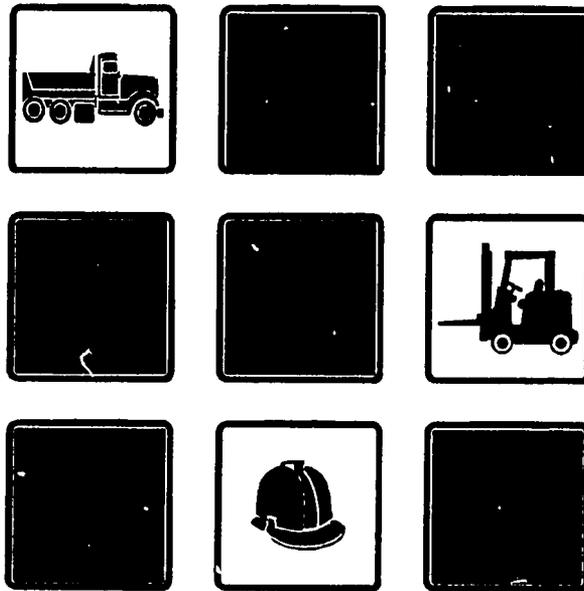


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Rehabilitation of Bosnia-Herzegovina's Production Enterprises

An Action Plan

December 1994



Center for Financial Engineering in Development

Draft Report

**REHABILITATION OF BOSNIA-HERCEGOVINA'S
PRODUCTION ENTERPRISES**

An Action Plan

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ACRONYMS

BiH	Bosnia-Hercegovina
BOAL	Basic Organization of Labor
DM	German Deutsche Mark
MT	Metric Ton
SCS	United Nations Special Coordinator for Sarajevo Rehabilitation
UK	United Kingdom
USAID	U.S. Agency for International Development

EXECUTIVE SUMMARY

When the civil war in Bosnia-Herzegovina (BiH) ends, the U.S. Agency for International Development (USAID) will be able to enhance the country's economic growth, environment, and basic human needs by rehabilitating production enterprises, particularly those in the gas and manufacturing sectors. Besides this case-by-case assistance, USAID can help other large, former state-owned enterprises indirectly through providing technical assistance and training to government officials on the legal and regulatory framework needed to restructure the economy and streamline the privatization process. Small business, meanwhile, can be encouraged through a small business development fund. This report, *Rehabilitation of Bosnia-Herzegovina's Production Enterprises: An Action Plan*, recommends USAID take the above actions once hostilities cease, analyses the past and present economic situation in BiH, summarizes reconstruction planning efforts, and identifies production enterprises for USAID to assist. *Planning for such efforts should start now.*

INTRODUCTION AND KEY RECOMMENDATIONS

When the civil war in Bosnia-Herzegovina (BiH) ends, the U.S. Agency for International Development (USAID) will need to set development priorities that enhance the country's economic growth, environment, and basic human needs. Rehabilitating production enterprises, particularly those in the gas sector, is a sound way of accomplishing all three of these. Production enterprises provide badly needed jobs and export opportunities, while those in the gas sector provide an environmentally sound means of heating homes and cooking food.

To identify production enterprises suitable for investment, USAID sent an engineer with expertise in privatization and developing economies to BiH in August 1994.¹ The engineer visited a cement plant to determine whether the equipment the government requested USAID purchase for the facility was appropriate. While the engineer concluded much of the equipment was not warranted, he thought the plant itself was a suitable candidate for USAID investment (see Chapter 5). While in BiH, the engineer identified other production enterprises that were equally suitable candidates. He agreed to an informal USAID request to research and report on the economic situation in BiH and make recommendations on suitable investments. This report, *Rehabilitation of Bosnia-Herzegovina's Production Enterprises: An Action Plan*, stems from that informal request. Highlights of its key recommendations are as follows:

- USAID should be prepared to act immediately upon the agreement of peace to steer the development of production enterprises and ensure that they do not slip back to their old, ineffective ways. To do this effectively, USAID should develop plans at this time.
- USAID should work closely with the City Development Action Group of the United Nations Special Coordinator for Sarajevo Rehabilitation (SCS). The action group has developed a well thought out plan of action for rehabilitating Sarajevo.
- Development efforts must focus on two separate levels: former state-run industries (large businesses) and the emerging private-sector enterprises (small businesses).

¹ See Fred Zobrist. *Kakanj Cement Plant* (Washington, D.C.: USAID Order to the Center for Financial Engineering in Development [CFED], 1994).

- Large businesses can be best helped indirectly through providing technical assistance and training to government officials on the legal and regulatory framework needed to restructure the economy and streamline the privatization process. This will help free the former state-run industries from the bureaucracy and poor enterprise management problems that limited their international competitiveness in the past.
- Small business can be best helped through a small business development fund to help finance their startup costs; however, technical assistance on evaluating proposals must take place along with it to ensure only businesses with a reasonable chance of success are financed.
- The production enterprises PLIN Sarajevo, a gas manufacturer; SarajevoGas, a natural gas utility; Vitex, a textile company; Kakanj Cement, a cement plant; and UNIS, a manufacturing company building gas regulators and meters, should be among the highest priorities for USAID funding.

YUGOSLAVIA'S PRE-WAR ECONOMY

Before the outbreak of hostilities, the former Yugoslavia prided itself on having created a unique economic system that out performed all the centrally planned communist economies of other Eastern European countries. The essence of that system was to combine a market economy with "social ownership" and worker self-management of enterprises. The self-management evolved from some token participation of workers in company management after World War II to the workers becoming majority "shareholders" in their partially privatized company in the few years prior to the current war. This evolution took place during five phases: central planning, basic proportions planning, market socialism, self-management planning, and the prewar privatization phase.

Five Phases in BiH's Economic Evolution

Central Planning Period

Between World War II and 1952, Yugoslavia followed the central planning model used by the Soviet block states. In 1946 the country adopted a new constitution calling for "direct economic life and development through a general economic plan." The same year the Federal Planning Commission was set up to make all decisions with little discretion or feedback from production units. In 1948, however, Yugoslavia broke with COMINFORM, severing trade links, unilaterally abrogating treaties, and canceling development loans. Unrestricted state ownership and control was denounced as "state capitalism," and two new guiding principles for the evolution of the system emerged: "self-management" by the producers and "socialist commodity production." Initially, these actions adversely affected the economy, but the Yugoslavians decided to continue with their experiment rather than return to the Soviet blueprint. In 1950 a law was passed on the management of government enterprises allowing workers' councils to participate in management, although the councils for some time remained subordinate to state-directed managers. A new constitution was adopted in 1953 stating that social ownership of the means of production and the self-government of the working people were to constitute the basis of the social and political system.

Emergence of Basic Proportions Planning

In 1956 a new system of planning was adopted, and "social planning" with increased consultation and participation replaced "state planning." Central planning in Yugoslavia became only the planning of basic proportions: the rate of accumulation, distribution of investment resources, and shares of collective consumption. The Federal Planning Commission, renamed the Federal Planning Bureau, was charged with only forecasting sectoral growth rates, while each enterprise was charged with developing its own plans based on bureau forecasts and market signals. To facilitate the use of the market, steps were taken to create a unified price structure and adopt a more realistic exchange rate. Following these measures, Yugoslavia's economy picked up and performed well through the early 1960s.

By 1960, Yugoslavian leaders had begun to question the roles of the state versus the enterprises and the market versus forecasting plans. The result was the introduction in 1961 of reform measures to increase the role of the market. Yugoslavia opened its economy to world markets, reorganized its financial system, and relaxed controls for the determination of wages. The reforms, however, were carried out too quickly and resulted in economic difficulties. Yugoslavian leaders then began debating whether to further liberalize the economy or return to greater central control. A new constitution, meant as a compromise between the two sides, was adopted in 1963, but two years later the economic system was further liberalized.

Evolution to Market Socialism

Between 1964 and 1965, a series of new measures often referred to as the *1965 economic reforms* were issued to reduce the role of the state, introduce incentives to increase the quality and efficiency of enterprises, and give the population the benefits of the country's increasing wealth through increasing the rate of aggregate consumption. Key components of the 1965 economic reforms included the following:

- Transferring a large part of the federal government's responsibilities to the republics
- Increasingly integrating the economy with the international division of labor by replacing a complex system of multiple exchange rates with a realistic unified exchange rate and by liberalizing exports
- Transferring responsibility for resource mobilization and allocation from the state to economic enterprises and banks

- Correcting massive price distortions, curtailing the system of price subsidies, and increasing the autonomy of enterprises in price formation
- Extending enterprise autonomy to include the distribution of enterprise income to capital accumulation and workers' personal income

The reforms resulted in a phase in Yugoslavia's economic evolution often called "market socialism," a phase in which enterprises managed their affairs independent of the state subject to market principles. At that time the only residual state interference was coming largely from the republics and not the federal government. Planning consisting of forecasts still took place; however, enterprises were not required to follow those recommended plans. The basic philosophy at that time was that enterprises would further the general interest if they were able to maximize their income.

After 1965 the economy exhibited considerable cyclical behavior with periodic balance-of-payment difficulties, stop-go policies, and growing inflationary pressure. The reforms had reduced the number of macroeconomic policy instruments (e.g., fiscal policy, resource allocation, etc.), thereby weakening macroeconomic management. Many of the policy instruments intact (e.g., income, pricing, etc.) ran counter to the spirit of self-management.

Self-management also was not bringing the promised empowerment of the workers but instead power to the concentrated group of enterprise top managers. Laws permitting workers' councils to cede their management rights to professional managers further increased this concentration of power. In addition, large trade enterprises were using their resources to expand into quasi conglomerates by merging with financially unviable production enterprises. Many of them were forcing production enterprises into positions of permanent dependency under arrangements for revolving credit or contracts for preferential delivery. As a result, workers at other stages of production were seen as being deprived of part of their contribution to the total value of output—to the "surplus value" in Marxian terminology—and their right to participate in its allocation. This growing concentration of power was not only seen as violating the principle of self-management but also as damaging to the economy. Enterprises were seen as only interested in maximizing profit in the short run not to balanced growth in the long run.

Concerns about banking followed a similar trend. Previously banks had been run by their founders—the enterprises and sociopolitical communities that deposited funds in the banks—in exchange for voting rights. After the reforms, decisionmaking shifted considerably to managers. The absence of a consensus

among founders, bank managers, and enterprises combined with nonequilibrium interest rates and bank managers' control over information gave the perception that bank managers had too much control over economic development. This was also seen as depriving workers from making decisions on the surplus value.

Self-Management Planning

In 1974 a new constitution was adopted to remedy the shortcomings of market socialism and allow for greater worker self-management. The basic organization of labor (BOAL) was established as the principal decisionmaking unit and building block of all other economic organizations. Social compacts and self-management contracts between the worker BOALs and enterprises replaced traditional policy instruments, which had been discredited because of their association with the state and their inherent conflict to self-management. The social compacts—covering almost all transactions and arrangements (e.g., deliveries, the pooling of investment resources, the computation of transfer prices and personal incomes, etc.)—regulated functions performed by the market in market economies or by government targets in planned economies.

The ways in which banks and trade enterprises functioned also was changed. Banks were no longer given the status of enterprises. They become special organizations, similar to credit unions, serving the needs of the enterprises that constitute them and subject to the decisions of their members. Trade enterprises were given a status comparable to agents supplying services for an agreed share of the receipts. Following these reforms, it was hoped that the efficiency of a market economy could be achieved without exploitation of workers and large inequalities of income and wealth.

Prewar Privatization Phase

Further market-oriented reforms took place in 1988. Foreign trade and prices were liberalized, increasing the competitiveness of the domestic market; hyperinflation was brought under control; a multi-party political system was established, ending the communist party's stronghold over the government; and the Yugoslavian Constitution of 1974 was amended to substantially revise the self-management system. New laws were enacted, including the Law of Enterprises and the Law on Social Capital. The Law of Enterprises made it possible for Yugoslavian firms to organize as Western companies, removed firms' legal obligation to establish themselves as "organizations of labor," and authorized all forms of ownership. The Law on Social Capital made it possible to privatize social capital, although in practice most social capital was partially privatized to create

"mixed" enterprises. Many private enterprises or "mixed" enterprises were then set up and many workers became "shareholders" in their companies. This in principle makes the production enterprises to be rehabilitated partly privatized. But the wartime conditions have led to much confusion over this since the currency problems have rendered many investments nearly worthless. Further, the government of BiH has reasserted state ownership over all revenue-earning enterprises. Chapter 3 discussed the current economic situation further.

Evaluation of System Developed

The system of self-management planning that evolved did result in a unique economic system that out performed all the centrally planned communist economies of other Eastern European countries. Its large, state-owned enterprises were successful and competitive in Western markets, learning how to both compete, market, and most importantly, team with Westerners. A small, but insignificant private sector was allowed to develop.

The system, however, did create a number of problems and inefficiencies. *The main weakness was that the BOALs and workers councils did not own the capital invested in the enterprises.* This resulted in poor enterprise management consisting of the following inefficiencies:

- Prosperous firms managed by their workers councils and BOALs tended to hire too few workers and used more capital-intensive methods of production. This increased the income for the existing workers but caused unemployment and low wages for other workers.
- The BOAL and worker council system created an extremely slow decision-making process, resulting in slow reactions to changes in the marketplace. This made competing with foreign firms difficult.
- Firms in declining sectors or experiencing losses could not fire workers, preventing surplus labor from moving to sectors experiences laboring shortages.
- Wages were often set too high in labor-intensive industries, resulting in overpriced products and diminished demand for them. This particularly hurt the less developed regions of the country where new industries would have been set up if high prices were not stifling demand.

- Capital was not mobile and could not move from a low value to a higher value user. This was because the workers in an enterprise could not exercise control of the capital if it was invested outside of the enterprise.

These and other inefficiencies made maintaining economic stability impossible. Savings declined, growth was low, and inflation was high. There was also a liquidity crisis, initially caused by a low level of retained earnings and investment and then compounded by overemployment. Despite government regulations on the proportion of revenues enterprises could pay to workers, the self-managed enterprises paid too high a proportion of their revenues to workers as income. The resulting low level of investment produced slow growth and threatened to cause unemployment. The Communist Party and government officials would then force enterprises to hire more workers to avoid unemployment. This further increased the proportion of revenues enterprises paid to workers, further reducing savings and investment. To meet their payrolls, many enterprises were forced to stop paying creditors for extended periods, resulting in a general state of illiquidity where no enterprise had cash. The illiquidity brought low and declining productivity of both capital and labor and low efficiency of investments.

Enterprises also resorted to borrowing from banks to meet their payrolls. Banks were willing to make such loans because of government pressure and the fact that they were owned by the enterprises. The banks in turn borrowed from the National Bank of Yugoslavia, which led to an increase in the money supply and a number of periods of high inflation. To control the inflation, the National Bank of Yugoslavia often had to introduce tight monetary policy leading to high rates of interest and further reducing illiquidity.

As noted above, in the years prior to the current war, government officials concluded that social-ownership and self-management is basically incompatible with an efficient market economy, and they committed to developing a new strategy that included privatization.

Chapter 3

BIH'S ECONOMY TODAY AND REHABILITATION PLANNING EFFORTS

The war in BiH has totally disrupted the economy. Production enterprises have suffered significantly. Their facilities have been extensively damaged, their manpower depleted, and their most highly skilled personnel lost to braindrain. Many enterprises cannot conduct business because they do not have a viable currency, a problem compounded by the interruption of the exchanges. Humanitarian assistance, savings, and remittances from relatives living abroad—not salaries—are providing about 85 percent of Bosnians with their means of support. Government talk is rampant about how the future will be based on a Western-style, market-based economy with the private sector leading development. To help BiH with this effort, many in the international development community have started making rehabilitation plans.

Issues Facing Production Enterprises

Structural Damage

Before the war, many technologically advanced companies existed in BiH, offering a wide variety of consumer goods and services to a large domestic and export market. Today, many enterprises in BiH have either shut down or reduced their production to a small percentage of their prewar output. Millions of dollars in damages to offices, factories, machines, supplies, trucks, etc. has also been suffered. Compounding this problem is the economic hardship the breakdown of the former Yugoslavia has caused. Many enterprises are cut off from their suppliers and customers, and some are separated from production facilities located in other former Yugoslavian republics. Today, war production is the only part of the economy still working.

Manpower Depletion and Low Salaries

Many enterprises whose facilities, customers, and suppliers have been unaffected by either the war or the breakup of the former Soviet Union still cannot operate fully because they have lost the majority of their skilled workers to army service or death. Low salaries and the hostilities have caused still more skilled personnel to flee the country. Today, all public employees receive a token salary of one German Deutsche Mark (DM) per month. Although most are proud to

demonstrate their patriotism by working for that 1 DM, the low salary when compared to the salary of 600 to 1,000 DM per month for a small segment of the population is an incentive for leaving. A law preventing medical personnel from leaving has been put into place, but other types of highly skilled professions have experienced severe "brain drain" with up to 75 percent leaving the country.

Lack of Capital

Still another problem facing production enterprises is a lack of capital. The hostilities brought severe hyperinflation to BiH resulting in the former local currency becoming worthless. Bank accounts were destroyed, and investments became nearly worthless. The fact that many enterprises had over borrowed to meet their payrolls (see Chapter 2) exacerbated this problem. Today, the currencies in use are the DM and U.S. dollar, but enterprises without immediate access to those two currencies lack sufficient funds to operate. To date, there are no public plans to introduce a new national currency.

Reconstruction and Development Planning Efforts

United Nations Special Coordinator for Sarajevo Rehabilitation

In April 1994 the UN's SCS began work to establish a Trust Fund and published an Action Plan and Project Synopsis to encourage donor pledges at a pledging conference in June. The U.S. pledged \$16 million, more than half of which was recommended to fund rehabilitation of production enterprises, particularly those in the gas sector. The SCS's City Development Action Group has a well thought out plan for SCS-managed restoration of enterprises in Sarajevo. The three goals of the plan are job creation, establishment of a free-market economy, and complementary development of both parts of Sarajevo. It includes plans for tapping the resources of various development agencies, establishing a network of services, and managing SCS operations. *Coordination between SCS and USAID is highly recommended to maximize limited resources.*

United Kingdom/United States Civil Planning Mission to Sarajevo

In March 1994 United Kingdom (UK) Prime Minister John Major visited U.S. President Bill Clinton in Washington, D.C., to launch a joint U.S./UK initiative to determine the requirements to restore essential public services to Sarajevo. A joint team of 22 experts visited Sarajevo that month to work with Bosnian, Serbian, and UN officials to examine priority needs. The team studied electric power, gas,

water, health, waste disposal, city transport, housing, education, telecommunications, central heating, rail/road transportation, and *production enterprises*. The mission's report² provides a summary of production sectors and enterprises suitable for outside investment.

BiH Government

In June 1994 the BiH government established the Directorate of Development and Reconstruction to work with donors on reconstruction activities. The Ministry of Economy also has been making plans to create jobs; prepare laws and rules to encourage a free-market economy, including capital investment regulations for foreign investors; and re-start transport, power, and telecommunications infrastructure, *with gas projects being the highest priority*. When the hostilities cease, the Ministry of Economy plans to privatize previously successful companies, including production enterprises, and allow others to develop through the small business sector. Until the civil war is over, however, ministry officials concede the government must limit its efforts to humanitarian assistance. Consequently, it is difficult to tell whether the government line is being adjusted to fit the occasion and whether large companies are destined to stay in the state portfolio or are to be truly privatized.

Of interest to USAID planners is an event that occurred during the site visit for this report. The Sarajevo chamber of commerce voted to fix the lowest pay on all reconstruction projects to 6.5 DM (\$4 U.S.) an hour, just a quarter below the U.S. minimum wage. Only 25 percent of the money would go to the employees, who would be left with a minimum salary of \$1.5 DM per hour, almost 290 percent more than the 1 DM per month government workers currently receive. The rest would be split between the government and the companies that employ them. Many in the development community thought the plan was a misguided means of exploiting development money from the West.

² See *Joint US/UK Civil Planning Mission to Sarajevo, March 8-23, 1994* (London: ODA, Washington, D.C.: USAID, 1994).

POST-WAR RECONSTRUCTION PLAN OF ACTION

The end of hostilities in BiH will present a unique opportunity to implement rapid ownership restructuring of production enterprises. This restructuring should be aimed at introducing better corporate governance to privatized enterprises. Unless this is done, BiH faces three dangers: the channelling abroad of the newly privatized capital, enterprise managers or government officials exploiting the privatization process for personal gain, or the return to poor corporate governance that stems from the workers of state-owned or "mixed" enterprises not owning the capital invested in the enterprises. USAID can play an important role in ensuring the BiH government carries out an effective restructuring effort based on free-market competition, the only way to ensure a normal life is restored in BiH on a long-term basis.

Privatization and Legal and Regulatory Reform

First and foremost, USAID can provide technical assistance and training to government officials on the legal and regulatory framework needed to restructure the economy and streamline the privatization process. For BiH's production enterprises to compete globally once again through viable investments with sustained development benefits, a new legal and regulatory system must be in place. USAID can provide technical assistance and training on enabling rules, structures, and regulatory capacities, including property and contract rights, permitting market-based pricing and wages, regulating corporate governance and competition, and providing access to impartial dispute-resolution.

Government officials and key decisionmakers, however, must not only understand but also support these structural changes for progress in the privatization process to take place. USAID can provide technical assistance and training to government officials in developing a plan of action to stop the country's experiment with a mixed economy and implement rapid ownership restructuring involving total privatization instead of "mixed" enterprises. It is critical that the government, not enterprise managers, carefully manage this process to ensure that enterprise managers (as well as government officials) do not exploit the process for personal gain, leaving little for the rest of the citizens, or allow the privatized capital to be channelled abroad. A quick restructuring of ownership will ensure appropriate new owners can take control of the enterprises and guard against managers and workers appropriating the assets. If carried out effectively, such restructuring will eliminate the corporate governance problem as

the enterprise managers find themselves representing and reporting to a clear authority, the owners. (See Chapter 2 for an in-depth analysis of the problems created when managers find themselves representing an unknown owner and subject to an elaborate system of internal self-management and external control and monitoring.) More importantly, the quick restructuring also will help ensure enterprises do not redevelop in their old, inefficient ways.

Restructuring State-Owned Enterprises

Two major obstacles facing the large, formerly state-owned enterprises will be not having an adequate market at home to support them and a lack of capital. To return to their prewar levels of output, these large enterprises will have to compete effectively in world markets. This will make eliminating the corporate government problem described in Chapter 2 paramount. If the issue is resolved, the BiH enterprises should become extremely competitive because they contain personnel with the requisite technical and management skills. The lack of capital problem, however, will be harder to overcome. The best solution is tapping redevelopment financing from international financing sources, including partnering or selling shares to Western firms. If done in a manner to ensure privatized capital is not channelled abroad, this will also help jumpstart the BiH enterprises' re-entry into the global marketplace.

USAID assistance to large existing enterprises is recommended to take place on a case-by-case basis. Chapter 5 contains a list of key production enterprises that should be targeted for USAID assistance.

Facilitating Private-Sector Development

Emerging small, private-sector businesses will face problems different and distinct from those facing large, formerly state-owned enterprises. The enterprises will have limited business skills, and, unlike the large-state owned enterprises, the emerging private-sector businesses' lack of experience will make it difficult for them to attract Western partners. To help finance the startup of private-sector businesses, USAID could help set up a small business development fund; however, technical assistance on evaluating proposals must take place along with it to ensure only businesses with a reasonable chance of success are financed. Other technical assistance could be provided to the emerging enterprises on business strategies and management from a free market point of view.

SUITABLE PRODUCTION ENTERPRISES FOR ASSISTANCE

USAID and the BiH government have placed their highest reconstruction priority on rehabilitating production enterprises in Sarajevo, particularly those in the gas sector. Also of high USAID interest are production enterprises providing construction materials, food, and clothing to the local population. USAID officers in BiH have received many detailed estimates for rehabilitation of enterprises, including gas companies, clothing manufacturers, cottage industries, drug manufacturers, and milk and dairy producers. The five production enterprises described below—PLIN Sarajevo, SarajevoGas, Vitex, Kakanj Cement, and UNIS—are recommended to be among the highest priorities for USAID assistance.

PLIN Sarajevo

PLIN Sarajevo is the only company in BiH manufacturing oxygen, nitrogen, argon, carbon dioxide, propane-butane, acetylene, nitrous oxide, and other gas mixtures needed for hospitals, commercial and residential cooking, and the feed, metal, and construction materials industries. The company owns factories in Sarajevo, Tuzla, Lukavac, Gračanica, Doboј, Mostar, and Laktaši in BiH and Korčula in Croatia. Before the war, the company produced between 35,000 and 50,000 tons a year of various gases with a \$25 million capital investment. The capital was 87 percent equity and 13 percent debt held primarily in supplier credits. Profit averaged 20 percent annually based on the capital investment and was put back into the industry as new and expanded capacity.

Today the company is producing about 3,000 tons a year, and only about a fifth of the 500 workers who worked at the company before the war still remain. War damage is estimated to be between \$12 and \$13 million, including the loss of the oxy-acetylene plant to the Serbs. Currently, PLIN Sarajevo is being renationalized, even though it was partially privatized before the war (employers were given 68 percent of the ownership with the state the balance). Government officials say they plan to reprivatize the company after the hostilities cease, although what privatization model will be used is unknown.

SarajevoGas

SarajevoGas is the public utility that transports and distributes natural gas in the Sarajevo area for use in heating homes and cooking food. Its system consists of more than 700 kilometers of pipeline distributing natural gas from Russia to 60,000 residential and commercial customers in the city and suburbs. This system was developed about 13 years ago through a \$60 million World Bank loan, which before the war was being paid back at \$3 million a year. The World Bank made the loan to develop a more environmentally sound energy supply and improve Yugoslavia's environment. Until the war broke out, Yugoslavia relied heavily on highly pollutant coal and oil energy methods, and SarajevoGas supplied only about 10,000 customers.

The hostilities have caused significant damage to the gas system. City regulation stations, measuring stations, pipelines, vehicles, machines, and maintenance tools have been either partially or completely destroyed. Because of the trade blockages around Sarajevo and the resulting shortages of gas and other energy supplies, tens of thousands of area residents made connections to the gas system with homemade systems without regulators and without protecting thermo units. These homemade systems—consisting of steel fences, light posts, scaffolding, etc.—are extremely unsafe and are endangering tens of thousands of people and their property. Further, required maintenance work on the system has been limited because of a shortage of spare parts and the loss of four-fifths of the workforce (to about 60 from the prewar 300). Once the hostilities cease, natural gas is expected to remain the energy source of choice, and the system will become even more strained as some 100,000 refugees return from abroad and tap into it. SarajevoGas, currently state owned, could be privatized at that time. SarajevoGas officials seem reluctant to privatize, probably because of a lack of understanding of how privatization would work.

Vitex

Vitex is a textile company with facilities scattered throughout BiH, some in Serb control, producing blankets for export and domestic markets. Before the war the company produced about 1.5 million blankets per year, mostly for export. Company officials interviewed for this report did not know what the company's value was but estimated it was about 150 million DM. Supplier credit debt was said to total 6 million DM. The company also had been privatized before the war with 49 percent employee ownership and 51 percent state ownership.

Today the company currently has 350 employees down from the prewar level of 3,500.³ The Visoko blanket plant is operating on a limited basis weaving blankets and spinning yarn from waste fiber and prewar undestroyed materials. The facility is in good repair, although it sustained 35 million DM in damage in an attack in May 1992 that the company paid to fix. The blankets produced in Visoko are given to needy families and the military. Reserve supplies, however, are just about exhausted and funding or materials must be found soon if operations are to continue. Vitex has developed a well thought out plan of action for reconstruction, including plans to replenish raw materials, set up an underwear weaving facility, and refurbish the blanket factory.

Kakanj Cement

Kakanj Cement is a cement plant in Kakanj owned by Hidrogradnja, a state industry. It has a capacity of 500,000 million Metric Tons (MTs) of cement and was originally constructed for expansion to the 1 million MT level. About 40 percent of the expansion phase was completed with the original construction. Fly ash from a nearby powerplant is used in the cement-making process as well as limestone quarried 2 and 3 kilometers from the plant. The limestone is reported to be excellent for the cement process and sufficient for at least 100 years of operation. The plant is designed to operate on either mazuit or gas for the clinker process while electrical requirements total 6 mW, a small fraction of the capacity of the nearby power station.

Today the Hidrogradnja organization is inoperative, although its administrative structure remains in place and is expected to restart most of its activities once peace is reached. The plant has not suffered any war damage and is in relatively good condition. All of its working equipment, however, has been loaned out to the military. After the hostilities end, new equipment will be needed to restart operations if the equipment returned is in disrepair or not returned at all.

³ One Vitex job provides an estimated 20 jobs to others in the textile business downstream.

UNIS

UNIS is a manufacturing company specializing in weapons; raw materials production; auto assembly; bicycles; bearings; telecommunications; and machinery, including *gas regulators and meters*. Before the war, UNIS had gross revenues in excess of \$1.4 billion, of which \$330 million were from exports. Profit was about \$300 million annually with salaries averaging \$300 per month. UNIS had offices worldwide, including the United States, primarily through working partners. Its foreign arrangements included 12 joint ventures, 33 long-term agreements, ownership of four offshore companies, and 13 representative offices. Its departments included industry, engineering, commerce, trade, tourism, car rental, and banking. Among its international agreements was a contract with Singer to produce gas regulators and meters. Under the Singer agreement, UNIS assembled or produced 150,000 gas regulators, 15,000 gas meters, and other selected gas products for export between 1981 and the outbreak of hostilities.

Today UNIS has about 20 factories operating primarily for military needs. Because of the war, formal international agreements have broken down and must be reestablished before any re-initiation of past activities can begin again. These includes the Singer agreement. After the war, UNIS plans to restart its operations with as much foreign investment and partnership as can be arranged; however, returning UNIS to its former levels of production will require more capacity than BiH can absorb in the foreseeable future. UNIS has lost control over many of its overseas offices, and its two highrise office buildings adjacent to the Holiday Inn in Sarajevo have been heavily damaged by the war. They will require between \$12 and \$20 million to fix. Still, the company has a workable plan for restarting its gas meters and regulators operation, a worthy USAID investment. UNIS plans to renew the Singer agreement, restart production by assembling parts, and then work out supply arrangements with other former Yugoslavian republics. Afterward, the company plans to develop a manufacturing franchise for gas regulators with American Meter Company, who has expressed interest in such an arrangement.

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