

**The Business Finance
Component of the
USAID Business
Development Project
in Bosnia and
Herzegovina**

Final Report for BRFF

June 1996–September 1997

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7250 Woodmont Avenue, Suite 200, Bethesda, Maryland 20814

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ACTIVITIES JUNE 1996 TO SEPTEMBER 1997

After almost 15 months of activity, USAID-Business Finance has recommended 145 loans to commercial enterprises for a total amount of DM 123,201,731. The average recommended loan size to date is slightly over DM 841,000. Disbursed loans on September 30 totaled 90 in number and DM 77,441,190 in value.

A total of 12,269 jobs from direct employment had been created by our loans and an undetermined number of other jobs have either been created or sustained by the indirect effects of the loans. To date, job-to-loan ratios are one job per DM 10,000, but the cost of job creation has steadily increased over the last months because of our exclusive concentration on the private sector.

The original contract completion date was June 15 of this year. In order to ensure continued increasing momentum in the lending program, USAID extended the contract to September 30 and will extend it again, for four more months, to the end of January 1998 under a new contractual arrangement.

Below is a brief summary of the 5th quarter of this contract, followed by commentary on each component of the project for the June 1996 to September 1997 period.

AN OVERVIEW OF SUMMER QUARTER 1997

Progress During July to September

Recommendations

Total of loans recommended this quarter was DM 38,515,000 million for 42 loans. This represents a marked increase in the quarterly volume of loan recommendations. The project's new management team and a reorganized and largely new, especially for expatriate staff, project team produced almost 2.5 times the loan volume of the previous quarter.

USAID-Business Consulting

The framework of cooperation between the two teams was implemented during the quarter. Although the management and the staff of both contract teams work together collaboratively, there are still improvements to be made, especially in ensuring that both teams are focused on the same targets.

General

The team members, both Bosnian and expatriate, are now well-trained, experienced in Bosnia, and deeply committed to accomplishing our assigned objectives. Cohesion, cooperation, and team work characterizes the dynamic of the present team members. This is a notable accomplishment, as most of the expatriate and many of the Bosnian team members have joined the project since April.

Problems During July to September

The difficulty of recruiting personnel on a short term basis for a long term effort has been a significant challenge this quarter. Consultants usually either want a short, four to six weeks assignment, or a long term assignment. DAI's recruitment department has done an extraordinarily good job in recruiting bankers, environmentalists, and auditors on a short term basis to fulfill the requirements of our task order. Placing of long term DAI employees in key management, lending, and other technical positions has provided the necessary continuity. On the present contract team, a core group of our short-term expatriate employees have indicated that they would remain on contract for the long term, given the opportunity.

The suspension of an Agent Bank from our program this quarter, a significant problem in itself, also caused a considerable expense of time that could have been used for making loans. Based on our initial determination of misuse of funds, the competent authorities, notably the Federal Banking Agency and its USAID funded support team, have been requested to investigate alleged misuse of USAID-Business Finance funds and of funds from other sources. Discussions with the suspended bank, with borrowers, and with the Agent Banks receiving the accounts of the transferred borrowers, required an expenditure of an important amount of technical assistance time.

Special Initiatives During July to September

Brcko Initiative

Three more loans for Brcko, for a total of DM1,950,000, were recommended this quarter. At the end of the quarter, the USAID-Business Finance set up living quarters and office space in Brcko for the consultants so as to continue this effort.

Small Loan Facility

USAID-Business Finance published a study in May, proposing a framework for a Small Loan Facility (SLF) for making loans in the DM 50,000 to DM 200,000 range. USAID decided to delay the implementation of this program until a new contract for the project has been competed.

**REPORT ON PROJECT COMPONENTS
FOR JUNE 1996 TO SEPTEMBER 1997**

Operations and Systems

The quarterly reports give a sufficiently clear presentation of the progress made by the operations and systems unit. This unit is fully capable of providing the banking and systems services to the project in a timely manner.

Credit Management

Credit management, as the quarterly reports have shown, has evolved steadily to meet the demands of our markets and of USAID. At present this component has staff in Sarajevo, Tuzla, Brcko, and Banja Luka, with 12 expatriate bankers and a capable staff of Bosnian professionals.

Number of loans recommended:	145
Value of loans recommended:	DM 123,201,731
Total of jobs created:	12,269
Number of loans disbursed (wholly or partially):	90
Value of loans disbursed:	DM 77,441,190

Training

The training unit has accomplished 855 person weeks of training. Attached is a list of courses.

Environmental Review

Attached as an annex is a copy of our LTTA environmentalist's final report.

Project Management and Public Relations

As previous monthly and quarterly reports have indicated, the USAID-Business Finance administrative report has been quick to adapt to the project's changing and expanding environment.

ANNEX A

SUMMARY REPORT ON CONTRACT DELIVERABLES

The DAI Technical and Administrative Management Information System (TAMIS) tracks progress made against contract deliverables. They are summarized in the table below, with comments on progress.

DELIVERABLES REPORT
30 SEPTEMBER 1997

Description of Deliverables	Status	Comments
Establish a BRFF office at NBBH with a team of bankers	Completed	The OMU office was established at NBBH in mid-June 1996 and the Training Center was established nearby.
Prepare core credit policies, procedures, accounting methods, and controls suitable for rapid modification.	Completed	Written credit policies, procedures, accounting methodology, and controls are on file
Prepared a detailed Agency Bank Agreement	Completed	The agreement model was drafted the first week of the project and has been amended as necessary. A new amendment is being drafted by our legal counsel and our auditor.
Arrange for meetings with Agent Banks	Completed	During the fourth quarter good working relations were maintained with Agent Banks.
Prepare standard loan application forms	Completed	Standard loan application forms were prepared during the first week of the project. The BRFF and the World Bank modified these forms during the second quarter and adopted a uniform set. The forms were updated during the third quarter and fourth quarters to provide better packages of information to USAID-Business Consulting and USAID-Business Finance.
Prepare a flow of funds plan	Completed	To prepare this plan, the operation and systems officer used a flow of funds document provided by USAID.
Prepare work plans and training plans for the OMU and the training program	Completed	The work plan was prepared and implemented during the first four quarters.
Establish a data base for each borrower.	Completed	The data base was established and is maintained by the operations officer.
Prepare an Environmental checklist with criteria for on-lending	Completed	The BRFF environmental officer prepared the checklist and criteria during the first week of the project. The list is modified as necessary.

Table 1 — continued

Establish a regional office in Tuzla	Completed	The Tuzla Office is fully functioning.
Conduct a quarterly operational review	Completed	Quarterly operational reviews were conducted with USAID and the NBBH in October and February; an annual review was conducted with the same participants, plus the representatives from Agent Banks and borrowers.
Publish a quarterly report	Completed	This present report is the fourth of four quarterly reports due under the present contract.
Recommend loans for \$15 million by 9/30.	Completed	The loan target was met.
Recommend loans for \$30 million between October and December 1996	Completed Behind Schedule	\$10 million or 1/3 of this Fall Quarter target was met. By December 31, \$20.5 million out of a to-date targeted \$45 million had been met.
Recommend loans for \$15 million after January 1, 1997	Not Completed	At the end of June, the BRFF had recommended over \$55 million of the \$60 million originally obligated by the BRFF Grant Agreement.
Train commercial bankers at an average of 150 participant weeks per quarter.	Completed	The average has been maintained since the inception of the program.
Create one job per DM 10,000	Completed	BRFF loans created more than one job for each DM 10,000.
Prepare a report on categories of Bosnian enterprises causing environmental concern	Completed	Available at the USAID-Business Finance
Publish environmental baseline data	Complete	Available at USAID-Business Finance
Prepare a project completion report	Complete	Available at USAID-Business Finance

ANNEX B
BACKGROUND INFORMATION

PROJECT BACKGROUND

The mission of the Bosnian Reconstruction Finance Facility (formerly the BRFF but now USAID-Business Finance) is set out in a Grant Agreement signed on May 7, 1996 between Bosnia and Herzegovina and the United States of America. That mission is to provide reasonably priced medium term financing through the USAID-Business Finance facility located in the National Bank of Bosnia and Herzegovina (NBBH) and staffed by U.S. bankers and Bosnian professional staff. USAID-Business Finance is responsible for (1) recommending commercial loans to USAID for approval and, once approved, disbursing, monitoring, and administering the loans; (2) establishing specific credit policies, operating procedures and controls within the guidelines of the program; and (3) determining and implementing any related delegations of authorities to Bosnian banks.

Until local commercial banks can assume a larger role, USAID-Business Finance is responsible for reviewing and recommending for approval to USAID all loan applications. The current role of the Bosnian commercial banks (those under the supervision of the NBBH) is to act as agents for USAID-Business Finance. Although the ultimate decision to make a loan recommendation is with USAID-Business Finance's, Bosnian banks participate in loan analysis and in loan monitoring. They earn no interest on loans and are not subject to credit risk, but they do receive fees for their services. These fees include:

- An origination fee for each successful application (1 percent);
- A quarterly monitoring fee on submission of a satisfactory report which reflects the results of a visit to the client (one-quarter of 1 percent); and
- Collection fee for timely repayments of principal and interest on the loans (one-half of 1 percent).

The USAID-Business Finance charges borrowers a rate of interest not to exceed DM LIBOR plus a spread of 400 basis points. Banks may also charge international market fees for other related services such as payments, transfers and Letters of Credit.

The length of term for loans usually does not exceed three years, but in exceptional cases this term can be extended to five years. The maximum loan amount to any single borrower or obligor under the original program guidelines is DM 1 million, but USAID is flexible in approving loans recommended for over this amount if there is a compelling justification. Loan proceeds are used to finance working capital, fixed assets, and related necessary imports required by local businesses. Preference is given to firms in the private sector that maximize job generation; revitalize local productive capacity with relatively small amounts of capital; demonstrate export potential with domestic inputs; and support the renovation of businesses. In general, USAID restricts availability of loans from USAID-Business Finance to the US SFOR sector and the Sarajevo area. Few other restrictions are placed on borrower eligibility, although financing retail businesses is low priority. The specific eligibility standards and criteria for creditworthiness requirements of prospective borrowers are reviewed frequently, however and are subject to modification. Indicted war criminals are ineligible to apply for loans. Loans are subject to a favorable review of their environmental impact. Overall, the loan program and attendant technical assistance provided by a sister project, USAID-Business Consulting, is designed to:

- Create substantial and sustainable employment as rapidly as possible;
- Contribute to private sector enterprise rehabilitation and expansion;

- Provide enterprises access to financing at terms up to three years;
- Inject liquidity into the economy and revitalize the use of local suppliers;
- Strengthen the technical credit skills of the bankers and institutional development of the banks;
- Provide incentives to the State of Bosnia and Herzegovina to enact good banking legislation, establish an independent banking supervision agency, and adopt sound regulations based on OECD norms; and
- Promote democracy in accordance with the Dayton Accord.

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ANNEX C
ACTIVITY REPORT FROM TAMIS

TAMIS

USAID - Business Finance Work Plan Activities, Status, and Comments

Recommended Loans Status Report

MAS 1996 - 1997 Training Summary

Component Activity	Start Date	End Date	Current Status	Comments
A. Operations/Systems				
General	06/11/96	06/15/97	Completed: On Schedule	Operations/Systems are functioning satisfactorily and have been tested during 15 months of activity.
Computer Hardware Installation	06/13/96	08/23/96	Completed: On Schedule	A local area network and a Lotus Notes File Server was installed.
Counterpart Selection	06/13/96	09/30/96	Cancelled: Not Applicable	A Bosnian bank operations specialist who speaks English has not been found.
Communications Link	06/14/96	08/05/96	Completed: On Schedule	A Lotus Notes link between Bethesda, Sarajevo, and Tuzla has been installed.
Loan Accounting: Spreadsheet Template	06/14/96	07/01/96	Completed: On Schedule	This is used to validate calculations from the BancPac Loan Accounting System.
Agent Banks: Template	06/14/96	06/20/96	Cancelled: Not Applicable	The necessary records are in Banc Pak, Deal Tracking, and General Ledger programs.
Deal Tracking: Spreadsheet Prototype	06/20/96	06/21/96	Completed: On Schedule	Data has been converted to Microsoft Access database software and is easily accessible.
Funds Transfer Authentication	06/24/96	08/30/96	Completed: On Schedule	Bank of America Test Keys are in use at the National Bank of Bosnia Herzegovina and installed at USAID, available for use.
Safekeeping	06/26/96	08/15/96	Completed: On Schedule	A National Bank of Bosnia Herzegovina steel locking cabinet is used for this purpose. Duplicate original copies are with Agent Banks. Promissory notes are kept separately in a fireproof safe.

Component Activity	Start Date	End Date	Current Status	Comments
Disbursement of Funds in Early July Totalling Approximately USD 2 Million	07/01/96	07/31/96	Completed: On Schedule	The fund transfer took place slightly later than originally scheduled.
Deal Tracking: System Specifications, Including Environmental Criteria	07/08/96	07/10/96	Completed: On Schedule	A multi-table database using Microsoft Access software is now operational as well as a Lotus Notes System.
Branch Procedures: Obtain and Modify	07/08/96	07/13/96	Completed: On Schedule	The BRFF created its own procedures for its specific needs instead of obtaining and modifying procedures from an international bank.
Loan Accounting: System Specifications	07/08/96	07/08/96	Completed: On Schedule	System specifications were developed and were used to select the BancPac software.
Agent Banks: System Requirements	07/18/96	07/20/96	Cancelled: Not Applicable	The necessary systems are in Banc Pak, Deal Tracking, and General Ledger programs
Make BancPac Loan Account System Operational and Issue First Interest Bill	09/01/96	09/30/96	Completed: On Schedule	The first interest bill was issued by the BancPac System on September 21, 1996.
Develop Forms and Procedures for Agent Bank Payment Processing	09/01/96	09/30/96	Completed: On Schedule	Forms and procedures have been developed.
Make BancPac Bank Account Monitoring Software Operational	09/01/96	09/30/96	Completed: On Schedule	The BancPac system's basic functions are operational, including adding customers, booking new loans, accruing interest, and issuing bills and late notices
Begin Interest Payments Processing Including Timely Repayment Fees	10/01/96	10/30/96	Completed: On Schedule	
Conduct Feasibility Study to Interface BancPac Data into Access Database	10/01/96	10/15/96	Completed: On Schedule	

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Component	Activity	Start Date	End Date	Current Status	Comments
	Develop and Implement Agent Bank Loan Monitoring Fee Procedures	10/01/96	11/30/96	Completed: On Schedule	
	Refine and Distribute Forms and Procedures for Agent Bank Payment Processing	10/01/96	10/31/96	Completed: On Schedule	
	Interface Directly to Automated Fax Software for Sending Bills	12/01/96	12/31/96	Cancelled: Not Applicable	This activity is not feasible with the present Bosnian telephone system. Faxes continue to be sent manually, but this requires excessive amounts of labor as volumes increase.
	Automate Loan Repayment Bills if Feasibility Study Was Positive	12/01/96	12/31/96	Completed: On Schedule	Production of bills is now automated, saving significant time and improving accuracy.
	Interface Directly to Automated Fax Software for Sending Late Notices	01/01/97	01/31/97	Cancelled: Not Applicable	The feasibility study this quarter for sending bills was not successful. Sending late notices by automated fax will be suspended or cancelled.
	Automate Late Payment Notices if Feasibility Study Was Positive	01/01/97	01/31/97	Completed: On Schedule	Late payment notices were automated at the same time as repayment bills, as per above.
	Conversion to New Windows Based Release of Loan Accounting Software	02/01/97	02/28/97	Completed: Behind Schedule	Completed at the end of June
	Complete Formal Documentation of All Operational Procedures	03/01/97	03/31/97	Completed: On Schedule	Revision of all written procedures complete and supplied to the RIG for their review.
	Concentrate on Turnover of More Responsibilities to Bosnian Staff	04/01/97	04/30/97	Completed: Behind Schedule	The expatriate operations manager has progressively turned over activities to his technical staff. The technical staff is not capable of running the system, however, as they know procedures only, not banking operations.
	Operational Assessment of Bosnian Agent Banks	04/10/97	05/31/97	Completed: On Schedule	An informal two day assessment was carried out by DAI to permit planning for a Small Loan Facility. This activity was not resumed, at the request of USAID.

Component Activity	Start Date	End Date	Current Status	Comments
B. Credit/Marketing/Legal				
General	06/11/96	05/31/97	Completed: On Schedule	
Assessment of Borrowing Climate: (Banks, Borrowers, Legal)	06/12/96	04/15/97	Completed: On Schedule	
Produce Introductory BRFF profiles for Agent Banks and Clients	06/12/96	07/15/96	Completed: On Schedule	
Finalize Borrower Documents: Promissory Note; Loan Agreement; Guaranty; General Security Agreement	06/12/96	07/15/96	Completed: On Schedule	All documents were initially produced in July and have been continually updated as appropriate.
Finalize Agency Agreements	06/12/96	06/18/96	Completed: On Schedule	Agent Bank agreements were completed on schedule and have been updated as additional responsibilities have been assigned.
Counterpart Selection	06/13/96	09/30/96	Completed: On Schedule	The BRFF's mandate was to select Bosnian professionals to work with the American credit-trained loan officers. Bosnians with business experience were selected to be trained as counterparts.
Meet with other donor agencies and donor projects for coordination	06/15/96	03/31/97	Completed: On Schedule	The BRFF works with the WB, the BBAC and other USAID donor programs, Price Waterhouse, the U.S. Treasury Department, the IFC, various other donors and NGOs so as to ensure a combined impact.
Screening of Loans	06/17/96	03/31/97	Completed: On Schedule	
Set up working relations with Agency Banks and sign agreements	06/20/96	03/31/97	In Progress: On Schedule	

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Component	Activity	Start Date	End Date	Current Status	Comments
	Borrower Visits: Stage 1	06/21/96	06/27/96	Completed: On Schedule	
	Participate in meetings and seminars with Agency Banks	06/28/96	09/30/96	Completed: On Schedule	At the beginning of the project, meetings and seminars were held in Sarajevo, Tuzla, and Zenica. about loan facility requirements.
	Borrower Visits: Stage 2	07/01/96	05/31/97	Completed: On Schedule	This stage of borrower visits has now become routine, with USAID Business Finance making initial site visits with USAID - Business Finance.
	Review Disbursement and Booking/Monitoring/Collection Procedures	07/04/96	09/30/96	Completed: On Schedule	Review of these procedures will continue during the life of the project.
	Establish BRFF Internal and Credit Audit Function	07/05/96	05/31/97	Completed: On Schedule	The BRFF credit auditor has reviewed credit policies and BRFF conformity with USAID policy and has begun auditing of OMU loans.
	Continued Analysis of Credit Applications and Loan Recommendation Decisions	07/06/96	04/30/97	Completed: On Schedule	Screening and analysis is a major part of the program. USAID - Business Finance and USAID - Business Consulting are upgrading the skills of the Bosnian staff.

C. Training

	General	06/01/96	05/31/97	Completed: On Schedule	The BRFF training program has trained participants at approximately the contract target rate of 150 participant weeks per quarter. The program includes banks from all of BiH.
	Training Needs Assessment and Preparation of Training Plan	06/11/96	11/25/96	Completed: On Schedule	Training assessment is a continuous process. Courses are designed and modified as needed.
	Presentation of Credit Facility to Agent Banks	06/17/96	07/09/96	Completed: On Schedule	The training program provided a venue for the OMU and USAID to conduct three one-day seminars to introduce the Bosnian banking community (28 banks and 62 bankers) to the BRFF project during Summer Quarter 1996.

Component	Activity	Start Date	End Date	Current Status	Comments
	Translation of Manual and Course on Small Business Financing	07/09/96	08/10/96	Completed: On Schedule	A first offering of this four-day course was arranged for 20 representatives from 20 Agent Banks who help to test the accuracy and usefulness of translations of manuals on small business financing.
	Seminars: The Role of the Agent Bank in the OMU Credit Process	07/09/96	07/18/96	Completed: On Schedule	This seminar for Agent Banks, offered in Summer Quarter 1996, made a thorough presentation of the OMU loan application process and the Agent Bank's role.
	Financial Analysis and Business Planning Seminar	07/23/96	08/07/96	Completed: On Schedule	This is a core three-day banking course offered six times in Summer Quarter 1996 to 198 participants from 27 banks.
	Financing Small Business Seminars	08/12/96	04/30/97	In Progress: On Schedule	Participants study financial, cash flow and break even analysis in conjunction with tenor lending, loan covenants, BRFF lending program overview and basic accounting principals.
	Bank Supervision	12/09/96	12/10/96	Completed: On Schedule	Two 2-day workshops were held Fall Quarter for for 53 bankers.
	WIN CREDIT Presentation 1	12/10/96	12/10/96	Completed: On Schedule	Introduction to the computer program to help Bosnian bankers analyze various banking procedures in a more satisfactory manner.
	WIN CREDIT Presentation 2	12/12/96	12/12/96	Completed: On Schedule	Two hours presentation of two computer programs for easier credit analysis and for gaining familiarity with the overall procedures of a bank.
	Lender Workshops	01/01/97	06/01/97	Completed: On Schedule	
	Vendor Fairs	01/01/97	06/01/97	Cancelled: Not Applicable	
	Executive Meetings	01/20/97	01/20/97	Completed: On Schedule	The purpose of the meeting was to share some thoughts on how the banking community can best improve the image of banks and establish confidence in the banking industry.

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Component Activity	Start Date	End Date	Current Status	Comments
Managing the Loan Portfolio	02/24/97	02/24/97	Completed: On Schedule	In Winter Quarter, 26 bankers from 15 banks studied problem loan detection, written loan policy, risk management policy, recasting bad loans, the role of the loan officer, and the OMU lending objectives.
Executive Seminars for Directors and Deputy Directors	03/05/97	03/05/97	Completed: On Schedule	The Executive Management Informations Systems Seminar was attended by 22 executives from 15 banks.
Bank Systems	03/05/97	03/07/97	Completed: On Schedule	This specific course provides the most recent information on computer system utilization and bank automatization processes alongside advices and tips on best usage of computer skills.
Executive Simulation Five Day Seminars	03/10/97	03/14/97	Completed: On Schedule	This is a virtual reality course. Winter Quarter total of 23 bank execs participated in one courses. Teams establish a bank enterprise, make decisions regarding the asset mix, interest rate risk, etc. - in the context of OMU lending objectives.
World Bank/BRFF/MIT Center Forum	03/13/97	03/13/97	Completed: Ahead of Schedule	The forum was held for the representatives of the Council of Ministers, Chamber of Economy, cantonal government, private companies, , faculties, private and state banks, World Bank, BRFF, USAID, US Embassy,
BRFF Lending Operations	03/17/97	03/17/97	Completed: On Schedule	The director of BRFF operations, Mr. Phil Fox, gave a short presentation on BRFF lending program including conditions and prerequisites and explained the most frequent problem issues that occur in the BRFF - Agent bank relationship.
Advanced Credit Workshop	04/14/97	04/15/97	Completed: On Schedule	The workshop is designed for the senior level bank loan officer, who must have first completed the Financing the Small Business course in order to enroll in this course.
Counting on Your Banker	04/21/97	04/25/97	Completed: On Schedule	A course designed specifically for customers - with special attention given to the financial management, marketing techniques, customer services, pricing of goods, production issues, human resource management and the benefits of consulting with their bankers.
Payment Conditions, Letters of Credit, Guarantees, Risks and Fraud in International Trade	05/06/97	05/06/97	Completed: On Schedule	Austrian banker Kurt Stella (employed by Creditanstalt Bankverein, Vienna) held lectures on payment conditions in international trade with a special view on "documentary" letters of credit, stand-by letters of credit, guarantees and international trade.
Banking Services, Austrian Export and Trade Financing	05/07/97	05/07/97	Completed: On Schedule	

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Component	Activity	Start Date	End Date	Current Status	Comments
	World Bank/USAID Business Finance Seminar	05/27/97	05/28/97	Completed: Ahead of Schedule	In order to have better understanding and cooperation between PCU, USAID Business Finance and Bosnian banks, PCU will continue to organize these types of meetings regarding latest changes in loan covenants, terms and basic principles of loan agreements.
	Loan Application Presentation	07/21/97	07/24/97	Completed: On Schedule	
	Foreign Trade Finance	09/01/97	09/05/97	Completed: On Schedule	
	Environmental Review Workshop	09/02/97	09/02/97	Completed: On Schedule	
	Payment Systems/S.W.I.F.T.	09/08/97	09/12/97	Completed: On Schedule	
	USAID Business Consulting Organization and Business Finance Support Meetings	09/17/97		In Progress: On Schedule	
	International Bank Accounting	09/22/97	09/26/97	Completed: On Schedule	
	Financial Analysis of Banks	10/01/97	10/06/97	Completed: On Schedule	

D. Public Relations

	General	06/01/96	05/31/97	Completed: On Schedule	At start up, the Public Relations component benefited from the assistance of a STTA expert. Since that time, the local news media has been generous in its coverage of the BRFF purpose and functions.
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Component	Activity	Start Date	End Date	Current Status	Comments
	Preparation of Materials Describing Credit Facility for Agent Banks and Borrowers	06/12/96	09/30/96	Completed: On Schedule	Basic documents have been drawn up and distributed. Refinements and small brochures will be developed.
	Write OMU Staff Guidelines For Media Relations	06/12/96	07/05/96	Cancelled: Not Applicable	Relations with the media will be handle by the COP, DCOP, or their designates.
	Compilation of Local Media Database, Including Prices, Points of Contact, Markets Covered	06/17/96	06/29/96	Cancelled: Not Applicable	The BRFF did not compile the data base, but it did receive an address book of all media institutions.
	Present Credit Facility Features	06/20/96	09/30/96	Completed: On Schedule	Credit facility features were presented at BRFF seminars conducted by the BRFF MIT Center in Sarajevo and at presentations in Zenica and Tuzla.
	World Bank/BRFF/MIT Center Forum	03/13/97	03/13/97	Completed: Ahead of Schedule	The forum was held for the representatives of the Council of Ministers, Chamber of Economy, cantonal government, private companies, , faculties, private and state banks, World Bank, BRFF, USAID, US Embassy,

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E. Environmental Review

General	06/01/96	05/31/97	Completed: On Schedule	All specific tasks in the environmental scope of work have been completed on time, including establishing an environmental review unit, integrating environmental review into the loan process and systems, and achieving full operations.
Environmental Assessment Training for Bosnian Bankers	06/12/96	05/31/97	Completed: On Schedule	Environmental Specialists Michael Kent and Dr. Sulejman Redzic have participated in MITC credit training courses and discussed with bankers the relation between environmental damage and bank lending, explaining the BRFF's environmental check list.
Counterpart Selection	06/13/96	08/15/96	Completed: On Schedule	The environmental counterpart was selected and recruited on schedule, and has added significant resources of knowledge and contacts to the BRFF team.
Environmental Checklist: Draft	06/13/96	06/18/96	Completed: On Schedule	A draft checklist was prepared on schedule.

Component	Activity	Start Date	End Date	Current Status	Comments
	Construction of Enterprise Profiles	06/15/96	05/31/97	Completed: On Schedule	
	Collection/Analysis of Baseline Data	06/15/96	05/31/97	Completed: On Schedule	
	Environmental Checklist: Modify, Finalize	06/19/96	06/27/96	Completed: On Schedule	The draft checklist was reviewed by OMU staff, modified, and finalized, and is now being used.
	Evaluation of First Set of Loans: Analysis	06/24/96	06/28/96	Completed: On Schedule	Environmental analysis of the first set of loans was completed on schedule.
	Evaluation of First Set of Loans: Discuss Findings with OMU Staff	06/28/96	06/29/96	Completed: On Schedule	Results of the environmental review of the first set of loans were presented to the Credit Committee, on schedule.
	Continued Environmental Review of OMU Loans	07/01/96	05/31/97	Completed: On Schedule	Environmental review of OMU loans is being performed on an on-going basis. Environmental reviews are being done concurrent with credit review.
	Integration of Environmental Review into OMU Credit Process, Documentation	07/05/96	07/31/96	Completed: On Schedule	The environmental review process and associated documentation has been satisfactorily integrated into the OMU credit process.
	System Requirements for Integration	07/08/96	07/31/96	Completed: On Schedule	System requirements for integration of environmental review into the OMU process have been satisfactorily fulfilled.
	Recommendations to USAID and SBH on Additional Environmental Measures	01/12/97	05/31/97	Completed: On Schedule	

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F. Project Management

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Component Activity	Start Date	End Date	Current Status	Comments
General	06/01/96	05/31/97	Completed: On Schedule	During the first 12 months of the project, project administrative services supported the technical management functions with effectiveness and efficiency.
Set up and Operate Procurement Policies	07/01/96	05/31/97	Completed: On Schedule	Local procurement manuals and major procurement are completed.
Set up and Operate Accounting Systems	07/01/96	05/31/97	Completed: On Schedule	Systems are set up and operating satisfactorily
Set up Contracts For Local Employees	07/01/96	08/31/96	Completed: On Schedule	Contracts have been reviewed by legal counsel and will be updated as new laws are enacted by the Bosnian government. .
Provide Routine Services to OMU and Training Unit	07/01/96	05/31/97	Completed: On Schedule	Project management provides computer and LAN networking services, translations, transportation, and arranges conferences and signing ceremonies when necessary.
Prepare Comprehensive Long-Term Workplans	07/08/96	11/10/96	Completed: Behind Schedule	Annual workplan will be completed and installed in TAMIS.
Prepare Monthly Reports and COP Summary	07/15/96	05/29/97	Completed: On Schedule	All reports have been submitted in a timely fashion since early December. Some delays were caused by the resignation of the COP at the beginning of the quarter.
Set Up Vehicle Use and Maintenance Policies	07/26/96	05/31/97	Completed: On Schedule	Use and maintenance procedures established. Lack of local rep for Blazers makes maintenance unnecessarily complicated.
Prepare Quarterly Reports	10/10/96	05/29/97	Completed: On Schedule	This concludes the fifth Quarterly Report.
Begin Using TAMIS	11/15/96	11/30/96	Completed: On Schedule	The Technical and Administrative Management Information System (TAMIS) will permit project managers, credit officers, USAID, and others to use Lotus Notes for tracking all project activities.

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MAS 1996 – 1997 Training Summary

Year	Qtr.	Part. Weeks	Title	Location	Dates	Days	Banks	Participants	% Fem
1996		294.8			-				
	Y 1 Quarter 1	128.0			-				
			Introductory seminar	Sarajevo	06/17/96 - 06/17/96	1	12	23	78.3%
			Introductory seminar	Sarajevo	06/18/96 - 06/18/96	1	8	15	73.3%
			Introductory seminar	Tuzla	06/24/96 - 06/24/96	1	8	24	79.2%
			Role of the Agent Bank	Sarajevo	07/09/96 - 07/09/96	1	21	78	59.0%
			Executive seminar	Sarajevo	07/18/96 - 07/18/96	1	26	47	42.6%
			Financial Analysis and Business Planning	Tuzla	07/23/96 - 07/25/96	3	8	29	48.3%
			Financial Analysis and Business Planning	Sarajevo	07/29/96 - 07/31/96	3	24	36	72.2%
			Financial Analysis and Business Planning	Sarajevo	08/05/96 - 08/07/96	3	27	34	85.3%
			Financing the Small Business	Sarajevo	08/12/96 - 08/15/96	4	20	20	70.0%
			Managing the Loan Portfolio	Sarajevo	09/02/96 - 09/05/96	4	18	19	78.9%
	Y 1 Quarter 2	166.8			-				
			Financing the Small Business	Sarajevo	10/01/96 - 10/04/96	4	17	19	78.9%
			Financing the Small Business	Sarajevo	10/07/96 - 10/10/96	4	18	18	94.4%
			BANKESEC Simulation	Sarajevo	10/14/96 - 10/18/96	4	23	26	57.7%
			Financing the Small Business	Tuzla	10/21/96 - 10/24/96	4	7	10	70.0%
			Managing the Loan Portfolio	Tuzla	11/04/96 - 11/07/96	4	16	23	52.2%
			Financing the Small Business	Sarajevo	11/18/96 - 11/22/96	5	16	33	51.5%
			Bank Supervision Workshop	Sarajevo	12/09/96 - 12/10/96	2	21	32	65.6%
			WIN CREDIT Presentation 1	Sarajevo	12/10/96 - 12/10/96	1	25	45	53.3%
			Bank Supervision Workshop	Sarajevo	12/11/96 - 12/12/96	2	11	21	71.4%
			WIN CREDIT Presentation 2	Sarajevo	12/12/96 - 12/12/96	1	3	4	0.0%
			BANKESEC Simulation	Sarajevo	12/16/96 - 12/20/96	5	16	26	61.5%
1997		756.1			-				
	Y 1 Quarter 3	142.9			-				
			Executive Breakfast Meeting	Sarajevo	01/20/97 - 01/20/97	1	24	38	28.9%
			Financing the Small Business	Sarajevo	01/27/97 - 01/31/97	5	18	29	69.0%
			Financing the Small Business	Tuzla	02/03/97 - 02/07/97	4	4	15	53.3%
			Executive Meeting	Sarajevo	02/15/97 - 02/15/97	0.5	19	35	37.1%
			Bank Regulation in a Market Economy I	Sarajevo	02/17/97 - 02/18/97	2	10	16	81.2%
			Bank Regulation in a Market Economy II	Sarajevo	02/19/97 - 02/20/97	2	9	16	75.0%
			Managing the Loan Portfolio	Sarajevo	02/24/97 - 02/27/97	4	15	26	80.8%
			Executive Management Information Systems Seminar	Sarajevo	03/05/97 - 03/05/97	1	15	22	27.3%
			Bank Information Systems Seminar	Sarajevo	03/06/97 - 03/07/97	2	17	33	54.5%
			BANKESEC Simulation	Sarajevo	03/10/97 - 03/14/97	5	15	23	73.9%

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Year	Qtr.	Part. Weeks	Title	Location	Dates	Days	Banks	Participants	% Fem
			World Bank/BRFF/MIT Center Forum	Sarajevo	03/13/97 - 03/13/97	1		45	8.9%
			BRFF Lending Operations	Sarajevo	03/17/97 - 03/17/97	1	24	38	68.4%
	Y 1 Quarter 4	185.6			-				
			Financing the Small Business	Sarajevo	04/07/97 - 04/11/97	5	14	30	73.3%
			Advanced Credit Workshop	Sarajevo	04/14/97 - 04/15/97	2	15	21	81.0%
			Executive Meeting	Sarajevo	04/19/97 - 04/19/97	1	17	21	23.8%
			Counting on Your Banker	Sarajevo	04/21/97 - 04/25/97	5	15	20	35.0%
			Payment Conditions, Letters of Credit, Guarantees, Risks a	Sarajevo	05/06/97 - 05/06/97	1	22	42	76.2%
			Banking Services, Austrian Export and Trade Financing	Sarajevo	05/07/97 - 05/07/97	1	15	27	88.9%
			Advanced Credit Workshop	Sarajevo	05/13/97 - 05/16/97	4	13	22	72.7%
			Executive Meeting	Sarajevo	05/17/97 - 05/17/97	0.5	19	26	53.8%
			Counting on Your Banker	Sarajevo	05/19/97 - 05/23/97	5	16	18	61.1%
			World Bank/USAID Business Finance Seminar	Sarajevo	05/27/97 - 05/28/97	2	11	26	65.4%
			Advanced Credit Workshop	Sarajevo	06/09/97 - 06/12/97	4	11	28	67.9%
			Counting on Your Banker	Sarajevo	06/16/97 - 06/20/97	5	25	35	62.9%
			Executive Meeting	Sarajevo	06/27/97 - 06/27/97	0.5	22	32	37.5%
	Y 2 Quarter 1	231.6			-				
			Counting on Your Banker	Sarajevo	07/07/97 - 07/11/97	5	12	13	53.8%
			Counting on Your Banker	Sarajevo	07/14/97 - 07/18/97	5	13	16	31.2%
			Loan Application Presentation	Sarajevo	07/22/97 - 07/22/97	1	28	54	63.0%
			Loan Application Presentation	Tuzla	07/24/97 - 07/24/97	1	7	24	66.7%
			Counting on Your Banker	Tuzla	08/11/97 - 08/15/97	5	8	13	38.5%
			Advanced Credit Workshop	Tuzla	08/18/97 - 08/21/97	4	5	13	61.5%
			"USAID/BF Introduction" - Banja Luka		08/27/97 - 08/27/97		137	161	16.8%
			TAMIS and Loan Application Workshop	Sarajevo	08/30/97 - 08/30/97	1	1	29	24.1%
			Financing Foreign Trade	Sarajevo	09/01/97 - 09/05/97	5	16	26	80.8%
			Foreign Trade Finance	Sarajevo	09/01/97 - 09/05/97	5	16	26	80.8%
			Environmental Review Workshop	Sarajevo	09/02/97 - 09/02/97	1	2	11	36.4%
			Environmental Review Workshop	Sarajevo	09/02/97 - 09/02/97	1	2	11	36.4%
			Payment Systems/S.W.I.F.T.	Sarajevo	09/08/97 - 09/12/97	5	20	36	83.3%
			USAID Business Consulting Organization and Business Fin	Sarajevo	09/17/97 - 09/17/97	1	1	32	21.9%
			International Bank Accounting	Sarajevo	09/22/97 - 09/26/97	5	25	44	70.5%
			Executive Planning Workshop	Sarajevo	09/26/97 - 09/26/97	1	10	13	30.8%
			Executive Meeting for BH Bankers	Sarajevo	09/27/97 - 09/27/97	1	38	60	31.7%
			Executive Follow-Up Meeting	Sarajevo	09/29/97 - 09/29/97	0.5	4	4	25.0%
	Y 2 Quarter 2	196.0			-				

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Year	Qtr.	Part. Weeks	Title	Location	Dates	Days	Banks	Participants	% Fem
			Financial Analysis of Banks	Sarajevo	10/01/97 - 10/06/97	5	22	38	73.7%
			Financing Small Business	Sarajevo	10/06/97 - 10/10/97	5	13	24	70.8%
			Counting on Your Banker	Sarajevo	10/13/97 - 10/17/97	5	13	18	61.1%
			BANKEEXEC Simulation	Sarajevo	10/27/97 - 11/01/97	6	13	24	70.8%
			Financing Small Business		11/10/97 - 11/14/97	5	12	42	73.8%
			Counting on Your Banker		11/17/97 - 11/21/97	5	36	40	35.0%
			Executive Meeting		11/22/97 - 11/22/97	1	12	26	11.5%
		1050.9							

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ANNEX D
REPORT ON RECOMMENDATIONS AND DISBURSEMENTS

Recommended Loans Date	Loan Amounts DM	Employment
Jun-96	3,195,000 DM	756
Aug-96	8,367,000 DM	871
Sep-96	11,688,619 DM	2,088
Oct-96	5,777,000 DM	699
Nov-96	5,220,000 DM	575
Dec-96	2,273,500 DM	268
Jan-97	10,503,112 DM	915
Feb-97	10,469,000 DM	1,574
Mar-97	12,375,000 DM	827
Apr-97	7,360,000 DM	637
May-97	3,623,000 DM	87
Jun-97	2,935,500 DM	207
Jul-97	9,545,000 DM	656
Aug-97	17,710,000 DM	1,371
Sep-97	11,260,000 DM	660
TOTAL	122,301,731 DM	12,191

Disbursed Loans Date	Loan Amounts DM	Employment
Aug-96	1,195,000 DM	636
Sep-96	8,167,000 DM	849
Oct-96	1,000,000 DM	107
Nov-96	10,084,219 DM	2,217
Dec-96	10,454,900 DM	1,039
Jan-97	1,620,000 DM	141
Feb-97	13,700,000 DM	1,181
Mar-97	5,105,000 DM	1,090
Apr-97	3,467,112 DM	316
May-97	3,950,000 DM	320
Jun-97	8,540,000 DM	560
Jul-97	1,855,000 DM	171
Aug-97	2,370,000 DM	167
Sep-97	4,633,000 DM	431
TOTAL	76,141,231 DM	9,225

ANNEX E

**REPORT ON ENVIRONMENTAL ACTIVITIES
(PROJECT COMPLETION REPORT)**

RECOMMENDATIONS REGARDING THE BRFF/BF LOAN PROGRAM ENVIRONMENTAL REVIEW FUNCTIONS

by Michael Kent and Dr. Sulejman Redzic, Environmental Specialists, Bosnia Reconstruction Finance Facility (BRFF) Business Finance (formerly known as On-Lending Management Unit (OMU))

Introduction

The Task Order for implementing the On-Lending Management Unit (OMU) for the Bosnia Reconstruction Finance Facility (BRFF) includes a set of environmental tasks. One of the specific environmental tasks, item V.C. 6 (page 8) of the Task Order, reads as follows:

“6. At the end of the first program year, or sooner if feasible, to recommend to USAID and the SBH any additional environmental measures and criteria that should be incorporated into the on-lending program.”

This report is submitted in fulfillment of that task. It consists of a set of recommendations, followed by a discussion of the rationale for the recommendation. No recommendations of substantial change are made because the environmental review functions, as specified in the Task Order, and carried out in practice during the first year, have proved to be appropriate and adequate, and no significant problems were encountered.

RECOMMENDATION 1: Continue to perform environmental review for loan applications according to the process developed in the first year of OMU operations

RATIONALE: The environmental review process developed in the first year has performed well. It provided satisfactory environmental review for the variety of applications received by the emergency lending program of the BRFF/OMU under prevailing Bosnian conditions, which include some sensitive environmental characteristics (existence of wetlands, biologically sensitive areas, and protected areas, acidification of soil by acid rain, degraded drinking and irrigation water quality including groundwater contamination in northern areas, etc.), and a generally low level of environmental awareness on the part of the local business community.

RECOMMENDATION 2: Continue to participate in training as much as possible. If additional personnel resources are available after fulfilling the primary environmental review mission of the OMU Environmental Unit, give highest priority for those additional resources

programs, but was limited by the time and personnel resources available for environmental functions in the first year of OMU operations. This recommendation is based on the current understanding that the number of OMU staff devoted to environmental functions will be increased.

RECOMMENDATION 3: If additional personnel resources are available after fulfilling the primary environmental review mission of the OMU Environmental Unit and expanding training functions, give second priority for those additional resources to expanding the scope of environmental review.

RATIONALE: While the current level of environmental review has proved adequate, it was tailored to an emergency lending program and the personnel resources available in the first year of OMU operations. As such, it was limited to the most significant environmental impacts, as is appropriate to an emergency loan program. Gradually phasing in broader environmental review over time would be beneficial as Bosnia emerges from the immediate post-war state and its economy develops and strengthens; its environmental review and protection should be developed concurrently. However, it is our judgement that, if personnel resources are limited and both expanded training and expanded scope of environmental review cannot both be done, that additional training would be more beneficial than expansion of the scope of BRFF/OMU environmental review.

24 May 1996

CATEGORIES OF BOSNIAN ENTERPRISES SEEKING LOAN FUNDING THAT GENERATE ENVIRONMENTAL CONCERNS

by Michael Kent and Dr. Sulejman Redzic, Environmental Specialists, Bosnia Reconstruction Finance Facility (BRFF) On-Lending Management Unit (OMU)

Introduction

The Task Order for implementing the On-Lending Management Unit (OMU) for the Bosnia Reconstruction Finance Facility (BRFF) includes a set of environmental tasks. One of the specific environmental tasks, item V.C. 3 (page 8) of the Task Order, reads as follows:

"3. Identify categories of Bosnian enterprises seeking loan funding that generate environmental concerns. In order to gradually phase in a broader environmental review and to advise on measures to prevent or reduce negative environmental impact, the specialist will need to develop profiles of Bosnian enterprises over time."

This report is submitted in fulfillment of that task, and is structured as follows:

- I. Categorization and discussion of Bosnian businesses seeking loans
- II. Discussion of businesses generating more significant environmental concerns.
- III. Conclusions

I. Categories of Bosnian enterprises seeking loan funding

By the conclusion of the first year of OMU operation (mid-April 1997), 311 Bosnian businesses had requested loans from the OMU. Table 1 classifies these business into 20 categories representing major economic sectors, and shows number and percentage of businesses in each sector. This information is also presented graphically in Graph 1.

For comparison, Table 1 also shows the number and percentage of businesses in the entire Bosnian economy during the war and before the war. It should be noted that the post-war information differs from pre-war and wartime categorizations in that it is limited to the businesses seeking OMU funding, rather than including data for the entire economy.

Annex A provides additional detail on the information summarized in Table 1, in the form of:

Table 2	Summary of Pre-War Businesses, by Region
Graph 2	Graph of information in Table 2
Table 2A	Pre-War Businesses, Sarajevo-Zenica-Gorazde Region
Table 2B	Pre-War Businesses, Tuzla-Doboj Region
Table 2C	Pre-War Businesses, Banja Luka -Bihac Region
Table 2D	Pre-War Businesses, Hercegovina Region
Table 3	Wartime Businesses
Graph 3	Graph of information in Table 3
Table 4	Post-War Businesses
Graph 4	Graph of information in Table 4

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The types of Bosnian businesses seeking BRFF loan funding in Table 1 span the range of economic sectors, as would be expected in an industrialized economy such as Bosnia's. However, the percentage distribution of businesses from each category seeking loans differs from the economy as a whole in the wartime and pre-war periods. This is probably because (1) the BRFF loan program tends to attract/fit certain sectors, and (2) the Bosnian economy is in a state of major transitions from a planned to a free-market economy and from wartime to peacetime.

As shown in Table 1, the largest number of loan requests came from the following sectors (in descending order of magnitude):

<u>SECTOR</u>	<u>PERCENT</u>
Metal products	15.43
Agriculture (including fisheries)	14.47
Food products	11.58
Clothing and textile products	8.68
Lumber and wood processing	6.11
Wood products and furniture	6.11
Services	5.79
Construction materials	<u>5.47</u>
SUBTOTAL	73.64

Together, these 8 categories represent approximately 74% of total businesses seeking loans. No other single category of the 20 categories in Table 1 represents more than 3.2%.

The dominance of these categories reflects the characteristics of the Bosnian economy and natural resource base, which has a relative abundance of forest resources ("Lumber and wood processing", "Wood products and furniture") and agricultural activity ("Food products", "Agriculture (including fisheries)"). Bosnia was a center for heavy industry in ex-Yugoslavia ("Metal products"), and has an abundance of low-cost labor (the labor-intensive "Clothing and textile products"). The categories above also reflect the basic needs of an economy recovering from war ("Construction materials", "Services").

As a general rule, the type and seriousness of environmental concerns associated with a given enterprise are determined by the nature of that enterprise and its production process. In the OMU's experience during its first year, many of the businesses seeking loans had relatively low environmental impacts. (Categories with greater impacts are discussed in Section II.) These lower-impact categories include food products, clothing and textile products, wood products and furniture, and services. In these sectors, the preponderance of inputs, outputs, processes, and waste products do not consist of or involve hazardous materials or relatively serious environmental effects.

The agricultural sector (which uses pesticides, herbicides, and fungicides and artificial fertilizer) and the lumber and wood processing industry (which includes logging operations, raising the issues of sustainability of forest management and environmental impact of logging

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practices) have potentially significant issues. However, in practice, environmental impacts were generally not of an unacceptably high nature due to the level of management of forestry and agriculture in Bosnia. "Metal products" were generally smaller enterprises manufacturing various metal goods from bulk unformed metal purchased or imported from other sources, and thus did not involve the impacts associated with the mining and smelting operations of primary metal production.

II. Categories of enterprises that generate environmental concerns

As discussed above, most of the categories that represent most of the businesses seeking loans have relatively low environmental impacts. Categories of businesses that have relatively higher environmental impacts are discussed in this section. They include "Construction materials" from the set of categories in Section I above, as well as other categories representing smaller percentages of loan applicants identified below.

Loan applicants in the "Construction materials" category tended to have higher levels of environmental impact, such as large quantities of airborne particulate matter generated by cement plants and concrete construction block manufacturers, or impacts on rivers and wetland ecosystems generated by gravel extraction operations. This is due to the nature of the businesses involved, particularly the fact that gravel extraction usually occurs in or near rivers, generating raising issues of impacts on water quality, wetlands and sensitive riparian areas.

In addition, some individual businesses seeking loans did generate significant environmental concerns. These businesses were in categories not listed in Section I, because they represented a relatively small percentage of total enterprises seeking loans.

Specific environmental issues generated by individual categories of businesses receiving loans is discussed in more detail in "Environmental Issues Specific to Bosnian Enterprises Receiving BRFF Loans", a report submitted in fulfillment of Item V.C.4 of the Task Order. The discussion below summarizes the more significant environmental issues associated with businesses seeking BRFF/OMU funding.

Major/significant environmental issues that did emerge were generally the result of (1), particular circumstances of individual enterprises rather than inherent characteristics of the business categories (except for "Construction materials" above), or (2) were from categories of businesses representing a smaller percentage of total loan requests.

<u>SECTOR</u>	<u>PERCENT</u>
Leather, rubber & plastics	3.22
Printing and publishing	2.89
Chemicals and paints	2.89
Stone, Clay, Glass & concrete	2.57
Pulp and paper	0.96
Mining	0.96

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Gas Production and Distribution	<u>0.64</u>
SUBTOTAL	14.13

Environmental issues associated with these sectors are discussed below.

Printing and publishing. The major environmental issues were the various inks, dyes, and other chemicals typically used in printing, and their effects on water quality if discharged as liquid waste.

Leather, rubber & plastics. Major environmental issues included water contamination from liquid waste discharges from leather tanning, and particulate matter and solid waste generated by rubber processors.

Stone, Clay, Glass & concrete. As discussed above relating to "Construction Materials", major impacts included impacts on rivers and watercourses of gravel extraction, and air quality impacts of air emissions from cement plants.

Chemicals and paints. Chemical industries can have a variety of impacts on air quality, water quality, and generation of hazardous waste, depending on the type(s) of chemicals involved. Paint manufacturer applicants usually mixed ingredients obtained from foreign sources and thus had lower impacts than the enterprises that manufactured basic ingredients for paints.

Pulp and paper. Major impacts are associated with the pulping process (the pulp is later converted into paper); nuisance odors, particulate air emissions, waste waters from bleaching containing chlorinated compounds such as dioxins, BOD (biological oxygen demand), TSS (total suspended solids), and high water use.

Mining. Surface coal mining has impacts on water quality, loss of topsoil, and productive land (agriculture and grazing, forest, wildlife habitat, etc.).

Gas Production and Distribution. Possibility of accidental spills, or leaks from underground storage tanks.

Finally, the remaining sectors from Table 1 represented a relatively small percent of loan requests and the specific businesses involved had relatively low environmental impact:

<u>SECTOR</u>	<u>PERCENT</u>
Trade	3.22
Communications, Electronics	2.89
(assembly, repair, broadcasting, etc. -- no chip manufacturers applied for loans)	
Construction Services	2.57
Transportation	1.93
(transport services -- no manufacturers of vehicles applied for loans)	
Hotels and Recreation	<u>1.61</u>
SUBTOTAL	12.22

In practice, the actual level of impact of businesses with higher potential impacts depended to a large degree on the level of pollution control and environmental mitigation measures that were included in the project, or to which the applicants agreed after negotiations with the OMU Environmental Unit. The existence and effectiveness of existing mitigation measures depended primarily on the age of the facility. (Most loan requests were for restarts or

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increases in production at existing war-damaged facilities, rather than new factories or enterprises.) Loan applicants were generally industrial facilities built between the 1950s (with little environmental protection), to the late 1980s (generally with relatively modern environmental protection measures). As would be expected, there was a great difference between the environmental protection and resulting environmental impacts of facilities dating from 30 to 40 years ago and those built within the last decade.

The effectiveness of negotiated additional mitigation measures depended on the cost of the measures and the enterprises' ability to pay, which varied greatly from applicant to applicant and type of business to type of business.

III. Conclusions

1. While, as discussed above, the type and magnitude of environmental impacts were related to the business sector of the applicant, in practice the actual impacts also depended heavily on the characteristics and site of the individual applicant. Thus, there is no substitute for individual environmental assessments (appropriately streamlined for OMU emergency lending requirements), both to detect environmental problems and to design/negotiate appropriate mitigation, if needed.
2. While mitigation measures to prevent or reduce negative environmental impact must be individualized, the first year's experience showed that an environmental specialist experienced in Environmental Impact Assessment can do so quickly and efficiently, without impeding the overall loan approval process.
3. The successful OMU-specific environmental review process used in the first year could be applied to a broader environmental review (encompassing more environmental impact categories, a lower threshold of significance, or more detailed analysis, for example), but would require more personnel resources per loan to do so without impeding the loan approval process.

BOSNIA RECONSTRUCTION FINANCE FACILITY
ON-LENDING MANAGEMENT UNIT
- Environmental Unit -

Sarajevo, April 21, 1997

Table 1 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA BUSINESS
IN DIFFERENT PERIODS

	TYPE OF BUSINESS	P E R I O D					
		PRE WAR		DURING THE WAR		AFTER WAR	
		n	%	n	%	n	%
1	AGRICULTURE (Incl. Fishing)	266	5.52	52	12.84	45	14.47
2	CHEMICALS AND PAINTS (Incl. Medicines)	68	1.41	17	4.20	9	2.89
3	CLOTHING AND TEXTILE PRODUCTS	150	3.11	43	10.62	27	8.68
4	COMMUNICATIONS, ELECTRONICS	208	4.32	7	1.73	7	2.25
5	CONSTRUCTION MATERIALS	56	1.16	58	14.32	17	5.47
6	FOOD PRODUCTS	196	4.07	53	13.07	36	11.58
7	HOTELS AND RECREATIONAL CENTRES	286	5.94	0	0	5	1.61
8	LUMBER & WOOD PROCESSING	99	2.06	14	3.46	19	6.11
9	METAL PRODUCTS ¹	277	5.75	47	11.6	48	15.43
10	PRINTING AND PUBLISHING	104	2.16	7	1.73	9	2.89
11	LEATHER, RUBBER & PLASTICS	35	0.73	14	3.46	10	3.22
12	SERVICES	539	11.19	3	0.74	18	5.79

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13	STONE, CLAY, GLASS & CONCRETE	47	0.96	27	6.67	8	2.57
14	TRADE	709	14.72	0	0	10	3.22
15	TRANSPORTATION	333	6.91	10	2.47	6	1.93
16	WOOD PRODUCTS & FURNITURE	133	2.76	25	6.17	19	6.11
17	CONSTRUCTION SERVICES	345	7.16	2	0.49	8	2.57
18	MINING	83	1.72	3	0.74	3	0.96
19	PULP AND PAPER	25	0.52	1	0.25	3	0.96
20	ELECTRONICS	54	1.12	8	1.98	0	0
21	ELECTRO ENERGY	28	0.58	1	0.25	0	0
22	ENERGETICS	30	0.62	2	0.50	0	0
23	EXPLOITATION OF BIOLOGICAL RESOURCES	38	0.79	5	1.23	0	0
24	IRON AND STEEL PRODUCTION	12	0.25	3	0.74	0	0
25	POLYCLINICS, CLINICS, PHARMACY, VETERINARIANS	604	12.55	0	0	0	0
26	GAS DISTRIBUTION	55	1.14	0	0	2	0.64
27	TOBACCO PROCESSING	17	0.35	0	0	0	0
28	DRY CLEANING INDUSTRY	20	0.42	0	0	0	0
29	NON-FERROUS METAL	0	0	3	0.74	0	0
30	OTHER/UNKNOWN	0	0	0	0	2	0.64
	Total:	4817	100	405	100	311	100

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BOSNIA RECONSTRUCTION FINANCE FACILITY
 ON LENDING MANAGEMENT UNIT
 - Environmental Unit

Sarajevo, February 03, 1997

Table 2 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA BUSINESS IN PRE WAR PERIOD

	TYPE OF BUSINESS	REGIONS									
		SARAJEVO		TUZLA		BANJALUKA		MOSTAR		TOTAL	
		n	%	n	%	n	%	n	%	n	%
1	AGRICULTURE (incl.Fisheries)	37	2.03	74	6.02	111	9.66	44	6.74	266	5.52
2	CHEMICALS AND PAINTS (incl.Medicines)	28	1.54	22	1.84	13	1.13	5	0.77	68	1.41
3	CLOTHING AND TEXTILE PRODUCTS	46	2.52	45	3.78	45	3.92	14	2.14	150	3.11
4	COMMUNICATIONS, ELECTRONICS	93	5.10	38	3.19	43	3.74	34	5.21	208	4.32
5	CONSTRUCTION MATERIALS	15	0.82	19	1.59	18	1.57	4	0.61	56	1.16
6	FOOD PRODUCTION	45	2.47	64	5.36	54	4.70	33	5.05	196	4.07
7	HOTELS and RECREATIONAL CENTRES	114	6.26	61	5.11	60	5.22	51	7.81	286	5.94
8	LUMBER & WOOD PROCESSING	35	1.92	19	1.59	32	2.79	13	1.99	99	2.06
9	METAL PRODUCTS	115	6.31	60	5.03	51	4.44	51	7.81	277	5.75
10	PRINTING and PUBLISHING	52	2.85	13	1.09	29	2.52	10	1.53	104	2.16
11	LEATHER, RUBBER & PLASTICS	7	0.38	11	0.92	11	0.96	6	0.92	35	0.73
12	SERVICES	242	13.28	113	9.47	113	9.83	71	10.82	539	11.19

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13	STONE,CLAY,GLASS & CONCRETE	13	0.71	20	1.68	8	0.70	6	0.92	47	0.96
14	TRADE	324	17.78	178	14.92	132	11.49	75	11.49	709	14.72
15	TRANSPORTATION	112	6.15	99	8.30	77	6.70	45	6.89	333	6.91
16	WOOD PRODUCTS & FURNITURE	50	2.74	34	2.85	41	3.57	8	1.23	133	2.76
17	CONSTRUCTION SERVICES	138	7.57	95	7.96	63	5.48	49	7.50	345	7.16
18	MINING	18	0.99	33	2.77	21	1.83	11	1.68	83	1.72
19	PULP AND PAPER	1	0.05	12	1.01	12	1.04	0	0	25	0.52
20	ELECTROTECHNICS	8	0.44	14	1.17	20	1.74	12	1.84	54	1.12
21	ELECTRO ENERGY	6	0.33	6	0.50	4	0.35	12	1.84	28	0.58
22	ENERGETICS	17	0.93	5	0.42	7	0.61	1	0.15	30	0.62
23	EXPLOITATION OF BIOLOGICAL RESOURCES	8	0.54	13	1.09	7	0.61	10	1.53	38	0.79
24	IRON AND STEEL PRODUCTION	10	0.56	1	0.08	1	0.09	0	0	12	0.25
25	POLYCLINICS, CLINICS, HOSPITALS, PHARMACY, VETERINARIANS	268	14.71	118	9.90	151	13.14	67	10.26	604	12.55
26	GAS DISTRIBUTION	13	0.72	17	1.42	19	1.65	6	0.92	55	1.14
27	TOBACCO PROCESSING	1	0.05	3	0.25	1	0.09	12	1.84	17	0.35
28	DRY CLEANING INDUSTRY	6	0.33	6	0.5	5	0.44	3	0.46	20	0.42
TOTAL:		1822	100.00	1193	100.00	1149	100	653	100	4817	100

Source: Review of companies. Business Informatory - PTT of Yugoslavia, Product Press, Beograd, 1991

BOSNIA RECONSTRUCTION FINANCE FACILITY
ON/LENDING MANAGEMENT UNIT
-Environmental Unit -

Sarajevo, January 3, 1996

**Table 2A - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA
BUSINESS IN PRE WAR PERIOD - SARAJEVO - ZENICA - GORAŽDE
REGION**

Number	TYPE OF BUSINESS	Number of Projects	Percentage
1	AGRICULTURE (Incl. Fisheries)	37	2.03
2	CHEMICALS AND PAINTS (incl. Medicines)	28	1.54
3	CLOTHING AND TEXTILE PRODUCTS	46	2.52
4	COMMUNICATIONS, ELECTRONICS	93	5.1
5	CONSTRUCTION MATERIALS	15	0.82
6	FOOD PRODUCTS	45	2.47
7	HOTELS and RECREATIONAL CENTRES	114	6.26
8	LUMBER & WOOD PROCESSING	35	1.92
9	METAL PRODUCTS	115	6.31
10	PRINTING and PUBLISHING	52	2.85
11	LEATHER, RUBBER & PLASTICS	7	0.38
12	SERVICES	242	13.28
13	STONE, CLAY, GLASS & CONCRETE	13	0.71
14	TRADE	324	17.78
15	TRANSPORTATION	112	6.15
16	WOOD PRODUCTS & FURNITURE	50	2.74
17	CONSTRUCTION SERVICES	138	7.57
18	MINING	18	0.99
19	PULP AND PAPER	1	0.05
20	ELECTROTECHNICS	8	0.44
21	ELECTRO ENERGY	6	0.33
22	ENERGETICS	17	0.93

23	NON-FEROUS METAL	0	0
24	EXPLOITATION OF BIOLOGICAL RESOURCES	8	0.45
25	IRON AND STEEL PRODUCTION	10	0.56
26	POLYCLINICS, CLINICS, HOSPITALS, PHARMACY, VETERINARIANS	268	14.71
27	GAS DISTRIBUTION	13	0.72
28	TOBACCO PROCESSING	1	0.05
29	DRY CLEANING INDUSTRY	6	0.33
30	ORTHOPAEDIC APPLIANCES	1	0.1
TOTAL		1.832	100

Source: Review of companies. Business Informatory- PTT of Yugoslavia, Product Press, Beograd, 1991

BOSNIA RECONSTRUCTION FINANCE FACILITY
ON/LENDING MANAGEMENT UNIT
-Environmental Unit -

Sarajevo, January 6, 1996

**Table 2B- ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA
BUSINESS IN PRE WAR PERIOD - TUZLA - DOBOJ REGION**

Number	TYPE OF BUSINESS	Number of Projects	Percentage
1	AGRICULTURE (Incl. Fisheries)	74	6.2
2	CHEMICALS AND PAINTS (incl. Medicines)	22	1.84
3	CLOTHING AND TEXTILE PRODUCTS	45	3.78
4	COMMUNICATIONS, ELECTRONICS	38	3.19
5	CONSTRUCTION MATERIALS	19	1.59
6	FOOD PRODUCTS	64	5.36
7	HOTELS and RECREATIONAL CENTRES	61	5.11
8	LUMBER & WOOD PROCESSING	19	1.59
9	METAL PRODUCTS	60	5.03
10	PRINTING and PUBLISHING	13	1.09
11	LEATHER, RUBBER & PLASTICS	11	0.92
12	SERVICES	113	9.47
13	STONE,CLAY, GLASS & CONCRETE	20	1.68
14	TRADE	178	14.92
15	TRANSPORTATION	99	8.3
16	WOOD PRODUCTS & FURNITURE	34	2.85
17	CONSTRUCTION SERVICES	95	7.96
18	MINING	33	2.77
19	PULP AND PAPER	12	1.01
20	ELECTROTECHNICS	14	1.17
21	ELECTRO ENERGY	6	0.5
22	ENERGETICS	5	0.42
23	NON-FEROUS METAL	0	0

24	EXPLOITATION OF BIOLOGICAL RESOURCES	13	1.09
25	IRON AND STEEL PRODUCTION	1	0.08
26	POLYCLINICS, CLINICS, HOSPITALS, PHARMACY, VETERINARIANS	118	9.9
27	REFINERY, NATURAL GAS and PETROL DISTRIBUTION	17	1.42
28	TOBACCO PROCESSING	3	0.25
29	DRY CLEANING INDUSTRY	6	0.5
TOTAL		1.193	100

Source: Review of companies. Business Informatory- PTT of Yugoslavia, Product Press, Beograd, 1991

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BOSNIA RECONSTRUCTION FINANCE FACILITY
ON/LENDING MANAGEMENT UNIT
-Environmental Unit -

Sarajevo, January 8, 1996

Table 2C - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA
BUSINESS IN PRE WAR PERIOD - BANJALUKA - BIHAĆ REGION

Number	TYPE OF BUSINESS	Number of Projects	Percentage
1	AGRICULTURE (Incl. Fisheries)	111	9.66
2	CHEMICALS AND PAINTS (incl. Medicines)	13	1.13
3	CLOTHING AND TEXTILE PRODUCTS	45	3.92
4	COMMUNICATIONS, ELECTRONICS	43	3.74
5	CONSTRUCTION MATERIALS	18	1.57
6	FOOD PRODUCTS	54	4.7
7	HOTELS and RECREATIONAL CENTRES	60	5.22
8	LUMBER & WOOD PROCESSING	32	2.79
9	METAL PRODUCTS	51	4.44
10	PRINTING and PUBLISHING	29	2.52
11	LEATHER, RUBBER & PLASTICS	11	0.96
12	SERVICES	113	9.83
13	STONE, CLAY, GLASS & CONCRETE	8	0.7
14	TRADE	132	11.49
15	TRANSPORTATION	77	6.7
16	WOOD PRODUCTS & FURNITURE	41	3.57
17	CONSTRUCTION SERVICES	63	5.48
18	MINING	21	1.83
19	PULP AND PAPER	12	1.04
20	ELECTROTECHNICS	20	1.74
21	ELECTRO ENERGY	4	0.35
22	ENERGETICS	7	0.61
23	NON-FEROUS METAL	0	0

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24	EXPLOITATION OF BIOLOGICAL RESOURCES	7	0.61
25	IRON AND STEEL PRODUCTION	1	0.09
26	POLYCLINICS, CLINICS, HOSPITALS, PHARMACY, VETERINARIANS	151	13.14
27	GAS and PETROL DISTRIBUTION	19	1.65
28	TOBACCO PROCESSING	1	0.09
29	DRY CLEANING INDUSTRY	5	0.44
TOTAL		1.149	100

Source: Review of companies. Business Informatory- PTT of Yugoslavia, Product Press, Beograd, 1991

BOSNIA RECONSTRUCTION FINANCE FACILITY
ON/LENDING MANAGEMENT UNIT
-Environmental Unit -

Sarajevo, January 8, 1996

**Table 2D - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA
BUSINESS IN PRE WAR PERIOD - HERCEGOVINA (MOSTAR)
REGION**

Number	TYPE OF BUSINESS	Number of Projects	Percentage
1	AGRICULTURE (Incl. Fisheries)	44	6.74
2	CHEMICALS AND PAINTS (incl. Medicines)	5	0.77
3	CLOTHING AND TEXTILE PRODUCTS	14	2.14
4	COMMUNICATIONS, ELECTRONICS	34	5.21
5	CONSTRUCTION MATERIALS	4	0.61
6	FOOD PRODUCTS	33	5.05
7	HOTELS and RECREATIONAL CENTRES	51	7.81
8	LUMBER & WOOD PROCESSING	13	1.99
9	METAL PRODUCTS	51	7.81
10	PRINTING and PUBLISHING	10	1.53
11	LEATHER, RUBBER & PLASTICS	6	0.92
12	SERVICES	71	10.87
13	STONE, CLAY, GLASS & CONCRETE	6	0.92
14	TRADE	75	11.49
15	TRANSPORTATION	45	6.89
16	WOOD PRODUCTS & FURNITURE	8	1.23
17	CONSTRUCTION SERVICES	49	7.5
18	MINING	11	1.68
19	PULP AND PAPER	0	0
20	ELECTROTECHNICS	12	1.84
21	ELECTRO ENERGY	12	1.84
22	ENERGETICS	1	0.15

23	NON FERROUS METAL	0	0
24	EXPLOITATION OF BIOLOGICAL RESOURCES	10	1.53
25	IRON AND STEEL PRODUCTION	0	0
26	POLYCLINICS, CLINICS, HOSPITALS, PHARMACY, VETERINARIANS	67	10.26
27	PETROL DISTRIBUTION	6	0.92
28	TOBACCO PROCESSING	12	1.84
29	DRY CLEANING INDUSTRY	3	0.46
TOTAL		653	100

Source: Review of companies. Business Informatory- PTT of Yugoslavia, Product Press, Beograd, 1991

BOSNIA RECONSTRUCTION FINANCE FACILITY
ON/LENDING MANAGEMENT UNIT
-Environmental Unit -

Sarajevo, February 03, 1997

**Table 3 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA BUSINESS
IN WAR PERIOD**

Number	TYPE OF BUSINESS	Number of Projects	Percentage
1	AGRICULTURE (Incl. Fisheries)	52	12.84
2	CHEMICALS AND PAINTS	17	4.2
3	CLOTHING AND TEXTILE PRODUCTS	43	10.62
4	COMMUNICATIONS, ELECTRONICS	7	1.73
5	CONSTRUCTION MATERIALS	58	14.32
6	FOOD PRODUCTS	53	13.07
7	HOTELS	0	
8	LUMBER & WOOD PROCESSING	14	3.46
9	METAL PRODUCTS	47	11.6
10	PRINTING	7	1.73
11	LEATHER, RUBBER & PLASTICS	14	3.46
12	SERVICES	3	0.74
13	STONE, CLAY, GLASS & CONCRETE	27	6.67
14	TRADE	0	0
15	TRANSPORTATION	10	2.47
16	WOOD PRODUCTS & FURNITURE	25	6.17
17	CONSTRUCTION SERVICES	2	0.49
18	MINING	3	0.74
19	PULP AND PAPER	1	0.25
20	Electrotechnics	8	1.98
21	ELECTRO ENERGY	1	0.25
22	ENERGETICS	2	0.5
23	NON-FEROUS METAL	3	0.74

24	EXPLOITATION OF BIOLOGICAL RESOURCES	5	1.23
25	IRON AND STEEL	3	0.74
TOTAL		405	100

Source: Projects for starting of economical activities, Government of R Bosnia and Herzegovina, Sarajevo, December, 1994.

BOSNIA RECONSTRUCTION FINANCE FACILITY
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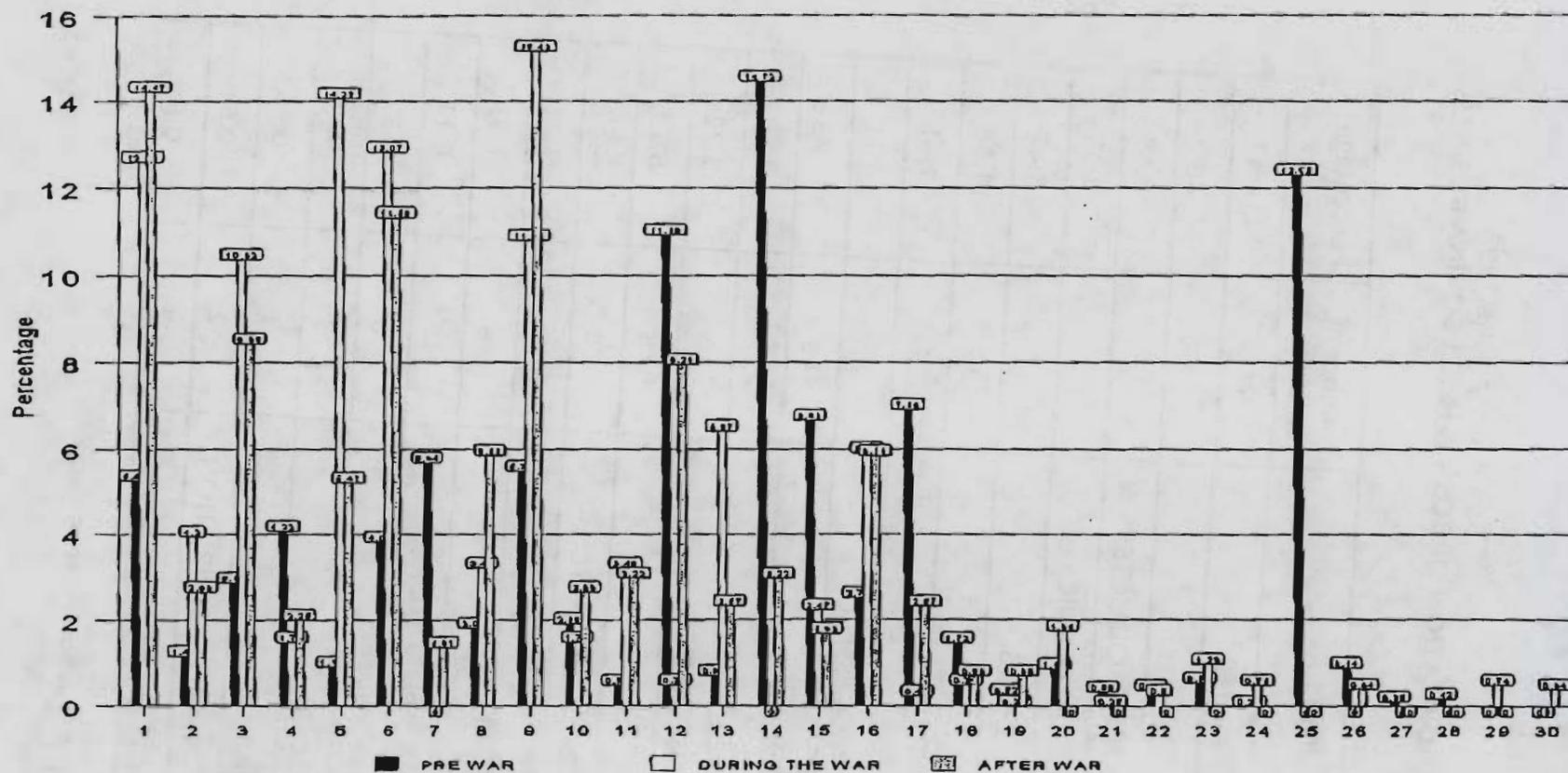
Sarajevo, April 18, 1997

**Table 4 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA BUSINESS
IN AFTER WAR PERIOD**

Number	TYPE OF BUSINESS	Number of Projects	Percentage
1	AGRICULTURE (Incl. Fisheries)	45	14.47
2	CHEMICALS AND PAINTS	9	2.89
3	CLOTHING AND TEXTILE PRODUCTS	27	8.68
4	COMMUNICATIONS, ELECTRONICS	7	2.25
5	CONSTRUCTION MATERIALS	17	5.47
6	FOOD PRODUCTS	36	11.58
7	HOTELS	5	1.61
8	LUMBER & WOOD PROCESSING	19	6.11
9	METAL PRODUCTS	48	15.43
10	PRINTING	9	2.89
11	LEATHER, RUBBER & PLASTICS	10	3.22
12	SERVICES	18	5.79
13	STONE, CLAY, GLASS & CONCRETE	8	2.57
14	TRADE	10	3.22
15	TRANSPORTATION	6	1.93
16	WOOD PRODUCTS & FURNITURE	19	6.11
17	CONSTRUCTION SERVICES	8	2.57
18	MINING	3	0.96
19	PULP AND PAPER	3	0.96
20	GAS PRODUCTION AND DISTRIBUTION	2	0.64
21	OTHER/UNKNOWN	2	0.64
TOTAL:		311	100

Source: US AID - Bosnia Reconstruction Finance Facility
Sarajevo, April, 1997

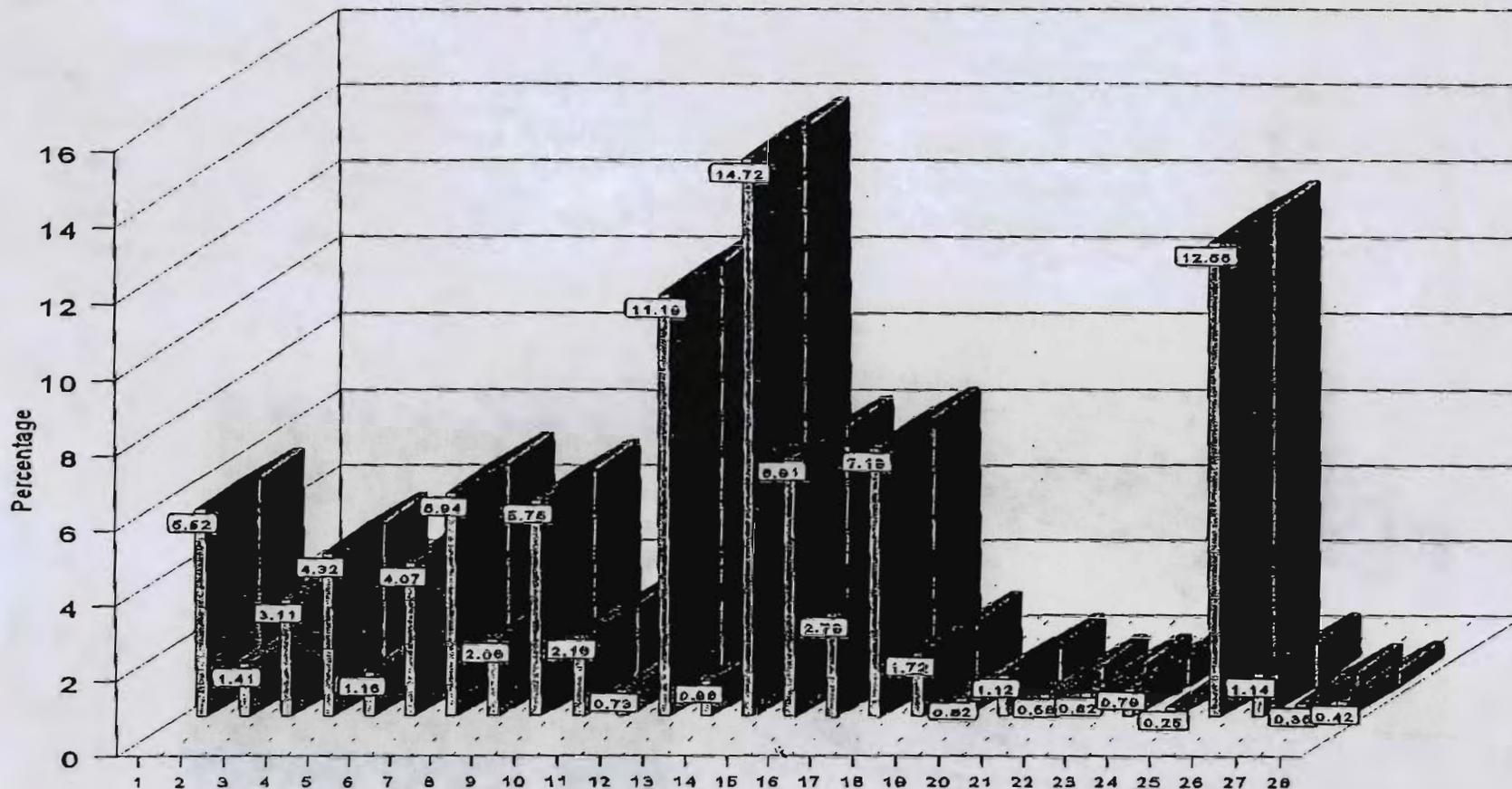
Graph 1 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA BUSINESS IN DIFFERENT PERIODS



Source: For Pre-war Period: Review of Companies, Business Informatory - PTT of Yugoslavia, Product Press, Belgrade, 1991.
 For War Period: Projects for Starting of Economic Activities, Government of Bosnia-Herzegovina; Sarajevo, December 1994
 For After-war Period: USAID - BRFF/OMU (Bosnia Reconstruction Finance Facility / On-lending Management Unit); Sarajevo, April 18, 1997
 Total Number of Companies Analyzed = 4,817 (Pre-war); 405 (During the War); & 311 (After-war)

1. AGRICULTURE (incl. Fisheries)	6. FOOD PRODUCTS	11. LEATHER, RUBBER & PLASTICS	16. WOOD PRODUCTS & FURNITURE	21. ELECTROENERGY	26. GAS DISTRIBUTION
2. CHEMICALS AND PAINTS	7. HOTELS	12. SERVICES	17. CONSTRUCTING SERVICES	22. ENERGETICS	27. TOBACCO PROCESSING
3. CLOTHING AND TEXTILE	8. LUMBER & WOOD PROCESSING	13. STONE, CLAY, GLASS & CONCRETE	18. MINING	23. EXPLOITATION OF BIOLOGICAL RESOURCES	28. DRY CLEANING INDUSTRY
4. COMMUNICATIONS, ELECTRONICS	9. METAL PRODUCTS	14. TRADE	19. PULP AND PAPER	24. IRON AND STEEL PRODUCTION	29. NON-FEROUS METAL
5. CONSTRUCTION MATERIALS	10. PRINTING	15. TRANSPORTATION	20. ELECTROTECHNICS	25. POLYCLINICS, CLINICS, HOSPITALS & PHARMACY AND VETERINARIANS	30. OTHER AND UNKNOWN

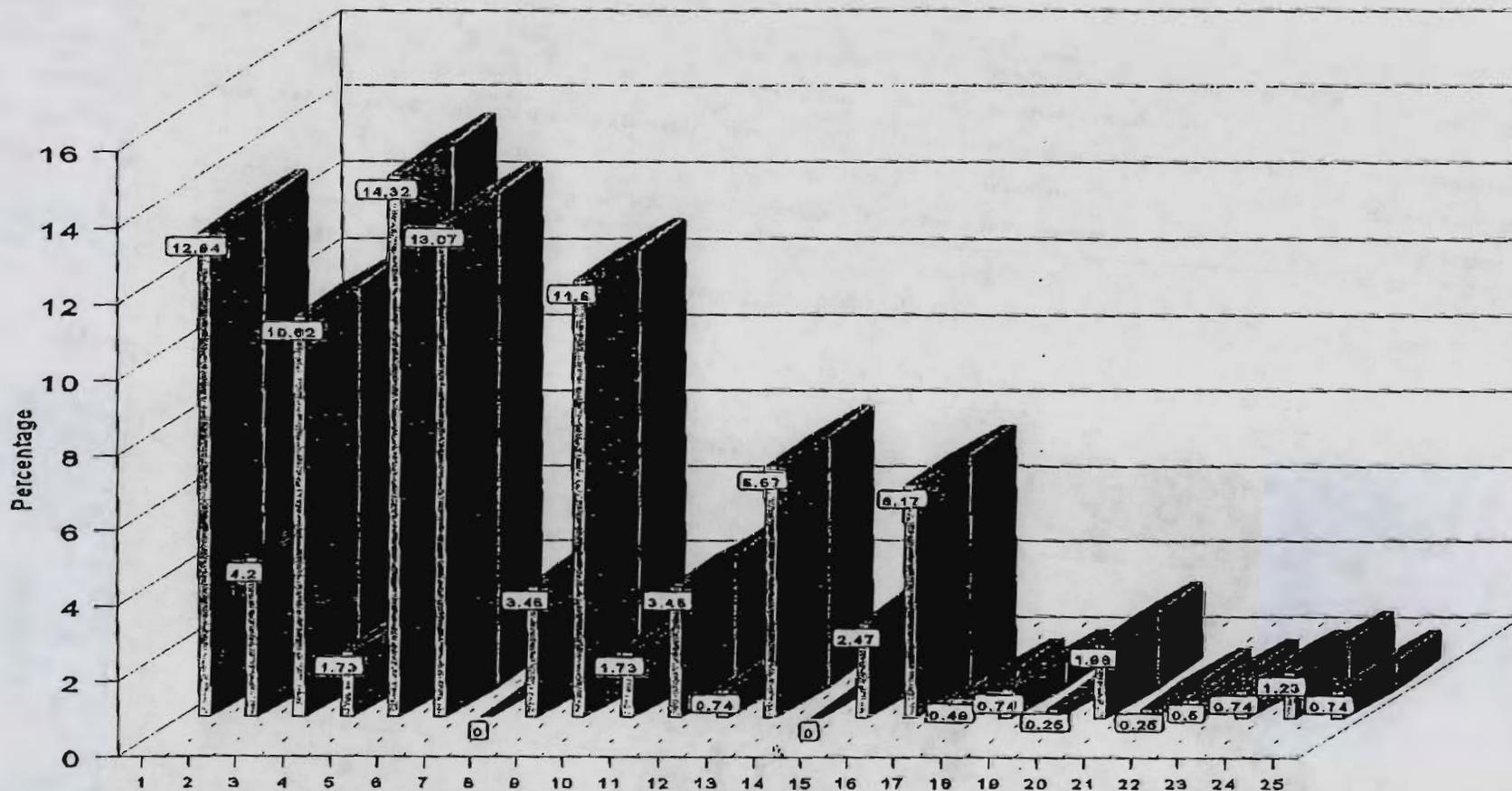
Graph 2 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA BUSINESS IN PRE WAR PERIOD



Source: Review of Companies, Business Informatory - PTT of Yugoslavia, Product Press, Belgrade, 1991.
 Total Number of Companies Analyzed = 4,817

1. AGRICULTURE (Incl. Fisheries)	6. FOOD PRODUCTS	11. LEATHER, RUBBER & PLASTICS	16. WOOD PRODUCTS & FURNITURE	21. ELECTROENERGY	26. GAS DISTRIBUTION
2. CHEMICALS AND PAINTS	7. HOTELS	12. SERVICES	17. CONSTRUCTING SERVICES	22. ENERGETICS	27. TOBACCO PROCESSING
3. CLOTHING AND TEXTILE	8. LUMBER & WOOD PROCESSING	13. STONE, CLAY, GLASS & CONCRETE	18. MINING	23. EXPLOITATION OF BIOLOGICAL RESOURCES	28. DRY CLEANING INDUSTRY
4. COMMUNICATIONS, ELECTRONICS	9. METAL PRODUCTS	14. TRADE	19. PULP AND PAPER	24. IRON AND STEEL PRODUCTION	
5. CONSTRUCTION MATERIALS	10. PRINTING	15. TRANSPORTATION	20. ELECTROTECHNICS	25. POLYCLINICS, CLINICS, HOSPITALS PHARMACY AND VETINARIANS	

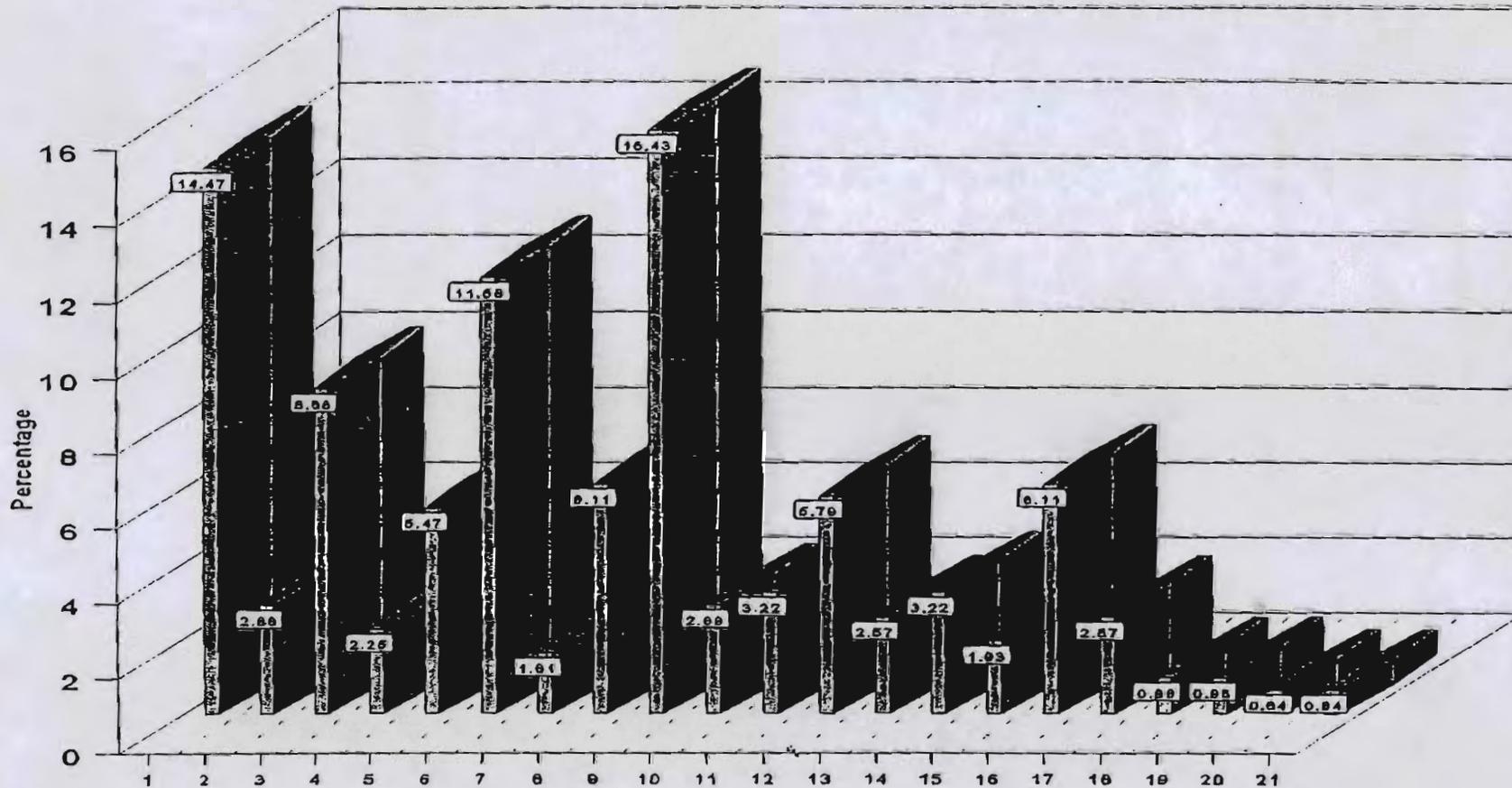
Graph 3 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA BUSINESS IN WAR PERIOD



Source: Projects for Starting of Economic Activities, Government of Bosnia-Herzegovina; Sarajevo, December 1994.
 Total Number of Companies Analyzed = 405

1. AGRICULTURE (Incl. Fisheries)	6. FOOD PRODUCTS	11. LEATHER, RUBBER & PLASTICS	16. WOOD PRODUCTS & FURNITURE	21. ELECTRO ENERGY
2. CHEMICALS AND PAINTS	7. HOTELS	12. SERVICES	17. CONSTRUCTING SERVICES	22. ENERGETICS
3. CLOTHING AND TEXTILE	8. LUMBER & WOOD PROCESSING	13. STONE, CLAY, GLASS & CONCRETE	18. MINING	23. NON-FERROUS METAL
4. COMMUNICATIONS, ELECTRONICS	9. METAL PRODUCTS	14. TRADE	19. PULP AND PAPER	24. EXPLOITATION OF BIOLOGICAL RESOURCES
5. CONSTRUCTION MATERIALS	10. PRINTING	15. TRANSPORTATION	20. ELECTROTECHNICS	25. IRON AND STEEL

Graph 4 - ENVIRONMENTAL CATEGORIZATION OF BOSNIA-HERZEGOVINA
BUSINESS IN AFTER WAR PERIOD



Source: USAID - BRFF/OMU (Bosnia Reconstruction Finance Facility / On-lending Management Unit); Sarajevo, April 18, 1997
Total Number of Companies Analyzed = 311

1. AGRICULTURE (Incl. Fisheries)	6. FOOD PRODUCTS	11. LEATHER, RUBBER & PLASTICS	16. WOOD PRODUCTS & FURNITURE	21. OTHER AND UNKNOWN
2. CHEMICALS AND PAINTS	7. HOTELS	12. SERVICES	17. CONSTRUCTING SERVICES	
3. CLOTHING AND TEXTILE	8. LUMBER & WOOD PROCESSING	13. STONE, CLAY, GLASS & CONCRETE	18. MINING	
4. COMMUNICATIONS, ELECTRONICS	9. METAL PRODUCTS	14. TRADE	19. PULP AND PAPER	
5. CONSTRUCTION MATERIALS	10. PRINTING	15. TRANSPORTATION	20. GAS STATION AND DISTRIBUTION	

ENVIRONMENTAL ISSUES SPECIFIC TO BOSNIAN ENTERPRISES RECEIVING BRFF LOANS

by Michael Kent and Dr. Sulejman Redzic, Environmental Specialists, Bosnia Reconstruction Finance Facility (BRFF) On-Lending Management Unit (OMU)

Introduction

The Task Order for implementing the On-Lending Management Unit (OMU) for the Bosnia Reconstruction Finance Facility (BRFF) includes a set of environmental tasks. One of the specific environmental tasks, item V.C. 4 (page 8) of the Task Order, reads as follows:

“4. Collect baseline data on environmental issues specific to the Bosnian enterprises that receive BRFF loans. Over time a monitoring system will be established to update data on the firms and their practices.”

This report is submitted in fulfillment of that task, and is structured as follows:

- I. Summary of environmental conditions and effects of human activity in Bosnia
- II. Environmental issues specific to individual categories of loan recipients
- III. Environmental issues relevant to many or all loan recipients
- IV. Conclusions

This report is based on the experience and accumulated data on Bosnian firms and their practices acquired during the first OMU year of operations. It should be noted that Bosnian firms receiving BRFF loans are a subset of all Bosnian enterprises, due to the nature and restrictions of the BRFF/OMU loan program, and environmental impacts associated with these firms do not necessarily represent the full range of possible environmental impacts of all Bosnian enterprises. Accordingly, the impacts discussed below are those associated with actual BRFF borrowers, and do not include possible impacts of other businesses that did not receive BRFF loans.

I. Environmental conditions and effects of human activity in Bosnia

Population and Population Distribution by Ecological Zones

In an area of 51,129 km², Bosnia and Herzegovina in 1991 had 4,377,033 inhabitants and 1,207,693 households, according to the 1991 census. The majority of the population --approximately 30%--lived in the lowlands (submountain region), approximately 50% in the mountain region, and 25% in the lower parts of the sub-Mediterranean region. Approximately 2% permanently lived in the high mountain region. Sub-alpine and alpine regions were not permanently inhabited. Annex A provides a more detailed categorization and discussion of these ecological zones. Table 1 provides a breakdown of the vegetation types in B&H.

19 May 1996

Table 1 - VEGETATION AND SOIL TYPES IN PRE-WAR PERIOD OF THE BOSNIA & HERCEGOVINA

Category of Soil/Vegetation	Surface (ha)	% of total soil surface
AGRICULTURAL SOILS		
Plowed field (Inc. Garden)	1 023 000	20.01
Orchards	92 000	1.08
Vineyards	5 000	0.10
Grasslands	471 000	9.21
Total of cultivable soil	1 591 000	31.12
Pastures	930 000	18.19
Fish ponds	5 000	0.10
Swamps & Reeds	5 000	0.10
Total of agricultural soils	2 531 000	49.50
FOREST SOIL		
Homogenous stands of forest	532 703	10.42
Deciduous	478 393	9.36
Coniferous	54 310	1.06
Mixed stands of forest	1 798 359	35.17
Deciduous	1 107 039	21.65
Coniferous	66 609	1.30
Deciduous - Coniferous	624 701	12.22
Total of forest soils	2.331 061	45.59
BARE MOUNTAINOUS TERRAIN	250 839	4.91
TOTAL OF SURFACE OF B&H	5.112 900	100.00

Source: Statistical Almanac of R Bosnia and Hercegovina, Sarajevo, 1992
 Publ. by The State Institute of Statistics of R B&H, Sarajevo, 1994

The number of inhabitants nearly doubled in the past forty years, with an increase in average population density to 35 inhabitants/km². The majority of the population was located in urban zones, with urban dwellers increasing over time. More than 30% of the total population lived in the larger urban areas, as shown in Table 2.

Table 2 - Inhabitants in larger cities of Bosnia & Hercegovina

AREA	NUMBER OF INHABITANTS		
	1961	1991	% (1991)
TOTAL FOR B&H	3 277 935	4 377 033	100
Banjaluka	131 681	195 692	4.47
Doboj	79 229	102 549	2.34
Mostar	72 452	126 628	2.89
Prijedor	84 675	112 543	2.57
Sarajevo	277 615	527 049	12.04
Tuzla	82 439	131 618	3.01
Zenica	84 401	145 517	3.33
Total for larger cities:	812 492	1 341 596	30.65

(2) Economic Activity and Environmental Effects

In the pre-war period, as of 1991, the economy was organized into the following sectors: Industry and Mining, Agriculture and Fishing, Forestry, Water Resources Management, Construction, Transportation and Communication, Trade, Hospitality Services and Tourism, Craftwork and Housing - Utility Industry.

From an ecological point of view, the intensity and distribution of the economic activities were not favorable. This was especially the case with the industrial sector (22.47%) with its high representation of basic heavy industry, which has a large impact on all components of environmental systems. As a result, B&H was one of the most ecologically burdened republics in the former Yugoslavia, as well as in Europe (measured by quantity of pollution per unit of space available). The clear result is that the balance between the total quantity of pollutants and the absorptive capacity of certain natural ecosystems in B&H was disturbed or exceeded.

II. Environmental issues specific to individual categories of loan recipients

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The discussion below is grouped by categories, and, for each category, discusses:

1. Types of impacts
2. Level of significance of those impacts (judged by OMU emergency lending program criteria/threshold of significance)
3. Mitigability/barriers to mitigation

As specified by the Task Order, it discusses only business receiving OMU loans, and therefore does not include all possible impacts of businesses falling within each general category.

This discussion below concentrates on the most prominent and significant borrower impacts encountered; Annex B provides a more detailed listing of environmental impacts associated with BRFF/OMU borrowers, and Annex C provides a more detailed listing of specific types of businesses receiving BRFF/OMU loans within the general categories below.

1A. AGRICULTURE (CROPS)

1. Types of impacts: significant potential impacts are use of artificial fertilizers and pesticides (insecticides, herbicides, fungicides)
2. Overall level of impacts for category: generally not high in practice, because BRFF borrowers are usually experienced farmers with the experience and knowledge to apply fertilizers and pesticides appropriately, which reduces potential impacts
3. Mitigability/barriers to mitigation: no particular barriers

1B. AGRICULTURE (ANIMALS)

1. Types of impacts: main significant impact is manure production by large quantities of animals held in relatively small areas (large dairies, poultry producers, egg production, cattle feedlots, etc.). In general, the practice of BRFF borrowers is to use accumulated manure for fertilizer, but improper handling of manure during collection, storage and transport may allow manure or leachate to enter surface or ground water.
2. Overall level of impacts for category: depends on manure handling practices — low if manure is handled to prevent water pollution
3. Mitigability/barriers to mitigation: no particular technological barriers, may be financial barriers

2. CHEMICALS AND PAINTS, including MEDICINES

1. Types of impacts: water quality impacts of discharges of medicines, paints and their components and ingredients, and/or substances used in testing/quality control of medicines
2. Overall level of impacts for category: potentially high, depends on particular medicines and substances involved and level of pollution control. Paint manufacturing had little or not liquid waste discharges due to closed systems used in manufacturing.
3. Mitigability/barriers to mitigation: no particular technological barriers, may be financial barriers

3. CLOTHING, including SHOES

1. Types of impacts: Due to nature of process and materials handled, no large quantities of hazardous materials, water or air pollution (except space heating and process steam, discussed as general issue below), with one exception: glues used in shoe manufacturing, which generally contain toxic materials such as toluene
2. Overall level of impacts for category: Medium, but can be mitigated to low level
3. Mitigability/barriers to mitigation; no technological barriers, possible financial barriers, to pay for ventilation, fume collection, filters, etc.

4. COMMUNICATIONS, ELECTRONICS

1. Types of impacts: Due to nature of processes (generally assembly of electronic equipment, rather than computer chip manufacturing) and materials handled, no large quantities of hazardous materials, water or air pollution involved (except space heating and process steam, discussed as general issue below)
2. Overall level of impacts for category: Low
3. Mitigability/barriers to mitigation: N/A

5. CONSTRUCTION MATERIALS (including gravel extraction)

1. Types of impacts; cement dust from cement manufacturing, cement-laden wastewater from concrete mixing, and impacts on biodiversity, wetlands, riparian habitats, water quality and riparian species from gravel extraction, which by its nature is concentrated in or near watercourses
2. Overall level of impacts for category; potentially high, when biologically sensitive and/or valuable wetlands and riparian areas are involved
3. Mitigability/barriers to mitigation; no particular technological barriers, but significant institutional barriers exist, due to variations in levels of local and national awareness and concern for protection of wetlands, local and national laws and regulations protecting wetlands and riparian areas, and political priorities given to mitigation

6. FOOD PRODUCTS

1. Types of impacts: Due to nature of process and materials handled, no large quantities of hazardous materials, water or air pollution involved (except space heating and process steam, discussed as general issue below), with the exception of waste water. This waste water does not contain large quantities of toxic materials, and can be treated adequately with normal sewage treatment, if available. (See general discussion below)
2. Overall level of impacts for category: low
3. Mitigability/barriers to mitigation: unavailability of functioning municipal treatment plants (see discussion below). Individual food processing wastewater treatment can be expensive, and may not be cost-effective.

7. HOTELS AND RECREATIONAL CENTERS

No OMU loans were made to this category due to the requirements and restrictions of the BRFF program.

8. LUMBER AND WOOD PROCESSING

1. Types of impacts: There are two main categories of potentially significant impacts: sustainability of logging (annual cut vs annual growth), and impact of logging practices (clear cutting vs selective cutting, location, design, and maintenance of logging roads, logging in riparian areas, etc.). The OMU is in the process of implementing a forestry sector loan package, which includes an environmental analysis of the Bosnian forestry sector. In summary, that analysis, which was being prepared at the time this report was written, indicated that while impacts could be significant, Bosnian forestry management has generally been adequate to avoid serious environmental impacts. This management includes calculation of annual allowable cut that is no more than annual growth (to avoid overall unsustainable forestry), and the use of selective cutting and adequate design of logging roads, etc., to prevent unacceptably serious environmental impacts in individual forests. It should be noted that this discussion applies to BRFF borrowers. During the war and in the post-war period, there has been a problem of illegal cutting, that results in more significant environmental impacts than discussed above, but such illegal cutting is generally done by smaller private entities that have not requested BRFF loans and are therefore not subject to control through the BRFF loan process.
2. Overall level of impacts for category: relatively low (for BRFF borrowers to date), but could be high
3. Mitigability/barriers to mitigation: no particular technological barriers, financial barriers possible, depending on borrower

9. METAL PRODUCTS

1. Types of impacts: Major impacts include removal of oxidation from iron raw material inputs (older chemical processes involve toxic liquids and have high potential environmental impact, while newer mechanical cleaning methods have substantially lower inherent environmental impacts), and galvanization/corrosion protection (involving liquids contaminated by zinc and possibly other heavy metals)
2. Overall level of impacts for category: high to low, depending on type of process and level of pollution control
3. Mitigability/barriers to mitigation: no technological barriers, potential financial barriers depending on financial status of borrower

10. PRINTING

1. Types of impacts: Major impacts involve water pollution from inks, solvents, dyes, cleaners, photographic developing fluids, etc., commonly used in printing
2. Overall level of impacts for category: high to low, depending on level of pollution control and size of enterprise (some loan recipients have been small printing shops that use smaller quantities of inks, etc.)
3. Mitigability/barriers to mitigation: no particular technological barriers, financial barriers depend on financial condition of borrower

11. LEATHER, RUBBER AND PLASTICS

No OMU loans were made to borrowers in this category.

12. SERVICES

No OMU loans were made to this category due to the requirements and restrictions of the BRFF program.

13. STONE, CLAY, GLASS & CONCRETE

Please see discussion in 5. Construction Materials above.

14. TRADE

No OMU loans were made to this category due to the requirements and restrictions of the BRFF program.

15. TRANSPORTATION

No OMU loans were made to borrowers in this category.

16. WOOD PRODUCTS AND FURNITURE

1. Types of impacts:; The major impacts are air emissions generated by paints, lacquering, varnishing, and application of other wood preservatives
2. Overall level of impacts for category; without mitigation, impacts could be relatively high, but mitigation (paint booths, collection/filtering of vapors, ventilation of painting areas) can reduce to a low level
3. Mitigability/barriers to mitigation: no particular technical barriers; could be financial barriers depending on financial condition of borrower

17. CONSTRUCTION SERVICES

1. Types of impacts: possible impacts vary, depending on construction site. Construction impacts are generally temporary, but can also include the possibility of water contamination at riparian sites, such as the bridge construction/reconstruction services that were provided by the recipient of one OMU loan.
2. Overall level of impacts for category: low to high, but generally lower
3. Mitigability/barriers to mitigation: in general technical barriers are not a problem, financial barriers depend on the individual situation and financial condition of the borrower

18. MINING

1. Types of impacts: Major impacts associated with surface mining of coal — water pollution from spoil disposal, loss of topsoil and use of surface land for agriculture, grazing, forest, watershed, green space, wildlife habitat, etc. In addition, there would be indirect air quality impacts due to the combustion of the coal to generate steam and electricity and generation of large quantities of ash.
2. Overall level of impacts for category: high if not mitigated (The one OMU loan in this category was to a firm providing services to the surface coal mining industry. The surface coal mine involved was already subject to an extensive mitigation plan negotiated through a USAID contractor. Implementation of this mitigation plan would reduce the otherwise serious surface mining impacts to an acceptable level.)
3. Mitigability/barriers to mitigation: no particular technological barriers, substantial financial and political barriers due to high cost of restoration of surface-mined areas

19. PAPER

No OMU loans were made to borrowers in this category.

20. GAS DISTRIBUTION

No OMU loans were made to borrowers in this category.

III. Discussion of environmental issues relevant to many or all loan recipients

In addition to the sector specific environmental issues discussed above, the OMU's first year of environmental assessment involved a some environmental issues common to many or all of the individual sectors above.

Many borrowers, including sawmills and wood products manufacturers, had high noise levels inside the factories. Impacts rarely affected individuals other than facility workers, and those impacts (possible hearing loss due to long term exposure) could, depending on the definition used, be classified as either environmental impacts or worker safety impacts. There are existing Bosnian worker safety laws and a regulatory apparatus relating to noise exposure of workers, but the level and comprehensiveness of enforcement in the immediate post-war period (i.e., the first OMU year) were in a state of flux at the time this report was written.

Many borrowers in many of the individual categories above required process steam, and most required space heating during the cold season. Often district heating and steam services were not available to the sites of borrowers, so borrowers generated their own steam onsite. The three commonly-used fuels were natural gas, heating oil, and coal (along with the self-generated sawdust/wood waste used by most of the lumber and wood products enterprises). While natural gas is the most environmentally desirable fuel, and was sought by many individual borrowers, it was often not available due to lack of distribution facilities, or frequent, unpredictable curtailment of supplies (Bosnia depends on foreign suppliers). Heating oil generates greater air emissions than natural gas, but is environmentally preferable to use of coal. Again, however, its availability is dependent in large part on foreign suppliers, and supply to individual OMU borrowers was unreliable and unpredictable. The environmentally least preferable fuel alternative, locally-mined high sulfur coal, was the generally the most reliable and economical fuel available. For these reasons, and because Bosnian government policies sometimes explicitly favor use of coal over other fuels, air emissions from combustion of coal were a common environmental impact of BRFF loan recipients.

The factors leading to widespread use of coal as fuel, even though they had a significant environmental effect, especially cumulatively, were generally beyond the control of individual borrowers.

Many BRFF/OMU borrowers generated waste waters such as wash down water, food processing waste, slaughterhouse waste, and domestic sewage from factories employing hundreds of workers. If discharged to a sewage collection system and given the normal level of treatment at a conventional municipal sewage treatment, these discharges would not represent a significant environmental issue. However, there are very few functioning

municipal sewage treatment plants in portion of Bosnia that received OMU loans. Few sewage treatment plants existed at the outbreak of the war, and this situation was exacerbated by wartime destruction and disruption of the plants existing before the war. To date, there has been little progress in rehabilitating existing damaged wastewater treatment plants or building new ones, and the prospects for the foreseeable future are poor, due to a lack of funding, and the priority given to other reconstruction efforts. As a result, some OMU borrowers, such as those enumerated above, generate environmental effects due to their waste water discharges. It appears that it will be at least several years before adequate centralized waste water treatment is available, and it would be economically onerous and not cost-effective for the borrowers to provide their own individual waste water treatment, although many provide pre-treatment. While this pre-treatment is beneficial, it does not by itself provide the level of treatment that a normal municipal wastewater treatment plant provides.

Many BRFF borrowers requested loans to buy new equipment, because the previous equipment had been destroyed, pillaged, or was economically obsolete. Most of the new equipment was purchased from Western Europe, and had a substantially lower level of environmental impact than the equipment it replaced. In many cases, the result was a reduction of environmental impacts from an unacceptable to an acceptable level. This of course, was a beneficial environmental effect of the BRFF/OMU program, even though the motivation for purchasing the new equipment may have been economic.

IV. Conclusions

The nature of the borrowers fitting the BRFF/OMU loan program criteria that received loans generally had low to moderate environmental impacts, or had impacts that were amenable to mitigation within the time, financial, and practical constraints of an emergency loan program such as the BRFF/OMU program.

Few intractable environmental problems were encountered. In these cases, the limited BRFF loan resources were applied to other worthy borrowers with lesser environmental impacts, with the result that the BRFF/OMU was able to achieve its overall economic goals while avoiding creation of potentially significant environmental problems.

ANNEXES

Annex A: GENERAL ECOLOGICAL CHARACTERISTICS OF BOSNIA AND HERZEGOVINA

Bosnia and Herzegovina occupies the space of 52,000 m². It is bounded by the coordinates 42° 33' 00" and 45° 16' 30" of Northern latitude and 12° 24' 00" and 17° 17' 30" of Eastern longitude.

Altitude varies from 0 m (Neum) to 2,836 m (summit of Mt. Maglic). The average altitude varies between 500-600 m.

On an ecological basis (topography, geologic-pedologic characteristics, climate, flora and vegetation), B&H can be divided into the following ecological zones:

(1) Eumediterranean area (0m-50m), occupies a few percent of B&H's territory with a typical eumediterranean climate (average air temperature varies between 16 and 18 C°, with absolute minimal temperatures as low as 1 to 5 degrees during winter, and absolute maximum temperatures up to 45 degrees during summer months. Triassic limestones form the geological foundation and climatogenic soil is terra rossa and calcokambisol.

The climatogenic vegetation consists of evergreen forests and *Quercus ilex* oak thicket. Their degradation creates maquis, bushes with *Cistus* species and ericas - *Erica* species, and rocky ground with sage - *Salvia officinalis*, mediterranean grass *Brachypodium ramosum*, everlasting - *Helichrysum italicum* etc.

(2) Submediterranean area (from 50 to 200-300m) covers around 20% of the territory with Submediterranean climate (average temperature 16-14 C°, rainfall between 1,200-1,500 mm per year. The geological foundation consists of limestones of different ages with a small portion of silicate rocks, and soils are calcocambisoles, rendzine and calcomelanosoles together with acid brown soils. The climatogenic vegetation consists of forests and thickets with *Quercus pubescens* and yoke mediterranean *Carpinus orientalis* which are today mostly degraded and converted into a long lasting stage of bushy vegetation. Endemic and relict kinds of plants are often found in this area, as well as animals and societies with their endemic center in the mountain complex within the Neretva River canyon.

The influence of Mediterranean and Submediterranean climate is clearly expressed on higher altitudes too with littoral mountain slopes, so that in Herzegovina there is a special sub-area --Mediterranean-mountain (600-1,000m), occupying approximately 10% of Eastern Herzegovina, with climatogenic bitter Adriatic oak forests *Quercus cerris* where a strong influence of Mediterranean and mountain climate can be felt (high rainfall, up to 1,500 mm, and low average temperatures around 7 C°).

(3) Mountain area (300-800 m altitude) is the most common, occupying approximately 40% of the territory, with a moderately continental climate (average air temperature varies between 12 and 9C°, annual rainfall around 950 mm). The geological foundation consists of limestones of different ages, dolomite, and a series of silicate rocks. Soils are very developed and productive (luvisoles, pseudoclay, brown limestone and acid brown soils). The climatogenic vegetation consists of moderately humid forests with oak *Quercus pertaea* and yoke elm *Carpinus betulus* which are now extremely degraded and turned into meadows and urban biocenosis.

The largest proportion of the B&H population lives in this area (with more than 60% of

dwellings, infrastructure, energy and industrial plants).

In the northern part of the country from 90 to 200 m (Posavina area), this area turns into submontane (lowlands) which covers around 15% of the territory and has a continental climate (average air temperature varies from 10-12°C and approximately 900 mm of rainfall). The soil is very productive (luvisoles, pseudo clays, vertisoles). The climatogenic vegetation consists of hydrophilous forests of alder (*Alnus glutinosa*), willows (*Salix alba*, *S. fragilis*) poplar (*Populus alba*, *P. nigra*), English oak (*Quercus robur*) and field ash (*Fraxinus angustifolia*).

Ecosystems of swamp societies with rare herbal and animal genofunds are often found in this sub-zone.

(4) High mountain area (800-1,400 m altitude, 8-6 °C temperature, 1,500-1,700 mm precipitation) occupies the central area of the country and approximately 25% of total surface area. The climate is moderately continental with a strong influence of alpine climate (average air temperature between 8 and 6 °C and annual rainfall between 1,000 and 1,700 mm). The soils are calcocambisoles on limestones and district cambisoles and luvisoles with silicates.

The climatogenic vegetation is beech forest (*Fagus sylvatica* and *F. moesiaca*), firs (*Abies alba*) and spruce (*Picea abies*) and silver pine (*Pinus silvestris*), some of which are now turned into mountain meadows with numerous endemic and relict kinds of plants and animals and their societies.

Depressions are frequently found in this area, in which air temperature during winter falls to -42°C (Malo Polje on Mt. Igman).

(5) Sub-Alpine area (1,400 -1,800m) and Alpine area (including the non-contiguous areas of nival and sub-nival ecosystems (above 1,800 m)) occupies approximately 10% of total area, with a typical Alpine climate (average annual temperatures varies from 2 to 4 °C, with rainfall up to 1,500 mm). The geologic foundation mostly consists of limestones and dolomite, with silicates in some places. Soils are calcomelanosoles, rendzines, and occasionally calcocalbisoles and rankers (humus silicate soils).

The climatogenic societies in the sub-Alpine area consist of beech forests (*Fagetum subalpinum*), maple (*Acer* sp.) and mountain pine (*Pinus mugo*), and, in the Alpine area, societies of mountain meadows (with species fescue (*Festuca*), meadow grass (*Poa*) and senegrass (*Sesleria*) and subnival and nival vegetation, with nival willows (*Salix retusa*, *S. serpyllifolia* and similar).

The greatest natural values of the B&H ecosystems are created by numerous endemic and relict kinds of plants and animals, as well as a whole set of phytocenoses in rock cracks and canyons of rivers going from the sea level to the highest mountain massif (Klek Peninsula, Hutovo Blato, Busko Lake, the canyons of the rivers Neretva, Vrbas, Una, Drina and their tributaries, Krivaja, Velika Tisina near Bosanski Samac, alpine peaks and similar areas). The specificity and an extreme heterogeneity of ecological factors adapted to this area result in a high level of biological and ecological diversity. So far, in B&H flora, more than 500 endemic and relict species of plant have been identified, along with a significantly larger number of animal species and mushrooms, and nearly 100 endemic animal societies. In terms of the diversity level, B&H is one of the most special regions of Europe.

**BOSNIA RECONSTRUCTION FINANCE FACILITY
ON-LENDING MANAGEMENT UNIT
- Environmental Unit -**

May 17, 1997

**ANNEX B: ENVIRONMENTAL CATEGORIZATION OF BH -BUSINESS
TYPE OF POLLUTANTS AND IMPACTS**

(1) AGRICULTURE (Inc. Fisheries)

(A) CROPS

POLLUTANTS	IMPACTS
<ul style="list-style-type: none"> - Residues of herbicides - Residues of insecticides - Residues of fertilizers 	<ul style="list-style-type: none"> - Contamination of soil - Contamination of surface and ground water - Soil erosion - Contamination of wild plants & animals - Contamination of human population - Possibilities for increased distribution of Invasive species and pests - change of biological diversity

(B) ANIMAL CULTIVATION

POLLUTANTS	IMPACTS
<ul style="list-style-type: none"> - Residues of insecticides - Solid waste (Manure) - Liquid waste (leachate) from manure - Ammonium emission - Odor - Excrements and residue of feed from fish - Air emissions from the central boiler (SO_x, NO_x, CO_x) 	<ul style="list-style-type: none"> - Pollution of surface and ground water by leachate from manure - Damage to ozone layer by ammonia - Disturbing of human population by manure odor - Contamination of soil by insecticide packaging material - Change of air quality - Possibilities for distribution of pests and animal and human diseases

(2) CHEMICALS & PAINTS (Inc. MEDICINES)

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Air and water emission (ketone, aldehydes, hydrocarbons etc.) - Waste water (after medicine production) - Thermal pollution - Emission from the central boiler (SO_x, NO_x, CO_x, soot, dust, smog, etc.) 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Surface and ground water contamination - Soil contamination - Acidification of environment - Disturbance of human and animals by odor - Human health damage (respiratory system, eyes, skin, nervous system and other chronic and acute diseases) - Climate changes, and degradation of natural ecosystems and loss of biological diversity
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(3) CLOTHING & TEXTILES PRODUCTION

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Air emission from central boiler (SO_x, NO_x, CO_x, soot, smog, dust) - Textile dust emission - Vapours from glues and paints - Hydrocarbons (small concentration) - Waste water after colouring/dyeing - Noise - Packing material from glue and paints 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Acidification of soil, water and ecosystems - Human health damage (respiratory system, cardiovascular system, skin, pregnancy effects etc.) - Water pollution
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(4) COMMUNICATION & ELECTRONICS

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Air emission (from soldering and insulation materials) - Air emission from central boiler - Waste oil and lubricate contamination - Noise 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Climate changes and biological diversity - Water and soil contamination - Human health damage (respiratory system, cardiovascular system, nervous system)
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(5) CONSTRUCTION MATERIALS

POLLUTANTS <ul style="list-style-type: none"> - Fluoride emission - Soot, SO_x, NO_x, CO_x, smog, dust emission - Hydrocarbon emissions - Noise 	IMPACTS <ul style="list-style-type: none"> - Air contamination, Climate changes - Green house effects - Ecosystems changes - Acidification of water and soil - Human health damage
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(6) FOOD PRODUCTION

POLLUTANTS <ul style="list-style-type: none"> - Oder emission (hydrogen sulphide, tri methyl ammine) - Air emission (SO_x, NO_x, CO, hydrocarbons, organic acids, aldehydes, particulates etc.) - Ammonium emission - Waste water emission - Noise 	IMPACTS <ul style="list-style-type: none"> - Damage of ozone layer - Climate changes - Acidification of water and soil - Green house effects - Water contamination - Human health damage
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(7) LUMBER & WOOD PROCESSING

POLLUTANTS <ul style="list-style-type: none"> - Residues of herbicides, insecticides, fungicides, bactericides, rodenticides - Soil erosion - Air emission (SO_x, NO_x, CO_x, saw dust, vapours from wood) 	IMPACTS <ul style="list-style-type: none"> - Water and soil contamination - Acidification of soil and water - Loss of biological diversity - Disturbance of wildlife - Soil degradation - Human health damage (vibration - nervous system, respiratory system etc)
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(8) METAL PRODUCTS

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Air emission (SO_x, NO_x, CO_x, dust, particulates, heavy metal, asbestos, etc.) - Vapour emission (paint, varnish, organic solvent, aliphatic hydrocarbons, aromatic hydrocarbons, alcohols, ketones, esters etc.) - Waste water (after galvanization, after chemical protection, heavy metals, acids, etc.) - Noise and vibration - Hazardous waste (*lime cakes*) - Waste oil and lubricate production 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Water contamination and changes of biological diversity - Contamination of soil and terrestrial ecosystems - Climate changes and green house effects - Human health damage (reproductive capabilities, pregnancy, congenital malformation, sterility etc.)
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(9) PRINTING & PUBLISHING

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Paint vapour emission - Air pollution (lead, SO_x, NO_x, CO_x, dust) - Water pollution by chemicals for developing print panels 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Air contamination and climate changes - Water and soil contamination - Human health damage
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(10) STONE, CLAY, GLASS, CONCRETE

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Air emission (cement dust, stone dust, SO_x, NO_x, CO_x, solid particulates), - Waste water after washing of stone - Waste oil and lubricates - Noise and vibration 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Change of land and topography - Soil and biocenosis degradation and destruction - Disturbance of wildlife and human population - Risks of explosion and fire - Pollution of surface water
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(11) WOOD PRODUCTS & FURNITURE

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Air pollution (SO_x, NO_x, CO, CO₂, saw dust, soot, flying ashes, hydrocarbons, etc) - Vapour of paint and lacquers - aromatic and aliphatic hydrocarbons, alcohols, ketones, esters etc. - Waste water (particles of paint, lacquers) - Hazardous waste (packaging material from fungicides, bactericides, insecticides) - Waste oil and lubricates - Noise and vibration 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Air pollution, climate changes, soil contamination - Acidification of water and soil - Contamination of surface and ground water and soil - Human health damage
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(12) CONSTRUCTION SERVICES

<p>POLLUTANTS</p> <ul style="list-style-type: none"> - Air emission (SO_x, NO_x, dust, CO, CO₂, hydrocarbons etc.) - Waste oil and lubricant emission - Noise and vibration - Physical influences 	<p>IMPACTS</p> <ul style="list-style-type: none"> - Landscape changes and degradation - Biocenosis destruction - Soil and water contamination by waste oil - Air pollution - Human health damage by noise and vibration
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Source: Bosnia Reconstruction Finance Facility, Sarajevo, May, 1997

BOSNIA RECONSTRUCTION FINANCE FACILITY
ON-LENDING MANAGEMENT UNIT

May 17, 1997

**ANNEX C: ENVIRONMENTAL CATEGORIZATION OF BH -BUSINESS
TYPE OF BUSINESS**

(1) AGRICULTURE (Inc. Fisheries)

<p>(A) CROP PRODUCTION</p> <ul style="list-style-type: none"> - Berries production - Fruit production 	<p>(B) ANIMAL CULTIVATION</p> <ul style="list-style-type: none"> - Cow milk farm - Veal production - Goat production - Broiler production - Table egg production <ul style="list-style-type: none"> - Cow breeding - Cattle breeding - Poultry - Livestock-feed
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(2) CHEMICALS & PAINTS

<p>(A) CHEMICALS</p> <ul style="list-style-type: none"> - Pharmaceutical production 	<p>(B) PAINTS & DETERGENTS</p> <ul style="list-style-type: none"> - Oil-based paint production - Oil-based varnish production
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(3) CLOTHING & TEXTILE PRODUCTION

<ul style="list-style-type: none"> - Cloth production - Textile production - Fashion Cloth production - Ski clothing production 	<ul style="list-style-type: none"> - Shoe manufacture - Slipper production - Sock production - Carpet manufacture
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(4) COMMUNICATIONS & ELECTRONICS

<ul style="list-style-type: none"> - Telecommunication systems - Computer production - Electronics system production 	<ul style="list-style-type: none"> - Telecommunication - Repair of electric machinery (motors)
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(5) CONSTRUCTION MATERIALS

- | | |
|--|--|
| - Brick & tile production | - Concrete block, pipes |
| - Portland cement production | - Concrete construction |
| - Siporex elements (construction block) production | - Marble & granite processing |
| - Asphalt production | - Isolation material (Bituminous coatings) |

(6) FOOD PRODUCTS (Processing)

(A) PLANT PRODUCTS <ul style="list-style-type: none"> - Fruit processing - Vegetable processing - Juice production - Bread production - Flour production and processing - Cereal grinding - Feed production - Frozen dough production 	(B) ANIMAL PRODUCTS <ul style="list-style-type: none"> - Chicken meat production - Veal meat production - Beef meat processing - Cows & goat milk processing - Frozen meat production - Chocolate and candy production - Ice-cream production - Eggs for consumption - Slaughter house services
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(7) LUMBER & WOOD PROCESSING

(A) FOREST EXPLOITATION <ul style="list-style-type: none"> - Harvest of wood 	(B) WOOD PROCESSING <ul style="list-style-type: none"> - Sawmill - Lumber & timber production
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(8) METAL PRODUCTS

- | | |
|-----------------------------------|---------------------------------------|
| - Hardware production | - Aluminum frames for windows & doors |
| - Gas regulation & metering sets | - Aluminum kiosk production |
| - Iron construction materials | - Car parts production |
| - Injected mouldings tool/dies | - Metal & tin processing |
| - Steel containers & construction | - Agricultural tools |
| - Steel cuttings | - Steel vessels |
| - Nuts, bolts, screens production | - Metal accessories |
| - Construction equipment (cranes) | - Dumpsters manufacturer |
| - Iron frames for windows & doors | - Time clock production |
| - Roller bearings | - Traffic signs |
| - Injected mouldings tool/dies | - Forged metal products |
| - Gas regulation & metering sets | |
| - Motor car spare parts prod. | |

(9) PRINTING & PUBLISHING

- | | |
|------------------------|--------------|
| - Magazine printing | - Newspapers |
| - Text books and forms | - Graphics |

(10) STONE, CLAY, GLASS & CONCRETE

- | | |
|--------------------------------------|---------------------------------|
| - Concrete for construction building | - Stone production & processing |
| - Limestone processing | |
| - Clay exploitation and processing | |

(11) WOOD PRODUCTS & FURNITURE

- | | |
|--|--------------------------|
| - Wood furniture | - Parquet production |
| - Leather, textile, plastic and synth. leather furniture | - Elements for furniture |
| - Upholstered furniture | - School furniture |
| - Floors | - Wood panelling |

(12) CONSTRUCTION SERVICES

- | | |
|---------------------------------------|---------------------|
| - Drilling for mines and construction | - Repair of bridges |
| - Construction finishing | - Civil engineering |

Source: Bosnia Reconstruction Finance Facility, Sarajevo, May 1997