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Mine Closure and its Impact on the Community

Five Years After Mine Closure in Romania,
Russia and Ukraine

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Abstract

Against the backdrop of economic transition, several countries in Eastern Europe have undertaken far-reaching programs to restructure their coal sectors, which in the 1990s were in a state of deep crisis. One aspect of restructuring has been the closure of loss-making mines, which are often located in communities where the coal industry is the dominant employer, and the significant downsizing of the workforce. Mitigation efforts that are implemented at the time of mine closure (such as severance payments) are usually intended only for the laid-off workers.

Haney and Shkaratan examine the impact of mine closure on the entire community five years after mine

closure in Romania, Russia, and Ukraine. Using quantitative and qualitative research methods and based on interviews with national, regional, and local experts, and members of the affected population, the authors describe the effect of mine closure and evaluate the various mitigation efforts that have been used by governments in such cases. They conclude with policy recommendations of broad relevance to programs of industrial restructuring in communities dominated by a single industry.

This paper—a product of the Infrastructure and Energy Services Department, Europe and Central Asia Region—is part of a larger effort in the region to evaluate the social impact of industrial restructuring. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Larisa Marquez, room H11-114, telephone 202-473-6578, fax 202-614-1582, email address lmarquez@worldbank.org. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at mhaney@worldbank.org or mshkaratan@worldbank.org. June 2003. (61 pages)

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Mine Closure and its Impact on the Community: Five Years After Mine Closure in Romania, Russia and Ukraine

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The research described in this report was carried out by a team consisting of Michael Haney (team leader), Maria Shkaratan (specialist in governance and social issues), Veronika Kabalina (research manager in Russia), Vladimir Paniotto (research manager in Ukraine), and Cosima Rughinis (research manager in Romania). Michael Haney is the principal author of this report, which benefited from inestimable contributions by Maria Shkaratan and the reports prepared by the research managers in each of the three countries. Lee Travers guided the preparation of the report as sector manager. Special thanks are owed to Laszlo Lovei for his comments and insights, and to Janis Bernstein and Nora Dudwick for valuable contributions made during the development phase of the research. David Craig, Jeffrey Davidson, Ashraf Ghani, Heinz Hendriks, Chris Jones, Christopher Sheldon and Doina Visa provided invaluable advice and comments. Anis Dani and Jeni Klugman were peer reviewers and their thoughtful comments on the concept and the draft report were instrumental in guiding the research and this final report.

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Executive Summary

Background

1. In recent years, Poland, Romania, Russia, and Ukraine have undertaken major reforms of their coal sectors, in all cases with financial support and policy advice from the World Bank and bilateral donors. While conditions varied from country to country, in general before restructuring the coal industries of these countries suffered from a number of serious problems, including: obsolete equipment and years of inefficient investments; poor sector management; inauspicious geological conditions in many basins; excessive employment, with productivity levels among the lowest in the world; wretched health and safety conditions; and acute levels of accounts payable.
2. Full-blown crises emerged in the coal sectors of these countries in the general economic dislocation of transition. The initial response of governments was to allocate high levels of subsidies to the industry. In Ukraine, for example, state support for the coal industry in 1993 was equivalent to about 4% of GDP. It soon became clear, however, that such levels of subsidization were unsustainable in the face of the other demands on the shrinking national budgets. From this recognition followed the decision, taken at the highest levels of government, to embark upon the restructuring of the coal sector.
3. In order to reduce the burden of subsidies on the budget as quickly as possible, sector restructuring entails the closure of uneconomic mines and an extensive downsizing of the industry workforce. Privatization of the healthy core of the industry may also be a part of the restructuring program. In view of the concentration of coal mining in a small number of regions and towns within regions, coal sector restructuring programs include mitigation strategies to strengthen the social safety net for laid-off workers and their families, and to create jobs in other sectors in the local economy.

Concept and structure of the research

4. This report is part of a work in progress and reflects the results of research that was carried out in Romania, Russia and Ukraine with the goals of (i) assessing the impact of mine closure on communities in which large-scale downsizing of the mining workforce began at least five years ago, in 1997, (ii) evaluating the effectiveness of the mitigation policies that have been used to date, and (iii) developing policy recommendations to address the problems identified by the research.
5. The research was designed primarily as a qualitative study in two phases consisting of in-depth interviews with national, regional and local experts (in the first phase) and impacted groups of the population and "response" groups such as local entrepreneurs (in the second phase). The research carried out in Ukraine also included a quantitative component in which survey data were collected on employment and living conditions in two mining municipalities as well as in the rest of the country.
6. Mining municipalities were selected on the basis of a high impact of restructuring on the share of coal sector employment in the overall workforce of the municipality, and on the basis of

the existence of alternative economic activity or the possibility of developing it. These criteria were augmented with such qualitative considerations as the imminence of local elections, proximity to other towns with more diversified economies, the desirability of regional variation in the final selection, etc.

Research Findings

7. Following are the most significant areas of the impact of mine closure on the community:

- Employment and Labor Migration
- Municipal and Social Services
- Community Cohesiveness
- Environment

8. ***Employment and Labor Migration.*** The problem of employment is one of the most serious and long-lasting consequences of mine closure, even five or more years after the downsizing of the local mining workforce. Mining communities in all three countries have in common the problem not just of the quantity of jobs, but of the quality of jobs as well: long-term, stable jobs providing livable wages are scarce. This basic situation on local labor markets has led to a worsening of living standards for many; a qualitative change in the nature of employment, with the emergence of informal, insecure forms of employment at lower wages with fewer legal and social safeguards; and the emergence of groups that are particularly vulnerable in these highly competitive job markets.

9. Two basic types of response to the dramatically worsened local labor market conditions following mine closure are: (i) local development and job-creation efforts, and (ii) migration.

10. Local development and job-creation. The standard policy response to the high unemployment that follows industrial restructuring is to foster the diversification of the local economy and to seek to improve the match between the available jobs and workers' skills through active labor market policies. Among the common mechanisms used in pursuit of this goal are: the provision of microcredits to individual entrepreneurs and subsidized credits to small and medium enterprises; technical assistance and support for business development; and programs matching job-seekers with potential employers through subsidized on-the-job training or training in another profession.

11. The research suggests the following general findings in this area:

- There is a long and steep "learning curve" of several years before the various local development efforts are established and begin to make an impact.
- While support to individual entrepreneurship and the SME sector is an important part of the policy response, it is equally important to recognize the limit to the job-creation capacity of these efforts. Even where these programs were most established and best financed, expert respondents characterized their impact as positive but "a drop in the bucket" of the total need.
- In addition to the targeted mitigation policies, general economic growth plays an important role in absorbing the larger part of the labor that is shed through mine closure.

12. **Migration.** The commonly encountered view of the immobility of labor in the transition countries is challenged by the research findings. In Ukraine, at the time of the survey, an estimated 37% of the population was absent for an extended period in connection with employment elsewhere. Whether or not migration is permanent or temporary, or successful or not, however, cannot be determined on the basis of this research. Cases of return migration are common in some places (notably in Romania), usually for the reason that things did not work out for the migrant in the other location.

13. The potentially beneficial impact of labor migration on the local employment market suggests that some form of migration support or subsidized transportation should be an explicit policy goal to help mitigate the employment problems caused by mine closure (see Policy Recommendations). In actual experience, however, support of migration has been limited. In each country economic conditions have been generally difficult everywhere, and officially sponsored migration is a politically and socially sensitive issue when there are no obvious growth centers that can receive migrants without displacing the local workforce and creating social tension. The problem of housing is also a severe constraint. The costs of migration are high, and practical and financial considerations would rule out the possibility of fully satisfying the likely demand for such support.

14. **Municipal and Social Services.** Municipal budgets suffer a dual impact from mine closure: tax revenues contract, while expenditure obligations expand. In the range of municipal services, respondents singled out housing and communal services as priority areas that have been severely negatively impacted by mine closure. Education and health are also important locally-provided social services that are affected by mine closure, although the research results indicate that the provision of these services has generally fared better despite the difficult circumstances.

15. The poor state of the housing stock of most mining towns is a result of historical considerations and of the impact of mining and mine closure. Subsidence and seepage of the groundwater have damaged residential and other structures, and physical infrastructure that delivers services of social significance. In some settlements that are immediately in the environs of closed mines, these services have ceased altogether as a result of mine closure. And in all research sites, hot water is generally not available.

16. Divestiture of housing and social assets from enterprises to municipalities took place in the 1990s in Russia and Ukraine, with a particularly harsh impact on the mining towns. The capacity of local administrations was overwhelmed, as in many cases the levels of the assets divested to the municipalities by the enterprises exceeded by a factor of several times the pre-divestiture levels for which the municipalities were responsible. While municipalities throughout both countries have had to shoulder extra burdens as a result of divestiture, the situation in the mining towns in these countries is generally worse, both because of the physical impact of mining on housing and because the enterprise's share of the total stock of housing and social assets tended to be greater in mining towns than in other municipalities. Enterprises facing the prospect of divestiture did not maintain assets, so that by the time the divestiture was completed assets were severely depreciated and in need of high levels of repair for which no financing was forthcoming.

17. **Community Cohesiveness.** In addition to social consequences of mine closure that are implicit in the problems of employment and social infrastructure, the research examined the capacity of the community to absorb the negative shocks of mine closure and to mitigate such negative phenomena as social instability, alienation and apathy. From this perspective, on the whole the mining communities appear to be rather fragile or vulnerable, their capacity to respond adequately on the community level diminished.

18. The role of civil society in these towns is quite limited: while various organizations representing civil society were found in all locations, their impact on the community was characterized by expert respondents as insignificant, while members of the population generally had no knowledge of any organizations that could be considered representatives of civil society.

19. **Environment.** The environmental impact of mine closure is severe and generally well known, even if the exact manifestation of the impact is highly site-specific. Environmental remediation is a standard component of mine closure plans, and usually the single largest component of the overall cost of mine closure. In the typical conditions of limited financing, first priority is given to preventing damage resulting from the restoration of the underground water level, while such items as land reclamation are often assigned a low priority.

20. Most of the research participants were not technically qualified to discuss the problems of the environmental impact of mine closure. Not surprisingly in view of the technical complexity of environmentally-related issues and the dearth of specialists among the respondents, on occasion respondents expressed contradictory opinions on matters of relevance to the subject. As residents of the community, they most frequently expressed concern about the problem of flooding, the damage caused to houses by mining, the quality of the drinking water (particularly in Ukraine), the danger of methane leaks, and mining waste piles that are not removed.

Policy Recommendations

21. The following policy recommendations are tailored to coal sector restructuring programs but would also have broad relevance to other industrial restructuring programs, particularly those where the patterns of municipal development are similar to those encountered in the coal sector.

22. **Recognize early on the costs to the community of sector restructuring, and align benefits more closely with the costs.** Ex-ante analyses of coal sector restructuring recognize the great benefits that accrue to the economy at large from restructuring when the high level of subsidization of the sector is eliminated and when workers released from the coal sector produce greater value in other economic activities. At the same time, it is less common for such analyses to recognize the full range and scope of the costs that are imposed by restructuring on the community, including the negative impact on downstream industries and on businesses dependent on household purchasing power. More closely aligning the costs and benefits of sector restructuring would help to minimize additional costs resulting from the failure to recognize upfront all the costs of sector restructuring and from the protraction of sector restructuring.

23. This general recommendation has some important practical policy applications, including: (i) broaden the base of eligibility for social protection benefits to mitigate the negative employment impact of mine closure on dependent industries (possibly using an approach based on demonstrated proportional dependence, as in the Russian experience), eligibility for participation in microcredit programs, etc. and (ii) recognize the role and potential of the municipality in mitigating the impact of sector restructuring on the entire community, where the costs of restructuring are disproportionately concentrated.

24. Notionally, the process of coal sector restructuring can be viewed as one in which subsidies that previously went to support loss-making production at uneconomic mines are shifted, for some period and in one form or another, to the mitigation of the impact of mine closure on the mining community. The actual form of the assistance is a matter for policy, judgment and negotiation. In view of the inevitable period of adjustment and the “learning curve”, it is likely greater value to the community would come from extending assistance over time. This review of the situation five years after mine closure in three different countries indicates that the coal municipalities need additional targeted assistance before being mainstreamed into national programs of inter-budgetary support; given the long time frames of the local response to sector restructuring, additional monitoring over coming years would be warranted to gain a more complete understanding of the long-term impact of sector restructuring.

25. **Build capacity on the community level.** Communities in which mines are closed are confronted with an array of new problems for which the capacity and skills embodied in the various local response systems are inadequate. Assuring adequacy of financing is a necessary but not sufficient condition for the proper management of the consequences of mine closure on the local level; measures to build capacity are necessary to ensure that the limited financing is put to its best use. The evidence from Russia’s experience with local development programs suggests that capacity-building is relevant for local government and also for the various non-governmental organizations that constitute civil society and that can make an important contribution to the development of adequate institutions on the local level.

26. Given the long-term nature of the impact of mine closure and the local response to it, it would be appropriate to plan long-term provision of technical assistance to communities. Because the capacity and needs of municipalities will differ and evolve over time, these programs should include an array of options that can be tailored to individual municipalities and that are re-visited periodically to confirm their continued relevance. In general, there is a high need for training municipal governments in a comprehensive approach to strategic municipal development. Effective and relatively low-cost technical assistance can be offered through seminars that bring together representatives of municipalities for an exchange of experience. Most important is to recognize the leading role of municipal governments in directing the response to the dramatically changed conditions of the life of the community and to provide them with the knowledge and skills they need for managing these complex processes.

27. **Enhance the private sector development component of the local development response.** Mitigation strategies sponsored by governments and supported by the World Bank tend to refrain from advocating large-scale enterprise development in the local development response, partly because of well-founded concerns that the coal industry could hijack this process, and partly

because of the sheer difficulty of carrying too many development initiatives at once. But unless restructuring is carried out in an environment of growth that is sufficient to absorb the shed labor, most of the jobs that are destroyed through mine closure will not be re-created through programs supporting individual and small businesses. Facilitating the growth of jobs at larger enterprises could also be particularly helpful in re-integrating into the labor force vulnerable groups who are least able to compete in these contracted labor markets. The focus of these efforts should be existing larger private/privatized enterprises or, in exceptional cases, SOEs that have a demonstrated commitment to restructuring.

28. A private sector development component could consist of provision of business consulting/technical assistance to (i) existing larger enterprises that are already major employers, (ii) medium enterprises that are seeking to grow, and (iii) local and regional governments that are seeking to enhance the role of the private sector in the economic development of their respective territories.

29. The provision of assistance to existing large enterprises has certain potential pitfalls that should be guarded against, notably SOEs that are themselves in need of restructuring. Given the risk that a large enterprise could absorb large amounts of finance without much effect, the type of assistance provided should be non-financial, such as strategic business planning, competitiveness assessments, and so on.

30. Local and regional governments can benefit from policy advice directed at strengthening the investment climate, increasing local/regional business competitiveness, private provision of housing and other municipal network-borne services and so on. When long-term strategic development plans include infrastructure-intensive projects, the scale of required investments is beyond the capacity of any level of government and underscores the relevance of a sustained effort to strengthen the capacity of municipalities and regions to attract investors, to work with creditors, etc.

31. **Deepen efforts to rationalize the housing stock and social assets and infrastructure.** In the typical mining town in which mines are being closed, the population is aging and contracting. Consequently, the need for certain types of social assets and infrastructure also declines. In recent years, most municipalities have understood the need to rationalize expenditures through closing kindergartens, consolidating schools and so on. The rationalization of the housing stock, while of greater significance given its impact on the municipal budget, is a considerably greater challenge than the rationalization of public buildings, however, for three major reasons. First, ownership of housing is sometimes legally ambiguous on the building level. Second, reliable information on building occupancy is typically lacking. Third, efforts to rationalize the housing stock are complicated by the partial occupancy of many buildings.

32. Capturing the gains from the rationalization of the municipal housing stock is not an easy task. At the same time, most municipalities cannot afford to disregard the huge potential of reforms in this area. In order to help ensure the successful continuation of efforts in this area, municipalities should strengthen their information base of the housing stock by working closely with neighborhood groups or (where they exist) building-level associations to identify unoccupied apartments. If financing is available, a program of municipal "buy outs" of

unoccupied apartments could benefit the municipality as well as the seller. Reducing the number of unoccupied apartments would also be a positive step towards the reduction of non-payments for utility services that were reported in towns that have experienced high levels of migration.

33. **Enhance migration or transportation support to households.** It is unlikely that direct financial support for migration could be made available in the volume required to match the demand that exists for such support in many communities in which mines have been closed. At the same time, recognizing that in many cases labor migration is a desirable phenomenon to help achieve a better balance between demand and supply on the local labor markets, there are social and economic gains to be had through strengthening local capacity to provide migration support to interested households. In cases of short-term, temporary or seasonal labor migration, municipalities and civil society groups can help protect the interests of the people living in the mining towns by coordinating information on employment prospects and confirming the legitimacy of employment offers that are extended from other locations. Efforts should be strengthened to remove barriers to migration, for example, housing or transportation. When families have decided to migrate permanently, or are considering permanent migration, municipalities can capture gains through better tracking of the housing stock and apartments that are potentially abandoned, and possibly acquiring apartments from families wishing to migrate. In view of the transportation constraints that exist in many areas, a less radical solution to balancing the local labor market would be to provide subsidized transportation for workers willing to travel to other cities for employment.

Introduction

1. World experience in coal sector restructuring has shown that the process has high up-front costs, is usually accompanied by various forms of protest as well as longer-term distress in the affected regions, and is so politically contentious that its implementation is often delayed or protracted over years. In the typical case of a State-owned industry, by the time restructuring is recognized as inevitable, the industry is heavily loss-making and unable to function without significant, often unsustainable support from the general budget. The imperative for the government in such a case is to contain costs as quickly as possible.
2. Restructuring of the coal sector generally is a major policy initiative for any government, not only because of the State ownership of the sector and the lifeline provided to the industry through subsidies, but also for compelling political and social reasons. In the “social contracts” between the State and coal trade unions, the State generally assumes a level of responsibility vis-à-vis the sector that exceeds that reflected in its relations with other industries.
3. The geographic concentration of coal mining is another important aspect of the rationale for a government’s active role in supporting efforts to mitigate the social impacts of sector restructuring and to create new jobs for laid-off workers. Historically, the settlements that grew up around coal mines did so primarily to serve the labor needs of the mines. Even in countries with viable coal industries, advances in coal mining technology have led to a high degree of mechanization in the industry, resulting in the steady downsizing of the labor force. The less fortunate variant of sector restructuring is mine closure due to the exhaustion of reserves that can be economically recovered, in which case all the labor is shed, usually over a short period. In either case, coal sector restructuring has an immediate negative impact on the local labor market and economy. In addition to the workers laid-off directly from the mines, jobs are lost in the auxiliary industries that serve the coal mines and in local service industries used by households. The closing of mines also means the loss of enterprise and personal taxes for the local budget, which has obvious detrimental effects on the provision of municipal services.
4. It is striking that even in highly developed economies, the long-term impact of sector restructuring persists decades after its implementation.¹ In the United States, a country with a long tradition of labor mobility, the historic coal regions are plagued with endemic poverty. In Appalachia, despite decades of labor force downsizing due primarily to mechanization, coal remains the lifeblood of the local economy in counties historically dominated by the industry in the absence of other significant forms of economic activity. The technological transformation of the industry has led to a relatively small number of skilled, well-paid workers, while considerably greater numbers of people, whose families worked the mines over generations, live in a state of chronic unemployment, or under-employment in the informal economy, without developing marketable labor skills.² Decades of Federal and other types of assistance, as well as the overall growth of the U.S. economy, have done little to change the status of the Appalachian coal communities as one of the country’s greatest development challenges.

¹ Neil (1992) is particularly useful in providing an international comparison of how mining towns have coped with closure in several OECD countries. While the general experience of these countries differs in obvious ways from the experience of countries of Eastern Europe, from the point of view of the problems that face communities in which mines have been closed, the similarities are striking.

² Duncan (1992), particularly pp. 114-125 on the effects of coal industry downsizing on the regional labor market.

5. In formal restructuring programs, most of the financial costs of the social aspects of restructuring are incurred early on in the process. Severance payments tend to be the single most costly item as they are made to all workers separated from the industry, although the magnitude of these payments varies depending on the conditions of downsizing package and specific attributes of the workforce. Some level of counseling and retraining is also usually provided. Governments also usually provide funds for temporary public works programs in order to mitigate the short-term negative employment impact of coal sector restructuring, providing some income to the workers and necessary services to the community.

6. Consistent with the front-end bias of the costs to the budget of coal sector restructuring, most of the monitoring and evaluation carried out to assess the impact of restructuring and the effectiveness of the mitigation efforts tends to focus on the short term, when workers are being laid-off, and when the risk of social disruption and related political action is perceived to be at its highest. The research described in this report was undertaken in an attempt to look beyond the short-term effects of coal sector restructuring and the relatively narrow confines of the sector and its workers to the broader affected communities several years after mine closure in three countries in Eastern Europe and the Former Soviet Union (EE/FSU).

Coal Sector Restructuring in Eastern Europe and the Former Soviet Union

7. The countries of EE/FSU that have significant coal industries are no exception to the generalized description above of the impetus behind governments' decisions to engage in sector restructuring. In addition, these countries possess some unique features, or more extreme manifestations of similar attributes, that distinguish their experience with coal sector restructuring from that of other coal-producing countries. And while the formerly socialist economies know many other examples of "one-company towns", the coal industry and the communities dependent on it, nonetheless, possess a number of characteristics that distinguish them from other small and medium-sized towns dominated by a single industry.³

8. First, the coal sector has been in something of the avant-garde of industrial restructuring in transition economies, and governments in the region have borrowed from the World Bank and other international lenders to finance the restructuring of the coal industry.⁴ While this may appear at first to be a formal rather than substantive indication of significance, in fact it reflects the priority that governments have accorded to coal sector restructuring in the general context of economic transition, and suggests that the lessons of coal sector restructuring that can be derived today may be of broader relevance to restructuring programs yet to be undertaken. A second (related) factor distinguishing the coal sector and communities dependent on it from other industries is that in all countries the coal sector was (in some cases, continues to be) unique among industrial sectors of the economy in the levels of subsidization received from the national budget (indeed, it is ultimately this factor that drives the decision to embark upon restructuring). Third, the industry was generally a major employer even in the national context prior to restructuring. In Ukraine, for example, the entire coal industry employment was estimated at 4.3% of the country's labor force in 1994. Fourth, certain attributes of the labor and the labor force (underground work in brigades often carried out by men who have worked only in the coal

³ Expert Institute (2000) provides a thorough review and analysis of "one-company towns" in Russia.

⁴ Annex 2 lists World Bank loans to Poland, Romania, Russia and Ukraine in support of coal sector restructuring.

industry) complicate efforts at labor redeployment after workers are separated from the industry. Fifth, communities dependent on coal (or extractive industries in general) are arguably more vulnerable than communities dominated by other types of industry given the volatility of energy commodity prices and, most fundamentally, the non-renewable nature of the principal economic activity. A coal mine cannot be refitted to produce another product, while a factory conceivably can. Finally, extractive industries takes a particularly severe toll on the environment and physical infrastructure of the community, to say nothing of the health of those who work in the industry or live in the area.

9. Four countries in the region – Russia, Poland, Ukraine, and Romania (in order of their prominence as producers) – have undertaken major reforms of their coal sectors in recent years. The backdrop to these reforms has been the historic transformation from the centrally planned economy to a market-based system. For most countries (Poland is an exception to some of what follows, and is also the one major coal-producing country in which the research was not carried out⁵), the transition has been characterized by the collapse of traditional manufactured output and the steady contraction of the formal economy, raising for some the disturbing prospect of de-industrialization; high inflation in the early years that wiped out the savings of many and that, in the former Soviet Union, was brought under control through monetary policies so tight that liquidity left the system and pervasive non-cash settlements took root; contracting state budgets and chronic budget deficits; economic output that is not competitive in world markets; and general social and economic dislocation. In addition, the socialist legacy of the region meant that mining enterprises not only mined coal, but also provided housing and some social services to the communities. Part of the impact of sector restructuring arises from the transfer of social assets to other agencies that at least initially do not have the capacity or the resources to manage those assets.

10. Coal-sector-specific issues that presaged the major restructuring programs included: inauspicious geological conditions in many basins; obsolete equipment and years of inefficient investments; poor sector management; steadily decreasing production; productivity levels among the lowest in the world; cross-subsidization from the most profitable to the most severely loss-making mines; wretched health and safety conditions; acute levels of non-cash payments from customers, particularly the power sector; and consequently, high levels of accounts payable to creditors, tax arrears, and months of wage arrears to workers.

11. Confronted with this inventory of coal sector woes that erupted under the conditions of the early transition period, the initial response of governments throughout the region was to allocate even higher levels of subsidies to the industry. In Ukraine, state support for the coal industry in 1993 was equivalent to about 4% of GDP. In Russia, after prices were liberalized in the coal market, subsidies in 1994 rose to the equivalent of US\$ 2.76 billion, or more than 1% of GDP; the analogous proportion held in Romania in 1996. While the privileged position of the coal sector (proclaimed by early socialist planners the backbone of the industrial economy, and an important vehicle for transforming the peasantry into the proletariat) and the socialist legacy of self-reliance helped perpetuate the belief that the sector was somehow absolved from the need to be competitive, it soon became clear that such levels of subsidization were unsustainable in the

⁵ Budget constraints limited the research to three countries; in view of the sustained positive economic growth in Poland, it was decided to focus on Romania, Russia, and Ukraine, which commenced their coal sector restructuring in the more typical and challenging conditions of economic contraction.

face of the other demands on the shrinking national budgets. From this recognition followed the decision, taken at the highest levels of government, to embark upon the restructuring of the coal sector.

12. Table 1 provides an overview of the coal extraction workforce in Poland, Romania, Russia and Ukraine before restructuring was launched, and the forecasted need for the downsizing of the coal extraction workforce in each country. As can be seen, coal sector restructuring involves a substantial reduction of the pre-restructuring mining workforce in all countries. In Poland, the least severe case, the pre-restructuring coal extraction workforce is projected to be reduced by slightly less than half. Restructuring in Russia is the most advanced from the point of view of downsizing achieved by the end of 2001 relative to the total forecasted need for downsizing, and least advanced in Ukraine from this perspective.

Table 1. Coal Sector Restructuring in Four Countries

	Poland	Romania	Russia	Ukraine
(i) Year restructuring policy adopted	1998	1997	1993	1996
(ii) Number of coal extraction workers at commencement of restructuring	243,000	113,000	373,000	410,000
(iii) Number of coal extraction workers at end 2001	145,000	46,000	178,000	300,000
(iv) Projected number of coal extraction workers remaining at end of restructuring ^a	133,000	18,000	160,000	150,000
(v) Total reduction in mining workforce planned over period of restructuring [(ii)-(iv)]	110,000	95,000	213,000	260,000
Forecasted % of workforce reduction over period of restructuring [(v)/(ii)]	45%	84%	57%	63%
% of forecasted workforce reduction completed by end-2001 [(ii-iii)/(v)]	89%	71%	92%	42%

^a World Bank estimates.

13. In addition to the large numbers of miners who are separated from the industry through formal restructuring programs, the crisis conditions prevailing in the industry typically lead to the large-scale departure of other workers. These are both the various categories of workers associated with mining but not actually engaged in extracting coal at the face or new development work, and workers employed at auxiliary enterprises and in other non-core activities (for example, social services) that were previously on the balance sheets of the coal enterprises. In Russia, for example, over the period 1993-2001, some 354,000 non-miners left the coal industry, which exceeds by far the number of miners who left the industry. Finally, the mass downsizing of the coal industry inevitably has a negative downstream impact on jobs in industries that supply the coal sector and in consumer-oriented industries that suffer as a result of the decline in household purchasing power.

14. Furthermore, in some cases high wage arrears drove workers out of the industry before the adoption of formal sector restructuring policies and the introduction of incentive packages designed to reduce the labor force. In Ukraine, for example, the total coal sector employment in 1994 was about 925,000 people (or, as noted earlier, about 4.3% of the country's labor force.) From 1994 to 1996 – that is, before the restructuring policy was adopted – this number declined

by 26%, to about 685,000 (of whom 410,000 were classified as extraction workers, as indicated in Table 1). In sum, while the reduction in the mining workforce is an important indicator of the scope and impact of restructuring, it should be stressed that coal sector restructuring has impacted many more workers both in the coal industry itself and in downstream and dependent industries. In these countries, sector restructuring has had a direct adverse impact on several million people living in a relatively limited total territory.⁶ Severance and other social mitigation benefits are typically made available only to the minority of those directly impacted by sector restructuring, the miners who are separated from the industry through formal mine closure or downsizing programs. From this perspective there is a disjoint between the sectoral parameters of restructuring programs and the actual social impact of restructuring.

The National Context

15. While the impetus behind the decision to embark upon coal sector restructuring and the goals that are pursued in doing so are broadly the same everywhere, individual countries possess unique attributes that influence the course of sector restructuring and the long-term impact of industry downsizing on impacted communities and consequently exhibit a wide variety of experience. This diversity is the result of many factors, including differing natural endowments, the history of the exploitation of the coal fields, patterns of economic and social development, the political economy of coal sector restructuring in the country, and the overall macroeconomic conditions that prevail in the country. This section provides an overview of the salient aspects of coal sector restructuring as it has taken place in Romania, Russia and Ukraine, including a description of the mining towns in which the research was carried out.

Romania

16. Of the three countries in which research was conducted, Romania differs from the other two for the obvious reason that it was not part of the former Soviet Union and, indeed, occupied a unique position among the Eastern European socialist bloc during the regime of Nicolae Ceausescu. From the point of view of its experience with coal sector restructuring, Romania is also unique for having launched sector restructuring through a voluntary downsizing program. And in the context of the World Bank's support to governments' coal sector restructuring programs in the countries of EE/FSU, the case of Romania is of interest because it is the only country in which the Bank has supported a major mine closure program through an investment loan as opposed to sectoral adjustment loans.⁷

17. Despite inherently poor conditions, the Romanian coal sector, like other extractive industries in the country, was extensively developed under the previous regime's drive for economic self-sufficiency. The emphasis on increasing production irrespective of costs resulted in a larger

⁶ A related indicator is the total population living in towns considered to be mining towns. While this is not an official statistical designation, it nonetheless has a working meaning in most countries due the existence of formal restructuring programs. In Russia, for example, at the end of 2001 the total population living in towns that are members of the Association of Coal Mining Cities was some 5.6 million, or slightly under 4% of the total population. In Ukraine, an estimated 5.7% of the total population in 2001 lived in municipalities considered to be mining towns on the criterion of the existence of at least one mine in the town, excluding Donetsk and Lugansk.

⁷ The Ukraine Coal Pilot Project (3 mines) was also an investment loan. While the modality of World Bank support can have potentially important implications for those engaged in carrying out industrial restructuring programs, a detailed examination of this technical observation is beyond the scope of this report.

industry than was economically justified and which consequently required extensive budget support. As the industry expanded, its relatively high wages attracted large numbers of workers from all over the country.

18. Romania is by far the smallest producer of coal of the countries examined here, and the mining towns are generally considerably smaller on average than the analogous towns in Russia and Ukraine. Nonetheless, the coal sector has been of significance on the national level in view of the all-Romanian character of its workforce, the high levels of subsidization provided to the industry, and more recently, as a result of the scope of the Government's sector restructuring program and the attendant resistance to further layoffs by the unions and general social unrest that has accompanied phases of the restructuring program.

19. The year 1997 marks the beginning of the Government's effort to restructure the coal industry through a voluntary program rather than the involuntary method of mine closure. A generous separation package consisting of up to 20 months of wages as severance was offered to workers in the coal and other extractive industries constituting Romania's mining sector. The resulting rush to accept the package, which was two to three times the size of what other industrial workers were being offered, far exceeded the expectations of the Government and the trade unions. By December 1998, about 83,000 miners (out of a total of about 173,000 workers total for coal and other mining industries) left the industry, including about 70,000 who had accepted the voluntary redundancy package (the others retired).

20. The Government also expected that a large portion of those accepting the separation package would return to their native regions. This expectation, too, proved to be inaccurate. The separation of so many workers from the industry and the low level of successful out-migration precipitated a sharp decline in general economic activity in the mining regions as the redundancies triggered further unemployment in local service industries, which was not adequately compensated for by labor redeployment efforts.

21. By January 1999, after the severance payments of the first large group of workers to accept the separation package were largely consumed and it became clear that employment options in the coal regions were extremely limited, the uptake of the separation package declined dramatically and mining unions went on strike in protest against continued high unemployment and the poor results of efforts to create jobs in the mining regions. Social unrest emanated from the Jiu Valley (which has suffered from a particular dependence on the coal industry but also enjoyed the highest visibility and political weight of Romania's mining regions), and trade unions led a march on Bucharest. The Government managed to contain the unrest through a negotiated settlement with the striking miners and the restructuring program has gone forward although employment opportunities in the mining regions remain limited.

22. The World Bank's support to the Government's restructuring program began later in 1999, with the provision of a loan targeted for the physical closure of 29 loss-making mines (20 of which are lignite and brown coal mines) and related social mitigation measures. In addition to the mine closure program that is being financed by the World Bank, the Government is financing the closure of mines with its own budgetary resources; about 60 mines have been closed under this program.

23. The elements of the social mitigation strategy supported under the World Bank loan that are directed at longer term aspects of alternative economic development include the establishment of microcredit funds; employment and training incentive schemes (employers are given an incentive to hire unemployed mining sector workers); and workspace centers to promote enterprise development and support start-up enterprises through business incubators at former mine buildings. However, the Government has been slow to implement most aspects of this strategy for fostering local development and absorbing the labor shed in the process of mining industry downsizing.

24. Uniquely in the case of Romania, the research was carried out in three mining cities (in addition to the capital and regional centers): Anina (Caras-Severin County), Motru (Gorj County) and Uricani (Jiu Valley). As can be seen in Table 2 (following para. 45), these are relatively small towns, particularly Anina and Uricani, that are highly dependent on the coal industry. Motru is a young city, having been established in 1966 as a mining town. Motru is also noteworthy for the facts that its workforce is mostly native to the region and that its land is good for agricultural use. Uricani is located on the periphery of the conurbation of the Jiu Valley. While agriculture is not an option in Uricani (or anywhere in the Valley), the town has derived some benefit from the political visibility of the Jiu Valley and the related financial support that has flowed to that region. Anina, in contrast, was included in the research project precisely because of its isolated situation and the absence of its political influence. Although located only 34 kilometers from the larger city of Resita, Anina is particularly crippled by problems of public transportation: the train that connects Anina to Resita takes six hours to cover the short distance. The road that connects the two towns makes it possible to make the trip in considerably less time by car or bus, but these forms of transportation are generally out of the reach of many residents of Anina.

Russia

25. Of countries that have undertaken coal sector restructuring anywhere in the world, Russia is noteworthy for a number of reasons. Even after the closure of 183 heavily loss-making mines over a few years, Russia remains one of the largest producers of coal in the world. The downsizing of the workforce has also been significant: the overall industry workforce (including workers involved in extraction, on the surface, in administration and social assets, etc.) has declined from about 900,000 in 1992 to 328,000 by the end of 2001. The restructuring of the coal industry has been in progress for almost a decade in Russia: *de facto* restructuring began in 1993, when the price of coal was liberalized.

26. Of the countries under review here, Russia has progressed farthest in implementing coal sector restructuring, which in addition to the program of closure of loss-making mines and related social protection and mitigation programs has included notably the privatization of the sector. Of note, too, is the elimination of operating loss subsidies at the end of 2001, which is an achievement of enormous significance that not all coal-producing countries can claim even after decades of restructuring, and is directly linked to the successes in removing loss-making mines from production.

27. Aspects of the social mitigation response in Russia are of note. Concerning statutory payments made to affected individuals, as in other countries, the social protection policy in

Russia at the beginning of sector restructuring was limited to miners laid off from closing mines. Over time, this policy was expanded to include workers laid-off from continuing mines and, eventually, workers of auxiliary enterprises that were demonstrably directly impacted by mine closure. The extension of eligibility for severance and other payments to this latter group was late in coming, however, having been approved by Government in October 1999, and the problem of lack of financing for wage arrears and severance for workers laid-off from auxiliary enterprises remains acute in some areas. As for programs directed at the community, the long period of coal sector restructuring in Russia has allowed for a relatively long-term focus on local development and job-creation programs, which are examined in detail later in this report.

28. Russia has also borrowed more from international lenders for coal sector restructuring than Romania, Ukraine and Poland combined: over the years 1996-2001, the World Bank disbursed \$1.3 billion to Russia in the form of adjustment financing, and the Japan Bank for International Cooperation matched \$800 million of these disbursements, for a total of \$2.1 billion. The World Bank also extended a \$25 million technical assistance loan to assist the Government of Russia in the implementation of its coal sector restructuring program. The country's own budget funds devoted to the restructuring program over the years 1998-2001 (corresponding to the period of the World Bank's second coal sector adjustment loan for \$800 million, which was matched with the funds of the JBIC) were equivalent to about \$773 million.⁸

29. The remaining challenges in coal sector restructuring in Russia can be classified into those that pertain to the impacted communities and individuals, which is the subject of this report, and those that pertain to the industry itself, which will not be examined here. The achievements of restructuring notwithstanding, the challenges to the viable part of the industry are also formidable.⁹

30. Underlying Russia's impressive experience with coal sector restructuring is a great range of experience on the regional and local level. In some regions, such as the Kuzbass, a major coal basin in Western Siberia, the coal industry has good future prospects, and the remaining core of the industry has been able to absorb much of the labor shed in the course of mine closure. Other regions, such as the Moscow basin in Tula Oblast, or parts of the Eastern Donbass region (which geologically is part of the Donbass, Ukraine's major coal basin), have been severely impacted by mine closure, and remain depressed regions. Still other coal regions, notably those in the Far North and the Far East, face the problem of providing for the relocation of thousands of workers and their families back to "mainland" Russia from these remote territories with inhospitable climates that were developed extensively during the Soviet era.

31. Anzhero-Sudzhensk, in the north of Kemerovo Oblast, is the oldest coal town of the Kuzbass. Anzhero-Sudzhensk's significance in the overall production of the Kuzbass peaked in the 1950s, and the town's coal industry has been in steady decline since the mid-1980s. The center of the industry has shifted to the south of the oblast, a few hundred kilometers away, and it is clear that Anzhero-Sudzhensk's significance as a coal town will continue to wane: two major

⁸ The restructuring program consists of the social protection, physical closure and local development programs. In addition to these subsidy categories, the Government disbursed subsidies that are not considered as part of the restructuring program in this context (for loss-making production, investments, safety etc.)

⁹ A recent and fairly extensive treatment of the challenges to the viable, mostly privatized part of the coal industry can be found in Artemiev and Haney (2002).

mines have been closed in recent years and one remains in operation.¹⁰ At the same time, the coal industry continues to provide about 30% of Anzhero-Sudzhensk's budget revenues. Anzhero-Sudzhensk is home to three major employers outside the coal industry: a machine-building factory, a pharmaceutical factory, and a glass factory. Anzhero-Sudzhensk also has some important infrastructure advantages: it is located on the Transsib railway, and the fiber optic cable running from Japan to Europe passes through the town.

32. Novoshakhtinsk is located in Rostov Oblast, in the Eastern Donbass coal basin on the border of the Ukrainian Donbass, with which it shares a common history, economic and geological conditions and extremely limited prospects for the coal industry. Novoshakhtinsk has been hard-hit by mine closure under the restructuring program, having seen the closure of five mines in recent years and probably facing the prospect of more closure in the months to come. At the same time, thanks to the particularly dynamic efforts of the city government, Novoshakhtinsk enjoys a good reputation for having established an effective infrastructure for the development and support of small business. The city was one of the municipalities selected for participation in the European Union's TACIS-MERIT program¹¹.

33. The significance of Anzhero-Sudzhensk and Novoshakhtinsk as mining towns that have suffered from mine closure is illustrated by their status as recipients for subsidies for local development programs. Of the several dozen municipalities which received subsidies from the Federal budget to finance local development programs (the number of municipalities averages around 65, varying from year to year depending on the mine closure program), both cities were among the top five recipients in 1999, each having received on the order of \$1.2-1.3 million. In 2000, Anzhero-Sudzhensk received about half the amount of the previous year, while Novoshakhtinsk again received a little over \$1 million, reflecting the greater impact of mine closure in that town.

34. In mid-2002, coal sector restructuring in Russia is at an advanced stage. Some of the program's major goals have been achieved, such as the privatization of the industry and the elimination of the subsidization of loss-making production, and the fundamental performance indicators of the industry itself in recent years have been encouraging. With the exception of one major company in Rostov Oblast, it is unlikely that more layoffs will be effected in connection with mine closure. These and other factors indicate that 2002 may become the final year of formal implementation of coal sector restructuring in Russia as it has been known in recent years. At the same time, it is likely that the Government will continue to finance efforts to make good certain critical liabilities, such as environmental damage, social infrastructure and housing and relocation, although the level of financing and the exact mechanism are at present unknown.

Ukraine

35. Ukraine possesses a large and old coal industry that is now for the most part uneconomic with a particularly poor productivity and safety record. In 1996, the Government adopted a

¹⁰ Data on unemployment underscore the severity of impact of mine closure on Anzhero-Sudzhensk. In 1998, some 83% of the officially registered unemployed in the city were former coal industry workers.

¹¹ TACIS-MERIT provided assistance to five mining municipalities in Russia to help them formulate and implement an integrated strategy for municipal development focusing on improving the diversification of the local economy, strengthening the private sector, and enhancing local business development.

restructuring policy consisting of a program of closure of about 20 uneconomic mines per year, improvement of the operation of the mines with the best long-term prospects, and provision of production subsidies to mines which have no future but which the Government had decided against closing immediately for social and political reasons. In the same year, the World Bank extended two loans to the Government in support of coal sector restructuring. The Coal Pilot Project helped initiate the restructuring program through the closure of three mines, and was followed by an adjustment loan in support of coal sector restructuring. To date, about 90 mines, mostly in the Donbass, have been taken out of production and about 190 mines are still in operation.

36. In September 2001 the Government adopted a program called Ukraine Coal 2001-2010 that, in essence, reverses its earlier commitment to carrying out a comprehensive reform of the coal industry, and reverts to the earlier policy of supporting increased production through high levels of subsidization of the industry. The motivation behind the change in policy probably has many facets, including: the influence of the vested interests that benefit from the subsidies that are presently being channeled to the industry; the continuing poor general economic condition of the country and concerns over exacerbating the difficult socio-economic situation of the coal regions; the energy security argument, according to which coal, as an indigenous energy source, deserves special protection from the Government, including not holding the industry to the strict parameter of profitability; and the failure to date of municipalities heavily dependent on the coal industry to diversify their economies. It is also reasonable to expect that the specific experience of the first significant wave of mine closures, which had a particularly harsh impact on some municipalities, would be an influential factor in recent pressures to abandon the earlier policy of setting the industry on the path to self-financing through closure of heavily loss-making mines, among other means.

37. The two municipalities selected for the research in Ukraine, Gorlovka and Stakhanov, are both located in the Donbass, the traditional center of coal mining in Ukraine and home to some of the oldest mines in the entire region (the Donbass was industrialized in the early part of the 19th century.) Gorlovka is located in Donetsk Oblast, which is one of the most significant industrial regions of Ukraine, indeed, of the former Soviet Union. Neighboring Lugansk Oblast, where Stakhanov is located, is also heavily industrialized and densely populated. The long history of the settlement and development of the Donbass has resulted in a high density of population and a pattern of urban development in which coal municipalities often run together seamlessly, without apparent borders between municipalities.

38. Stakhanov has been particularly hard-hit by the closure of uneconomic mines, with all four of the mines operating in the city having been closed almost at the same time. Given the scope and timing of the mine closure, the downstream impact on other industries was particularly severe. Alternative economic activity in the city includes notably the development and reconstruction of light industry (particularly textiles, a pattern that has followed mine closure in other countries). In Gorlovka, one of the larger cities of Donetsk Oblast with a population of just under 300,000, three mines have been closed. The city is home to a large pharmaceutical factory employing more than 5,000 workers as well as a number of other industrial enterprises.

Concept and structure of the research

39. The research described in this report was carried out with the goals of assessing the longer term impact of mine closure on the entire community, evaluating the effectiveness of the mitigation policies that have been used to date, and developing policy recommendations to address the problems identified by the research. While it is premature to speak of the truly long-term impact of mine closure on the community, the subject of the research was communities in which large-scale downsizing of the mining workforce began at least five years ago, in 1997 (although in many cases mines were also closed subsequently). In order to capture insights on current phenomena and trends that are poorly reflected in statistics, the research was designed primarily as a qualitative study in two phases consisting of in-depth interviews with national, regional and local experts and key informants (in the first phase) and impacted groups of the population and “response” groups such as local entrepreneurs (in the second phase). The first phase of the fieldwork for the qualitative research was carried out over the period September-December 2001, and the second phase fieldwork was carried out in February-March 2002.

40. In addition, the research carried out in Ukraine included a quantitative component in which survey data were collected on employment and living conditions in the mining municipalities as well as in municipalities in the rest of the country. The survey fieldwork was carried out in Ukraine in January-February 2002. Also reported here are the findings of a recent evaluation of the viability of jobs created under local development programs in Russia that was financed by the World Bank loan providing technical assistance to the Russian Government’s coal sector restructuring program and carried out by independent Russian consultants.

41. The main areas of investigation were: (i) the overall economic and social impact of restructuring; (ii) employment impact of mine closure; (iii) development of an alternative economic base; (iv) social consequences of mine closure, household coping strategies; (v) environmental impact of mine closure; (vi) municipal, social and utility services; and (vii) civil society (awareness, participation). Questions on any given issue were formulated with respect to the competence and concerns of the given sample group; thus, for example, local administration officials were interviewed on their vision for developing an alternative economic base, while local entrepreneurs were asked to evaluate the climate for business and the effectiveness of policies to facilitate the development of economic activity outside the coal sector.

42. *Selection of research sites.* Contrary to the popular image of the mining town and the tendency in common parlance to generalize experience, coal mining towns and settlements display a great diversity when considered from the point of view of such basic indicators as the composition of their populations, the local economy’s dependence on the mining sector, the nature of other existing forms of economic activity and the prospects for developing them, and so on. The selection of the mining municipalities as participants in the research was based on a combination of quantitative and qualitative factors. The first phase of selection was based on two quantitative factors: (i) a high pre-restructuring share of coal sector employment in the overall workforce of the municipality; and (ii) a high impact of coal sector restructuring as measured by a substantial reduction in coal sector employment as a share of total employment in the municipality. This seemingly straightforward selection task was complicated by difficulties

in collecting comparable data on the sectoral structure of municipal employment, although this problem was generally overcome through various means.¹²

43. The second stage of the selection of municipalities was based on the existence of alternative economic activity or the possibility of developing it. Truly isolated mining communities that were developed with the sole purpose of mining coal and in which no other meaningful economic base was developed (such as the mining towns in Russia's Far North) were excluded from consideration as research sites in view of the limitations their isolation places on the options available to these communities for future development. Such communities, however, constitute a small part of the total of coal municipalities. For similar reasons, the relatively small number of mining towns with good future prospects for coal production were also excluded as potential research sites even if several mines had been closed, as the continued dominance of the coal sector in the local economy would be the determining factor in the local labor market dynamics and in local strategic planning, thereby rendering these locations of limited relevance to the given research.

44. As a final stage in the selection process, the quantitative criteria were augmented with such qualitative considerations as the imminence of local elections, proximity to other towns with more diversified economies, the desirability of regional variation in the final selection, etc. By design, two municipalities were selected in each country; in the case of Romania, circumstances allowed for the inclusion of a third municipality in the research, which made possible the selection of a greater range of municipalities.

45. Table 2 provides an overview of the seven municipalities selected as research sites, with data on the population, number of mines closed in the restructuring period, and data on the dynamic of the coal mining workforce as a share of overall municipal workforce. The coal municipalities in Romania are of note both because they are smaller, by far, than the research sites in the other two countries (where, indeed, few coal municipalities are as small as their Romanian counterparts), and for the considerably greater share of the coal sector employed in the overall municipal workforce in the municipalities in Romania. These two factors reflect certain historical peculiarities of the development of the Romanian coal industry as noted earlier, when the industry underwent a great expansion and labor was attracted from around the country to the coal regions under the previous regime's drive for self-sufficiency. The coal towns in the two former Soviet republics, in contrast, were established as mining centers in the more distant past and are at a more mature stage of their development, with significant in-migration having abated long ago and greater diversification having been introduced in the local economies. At the same time, it is possible that methodological differences in data collection also account for some of the cross-country difference in the figures for coal sector employment provided below¹³.

¹² In the Soviet Union, data on coal sector employment were maintained without regard to the municipality, as this as such was not part of the sector. While such data have gradually become more available in the post-Soviet area, inconsistencies in their collection remain, as well as discrepancies between data reported by various agencies in the same location (municipal governments versus local branches of the national employment office, for example.)

¹³ For example, in the Russian mining city of Kiselevsk (not a research site), in the assessment of the deputy mayor for economic affairs (who is herself a veteran of the coal industry), although the official employment statistics indicated a 35% share of the coal sector in total municipal employment (2000), when coal sector employed who for various reasons are classified under other sectors are considered, coal sector employment increases to 48% of total municipal employment.

Table 2. Research sites: population, mine closure and coal sector employment.

Country, municipality	Population (year)	Number of mines closed	Coal mining workforce as % of total municipal workforce	
			Pre-restructuring	Current
Romania^a				
Anina	10,695 (1997) 10,575 (1999)	Five	40% (1997)	28% (2000)
Motru	26,869 (1997) 26,472 (2000)	Four	50% (1997)	27% (2000)
Uricani	13,078 (1997) 11,845 (2000)	Five	74% (1997)	37% (2000)
Russia				
Anzhero-Sudzhensk ^b	106,300 (1996) 99,500 (2001)	Two	27% (1994)	14% (2000)
Novoshakhtinsk	121,300 (1996) 117,400 (2000)	Five	22% (1996)	14% (2000)
Ukraine				
Gorlovka ^b	338,100 (1995) 293,800 (2000)	Three	n.a.	9% (2000)
Stakhanov	112,700 (1995) 99,000 (2001)	Four (all)	19% (1996)	0.3% (2000)

a) Redundancies in the mining sector in Romania were due not to mine closure, but to voluntary downsizing primarily in 1997 and, to a lesser extent, in 1998. b) Mining workforce as percentage of employed.

46. **Selection of research participants.** Annex 1 provides a detailed description of the research sample. In each country, the first phase of the research consisted of in-depth interviews with national, regional and local experts and key informants, the majority on the local level. In Romania, the first phase consisted of a total of 80 interviews (for three research sites and the related regional capitals and Bucharest); in Russia, 44 interviews; and in Ukraine, 49 interviews. The Phase 1 sample consisted of national-level officials working at the national level as well as at the local level (local representatives of the employment office, etc.); national-level non-governmental (civil society) groups, including trade unions; local officials; other local experts and representatives of civil society groups; and independent experts (national and/or local).

47. The preliminary findings of the first phase were used to guide the design of the Phase 2 sample, which consisted of in-depth interviews with various groups of the population impacted by mine closure and response groups such as local entrepreneurs. Seven groups were identified:

- presently unemployed or underemployed coal miners who were laid-off in connection with mine closure in 1997 (or left voluntarily, in the case of Romania);
- wives of unemployed (underemployed) miners;
- coal sector workers laid-off in 1997 and presently employed in any capacity;
- unemployed young people (not former miners);
- former miners who received training in another profession;
- local individual entrepreneurs who used the services of local business incubators and/or received microcredit to open their own businesses (where such programs exist);
- local entrepreneurs with 10 or more employees.

48. The findings of Phase 1 indicated the relevance of a primary focus on the employment impact of mine closure and locally-implemented policy responses to the changed circumstances of the local labor market and the structure of the local economy. This, in turn, resulted in a de-

emphasis on specifically defined socially vulnerable groups (although it was recognized that some of these groups could be captured in the Phase 2 sample groups as described above), and in a limitation of the Phase 2 selection to working age respondents who are actual or likely participants in the labor market. Other factors underpinning this articulation of the Phase 2 sample included the recognition that (i) members of socially vulnerable groups are generally recipients of some sort of benefits through nationally defined programs (pensions, disability, child support, etc.) and would consequently be less directly impacted by mine closure than individuals competing on the local job market; and (ii) particular aspects of social vulnerability or manifestations of relatively new problems such as the migration of the working-age population, or the emergence of drug abuse as a local problem were captured during the Phase 1 interviews and (in Ukraine) the quantitative survey.

Research Findings

Common Problems and Experiences

49. The most important findings that were common to all three countries are presented here, together with the experiences of individual countries when they have broad application to the other countries or to industrial restructuring programs in general. This presentation of general results is followed by selected issues that are particularly well illustrated by the experiences of individual countries. As coal sector restructuring was commenced in different years and its course has run differently in each country, the inevitable disclaimer concerning the difficulties of generalization must be made.

50. The findings presented here do not purport to constitute an assessment of all aspects of the programs of coal sector restructuring that are being implemented in Romania, Russia and Ukraine. The scope of this inquiry was limited to the impact of the rapid and large-scale contraction of coal sector employment in communities dominated by the coal sector. Thus, by design, most (but not all) of the sample is composed of those who have lost something as a result of coal sector restructuring: individuals who have lost employment and prospects for future employment and in some cases social stature, and municipalities which have lost revenues and gained increased expenditure and other sorts of responsibilities and problems.

51. Before the review of the substantive findings, an observation on the differing quality of the research results depending on the level of the respondent will help establish a general framework for interpreting the results. National-level experts, whether in the Government or independent, tend to have a broader view of the entire coal sector restructuring process and a greater appreciation of its rationale in the context of national policy. To the extent that they identify personally with the articulation and implementation of the coal sector restructuring policy or, more generally, with a centrist view, they may be inclined to defend the Government's policy as a principal. A particular view sometimes encountered among these respondents is that the coal industry and coal municipalities have been relatively privileged vis-à-vis the rest of the country in that a special program of restructuring has been implemented only for the coal industry and the coal municipalities have as a result enjoyed a level of support, even patronage, that sets them apart, although the entire country is going through difficult times. The positive assessments of coal sector restructuring that were articulated in the course of the research were generally given by respondents on this level.

52. Local experts and members of the population of the impacted communities, in contrast, view the term "restructuring" as synonymous with "mine closure", and often expressed the view that the process was chaotic, unplanned and carried out in haste without regard for the long-term consequences that the affected communities and individuals have been suffering. Too many mines were closed too quickly, and (some believe) sometimes even the wrong decisions were made about mine closure. For respondents on this level, the closure of mines was a severe blow to the life of the community, and the human price has been high.¹⁴ The distress and dislocation

¹⁴ A notable (but limited) exception to this typical local view was made in reference to the particularly severe levels of wage arrears that prevailed in Russia and Ukraine in the early and mid-1990s. Workers received direct gains from mine closure when their separation from the industry was associated with repayment of their wage arrears (which in the average case in Russia were much greater than the severance that was also paid).

caused by mine closure are all the greater when contrasted to the industry's once privileged status and the high wages that were paid in the coal industry; many individuals go through a difficult process of psychological and social adaptation to their changed circumstances.

53. The view that the social aspects of coal sector restructuring and specifically the various social mitigation policies and job-creation programs were given short shrift or were late in the implementation was voiced by respondents on all levels in all countries. The disjunction between the sectoral limitation of the benefits provided and the actual broader social impact was raised as a matter of concern (indeed, in some cases benefits have been limited even within the coal sector, with miners the most privileged, while other workers have not been eligible for separation benefits).

54. The point of this distinction between the various levels of respondents is to underscore the extreme degree of alienation of basic positions, which is a condition resulting from the very nature of sector restructuring. The gains of coal sector restructuring are generally captured outside of the impacted communities, most notably by the national government in the form of reduced subsidization and sometimes revenue from the privatization of viable enterprises, while the negative impact is concentrated locally.¹⁵ One implication of this discrepancy between where the benefits and costs of sector restructuring accrue is the likelihood that the costs of coal sector restructuring may be underestimated during the initial period of analysis and preparation for implementation of the reform program, particularly as concerns the impact (cost) of restructuring on workers and others outside the coal sector.¹⁶ A related implication of the inherent alienation between the different levels of stakeholders is that long and difficult periods of transition and adaptation are probably inevitable in cases of industrial restructuring. Mitigation policies are necessary, but it is also important to recognize their limited potential and the time lag between the imposition of the social and environmental impacts of mine closure and their eventual mitigation.

55. The research findings have been grouped into the following broad areas of impact which are discussed in detail below:

- Employment and Labor Migration
- Municipal and Social Services
- Community Cohesiveness
- Environment

¹⁵ To the extent that restructuring succeeds in putting the industry on a more stable footing, workers retained in the industry are, arguably, local "winners" of the restructuring process. At the same time, the interviews with the current coal sector workers revealed a general sense of insecurity about the prospects of sustained, long-term employment in the industry, which is not surprising given that in most cases, restructuring is far from complete.

¹⁶ Annex 4 provides an overview of the various cost-benefit analyses carried out in the context of World Bank investment loans in support of coal/mining sector restructuring in Romania and Ukraine.

Employment and Labor Migration

56. By all accounts and in all research sites, the problem of employment is one of the most serious and long-lasting consequences of mine closure, even five or more years after the mass contraction of the mining workforce.¹⁷ And while the overall economic and employment situations differ dramatically between the research sites, mining communities in all three countries have in common not just the problem of the quantity of jobs but the quality as well. The scarcity of long-term, stable jobs providing livable wages is a problem everywhere, including places where research respondents reported an improvement in labor market and general economic conditions in recent years. The long-term unemployment and under-employment that is endemic in the mining towns has led to a worsening of living standards for many who remain, and the impoverishment of some; a qualitative change in the nature of employment, with the emergence of informal, insecure forms of employment at lower wages with fewer legal and social safeguards, including the loss of accumulation of service in the formal employment system (some employers wish to avoid paying the social taxes associated with formal employment), and sometimes outright fraud of workers when they are not paid for labor in the informal sector; to significantly changed perceptions of future employment and life prospects among young people; and to the emergence of groups that are particularly vulnerable in these highly competitive job markets where the demand for jobs has consistently outstripped the supply of jobs over several years. To be sure, these problems are not unique to the coal municipalities, and the coal municipalities do not exist in a vacuum, separated from the rest of the country. But the general economic difficulties of most transition economies are intensified in the mining towns by the destruction over a short period of a large number of jobs in the industry that is dominant in the local economy and the downstream destruction of jobs.

57. Viewed broadly, there are two basic types of response to the dramatically worsened local labor market conditions following mine closure: (i) local development and job-creation efforts, and (ii) migration. Both types of response are considered here.

58. Local development and job-creation. A standard policy response to the high unemployment that can arise from industrial restructuring is to foster the diversification of the local economy through creation of jobs outside of the impacted sector and to seek to improve the match between the available jobs and workers' skills through various active labor market policies. In Romania, Russia and Ukraine, among the common mechanisms used in pursuit of these goals are: the provision of microcredits (sometimes grants) to individual entrepreneurs and subsidized credits to small and medium enterprises; technical assistance and support for business development through business incubators and workspace centers; and programs matching job-seekers with potential employers through subsidized on-the-job training or training in another profession, in addition to the more traditional local employment offices that provide information on vacancies to job-seekers. Public work programs are also a common and important policy response to mass unemployment, although these are generally transitional programs that do not seek to create permanent jobs. Sometimes these locally-focused programs are complemented with efforts to attract new investments by conferring upon the region a special status (e.g.

¹⁷ Quantitative surveys and analysis of official statistics have also found a more difficult employment situation in mining regions after the implementation of sector restructuring. See, for example, the analysis of the survey carried out in Ukraine later on in this report and NAD (2001), which found that the decline in employment in mining regions in Romania was more dramatic than the decline at the national level.

“disadvantaged region”) that provides such enticements as tax holidays. In regions in which mine closure has taken place, it is also common to promote the use of the industrial space and surface buildings of the closed mines for alternative industrial purposes.

59. Severance payments to laid-off workers are also sometimes considered by policymakers as a form of seed capital that workers will use to start businesses, and/or to migrate. In the countries under review here, this expectation was most prevalent in Romania, where the terms of the severance package were more generous than in the other two countries.

60. Among the general observations that can be made on the basis of the research results from all locations is that there is a long and steep “learning curve” of several years before the various local development efforts and active labor market policies are established and begin to have a positive impact. There is a discrepancy between the swiftness of the emergence of the problem (large-scale unemployment following industry downsizing) and the capacity of response systems on all levels to react, even under the best of circumstances (which normally do not prevail). Romania is arguably at one extreme in this regard, having stimulated a mass downsizing of the industry in 1997 through a voluntary separation package without having in place any mechanisms to absorb the shed labor or to otherwise foster job-creation. Since then, the Government has been slow to implement its strategy for local development, and critical elements of the strategy for dealing with the severe employment problem of the mining regions are not yet in place. These research findings are consistent with studies of active labor market programs, even in countries where they have been carried out for years and where more resources have generally been available to facilitate program implementation and to monitor and evaluate programs than has been the case in the countries in which research was carried out.¹⁸

61. The case of Russia (which also experienced a long learning curve with lost opportunities along the way) is worthy of mention in view of the relatively long period of the consistent and well-financed implementation of the Government’s coal sector restructuring program and specifically the local development programs that were launched in 1996 and are still receiving financing. An evaluation of these programs was recently carried out, and the results of this evaluation are described in the country section below.

62. The second general observation is that while support to individual and small businesses is an important component of the policy response to the employment problem that arises from mine closure, and one whose potential has not been fully realized in most locations, it is equally important to recognize the limit to the job-creation and economic diversification capacity of policies supporting microcredits, loans to small businesses, etc. The research found several examples of such support programs that respondents characterized as successful and useful but “a drop in the bucket” of the total need. Moreover, the development of small businesses, which are overwhelmingly oriented to local markets and household consumption, is constrained by the limited household purchasing power in communities impacted by mine closure. There is a qualitative limit to these programs as well: the skills and appetite for risk that are required to survive as a small entrepreneur, or even as an employee of a small entrepreneur, are particular, and this research is consistent with the findings of many social surveys that indicate that only a small portion of the population considers the small business sector as a viable option for themselves. And while the small business sector is beginning to make an appreciable

¹⁸ See, for example, Dar (1999).

contribution to revenues collected by municipal budgets, that contribution is still relatively small (at highest around 15% of total revenues in the cases reviewed here).

63. Here, too, Russia's experience may be informative. The financing made available to coal municipalities for local development in the years 1998-2001 was sufficient in the sense that the municipalities themselves acknowledged that they had reached their absorptive capacity to assimilate these funds. Even under conditions of relatively efficient implementation of the funds allocated to local development programs (that is, not counting the first two years of implementation, 1996-97), the number of jobs created over the reference period was equivalent to only about 18% of those who entered the job market as a result of mine closure. In the course of the research, the mayor of one of the cities that has been one of the largest recipients of funds for local development programs expressed the view that the development of the small business sector, while one of the uncontested achievements of recent years, had probably reached its limit.

64. A final general observation which follows from the second observation, and also is suggested by the Polish experience (and inversely by the Romanian experience), concerns the importance of the role of general economic growth in absorbing the labor that is shed through mine closure. A Russian labor expert who participated in the research identified three distinct phases of the employment impact of mine closure and the capacity of local and regional labor markets to absorb the shed labor against the background of general economic developments in Russia in recent years:

- (i) the initial period of mass layoffs through mine closure, when the economic situation in the country was not very good, with the result of high unemployment and difficult social consequences (one may recall the "rail wars" of 1998 when miners occupied the country's major rail arteries). At this initial stage local development programs were not in place; that is, the policy response was inadequate.
- (ii) the subsequent period of the beginning of the adaptation, characterized by the establishment of the local development programs in their present form in 1998 and the operationalization of other policy responses; and
- (iii) the latest period, beginning approximately two years ago, characterized by a dramatic drop in unemployment against the backdrop of economic growth in Russia.

65. The remainder of this section considers selected issues of relevance to local development efforts and the local labor market.

66. *Temporary public works programs.* Public work programs are commonly implemented in response to the conditions of high unemployment that follow the downsizing of the industry through closure or voluntary separation programs. Although typically offering low wages and temporary by design (and hence, not an effective means for addressing the longer-term problems of job-creation and economic diversification), public work programs can nonetheless be an important part of the initial policy response to mine closure in that they help relieve social tension, provide some level of income to workers, and are focused on projects of social value (repair of social infrastructure, maintenance of the housing stock, and so on). Public works programs are also amenable to targeting assistance to more disadvantaged groups, such as older workers or women. Priority should be given to establishing these programs early on in the restructuring process, before initiating the downsizing of the industry. Eligibility for participation in public works programs should be open to all who are interested (and willing to work for relatively low wages), that is, not limited to the coal sector.

67. *Microcredits, small and medium business development.* Policies that promote the development of individual entrepreneurship and the SME sector are a standard component of the response to industrial restructuring. Even if the demand for this kind of assistance is limited, as is the potential of small business to contribute to the resolution of the employment problem, at least in the assessment of municipal officials who participated in the research, the launching of microcredit and small business programs early on in the post-closure period can send a positive message in an otherwise highly depressed environment. At the same time, the basic challenge of ensuring an acceptable return to these public investments in job-creation should be noted, and this challenge is compounded by the difficulties in carrying out systematic *ex post* evaluation of the programs after some appropriate period of implementation.¹⁹

68. A particularly important and relatively low-cost aspect of ensuring the success of these programs is the establishment of an infrastructure to support small business, e.g., business incubators, workspace centers and other facilities where individuals can receive assistance in preparing business plans, successfully navigating the bureaucratic requirements of starting a new business (including simply assistance in properly completing forms), courses in the fundamentals of business, marketing, management, sales and advertising, and so on. The experience of Novoshakhtinsk is noteworthy in this regard, and is described below in Box 1. In a number of locations, European Union programs were singled out as effective examples of this kind of technical assistance, although respondents regretted the small volumes of these programs and the fact that they were typically under implementation for only a couple of years.

69. Experts respondents in several locations noted that their experience demonstrates the relative desirability of expanding jobs at existing enterprises compared to starting a new enterprise. The cost-per-job at an expanding enterprise is generally lower than at a new enterprise, and established, existing enterprises have good potential for absorbing labor. Also, those enterprises that market their product not only locally (where purchasing power is limited) but also outside the region tend to be more successful.

70. On the subject of barriers to establishing and expanding small businesses, the comments of entrepreneurs who participated in the research echoed the results of general studies of the investment climate and the development of the SME sector. Obtaining credit from banks is one of the biggest problems, particularly for the smaller entrepreneurs, who have little to offer by way of collateral that is acceptable to the banks. This is part of a much larger, economy-wide problem that is unlikely to change for the better soon, and the general problem of the access to credit underscores the important role that has been and can still be played by credit programs offered by governments and international donors.

71. In all countries, entrepreneurs complained of the excessive bureaucracy that attends the creation of a new business as well as its perpetuation over time. Resolving these obstacles can be a time-consuming and sometimes costly matter for a small business. Romania has recently

¹⁹ In Russia, where coal municipalities have received targeted Federal funding to implement such programs for several years, expert respondents on both the local and national levels cited the positive role played by these programs in reducing social tension and helping to create jobs. In Russia's case, as described later on in this report, the first extensive evaluation of the local development programs took place only after almost six years of implementation.

focused on the problem of reducing the administrative barriers to establishing new businesses, requiring, for example, that new businesses be registered within 30 days of the submission of the application. At the moment, the implementation of this new initiative is weak, but with time and experience it may yield creative solutions to this problem.

72. A related problem is the tax burden on small businesses, which entrepreneurs usually consider excessive and, what is perhaps worse, unpredictable. Entrepreneurs spoke of the disincentive to produce and expand business that results from high taxes, and of the increased bureaucratic power that inconsistent application of taxes gives to local authorities. Two obvious and detrimental consequences of this situation are the creation of the potential for corruption, and the retreat of some part of the SME sector into the informal economy to avoid paying taxes.

73. *Professional retraining.* Professional retraining in one form or another has been offered in all three countries. The general experience is that the demand for these programs has been limited (for a variety of reasons that could be termed objective and subjective), and the experience of those who received training in another profession has been that actually finding and retaining a job in the new profession has been difficult, even when the training itself has been of a high quality. Many interviews with laid-off miners off revealed a deeply skeptical attitude about the value of learning a new profession. It is of note that this attitude can be found both in locations where the local employment situation has begun to improve, sometimes thanks to positive developments in the coal industry itself (as in Russia's Kuzbass), and in locations where the employment situation is particularly poor, often because of recent mine closure. In places where the coal industry is hiring, laid-off miners often prefer to seek re-employment in the coal industry. And where, on the contrary, the industry is not hiring and unemployment is high, unemployed mining workers are often cautious and doubtful of the value of retraining that is not likely to lead to viable employment prospects. The explicit linking of retraining with job placement, including the provision of some level of incentive to the new employer, as in Romania, would appear to be the most sound approach to the administration of these programs, although there are challenges to getting the incentive right and overcoming the negative image of former miners as workers in other fields that is often encountered among potential employers, including some of the research participants.

74. *Disadvantaged region status.* This idea has received its most extensive development in Romania, although in other countries it has also been advocated by regional and municipal groups as a way of attracting investments. Of the total of 27 regions that have been granted this status in Romania, 23 are mining regions that received the status in 1998-1999 for a period of 10 years under criteria that have since been made more stringent. Under the original criteria, this status was granted to regions (i) in which registered unemployment was 25% greater than the national unemployment rate, (ii) considered mining regions in which mass layoffs had taken place, or (iii) in which more than 25% of the workforce had been declared redundant as a result of mass layoffs. The revised and stricter criteria require that the registered unemployment in a region be at least three times greater than the national average. Most expert respondents in Romania agreed that this policy has not resulted in the anticipated increase in investments and new jobs. One of the reasons for this is the poorly targeted nature of the original criteria used to determine eligibility for this status, which reduced its effectiveness and tends to cancel out whatever benefit might accrue to disadvantaged regions. The result is that the competition for limited investment funds has been decided by the usual factors that are of significance to investors: regions with superior infrastructure and a more qualified and flexible workforce and

generally better investment climates win out over the most disadvantaged regions. Another reason for the lack of success of this policy is the existence of other legislation such as the law on SMEs that in part duplicates the provisions of the legislation on disadvantaged regions. Enforcement has also been difficult: some investors have registered businesses in disadvantaged regions in order to receive the benefits without actually producing anything and without creating jobs. The government has recently taken steps to improve the impact of this policy by strengthening enforcement, limiting the eligible activities, and stiffening requirements for the minimum number of jobs to be created (increased from 1 to 10).²⁰

75. Severance as seed capital. It is sometimes considered that the severance payments made to workers upon separation from employment can serve as seed capital to be invested in new small businesses and/or to facilitate migration to a place where the individual could start a business. This expectation existed in Romania at the time of the mass downsizing of the industry in 1997. Despite the fact that severance payments were generous (both by national standards and in comparison to the experience in Russia and Ukraine), the view of the vast majority of those interviewed is that the severance payments failed to result in an appreciable level of economic development activity; new businesses were not created. The idea of severance as seed capital also found application in Russia, where by way of an experiment the Government offered some 570 laid-off miners in two coal towns in Rostov Oblast grants in amounts equivalent to 2-3 times the average severance to be used to establish individual businesses. An evaluation project, financed through technical assistance from the World Bank, has recently been launched to review the experience using a 100% sample of grant recipients. While the evaluation was just getting under way as this report was being finalized, the indications from expert respondents familiar with the project in Rostov Oblast were negative, the main criticism being that funds were offered indiscriminately to many people, relatively few of whom were likely to have the requisite business skills to successfully grow and manage a small business, and no support systems were in place to assist recipients with such basic tasks as preparing business plans. (Novoshakhtinsk, which has established a model small business support infrastructure, was not one of the towns which participated in this experiment.)

76. The experience of Romania and Russia (based on preliminary assessments) indicates that the use of severance (or grants in lieu of severance) as seed capital is generally not good policy. In most cases there will be a disjunction between the basic attributes of the severance policy (a payment made upon separation from employment to all separated employees) and the needs of a successful small business development program, which requires a support infrastructure and some kind of filtering process that targets individuals likely to succeed as small business people. At the same time, one could imagine this idea working more effectively if linked to specific conditions, such as the small business support infrastructure being in place and a more targeted individual selection process, with the recipient agreeing to receive training in the fundamentals of business, etc.

77. Migration. The logical complement of the local development response to the dramatically worsened local labor market conditions following mine closure is migration. Migration is directly linked to the local labor market in two important ways: (i) it arises as a response to the lack of employment (or employment acceptable to the migrating individual); and (ii) it relieves the pressure on the local labor market for those who do not migrate. Seen from this perspective,

²⁰ World Bank (2001a) treats regional development policy with particular reference to Ukraine.

migration can be considered not only in the positive sense as a common response by individuals and families to difficult circumstances, but also in the normative sense as a desirable outcome that can help achieve equilibrium on the local labor market (recognizing that those departing may be more likely to possess good skills and to be more productive workers).

78. The foregoing suggests that some form of migration support (not necessarily financial) should also be an explicit policy in response to the employment problems caused by mine closure. In actual experience, however, policy directed at supporting migration or otherwise stimulating labor mobility has been limited in the cases under review, for a number of reasons. First, in each country economic conditions have been generally difficult everywhere, and officially sponsored migration is a politically and socially sensitive issue when there are no obvious growth centers that can receive migrants without displacing the local workforce and creating social tension. The problem of disposing of housing in the mining town and of the availability of affordable housing in the new location is also a severe constraint. The costs of migration are high, and in cases where demand for such support is high, practical and financial considerations would rule out the possibility of supporting migration of the presumed scope. And while one can speak of a theoretically optimal population size and composition for any given municipality that would help bring about a (theoretical) equilibrium on the local labor market, governments might not wish to undertake the analytical challenge of quantifying these variables and determining the related required scope of migration support for a variety of social and political reasons. There need not be a contradiction between supporting policy directed at preserving and developing the local economy and policy directed at helping people leave a place, but in practice it is difficult to combine these two policies into an integrated approach to mitigating the effects of mine closure.

79. Another potential problem in the implementation of migration support programs could be a disinclination on the part of local officials to support migration, to the extent that these programs are based on discretionary funds. This can be seen in the experience of Russia's local development programs, where particularly isolated municipalities with poor future prospects have been given the choice of using their funds either to support the migration of families back to "mainland" Russia or to carry out local development programs. Municipal officials in such cases are faced with the difficult task of finding the right balance for the use of the limited funds they receive, and in the first years of the administration of these programs tended to spend most of the funds on unrealistic local development programs rather than on facilitating migration. Novoshakhtinsk in Russia is an interesting exception to this general statement, having managed to combine a successful local development effort based on facilitating the growth of the small business sector while at the same time helping its residents find work outside of the city through an agency that was established for this purpose. The agency, which continues to function, assists people considering accepting job offers in other places (often temporary or seasonal) primarily through verifying the legitimacy of the employer, which is an important service as cases of deception of labor migrants are widely reported.

80. Despite the difficulties that face the migrant or would-be migrant, the research findings as well as other evidence indicate that to one degree or another, migration from communities impacted by mine closure is taking place, and in the majority of cases without official support. The commonly encountered view of the immobility of labor in the transition countries is challenged by the research findings in some of the locations, notably in Ukraine, where the quantitative component of the research found evidence of a very high level of migration of the

working-age population (see the detailed treatment of this topic in the Ukraine country section below).²¹ This finding is consistent with recent research by the World Bank on the social impact of enterprise restructuring in Russia, which found that labor mobility appears to be much higher than captured by official statistics, challenging the standard argument that the lack of a developed housing market has impeded labor mobility in this country. The study found that labor migration on a shift/semi-permanent basis has developed into a significant feature in today's Russia; bread-winners leave their families at the original place of residence and find jobs, often informally, in major "centers of gravity".²² At the same time, it is important to stress that the nature of the migration (permanent or temporary) cannot be determined on the basis of this research, and cases of return migration are also common in some locations, usually for the reason that things did not work out for the migrant in the other location. Social impact monitoring carried out in Romania in 2000 found that it was not unusual for those who migrated from the mining regions to return within a year, usually for the reason that the "promised work" never materialized or was of a lower quality or level of pay than expected.

81. There are several barriers to studying labor migration that takes place outside of the context of formal programs to assist migrants: the fact of the migration is usually poorly reflected in official statistics and other available data (for example, a family may continue to own its house or apartment in the town it has migrated from); the nature and duration of the migration are unpredictable; and individuals who migrate disperse to other locations and are not easily identified in the "magnet" locations. Also, bearing in mind the focus of the research on communities where mine closure or mass downsizing took place several years ago, it is likely that a wave of migration would have happened earlier, as those possessing the inclination and financial and other resources required to migrate successfully would have left in search of better opportunities.

82. Given the need for "pull" factors in addition to the obvious "push" factor, the actual experience with migration of individual mining communities is highly sensitive to a number of factors, including the proximity of growth centers. For example, even though the coal communities of Russia's Tula Oblast (which was not part of this research but well known to the researchers) have been very hard-hit by mine closure, many laid-off miners have found employment in Moscow, which is about four hours away by car. Typically, workers travel to Moscow for several weeks or months at a time and work in construction, with their families remaining behind in Tula Oblast. As such, the employment is not permanent and much fault could probably be found with the work conditions; but given the absence of alternative employment closer to home, Moscow as a labor market has been important for many families in the coal communities of Tula Oblast.²³ As the dominant growth center in the region, Moscow has also served as a magnet for workers from the mining communities of the Donbass, who also find opportunities in other cities in Ukraine and southern Russia.

83. Of the countries in which research was carried out, migration figured most prominently in the expectations of policymakers in Romania, and Romania is also unique in having introduced a

²¹ See, for example, Fricbel and Guriev (1999).

²² World Bank (2001b).

²³ The dramatic improvement in overall economic conditions in Tula Oblast is reflected in World Bank (2001b), which relates the views of the head of a raion in Tula oblast that was among the hardest hit by mine closure. This research respondent described 1997 as "hell" and 2001 as "heaven", noting that if three years ago there were typically 50 people in his waiting room seeking assistance, today the number has shrunk to 2-3 people.

modest level of support of labor mobility. Many families in the Romanian coal mining regions originally came from other parts of the country, and it was expected that large numbers would return to their native villages, using their severance payment to facilitate the transition and in some cases taking up agriculture. In the event, this expectation proved to be a miscalculation. Although many families did attempt to return to their native localities, for many the transition proved to be unaffordable given their limited resources and the often equally poor employment prospects of their new location (even generous severance payments were not sufficient to cover moving expenses or to start up a new business in the new location), or too difficult for other reasons related to the adaptation to a very different lifestyle. Research respondents said that most of those who attempted to migrate had returned, and lived under conditions that were inferior even to the poor conditions that had prompted the family to migrate in the first place (they had spent their severance on the failed move, had sold their apartment in the mining town, etc.).

84. The experience of Romania is also of interest from the point of view of official efforts to stimulate labor mobility through subsidizing transportation expenses. Under a law passed this year, unemployed people who accept a job situated more than 50 kilometers from their home will receive a grant equal to two minimum wages. In cases where the unemployed worker changes his domicile in order to accept a job at a distance greater than 50 kilometers from his home, the value of the grant is calculated as seven minimum wages. The law does not, however, apply to workers who travel distances under 50 kilometers in order to get to work, despite the fact that transportation expenses may nonetheless be considerable and transportation itself a serious constraint to mobility (as in the case of Anina).

Municipal and Social Services

85. Mine closure has a negative impact on services to the population that are provided locally and associated with the municipal budget. The process of mine closure has had a dual negative impact on municipal budgets: the revenue side contracts through the loss of enterprise and personal income taxes, and the obligations on the expenditure side expand, generally as a result of the greater need for assistance that follows mass unemployment and specifically as a result of the assumption by the municipality of services and assets formerly associated with the mining enterprise. In addition, mine closure could also impact on local delivery of services if it results in the migration of qualified professionals who provide the services, such as teachers and doctors. In the broad range of municipal services, housing and communal services were singled out by respondents as priority areas that have been severely negatively impacted by mine closure. Depending on the location, transportation was also sometimes cited as a priority problem that has a direct link to the employment market as most people are dependent on mass transportation to get to their place of employment (or prospective employment), although this problem is more amenable to solutions offered by the private sector, and often one of the first sectors to develop successfully in the context of local development programs. Under social services, education and health are considered here.

86. *Housing and communal services.* One of the enduring aspects of the common image of mining towns is the poor quality of housing in these communities, and the research as well as ample field experience confirm that, in this regard, there is unfortunately little variation between locations. The present generally poor state of the housing stock is a result both of historical factors—some residential buildings still in use in mining towns were built as temporary shelter and never intended for long-term occupation—and of the legacy of mining and mine closure,

which have inflicted damage on residential and other structures through subsidence and seepage of ground water. The longer the history of underground mining in a given area and the more extensive the underground works, the greater the likelihood that housing has either already suffered damage directly linked to mining, or could be in the future. For the same reasons, physical infrastructure that delivers services of social significance (water and heating systems, telecommunications) has also suffered great damage in the typical mining town. In some mining settlements (districts of municipalities in the environs of the mines) these services have ceased altogether as a result of mine closure. And in mining communities in all three countries, there is a severe problem of access to water, and hot water is generally not available.

87. Divestiture of housing and social assets from enterprises to municipalities took place in the 1990s in Russia and Ukraine, with a particularly harsh impact on the mining towns. The capacity of local administrations was overwhelmed, as the levels of the divested assets exceeded by a factor of several times the pre-divestiture levels. In Russia, for example, the housing stock managed by local administrations in mining towns increased almost 10-fold as a result of divestiture, while the stock of other types of social assets increased by 15%-40%. In contrast, social infrastructure (boilers, gas and water distribution systems, telephone systems, etc.) usually remained on the balance sheets of mines until closure, at which point a number of things could happen: the assets could be transferred to the municipalities; the agencies responsible for carrying out the liquidation works could hold on to these assets; and/or the assets could suffer from being abandoned or vandalized, with no clear delineation of the ownership and responsibility for the asset. While municipalities throughout both countries have had to shoulder extra burdens as a result of divestiture, the situation in the mining towns in these countries is generally worse, both for the reason already noted (the physical impact of mining on housing) and because, as a general rule, the enterprise's share of the total stock of housing and social assets tended to be greater in mining towns than in other municipalities. Enterprises facing the prospect of divestiture had no incentive to continue the maintenance of the assets, so that by the time the divestiture was completed, assets were in need of high levels of repair for which no financing was forthcoming.

88. In Russia and Ukraine, the damage to housing, social assets and social infrastructure as a result of mining works and mine closure is formally acknowledged through the inclusion of financing lines for the mitigation of this damage in the approved mine closure plans. The experience of the last several years, however, has been that these items are financed on a residual basis. In Russia, for example, although the mine closure program as a whole has been relatively well-financed, the overarching objective of the first several years of its implementation was to remove from production almost 200 heavily loss-making mines, with priority given to the completing the technical closure of the mine itself. The other major priority has been the mitigation of such life- and property-threatening risks as flooding, underground fires, and methane leaks. As a result, the housing, social assets and social infrastructure components of the mine closure plans, and long-term aspects of the environmental damage mitigation component such as land reclamation, have received little financing relative to the total need.

89. In Ukraine, the Coal Pilot Project that was supported by the World Bank established an approach to the various social problems arising from mine closure that had a strong focus on housing and social assets, among other dimensions of the problem. Unfortunately, implementation difficulties on the ground and the persistent ambivalence about coal sector restructuring in Ukraine have prevented the replication of this model.

90. In Romania, the role of the mining enterprise in the provision of housing and other assets was not as great as in the former Soviet republics, but some portion of the housing stock is the responsibility of the municipality, although this is generally not considered a priority or even a concern for the local authorities. The problem of damage to housing, social assets and social infrastructure also appears to be less urgent in Romania, at least for the moment, which may be attributable to the fact that the mass downsizing of the industry took place well in advance of the implementation of the mine closure program, and it could be that in most localities even those local mines slated for eventual closure continue to supply these services.

91. Payment arrears for housing and communal services are high in some locations, particularly in Ukraine, where respondents spoke of the unaffordability of basic services and most significantly heat. In the choice between such essential expenditures food and medical care and expenditures on housing and communal services, respondents give priority to the former, allowing large arrears to accumulate for the latter. Municipal authorities reported working constantly with the population to reduce arrears, but it seems likely that part of the problem, in addition to the real burden that the high cost of heating services in particular place on the population, is a degree of tolerance of non-payments for these services on the part of the authorities.

92. These findings of the in-depth interviews with experts on various levels and members of the population are consistent with the results of the comparative survey carried out in Ukraine. Respondents in the sample of the two mining towns reported generally worse conditions of access to basic utility services compared to respondents in the national sample of like-sized municipalities. Considerably more respondents in the mining sample, for example, reported having no hot water in their apartments than in the national urban sample (79% vs. 43%, respectively). Additional survey results are reported below in the section on Ukraine.

93. *Education and health services.* Among the most important human development achievements of socialism, as viewed by the socialist system itself, was the provision of education and health services to the entire population at no charge or for a nominal charge. Throughout the transition economies, governments have found that they can no longer afford to continue to subsidize these services to the same extent as in the past, and fee-based education and health services are increasingly common. At the same time, aspects of the past system are maintained, such as subsidized kindergartens, and there is generally excess demand for these subsidized services. While the research results are somewhat different for the two kinds of basic services examined here, they had in common the suggestion of increasing social stratification and the differing qualities of access to these services depending on one's ability to pay. These results are broadly consistent with the results of studies devoted to these issues in the transition countries. As these are broad, country-wide issues, it would be appropriate to view the problems of the provision of education and health services as part of the overall problem of economic transition that are aggravated by the relatively more depressed conditions of the mining towns.

94. *Education.* In all three countries, the broad consensus among respondents was that education services were generally available to the population, if somewhat more expensive than in the past, and that despite the difficulties of recent times, the quality of the services was being maintained. Municipalities are aided in their efforts to maintain kindergartens and primary schools by the demographic trends of recent years: populations across the region are aging, and in mining towns

this trend tends to be even more pronounced than in the rest of the country. In some mining settlements, it was reported that there are very few children, which has made it possible for municipalities to rationalize resources by closing kindergartens and schools for which there is no longer demand. In Stakhanov, in Ukraine, the rationalization of the number of schools has been accompanied by a program of installation of individual boilers in public buildings, leading to even greater savings for the municipality and to better quality heat for the children and other users of the buildings.

95. At the same time, some experts sounded notes of caution when considering the future of education services in the mining towns, and sometimes even more generally. In Romania, a national-level expert saw an education crisis looming in all areas of the country afflicted by poverty and unemployment, expressing concern that children growing up in an environment dominated by the chronic unemployment and perception of failure on the part of their parents would suffer from diminished expectations and goals in life, seeing little point in pursuing education. A Russian expert in Anzhero-Sudzhensk echoed this observation, noting that the higher charges for kindergarten and the resulting decrease in attendance have led to a situation where half of the children in the first grade experience difficulties with their studies.

96. In general, the most worrisome results were reported from Romania, where the reduction in families' incomes seems to have had a greater impact on their ability to pay for their children's education, and where problems with the attendance rates and attention spans of children from poorer families have been noted. In Motru, attendance at the all-day kindergartens has dropped by 50%, because a daily fee of 20,000 ROL (about US 60 cents) is charged for the all-day kindergarten, whereas the half-day session is free of charge but overcrowded.²⁴ Respondents in Russia also noted that the subsidized, free schools were also overcrowded.

97. Respondents in all three countries spoke of increased difficulties in finding qualified teachers, whose salaries are low and who, like others, have also sought better working and life conditions in other cities.

98. Generally, the higher the level of education, the greater the problems of affordability and in some cases, the greater the problem of diversifying curricula to equip pupils with knowledge and skills that will help them find jobs in the future. In all three research sites in Romania, secondary schools and vocational schools still train pupils for careers in the mining industry. Some families send their teenage children away to high schools in other towns for this reason, but most families cannot afford this. In Ukraine and Russia, in contrast, respondents reported that young people were interested in obtaining higher education, and despite the great costs, could still find relatively affordable education at state universities.²⁵

99. *Health services.* Expert respondents in all three countries reported that access to good-quality healthcare is a problem for most of the population of the mining towns. While the health

²⁴ At the same time, the particularly good quality of education in Motru was singled out by respondents from that town, who noted that high school children from Motru regularly compete in national education Olympics and have a good record of entering university.

²⁵ This relatively more optimistic assessment of young people's attitude to higher education in Russia and Ukraine was not reflected in the interviews with young people who were part of the sample and who, by design, did not include students or young people with higher education. It could be that the expert respondents were projecting their own values or reflecting the values of the young people with whom they have more social contact.

infrastructure is still generally in place, it is being steadily eroded by persistent financial problems. The low salaries of medical personnel in mining towns lead them to migrate in search of better prospects (in Anina, in Romania, three doctors remain at the hospital, which is in danger of being shut down). Hospitals struggle to maintain medical equipment, which was reported to be heavily depreciated in some locations. And people find it increasingly difficult to afford even basic medical services, to say nothing of specialized services.

100. The research in Ukraine revealed two interesting aspects of the problem of health care services in that country. First, the comparative survey results showed that the assessment of the quality of health services available in the two mining towns was essentially identical to the assessments given in like-sized towns in the rest of the country, underscoring the national character of the problem.²⁶ Second, cooperative group insurance pools have been established in both Gorlovka and Stakhanov. These group insurance schemes, which are based on individual memberships and cover hospitalization fees, have not been in existence for very long (and accordingly, have not been not assessed in any meaningful way), but are apparently popular; in Gorlovka, the cooperative has reportedly more than 15,000 members in little over a year of operation.

²⁶ These services were assessed as "bad" by about 37-40% of respondents in the two samples, as "good" by about 13-17% of respondents, and as "neither good nor bad" by about one-third of respondents.

Community Cohesiveness

101. Certain consequences of mine closure of an obvious social import, such as widespread employment problems and housing and social infrastructure deterioration, are addressed in governments' coal sector reform programs through mitigation policies that are generally under implementation (with varying levels of financing and varying degrees of effectiveness). Other dimensions of the social consequences of mine closure can be equally important but less commonly treated as such, or less amenable to mitigation through the standard policy approach employed in the context of industrial restructuring. These could include problems of a more psychological or behavioral nature, including various manifestations of socially undesirable or self-injurious behavior such as substance abuse. The evolution of these social indicators over the last decade in the transition economies has been well documented.

102. While specific manifestations of socially undesirable behavior, such as drug abuse and prostitution, or the emergence of troubling indicators of social disruption such as the problem of abandoned children, were mentioned as concerns by some respondents, these individual phenomena will not be examined here as the research results either indicated that some communities did not, in fact, appear to be suffering particularly from these phenomena, or results were somewhat contradictory and do not allow for meaningful generalization.²⁷

103. Communities in which mines are closed face various response options, ranging from an activist stance of resistance (expressed through various forms of protest) to a proactive or constructive approach to the changed conditions of life, with probably the most common response being a form of retreat of the individual from the broader community and, in some cases, even from his or her own family in the face of the difficulties of getting by. Of course, different members of the same community can and do exhibit widely varying reactions to the same set of external circumstances and to changing circumstances over time, and this reaction will depend, in addition to personal attributes, on the severity of the employment problem, the quality of the national and local political leadership, and the resilience of the community of which the individual is a member. These factors will play important roles in determining the nature of the social tension that is experienced in communities in response to mine closure and the extent to which this social tension in turn serves as a form of feedback that influences local and national implementation of the coal sector restructuring policy, including the continuation of a program of closure of loss-making mines.

104. From the point of view of community cohesiveness and the capacity of the community to absorb the negative shocks of mine closure and to mitigate such phenomena as social instability, alienation and apathy that take a toll on individuals and the community at large, the research found that, on the whole, the mining communities appear to be rather fragile or vulnerable, their capacity to respond adequately on the community level diminished. The role of civil society in these towns is quite limited: while various organizations representing civil society were found in all locations, their impact on the community was generally characterized by research respondents as insignificant. Members of the population who participated in the research typically had no knowledge of any organizations that could be considered representatives of civil society.

²⁷ It is noteworthy that as concerns alcohol consumption, some respondents felt that it had increased in reaction to the more difficult circumstances of life, while others felt that it had decreased in reaction to the considerably more competitive labor market (workers are less inclined to come to work drunk for fear of losing their jobs.)

105. Two broad types of social consequences are noteworthy in this context: (i) the loss or destruction of “community space”, including the various forms of infrastructure linking the individual/family to the community, social networks and family relations, and (ii) the loss of social status, which has implications of a microeconomic nature (e.g. how individuals react to the labor market conditions they face) as well as more generally for how the individual relates to his society.

106. *The loss of community space.* This problem consists of a physical dimension and an abstract dimension. The most important aspects of the physical dimension in this context include the deterioration or destruction of such infrastructure as telephone systems, roads, and so on, that makes it possible for the individual and family to interact with others in the community and the world at large. Particularly in cases where mining settlements exist within the larger mining town (that is, the parts of municipalities in the immediate environs of a closed mine), the sense of isolation is profound, not only because there are no alternative employment options in the area, but because the closure of the mine and the damage to infrastructure resulting from mine closure and sometimes vandalism often lead to the complete termination of these services. Respondents living under these circumstances described a sense of being cut off from civilization.

107. Cultural centers and youth clubs are examples of physical infrastructure of a significance for the entire community that have often fallen into disrepair in recent years. As a result of social assets divestiture, in many cases they were essentially abandoned and municipalities have lacked the financing required to maintain them. In such cases, members of the community have lost the opportunity to socialize and to organize activities for children that were frequent in the past. In Russia, some respondents reported the recent reversal of this negative trend: clubs and other types of activities for children are being recreated under the sponsorship of local enterprises (thus, to some extent reversing the impact of divestiture).

108. More abstract but no less significant aspects of community space include the general atmosphere of a lack of community cohesion and a lack of a shared sense of identity or a worthwhile future. As families struggle to make ends meet, such previously common aspects of life such as socializing with friends and neighbors and vacationing are among the first to be dispensed with as unaffordable luxuries. Not surprisingly, respondents often complained of a growing antagonism among different groups of the population and reported that people communicate less with one another than previously, before mine closure (although it should be noted that these processes have been observed throughout the transition economies). The constant factor of migration (actual or unrealized) underscores the erosion of the identity of the community. Those who migrate successfully from the mining towns are more likely to be young and male, which leads to an imbalance in the demographic structure of the community. Labor migration of one or more members of the family, while helping resolve the fundamental problem of earning income, often leads to the unfortunate consequences of greater tension between spouses, and greater numbers of children who are not being raised by their parents.

109. *The loss of social status.* Before restructuring, coal miners enjoyed a high status in their communities, indeed on the national level. This status was reflected in wages that were among the highest for industrial workers and in various perquisites, and buoyed by a social prestige accorded by the socialist system to the miner as a significant agent of the industrialization of the economy. The sudden loss of this status has typically led to difficult periods of adaptation for

miners and members of their families. For miners' wives, the loss of the husband's income can serve as the impetus to enter the work force, where a lack of experience and competitive skills often relegates them to low-paying work. Several women who participated in the research related difficulties in finding work if they were above the age of 35. Older miners in particular suffer from a loss of self-identity when they lose their jobs at the mines and find it difficult or impossible to secure stable, "respectable" employment in other lines of work.

110. The practical implication of these observations is that the post-closure adaptation period for miners and members of their families can be more difficult than for workers laid-off in other situations, as the actual and perceived losses are greater and the initial period of (usually unrealistic) hopes of a rapid restoration of the former status is protracted. Laid-off miners often find unacceptable the labor conditions of jobs that are offered to them, while potential employers (including the entrepreneurs who participated in the research) and job-placement specialists often remark that they have had bad experiences with former miners as employees, precisely because of the problem of unrealistic expectations on the part of the workers. For the same basic reason, many former miners (and particularly miners older than around 40) are disinclined to pursue such active job-search strategies as professional requalification, labor migration or holding multiple jobs.

Environment

111. The environmental impact of mine closure is severe and generally well understood by specialists, even if the exact manifestation of the impact is highly site-specific, depending on the configuration and depth of the mine, attributes of the groundwater system, subsidence patterns, the presence of near-by continuing mines, the pattern of human settlement on the surface relative to the mining territory, and so on. Environmental remediation is a standard component of mine closure plans and usually the single largest component of the overall cost of mine closure, although the various specific environmental problems caused by mine closure vary considerably in the extent to which they pose a threat to life and property. In conditions of limited financing, first priority is given to preventing damage resulting from the restoration of the underground water level, while such items as land reclamation are often assigned a low priority.

112. In view of the limitations of this research to provide technical assessments of the environmental situation that prevails in each research site, detailed research results will not be presented here. Most of the research participants were not technically qualified to discuss the problems of the environmental impact of mine closure. Not surprisingly in view of the technical complexity of environmentally-related issues and the dearth of specialists among the respondents, on occasion respondents expressed contradictory opinions on matters of relevance to the environment. As residents of the community, they most frequently expressed concern over the problem of flooding, the damage caused to housing by mining, the quality of the drinking water (particularly in Ukraine), the danger of methane leaks, and the mining waste piles that are not removed.

Selected Issues and Individual Country Experience

113. This section presents selected issues from each of the three countries in which the research was carried out. The selection of the issues was based on unique aspects of the research design (as in the case of the survey carried out in Ukraine) and the individual country experience.

Romania: Restructuring in a Challenging Macroeconomic Environment

114. Economic transition in Romania has had a difficult and erratic history over the last decade. The government that took office in 1992 adopted a cautious and gradualist approach to economic reform, which failed to produce sustainable gains in either economic or social conditions. Three years of contraction of the GDP were followed by two years of real growth, 1995 and 1996, and then three more years of economic contraction. Positive real growth was recorded in 2000 and 2001. Poverty has increased sharply, with the share of the population living below the national poverty line doubling in the second half of the 1990s, from 20% to 41%.

115. Coal sector restructuring was launched in Romania in 1997, which was a particularly bad year for the country's economy overall, and the first year in one of the three-year spirals of negative growth. As described earlier in this report, the Government stimulated the mass downsizing of the industry in 1997 through its offer of a generous voluntary separation package without having in place measures for the restoration of the incomes of the workers separated from the industry. Since then, with support of the World Bank and the UK Department For International Development (DFID) under the Mine Closure and Social Mitigation Project, the Government has articulated a social mitigation strategy consisting of the following components: (i) microcredit schemes; (ii) workspace centers using facilities at closed mines; (iii) an enterprise support program; (iv) an employment and training incentive scheme; and (v) a public information and social dialogue. As noted earlier, the Government has been slow to implement most aspects of this mitigation strategy for the mining regions. The best progress to date has been had with the establishment of the employment and training incentive scheme and, most recently, with movement towards establishing the microcredit schemes.

116. In addition to the programs focused on the mining regions, other national-level programs sponsored by the Romanian Government seek to stimulate employment in depressed regions, including the mining regions. These programs include subsidized credits and temporary work programs. The latter constitute one part of the support provided by the World Bank under the Employment and Social Protection Project. It is noteworthy that these temporary public works programs, which provide employment up to six months, are the best known and, indeed, in many cases the only Government-sponsored employment programs known to research participants. Such a situation is typical for the initial phase following mine closure or mass downsizing, and it underscores that probably a few more years are necessary before the other, longer-term mitigation policies begin to have the intended effect.

117. The point of the foregoing is that Romania has faced an exceptional challenge in launching mining sector restructuring in an environment of economic contraction and macroeconomic instability. The same basic economic conditions that led to the decision to adopt the restructuring policy also determined the very limited capacity of the economy to absorb the labor shed from the mining industry. Under such difficult circumstances, it is almost inevitable

that “things get worse before they get better”, as illustrated by Russia’s experience with coal sector restructuring in the late 1990s. Conditions at present are more promising than they have been in the past: the economy overall appears to be on a stable growth trend, and good progress has recently been made to removing the various obstacles to operationalizing the social mitigation component of the Government’s mining industry restructuring program.

118. The research results for the three mining town in Romania reveal individual differences that are more pronounced than in the other two countries. Of the three, Motru has fared best, thanks in part to the availability of small agriculture as a subsistence solution; agricultural products are a constant part of the household income in a significant number of cases. Social services in Motru are also relatively good (some respondents believe they are very good, especially education), and the state of the housing blocks, including water and heating provision, is also relatively good.

119. In contrast to Motru, which is relatively isolated from large cities, Uricani is integrated into the conurbation of Jiu Valley. Local social services are poor. The city has derived some benefits from the political visibility of the Jiu Valley, for example, like the other towns, Uricani has benefited from the Solidarity Fund, a program of social assistance that is used primarily in the Jiu Valley. In Uricani, as in the entire Jiu Valley, agriculture is not an option. The housing blocks, especially the older ones, are in particularly bad condition.

120. Anina is in the worst situation: a small town, quite isolated from the larger city of Resita, it has no agricultural opportunities, and no political visibility. The forest is the main subsistence source for chronically unemployed people, especially because heating in all blocks of flats is based on wood. The state of housing blocks is rather poor, and significantly more apartments are in public property. In Anina, more than anywhere else, respondents expressed the feeling of being at a dead end and having no future.

Russia: Six Years of Local Development Programs

121. Since 1996, the Russian Government has financed Local Development Programs (LDP) in coal municipalities impacted by mine closure. The first two years of the implementation of the LDP through regional administrations were characterized by poor administration, a lack of accountability for subsidies received and disbursed (which was a system-wide problem affecting all categories of subsidies), and a tendency by regional administrations to absorb these targeted funds into the general regional budget. Flaws in the design of the programs, such as the lack of competitive bidding in the awards process and the fact that funds were offered as grants, not credits to be paid back, contributed to the poor record of the LDP in 1996-97. And while the funds were intended to compensate for the job destruction resulting from mine closure and to promote the diversification of local economies, powerful regional coal companies attempted to channel the funds into investment projects of benefit to the coal companies themselves.

122. In late 1997, during negotiations between the Russian Government and the World Bank for the provision of the second coal sector adjustment loan, it was agreed that starting in 1998, LDP subsidies would be disbursed directly to municipalities, which would be responsible for determining the use of the subsidies within established parameters, for carrying out the competitive tenders that would now be required for certain categories of use of the funds, and so on. As detailed in Table 3, there are six categories of use of LDP funds, and they are designed to

mitigate different phases and aspects of the local employment problems that arise from mine closure. Each municipality determines the allocation of the subsidies it receives across the various categories; the use of the funds for relocation support is allowed only in a small number of municipalities considered to be “non-viable” due to their isolated location and lack of alternative economic development options.

Table 3. Local Development Programs, financing by components, 1998-2001

	1998		1999		2000		2001	
Total (thous rubles)	293,000	100%	828,591	100%	938,372	100%	1,024,520	100%
Pre-redundancy consultations	1,910	1%	1,871	0%	2,296	0%	335	0%
Professional retraining	10,274	4%	16,177	2%	5,807	1%	3,177	0%
Temporary public works	119,956	41%	141,609	17%	138,426	15%	87,208	9%
Small business support	16,778	6%	87,548	11%	77,105	8%	71,583	7%
Job-creation programs	131,377	45%	269,563	33%	402,887	43%	493,349	48%
Relocation	12,706	4%	311,822	38%	311,851	33%	368,869	36%
Memo: USD equivalent (based on monthly disbursement data and average monthly rate of exchange)								
Total (million \$)	22.6		32.8		33.4		27.2	

123. Local public oversight, participation and transparency have been facilitated through a reliance on Local Oversight Councils consisting of representatives of the local administration, the local employment service, the trade unions, and other governmental and non-governmental entities operating in the municipality. Although Local Oversight Councils have no official status, they are active in coal municipalities throughout Russia and by local consensus typically function as the decision-making authority over the use of LDP funds.

124. The data in Table 3 reflect the development of local priorities over time, which is a function both of the increased experience with the administration of these programs (including the complicated processes of project evaluation and competitive tenders), and of the changing needs of the local employment markets. In the first year shown here, 1998, coal municipalities in the aggregate assigned an importance to temporary public works (which received 41% of the financing made available through the LDP) that was roughly equal to the importance accorded to job-creation programs (45% of the total). By 2001, coal municipalities in the aggregate disbursed only 9% of their LDP funds on temporary work programs, and job-creation programs were by far the largest expenditure category. Removing relocation (as a special category used by a small number of isolated municipalities), the overall weight of job-creation programs in the LDP grows to 75% in 2001. The decline in the share of financing allocated to temporary work programs from 1998 to 2001 reflects the more pronounced social tension in coal municipalities in 1998 (one of the peak years for mine closures), and the improvement of the overall employment situation in the coal municipalities in recent years.

125. Over the last four years the LDP have received large amounts of financing; the total for the four years shown is about \$116 million. These funds have been disbursed to a universe of some 78 coal municipalities that have been impacted by mine closure, but each year about 12-15 coal municipalities have accounted for about half of total LDP financing (the actual number of

recipient municipalities varies from year to year depending on the mine closure program, where new mine closure takes place, etc.).

126. Of note is the extremely small volume of financing that municipalities have allocated to professional re-training programs. While these are a common policy prescription in cases of large-scale industrial downsizing, the actual experience on the ground in Russia indicates that this policy tool has not been used. The interviews conducted with local experts and with recipients of the training indicate that the major problem with professional re-training, even when the training is of a high quality, is the lack of relevance of the professions in which training is provided to the needs of the local job market. This experience is consistent with that of other countries. Another view encountered in some of the interviews is the more complex question of demand for such services among laid-off miners. One frequently encountered point of view is that the miner's mentality is such that he is not inclined to seek employment in other professions, and hence not interested in retraining. A more prosaic explanation in the case of Russia could be that in recent years, jobs have again become available in the coal industry in some regions, and miners reasonably prefer to seek employment in the profession they know best and in which they can make relatively better wages. A comparative study of social assessments carried out in 1996 and 2000 found that in 2000, interest among miners who had been laid-off in connection with mine closure in seeking re-employment in the industry had increased, while interest in re-training had decreased relative to the 1996 survey.²⁸

127. The small business support category (which may be used for provision of microcredits and to establish a support infrastructure) has received a relatively small share of each year's allocation, but in absolute terms increased appreciably from the first year to subsequent years. Box 1 recounts the interesting experience of the city of Novoshakhtinsk in relation to the small business support category of LDP.

128. One of the more hotly debated issues in the administration of the LDP has been the question of whether former miners and non-miners alike, or only former miners, were the intended beneficiaries of these funds (either as workers in temporary public work programs, or as entrepreneurs competing for investment funds, or as employees in enterprises creating jobs with the help of the subsidies.) In fact, from the start, the philosophy of the LDP as formulated on the national level and as supported by the World Bank has been to ensure maximum access to LDP funds to benefit the entire community. The rationale for this position was the recognition that mine closure has an impact on the entire community and also that the entire community benefits from successful efforts to create new jobs and to diversify the local economy. In practice, however, different municipalities have employed various interpretations, with some insisting that the LDP funds are "money for the coal miners" and should be used to alleviate the situation of miners and their families. Most municipalities; however, have followed a more inclusive policy that is closer to the intention of the programs.

²⁸ Comring (2001).

Box 1. Novoshakhtinsk: Best Practice in Development of a Business Support Infrastructure

Of the several dozen mining towns in Russia that have received state support for local development in recent years, Novoshakhtinsk in Rostov Oblast is unique for having pursued a strategy based on cultivating an extensive small enterprise sector, from which it is expected some enterprises will grow into medium and even large enterprises. In order to achieve its strategic goals, as a first priority the town used LDP subsidies to establish a multi-faceted small business support infrastructure which was then in place to facilitate the implementation of job-creation projects. In most other cities, job-creation programs were implemented before an adequate support infrastructure was established, which led to implementation problems.

An unusual degree of political stability on the local level has contributed to the success of the implementation of Novoshakhtinsk's strategic vision: the mayor has been the town's executive for the last 11 years, and has put in place a team dedicated to the town's strategic development. An important factor underlying the strategic vision was the realization that the coal sector, which dominated the local economy until five mines were closed, had left Novoshakhtinsk with a legacy of poor local managerial and entrepreneurial skills. The emphasis on the support of the small business sector was a conscious effort to develop a broad base of business skills among local entrepreneurs, thereby increasing the success of job-creation efforts financed by the LDP and increasing the local economy's overall competitiveness through helping educate "tomorrow's business leaders".

Two municipal agencies form the core of the business support infrastructure in Novoshakhtinsk: the Novoshakhtinsk Business Incubator (NBI), which was the first to be created in 1996 with LDP subsidies and which provided various business support services to all types of entrepreneurs and enterprises until the creation in 1998 of the Municipal Foundation for the Support of Small Enterprises, which allowed the NBI to specialize in providing loans, technical assistance and other forms of business consultations to medium and large enterprises. A showcase project for NBI is the assistance provided to facilitate the conversion of a former military factory, which now produces various mechanical parts and where the number of jobs was doubled from 400 to 800.

A business park created on the territory of a closed mine serves as the site for many of the training and consulting activities provided to small entrepreneurs. In addition, industrial space at the business park is rented out at subsidized rents to beginning small entrepreneurs for up to 3 years. The business park also provides the entrepreneurs with Internet access, security and other common office facilities.

Despite the success of Novoshakhtinsk's strategic focus on small business development, local experts caution that the employment and tax-base potential of the small business sector is not enough to solve the city's problems. Experts voiced the opinion that stabilization of the local employment situation and the related social problems would take place when 3-4 additional large enterprises have been established.

A second generation of investment projects is now being financed with funds that have been paid back. At the same time, local experts stressed the continuing significance of the annual replenishments of the LDP subsidies: the city is preparing for the closure of another mine later in 2002.

129. Of particular relevance to this research is the job-creation category of the LDP. These funds are provided as co-financing of investment projects on a competitive, returnable basis both for the expansion of existing small enterprises and the creation of new small enterprises outside of the coal sector.²⁹ Municipalities have used increasingly greater shares of LDP financing for

²⁹ Under Russian legislation, small enterprises are those in the manufacturing, construction and transport sectors with no more than 100 employees, and smaller numbers of employees in other sectors as specified by law.

job-creation, but until recently there was no reliable measure of the long-term viability of the jobs created, and no rigorous approach to calculating the actual costs job-creation. The absence of reliable data on these two indicators of the overall effectiveness of job-creation programs became an increasingly serious management problem for the program administrators on the federal level and for the municipalities themselves, as they lacked the information to establish meaningful performance criteria for individual projects, cost-per-job guidelines by sector, as well as more generally to assess the effectiveness of the job-creation programs under their administration.

130. In late 2001, the first comprehensive evaluation of the jobs created with LDP financing was carried out by independent Russian consultants with financing from the World Bank.³⁰ The first stage of the study entailed the analysis of existing data on the 410 businesses that had received co-financing for projects from the job-creation component of the LDP over the years 1998-2000 and that had used these funds to create 19,115 jobs outside the coal sector. The second stage of the study consisted of developing evaluation criteria, collecting and systematizing detailed data on selected enterprises in five regions, and carrying out interviews at the enterprises and in the concerned municipalities with the goal of evaluating the long-term viability of the created jobs. On the basis of their findings, the consultants prepared general recommendations for various levels of management (from individual enterprises to the Federal level) for improving the efficiency the job-creation component of the LDP. In all, 42 enterprises were selected for the detailed analysis. Of these, two-thirds (28) had been created with the help of LDP subsidies, and the remainder (14) were existing small enterprises that had used LDP funds to expand their businesses.

131. Enterprises were evaluated on the basis of five criteria: (i) financial potential; (ii) productive potential; (iii) marketing assessment; (iv) socio-economic assessment; and (v) investment potential. Each criterion, in turn, was the composite of five separate factors (see Annex 3). In computing an overall rating for each enterprise, the analysts gave greater weight to the investment potential and the marketing assessment of the enterprise on the reasoning that these factors more strongly influence the long-term viability of enterprises and jobs.

132. The analysis found that some two-thirds of the surveyed enterprises had good or very good potential for long-term viability, meaning that they were likely not only to survive, but to grow, in the process creating more jobs. The remaining third of the enterprises that were rated less positively also have the chance to fare well, but will need to improve various aspects of their operations and clarify their overall business strategy. A part of the enterprises that were rated less positively had commenced their operations in the year preceding the survey, which probably contributed to their relatively lower rating.

133. The analysis of the cost-per-job underscored the great variation of this factor across sectors. Table 4 shows the sectoral structure of the jobs created at the 410 enterprises that received LDP subsidies through the job-creation component over the years 1998-2000. In the assessment of the analysts who carried out this study, the average cost of job-creation under the LDP is significantly lower than the comparable average cost of the creation of a job in the various sectors of the Russian economy that are indicated below.

³⁰ The results of this evaluation of the LDP are excerpted here from Reformugol (2001) in view of their relevance to the subject of this report.

Table 4. Local Development Programs, new jobs by sector, 1998-2000

Industry	Number of jobs created	% of total	Average cost per job* (thous rubles)
Food processing	3,225	17%	112.7
Construction materials	2,977	16%	180.8
Wood, timber, pulp and paper	2,521	13%	131.6
Machine building and metal working	2,017	11%	99.6
Light industry	1,909	10%	148.9
Chemical and petrochemical	1,795	9%	182.7
Agriculture	1,079	6%	96.3
Consumer services	1,025	5%	113.0
Medical industry	481	3%	91.1
Communications	326	2%	97.6
Trade and public catering	320	2%	117.6
Transport	141	1%	102.9
Printing	37	0%	101.3
Electro-technical	20	0%	60.0
Other industries	1,242	6%	--
Total:	19,115	100%	

* Total cost from all sources of financing.

134. Despite the relatively positive assessment of the performance of the LDP in more recent years, it is important to keep in mind the small scale of job-creation relative to the loss of jobs due to mine closure. Over the years 1997-1999 sector employment decreased by about 156,000. Assuming on the basis of general experience that about one-third of this number retired, about 104,000 workers would have entered the job market; thus, the jobs created under the LDP provided employment for about 18% of those who entered the job market as a result of mine closure.³¹

135. Russia's experience with the LDP suggest some general conclusions:

- Programs such as the LDP that receive sustained financial support and that are augmented by training and other forms of technical assistance can become a powerful tool for municipal capacity-building and for job-creation in the small and medium enterprise sector.
- Coal municipalities throughout Russia acknowledge the important role played by LDP in reducing social tension and fostering the development of jobs outside the coal industry.³²
- At the same time, the success of such programs also makes it possible to speak of an upper limit of their job-creation potential: the number of jobs created is small compared to the number of jobs destroyed through mine closure.

³¹ This is a simple calculation to illustrate the order of magnitude of the difference between jobs created and jobs lost. The reference period for the downsizing of industry employment, 1997-99, is one year earlier than the reference period for the job creation programs to reflect the normal lag between an individual's loss of employment and the beginning of the individual's job search.

³² In a recent letter to the World Bank, the Association of Mining Cities noted that "the joint efforts of the Russian Government and the World Bank in implementation of Local Development Programs ... have made it possible to significantly decrease social tension related to redundancy at the closing coal mines, and have assisted in the formation and development of new directions in the economy of coal communities."

- The programs had a long “learning curve”, as local governments and other engaged local bodies grappled for the first time with such complex tasks as optimizing the use of financing, carrying out project evaluation and competitive tendering, etc. Training seminars and conferences for sharing experience have been effective tools.
- Ideally, the institutional and regulatory framework for such programs should be in place **before** large-scale layoffs take place. In Russia, precious years were lost between the beginning of the mass program of mine closure in the mid-1990s and the establishment of the LDP in their present form in 1998. The regulatory documents that govern the LDP have undergone a fairly constant process of revision, and at the time of the writing of this report another set of major revisions was under ministerial review in Moscow.
- Close supervision and support from the national project administrator and a working system of feedback between the municipalities and the project administrator in the capital are important factors for success.

136. At the time of this writing in mid-2002, it is not known whether the LDP will receive Federal financing beyond 2002. Even if financing ceases at the end of this year, it is encouraging that some degree of sustainability has been built into the system through the mechanism of the revolving fund: as the first generation of loans recipients begins to pay back the borrowed funds, municipalities are recycling them to other businesses for continued investment in job-creation. The most effective form of future assistance from the Government may be to target the limited resources available to the coal municipalities that have been most hard-hit by sector restructuring. Such assistance could be carried out either in the existing framework of support to coal mining municipalities or in a broader framework of support to municipalities negatively impacted by economic restructuring in general.

Ukraine: Mining Towns Compared to a National Sample

137. In Ukraine, in addition to the qualitative component, a quantitative component was included in the research with the objective of comparing employment and living conditions in the mining municipalities with those in like-sized municipalities across the country. Following is a brief description of the survey design and its chief findings. A detailed description of the survey and the analysis of the results is given in Shkaratan (2002).

138. The same questionnaire was administered to respondents drawn from two samples: (i) a representative sample of the population of the two mining municipalities, Gorlovka and Stakhanov, in which the qualitative research was carried out (sample size – 514 individuals), and (ii) a representative national sample of urban Ukraine. Respondents living in rural areas and large cities (those with populations over 500,000) were excluded from the analysis in order to enhance the comparability with Gorlovka and Stakhanov, which resulted in a sample of 705 individuals.

139. The analysis found significant results in three areas that are presented below: (i) labor migration; (ii) employment conditions; and (iii) housing and communal services.

140. *Large-scale migration from the mining cities.* Even before the interviewing in the mining municipalities was completed, the process of compiling the sample in the two towns revealed a high level of unoccupied apartments, or absent family members in apartments that were occupied. At the time of the survey, an estimated 37% of the population of Gorlovka and Stakhanov aged 18 or more was absent from the cities for an extended period.

141. The methodology used to compile the sample entailed as a first step recording basic demographic information on the residents of a large number of randomly selected addresses. Of the total 1,618 addresses selected in this fashion, information received from neighbors indicated that in 460 cases (or 28% of the total), the residents of the selected address had either moved away or were absent for an extended period in connection with employment elsewhere. In the remaining cases, interviewers were able to record household composition, for a total of 2,136 individuals in the two cities, as indicated in Table 5 below. Of the 671 individuals who were selected from this composite list for the sample, 89, or 13%, were absent from the city in connection with employment elsewhere, as reported by other members of their household. These two separate observations combined make for the estimate that some 37% of the registered population in the two cities was absent for an extended period at the time of the survey.

142. The second estimate of 13% is consistent with actual survey results. Around 11% of respondents gave a positive response to the question, “In the last 12 months, have you or your family members had to travel in order to earn money in other cities or countries (seasonal work, “shuttle” trading, etc.)?”

143. Table 5 compares the age and gender structure of the population as recorded in the course of compiling the sample with the official statistics from the two cities. As can be seen, it is the working-age population, and more likely men than women, who were absent. The population actually living in the cities is considerably older, and more likely to be female, than indicated by official statistics. The tendencies are identical in Gorlovka and Stakhanov.

Table 5. Gorlovka and Stakhanov: comparison of sample data to official statistics

Demographic variable		Survey,	Official statistics	Difference (%)
		January- February 2002 (%)	as of 01.01.2001 (%)	
Gorlovka				
gender	male	40.6	44.8	-4.2
	female	59.4	55.2	+4.2
age	18-29	12.0	21.4	-9.4
	30-44	23.9	27.7	-3.8
	45-59	22.8	22.6	+0.2
	60 and older	41.3	28.3	+13.1
TOTAL (population 18+)		1,053	236,011	
Stakhanov				
gender	male	40.6	44.0	-3.4
	female	59.4	56.0	+3.4
age	18-29	14.1	20.6	-6.5
	30-44	20.8	28.7	-7.9
	45-59	24.5	23.7	+0.8
	60 and older	40.6	27.1	+13.5
TOTAL (population 18+)		1,083	80,298	

144. The quality of the migration – whether temporary or permanent – is impossible to determine on the basis of this research. At the same time, the survey results (as well as the qualitative research) indicate that among those who remain, migration intentions seem to have subsided; the overwhelming majority of respondents indicated that they expect to live in the same place 5 years hence, even when the analysis was limited to the working-age population (results are the same for the two samples at 77%). A concern emerges, however, when the situation is considered not in the static view, as it is here, but rather, in the dynamic perspective. While the survey data cannot shed light on the circumstances of the out-migrants and the likelihood of their return to Gorlovka and Stakhanov, the qualitative research indicated that a new phenomenon of return migrants has been noted, primarily for negative “push” factors from the place of migration, not for positive “pull” factors of more attractive conditions in the two mining municipalities.

145. *Employment conditions.* The survey results indicate a somewhat disadvantaged employment position of the mining municipalities compared to similar sized municipalities in the rest of Ukraine. While the difference is not dramatic, it is reasonable to assert that the difference would be much greater if the observed migration had not taken place. The analysis showed that 55% of the working age adults in urban Ukraine (not including cities with populations above 500,000) compared to 47% in the mining municipalities were employed.³³ For the sake of comparison, employment in different sized settlements in Ukraine was analyzed, with the following results: the share of the employed working age population is 61% in rural areas, 55% in cities, 68% in large cities other than Kyiv, and 73% in Kyiv. Thus, of all the settlement types considered here, the mining municipalities had the lowest level of current employment. Among working age adults, there is no difference in the level of employment among women in the mining municipalities compared to women in urban Ukraine (46-47%) but the difference among

³³ The difference is statistically significant at 5%.

men is quite large: 48% in the mining municipalities compared to 64% in the Ukraine urban sample.³⁴ The structure of employment by age reveals lower levels of employment in the mining municipalities for all age groups, most significantly for the youngest group (18-29), 36% of whom in the mining sample reported being employed compared to almost 50% in the national sample.

146. Another indication of the relatively more complicated employment situation in the mining municipalities was given by the answers to the question about main sources of income (Table 6). For 38% of respondents in the sample of mining municipalities and for 57% of respondents in the national urban sample, a main source of income is wages. This striking difference is largely a function of the preponderance of older individuals in the population of the mining municipalities; when age is controlled for and results for the working age population only considered, the corresponding numbers are 61% and 72%. This difference would be partially accounted for by lower levels of employment in the mining towns, and could also reflect lower average wages in the mining towns than in the other cities in the country.

Table 6. Main sources of income (% of respondents; multiple responses possible.)

		wages	social benefits	produce from gardens	second or occasional jobs	own business	help from relatives
Working age adults	mining towns	60.7	37.8	15.6	14.1	3.0	8.5
	urban	72.2	32.2	26.7	12.9	4.0	16.0
	Ukraine*						
Retired	mining towns	13.5	98.4	10.7	0.8	0.0	2.0
	urban	20.1	97.1	26.7	2.2	0.3	3.1
	Ukraine*						
Total	mining towns	38.3	66.5	13.2	7.8	1.6	5.4
	urban	57.2	50.9	26.7	9.9	2.9	12.3
	Ukraine*						

* excluding large cities

147. Relatedly, given the higher unemployment in the mining towns (as well a level of occupational diseases that is likely to be higher), it is not surprising that a greater percentage of working age respondents in the mining towns cited "social benefits" as a main source of the family's income (38% compared to 32% in the national urban sample). Respondents in the mining sample were also considerably less likely than respondents in the national urban sample to name produce from garden plots as a main source of income (13% versus 27%). It is also of note that respondents in the national urban sample are roughly twice as likely as respondents in the mining sample to receive help from relatives (12% compared to 5%), which is consistent with what is known about the history of the settlement of the mining towns and the more limited nature of the support networks of extended families of those remaining in the mining towns.

148. Job stability including payment stability is an important characteristic of employment conditions. The survey shows that the percentage of respondents reporting wage arrears is higher in the mining municipalities: 28% of employed respondents from this sample said that their

³⁴ The difference is statistically significant at 5%.

wages were delayed vs. 21% in the national urban sample. In addition, the average level of wage arrears is higher in mining municipalities (7.3 months compared to 4.2 months in the national urban sample).

149. Concerning past unemployment, the same percentage (30%) of employed respondents in the mining and in the nation-wide samples said that they had been unemployed during the last five years, but the average length of unemployment among respondents in the mining sample was 26 months as opposed to 19 months for respondents in the national urban sample

150. *Housing and communal services.* Residents of the two mining communities are considerably more likely to live in apartments than residents of similarly sized cities in the rest of the country, and consequently are more dependent on communal services for the provision of various essential services such as heat and water. In the mining sample, 71% of the respondents reported living in an apartment as opposed to 45% in the comparable urban sample.

151. Respondents in the mining sample noticeably more often gave negative assessments of their housing conditions than respondents in the national sample. In the mining sample, 46% of apartment-dwellers said that the condition of their housing was very bad or even dilapidated, requiring either major repairs or demolition, as opposed to 21% in the national urban sample. Also, considerably more respondents in the mining sample reported having no hot water in their apartments (79% vs. 43%). Respondents in the mining sample were also more likely to have no central heating (21% in mining towns vs. 12% in the other cities) or gas for heating (75% vs. 63%) and less likely to have a telephone (56% in the mining sample did not have telephones vs. 43% in the national urban sample).

152. For respondents who receive these services, the analysis demonstrated that the functioning of all basic services is considerably worse in mining towns than in the rest of the country. Twenty-nine percent of the respondents in the mining towns as compared with 11% in the national urban sample reported that their electricity service does not function well. Of those connected to central heating in the mining towns, 69% vs. 43% in the nation-wide sample said that the service does not work well. Cold water is delivered with interruptions or not delivered at all to those who have water connection in 64% of the cases in mining towns as compared with 35% in Ukraine. And almost all respondents (95%) in the mining sample with connection to hot water reported bad delivery of hot water compared to 68% in the national urban sample.

Policy Recommendations

153. Policy recommendations that could help mitigate the negative impact of coal sector restructuring programs on communities can be grouped into those of national or economy-wide relevance and those of relevance to the mining sector or the mining municipalities. The former group will not be considered in detail here, both because this would be beyond the scope of the research, and more generally in adherence to the general principal that special regimes should not be carved out of instruments of national economic policy. At the same time, the importance to mining regions and municipalities of reforms that could (and should) be part of national-level policy cannot be overstated. Some of the important broad areas of reform in this regard would include:

- the system of inter-governmental relations;
- the banking system and access to credit for a wide variety of purposes (to start businesses, improve real estate and infrastructure, etc.);
- housing and communal services;
- local economic development and diversification;
- education; and
- social protection.

154. The following policy recommendations are based on the results of the research carried out in Romania, Russia and Ukraine but would also have broad relevance to other industrial restructuring programs, particularly those where the patterns of municipal development and the social aspects of restructuring are similar to those encountered in the coal sector. In one way or another these recommendations seek to further a holistic or comprehensive approach, as opposed to the limited sectoral approach, to mitigating the impact of sector restructuring on the entire community.³⁵

155. **Recognize early on the full range of costs to the community of sector restructuring, and align benefits more closely with the costs.** Ex-ante analyses of coal sector restructuring recognize the great benefits that accrue to the economy at large from restructuring when the high level of subsidization is eliminated and when workers released from the coal sector produce greater value in other economic activities. At the same time, such analyses usually do not recognize the full range and nature of the costs that are imposed by restructuring on the community, including the negative employment impact of mine closure on downstream industries and on services industries dependent on household purchasing power. The time frames required for the implementation of local development initiatives and the transition of shed labor to more productive uses also tend to be underestimated, which is another form of unrecognized costs to the extent that these represent delays in the accrual expected benefits and increased social tension. The recommendation to more closely align the costs and benefits of sector restructuring seeks to minimize the additional costs that result from failing to recognize upfront all the costs of sector restructuring, as well as the additional costs of protracting sector restructuring, and to more quickly move to the implementation of the mitigation strategy through

³⁵ The observation in World Bank (2001a) that “regional policy has been developed as a necessary approach to solving a wide range of systemic issues that cannot be resolved by isolated sectoral policies,” is of note in this context.

establishing a constructive framework for dialogue that clearly identifies the various stakeholders and recognizes their respective shares of the costs of sector restructuring.

156. Notionally, the process of coal sector restructuring can be viewed as one in which subsidies that previously went to support loss-making production at uneconomic mines (and, indirectly, employment in dependent industries) are shifted, for some period and in one form or another, to the mitigation of the impact of mine closure on the mining community. The extent and manner in which these funds are shifted is a matter of policy within the usual budget and other constraints. In practice, the link between these two general categories of need is recognized, but usually only in the context of making a case for postponing the initiation of closure at a loss-making mine (i.e. the community will suffer if another mine is closed, jobs need to be maintained). Implicitly, this argument seeks to justify subsidization of loss-making production as a form of social protection that guarantees employment for a certain number of people and helps preserve stability in a community.

157. While in some cases it could certainly be advisable to stagger closure of mines in a given location in order to mitigate the impact on the affected workers and the community, the argument referred to in the preceding paragraph often amounts to no more than an attempt to delay the inevitable. Failing to forestall the inevitable, this position results in increased financial and social costs of mine closure and consumes funds that could otherwise be used for mitigation programs. Far from being strengthened, the level of social protection of workers at uneconomic mines is usually eroded under such circumstances (bad management, for example, gives rise to wage arrears) while the fundamental economic problem of the loss-making mine remains. The case of Rostovugol in Russia illustrates this well. Having resisted the comprehensive restructuring that was being carried out in the rest of the industry (for several years, Rostovugol produced about 1-2% of total production but received up to 25% of the total subsidies for loss-making production), as a result of a recent Government decision the company now faces extensive restructuring. Wage arrears are very high at the loss-making mines that were kept functioning and that are now slated for closure.

158. While a case-by-case approach is obviously called for in such circumstances, given the high return to the budget of eliminating production subsidies, a rationale generally exists for increasing the support directed to communities without undermining the overall economic rationale of sector restructuring. The actual form of the assistance is a matter for policy, judgment and negotiation. In view of the inevitable period of adjustment and the “learning curve”, it is likely greater value to the community would come from extending assistance over time. In the cases under consideration here, the review of the situation five years after mine closure in three different countries indicates that the coal municipalities need additional targeted assistance before being mainstreamed into existing national programs of inter-governmental transfers.

159. This general recommendation has some important practical policy applications, including: (i) broaden the base of eligibility for social protection benefits (i.e. severance, participation in job-creation programs, etc.) to mitigate the negative employment impact of mine closure on dependent industries (possibly using an approach based on demonstrated proportional dependence, as in the Russian experience), and (ii) recognize the role and potential of the municipality in mitigating the impact of sector restructuring on the entire community. In all cases under review here control over the funds intended for local mitigation efforts has been an

issue in relations between regional and municipal authorities. While regional authorities can play a crucially supportive role, the experience at various points in times in various locations has been that funds targeted for assistance to mining towns have been captured at the regional level and used for other purposes (and here it is worth recalling that the concentration of the mining industry is highly localized, and the priorities of the regional government are often different from those of the local administrations of the mining towns). The funds provided for solving local problems are ultimately more effectively used if they are allocated directly to the communities, with the important proviso that this be done in the context of appropriate policies and procedures exist, and that training and capacity-building be made available over time.

160. The experience of Russia in the final four years of the existence of production subsidies illustrates the disparity between the subsidies provided to loss-making mines and the subsidies provided to municipalities for local development programs, and demonstrates that even in this case of a relatively high level of support to impacted communities, the loss-making mines in the coal industry received higher levels of support. In 1998, subsidies in support of loss-making production exceeded the support to local development programs by a factor of 6. In the following year, this ratio was reduced to about 3. By 2000, the ratio was reduced to about 1.3, and then in 2001, the last year of production subsidies, to less than 1. Viewed over the four-year period, the subsidies in support of loss-making production were almost exactly double the subsidies devoted to local development programs.³⁶ Viewed over the entire period of restructuring, the ratio would be far greater than 2:1 in favor of loss-making production subsidies, as these existed for many more years than local development programs and subsidies to the sector in the period 1993-97 exceeded US\$10 billion, most of which went to subsidizing loss-making production and inefficient investments.

161. Because of the sectoral approach that dominates in the process of the development of industrial restructuring programs, it is not common practice to view the two types of State support (subsidization of a loss-making industry versus support to the municipalities in which the industry is located) as constituting a trade-off. As a general framework, however, for an approach to industrial restructuring, this view may help national governments to build support and understanding for the need to carry out restructuring and to articulate more clearly the high cost to the communities themselves of perpetuating the untenable situation of subsidization of loss-making mines. In this, the government will face the challenge of the widely varying attitudes and capacities on the part of different players on the regional and local levels. Public information campaigns and continuous social dialogue are important instruments to help meet this challenge.

162. **Build capacity on the community level.** Communities in which mines are closed are confronted with an array of new problems for which the capacity and skills embodied in the various local response systems are inadequate. Assuring adequacy of financing is a necessary but not sufficient condition for the proper management of the consequences of mine closure on the local level; measures to build capacity are necessary to ensure that the limited financing is put to its best use. Capacity-building in this context is relevant for local government and also for the various non-governmental organizations that constitute civil society and that can make an

³⁶ Budget financing of repair of social infrastructure, housing, etc. is not counted here as these are formal liabilities recognized under mine closure plans, as opposed to the local development programs which are mitigation programs, the financing of which is entirely the prerogative of the Government.

important contribution to the development of adequate institutions on the local level. As has been seen, civil society in the mining communities is relatively weak; indeed, the concept of civil society and the recognition of its potential are often poorly developed at the local level. Equally important is supporting the creation of a mechanism that ensures the adequate and meaningful interaction of municipal government and civil society (as illustrated, to some extent, by Russia's Local Oversight Councils.)

163. Given the long-term nature of the impact of mine closure and the local response to it, it would be appropriate for governments and international lenders and donors engaged in supporting coal sector restructuring to plan long-term provision of technical assistance to communities. Because the capacity and needs of municipalities will differ and evolve over time, these programs should include an array of options that can be tailored to individual municipalities and that are re-visited periodically to confirm their continued relevance. In general, there is a high need for training municipal governments in a comprehensive approach to strategic municipal development. Effective and relatively low-cost technical assistance can be offered through seminars that bring together representatives of municipalities for an exchange of experience. Most important is to recognize the leading role of municipal governments in directing the response to the dramatically changed conditions of the life of the community (including critically in such disparate areas as the management of social assets and local economic development) and to provide the staff of the municipal governments with the knowledge and skills they need for managing these complex processes.

164. Organizations representing civil society are many and varied. Some function at a high level of professional competence, sometimes with the benefit of donor-financed training. Others, in contrast, function on a strictly local level with a local focus and with limited financing and capacity. Two types of potential beneficiaries of capacity-building measures are of particular note in the present context: (i) groups focused on local business development, and (ii) groups that carry out social work of various kinds. The groups that fall into the first category will often be directly involved in the sorts of activities reviewed in the discussion of the local economic development response, such as the promotion of small business through business incubators. But the capacity of business development groups can also be developed in ways that are not as obvious and that have important social dimensions. For example, the TACIS-MERIT programs sponsored by the EU in Russian coal towns included components dedicated to increasing the representation of women and youth among local entrepreneurs.

165. While the NGOs and other groups that provide social services of various kinds perform a very different function, they too can benefit from basic training in how government works, how to write grant proposals, and so on. With strengthened capacity, some of the groups mentioned in the course of the research could begin to play, for example, valuable roles as monitors of the environmental and social impacts of mine closure.

166. **Enhance the private sector development component of the local development response.** Programs that support the development of the SME sector are a staple of the local development policy response. These programs have a significance that extends beyond their actual weight in the local economy because they send a powerful and optimistic message of the possibility of positive change. At the same time, policy-makers should recognize the limited potential of small and medium-sized businesses to provide jobs for workers who are made

redundant as a result of mine closure, at least over the 5-year period that served as the basis for this research.

167. Mitigation strategies sponsored by governments and supported by the World Bank tend to refrain from advocating large-scale enterprise development in the local development response, partly because of well-founded concerns that the coal industry could hijack the process, and partly because of the sheer difficulty of carrying too many development initiatives at once. But unless restructuring is carried out in an environment of growth that is sufficient to absorb the shed labor, most of the jobs that are destroyed through mine closure will not be re-created through programs supporting individual and small businesses. In the contracted, highly competitive labor markets that follow mine closure, workers less able to compete are likely to suffer from long periods of unemployment or under-employment and to be more vulnerable to abuse of the legal and social safeguards that have been established to protect workers. Facilitating the growth of jobs at larger enterprises could also be particularly helpful in re-integrating into the labor force vulnerable groups, including laid-off workers with employment prospects limited either by age, skills or other factors, and new entrants to the labor force, such as women who did not work before mine closure and youth, who are disadvantaged by their lack of experience and skills.

168. A private sector development component could consist of provision of business consulting/technical assistance to (i) existing large enterprises that are already major employers (assuming such exist in the municipality, which is typically the case in Russia and Ukraine and less so in Romania), (ii) medium enterprises that are seeking to grow (for example, through assisting them in identifying a strategic marketing plan to allow them to grow beyond the local market), and (iii) local and regional governments that are seeking to enhance the role of the private sector in the economic development of their respective territories.

169. The provision of assistance to existing large enterprises has certain potential pitfalls that should be guarded against, notably SOEs that are themselves in need of restructuring. In any event, it should be stressed that the larger, existing enterprises should not be eligible to compete for the limited investment funds made available to support individual and small business through local development programs. The risk that a large enterprise will absorb large amounts of finance without creating jobs is great. Rather, the assistance should be streamlined to consist of strategic business advice, which can be just as relevant to a large, established enterprise as to a small entrepreneur who is just starting out.

170. Local and regional governments can benefit from policy advice directed at strengthening the investment climate, increasing local/regional business competitiveness, private provision of housing and other municipal network-borne services and so on. Where long-term strategic development plans give an important role to infrastructure-intensive projects, such as the development of a tourism industry (as, for example, is often proposed for Romania's Jiu Valley), the scale of required investments is clearly beyond the capacity of any level of government and underscores the relevance of a sustained effort to work with municipalities and regions in order to attract investors, work with banks, etc.

171. **Deepen efforts to rationalize housing stock and social infrastructure.** The intractable problems of housing and social infrastructure are found in municipalities throughout the transition economies, but they assume a particular significance in mining towns, both for the

historical reasons as described earlier and because the rate of population decline in these communities is likely to exceed the national average. A significant implication of this is the continued decline of already highly depressed local housing markets (which in turn constitute a major constraint to individuals and families considering out-migration.) This condition, in turn, argues against investments in the housing stock of mining communities beyond what is necessary for basic maintenance and to ensure a basic level of safety.

172. As populations decline and age, the need for certain types of social infrastructure also declines. The research found that in recent years, many municipalities have understood the need to rationalize these expenditures through closing kindergartens, consolidating schools and so on. In the more positive cases, this process of rationalization is accompanied by improved maintenance of the remaining assets.

173. The rationalization of the housing stock, while generally of greater significance from the point of view of the impact on the municipal budget, is a considerably greater challenge than the rationalization of public buildings, however, for three major reasons. First, ownership of housing is sometimes legally ambiguous, as when there is a private ownership at the apartment level and municipal ownership (by default) at the building level. Second, reliable information on building occupancy is typically lacking. While a large number of apartments might be empty for months on end (as indicated by the survey carried out in Ukraine), the municipality usually does not know whether an apartment has been abandoned, or whether the owner/occupant intends to return (indeed, the occupants themselves may not know this when they leave). Third, efforts to rationalize the housing stock are complicated by the partial occupancy of many buildings. Given equal claims on replacement housing of comparable quality, municipalities face the difficult question of determining which buildings will be demolished and who will be relocated first.

174. Some mining municipalities have had a positive experience in rationalizing the municipal housing stock and related services, particularly when the municipality includes mining settlements that are spread out over a large territory. Where sponsored migration programs exist (such as from Russia's Far North), municipalities have a chance to realize gains by closing down the mining settlements, compacting the physical infrastructure that was extended over kilometers to serve the settlements, and providing improved living conditions to those who remain, who are relocated into better quality apartments that have been vacated by official migrants. But such clearly defined situations are rare.

175. Capturing the gains from the rationalization of the municipal housing stock is not an easy task, for the economic, social and political reasons touched upon here. At the same time, most municipalities cannot afford to disregard the huge potential of reforms in this area. In order to help ensure the successful continuation of efforts to rationalize the housing stock and related social infrastructure, municipalities should strengthen their information base of the housing stock by working closely with neighborhood groups or (where they exist) building-level associations to identify apartments that are unoccupied. If financing can be made available, a program of municipal "buy outs" of unoccupied apartments could benefit the municipality as well as the seller. Reducing the number of unoccupied apartments would also be a positive step towards the reduction of non-payments for utility services that were reported in towns that have experienced high levels of migration.

176. **Enhance migration and transportation support to households.** It is unlikely that direct financial support for migration could be made available to match the demand that exists for such support in many communities in which mines have been closed. There are also compelling social and political reasons why governments would be disinclined to provide this support. At the same time, recognizing that in certain cases labor migration is a phenomenon of enormous significance to the present and future of a mining town, there are social and economic gains to be had through strengthening local capacity to provide migration support to interested households (along the lines, for example, of the support provided in Novoshakhtinsk.) Efforts should be strengthened to remove barriers to migration, for example, housing or transportation. In cases of short-term, temporary or seasonal labor migration, municipalities and civil society groups can help protect the interests of the people living in the mining towns by coordinating information on employment prospects (which could lead to a more optimal matching of jobs with job-seekers, e.g. over a smaller geographic territory than is the case when individuals seek to resolve this problem on their own) and taking steps to confirm the legitimacy of employment offers that are extended from other locations.

177. When families have decided to migrate permanently, or are considering permanent migration, municipalities can capture gains through better tracking of the housing stock and apartments that are potentially abandoned, and possibly purchasing apartments from families wishing to migrate, as described in the previous paragraph. In view of the transportation constraints that exist in many areas, a less radical solution to balancing the local labor market would be to provide subsidized transportation for workers willing to travel to other cities for employment.

Parting Thoughts: Looking to the Future

178. Mining towns and other towns dominated by a single industry are often described as “dying towns” after the closure or significant downsizing of the dominant industry in the local economy. This term has been avoided throughout this report, as it carries rather negative implications usually without a corresponding analytical basis for this designation. And while it seems that the population of mining towns will continue to contract (as will populations overall in EE/FSU, at least in the medium term), it is important to keep in mind the short “shelf life” of some of the more grim prognoses of decline in regions that have suffered large-scale job-destruction as a result of industrial restructuring. It is true that the process of recovery is a long and arduous one. One way or another, however, most municipal governments will come around to dealing with the problems that confront their communities. If they can be aided in this process by national and regional governments and other concerned groups, such as NGOs, that share a vision of coal sector restructuring and implement it consistently, financial and human costs can be reduced.

179. There is an important role to be played by makers and implementers of policy in helping to prepare municipalities for the difficult adaptation that they face when mines are closed, including first and foremost minimizing the period of the adaptation (which often includes a phase of resistance to the restructuring policy, or a phase of simply not knowing what to do) so that resources may be employed more effectively and the various components of the mitigation strategy put into operation as soon as possible.

180. The town of Stakhanov, one of the research sites in Ukraine, is a noteworthy example in this regard. All of the mines in Stakhanov have been closed and, as described earlier, there is evidence of a high level of out-migration from the town. The local development response has been slow to come, protracted, perhaps, by the on-going ambivalence towards coal sector restructuring from the national level down. At the same time, for the first time in many years, recent assessments of Stakhanov’s future prospects contain a glimmer of encouraging news. A comprehensive report on Stakhanov’s economic and socio-cultural life that was prepared by the city government in 2001 details a number of positive developments, including the resumption of growth of industrial production, improved tax collections, the growth in the number of individual and small enterprises, a doubling of the average monthly number of vacancies in the employment service, and so on. Of particular interest is the description of an investment project under implementation by a domestic investor that is converting waste from coal mining into a marketable product that is sold as fuel to power stations. An environmental problem has been turned into a business opportunity.³⁷

³⁷ Stakhanov, Ukraine (2001).

181. The optimism of the local administration is echoed in the words of an entrepreneur in Stakhanov who participated in the research:

[Business people] are trying to fill all the niches for the things necessary in life... Just this last year there's been a real leap forward... People who, for example, began to work with wood and metal now have businesses installing doors with codes. New kinds of activities are starting up in the city, people are beginning to use services... There really is competition here now. People come here from all over the region to have weddings, celebrate birthdays and special occasions. The thing is, the absence of jobs and the closure of the mines really forced people to try to survive. And we all feel this and we know that if we're going to do something, we have to do it right, it's a matter of conscience. And the people who take up [business] are the people who know how to do something.

Entrepreneur, cable and satellite TV systems, Stakhanov, Ukraine

182. The report prepared by the Stakhanov city government also noted that a business incubator had been opened in the town in 2001, with the help of a Lugansk Oblast organization dedicated to the support of entrepreneurship. One cannot help but note the contrast with Novoshakhtinsk, a coal town of about the same size, equally hard-hit by mine closure, and a short distance away on the other side of the Ukrainian-Russian border. Novoshakhtinsk opened its first business incubator in 1996 and has since gained recognition as one of the more progressive small towns in Russia in this field. Much remains to be done to diversify the local economy and establish an economic base that is independent of the coal sector, and in the meantime there is, inevitably, some dislocation and social cost, as workers leave Novoshakhtinsk in search of gainful employment. At the same time, it is reasonable to suppose that the combination of a realistic vision on the local level and adequate support from above has helped shorten the adaptation period and to facilitate the town's progression into the constructive phase of response to the closure of the mines that were once the lifeblood of the town.

Annex 1. Description of research sample

A. Phase 1 Indicative Sample. The following indicative sample was used to develop the sample in each country, with variations introduced as appropriate in each research location.

I. National-level officials working at national level

1. Deputy minister (Department head) of Mining/Energy Ministry or Mine Closure Agency. (More than one official is possible depending on nature of expertise.)
2. Deputy minister (Department head) of the Ministry of Finance.
3. Deputy minister (Department head) of the Ministry of Health.
4. Deputy minister (Department head) of the Ministry of Social Development / Labor.
5. Government official overseeing regional/municipal development.
6. Member of parliament from coal mining region.

II. National-level officials working at local level

Official from local branches of:

7. Employment Service.
8. Health service agency.
9. Education agency.
10. Social protection agency.
11. Environmental agency.

III. National-level non-governmental (civil society) groups

12. Representative of coal trade union.
13. National association of mining municipalities (alternatively municipalities in general.)

IV. Local officials

Municipal government officials:

14. Mayor.
15. Deputy mayor for social issues (social protection, health, education, etc.)
16. Deputy mayor for social assets (if applicable).
17. Deputy mayor for economics/economic development.

V. Other local experts and representatives of civil society groups

18. Managers of job-creation programs, business incubators, etc.
19. Local union representative.
20. Local NGOs and other civil organizations.
21. Leaders of the informal groups in the community.
22. Director (deputy director) of large or growing non-coal enterprise that employs former miners (or potentially could).
23. Local religious leader (if appropriate and significant for community.)

VI. Independent Experts (national and/or local)

Experts in the areas of:

24. Education.
25. Health, including stress-related mental and physical illnesses.
26. Child and youth problems.
27. Social deviations such as crime, drug abuse and other socially destructive behavior.
28. Family issues.

B. Phase 2 Sample – Members of the Population

Following is the description of the Phase 2 sample for each municipality; in each municipality, approximately 30 interviews were sampled, for a total of 60 per country (90 in Romania).

Nº	Description of sample group (for each municipality)	Indicative Quantity (+/- 1 okay)
	TOTAL in each municipality	30
1	Coal miners first laid-off in 1997 (1998 latest) and presently unemployed or underemployed.	5
2	Wives (or widows) of unemployed/underemployed miners. <i>Note: Not wives of respondents from other groups.</i>	5
3	Coal sector workers laid-off in 1997 (1998 at latest) and presently employed in the coal industry in any capacity. <i>Note: Including working pensioners up to the age of 60. If relevant, okay to include one or two "professional migrants" – i.e. coal miners who regularly travel to other coal regions or countries (e.g. from Ukraine to Russia) to work in the coal industry and who are temporarily at home on leave – but only if they really are employed.</i>	6
4	Unemployed young people (not former miners), age 20-30. <i>Note: do not include students or individuals with higher education. Conceptually the idea is to find individuals who most likely would have found employment in the coal sector in the past, before coal sector restructuring and the general contraction of the economy in the transition period.</i>	4
5	Former coal miners who received professional retraining in another profession. <i>Note: It is not necessary for these respondents to have found employment in their new profession, the important point is the fact that they received retraining.</i>	3
6	Local individual entrepreneurs who have used the services of local business incubators and/or received microcredit to open their own businesses. <i>Note: Self-employed or with no more than 3 employees, and not necessarily former coal sector workers. Respondents can include individuals who engage in petty trade but the emphasis should be on those who have plans to develop their business, not those who are engaged in petty trade "simply to survive".</i>	5
7	Local entrepreneurs with 10 or more employees <i>Note: Give preference to respondents who started their businesses in 1997 or later.</i>	2-3

Annex 2. World Bank lending in support of coal sector restructuring in Eastern Europe and the former Soviet Union

	Loan Amount (USD million)	Loan Approval Date	Loan Status
Poland			
Hard Coal SECAL 1	\$300	June 1999	Closed September 2000.
Hard Coal SECAL 2	\$100	August 2001	Closed December 2001.
Romania			
Mine Closure and Social Mitigation Project (Note: for coal and other mining industries)	\$44.5	August 1999	Active (closing June 2005).
Russia			
Coal SECAL 1	\$500	June 1996	Closed December 1996.
Coal SECAL 2	\$800	December 1997	Closed December 2001.
Coal IAP (technical assistance)	\$25	June 1996	Active (closing December 2002).
Ukraine			
Coal Pilot Project	\$15.8	May 1996	Closed December 2000.
Coal SECAL	\$300	December 1996	Closed December 2000.

Annex 3. Russia: Evaluation Criteria for Local Development Programs

Factor (criterion)	Weight	Rating	Value
1. Financial potential			
1.1 Profitability of own capital	.2	Negative Zero Positive	-1 0 +1
1.2 Level of borrowed capital	.2	High Average Low	-1 0 +1
1.3 Period of payment of accounts payable.	.1	Early On time Late	+1 0 -1
1.4 Enterprise ability to pay	.3	Low Optimal High	-1 0 +1
1.5 Existence of undistributed profit	.2	Unstable Neutral Stable	-1 0 +1
2. Production potential			
2.1 Number of types of activity	.2	1 type Less than 3 types 3 or more types	-1 0 +1
2.2 Volume of production (dynamic)	.1	Falling volume Stabile Growing	-1 0 +1
2.3 Load factor	.3	Less than 0.8 0.8 More than 0.8	-1 0 +1
2.4 Norms for expenditure of raw materials and other materials	.1	Are absent Often used Are used	-1 0 +1
2.5 Profitability of produced goods	.3	Negative Less than 10% More than 10%	-1 0 +1
3. Marketing assessment of enterprise			
3.1 Potential scope of market	.3	Non-perspective Relatively perspective Perspective	-1 0 +1
3.2 Sales volume	.2	Small, local Sufficient, local Large, including sales in other regions	-1 0 +1
3.3 Competition	.3	Very high Moderate Very low	-1 0 +1
3.4 Existence of portfolio of orders	.1	No portfolio Current orders portfolio Future orders exist	-1 0 +1
3.5 Advertising expenses	.1	None Less than 10% of sales More than 10% of sales	-1 0 +1

Factor (criterion)	Weight	Rating	Value
4. Socio-economic assessment			
4.1 Number of jobs created	.2	Fewer than in plan As planned More than in plan	-1 0 +1
4.2 of which, for former miners	.2	Fewer than in plan As planned More than in plan	-1 0 +1
4.3 Wage level	.2	Below regional average Regional average Above regional average	-1 0 +1
4.4 Costs per job-created	.3	More than in plan As planned Less than in plan	-1 0 +1
4.5 Qualification of management	.1	Low Average High	-1 0 +1
5. Investment potential			
5.1 Assessment of future investment plans	.2	None Plans exist for current year Plans exist for medium term	-1 0 +1
5.2 Existence of own sources of investment	.2	None Less than 50% of need More than 50%	-1 0 +1
5.3 Access to credit	.2	Credit inaccessible Credits accessible but only up to half of needed amount Access to any volume of credit	-1 0 +1
5.4 Location (territory)	.2	Poor Neutral Advantageous	-1 0 +1
5.5 Environmental factor	.2	Poor Neutral Advantageous	-1 0 +1

Annex 4. Cost-benefit analysis of coal sector restructuring (World Bank projects)

Country, project	Type of analysis	Costs (major items)	Benefits (major items)	Results of analysis	Notes
Romania, Mine Closure and Social Mitigation Project	Financial	Severance, social programs, mine closure costs	Savings of labor costs and related social fund contributions	FIRR 16.5%	Benefits from microcredit and incentive schemes not quantified for purposes of analysis in view of lack of reliable data.
Ukraine, Coal Pilot Project (3 mines)	(i) Economic – ex ante (appraisal)	Costs of coal production, mine closure, coal imports and social mitigation (latter two only in “with project” scenario)	Value of coal delivered to consumers, value of output from re-employed miners (in “with project” scenario)	EIRR 55% (overall; range from 20% to 93%)	The economic analysis compares (i) costs and benefits of the continued operation of the mines during the project implementation period and during a post-project period limited by coal reserves at each mine, with (ii) the costs and benefits of closing these mines immediately.
	(ii) Economic – ex post	(as above)	(as above)	EIRR 47% (overall)	The driver behind the results is reduction of cost of domestic coal production through mine closure in “with project” scenario. Revisions of analysis at project completion was based on the following factors: (a) the cost of imported coal, which sensitivity analysis in the ex ante analysis showed to be the most important factor, did not change. Further, the cost estimates for mine closure were on target (even slightly lower than at appraisal); (b) however, social mitigation costs were higher than estimated at appraisal and creation of new employment was progressing slower.
	(iii) Fiscal impact – ex ante	Coal industry subsidies, mine closure, social mitigation	Contributions to social funds, taxes	US\$ 59 mln incremental net impact on budget	

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