Bosnia & Herzegovina

Impact of the Emergency Demobilization and Reintegration Project

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BOSNIA AND HERZEGOVINA

IMPACT
OF THE
EMERGENCY DEMOBILIZATION AND REINTEGRATION PROJECT

EXECUTIVE SUMMARY

BOSNIA AND HERZEGOVINA

IMPACT
OF THE
EMERGENCY DEMOBILIZATION AND REINTEGRATION PROJECT

In 1996, the World Bank International Development Association (IDA) provided the Government of Bosnia and Herzegovina (BH) with a US$ 7.5 million credit for the Emergency Demobilization and Reintegration Project (EDRP). Additional funding for the EDRP was provided through a USAID Support for Eastern Europe Democracy (SEED) grant and a Dutch Trust Fund grant. In this report, we evaluate the effectiveness of the EDRP by assessing the net impact of its Active Labor Program (ALP) components.[1]

EMERGENCY DEMOBILIZATION AND REINTEGRATION PROJECT (EDRP)

The EDRP began in 1996 and completed program operations in 1999. The goal of the project was to assist in the reintegration of demobilized soldiers and displaced workers into the civilian workforce and to increase economic productivity by financing the implementation of Active Labor Programs (ALPs). To achieve the project objectives of assisting in the economic reintegration of displaced workers into the civilian workforce and to increase economic productivity, the project design incorporated four components:

❑ *Labor Market Information Data Base*[2]

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[1] It should be noted that, in the EDRP, the number of Active Labor Programs (ALPs) was limited. For an evaluation of a broader set of ALPs in the region, see: David Fretwell, Jacob Benus and Christopher O'Leary, *Evaluating the Impact of Active Labor Programs: Results of Cross Country Studies in Europe and Central Asia*, Social Protection Discussion Paper No. 9915, World Bank, Washington, D.C., June 1999.

[2] This component was funded through IDA credits, USAID SEED funds, and the Dutch Trust Fund.

- *Education and Retraining Services*
- *Counseling and Job-Finding Services*
- *Management Assistance*

Project Costs and Financing

Funding for the EDRP came from a variety of sources, including a World Bank IDA credit, a Dutch Grant, and a USAID SEED Grant. The total funding from these sources was US$ 7.75 million. As indicated in Table 1, nearly US$ 7.0 million came from the IDA credit and the remainder from the Dutch and USAID grants. Furthermore, approximately two-thirds (66 percent) of the project funds were used for the Education and Retraining Component and approximately one-quarter (24 percent) of the funds were used for the Labor Market Information Component. Only 8 percent of the resources were used for project management and technical assistance and only 2 percent for the counseling component.

TABLE 1

**PROJECT FUNDING
BY COMPONENT**

Project Components	IDA	Dutch Grant	USAID SEED Grant	Total	Percent
1. Labor Market Information	1,479,900	20,100	150,000	1,850,000	24%
2. Employment Counseling	56,100	60,300		116,400	2%
3. Education and Retraining	5,110,600	20,100		5,130,700	66%
4. Project Management	348,900	301,100	200,000	650,000	8%
Total Project Disbursement	**$ 6,995,500**	**$ 401,600**	**$ 350,000**	**$ 7,747,100**	**100%**

Source: Implementation Completion Report

Project Implementation

Project implementation began shortly after the Board approval date of July 30, 1996. To assist in the project implementation, the International Labor Affairs Bureau (ILAB) of the United States Department of Labor (USDOL) was selected to provide technical assistance. ILAB teams provided technical assistance in several areas, including the development of institutional management structures, counseling practices and data systems.

Throughout the three-year implementation period, project funds were carefully allocated between the two political entities: the Federation of Bosnia and Herzegovina (FBH) and the Republika Srpska (RS).[3] Each of these political entities managed and implemented its own project resources independently. For example, each entity maintained its own small Project Implementation Unit (PIU) as well as its own extension agents who promoted and monitored the counseling and training contracts.

Shortly after the two PIUs were established, public solicitations were published in local newspapers to identify local enterprises and educational institutions with the capacity and willingness to train and find jobs for program participants. As indicated in Table 2, in the FBH, a total of 354 contracts were signed; in the RS, a total of 183 contracts were signed. The bulk of these contracts were with enterprises that agreed to provide on-the-job (OJT) training. Specifically, in the two entities combined, 86.6 percent of the contracts involved on-the-job training at local enterprises. The remaining contracts were split approximately equally between training institutions (6.9 percent) and counseling service providers (6.5 percent). The client distribution is similar with 80.3 percent participating in on-the-job training, 5.2 percent participating in institutional training, and 14.5 percent participating in counseling.

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[3] The FBH includes areas that have Muslim and Croat ethnic majorities; the RS includes areas that have a Serbian ethnic majority.

TABLE 2

SUMMARY OF CONTRACTS AND CLIENTS SERVED
BY
ENTITY AND TYPE OF TRAINING

Type of Training	Number of Contracts/ Grants	Percent	Number of Clients	Percent
FEDERATION OF BOSNIA AND HERZEGOVINA				
OJT	307	86.7%	13,568	79.5%
Institutional Training	25	7.1%	865	5.1%
Counseling	22	6.2%	2,643	15.4%
Sub-Total for FBH	**354**	**100.0%**	**17,076**	**100.0%**
REPUBLIKA SRPSKA				
OJT	159	84.9%	4,898	82.8%
Institutional Training	12	6.6%	334	5.7%
Counseling	13	7.8%	681	11.5%
Sub-Total for RS	**184**	**100.0%**	**5,913**	**100.0%**
COMBINED				
OJT	466	86.6%	18,466	80.3%
Institutional Training	37	6.9%	1,199	5.2%
Counseling	35	6.5%	3,324	14.5%
Combined Total	**538**	**100.0%**	**22,989**	**100.0%**

PROGRAM EVALUATION METHODOLOGY

To evaluate the net impact of the employment and training component of the EDRP, we employed a **quasi-experimental evaluation design**. Quasi-experimental evaluations utilize the experiences of a comparison group to measure what would have happened to the participant group in the absence of the program services. The difference in the experiences of the participant group and the comparison group is then used as a measure the net impact of the program.

The central issue in quasi-experimental evaluations is how to select comparison group members that are similar to the program participants but who did not participate in the program. In this study, we first selected the participant group from administrative data provided by the two PIUs. Using these data we identified a representative sample of program participants from each entity. We then selected the comparison group from a list of registrants at municipal Employment Bureaus in the FBH and the RS. Using quota sample technique, we selected a comparison group that was demographically similar to the participant sample.

To implement the sample selection process and conduct in-person surveys, we engaged the services of a local survey firm (PRISM). The local firm successfully completed 3,457 interviews between July and November of 2000, with survey respondents nearly equally divided between participant and comparison group members (1,714 participants and 1,743 comparison group members). The overall survey response rate was 58 percent, a good outcome for a survey under very difficult implementation conditions.

In the full report, we present an analysis of the demographic characteristics of the participant and comparison samples. This analysis revealed that there are substantial similarities in the distribution of demographic characteristics of the two groups. These similarities confirm the success of the sample matching techniques employed in the sample selection phase of the study.

IMPACT ANALYSIS

One measure of program impacts is the difference between participant group outcomes and comparison group outcomes. That is, for any given outcome, an unbiased measure of the program impact is provided by a simple difference in participant and comparison group means. A more precise, and still unbiased, impact estimate can be obtained through multivariate analysis that yields regression-adjusted impact estimates.

In the full report, we present both differences in means and regression-adjusted impact estimates. Below, for simplicity of presentation, we only present the regression-adjusted impact estimates.

As seen in Table 3, the EDRP had a statistically significant impact on all the employment and earnings outcomes examined. For example, the EDRP increased the likelihood of employment at the time of the follow-up interview by 43 percentage points. This increase is not only statistically significant, but it is also very large. Thus, we conclude that the EDRP had a major impact on the employment experience of EDRP participants.

We also examined the program's impact on the likelihood of wage and salary employment and the likelihood of self-employment. We found that the EDRP had opposite impacts on these two types of employment; that is, wage and salary employment **increased** by 45 percentage points while self-employment **decreased** by 2 percentage points. This result was to be expected since program services focused on the reemployment of participants in the formal economy rather than employment in the informal economy.

The EDRP also had a large and significant impact on the likelihood of being employed since 1997 and on the number of jobs during that period. Specifically, the program increased the likelihood of having at least one job since 1997 by 34 percentage points. In addition, participants had, on average, .37 more jobs than comparison group members during this period.

Finally, the program had a very large and statistically significant impact on earnings. On average, monthly earnings of participants increased by 98DM. It should be noted that this earnings impact largely reflects the effect of the increased likelihood of employment. That is, since the participant group had a higher employment rate, many more participants than comparison group members had positive earnings, while many more comparison group members had zero (or very low) earnings.   As a result, the average earnings of the participant group substantially exceeds the average earnings of comparison group.

In the full report, we also examined program impacts by subgroup. This subgroup analysis revealed that the EDRP had a positive and statistically significant impact on all subgroups studied. That is, whether the participant was male or female, young or old, highly educated or not, etc., the EDRP had a positive impact on the outcomes studied.

TABLE 3

PROGRAM IMPACT S

Outcome	Impact
Likelihood of employment at the time of the follow-up survey	43%***
Likelihood of wage and salary employment at the time of the follow-up survey	45%***
Likelihood of self-employment at the time of the follow-up survey	-2%**
Likelihood of ver being employed since 1997	34%***
Number of jobs since 1997	0.37***
Current monthly earnings	98DM***

***Indicates coefficient is significantly different from zero at the.01 level
**Indicates coefficient is significantly different from zero at the .05 level.
*Indicates coefficient is significantly different from zero at the .10 level.

CONCLUSION

The findings of this evaluation indicate that the EDRP had a large and positive impact on employment and earnings of demobilized soldiers in Bosnia and Herzegovina. Based on these results, we conclude that the services provided by the EDRP were effective in reintegrating demobilized soldiers into the economy. Furthermore, we believe that similar training and reintegration programs should be incorporated into future military demobilization efforts.

IMPACT
OF THE
EMERGENCY DEMOBILIZATION AND REINTEGRATION PROJECT

BACKGROUND

Following the signing of the Dayton Peace Accords in December 1995, demobilization and reintegration of ex-combatants became one of the highest priorities for the new Government of Bosnia and Herzegovina (BH).[4] The high priority placed on the reintegration of ex-combatants into the economy resulted from a number of factors:

- The requirement of the Dayton Peace Accords that called for a balanced reduction of 425,000 men and women enlisted in the three competing armies;[5]

- The widespread concern that a large infusion of former soldiers into the economy could threaten peace and recovery; and

- The expected 1,250,000 refugees returning to BH, adding to the 900,000 people who were unemployed due to war damage to their place of employment.

As a result of these factors, the Government of BH moved quickly to work with international organizations in establishing programs to assist demobilized soldiers and to reinvigorate the war-ravaged economy.

In mid 1996, the World Bank International Development Association (IDA) provided the Government of BH with a US$ 7.5 million credit for the Emergency Demobilization and Reintegration Project (EDRP). Additional funding for the EDRP was provided through a USAID Support for Eastern Europe Democracy (SEED) grant and a Dutch Trust Fund grant. The EDRP represent a very small

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[4] The Dayton Accords created a political framework for the reestablishment of BH. Specifically, the Accords created two distinct political entities within BH: the Federation of Bosnia and Herzegovina (FBH) and the Republika Srpska (RS). The FBH includes areas that have Muslim and Croat ethnic majorities; the RS includes areas that have a Serbian ethnic majority.

[5] The Dayton Peace Accords required 245,000 soldiers from the FBH to be demobilized (180,000 from the Army of BH and 65,000 from the Bosnia Croat Army) and 180,000 soldiers from the RS to be demobilized.

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part of the US$ 5.1 billion Reconstruction Program for Bosnia and Herzegovina, presented by the World Bank and the European Union at the December 1995 Peace Implementation Conference in London.

In this report, we evaluate the effectiveness of the EDRP by assessing the net impact of its Active Labor Program (ALP) components. [6] Our approach utilizes a quasi-experimental design where we compare the employment and income outcomes of program participants with the outcomes of a comparison group that did not receive EDRP services.

In the following sections, we first describe the EDRP and review the implementation of the program. Next, we describe our evaluation methodology, including sample selection, survey design, data collection methodology and survey response rates. The selected evaluation samples are then analyzed to determine the adequacy of the sample for the quasi-experimental impact evaluation. Next, we review program outcomes, including training and other employment services. Finally, we present the net impact evaluation results followed by our conclusions on the effectiveness of the EDRP, including recommendations on implementing similar programs in the future.

EMERGENCY DEMOBILIZATION AND REINTEGRATION PROJECT (EDRP)

The EDRP began in 1996 and was completed in 1999. The goal of the project was to assist in the reintegration of demobilized soldiers and displaced workers into the civilian workforce and to increase economic productivity by financing the implementation of Active Labor Programs (ALPs). The primary target of the assistance was demobilized soldiers; secondary target groups included refugees, war victims and the disabled, widows and the general unemployed.

To achieve the project objectives of assisting in the economic reintegration of displaced workers into the civilian workforce and to increase economic productivity, the project design originally incorporated four components:

❑ *Labor Market Information Data Base* - This component provided for the reestablishment, upgrading and broadening of the Municipal level labor market information data base, broadening of the job vacancy system and broadening of the job seeker registration system.[7]

❑ *Education and Retraining Services* - This component financed subproject contracts for demand-driven education and retraining services (including small business training). Contracts were

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[6] It should be noted that, in the EDRP, the number of Active Labor Programs (ALPs) was limited. For an evaluation of a broader set of ALPs in the region, see: David Fretwell, Jacob Benus and Christopher O'Leary, *Evaluating the Impact of Active Labor Programs: Results of Cross Country Studies in Europe and Central Asia*, Social Protection Discussion Paper No. 9915, World Bank, Washington, D.C., June 1999.

[7] The implementation of this component was funded through IDA credits, USAID SEED funds, and the Dutch Trust Fund (Dutch funds were used only in the FBH).

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granted to enterprises that agreed to provide on-the-job training and to hire 80 percent of the training participants. Contracts were also granted to educational institutions that agreed to provide training and to find employment for 60 percent of the training participants. The vast majority of contracts were with enterprises rather than educational institutions.

❑ *Counseling and Job-Finding Services* - Provided technical assistance to develop counseling and job-finding services as well as subproject contracts for the delivery of these services.

❑ *Management Assistance* - Provided technical assistance and goods to develop and maintain two small Management Units in the Federation of Bosnia and Herzegovina (FBH) and in the Republika Srpska (RS). The International Labor Assistance Bureau (ILAB) of the U.S. Department of Labor provided this technical assistance.

In the implementation of the project, however, the Education and Retraining component was effectively combined with the Counseling Services component. As a result, we combine these two components in the impact evaluation below.

Project Costs and Financing

Funding for the EDRP came from a variety of sources, including a World Bank IDA credit, a Dutch Grant, and a USAID SEED Grant. The total funding from these sources was US$ 7.75 million.[8] As indicated in Table 1, nearly US$ 7.0 million came from the IDA credit and the remainder from the Dutch and USAID grants. Furthermore, approximately two-thirds (66 percent) of the project funds were used for the Education and Retraining Component and approximately one-quarter (24 percent) of the funds were used for the Labor Market Information Component. Only 8 percent of the resources were used for project management and technical assistance and only 2 percent for the counseling component.

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[8] Midway through the implementation, an additional $1.0 million became available from the Dutch Trust Grant for investment in the FBH. Later, US$ 0.3 million became available from the Swedish Trust Fund for investment in the RS.

TABLE 1

PROJECT FUNDING
BY COMPONENT

Project Components	IDA	Dutch Grant	USAID SEED Grant	Total	Percent
1. Labor Market Information	1,479,900	20,100	150,000	1,850,000	24%
2. Employment Counseling	56,100	60,300		116,400	2%
3. Education and Retraining	5,110,600	20,100		5,130,700	66%
4. Project Management	348,900	301,100	200,000	650,000	8%
Total Project Disbursement	**$ 6,995,500**	**$ 401,600**	**$ 350,000**	**$ 7,747,100**	**100%**

Source: Implementation Completion Report

Project Implementation

Project implementation began shortly after the Board approval date of July 30, 1996. To assist in the project implementation, the International Labor Affairs Bureau (ILAB) of the United States Department of Labor (USDOL) was selected to provide technical assistance. ILAB teams provided technical assistance in several areas, including the development of institutional management structures, counseling practices and data systems.

Throughout the three-year implementation period, project funds were carefully allocated between the two entities with approximately two-thirds allocated to the FBH and one-third to the RS. Each of the two political entities managed and implemented its own project resources independently. For example, each entity maintained its own small Project Implementation Unit (PIU) as well as its own extension agents who promoted and monitored the counseling and training contracts. In addition, each PIU operated under the authority of its own Employment and Training Foundation (ETF). These ETFs are autonomous non-profit agencies established by the respective governments of the FBH and the RS with boards of trustees composed of government officials and representatives from the Chamber of Commerce and union organizations. During the project implementation, the boards met quarterly and were responsible for approving regulations, policies, procedures, annual budgets, and contractual decisions and proposals made by the PIUs. In addition to the ETF boards, the PIUs organized Steering Committees to help review contract proposals and to help evaluate the appropriateness of each proposal with respect to local needs.

Table 2 provides a summary of the number of demobilized soldiers in each of the 6 regions of the RS and the number of clients served in these regions. In the RS, there were nearly 57 thousand soldiers demobilized; a total of 4,904 clients (8.7 percent) were served by the EDRP. Table 3 provides a similar summary for the FBH, indicating that 17,076 clients were served in the 10 cantons of the FBH, representing 7.0 percent of the approximately 245 thousand soldiers demobilized in the FBH.

Shortly after the two PIUs were established, public solicitations were published to seek out local enterprises and educational institutions with the capacity and willingness to enter into a contractual agreement to train and find jobs for participants. In October 1996, the PIU in the FBH published its first solicitation. The response to this solicitation in the FBH was overwhelming and by January 1997, 141 contracts were negotiated and signed to serve 6,524 participants. The pace in the RS was more deliberate and, as a result, fewer contracts were initiated in the early months of the project. This slower initial pace provided the RS PIU an opportunity to focus more on client needs and on the quality of the training provided.

The different early experiences of the two entities were helpful in developing improved procedures for project implementation. Specifically, based on their different early experiences, the two PIUs were

able to share lessons learned and develop improved procedures for the subsequent rounds of solicitations.

In the FBH, a total of 354 contracts were signed (see Table 4) in three waves of contract solicitations. The bulk of these contracts (307) were signed with enterprises that agreed to provide on-the-job (OJT) training; a smaller number of contracts were signed with educational institutions (25) and employment counseling providers (22). In the RS, a total of 184 contracts were signed (see Table 5) with 86.4 percent going to enterprises, 6.5 percent to educational institutions, and 7.1 percent to employment counseling providers.

TABLE 2

SUMMARY OF DEMOBILIZED SOLDIERS AND CLIENTS SERVED
BY REGION
REPUBLIKA SRPSKA

Region	Number of Demobilized Soldiers	Percent	Number of Clients Served	Percent	% of Demobilized Soldiers Served
1. Prijedor	7,194	12.6 %	589	12.0 %	8.2 %
2. Banja Luca	16,501	29.0 %	1,516	30.9 %	9.2 %
3. Doboj	9,539	16.7 %	808	16.5 %	8.5 %
4. Bijeljina	11,997	21.1 %	864	17.6 %	7.2 %
5. Srpsko Sarajevo	6,315	11.1 %	622	12.7 %	9.8 %
6. Trebinje	5,418	9.5 %	505	10.3 %	9.3 %
Total	**56,964**	**100 %**	**4,904**	**100 %**	**8.7 %**

Source: Implementation Completion Report

TABLE 3

**SUMMARY OF DEMOBILIZED SOLDIERS AND CLIENTS SERVED
BY CANTON
FEDERATION OF BOSNIA AND HERZEGOVINA**

Canton	Number of Demobilized Soldiers	Percent	Number of Clients Served	Percent	% Demobilized Soldiers Served
1. Unsko-Sanski	25,480	10.4 %	1,502	8.8 %	5.9 %
2. Bosansko-Posavski	10,290	4.2 %	222	1.3 %	2.2 %
3. Tuzlansko-Zvornicki	52,430	21.4 %	3,941	23.1 %	7.5 %
4. Srednje-Bosanski	43,855	17.9 %	3,142	18.4 %	7.2 %
5. Bosansko-Podrinjski	6,125	2.5 %	396	2.3 %	6.5 %
6. Lasvansko-Vrbaski	36,995	15.1 %	2,434	14.3 %	6.6 %
7. Neretvljanski	28,420	11.6 %	2,203	12.9 %	7.8 %
8. Zapadnohercegovacki	9,555	3.8 %	724	4.2 %	7.6 %
9. Sarajevo	25,725	10.5 %	2,068	12.1 %	8.0 %
10. Zapadnobosanski	6,125	2.5 %	444	2.6 %	7.2 %
Total	**245,000***[*]	**100 %**	**17,076**	**100.0 %**	**7.0 %**

Source: Annual Report (December 31, 1998), Federation PIU

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[*] The total number of demobilized soldiers (245,000) is based on the Dayton Peace Accord projection for the FBH. The distribution of the demobilized soldiers by Canton is provided in the Federation PIU 1998 Annual Report.

TABLE 4

SUMMARY OF CONTRACTS AND CLIENTS SERVED
BY TYPE OF TRAINING
FEDERATION OF BOSNIA AND HERZEGOVINA

Type of Training	Number of Contracts[9]	Percent	Number of Clients	Percent
OJT	307	86.7%	13,568	79.5%
Institutional Training	25	7.1%	865	5.1%
Counseling	22	6.2%	2,643	15.4%
Totals	**354**	**100.0%**	**17,076**	**100.0%**

Source: Annual Report (December 31, 1998)

TABLE 5
SUMMARY OF CONTRACTS AND CLIENTS SERVED
BY TYPE OF TRAINING
REPUBLIKA SRPSKA

Type of Training[10]	Number of Contracts/ Grants[11]	Percent	Number of Clients	Percent
OJT	159	86.4%	4,898	82.8%
Institutional Training	12	6.5%	334	5.7%
Counseling	13	7.1%	681	11.5%
Totals	**184**	**100.0%**	**5,913**	**100.0%**

Source: Report on Project Activities as of April 30, 1999, ETF, Republika Srpska

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[9] There were three waves of contract solicitations. In this column we combine the contracts from all three waves (wave I = 141; wave II = 73; wave III = 140).

[10] Under a separate contract, 385 individuals also received post-traumatic stress counseling.

[11] The numbers in this table reflect both contracts and grants.

Funds Allocation

Early on in the project, the two PIUs developed procedures to equitably distribute funds to the political divisions within their entities. Specifically, in the RS and the FBH, counseling and training resources were allocated to each political division (canton and region) in proportion to the number of demobilized soldiers from that division. A review of the funds allocation within the FBH and the RS, reveals a very close correspondence between the distribution of funds and the distribution of demobilized soldiers by political division. As indicated in Exhibits 1 and 2, the PIUs were successful in achieving a distribution of funds that corresponds closely to the distribution of soldiers in each political division.

PROGRAM EVALUATION METHODOLOGY

To evaluate the net impact of the employment and training component of the EDRP, we employ a quasi-experimental evaluation design. Using this approach, we measure program net impacts by comparing the outcomes of program participants with outcomes for non-participants.

Quasi-experimental evaluations utilize the experiences of a comparison group to measure what would have happened to the participant group in the absence of the program services. The difference in the experiences of the participant group and the comparison group is then used as a measure the net impact of the program. The central issue in quasi-experimental evaluations is how to select comparison group members that are similar to the program participants but who did not participate in the program. We describe our procedures for identifying and selecting participants and non-participants below.

To implement the sample selection process and to collect the survey data, we engaged a local research firm, PRISM RESEARCH. PRISM was responsible for selecting the sample, pilot testing the survey instrument, collecting the data and constructing an evaluation data set.
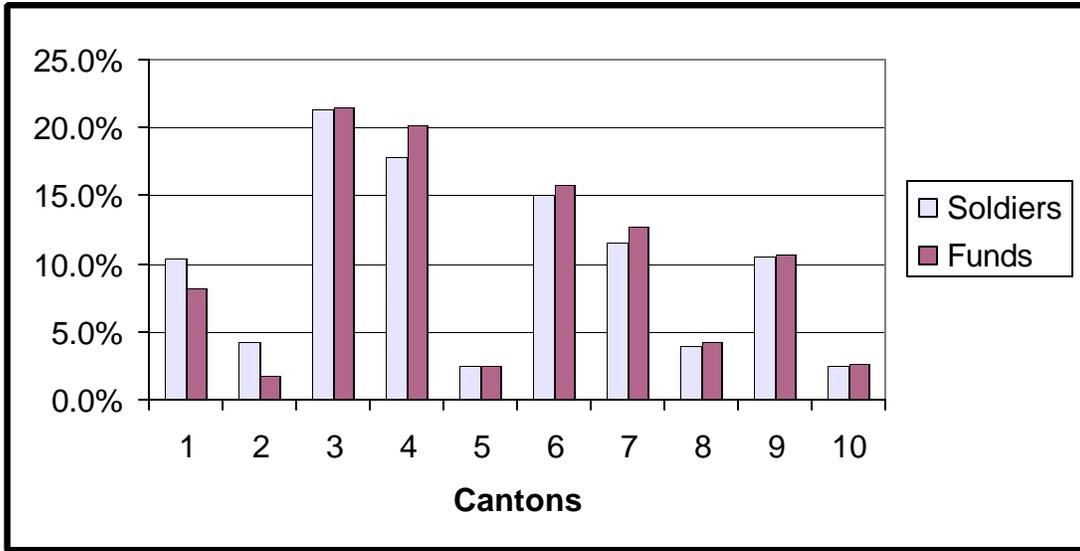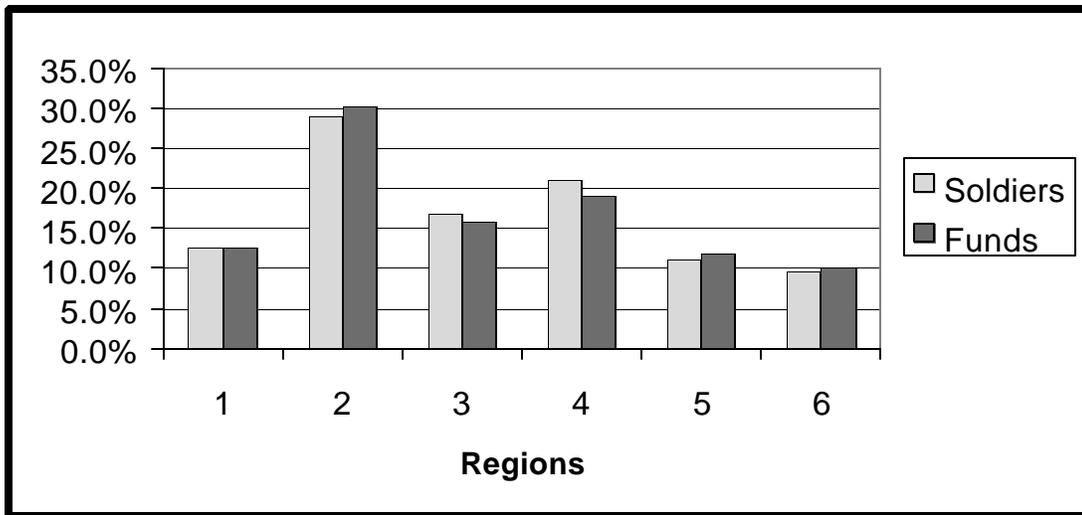
Exhibit 1
Funds Allocation -- FBH
by Canton[12]

Exhibit 2
Funds Allocation -- RS
by Region[13]

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[12] For list of Cantons, see Table 3.
[13] For list of Regions, see Table 2.

Selecting the Participant Sample

Using the administrative data that was made available to PRISM by the two PIUs, we created a list of enterprises and institutions that participated in the program (separately for the FBH and the RS). These enterprises were then categorized into 3 groups (based on the number of clients trained). Next, we randomly selected 30 percent of the enterprises in each of the 3 groups. Using this stratified sample selection technique ensured that the sample would be representative of the two entities as well as representative of enterprises and institutions with large, medium and small number of trainees.

In the second stage of the sampling design, we created a database of all the training participants who received services from the selected enterprises and institutions. Using this database, we randomly selected approximately 6,000 program participants and grouped these individuals by municipality. For each municipality, we then calculated the distribution of respondents by gender, age, and profession/qualification. Using these distributions, we formed quota tables for selecting a comparison sample in each municipality.

Selecting the Comparison Sample

In selecting a comparison sample, we requested and received assistance from the municipal Employment Bureaus of FBH and the RS. Specifically, in each selected municipality, we obtained from the Employment Bureau a list of unemployed individuals who met the following criteria:

- did not participate in the EDRP,
- registered at the Employment Bureau between January 1 and July 1, 1999, and
- fit the sampling quotas for gender, age, and profession/qualification.

The rationale for selecting non-participants who registered at the Employment Bureaus during the first half of 1999, was based on the desire to identify individuals who were unemployed and looking for a job at approximately the same time as a majority of EDRP participants. The first half of 1999 corresponded to the period when a majority of the EDRP participants completed their training programs.

To identify the non-participant sample, PRISM researchers provided Employment Bureau staff with detailed written instructions on how to select individuals from the database of registered unemployed. After receiving lists of registrants who met the selection criteria, PRISM researchers identified a comparison sample for each municipality. Specifically, using quota sampling techniques, PRISM researchers identified a comparison sample that was demographically similar to the participant sample.

Design and Pilot Test of the Survey

The survey instrument developed for this evaluation is similar to survey instruments used in previous ALP impact evaluations.[14] In order to refine the survey instrument and adapt it to local conditions, we tested the instrument in Banja Luka (RS) and in Sarajevo (FBH). In both Banja Luka and Sarajevo, respondents were randomly selected from one enterprise and from one municipal Employment Bureau. As anticipated, many selected respondents could not be contacted due to incorrect or imprecise addresses or refusals. To compensate for this problem, it was necessary to utilize a substantial number of reserve addresses as substitutes. The pilot test concluded with 20 interviews in Sarajevo and 18 in Banja Luka.

Overall, the findings from the pilot test indicated that the survey instrument worked well; we also learned that locating respondents in the full survey would be difficult because of the quality of the contact information. One surprising result from the pilot test, however, was that many program participants were not familiar with the training and counseling services provided by the EDRP. While the pilot test results may simply reflect the situation in one selected enterprise in each entity, the questionnaire responses as well as interviewers' comments alerted us to a potential problem in the full survey. Based on the pilot test findings, we altered some of the questions and added probes to elicit more information about the training and counseling programs. The goal of these questionnaire changes was to be more precise about participants' training and counseling experience and to ensure that the questionnaire elicited the available training information accurately.   The final questionnaire is presented in the Annex.

Response Rate

A combined total of 3,457 interviews were completed between July and November of 2000. As seen in Table 6, the evaluation sample is divided nearly equally between participant and comparison group members with 1,714 participants and 1,743 comparison group members. The overall survey response rate was 58 percent, a good outcome for a survey under very difficult implementation conditions. One difficulty during the survey period, for example, was travel conditions. Specifically, there were periods when travel between the two entities was difficult and even somewhat risky. Also, survey respondents were often suspicious of answering questions regarding their economic status. Nonetheless, the resulting response rate was quite respectable under these difficult conditions.

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[14] See, for example, Jacob Benus, et al, "The Impact of Active Labor Programs in the Czech Republic," May 1998, Abt Associates. See also, David Fretwell, Jacob Benus and Christopher O'Leary, *Evaluating the Impact of Active Labor Programs: Results of Cross Country Studies in Europe and Central Asia*, Social Protection Discussion Paper No. 9915, June 1999, World Bank.

A somewhat surprising result, however, was that the response rate for the participant group was 51 percent while the response rate for the comparison group was 67 percent. The higher response rate for the comparison group is unusual since program participants are generally more likely to cooperate with a survey about a familiar program than non-participants who have no connection to the program.

The higher response rate for the non-participant sample in this study, however, may have an explanation. As described earlier, the contact information for program participants came from administrative records at the two PIUs. As a result, the contact information, in some cases, may have been 3 years old (i.e., for participants who enrolled early in the implementation period). In contrast, the contact information for the non-participants (i.e., comparison group members) came from recent registrants at the municipal Employment Bureau. Furthermore, unlike the PIUs, the Employment Bureaus were likely to have on-going contact with clients and thus their contact information was likely to be up-to-date. As a result of these factors, one would expect that the Employment Bureaus would have more current and more accurate contact information than the PIUs. Hence, the higher response rate for the comparison group.

TABLE 6

RESPONSE RATE ANALYSIS

	Participants	Comparison Group
Completed	51.2 %	66.5 %
Wrong Address	7.4 %	4.8 %
Moved Away	6.8 %	3.5 %
Refused/Busy	28.6 %	18.5 %
Other	6.0 %	6.7 %
COMPLETED INTERVIEWS	**1714**	**1743**

SAMPLE DESCRIPTION

In this section, we present an analysis of the two samples selected for the evaluation of the impact of the EDRP. Specifically, we assess the demographic characteristics of the participant group and the matching non-participant (comparison) group to determine the compatibility of the two groups for the impact evaluation. We also examine other sample characteristics to determine whether there were any pre-existing differences in the two groups that should be considered in the impact evaluation.

Sample Demographic Characteristics

A comparison of the demographic characteristics of the participant and non-participant samples indicates remarkable similarities between the two groups. As seen in Tables 7, the two groups have nearly identical distributions of age, gender, and household size. For example, 36 percent of the participant group members and 38 percent of the non-participant group members fall between 25 and 34 years old; 71 percent of the participants and 70 percent of the non-participants are male. All the other proportions in this table are also quite similar.[15]

There are also similarities between the participant and non-participant groups in their military service experience. As seen in Table 8, both groups are equally likely to have served in the military (53 and 52 percent, respectively) and to have received privatization vouchers upon their demobilization from the military (84 percent). Furthermore, very few individuals in both groups said that they learned any new employment skills while in the military (5 and 6 percent, respectively).

Our analysis also revealed some small, yet statistically significant, differences between the two groups.[16] For example, as indicated in Table 9, the distribution of education is statistically different for the two groups. Specifically, program participants are more likely than non-participants to have attended secondary school and/or an apprenticeship program. There is also a statistically significant difference in the distribution of household members under 18 years old.

In summary, the two groups show substantial similarities in the distribution of demographic characteristics and military service experience. These similarities indicate the success of the sample matching techniques employed in the sample selection phase of the study. While there remain some

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[15] For the reader's convenience, we present the data source (i.e., question number from the survey instrument) in each table. The reader may refer to the survey instrument presented in the Annex.

[16] To test for differences between the groups, we performed a chi-square $(\chi)^2$ test of association. We use the following notation to indicate statistically significant findings: *** indicates a significant difference at the .01 level; ** indicates a significant difference at the .05 level; and * indicates a significant difference at the .10 level. All the statistical tests in this report assume simple random sampling, rather than complex sample selection. Using this assumption, provides good estimates of means and regression coefficients, however, estimates of standard errors may be in error. As a result, some significance tests may be in error. For readers interested in a discussion of analytical statistics for complex samples, see: Leslie Kish, *Survey Sampling,* 1965, pp. 582-587, John Wiley & Sons, New York.

differences between the two groups, we will attempt to control for these differences in the net impact analysis through the use of multivariate regression techniques.

TABLE 7
DEMOGRAPHIC CHARACTERISTICS OF
PARTICIPANTS AND NON-PARTICIPANTS

Age	Participants	Non-Participants
18 - 24 years old	17.4 %	17.2 %
25 - 34	36.3 %	37.6 %
35 - 44	28.4 %	30.1 %
45 - 54	14.3 %	12.3 %
55 - 64	2.9 %	2.5 %
65 and older	0.3 %	0.2 %
Unknown	0.4 %	0.1 %
Gender		
Male	70.7 %	69.7 %
Female	29.3 %	30.3 %
Household Size		
1 -2	8.3 %	8.1 %
3 - 10	90.1 %	91.1 %
11 - 20	0.5 %	0.2 %
Unknown	1.0 %	0.6 %
SAMPLE SIZE	**1,714**	**1,743**

Source: A02, Gender, A03

TABLE 8

**SELECTED CHARACTERISTICS OF
PARTICIPANTS AND NON-PARTICIPANTS**

Serve in the Military?	Participants	Non-Participants
Yes	53.4 %	52.3 %
No	45.7 %	46.6 %
Unknown	0.9 %	1.1 %
SAMPLE SIZE	**1,714**	**1,743**
Learned New Skills in the Military?		
Yes	4.8 %	5.6 %
No	92.7 %	92.7 %
Unknown	2.5 %	1.7 %
SAMPLE SIZE	**916**	**911**
Received Privatization Vouchers as a Result of Service in the Military?		
Yes	84.3 %	84.2 %
No	14.9 %	14.1 %
Unknown	0.8 %	1.7 %
SAMPLE SIZE	**916**	**911**

Source: C01, C04, C07

TABLE 9

**SELECTED CHARACTERISTICS OF
PARTICIPANTS AND NON-PARTICIPANTS**

Education***	Participants	Non-Participants
Primary School or Less	15.6 %	18.5 %
Secondary School / Apprenticeship	77.3 %	73.5 %
College (2 year Post Secondary School)	3.7 %	2.8 %
University Degree or Higher Degree	2.8 %	4.4 %
Unknown	0.6 %	0.8 %
Members of Household Less than 18 years old**		
None	37.8 %	37.0 %
1 - 2	55.2 %	53.2 %
3 - 10	4.2 %	6.0 %
Unknown	2.9 %	3.8 %
SAMPLE SIZE	**1,714**	**1,743**

Source: A01a, A03

Other Sample Characteristics

In addition to comparing the demographic characteristics, we compared other characteristics of the two groups (see Table 10). We found, for example, that in 1996 (prior to the implementation of the EDRP) the two groups were equally likely to have participated in a school, training or counseling program. Specifically, 11 percent of both groups said that they participated in such programs. However, we also found that program participants were more likely than non-participants to be employed in 1996. That is, among participants, we found that 39 percent were employed in 1996; only 15 percent of the non-participants were employed at the same time. These results suggest that while the two samples are comparable in many ways, the participant group may have started out in 1996 with some economic advantages relative to the comparison group.

TABLE 10

**EXPERIENCE
IN 1996**

Attend school, training or counseling program?	Participants	Non-Participants
Yes	11.2 %	11.0 %
No	87.9 %	88.5 %
Unknown	0.9 %	0.5 %
Employed?*		
Yes	39.3 %	15.0 %
No	60.3 %	84.4 %
Unknown	0.4 %	0.6 %
SAMPLE SIZE	**1,714**	**1,743**

Source: D01, D03

PROGRAM OUTCOMES

In this section, we describe and analyze selected program outcomes. For example, we examine the receipt of training and the receipt of counseling services. We also analyze the receipt of other employment assistance services that were available to both participants and non-participants. Following this analysis of training, counseling and employment assistance services, we present an analysis of selected economic outcomes. For example, we review the employment and unemployment experiences of the participant and comparison groups as well as their earnings experiences.

Training

As noted earlier, the participant and non-participant groups were equally likely to have participated in school or training in 1996 (prior to the EDRP). In contrast, since January 1997, a larger proportion of the participant group participated in a training program (see Exhibit 3 and Table 11). Specifically, 16 percent of the participant group said that they participated in a training program since January 1997 while only 5 percent of the non-participant group responded that they participated in such a program. Thus, while the two groups were similar in training program participation prior to the EDRP implementation, since January 1997, there was an increase in participation for the participant group and a decrease for the non-participant group.

One might consider 16 percent to be a low proportion of the participant group reporting that they took part in the EDRP training program. However, it should be noted that most of the training services provided under the EDRP were provided on the job (i.e., at the workplace). As a result, program participants may not have recognized that the training services provided at the workplace were part of a training program. Furthermore, while there was no difference in participation in 1996, the difference between the participant and non-participant groups is statistically significant in the period since 1997. Finally, among those who recalled participation in a training program since 1997, two-thirds reported that the quality of the training was "Excellent" or "Very Good" and very few (3 percent) reported that the training was "Poor" or "Very Poor" (see Table 11).

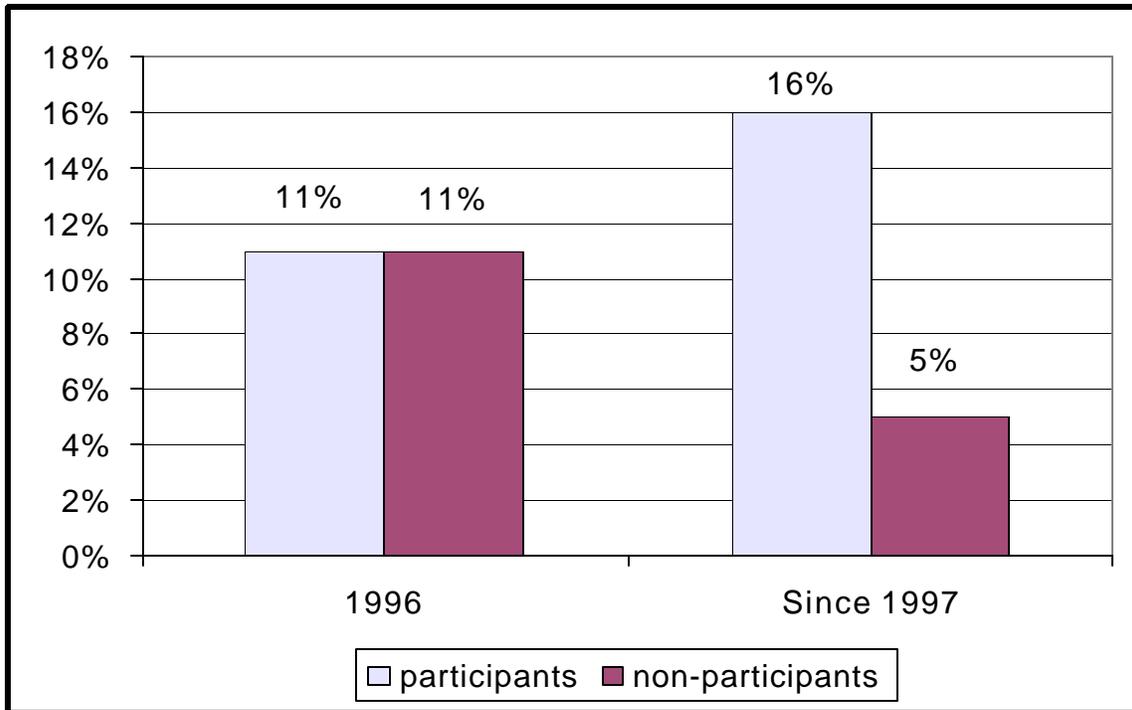**Exhibit 3**

Training Participation

TABLE 11

TRAINING SERVICES
PARTICIPANTS AND NON-PARTICIPANTS

Attended training program since January 1997?***	Participants	Non-Participants
Yes	16.0 %	4.7 %
No	71.8 %	78.2 %
Unknown	12.3 %	17.2 %
SAMPLE SIZE	**1,714**	**1,743**
Quality of Training Services		
Excellent	22.0 %	25.0 %
Very Good	44.6 %	50.0 %
Average	30.1 %	16.7 %
Poor	2.7 %	8.3 %
Very Poor	0.6 %	0.0 %
SAMPLE SIZE	**186**	**12**

Source: E04, G07

Employment Bureau Services

As noted above, non-participants received less training services than participants in the period since January 1997; however, during that period, they may have received other employment assistance services at a greater rate than participants. To investigate this, we examined the employment assistance and other services that the two groups received from the Employment Bureaus.

As indicated in Table 12, non-participants were more likely than participants to have registered at the Employment Bureau. Specifically, 89 percent of non-participants and 51 percent of participants said that they registered at the Employment Bureaus since 1997. Indeed, one would have expected 100 percent of the non-participants to have registered at the Employment Bureaus since the non-participant sample was drawn from Employment Bureau files. The shortfall between 100 percent and 89 percent is likely to be attributed to respondent recollection problems.

In terms of services received from the Employment Bureaus, Table 12 indicates that very few from both groups received unemployment assistance benefits since 1997. Specifically, only 2 percent of the participant group and 4 percent of the non-participants received any unemployment benefits since 1997. Nonetheless, it should be noted that, while this difference between the two groups is small, it is statistically significant.

TABLE 12

EMPLOYMENT BUREAU SERVICES
PARTICIPANTS AND NON-PARTICIPANTS

Registered at Employment Bureau?***	Participants	Non-Participants
Yes	50.7 %	89.2 %
No	46.3 %	8.2 %
Unknown	3.0 %	2.7 %
SAMPLE SIZE	**1,714**	**1,743**
Received unemployment assistance? **		
Yes	1.7 %	3.7 %
No	97.2 %	95.4 %
Unknown	1.1 %	0.9 %
SAMPLE SIZE	**869**	**1,554**

Source: E06, E08

Employment and Unemployment

Earlier, we noted that in 1996 (prior to receiving EDRP services), participant group members were more likely to be employed than non-participant group members (39 percent versus 15 percent). An examination of current employment rates (i.e., employment rates at the time of the interview) indicates that the difference between the two groups is much greater (see Exhibit 4 and Table 13). That is, at the time of the interview, 66 percent of the participant group and 16 percent of the comparison group were employed. Compared to 1996, the employment rate of the non-participant group remained essentially the same while the employment rate of the participant group increased dramatically (from 39 to 66 percent).

Exhibit 4
Employment Rates
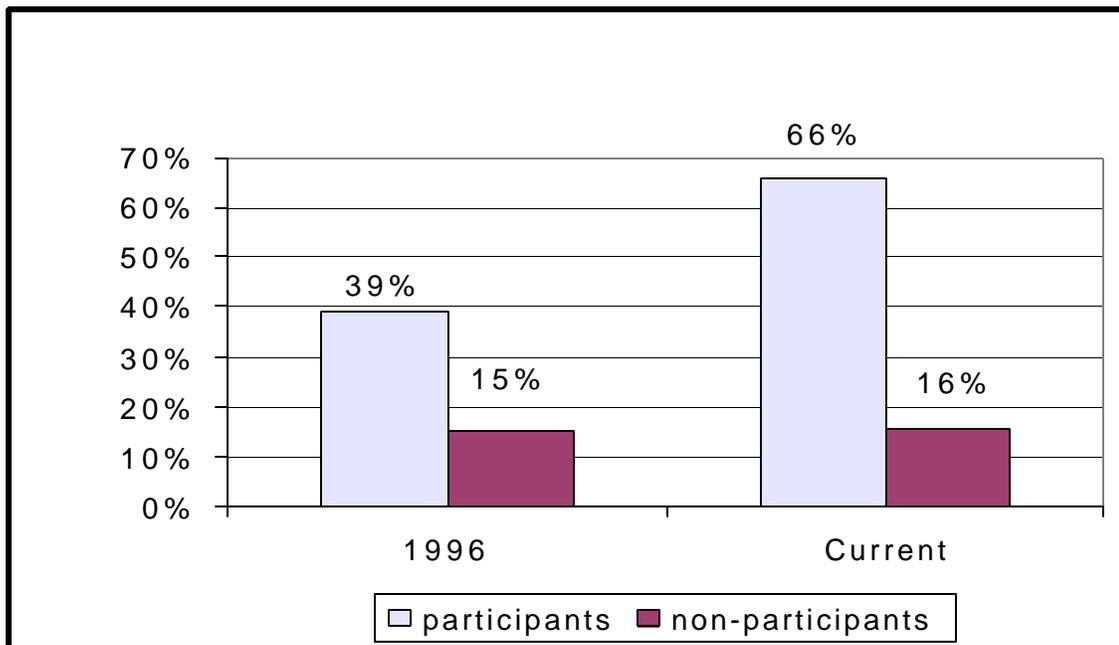
Furthermore, as seen in Table 13, the vast majority of the program participants who were employed at the time of the interview, were employed in a wage and salary job (92 percent); only a relatively small proportion (7 percent) were self-employed. In contrast, among the non-participants who were employed at the time of the interview, 62 percent were employed in a wage and salary job and 30 percent were self-employed. The higher proportion of participants in wage and salary employment

suggests that program participants are more likely than non-participants to be employed in the formal economy.

TABLE 13

CURRENT EMPLOYMENT

Employed or Unemployed? ***	Participants	Non-Participants
Employed	65.6 %	16.4 %
Unemployed	33.7 %	82.6 %
Unknown	0.7 %	1.0 %
SAMPLE SIZE	**1,714**	**1,743**
Type of Employment *		
Wage and Salary	92.1 %	62.2 %
Self-employed	6.5 %	30.3 %
Unknown	1.4 %	7.5 %
SAMPLE SIZE	**1,136**	**304**

Source: F01, F02

Earnings

Given the large difference in current employment rates between the participant and non-participant groups, one might also expect there to be a large difference in current earnings. Indeed, an examination of current monthly earnings for the two groups revealed that current average monthly earnings for the participant group was 178 DM and only 51 DM for the non-participant group.   Thus, it appears that there is a substantial difference in average earnings for the sample as a whole.

An interesting corollary question to address is whether there is also a difference in the earnings of employed individuals. That is, do **employed** participants earn more than **employed** non-participants? We recognize that these employed individuals are not a representative sample of their entire group.

That is, the employed individuals within each group are likely to represent the elite and most successful individuals within their respective groups. Nonetheless, it remains an interesting question and we investigate the earnings of the employed subgroups below.

The distribution of current earnings for employed individuals is presented in Exhibits 5 and Table 14. An examination of this distribution indicates that, among the employed, a greater proportion of non-participants fall into higher earnings brackets than among the participants. Moreover, on average, among the employed, non-participants currently earn 341 DM per month while participants currently earn 285 DM per month (see Table 14).

In summary, for the sample as a whole, participants earn more than non-participants; for the employed subgroup, however, the reverse is true (i.e., non-participants earn more than participants). While we cannot draw a definitive conclusion from this finding, the implication is that the EDRP affected participants by increasing their likelihood of employment rather than by increasing their earnings on a job.

EXHIBIT 5

**CURRENT EARNINGS
AMONG
CURRENTLY EMPLOYED**
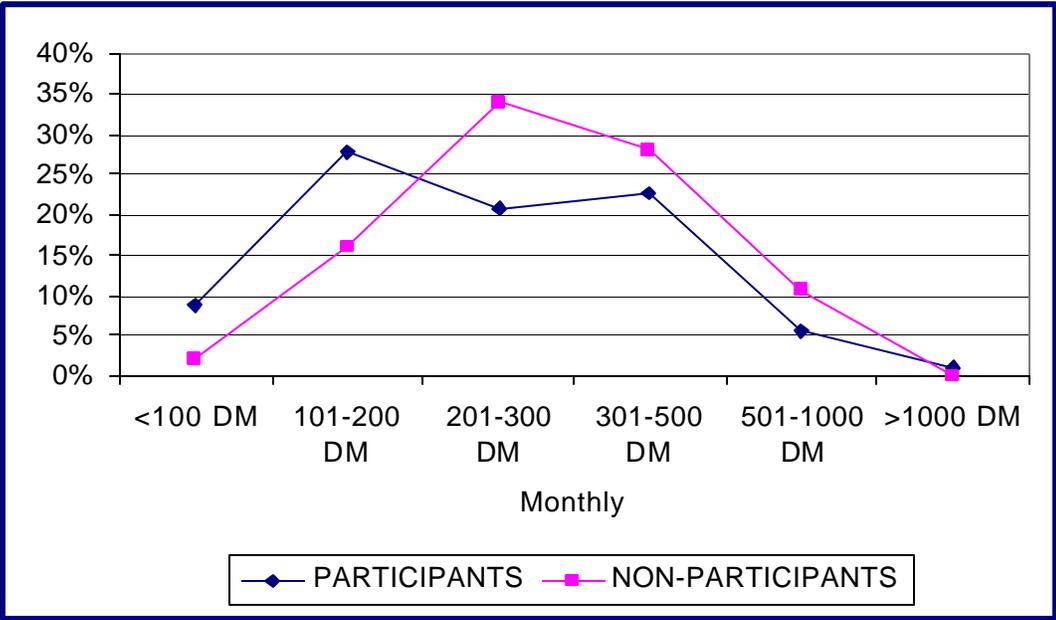
TABLE 14

CURRENT EARNINGS

AMONG

CURRENTLY EMPLOYED

Average Monthly Earnings***	Participants	Non-Participants
Less than 100 DM	8.8 %	2.1 %
101 - 200 DM	27.7 %	15.9 %
201 - 300 DM	20.9 %	33.9 %
301 - 500 DM	22.8 %	28.0 %
501 - 1,000 DM	5.6 %	10.6 %
More than 1,000 DM	1.0 %	0.0 %
Unknown	13.2 %	9.5 %
AVERAGE EARNINGS*	**285 DM**	**341 DM**
SAMPLE SIZE	**1,046**	**189**

Source: F05

IMPACT ANALYSIS

Our measure of program impacts is the difference between participant group outcomes and comparison group outcomes. For any given outcome, an unbiased measure of the program impact is provided by a simple difference in participant and comparison group means. We refer to this simple difference in outcome means as the unadjusted program impact. In the following tables, we present the simple difference in means in the column labeled *Difference*.

A more precise, and still unbiased, impact estimate can be obtained through multivariate analysis, using covariates to explain some of the variation in outcomes across the sample.[17] We refer to impact estimates obtained from such multivariate regression techniques as regression adjusted program impact. The regression-adjusted impacts are presented in the last column labeled *Impact*.

In both the unadjusted and adjusted program impact estimates, a standard t-test can be calculated to determine whether the estimated impact is significantly different from zero. In the following tables, a single asterisk (*) following a given impact estimate indicates statistical significance at the 10% level; a double asterisk (**) indicates significance at the 5% level; and a triple asterisk (***) indicates statistical significance at the 1% level. Impacts with no asterisk are not statistically significantly different from zero at the 10% level. Thus, only estimates that are significantly different from zero at the 10% level or better are treated as evidence of a real effect of the program.

Using ordinary least squares regression techniques, we analyzed the following six outcomes[18]:

(1)	Likelihood of employment at the time of the followup interview;
(2)	Likelihood of wage and salary employment at the time of the followup interview;
(3)	Likelihood of self-employment at the time of the followup interview;
(4)	Likelihood of ever being employed since 1997;
(5)	Number of Jobs since 1997; and
(6)	Current monthly income.

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[17] By including a variable that captures participant status (i.e., P=1 if the labor office registrant is in the participant group and P=0 if the registrant is in the comparison group), we can obtain an unbiased estimate of the average impact of the program on the outcome. In addition to the dummy variable for participant status, the regression equations include categorical variables reflecting demographic and other personal characteristics as well as status prior to the EDRP.

[18] To assess the net impact of the EDRP, in each regression, we included a dummy variable for participation status (i.e., P=1 if in the participant group and P=0 if in the comparison group). We also included the following categorical variables: female; less than 25 years old, 41 years old and older; education (primary), education (college), education (university); rural location, family size (3), family size (4), family size (5 or more); unemployed in 1996; attended training or school in 1996 and served in military (1992-1995).

The results of the unadjusted and adjusted program impacts for selected outcomes are presented in Table 15. As indicated in the first row of this table, 66 percent of the EDRP participants had a job at the time of the followup interview (i.e., currently employed); in contrast, 16 percent of the comparison group were currently employed. Based on a simple difference of means t-test, we find that the EDRP had a significant positive impact on current employment (50 percentage points). Adjusting for other variables using multiple regression, confirms this conclusion; i.e., that the EDRP had a significant positive impact on current employment. Specifically, the impact estimate from the multiple regression indicates that, after controlling for sample differences, the EDRP still increased the likelihood of current employment by 43 percentage points.

A more detailed examination of current employment by type of employment, revealed that the EDRP had opposite effects on wage and salary employment and on self-employment. That is, the EDRP had a positive impact on the likelihood of wage and salary employment, but a negative impact on the likelihood of self-employment. As indicated in Table 15, the EDRP raised the likelihood of wage and salary employment by 45 percentage points while, at the same time, it lowered the likelihood of self-employment by 2 percentage points.

These opposite affects may, at first glance, seem surprising. That is, why would the EDRP increase one type of employment while decreasing another. One possible explanation is that the EDRP was so successful in enhancing wage and salary employment, that participants chose not to pursue self-employment. Another interpretation of these results is that non-participants had more opportunities to take advantage of alternative employment assistance programs. By one count, in 1998 there were 17 local non-governmental organizations (NGOs), 9 international NGOs, and one licensed bank (Microenterprise Bank) operating microcredit programs in BH. While these entrepreneurship programs were available to both EDRP participants and non-participants, it is likely that program operators targeted non-participants. As a result of these factors, we find a larger proportion of the comparison group in self-employment at the time of the followup interview.

We also examined the impact of the EDRP on other employment outcomes. For example, we analyzed the impact of the EDRP on having at least one job since 1997; also, we analyzed the number of jobs held since 1997. The impacts, presented in Table 15, indicate that the EDRP had a significant positive impact on both of these outcomes. Specifically, the EDRP increased the likelihood of employment since 1997 by 34 percentage points and increased the number of jobs since 1997 by .37 jobs.

TABLE 15

IMPACT RESULTS

Outcome	Participant Group	Comparison Group	Difference	Impact
Percent Currently Employed in any job	66%	16%	50%***	43%***
Percent Currently Employed in a wage & salary job	62%	11%	51%***	45%***
Percent Currently Self-employed	4%	5%	-1%	-2%**
Percent Ever Employed Since 1997	77%	36%	41%***	34%***
Number of Jobs Since 1997	1.15	0.67	0.48 ***	0.37***
Current Monthly Earnings	178 DM	51 DM	127 DM***	98DM***

***Indicates coefficient is significantly different from zero at the.01 level
**Indicates coefficient is significantly different from zero at the .05 level.
*Indicates coefficient is significantly different from zero at the .10 level.

Finally, the EDRP had a large positive impact on monthly income. That is, holding all other variables constant, the EDRP increased monthly income by 98 DM. This income increase is quite large, representing more than one-quarter of the average monthly income in the FBH.

Above, we examined the impacts of the EDRP by focusing on a single multiple regression coefficient (i.e., the coefficient on the dummy variable for participation status). It may also be instructive to examine the coefficients on the other independent variables that were included in the multivariate regressions. In Table 16, we present these regression results.

In the first column of Table 16, we present all the estimated coefficients from the multiple regression on the likelihood of current employment. The results from this regression indicate, for example, that gender is not a significant determinant of current employment. That is, the reader will note that the coefficient on the dummy variable for female is not statistically different from zero. Similarly, being a student in 1996 does not affect the likelihood of current employment.

In contrast, all the remaining coefficients in the multiple regression were statistically significant. For example,

- **age** -- older individuals (i.e., those who are over 40 years old) were less likely to be employed than younger individuals;

- **family size** -- individuals with large families (4 or more) were more likely to be employed than those with smaller families;

- **rural/urban** -- living in a rural area had a positive affect on employment;

- **prior military service** -- serving in the military had a positive affect on employment; and

- **prior employment status** -- being unemployed in 1996 had very large negative affect on employment.

Finally, as noted earlier, the EDRP had a very large and significant impact on the likelihood of current employment.

The reader can review the remaining multiple regression results in Table 16. To interpret the regression results, however, the reader may find the presentation in Table 17 more readable. In Table 17, we present only the signs of the coefficients that were significantly different from zero at the .10 level. An examination of Table 17 indicates that military service has a positive affect on all the outcomes studied; in contrast, being unemployed in 1996 had a negative affect on all

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TABLE 16

REGRESSION COEFFICIENTS

Independent Variable	Likelihood of				Number of Jobs since 1997	Current Monthly Earnings
	Current Employment	Wage Employment	Self Employment	Employment Since 1997		
Intercept	28%***	23%***	5%**	60%***	1.0***	130DM***
Gender -						
Female	1%	3%	-2%*	1%	0.0	-15DM
Age -						
Less than 25 years old	-1%	-1%	-0%	1%	0.1	-5DM
More than 40 years old	-4%**	-4%**	-0%	-11%***	-0.2***	-24DM***
Education -						
Primary or less	-4%*	-1%	-2%*	-1%	-0.1*	-12DM
College	9%**	6%	3%	2%	-0.0	79DM***
University	7%*	7%*	1%	8%*	0.1	87DM***
Family Size -						
3	2%	1%	2%	1%	0.0	3DM
4	5%**	3%	3%*	0%	-0.1	11DM
5 or more	7%**	4%	3%*	6%*	0.1	15DM
Rural/Urban -						
Rural	6%***	6%***	-0%	-2%	-0.1***	6DM
Military Service (1992-1995)						
Yes	8%***	7%***	2%*	9%***	0.3***	29DM***
Prior Employment Status (1996)						
Unemployed	-27%***	-24%***	-2%**	-34%***	-0.5***	-118DM***
Prior Student Status (1996)						
Student	0%	1%	-1%	1%	0.4***	18DM
Impact	43%***	45%***	-2%**	34%***	0.4***	98DM***

***Indicates coefficient is significantly different from zero at the .01 level
**Indicates coefficient is significantly different from zero at the .05 level.
*Indicates coefficient is significantly different from zero at the .10 level.

TABLE 17

**STATISTICALLY SIGNIFICANT
REGRESSION COEFFICIENTS ***

Independent Variable	Likelihood of				Number of Jobs since 1997	Current Monthly Income
	Current Employment	Wage Employment	Self Employment	Employment Since 1997		
Gender - Female			—			
Age - Less than 25 years old More than 40 years old	—	—		—	—	—
Education - Primary or less College University	— + +	 +	— 	 +	— 	 + +
Family Size - 3 4 5 or more	 + +		 + +	 +		
Rural/Urban - Rural	+	+			—	
Military Service (1992-1995) Yes	+	+	+	+	+	+
Prior Employment Status (1996) Unemployed	—	—	—	—	—	—
Prior Student Status (1996) Student					+	
Impact	+	+	—	+	+	+

*Entry of "+" or "—" sign in table indicates coefficient is significantly different from zero at the .10 level or better1.

the outcomes studied. Having a university degree had a positive impact on most of the outcomes studied and being more than 40 years old had a negative affect on most outcomes.

SUBGROUP EFFECTS

As noted above, the EDRP had a negative impact on the likelihood of self-employment and large positive impacts on all the other outcomes studied. In this section, we examine whether these overall results are consistent for all population subgroups or whether they vary by the participants' characteristics. Specifically, we examine whether program impacts vary by gender, age, education, family size, rural/urban, prior military status and prior employment status.[19]

In Table 18, we present the subgroup impact estimates for two outcomes: the likelihood of current employment and current monthly income. The overall conclusion from this presentation of subgroup impacts is that the EDRP had large positive impacts for every subgroup. Of course, the impacts were larger for some groups than for others; nonetheless, the program had a statistically significant positive impact for every subgroup.

For example, for males, the impact of the EDRP was to increase the likelihood of current employment by 46 percentage points. The program also increased current monthly income by 108 DM. For females, the EDRP had significant but slightly smaller impacts. Specifically, for females the program raised the likelihood of current employment by 35 percentage points and raised current monthly income by 78 DM. Thus, the impact was significant for both males and females, with slightly larger impacts for males.

A review of the remaining subgroups indicates some interesting results. For example, the smallest program impacts were found for the under 25 years old subgroup. For this subgroup, the program increased the likelihood of employment by 28 percentage points; the program also increased their monthly income by 42 DM. While these results are small relative to the other subgroups, the impacts were still statistically significant. In contrast, the largest program impact on employment was for the subgroup with very little education (primary education or less). For this subgroup, the program raised the likelihood of employment by 57 percentage points. The largest program impact on monthly income was found for the subgroup with a university education. For this highly educated group, the program raised monthly income by 279 DM.

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[19] To test for differential subgroup program impacts, we added interaction terms to the basic multivariate regression model described earlier (e.g., participation status interacted with subgroup designation). To avoid multicollinearity, the uninteracted participation status dummy variable was omitted from the basic multivariate regression. The estimated coefficients on the interaction terms, represent the subgroup impacts.

TABLE 18
PROGRAM IMPACTS
(BY SUBGROUP)

Independent Variable	Sample Proportion	Likelihood of Current Employment	Current Income
Gender -			
Male	70%	46%***	108DM***
Female	30%	35%***	78DM***
Age -			
Less than 25 years old	18%	28%***	42DM***
25-40 years old	58%	44%***	106DM***
More than 40 years old	25%	52%***	126DM***
Education -			
Primary or less	17%	57%***	111DM***
Secondary school	76%	40%***	86DM***
College	3%	37%***	135DM***
University	3%	40%***	279DM***
Family Size -			
1 - 2	8%	40%***	121DM***
3	22%	42%***	85DM***
4	38%	38%***	80DM***
5 or more	32%	50%***	123DM***
Rural/Urban -			
Urban	56%	37%***	92DM***
Rural	44%	50%***	106DM***
Military Service (1992-1995)			
Yes	53%	50%***	124DM***
No	47%	35%***	72DM***
Prior Employment Status (1996)			
Employed	27%	45%***	109DM***
Unemployed	73%	42%***	95DM***
Prior Student Status (1996)			
Student	11%	27%***	113DM***
Non-Student	89%	45%***	96DM***

***Indicates coefficient is significantly different from zero at the .01 level
**Indicates coefficient is significantly different from zero at the .05 level.
*Indicates coefficient is significantly different from zero at the .10 level.

CONCLUSIONS

The Emergency Demobilization and Reintegration Project (EDRP) began in 1996 and was completed in 1999. The main goal of this project was to assist the new Government of Bosnia and Herzegovina in the reintegration of demobilized soldiers into the civilian workforce and to increase economic productivity.

In this study, we analyzed the net impacts of the EDRP using a quasi-experimental design. To implement this evaluation design, we selected a representative sample of program participants from EDRP program records as well as a comparison sample from the records of the municipal Employment Bureaus.   A local survey firm then interviewed members of these two groups, completing a total of 3,457 interviews (1,714 participants and 1,743 non-participants). The data from these interviews were used for the impact evaluation.

Our analysis of program impacts revealed that the EDRP had substantial success in improving participants' economic outcomes. Specifically, we found that the program increased the likelihood of participants' employment by 43 percentage points. The program also succeeded in raising participants' monthly income by 98 DM. Furthermore, our analysis of program impacts by subgroup, revealed that the EDRP had a positive and statistically significant impact on all subgroups studied. That is, whether the participant was male or female, young or old, highly educated or not, etc., the EDRP had a positive impact on the outcomes studied.

In conclusion, the impact estimates from this evaluation indicate that the EDRP had a large and positive impact on employment and earnings of demobilized soldiers in Bosnia and Herzegovina.   Based on these results, we conclude that the services provided by the EDRP were effective in reintegrating demobilized soldiers into the economy.   Furthermore, we believe that similar training and reintegration programs should be incorporated into future military demobilization efforts.

ANNEX -- SURVEY INSTRUMENT