

BAL KAN

VITAL GRAPHICS

ENVIRONMENT
WITHOUT BORDERS





This publication was initiated by the Environment and Security Initiative (ENVSEC), a partnership between six organizations listed below.

The **United Nations Environment Programme (UNEP)**, as the world's leading inter-governmental environmental organisation, is the authoritative source of knowledge on the current state of, and trends shaping the global environment. The mission of UNEP is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

The **United Nations Development Programme (UNDP)** is the UN's Global Development Network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. It operates in 166 countries, working with them on responses to global and national development challenges. As they develop local capacity, the countries draw on the UNDP people and its wide range of partners. The UNDP network links and co-ordinates global and national efforts to achieve the Millennium Development Goals.

The **United Nations Economic Commission for Europe (UNECE)** strives to foster sustainable economic growth among its 56 member countries. To that end, UNECE provides a forum for communication among States; brokers international legal instruments addressing trade, transport and the environment; and supplies statistics and analysis. The broad aim of UNECE's environment activities is to safeguard the environment and human health, and to promote sustainable development in its member countries in line with Agenda 21.

With 56 participating States, the **Organization for Security and Co-operation in Europe (OSCE)** is a pre-eminent instrument for early warning, conflict prevention, conflict management and post conflict rehabilitation in continental Europe, the Caucasus, Central Asia and North America. Since its beginnings in 1973 the OSCE has taken a comprehensive view of security, including through the protection and promotion of human rights and fundamental freedoms, economic and environmental cooperation, and political dialogue.

The **Regional Environmental Centre for Central and Eastern Europe (REC)** is a non-partisan, non-advocacy, not-for-profit international organization with a mission to assist in solving environmental problems in Central and Eastern Europe. The center fulfils this mission by promoting cooperation among non-governmental organizations, governments, businesses and other environmental stakeholders, and by supporting the free exchange of information and public participation in environmental decision-making.

The **North Atlantic Treaty Organisation (NATO)** embodies the transatlantic link that binds Europe and North America in a unique defence and security alliance. In response to recent changes in the overall security environment, NATO took on new fundamental tasks. These include addressing both instability caused by regional and ethnic conflicts within Europe and threats emanating from beyond the Euro-Atlantic area. NATO's "Science for Peace and Security" programme brings scientists together to work jointly on new issues and to contribute to security, stability and solidarity among nations.



Published by UNEP/GRID-Arendal
Copyright © 2007, UNEP/GRID-Arendal
ISBN: 978-82-7701-046-5

Printed by AVANGARDA, 11080 Zemun, Srbija.

The views expressed in this book are those of the authors and do not necessarily reflect views of neither UNEP/GRID-Arendal nor ENVSEC partner organizations or their member-countries. The designations employed and the presentation of material in this book do not imply the expression of any opinion on the part of the organizations concerning the legal status of any country, territory, city or area of its authority, or delineation of its frontiers and boundaries.

For the purpose of this publication the name Kosovo has been used to refer to the territory under the United Nations Interim Administration Mission in Kosovo, established in 1999 by the UN Security Council resolution 1244; and the name Macedonia has been used to refer to the Former Yugoslav Republic of Macedonia.

BALKAN

VITAL GRAPHICS

ENVIRONMENT WITHOUT BORDERS

Editorial team

Ieva Rucevska
Otto Simonett
Christina Stuhlberger
Jasmina Bogdanovic

English translation and editing

Harry Foster

Cartography

Philippe Rekacewicz
Stephane Kluser
Matthias Beilstein
Ieva Rucevska
Cecile Marin
Otto Simonett

Photography

Vlado Alonso

Special thanks for collaboration to

Harald Egerer (UNEP Vienna office)
Jelena Beronja (UNEP Vienna office)
Bo Libert (UNECE)
Francesca Bernadini (UNECE)
Franca Schwarz (German Environment Ministry)
Claudia Heberlein (UNEP/GRID-Arendal)
Mukundi Mutasa (UNEP/GRID-Arendal)

Contents contributors

Slavko Bogdanovic, Professor of environmental law, Serbia
Jean-Arnault Derens, journalist, France
Robert Hargreaves, Balkan Peace Park Project, United Kingdom
Lorik Haxhiu, Ministry of Energy and Mining, Kosovo
Marlene Heeb, Research Institute of Organic Agriculture, Switzerland
Zbigniew Niewiadomski, Bieszczady National Park, Poland
Nikola Nikolov, Professor, University of Skopje, Macedonia
Nelly Papazova, the Regional Environmental Center, Hungary
Philip Peck, Assistant Professor, ENVSEC mining expert, Lund University, Sweden
Edit Pop, WWF Baia Mare, Romania
Scott Sinclair, the World Bank, United States
Fethi Silajdzic, Bosna-S Oil Services Company, Bosnia and Herzegovina
Michael Stanley, the World Bank, United States
Dragi Pop Stojanov, Brajcino Society for Sustainable Development, Macedonia
Skender Syla, WHO, Kosovo
Bekele Tamenu, WTO, Switzerland
Martin Woker, journalist, Croatia
Antonia Young, Balkan Peace Park Project, United Kingdom

UNEP promotes environmentally sound practices globally and in its own activities. This report is printed on 100% recycled paper, using vegetable-based inks and other eco-friendly practices. Our distribution policy aims to reduce UNEP's carbon footprint.

Foreword

by Otto Simonett

One of the more recent James Bond movies, Casino Royale, prominently featured somewhere called Montenegro, thus putting a little known place – or country – on the world map, at least for those who saw the film.

In the film, what purported to be Montenegro did not look quite like the real thing. Nor did the story, the action, nor indeed anything else in the movie particularly appeal to me personally (unlike the early Bond movies of my childhood). All in all I do not recall anything other than a cliché now shared with many of the millions who also saw the film: Montenegro is a place of natural beauty and a paradise for money launderers, with lots of long legged ladies.

Consequently talk of the Balkans, the environment and security may sound like yet another indigestible cocktail of pollution, conflict and poverty, with maybe some sex and crime too. However, we have also added vital graphics, to give the book more of a superstructure or spin, in short the ambition to communicate.

We aim to communicate nothing less than the environment of this highly complex, fascinating and attractive

region, a part of the world that faces many problems related to its environment and security, a place where “the dark side” often overshadows opportunities based on rich, diverse natural and human assets, the “bright side”.

With this publication, the consortium of international organizations behind the ENVSEC initiative would like to paint a picture using more colours than just black and white, taking intermediate hues to highlight the region’s environmental and security issues: gray, for the political background, always relevant to such a harmless topic as the environment; blue, for water, as in the Blue Danube, disregarding national borders and offering enormous potential for cooperation; brown, with an industrial legacy of brown clouds and rusty water, yet endowed with a certain charm and considerable potential for future development; lastly green, symbolic of nature itself, but also associated with conservation, production, cooperation and consumption.

Unfortunately our booklet will probably have far fewer readers than Casino Royale had viewers, but to those who do take a look at it, we say: *Enjoy!*

Contents

GREY
8
BACKGROUND

BROWN
24
MINING

BLUE
44
WATER

GREEN
58
NATURE

“*What would be ...*”

“Long before appointed time the four ‘recognized notables’ met on the deserted square and walked with slow steps to the kapia ... They sat on the kapia as they had once done when they were young and carefree and, like the rest of the young people, wasted their time there. Only now they all advanced in years. Pop Nikola and Mula Ibrahim were old, and the schoolmaster and the rabbi in the prime of life. They were all in their best clothes, filled with anxiety both for themselves and their flocks. They looked at one another closely and long in the fierce summer sun, and each seemed to the others grown old for his years and worn out. Each of them remembered the others as they had been in youth or childhood, when they had grown up on this bridge, each in his own generation, green wood of which no one could tell what would be.

They smoked and talked of one thing while turning another over in their minds, glancing every moment towards Okoliste whence the commandant upon whom everything depended was to come and who could bring them, their people and the whole town, either good or evil, either peace or fresh dangers.”

Excerpt from *The Bridge on the Drina* (Serbo-Croat: *На Дрину Ћуприја* or *Na Drini Cuprija*), a novel by the Yugoslav writer Ivo Andrić, winner of the Nobel Prize in 1961. The book describes relations between Orthodox Christian Serbs and Muslims in the town of Višegrad in east Bosnia and Herzegovina during the Ottoman occupation. The story spans about four centuries and is, in some sense, a collection of short stories. What unites the book and becomes in a sense the main “character” is the bridge over the Drina River in Višegrad.

“Много пре одређеног времена четворица ‘законаша’ нашли су се на опустелој пијаци и спорим корацима запутили на капију ... Тако су седели на софи као некад кад су били млади и безбрижни и као и остала младеж кратили време на капији. Само што су сада били сви већ у годинама. Поп Никола и Мула Ибрахим стари, а мудерис и рабин зрели људи, празнички одевени и безбрижни за себе и сваки за своје. Гледали су се на оштром летњем сунцу, онако на дугу времену и изблиза, и долазили су један другом престарели за своје године и сувише истрошени. И сваки се сећао другог какав је био у младости или у детињству, кад су расли поред овог моста, сваки са својим нараштајем, зелено дрво од којег се још не зна шта ће бити.

Пушили су, разговарали једно а у мислима претурали друго, погледајући сваки час на Околишта, одакле треба да се јави командант од кога зависи сада све и од кога може доћи и за њихов свет и целу касабу и добро и зло и смирење и нове опасности.”



GREY

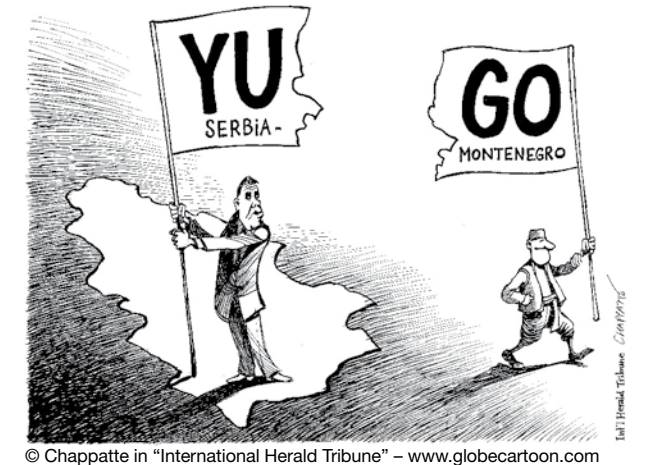
BACKGROUND



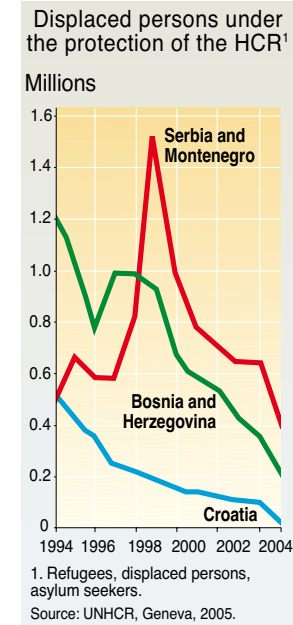
The west Balkans and the Black Sea region are characterized by numerous common risks and challenges, including fragile statehood, a shared history of violent conflict, unconsolidated democratization and economic underdevelopment. Given the crucial geopolitical position of both regions as (a) direct neighbours to the European Union (EU), North Atlantic Treaty Organisation (NATO), and Russia, (b) a bridge to the Middle East and Central Asia, and (c) an increasingly important energy transport route, instability in either region can have significant ramifications for domestic, regional, and international security. (Ref: Berteismann Group for Policy Research)

People and identity

The wars in former-Yugoslavia speeded up the process of ethnic homogenization underway in the west Balkans since modern states started to take form in the 19th century. In Croatia, for instance, the proportion of Serbs in the overall population has dropped from 12 per cent to just 4 per cent in 10 years. Bosnia and Herzegovina now consists of two political entities, the Federation of Bosnia and Herzegovina and the Republic of Srpska, and Distric Brcko hosting three main ethnic groups. The same is true of Kosovo, where the Serbs have lived in enclaves since 1999. A similar trend is at work in Macedonia, discreetly separating communities. It is even apparent in Skopje where segregation between Macedonian and Albanian neighbourhoods is growing.

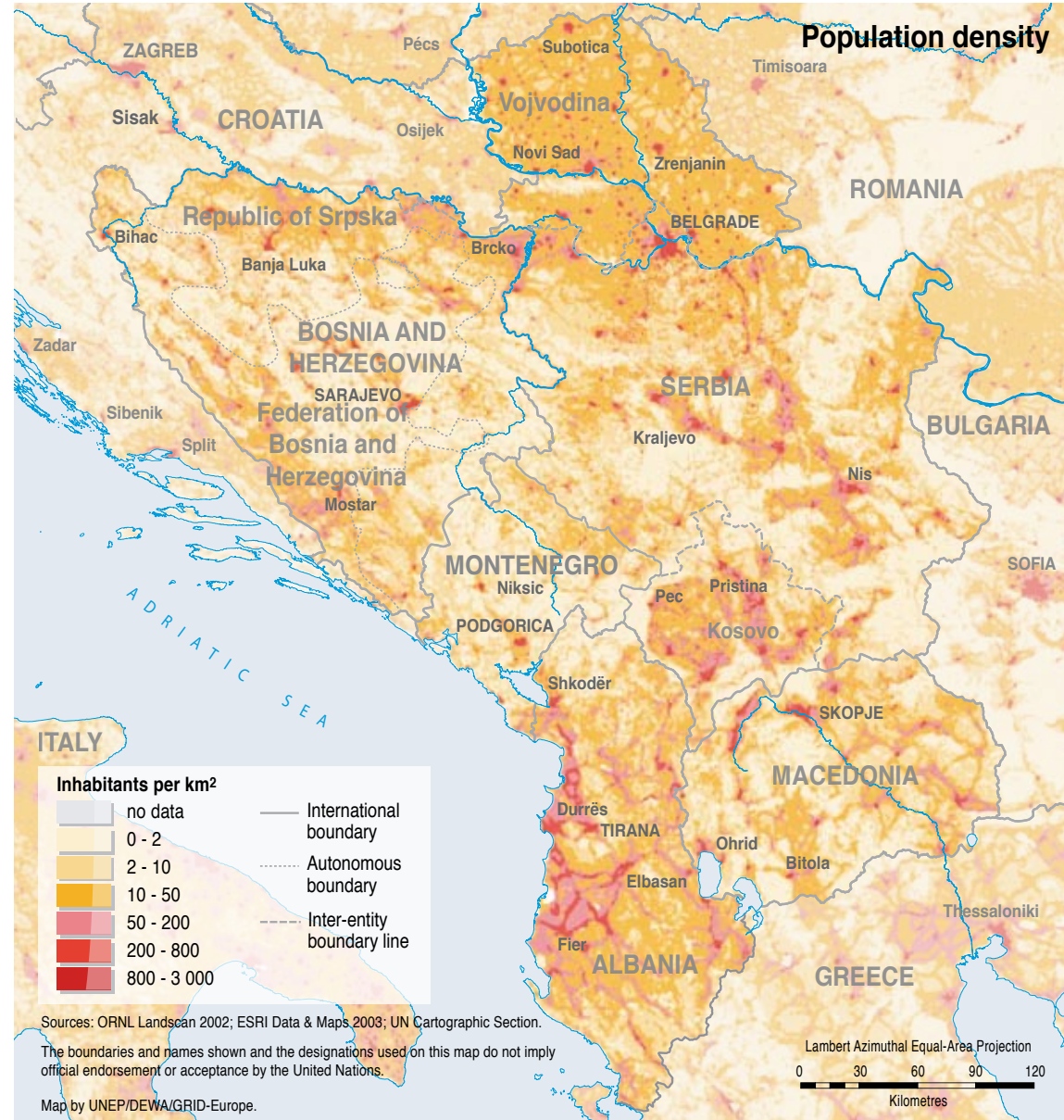


© Chappatte in "International Herald Tribune" – www.globecartoon.com



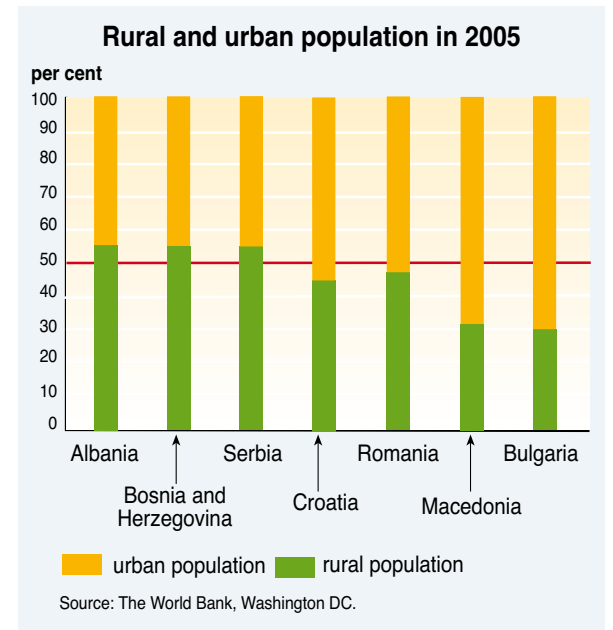
The wars gave rise to significant movements of population, some temporary, others permanent. It has proved difficult for refugees and displaced persons to return to their former homes. In Bosnia and Herze-

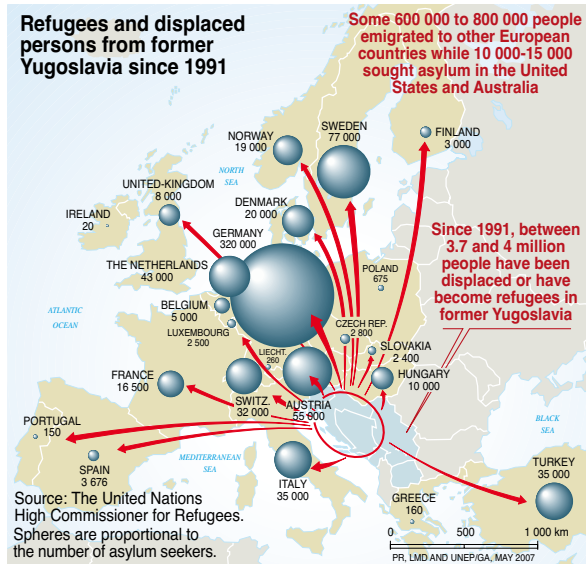
govina, the process is often illusory. Returnees hurry to sell recovered property, particularly when it is located in areas in which the ethnic community to which they belong is now in the minority.



Fighting may have ended but migration continues. Despite increasingly strict EU policies on immigration, the “western dream” still exerts a powerful force of attraction on the people of the Balkans. This is particularly noticeable in Kosovo where half the population is under 20 and unemployment affects 60 per cent of people of working age. The brain drain, primarily among young graduates, is compromising the future of countries such as Bosnia and Herzegovina, and Albania. In recent years there has been an increase in the number of migrants being forcibly repatriated, under readmission agreements signed by all the west Balkan countries with the EU.

In the meantime, the rural exodus is continuing all over the region, particularly in Albania where people are deserting mountain areas and the population of Tirana has risen from 200 000 at the end of the communist era to almost a million. The newcomers cram into the city outskirts lacking any proper infrastructure. A similar pattern may be seen in Belgrade, Sarajevo and Skopje.





Fragile states

All the states that emerged from the break-up of Yugoslavia are still fragile, except Slovenia, which joined the EU in 2004, and Croatia, which is well on the way towards European integration. Since the Dayton Peace Agreement (1995), Bosnia and Herzegovina has constituted a state, but split into two entities: the Republic of Srpska and the Federation of Bosnia and Herzegovina, itself divided into 10 cantons. In addition, there exists the district of Brcko which is a self-governing administrative unit. All attempts at reform of this highly ineffective institutional framework have failed so far.



Kosovo is theoretically a part of Serbia but has been under provisional United Nations administration since 1999. The decision on its final status could have serious consequences for the region, with the risk of new disturbances in areas with Albanian minorities (in Macedonia, Montenegro and Serbia).

Each government in the region has more or less restored law and order elsewhere. The “grey areas” of the 1990s have disappeared, particularly in Albania. However, corruption is still rife in government and public services (healthcare, education, etc.).

Green politics

In 1992, Montenegro, at that time part of the Federal Republic of Yugoslavia, adopted a new constitution which qualified it as an “ecological state”, the first to lay claim to this distinction. It has never had any practical effect. Much as in the other Balkan countries, environmental awareness is very low in Montenegro and public policy attaches only minor importance to the ecology.

Unlike other countries in central and east Europe, environmental movements did not play a major role in precipitating the downfall of communism, except perhaps in Slovenia. Throughout the 1990s, politics in the former Yugoslav republics limited itself to a standoff between nationalist and pro-democratic forces, leaving very little room for other issues.

Today’s supposedly “green” parties are often little more than empty shells in the west Balkan region. Various political parties, particularly those with a regionalist agenda,

nevertheless exploit environmental issues with varying degrees of enthusiasm and sincerity. This is for instance the case in the Vojvodina autonomous province, Serbia or in Istria, Croatia, where the Istrian Democratic Forum (Istarski Demokratski Forum, IDF), at the head of the regional government, is actively promoting sustainable tourism.

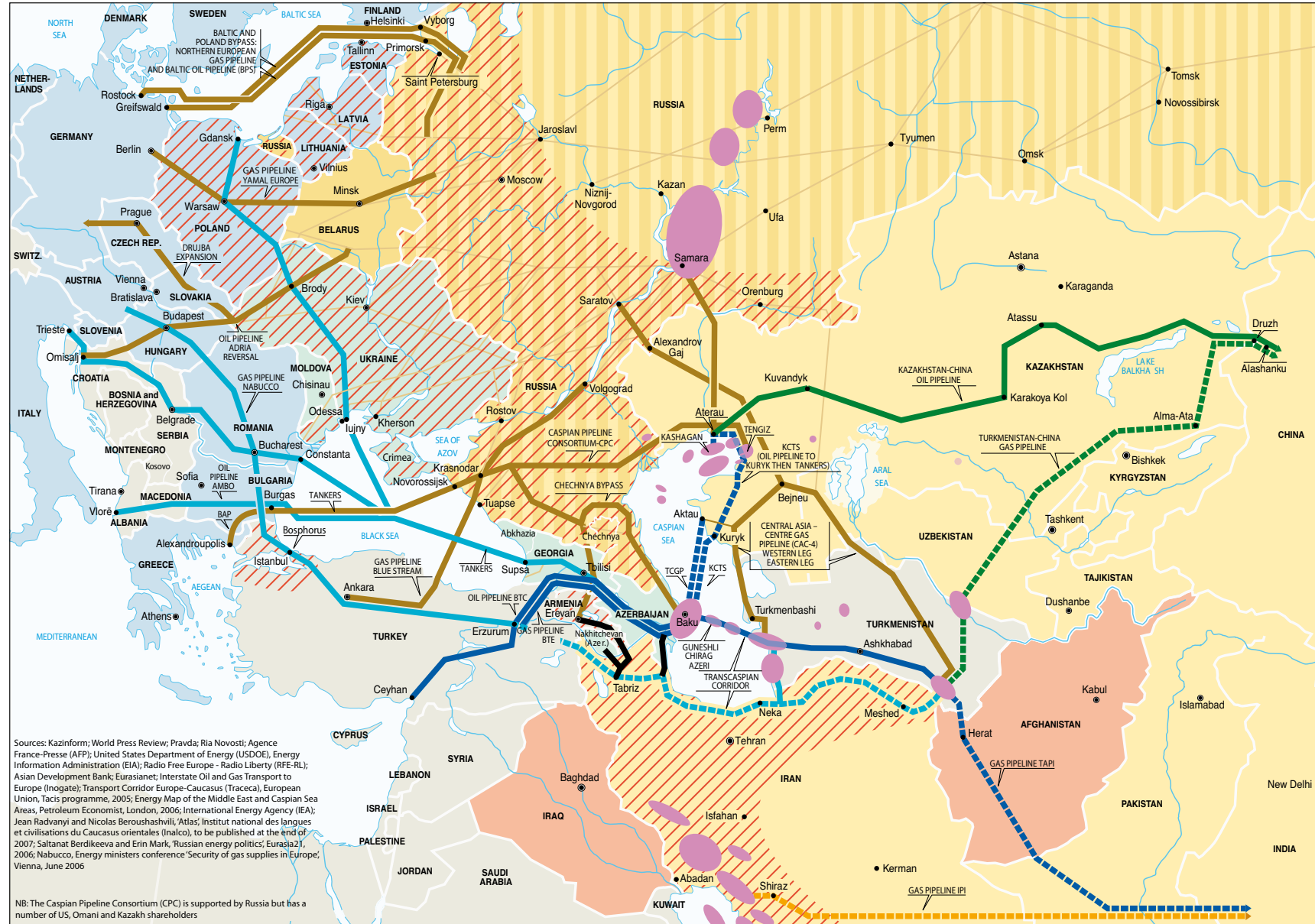
But in recent years significant citizens’ movements have emerged, in particular in the Republic of Srpska and Montenegro, to counter plans to build dams for hydropower generation with potentially serious environmental consequences. Their efforts have been met with success and the dam projects on the Vrbas, in Bosnia, and the Tara, in Montenegro, have been shelved at least for the moment. A powerful movement is developing in Pancevo, an industrial centre near Belgrade regularly affected by serious air pollution. Serbia’s independent trade union, Nezavisnost, pays close attention to the impact of industrial pollution too.

Energy and transportation

Several transportation corridors singled out by the EU as development priorities pass through the Balkans, in particular corridors Vc (Budapest-Ploce), VIII (Sofia-Skopje-Thessalonica-Durres) and X (linking Germany to Greece, via Croatia, Serbia and Macedonia). Most of these projects only exist on paper, apart from corridor X, which corresponds to a line of communication essential to European trade. It is served by a busy, good quality motorway. The countries through which this route passes may use this transit function to leverage development.

In contrast, some countries remain on the sidelines, notably Bosnia and Herzegovina, Kosovo and Albania, though the latter has the advantage of its coastline. Some infrastructure projects, such as the motorway slated to connect Kosovo to Albania, obviously have a political significance.

Trade in the region is still limited, due to customs formalities and poor infrastructure. The rail network, which is not very extensive, suffered during the various



Sources: Kazinform; World Press Review; Pravda; Ria Novosti; Agence France-Presse (AFP); United States Department of Energy (USDOE), Energy Information Administration (EIA); Radio Free Europe - Radio Liberty (RFE-RL); Asian Development Bank; Eurasianet; Interstate Oil and Gas Transport to Europe (Inogate); Transport Corridor Europe-Caucasus (Traceca), European Union, Tacis programme, 2005; Energy Map of the Middle East and Caspian Sea Areas, Petroleum Economist, London, 2006; International Energy Agency (IEA); Jean Radvanyi and Nicolas Beroussas, 'Atlas: Institut national des langues et civilisations du Caucase orientales (Inalco), to be published at the end of 2007; Saltanat Berdikoeva and Erin Mark, 'Russian energy politics', Eurasia21, 2006; Nabucco, Energy ministers conference 'Security of gas supplies in Europe', Vienna, June 2006

NB: The Caspian Pipeline Consortium (CPC) is supported by Russia but has a number of US, Omani and Kazakh shareholders

Political and economic alliances
 Member and observer countries
 of the GUAM: Georgia, Ukraine, Azerbaijan, Moldavia (a pro-western organisation)
 of the European Union
 of the Shanghai Cooperation Organisation (SCO)
 of the Union of Russia and Belarus
 of both the SCO and the Union of Russia and Belarus

The oil and gas pipeline 'war'
 Major oil and gas fields

Major oil and gas pipeline projects

| Existing or under construction and/or renovation | Envisaged | Supported by |
|--|-----------|--------------------|
| | | China |
| | | Russia |
| | | the United States |
| | | the European Union |
| | | Iran |

Other very important pipelines
 Ex-USSR pipeline network

Choosing a route: geostrategic 'bypass' policies
 Territory which is largely not under state control and where the security of oil and gas pipelines cannot be guaranteed
 Territory that players in the Great Game say should be avoided when planning the transport of oil and gas from the point of extraction to the main markets (US, Europe, China and Japan)

- The US and European Union are seeking at all costs to establish supply lines across the southern Caucasus, the Black Sea, and Turkey, thus avoiding Russian and Iranian territory (although the Europeans are considering a gas pipeline across the north of Iran).
- Russia is trying to control the oil and gas routes across transit countries (Georgia, Ukraine, Belarus, Hungary and Poland). On 12 May 2007 it signed an agreement with Turkmenistan and Kazakhstan to renovate the CAC-4 gas pipeline, thus spoiling competing western plans. It has also just commissioned a gas pipeline allowing it to bypass Chechnya. Finally, Russia could neutralise the Ukraine, Poland and the Baltic states as transit countries by joining in the construction of gas and oil pipelines across the Baltic sea (with direct access to the German market) and from Burgas to Alexandroupoli (avoiding, for historical and ecological reasons, the Bosphorus).
- Azerbaijan insists on bypassing its neighbour Armenia, with which it is still in conflict.

MAP BY PHILIPPE REKACEWICZ, 2007

conflicts. The Danube was closed to navigation for a few years, due to NATO bombing in 1999 which destroyed several bridges preventing river traffic. Today, all the bridges have been rebuilt and navigation has been reopened in the area.

A number of oil pipelines are currently under study or construction in the Balkans: the US registered Albanian-Macedonian-Bulgarian Oil Corporation (AMBO) project will carry oil from the Caspian to the Mediterranean, via Bulgaria, Macedonia and Albania; the Adria Group project will channel Russian oil to the Omisalj terminal on the Croatian coast. The presence of President Putin, of Russia, at Southeast Europe's first energy summit in Zagreb in June 2007, emphasised the region's strategic importance to his country. It should be borne in mind that many Balkan countries suffer a serious energy deficit, further aggravated by the closure of four out of six units of the nuclear power plant at Kozloduy, Bulgaria, by 2006.



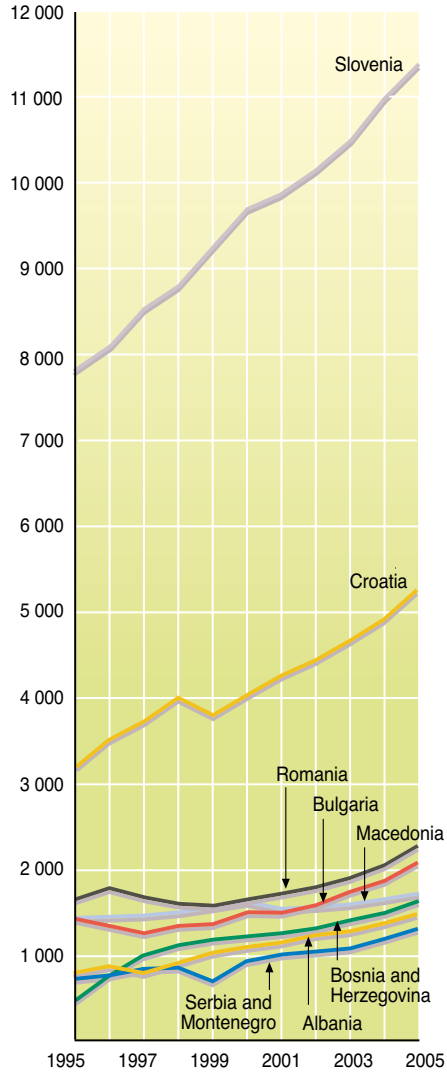
Vlado Alonso *Tito & friends* (Bor 2006)



Vlado Alonso *Filoloski* (Belgrade 2007)

Gross Domestic Product (GDP)

In constant USD per capita



Source: The World Bank, Washington DC.
Note: In 2006, Serbia and Montenegro split to form independent states.

On the road to the EU

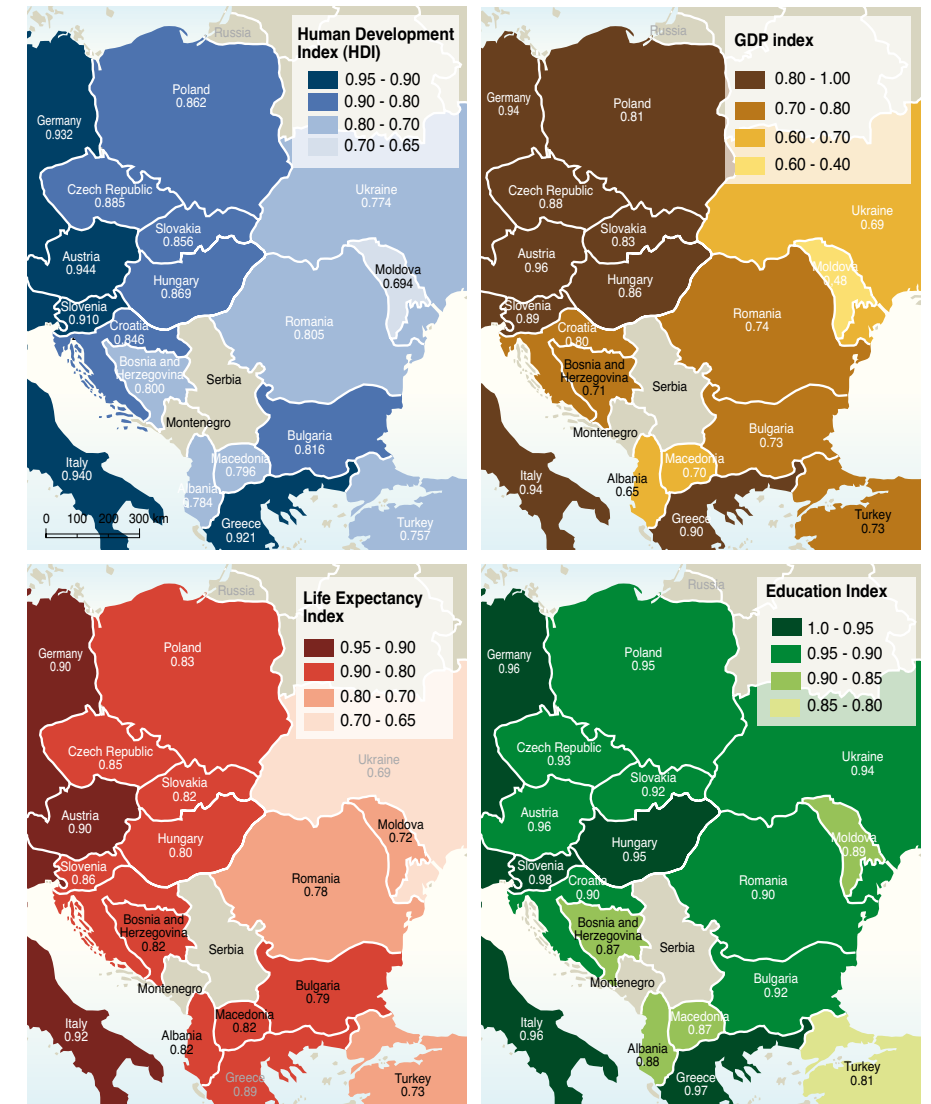
In 2003, the European summit in Thessalonica reiterated its “unequivocal support to the European perspective of the Western Balkan countries” but did not specify a timeframe for membership. Slovenia joined the Union in 2004, followed by Romania and Bulgaria in 2007, making the west Balkans a sort of “land-locked” island in the EU.

Two countries (Croatia and Macedonia) have enjoyed official candidate status since 2005, whereas all the others (Bosnia and Herzegovina, Montenegro, Serbia and Albania) have engaged in the Stabilisation and Association process. These countries also benefit from specific European policies, in particular under the Stability Pact for South East Europe. Furthermore, the EU is taking on growing civil and military responsibilities in post-conflict management, primarily in Bosnia and Herzegovina.

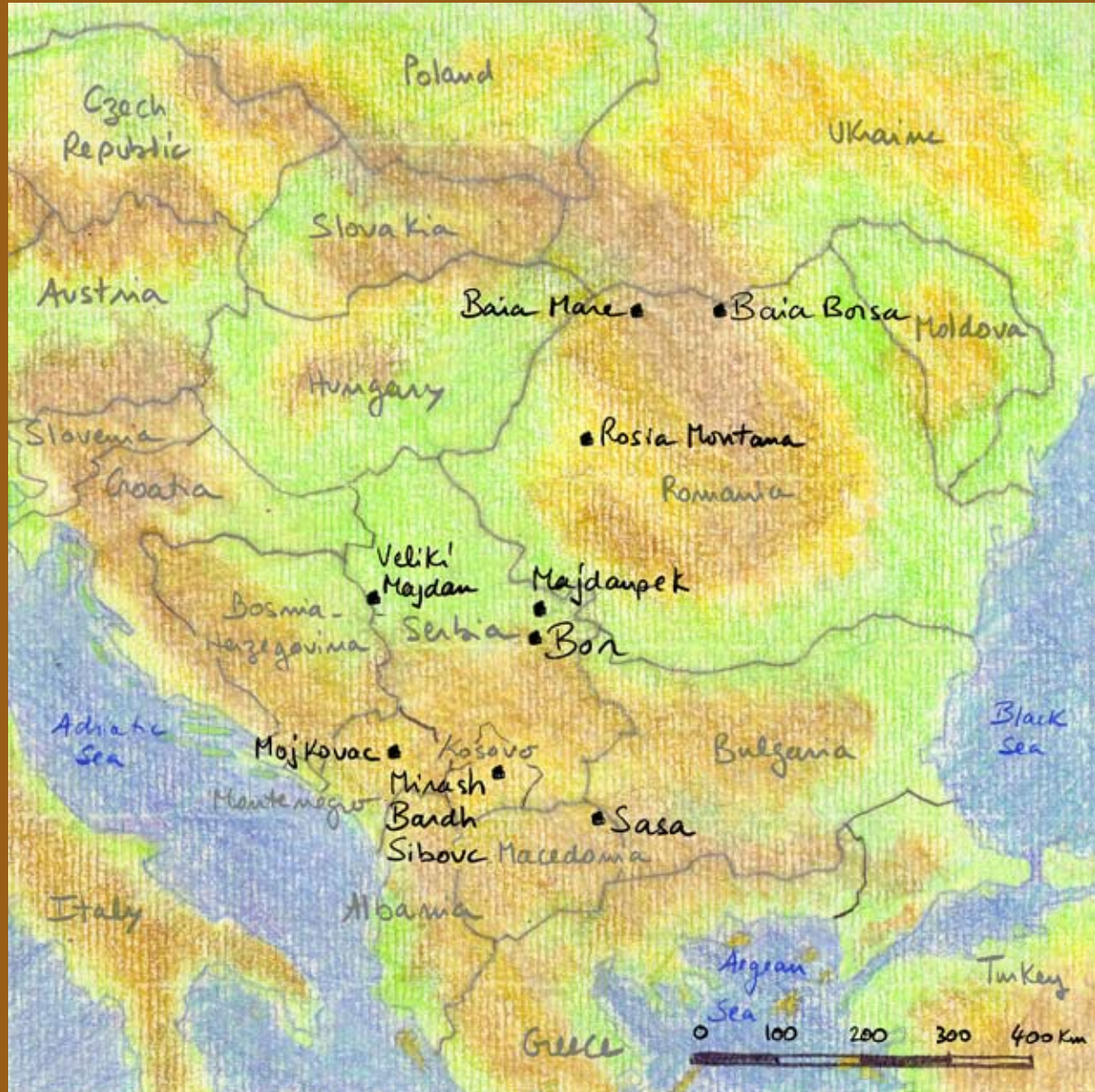
Serbia is in a particularly delicate position. For several years, the main obstacle to rapprochement was the lack of Serbian cooperation with the International Criminal Tribunal for the former Yugoslavia (ICTY) in the Hague. Serbia has since made progress in this respect but the next step on the road towards Europe demands settlement of the Kosovo question. The idea of making any further progress conditional on Serbia adopting a “cooperative” attitude on Kosovo has frequently been raised. Come what may, it seems that the status of the territory currently under UN administration must be settled before any further advances can be expected. This brings the question of whether the EU will one day allow Serbia and Kosovo to join as separate states. Similarly, Brussels considers it impossible to entertain closer ties with Bosnia and Herzegovina until it undertakes root-and-branch reform of the institutions inherited from the Dayton Peace Agreement.

The present crisis in Europe’s own institutions rules out any idea of enlargement to include the Balkan countries in the immediate future. Yet this seems to be the only prospect capable of preventing further strife, particularly in the case of restless Macedonia.

Socio-economic indicators in central and east Europe, in 2004



Source: Human Development Report, United Nations Development Programme, 2006.



BROWN

MINING



Southeast Europe, as we have seen, has a long history of mining base and precious metals, reaching back to the fifth century BC at least. In Serbia, for example, archaeological exploration of the Bor site suggests that copper mining started in prehistoric times. The Balkans was the first place on the European continent where human society developed intensively. But in its long history, from prehistoric times to the present day, mining has experienced several ups and downs.

Balkan countries have struggled with the legacy of the break-up of former Yugoslavia and numerous armed conflicts. The region is highly fragmented and characterized by a complex economic and social situation that impacts in various ways on the management of mines and in some cases on the treatment of waste water.

The environmental legacy associated with extraction industries is all too familiar. Badly operated or abandoned mining sites have already caused severe pollution, some with impacts spilling across national boundaries: heavy metal spills from Baia Borsa tailings in Romania; the cyanide spill from Baia Mare in Romania; heavy metal spills from Sasa tailings in Macedonia; and various releases at Majdanpek and Veliki Majdan in Serbia, and Mojkovac in Montenegro. Watercourses are the main vector for transboundary pollution, whether it is ongoing and chronic, or infrequent, acute and accidental.

Smelters near borders such as in Bor, Serbia, also contribute to air pollution, with serious consequences for human health to this day, and continuing risks for the

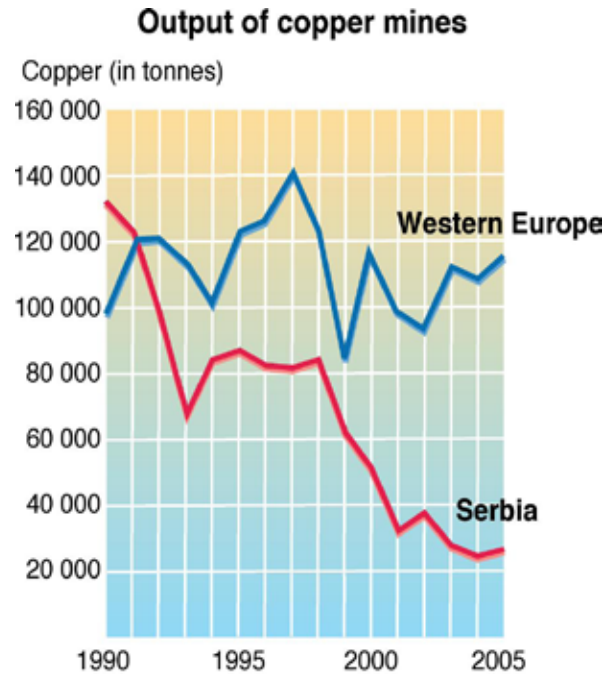
future. Environmental incidents related to the mining industry also fuel political tension at a time when peace and cooperation head the agenda.

The economic effects of irresponsible mining practices reach out to food exports and tourism, which suffer from the powerful media exposure of accidents and ongoing pollution activities. All these chronic problems – on top of their direct environmental impact – contribute to a negative atmosphere for economic investment essential to the region’s sustainable development.

However, southeast Europe is still rich in mineral resources and sustainable mining cannot be neglected as an option to progress economic development. Therefore, remediation of high hazard sites will be compulsory in order to attract foreign investment and to comply with environmental protection standards. A good example of how to achieve effective and fast risk reduction at relatively low level of investment is the repair measures of the mining dam in Baia Borsa – Novat carried out by the Austrian Development Agency (ADA).

Mining legacies: riches of the past, present day headaches

Between 1944 and 1991, the mining, processing, and downstream exploitation of base metals established the Balkans as a major European source of copper, lead, zinc and a global producer of chromite. Mining was one of the flagship industrial sectors, influencing the area more largely than in simply economic terms.



Note: Western Europe includes Finland, France, Norway, Spain, Sweden.
Source: US Geological Survey.

The upheaval that subsequently swept through southeast Europe resulted in economic, social and political instability. The disintegration of the Yugoslav common market aggravated economic conditions in the region and in the early 1990s the Balkan economy declined sharply. Industrial output dropped significantly, with a widespread shutdown of operations such as mining. In environmental terms this cuts both ways. With a dramatic drop in industrial output, pollution decreased. But at the same time plants were either abandoned or privatized under conditions that did not clearly establish environmental liability.

Today the legacy of mining is still a serious problem in southeast Europe. On abandoned sites, with no liable legal owner, the necessary measures to close the site were never taken – stabilization, water management, replanting of vegetation, etc. – to minimize the risk of accidents and prevent environmental pollution. Implementing them now is very expensive. Most modern mining operations consequently include a bonding system that ensures that sufficient financial resources are set aside during the active period of the mine. If appropriate such resources are released when mining stops and the measures mentioned above need to be taken.

Acid mine drainage and other mine water issues

Topics such as land disturbance, air pollution and labour issues are prominent in any discussion of the detrimental effects of mining. But in almost all cases, regardless of whether coal, ore or other materials are being mined, they are compounded by water-related problems. They may either be due to the fact that wherever mining occurs, the groundwater level must (almost always) first be lowered to permit mining. This may have far-reaching effects in the area. Limiting the water supply obviously impacts on plant life, and consequently the ecosystem and farming. But it may disturb wells too and cause land subsidence.

There may be a shortage of water, but on the other hand there may also be too much unwanted water. Water from mine voids or waste contains toxic elements at levels that are intolerable for discharge into the natural environment. The contaminants are mostly heavy metals, depending on the composition of the underground material. Microorganisms which “eat” inorganic energy sources, notably iron, flourish on mining waste and in mines. They require

oxygen and water to prosper, which is not available under natural conditions in places where mineral-rich material is found. Mining, however, creates a feast for them. It not only extracts minerals, bringing them into contact with air and water, as in the mine void, but also maximizes the contact surface by grinding rock into sand-like particles (overburden and tailings). Microbes, much as any living creature, produce waste, in the form of metals and acid. The resulting solution is known as acid mine drainage (AMD) or acid rock drainage (ARD). These discharges, with a low pH value and rich in heavy metals, affect downstream ecosystems and make water unsuitable for irrigation and other purposes.

In the Balkans, the effects on water are particularly severe. As explained in the Blue Chapter, many waterways cross borders and as the countries are relatively small, many sites are located close to a neighbouring state. The effect of changes in the water regime and water contamination are consequently likely to reach beyond political borders.

The situation in the Balkans falls far short of this ideal picture. Coping with the present situation is complicated, with a large number of sites with serious environmental impacts, high remediation costs and the liable owners missing. In most cases the government is held accountable. But the huge financial liability attached to any systematic rehabilitation programme represents a challenge that far exceeds the financial or organizational resources of any one regional actor. In comparison, the lack of expertise required to take practical responsibility for dealing with abandoned sites and the associated issues pales to insignificance.

The Balkan countries have certainly had many other concerns in the last two decades. But they will soon be reaching a point at which the question is no longer what they could do about problem sites, but what they must do. Joining the European Union is the top priority in Albania, Bosnia and Herzegovina, Macedonia, Montenegro and Serbia. But this means they must pass and enforce strict environmental legislation. The debate on ongoing pollution from piles of hazardous waste rock, tailings dams, mine voids, open pits, smelters and so on, will soon reach beyond the environment and enter the political arena.

The dark and the light side of the moon

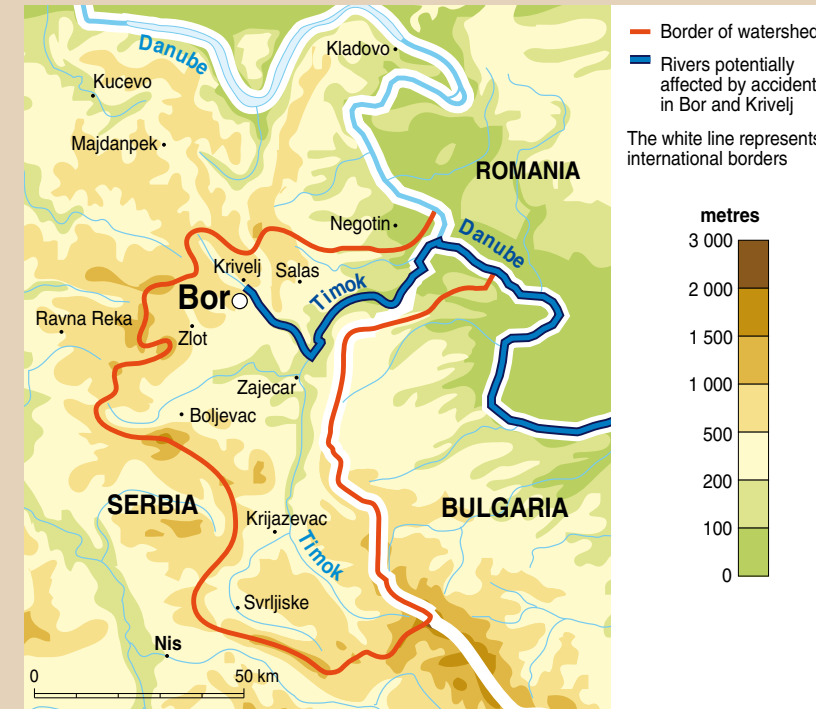
The Bor region is one of the poorest parts of Serbia. In 2004, the average wage at Bor was only 43 per cent of the national average and 33 per cent at Majdanpek. Unemployment stands at about 50 per cent. But things were not always this difficult. The regional economy depended largely on mining, which started in 1903 with the discovery of copper ore. After the Second World War, the publicly owned mining and processing complex “Rudarsko-Topioničarski Basen Bor” (RTB Bor) became one of Europe’s top producers of copper and a flagship of former Yugoslav industry.

However, over the past 15 years, with political change and insufficient investment, the company has declined. Even with today’s high copper prices, operations are still not profitable due to massive overstaffing, outdated technology and low ore grades. The crisis in the mining industry had a disastrous impact on the regional economy. Moreover the combination of obsolete technology and poor maintenance has made RTB Bor’s

operations, especially the smelter, extremely harmful to the environment and public health.

Foreign investors have expressed considerable interest as the area covered by the publicly-owned complex still has rich mineral resources. An initial tender for RTB Bor was announced in September 2006. It was awarded to the Romanian mining company Cuprom in early 2007. The offer amounted to US\$400 million for the core operations of RTB Bor: the copper mines at Bor and Majdanpek, the smelter and the refinery. However the Romanian neighbours failed to provide financial guarantees by the set deadline, so the Serbian Privatization Agency terminated the contract in April 2007 citing the “obvious inability to meet the contract obligations”.

Whoever the future owner of the Bor mining complex may be, they will have to develop operations in an environmentally sound and socially sustainable manner. However, remedying the legacy of the past, such as



two tailings ponds and several waste disposal sites, is still the responsibility of the Serbian Government which has separated environmental liabilities from privatization. This approach is designed to attract potential investors who would be deterred by the enormity of the environmental liabilities left over from the past.

In June 2007, the World Bank approved a US\$43 million grant to the Government of Serbia “to reverse the decline of the Bor region”. Under this project, some US\$31 million will be directed to the environmental management and remediation of mining sites, including civil works on critical facilities and the setting up of a monitoring system. Apart from these concrete measures on the ground, the project also has an influence over the privatization process. Among the conditions for granting financial support, the World Bank linked the project to the timely privatization and restructuring of RTB Bor and required the government to ensure that the new owner complied with environmental legislation and deployed sustainable operations. The new tender was issued in August 2007 with the expectation to see RTB Bor in the hands of the new owner by March 2008.



Bor miners enjoy special status of proudness in the town. However, the existing production capacity is not sufficient to provide work for everybody, so many must wait and see what happens. Though local people know that economic conditions can only improve, they are sufficiently realistic to understand there is no chance of an immediate recovery. The dark side of the moon spreads its shadow, forcing them to be patient, and it may well keep spreading for some time.

Photos by Vlado Alonso.





Vlado Alonso *Odlzak iz Bora* (Bor 2006)



Vlado Alonso *Atelier coiffure* (Bor 2006)

Mining the future?

Most of Kosovo's wealth lies underground. According to the International Council on Mining & Metals, the "small territory (is) home to one of Europe's most concentrated and potentially most lucrative mining sectors. With upwards of 14.7 million tonnes of exploitable reserves, Kosovo is host to the fifth largest accumulation of lignite coal on the planet." Hopes are high that exploiting these resources will help improve living standards in the territory. Lignite mining and combustion provide a way of overcoming the chronic power outages holding back growth and economic development. The export of energy to neighbouring countries promises to generate substantial income for Kosovo. While talk of statehood dominates diplomatic circles, many who live and work in Kosovo say their primary concern is much more basic. "Alleviate Kosovo's economic hardships", they say, "and we will be at least halfway to peace and stability."

On the other hand, lignite mining and coal-fired power plants have severe impacts on the environment. Open-cast mines have large footprints, often requiring the resettlement of local people. The affected areas are subject to altered landscapes, disturbed water regimes, and airborne and waterborne pollution. Reducing carbon dioxide emissions is one of the world's most important

tasks. Yet each tonne of lignite burned produces more than a tonne of carbon dioxide. In combination with its low energy content per tonne and high proportion of impurities, lignite is a very undesirable energy source.

The potential adverse effects on people exposed to mining operations range from evacuation of villages (houses about to crash into the open pit mine) to respiratory diseases mainly caused by poorly maintained ash deposits.

The discrepancy between environmental protection and human development is commonplace in the modern world. Kosovo is one of the poorest territories in Europe and scarcely in a position to choose from a range of development options, so the international community is helping Kosovo concentrate on mining.

The World Bank awarded a US\$10.5 million grant to the United Nations Interim Administration Mission in Kosovo (UNMIK) to attract private investors to develop lignite mines and build new capacity for lignite thermal power generation. The financial support should help set up proper regulations and laws enabling private investors to start bidding in early 2008, begin construction in

2009, and complete the power plant by 2014. The Ministry of Energy and Mining in Kosovo expects that the tender for the development of a new power plant using Kosovo's lignite resources will become the biggest investment project in Kosovo's history, with an estimated €3.5 million in direct foreign investment.

The World Bank and UNMIK state that high standards of environmental and social sustainability will guide the development of these facilities. According to the World Bank, this will be achieved by complying with European Union regulations on lignite mining and coal-fired power plants. Whether these requirements will only apply to the new Kosovo C plant, or also to the old Kosovo A and B plants, has not yet been decided. For the time being, no decision on their future has been taken. It remains to be seen whether they will be refurbished, perhaps with the help of private investors, or whether it would make better economic sense to close them.

However, it is misleading to suggest that by applying best practice and state-of-the-art technology, the environmental impacts are negligible. Lignite mining for electricity generation is a trade-off and the question is certainly still open as to whether, with the external costs

entailed by the project, operations will be as profitable to Kosovo as expected.

Cost is already a big issue today, even before power plant construction has started. With the world's current mining boom, prices for diggers, conveyor belts and so on, not to mention the salaries of skilled operators, are increasing almost monthly. It will cost about €240 million to equip the new South West Sibovc mine in part by using refurbished old equipment currently in use at the Mirash and Bardh mines. This saves money in the short term but not yield the most efficient mining operations. New funding sources must be found soon, as the two mines currently supplying fuel will run out of lignite by 2010 and will leave Kosovo powerless unless a replacement has been developed. Just as for mining supplies, the price of thermal power plants on the world market is also skyrocketing.

With these financial issues troubling the project, it is questionable how much room will ultimately be left to maintain the promised high environmental standards. Achieving the best possible result will demand determined negotiation of the tender, thorough project implementation and a responsible investor.

Kosovo's hidden wealth

Martin Woker, Zagreb, Neue Zürcher Zeitung, February 2005

"The Kosovars could live like the sheikhs of the Gulf states," said Rainer Hengstmann, then director of the Independent Commission of Metals and Mining (ICMM) in Pristina. Kosovo's wealth is underground in the form of lignite and bauxite as well as a whole range of minerals such as lead, zinc, nickel, silver, chrome and potentially copper and gold too. Although the extent of deposits is still unknown, the ICMM has an accurate idea of the existing preliminary potential. This makes the growing euphoria understandable.

In Kosovo mining itself promises to create 35 000 jobs. A large part of this plan is associated with the exploitation of lignite, which is supposed to be used exclusively for electricity generation. On the basis of existing demand for electricity in Kosovo, the known deposits would produce sufficient energy for about 1 000 years. However, these tempting visions require a stable political framework. It would be unwise to wager on them, in particular because Serbia's own lignite reserves will run out in the near future.

But Belgrade is not yet dependent on Pristina for its electricity, quite the reverse. Kosovo is unable to satisfy domestic demand and imports electricity from several neighbouring countries. In the eight years since the forced withdrawal of the Serbian administration, the United Nations Mission in Kosovo (UNMIK) interim government has not succeeded in providing the territory with an adequate electricity supply.

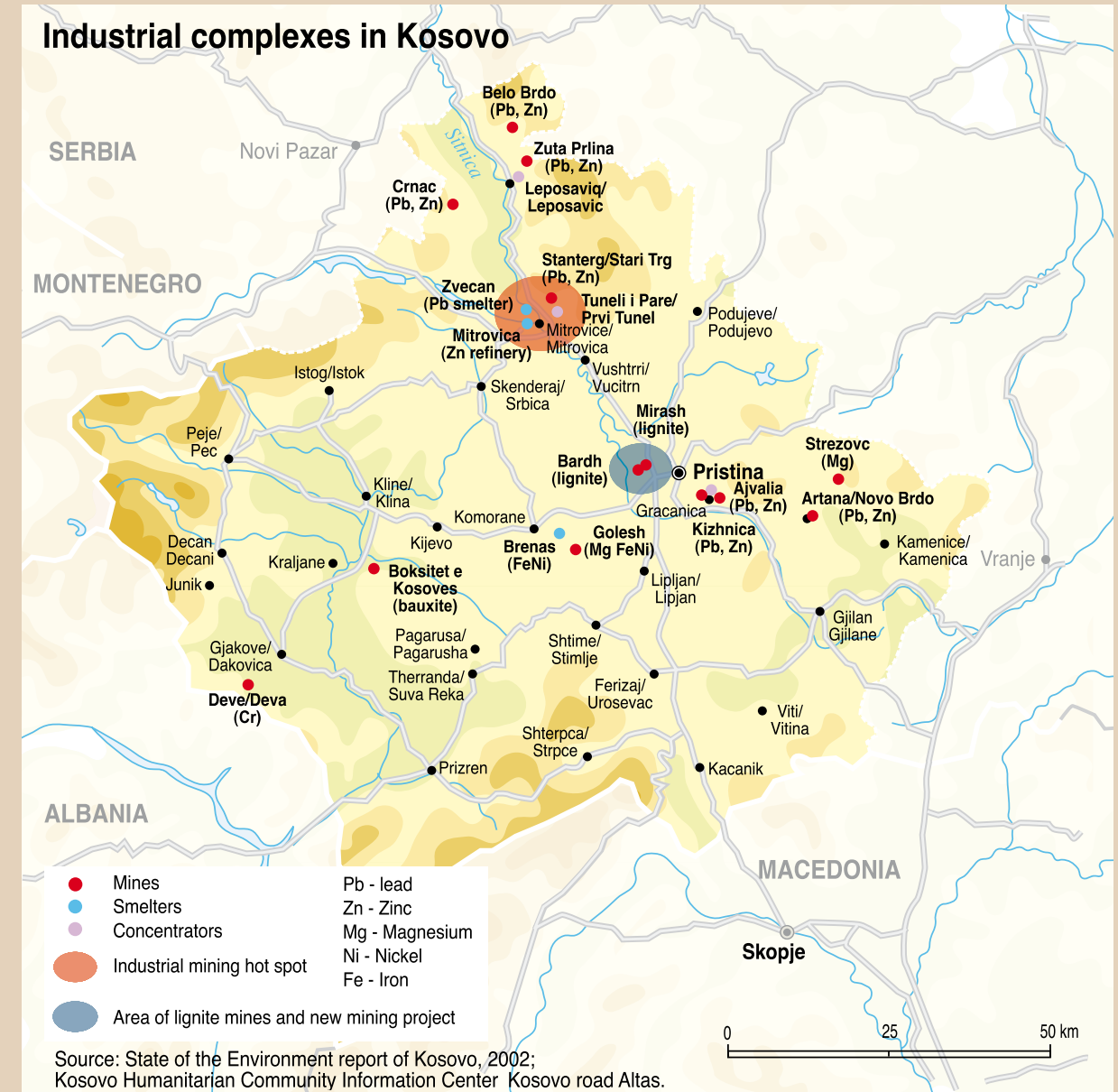
Various awkward circumstances explain this situation: outdated technology, mismanagement, confusion over ownership, corrupt national and international officials, a disastrous backlog of unpaid consumer bills and a lightning strike in one of the two power plants, to name but a few. Every day there are power cuts lasting several hours at alternating locations. Some Albanian and Serbian villages have been deprived of electricity for weeks on end.

For many people in the territory, the idea of a luxurious life based on mineral resources must seem very exotic, real life being so different, not to mention the stench.

Near a village named after the Serbian hero Milos Obilic, just outside Pristina, two clusters of smoking chimneys rise into the sky. For years they have justified Kosovo's dubious reputation as one of the worst sources of pollution in the Balkans. The chimneys belong to the two coal-fired power plants, Kosovo A and B. Because of their technical shortcomings, they do not even yield half their rated capacity of about 1.5 GWh. Two coal mines, Bardh and Mirash, are affiliated to the power plants. They extend over 10 square kilometres, with lignite mined round the clock, transported on a mile-long conveyor belt to the drying facility, then onto the power plant.

According to a mining expert, the two lignite mines were exploited in a very unsustainable manner during the 1990s until the withdrawal of the Serbian administration. Among others this is reflected in the unsystematic approach to exploiting deposits, with no proper preparation of the pit slopes. For this reason an Albanian village close to the mines had to be urgently evacuated. At the next thaw, the first houses were in danger of sliding down very steep pit walls. Similarly, the haze over Pristina is mainly due to the huge ash deposits exposed to the wind without any protective measures, and only to a lesser extent to the grime emitted from the power plant. If the mine was operated professionally all combustion by-products and mineral waste would have to be used to refill the exhausted pit, once its bottom had been properly sealed. In 2004, the Irish company, ESBI, took charge of improving the efficiency of the mining company.

There is a great deal of work still to be done, including removing about 10 000 tonnes of scrap metal in the form of diggers and other monstrous machines rusting on the site.



What ever happened to ... Baia Mare?

At the time, the Baia Mare spill received worldwide attention and many sources referred to it as the “worst environmental catastrophe in east Europe ever since Chernobyl”. Today, the environmental effects of the accident have largely been overcome. Wildlife in the region recovered after about a year with species migrating into the affected area from upstream. According to the World Wide Fund For Nature, the situation in Baia Mare is better now than it was 10 years ago. There were no fatalities and in most localities the water supply was protected. The consequences of the accident could have been much worse under different circumstances, particularly without the emergency procedures, such as the early warning system that warned downstream communities of imminent contamination. However, the long term effects of the accident are still apparent at a different level.

To minimize the risk of future accidents, various security measures were introduced at Baia Mare, the last of which brought mining operations to an end in 2005. A Hungarian court forced the mining company to reduce production by 85 per cent. Investors consequently

lost interest in the site, and spending on environmental protection declined too. When environmental inspectors discovered the company had failed to spend €750 000 on a water purification plant and a system for automatically dosing cyanide, the operation had to shut down.

The debate stirred up by the Baia Mare spill also triggered European legislation on industrial accidents and mining activities. In this respect, several legal **measures** were taken to improve the safety of mining facilities. The mining industry responded by developing better technology and attaching greater importance to safety performance.

For the people in Baia Mare and their downstream neighbours, what matters after all is whether the “lessons learned” will be remembered should the operations start again.

*Amendment of the Seveso II Directive (2003).
Best available techniques reference document on management of tailings and waste-rock in mining activities within the IPPC Directive (2004).
Mining waste directive (2006).*



Mining for Closure – policies, practices and guidelines for sustainable mining and closure of mines

Published in 2005 by the Environment and Security Initiative, *Mining for Closure* is a guide and checklist for reducing and mitigating the environmental, health and security risks from mining practices. The intention is to stimulate debate and public accountability of mining legacies and operations. Through applying the basic principles and guidelines, not only mining will become environmentally and socially more sustainable, it may also result in more democracy, increased well-being and security of those directly and indirectly affected.

Facts of the accident

On 30 January 2000, a dam holding tailings (mining waste) from gold extraction overflowed in Baia Mare, in northwest Romania. The failure of the dam was probably due to a combination of factors: faulty design, unexpected operating conditions and extreme weather. The spill released some 100 000 cubic metres of waste containing about 70 tonnes of cyanide, as well as copper and other heavy metals. The contaminated water fed into the Sasa, Lapus, Somes, Tisza and Danube rivers, crossing seven countries, before reaching the Black Sea about four weeks later. The spill affected some 2 000 kilometres of the Danube's catchment area.

Romanian sources reported that the spill interrupted the water supply of 24 localities and added to the costs of sanitation plants and industry, due to the break in production processes. Hungary estimated the amount of dead fish on its territory at 1 240 tonnes. The Federal Republic of Yugoslav authorities reported large amounts of dead fish in their branch of the Tisza river but no serious damage in the Danube.

Carolina Salguero Romanian miners ©2000 Topham Picturepoint



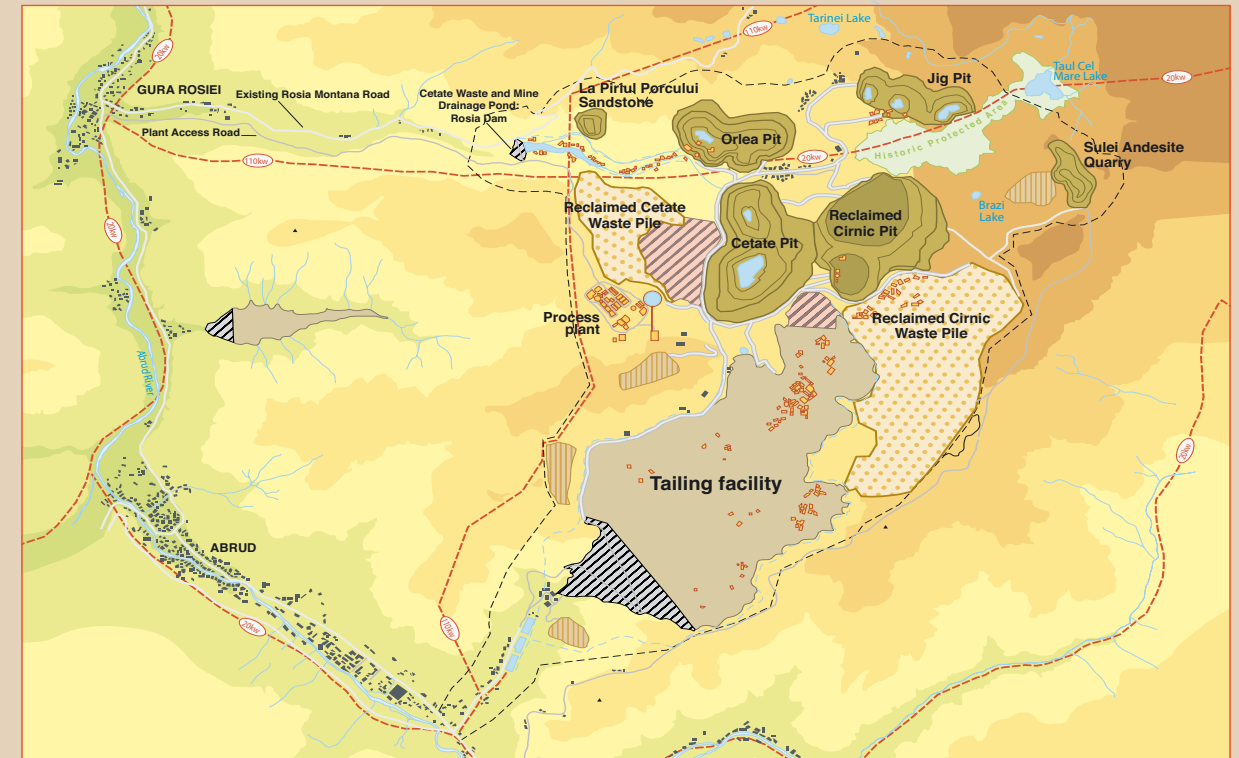
Pros and cons of gold mining at Rosia Montana

The Rosia Montana gold and silver mining project in Romania's Apuseni mountains has been in and out of the environmental headlines in recent years. It is a fascinating case of the new market economy trying to conduct a dirty old industrial activity in a completely new and much cleaner way – at least in Romania. Over roughly 20 years, the miners hope to extract 300 to 450 tonnes of gold and 1 500 to 2 000 tonnes of silver – for a total value of several million million US dollars. This is all supposed to bring new life to an attractive, historic area that has been mined for thousands of years. Purportedly the mines will bring new jobs and steady incomes, vocational training, new markets for local goods and services, spin-off local employment opportunities, schools full of children, better roads, improved public transport, renewed municipal services and plenty more besides.

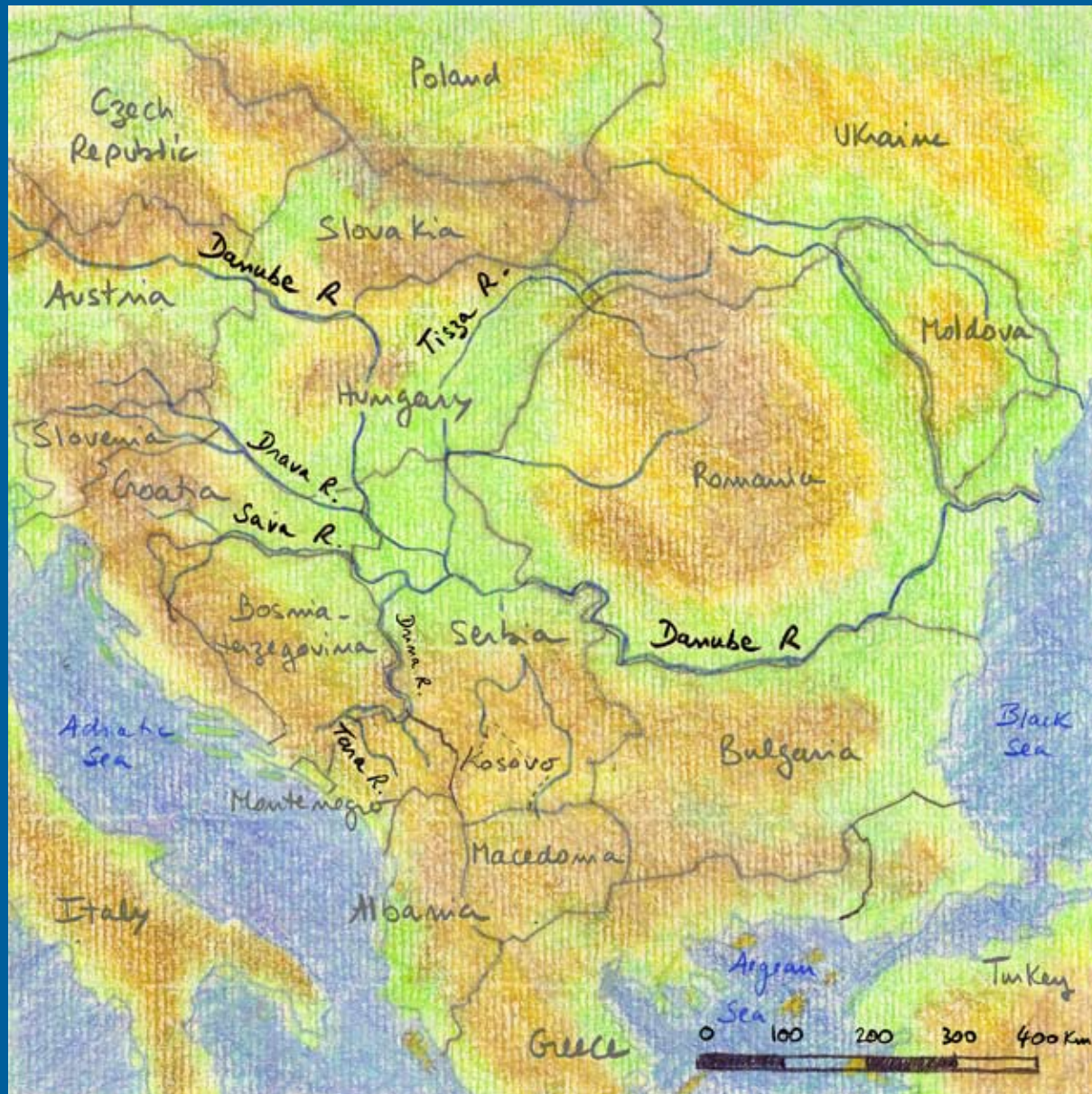
Despite such promises, opposition to the project has been relentless, and highly vocal nationally and internationally. Sponsors of the project have argued that they will develop and profitably operate mining in a way that meets or exceeds all national and international social and environmental regulations, but to no avail. Opponents are not impressed by the range of expected benefits. There are bound to be disadvantages and the region's unhappy past experience of mining has roused significant opposition. The appalling social and environmental consequences of past mining activities are still all too apparent in many areas of Romania.

As for the downside, the grand promises to reinvent the Romanian mining industry also involve reshaping mountains and burying whole valleys. To bring new life to the township, a large part of it will be destroyed. The risk of poisoned waterways goes hand in hand with the promise of a restored environment. All this coincides with a period of unprecedented institutional change and new rulemaking as Romania joins the European Union. Nor should it be forgotten that mining is also about making money and that the Romanian state owns a 20 per cent stake in the project, so vested interests no doubt explain some people's wariness.

As of today, the key question is whether the Rosia Montana project will deliver all its promised benefits. But given the opposition to the project, it might be more to the point to ask whether it will even get a chance to try?



Sources: Societatea Comerciala Rosia Montana Gold Coporation S.A.



BLUE

WATER

Prior to 1992, there were only six international river basins in the Balkans, but after the break-up of former Yugoslavia, the number more than doubled. There are now 13 internationally shared river basins and four transboundary lake basins. Such a fragmented situation means that new international legal regimes specifically for water basins need to be worked out. Talks between the countries concerned are also essential to develop future policies on hydroelectric power generation.

Establishing international cooperation on water resources

Many bilateral and multilateral treaties concerning water resources in the Balkans were concluded in the second half of the 20th century. In particular, the former Yugoslavia was keen to develop such partnerships, in keeping with its position as a non-aligned country in a divided world and its commitment to peaceful co-existence and friendship between peoples. In addition, water treaties paved the way for further development.

The treaties established cooperation between national authorities responsible for water management, with a view to improving their ability to deal with challenges arising in shared river basins. Typical concerns included floods, drainage, the construction of dams and hydroelectric power plants, shipping and fishery. Water pollution was also an issue, often with the specific purpose of reducing the amount of pollution discharged into the water to protect fish or allowing fish species such as the Danube sturgeon to migrate freely. However, although legislation on pollution and migration existed, it was often not enforced.

The treaties generally set up joint commissions. Some of them are still at work. The Danube Commission, for instance, was established under the Belgrade Convention on the Danube Navigation Regime in 1948.

Apart from international waters, former Yugoslavia also had to manage its national waters divided between the various federal units – six republics and two autonomous provinces. Water compacts between these units had a constitutional and legal basis. A good example of this type of legal instrument is the compact governing use of the Trebižat River watershed, agreed by Bosnia and Herzegovina and Croatia. It remains an open question why such an excellent example of intra-state cooperation was not fully implemented.

The fall of the Berlin Wall in 1989 marked the end of a divided Europe and a bipolar world. New activities led to several multilateral environmental agreements. Almost all of them concern transboundary waters in one way or



another. Several new treaties were signed in Kiev in 2003 in an effort to introduce more detailed regulations.

Following the conflicts of the 1990s and the breakup of former Yugoslavia, six new countries emerged in the Balkans. In addition to creating new states, former national water resources now are of concern to several countries, creating the need for specific international rules.

Contrary to the situation in the 1950s and 1960s, there are now several internationally accepted policy and legal instruments such as the Stockholm Declaration (1972) or the Rio Declaration (1992). Alongside the UNECE international instruments mentioned below, they constitute an overall framework for new legal regimes between states, old and new, covering the management of international water resources.



Sava Slovenia Croatia Bosnia-Herzegovina Serbia



Drina Montenegro Bosnia-Herzegovina Serbia



Maritsa Bulgaria Greece Turkey



Kolpa Kupa Slovenia Croatia



Una Croatia Bosnia-Herzegovina Serbia



Vardar Axios Macedonia Greece



Tundzha Bulgaria Turkey



Vardar Axios Macedonia Greece



Neretva Bosnia-Herzegovina Croatia Serbia



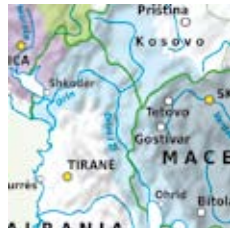
Struma Strimonas Bulgaria Greece Serbia Macedonia



Mesta Nestos Bulgaria Greece



Vardar Axios Macedonia Greece



Drin Albania Macedonia Serbia



Arda Bulgaria Greece



Ergene Evros Turkey Greece

Adapting to international rules

All the Balkan countries are now committed to the European integration progress, with the goal of joining the European Union. They must consequently accept the *acquis communautaire* and transpose it into their national legislation. One major challenge – and not just for new member states – is the Water Framework Directive, which introduces new rules for water management hinging on river basins.

On joining Europe, a country automatically accepts the terms of all international treaties to which the EU is part. In the case of the UNECE conventions, this means that Balkan countries must comply with them even if they have not actually ratified them. Serbia, for example, complies with the Espoo Convention and the Strategic Environmental Assessment Protocol without being part to either. The same is true of the Aarhus convention.

But Balkan countries would benefit by signing up to international treaties already ratified by the EU, particularly as doing so would strengthen their environmental policies and commitments at a national level and serve as a framework for transboundary cooperation on environmental damage and hazards. The UN Convention on the Law of Non-Navigational Uses of International Watercourses is yet another case in point. To accept the principles underpinning international instruments protecting the environment and water resources, and to work within their framework would surely bring benefits, stability and security to the Balkans.

The body of EU legislation which candidate countries must adopt to become EU members.

How Balkan countries go about complying with EU requirements in this respect depends on how successful they are in changing the national water management systems they inherited from the socialist era. This means accepting new, and in the most part very advanced, approaches to water management, which involve active co-operation with neighbouring countries sharing a river basin. Over the last 12 years, all Balkan countries, except Serbia, have passed new water legislation, replacing outdated water management methods and facing up to future challenges.

Water-related multilateral agreements facilitated by the United Nations Economic Commission for Europe

- Convention** on Environmental Impact Assessment in a Transboundary Context (EIA, Espoo Convention, Espoo 1991)
- Convention** on the Transboundary Effects of Industrial Accidents (Helsinki 1992)
- Convention** on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention, Helsinki 1992)
- Convention** on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention, Aarhus 1998)
- Protocol** on Water and Health (London 1999)
- Protocol** on Strategic Environmental Assessment (SEA Protocol, Kiev 2003)
- Protocol** on Civil Liability and Compensation for Damage Caused by Transboundary Effects of Industrial Accidents on Transboundary Waters (Kiev 2003)
- Protocol** on Pollutant Release and Transfer Registers (PRTR Protocol, Kiev 2003)



Vlado Alonso *Bor Bus* (Bor 2006)



Vlado Alonso *Gazela* (Belgrade 2007)

Building a new legal framework

When developing new (bilateral) legal regimes for shared water resources, the new Balkan states must consider numerous international policy and legal requirements applicable to the region. Projects concerning international waters that are prepared unilaterally or disregard basic principles such as public participation in the decision-making process stand little chance of success. For example, a campaign by non-government organisations temporarily held up the construction of the Buk Bijela hydroelectric power plant on the Tara River in Montenegro (see page 57). But there is more to be learnt from this story. The governments of Montenegro and Republic of Srpska, who were directly concerned, discussed the scheme. But such projects also require the involvement of other basin authorities, in this case in Bosnia and Herzegovina and Serbia, as well as the Sava Commission. UNESCO is an equally important stakeholder because it recognizes the Tara canyon as a natural and cultural heritage site. When planning new hydroelectric power plants, any viable approach must be based on the clearly established principles of international water and environmental law.

All the new states in the Danube River Basin, except Montenegro, have joined the Danube River Protection Convention and concluded bilateral agreements on shared water resources (Bosnia and Herzegovina and Croatia; Croatia and Slovenia; Croatia and Hungary). Collaboration is visible between Montenegro and Albania, as well as between Albania, Greece and Macedonia (the Prespa Lakes Basin) and Bulgaria, Moldova, Romania and Ukraine (Lower Danube Green Corridor). However, the most remarkable regional achievement was undoubtedly the ratification of the Framework Agreement on the Sava River Basin and the protocol regulating the navigation regime on the Sava River and its tributaries (2002). The agreement established the Sava Commission to implement the treaties affecting the basin. Additional protocols that should “fill” the framework and enable implementation of the agreement are yet to be concluded. The treaty

The Petersberg and the Athens Declaration Process

Recognizing that water is an opportunity for close regional cooperation from a global perspective, the German government and the World Bank launched an initiative called the Petersberg Process. Since it started work in 1998, the initiative has organized six round tables on transboundary waters to debate the specific issues involved and how to develop an integrated approach to solving them.

The process addresses issues from the point of view of development, the environment, and policy on security and the economy. The activities are closely linked with the Athens Declaration Process. That process, between the Government of Greece and the World Bank, was initiated in 2003 during the Hellenic Presidency of the European Union and focuses on actions to promote sustainable management of transboundary water resources in south-east Europe and mediterranean region.

was signed and ratified as a river basin agreement between Bosnia and Herzegovina, Croatia, the Federal Republic of Yugoslavia and Slovenia. It consequently does not apply to the parts of the Sava River Basin furthest upstream, in Montenegro, now an independent state and not yet a party to the agreement.

The scope of future action is increasingly clear, revising and replacing the old water treaties and establishing new relations. Cooperation hinging on the Prespa Declaration should lead to a trilateral agreement between Albania, Greece and Macedonia. Water treaties may also be needed to improve management of the Vardar River (Macedonia and Greece) and the Tisa River Basin (Serbia and other upstream countries).

Regardless of the final status of Kosovo, the sooner Serbia and Kosovo settle their differences on transboundary water issues the better. The Serbian population living beside the various rivers located downstream clearly stands to gain from a proper legal framework.

National and international water management practice

When comparing traditional water management systems with today’s dynamic development of good water governance, it is clear that the practices inherited from the past in the Balkans are based exclusively on a centralized “top-down” approach. This does not allow public involvement in decision making and rarely addresses environmental issues (except in official statements). To make matters worse, this approach lacks the proper instruments to implement its stated commitments. Water resources are treated piece by piece, without an integrated approach reasoning in terms of an entire river basin and its ecosystem. Old institutional arrangements and their workings stay well out of the public eye.

With today’s approach to water management, not to mention global climate change, national authorities with various responsibilities must interact closely. Different government departments are in charge of protecting water quality and aquatic ecosystems, supplying water for public consumption, and use by industry and the public sector. Others oversee navigation, hydroelectric

power production or indeed measures to protect the community against water-related hazards. Each player has segmented responsibility in specific fields. Tomorrow’s water management systems need to be much more highly integrated at all levels (international, national, regional and municipal). This may also involve developing partnerships bringing together the relevant public authorities, the private sector and civil society.

If the Balkans are to achieve sustainable development in an increasingly global world, water management systems clearly need to change a great deal. But such change is possible if new concepts are accepted and implemented, backed by UNECE and EU policy requirements, which serve as the basis for cooperation between the international organizations to which all Balkan countries belong. Future action should embrace new approaches to water management. This involves joining the international treaties discussed above and replacing existing legal instruments, at a national and international level, with others reflecting current trends in the sustainable management of water resources.

Convention on the Protection and Use of Transboundary Watercourses and International Lakes

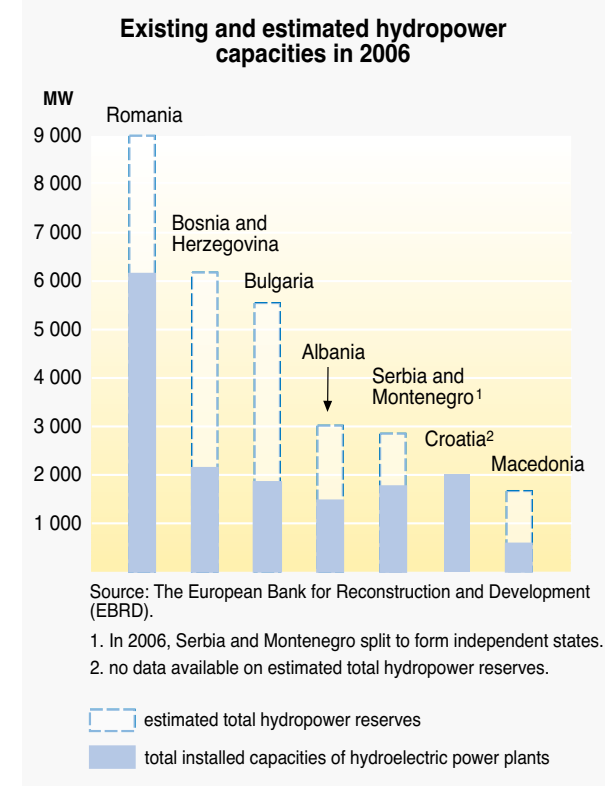
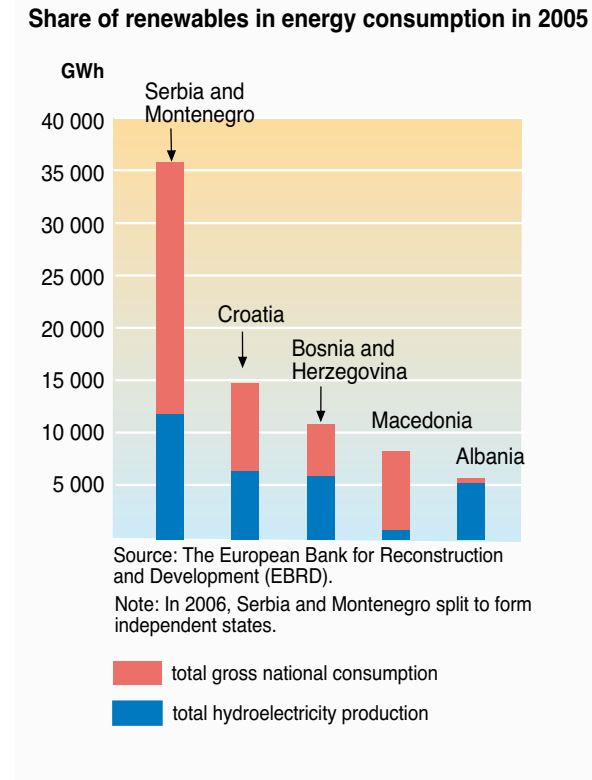
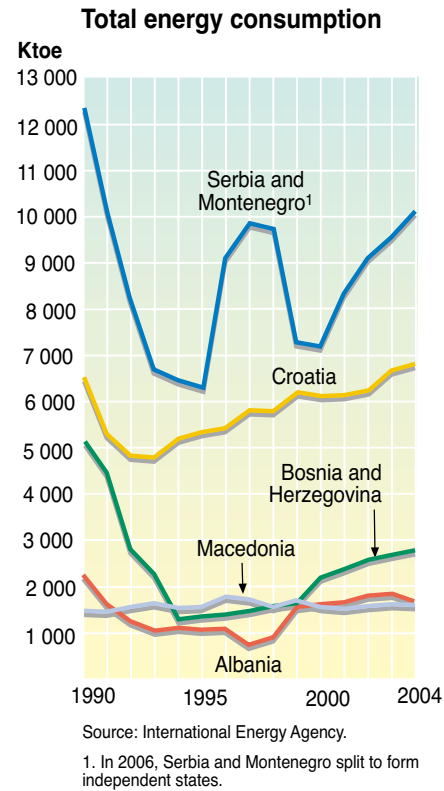
The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention) was signed in Helsinki in 1992 and came into force in 1996. Albania and Croatia are the two non-EU Balkan countries that are parties to the Convention. It aims to protect surface and ground water, preventing transboundary impacts on health, safety and nature, which in turn affect the quality of life. It also promotes ecologically sound management of transboundary waters, and their reasonable and equitable use as a way of avoiding conflicts.

Parties to the convention must agree on a common action plan to reduce pollution, in addition to accepting water quality objectives and waste-water emission limits. They are also required to cooperate on information exchange, monitoring and assessment. Early warning systems must be established to warn neighbouring countries of any critical situation such as flooding or accidental pollution that may have a transboundary impact. Parties are also required to inform the general public of the state of transboundary waters and any prevailing or future measures. Joint bodies such as the Sava or Danube commission implement these requirements.

Blue energy

The region's political and economic instability has discouraged any substantial investment in the energy sector. Except for some places such as Kosovo, the Balkans have no fossil fuel deposits, which are significant on a global scale. The Balkan countries are neither big energy producers nor consumers, so the region can rely on renewable energy to cater for tomorrow's growing electricity demand. Hydroelectric power covers a significant share of electricity consumption in the region (43 per cent in 2004). Hydroelectric power dropped noticeably due to lower rainfall in 2002 and 2003, but the increase in overall electricity consumption nevertheless seems likely to continue driving demand upwards.

Further development of hydroelectric power will depend on several factors, perhaps the most important being market deregulation. Specific measures are needed to encourage hydroelectric power. One specific measure would be to support new investment in production facilities, this being the best way of meeting environmental challenges and improving the stability of supply. It would also help to frame a regional energy policy, promoting more sustainable forms of energy production and consumption. Furthermore, to develop a free market in the region, it is vital to set up independent authorities to manage electricity generation, transmission and distribution.



Albania's ongoing energy crisis

In the early 1980s, countries in southeast Europe, such as Bulgaria, Greece, Romania and the former Yugoslavia were facing an energy crisis that was seen as a “window of opportunity” by Albanian President Enver Hoxha, who was determined to boost the Albanian electricity industry and its huge hydroelectric power potential. In 1986, shortly after Hoxha's death, Albania signed trade agreements for the export of electricity.

Albania has a long history of hydroelectric power, dating back to 1936 when the first small plant was built at Tithkuqi, in the southern Korca area. By 1984, Albania had 1.350 MW of installed capacity supplied by three power stations located on the Black Drin river in north-east Albania. That year total hydroelectric power output in Albania reached 3.220 GWh. This far exceeded local demand, leaving more than half of it to be exported. The future looked promising and work was underway to increase capacity.

After the fall of communism in the early 1990s energy demand rapidly increased. But there was no substantial investment in power generation, leaving it unable to keep pace with rising demand. While hydroelectric capacity only increased by eight per cent in two decades the number of hydropower plants increased to 91 units including mostly small-scale capacities. Hydroelectric output increased at the same by 67 per cent covering about 90 per cent of the gross power consumption in 2004. Once the region's largest electricity exporter, Albania today is unable to meet domestic electricity demand and needs to import electricity from its neighbours.

One of the major obstacles faced in hydroelectric power generation in Albania is the dry climate with sporadic low rainfall. This leads to falling water levels and a drop in generator output, with corresponding electricity shortages. 2001 and 2002 saw a dramatic drop in hydroelectric power output, with production down to 68 per cent and 59 per cent of overall national consumption, respectively. The massive power cuts triggered a social and economic crisis. The problem was aggravated by the fact that consumers did not reduce demand or make adequate use of alternative fuels. The government subsidized energy imports, diverting state resources from other critical programmes. In 2001, the subsidy amounted to US\$31.5 million. To make matters worse, Albania can only import limited amounts of electricity because the national grid is in dire need of repair and upgrading to boost capacity. A similar incident occurred in the summer of 2007 forcing the government to take short-term measures, including a cut in public sector office hours to save power. Outages in some parts of the country lasted up to 16 hours a day.

As reported by the Balkan Investigative Reporting Network (BIRN), “the Albanian power grid is estimated to need US\$1.6 million million in investments to eliminate power outages.” KESH, the state-owned electricity utility which has a monopoly of the market, is currently preparing an application to national regulators to raise prices in line with the higher cost of imports. To boost energy production capacity, the government is building a fossil-fuel power station at Vlora, in the south. The plant, funded by the World Bank, is slated to be operational by the end of 2007.

“I don't want a swamp, I want the Tara”

This is the main message broadcast by the MOST non-governmental organization for its campaign to stop construction of the Buk Bijela hydroelectric power plant on the Tara river in Montenegro. A 144 kilometre stretch of the river runs through the country, joining the Piva river near the border with Bosnia and Herzegovina to flow on towards the Drina river. The area was designated as the Tara river basin biosphere reserve in 1977 and, as a part of the Durmitor national park, became a UNESCO world natural and cultural heritage site at the beginning of the 1980s.

Local activists argue that flooding the canyon would completely change its microclimate and ecosystems. Additionally, it would impede increasing eco-tourism in the area. At the same time, they believe that the potential of other renewable energy resources in the country is underestimated and unexplored.

The idea of building the Buk Bijela facility on this river is not a new one. Leading energy generation companies in former Yugoslavia started taking an interest in the area in 1957. In 2004, the governments of Republic of

Srpska and Montenegro agreed to build the Buk Bijela dam, with a hydroelectric power plant. Following several lively protest campaigns, at home and abroad, the plan was shelved the following year. But not for long. According to the Nezavisne Novine daily, a meeting of the Committee for Cooperation between Republic of Srpska and the Republic of Serbia in Banja Luka on 5 September 2007 (attended by the presidents and prime ministers of both countries Milan Jelic, Milorad Dodik, Boris Tadic and Vojislav Kostunica) recommended starting construction of plant. It was stressed that both governments should be involved as partners in the project. To make matters worse, under the master plan, drawn up by Montenegro in 1997 and still in force, several hydroelectric power plants could be built in the area.

The impacts that this controversial project might have on the environment were presented in an environmental study (Buk Bijela and Srbinje hydropower plants) published in Belgrade in March 2000. However, the document drew serious criticism from UNESCO and various non-governmental organizations due, among others, to the lack of a sound scientific basis.



GREEN

NATURE



Protecting the ecological value of a region ideally extends from its biodiversity through natural resources to human activities that contribute to the workings of the ecosystem. But at the same time it is essential to sustain vital resources for the resident population. Public opinion often sees nature protection as a luxury, particularly in areas where the main concern is satisfying human needs such as employment and security. But a closer look reveals that the issues are closely interconnected. Ultimately regional cooperation is the key to good results, whether in the joint marketing of regional products, sustaining rich biodiversity or dealing with shared threats such as forest fires. Furthermore, European Union membership is high on the southeast Europe agenda, either because individual countries, such as Bulgaria and Romania, have already joined or because there is a good chance they will do so in the near future. The promise of economic benefits goes hand in hand with improved environmental protection, which involves meeting strict requirements. All in all, environmental concepts that are relatively new to the Balkans are becoming increasingly relevant.

Ecosystems across borders

Southeast Europe boasts a wide variety of landscapes, ecosystems and endemic species. What is unusual is that such valuable areas, which fully deserve protection, should often be located in two or more jurisdictions, as is the case here.

The preserved biodiversity of border areas is often due to their peripheral location or political factors. Consequently, if special areas require protection, and they generally do, such responsibility is split

between at least two countries. In a place such as southeast Europe where history has left a complicated political landscape, an issue as sensitive – and yet so relevant – as protecting the ecosystem, obviously has considerable potential for facilitating collaboration between neighbouring countries and building up trust. In this context it sometimes seems of secondary importance that unique areas should also benefit from such a process, but that remains the overriding goal.

Protected areas in the west Balkans

About six percent of the whole region is under legal protection. The extent of protection ranges from 0.8 per cent of the total area of the country in Bosnia and Herzegovina to 9.1 per cent in Albania and Croatia. Experience shows that it is only possible to protect viable wildlife populations in conservation areas of about 100 000 hectares. Smaller territories are suitable for

protecting landscape features or a single threatened plant species. Currently, the only large protected area in the west Balkans is the Stara Planina Nature Park, which covers an area of 142 220 hectares straddling Serbia and Bulgaria. Only 18 national parks protecting the Balkans' mountain ecosystems exceed 10 000 hectares (see page 63).

Transboundary protected areas

It is often very difficult for a single country to establish a large protected area on its own, but if it can find one or more neighbouring countries to participate as partners, the whole initiative gains in efficiency, financially and in terms of protection.

As **stressed** by the World Conservation Union (IUCN), natural systems that straddle political boundaries can be most effectively managed as functional units at the scale of the regional landscape. They would consequently benefit from appropriate mechanisms for long-term transboundary cooperation. While establishing transboundary protected areas (TBPAs) for integrated conservation and development can enhance environmental protection, such areas can also reinforce political security and provide multiple benefits to local communities and indigenous peoples. The existence of TBPAs and their buffer zones can help reduce tension, rebuild divided communities, promote freedom of movement and create new opportunities for sustainable development, including low-impact regional tourism. Such areas can

also make an important contribution to regional biodiversity-conservation programmes, especially when they are part of a coherent ecological network. Neighbouring states, which often have different levels of technical expertise, knowledge, capacity and financial resources, can benefit by combining their respective strengths through transboundary cooperation.

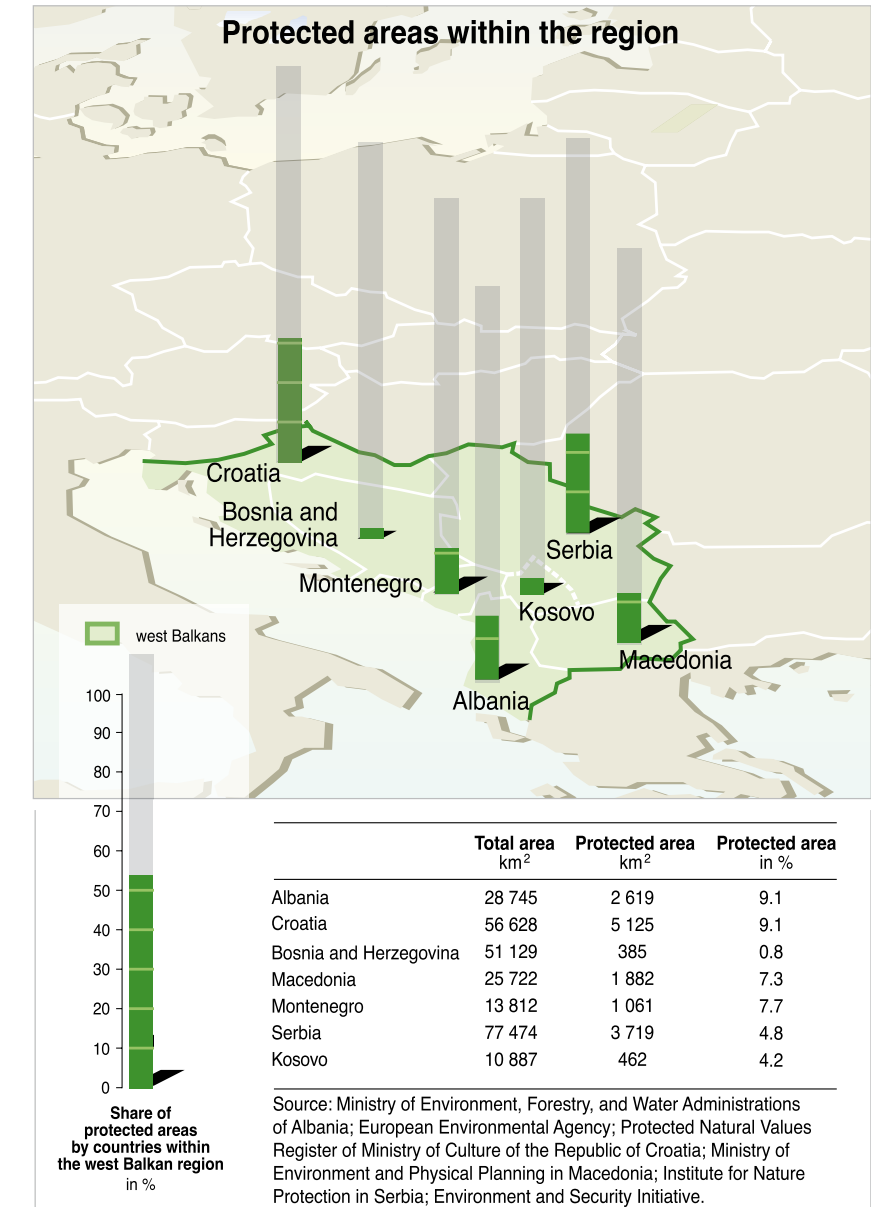
In southeast Europe there are several initiatives lobbying for transboundary nature protection. One of them is the Environment and Security Initiative (ENVSEC). Apart from encouraging regional cooperation and the creation of protected areas in border regions, the ENVSEC Initiative organizes training for community representatives to develop their skills for coping with challenges.

Because there are only a few examples of well-developed transboundary cooperation in the world, little documentation is available to help develop new projects of this nature. Against this background the ENVSEC Initiative has developed the first methodological guidance available for designing a feasibility study to establish a transboundary protected area, applicable to the Balkans, but also to other parts of Europe and further afield.

Draft code on transboundary protected areas in times of peace and armed conflict, by Trevor Sandwith, Clare Shine, Lawrence Hamilton and David Sheppard, (2001). Transboundary protected areas for peace and cooperation, IUCN, Gland, Switzerland and Cambridge, UK.

National parks (in hectares)

| | |
|-------------------------------|--------|
| Albania | |
| Prespa Lake | 27 750 |
| Bosnia and Herzegovina | |
| Sutjeska | 17 250 |
| Croatia | |
| Risnjak | 10 900 |
| Brijuni | 23 894 |
| Plitvice Lakes | 21 700 |
| Sjeverni Velebit | 10 900 |
| Krka | 50 600 |
| Kornati | 22 400 |
| Macedonia | |
| Mavrovo | 73 088 |
| Galicica | 22 750 |
| Pelister | 12 500 |
| Montenegro | |
| Durmitor | 32 100 |
| Skadar Lake | 40 000 |
| Serbia | |
| Djerdap | 63 600 |
| Fruska Gora | 25 000 |
| Tara | 19 200 |
| Kopaonik | 11 800 |
| Kosovo | |
| Sharr | 39 000 |



Biodiversity: challenges and opportunities

The Balkans boast an exceptional wealth of biodiversity of flora and fauna. The main threat to species is increasing anthropogenic pressures such as hunting, farming and the collection of medicinal plants. Natural habitats are threatened by unsustainable economic activities in agriculture, illegal logging of forestry, illegal building and serious pollution. This poses several environmental problems such as erosion, a concern for most of the countries.

A large number of species are critically endangered. Many plant and animal species are of European, perhaps global, conservation importance. It is estimated that less than 100 individuals of the Balkan Lynx, one of Europe's largest wild cats, remain. The rate of species loss over the past 50 years in Albania has been one of the highest in Europe. At least two species of plants and four species of mammals have become extinct, while 17 species of birds no longer nest in Albania.

Biodiversity loss has been recognized as a security risk in southeast Europe, but for protective measures to be effective they must apply to large territories. Just as with water-related issues, mountain ecosystems have given rise to many initiatives to promote cross-border cooperation. International mechanisms, such as the Convention on Biological Diversity and the Ramsar Convention on Wetlands, have boosted protection of mountain ecosystems in the last decade, starting with Prespa Park, which lies between Greece, Albania and Macedonia.

Balkan Peace Park

Peace Parks are transboundary protected areas formally dedicated to protecting and maintaining bio-diversity, natural and associated cultural resources, and to promoting peace and cooperation. The concept takes conservation as a land-use option to address poverty in the area caused by unemployment. One approach to achieving economic development in protected areas is to establish sustainable tourism. The basic idea behind the Peace Park initiative is free movement without borders inside the protected area, so border controls to prevent uncontrolled immigration occur on the park boundaries.

Non-governmental and environmental organizations from Albania, Kosovo, Montenegro and the United Kingdom have been working together since 1999 to establish a peace park in the border region straddling the three neighbouring countries. Supporters of the project nevertheless face several challenges, however attractive the idea of an area combining environmental protection, sustainable use and regional cooperation may seem.

There are already three national parks in the area proposed for the peace park: Thethi in Albania, Rugova in Kosovo and Prokletije in Montenegro. They are wild places, home to a huge variety of species and most people leaving there lead a traditional, rural existence. The idea is to manage the three areas in close cooperation with one other, pursuing common protection goals, and establishing free movement, disregarding national borders, for wildlife and visitors.

People living in the area react in various ways to the project. On the one hand, the commitment of local non-governmental

PEACE PARK
K PEACH PARK BEACH
PARK PEAS PARK BEES
PARK BIZ PARK PISS PA
RK **Unknown artist** *Peace Park* (Yugoslavia 1970s)

organizations and environmental activists reflects local interest in a legal framework for protecting and developing the area. But on the other hand there is concern about the consequences of possible restrictions associated with the setting up of a national or transnational park on their land. Some people in the Balkans confuse the establishment of a national park with the nationalization process under which private assets are passed into public ownership. Naturally this is not the case.

Logging and hunting are forbidden, many forests in the area being state owned. However, regulations are not properly enforced. A national park, or even a cross-border peace park, would not only bring additional financial resources but also greater legal pressure to actively enforce protection. A key concern is to prevent private companies exploiting natural resources unsustainably and other illegal activities.

The governments involved are largely in favour of having a peace park. As for so many new developments in the Balkans, the prospect of European Union membership is the main incentive. Balkan countries need to identify new sites of ecological value for conservation in compliance with the Annexes to the EU Habitat Directive. The formal declaration of independence by Montenegro in June 2006, and the announcement that a national park will be proclaimed in the Prokletije mountains, marked a step forward for the project. The United Nations Interim Administration Mission in Kosovo supports the project in principle, but it is not clear whether the interim administration has the necessary competence to take such a decision. It may have to wait until such time as the final status of Kosovo is settled.

The peace park concept itself has often prompted controversy. Criticism has mainly focused on lukewarm support from local communities and uneven distribution of benefits between the authorities, non-governmental organizations and the local community. Peace parks try to overcome this problem by creating added value through sustainable tourism.

But enabling local people to exploit this source of income more is needed than the simple proclamation of a protected area. In many places infrastructure and adequate local amenities need to be developed to attract visitors. In Thethi, Albania, for example, selected inhabitants were provided with materials to improve sanitary facilities and offer visitors better accommodation. Further steps include English-language courses and repair work on the hydroelectric power station left over from the socialist era and no longer in working order.

With regard to local communities, it is vital to provide clear information, this being the only way to achieve reasonable decisions that promote the interests and wishes of all stakeholders.

At present many people are leaving the highlands because they lack a sustainable livelihood. It is hoped that the Balkan peace park succeeds in giving people in the area new prospects, while protecting a unique landscape from degradation. If that can be achieved, then cross-border cooperation leading to good relations between neighbours would put icing on the cake.



Vlado Alonso *Bigz* (Belgrade 2007)



Vlado Alonso *Sajam Bife 13* (Belgrade 2007)

Lunch in Brajcino

“There are three categories of meals we offer in Brajcino: simple, medium and large, in case you are very hungry. The medium one includes rakija (a local drink), salad, soup, a main course, dessert, coffee, wine and seasonal fruit and it costs eight euros,” explains Dragi Pop Stojanov from the Brajcino Society for Sustainable Development. In 2006, the people of Brajcino sold about 4 000 meals plus 800 overnight stays to tourists who came to visit their picturesque little village and its surroundings.

What sounds like an average tourist venue for summer visitors is also a remote village near Lake Prespa in Macedonia, typical of the Balkans. The population in such places is generally older than the national average, there being little scope for earning decent wages. The promise of a better life elsewhere raises the hopes of young people and draws them away. With a relatively small amount of money, a project funded by the Swiss Development Agency and supported by the German Tourist Board started in 2002 to develop the area for tourism.

The villagers identified what could be of interest in the area and what they would like to show to visitors. They developed tours accordingly, providing information and trained guides to show visitors round the Pelister National Park and the village’s architectural highlights. They also realised local food might justify a visit, so the women were taught how to calculate the cost of dishes

and manage a business. Tourists obviously need somewhere to stay after all these activities, so some people were helped to adapt their homes to suit the demands of the average eco-tourist. It also made sense that visitors would only really appreciate clean beds and proper sanitation if local people were able to give them directions in a language most could understand, not to mention remaining polite regardless of how many times visitors ask whether the rooster could be prevented from crowing in the morning. Training consequently included courses in English and hospitality.

Amazingly this whole concept was not only effective as a project proposal but really improved the lives of people in the community and continues to do so. Funding stopped in 2005 and the business has continued since then even without external support. For coordination, promotion, communication and other services that do not earn any money directly, participants pay 15 per cent of tourist earnings to the Brajcino Society for Sustainable Development, with a third going directly to nature protection measures.

In 2002, out of Brajcino’s 120 inhabitants, 15 were taking part in the project, which covered almost everyone of working age. Five years later the number of residents amounts to 150 people and 45 are guiding, renting, explaining, promoting and cooking.

The European Green Belt initiative

The European Green Belt initiative aims to serve as the backbone for an ecological network running from the Barents Sea to the Black Sea. The green corridor will act as a bridge linking pasture, fallow and damp sites, dry grassland and mature woodland, to form a sequence of essential habitats. The Balkans are part of the picture, with an important ecological corridor for wolves, bears and lynxes. The Green Belt initiative, launched by the World Conservation Union (IUCN), is an ideal opportunity to promote protected areas as a tool for regional development in southeast Europe.

The Dinaric Arc initiative

The Dinaric Arc initiative aims to preserve heritage and identity by establishing a network of protected areas stretching from Trieste in Italy to Tirana in Albania. It includes parts of Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Macedonia and Albania. The initiative also promotes intercultural dialogue and scientific cooperation between participating countries and helps to promote the Balkans as an attractive travel destination with rich natural resources. The initiative is backed by the World Wide Fund For Nature (WWF), the United Nations Educational, Scientific and Cultural Organization - Regional Bureau for Science and Culture in Europe (UNESCO-BRESCE), UNDP, IUCN, the Council of Europe, the Food and Agriculture Organization of the United Nations (FAO), Euronatur and the Dutch Organization for Development (SNV).

Colour my Stara Planina

Adopted from Nelly Papazova, Green Horizot Magazine, Regional Environmental Centre (REC)

A folk tradition of making carpets coloured with natural dyes has united Serbs and Bulgarians in efforts to preserve their shared mountain environment.

Seated on a small wooden chair with his eyes staring out of the window at the autumn beauty of the forest, the man speaks quietly: “A leaf from the birch. A stem from nettles. A flower from buckwheat. Bark from the chestnut. There you have 10 hues of yellow.” The man is Nikola Nikolov and the place Chiprovtsi, a small town on the western slope of Stara Planina, Bulgarian for “old mountain”.

Nikolov, a chemistry teacher at the local school, says, “Here each house has a loom; each woman, no matter her other professions, is a carpet-weaver; each child grows up with the sight of carpet patterns and the smell of boiling herbs for colouring the wool. It is the wool, the herbal colours and the symbols that give the carpet healing power.”

For 20 years, Nikolov and his pupils have gathered bits of old folk wisdom about natural colouring. For the summer he asked them to find old recipes and in the winter his class experimented with them. The experience resulted in a book, *Colours from Nature, a collection of recipes and legends* published in 2003.

In June 2003, a three-day Bulgarian-Serbian festival was organized as part of the Regional Environment Cen-

tre’s (REC) transboundary activities on Western Stara Planina. It coincided with a roundtable for non-governmental organizations from both sides of the mountain determined to preserve the mountain’s natural environment and culture. It was here that Biljana Ratomir, of the Association for Preserving Carpet Weaving in Pirot, discovered *Colours from Nature*, which has been translated into Serbian.

“In Pirot the tradition of natural colouring is being forgotten due to automation,” Biljana explained. “I found this book and made many friends in Chiprovtsi. It gives me hope that the tradition will be revived.” After the summer festival, children as well as adults from Pirot and Chiprovtsi visited each other and exchanged tips on colouring wool and weaving carpets.

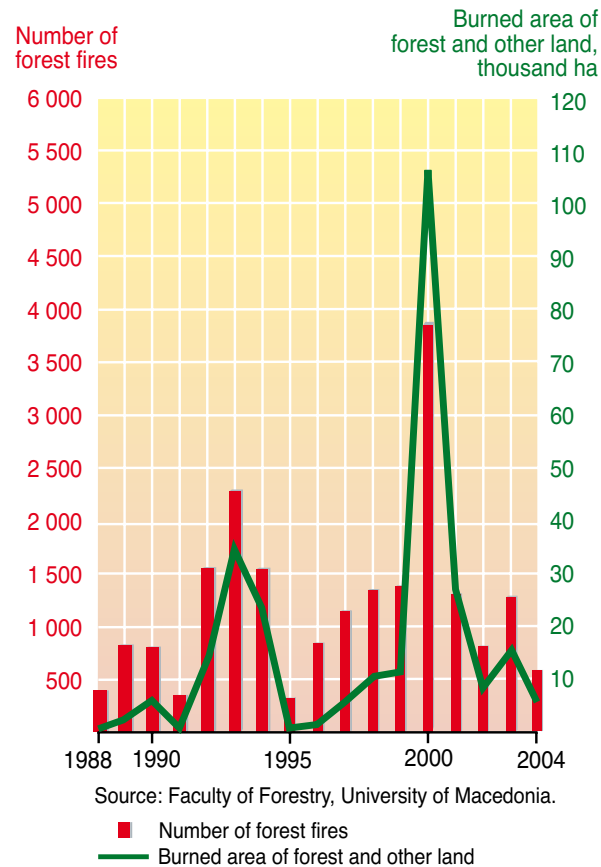
These and other activities in the region were supported by the REC project on transboundary cooperation through management of shared natural resources. In 2006, the Stara Planina Euroregion was established to foster transboundary cooperation between border municipalities in Serbia and Bulgaria, and assist governments with planning, and implementing cooperation and regional development policies.



Sources: Image2000 from European Commission’s Joint Research Centre, ESRI.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Created at UNEP/DEWA/GRID-Europe, July 2007.

Forest fires in Albania, Macedonia, Montenegro, Serbia and Bulgaria



Forests on fire

The summer of 2007 brought another heat wave to the Balkans, with widespread forest fires. The extent of burnt forest may differ a great deal from one year to the next, but it is quite clear that over the past 20 years, the frequency of forest fires has gradually increased in south-east Europe. In Albania, NATO reported about 100 fires in a single week in July, affecting about 1 500 hectares of forest. The areas most severely hit were Kukës, Tropoja and Erseka. Over the same period, Kosovo suffered about 20 forest fires, primarily in areas bordering on Albania and Macedonia. In the course of July, there were occasional forest fires in Romania, Bulgaria and Serbia.

Damage after forest fires is difficult to estimate from one country to the next, there being no international standards for such comparisons. But in terms of environmental damage, forest fires contribute to the destruction of valuable species and their habitats, to soil erosion, the spread of insects, greenhouse gas emissions and other impacts. For example, bark beetles are a serious threat to the pine forests of Macedonia.

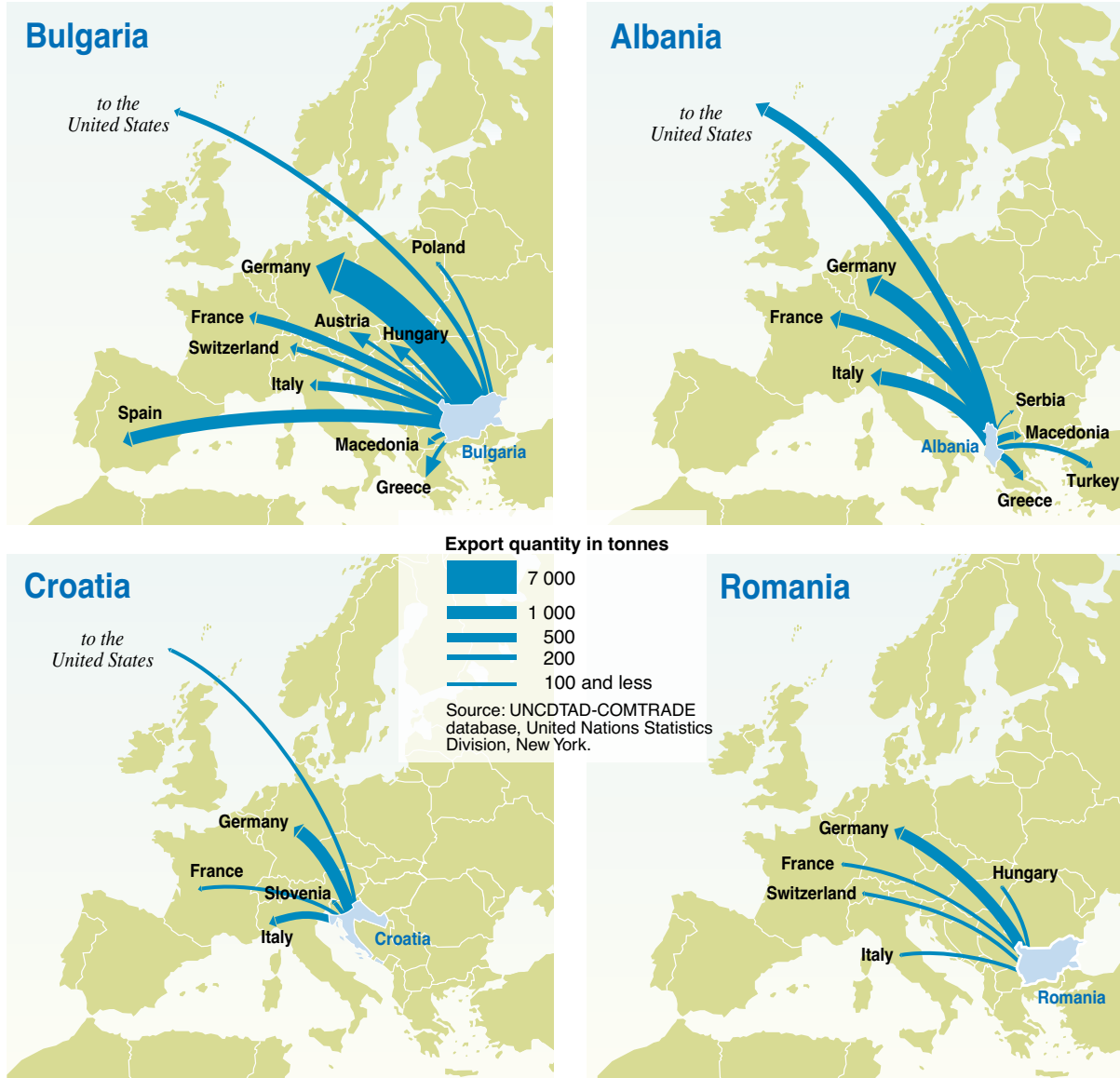
But fires do not mean loss of life or livelihood for everyone. A burnt forest is not completely worthless because the wood can still be used for various purposes. The leftovers must be processed as soon as possible after the fires have been extinguished to prevent the bark beetle population from spreading. This makes work for the timber industry, particularly as wood prices are currently high and logging is not permitted in many forests. Hearing this, some people may wonder whether fires were not started deliberately.

Among causes cited for the fires are faulty power lines, agricultural practices, careless behaviour by people or lightning. Cross-border fires are a further problem since fires do not respect political divisions. A regional approach needs to be employed in the prevention of devastating cross-border forest fires, based on common regional strategy, which currently is not in place in the Balkans.



Source: AQUA satellite, 25 July 2007, 11:15 UTC.

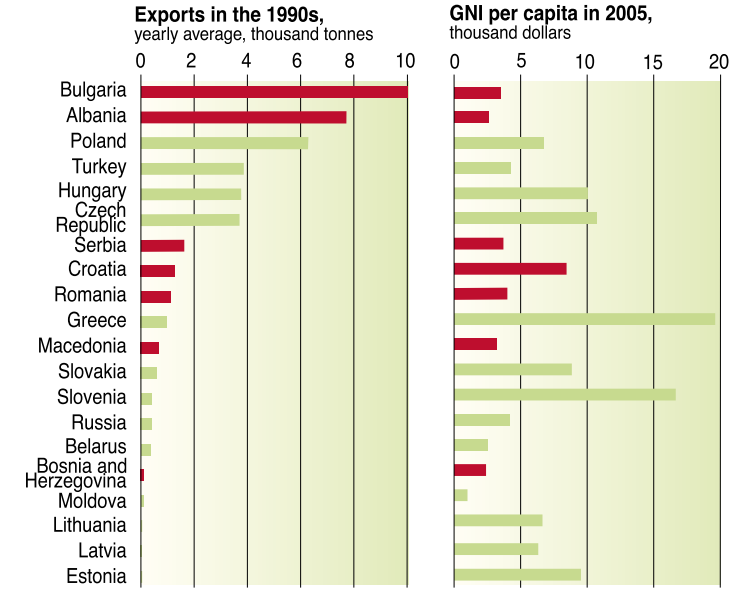
Export volumes of pharmaceutical plants to the largest markets in 2000



“I didn’t even want to earn any money. I just wanted to get my school books. Seven kilograms of camomile was the price. Too high? [...] Later I drank nothing but linden flower tea. No use. First, I definitely had to get hold of a good camomile-picker. This appliance, equipped with a rusty iron comb with twenty-nine teeth, was a primitively assembled box. The wooden box weighed almost two kilograms and could hold two to three pounds of camomile. Full of verve I swept the iron comb through the camomile, pulled the box up, and about thirty flowers fell into the belly of the wooden box. In three hours it was full. My arm had long since gone numb. I was breathing heavily, the strain made me sweat and I measured time in camomile-flower-gram-units. My summer was called “camomile” and weighed seven kilograms, from mid-June to mid-September.”

Translated extract from *7 Kilo Zeit* by Rumjana Zacharieva.

Exports of pharmaceutical plants from Central Europe compared to gross national income (GNI) per capita



Source: UNCTAD COMTRADE database, United Nations Division, New York; The World Bank database, 2005.

Camomile summer

The Balkans are home to an outstanding number of medicinal, cosmetic and aromatic plants, with a long-standing tradition of harvesting them. The tradition is handed down from one generation to the next and most pickers know a great deal about harvesting methods, which plants are picked and for what purpose, and the best times to go picking. But such knowledge is declining, despite the fact that Balkan countries still harvest high quality products.

The area is remarkably rich with the potential to play an important part in the regional and global market for medicinal plants. In terms of quantity, Bulgaria and Albania are the two leading exporters in southeast Europe, the

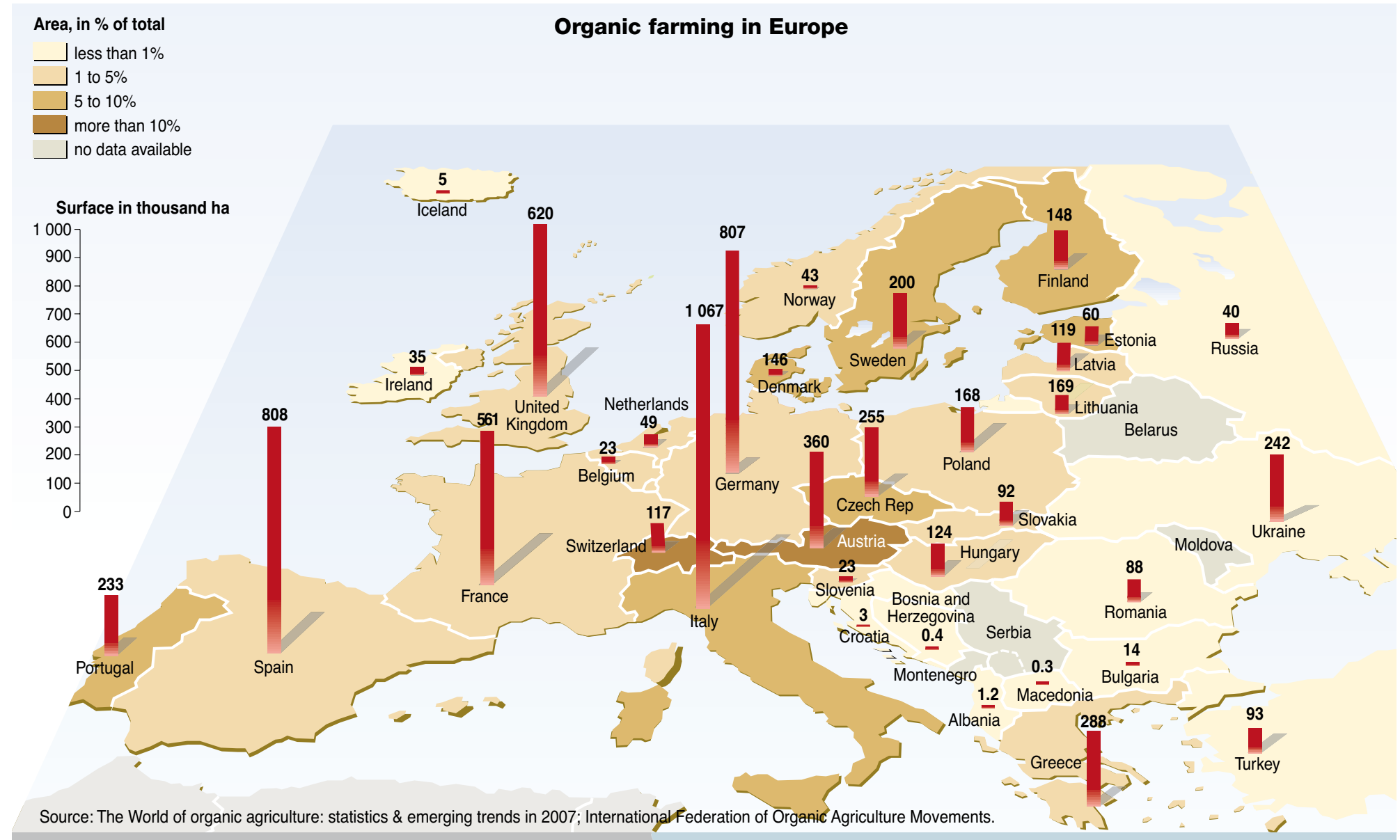
former ranking among the top 10 exporters worldwide. Harvesting wild medicinal and aromatic plants is also a major source of income in rural areas in all the countries concerned. Lastly, the Balkans are one of the most competitive sources on the world market.

However, stocks of many wild species have recently declined. Some species are now rare or endangered due to the loss of their natural habitat, excessive picking, soil erosion and other factors. Protecting wild medicinal and aromatic plants requires an effective management system to ensure harvesting is sustainable. Among others, the environmental awareness of pickers and their understanding of the stakes needs to be improved.

Organic farming: a progressive outlook in mountain ecosystems

Shelves in western Europe are increasingly laden with “organic” products and growing numbers of consumers are giving preference to quality food rather than standardized imported tomatoes and frozen chicken.

This trend could be very promising for the Balkans, but there is still a long way to go before their share of organic food production can rival with that of countries such as Austria or Switzerland. Although the natural conditions in southeast Europe – climate, soil and variety of plants – look pretty favourable, the market does not yet seem ready to accept organic products from the region. This may change in the future with increasing awareness and a wider range of products on offer, as has been the case in other parts of the world. It will take time for organic goods labelled “Balkan Produce” to establish consumer-loyalty but the strict certification systems already in force should make all the difference. Organic farming is more than just a source of healthy food and different production methods. It is a modern development model for agriculture integrating environmental, socio-economic and ethical factors. Southeast Europe is among the leaders of this trend, with plenty of capacity and high potential. The Balkans have a lot to offer.



Organic farming in Croatia determined to shake off its backward, rural image

Martin Woker, Zagreb, Neue Zürcher Zeitung, September 2007

On the road to European integration, organic farming is now on the agenda in Croatia. But producers are battling with a tough image problem.

“Supermarkets, nice clothes, new cars and a computer: that’s what people here are interested in.” The market analysis offered by the friendly farmer’s wife is based on years of experience and might well be confirmed by specialist economic institutes with piles of survey data. The woman has a stall selling home-grown vegetables and dairy products at an organic trade fair in Zagreb. The term “ecology” is still little known here, she explains. Most consumers think organic products are something exotic, often perceived as remedies. Every now and then, mothers show up to buy organic carrots for their sick child.

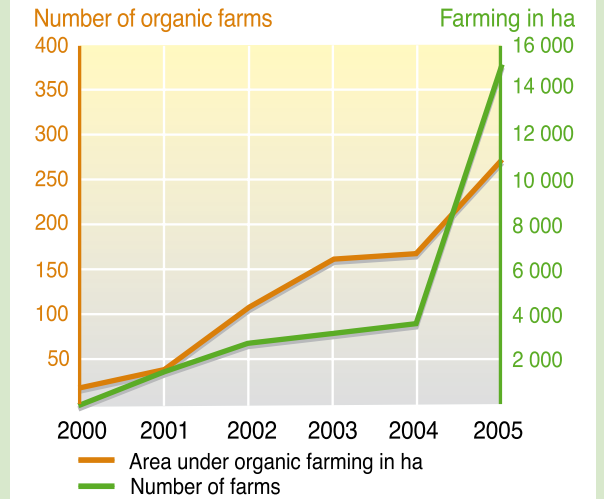
Negative rural image

The agronomist, Sonja Karoglan Todorovic, reckons organic farming reflects overall social developments, and, as the head of Ecologica, she should know what she is talking about. Launched eight years ago, the organization defends the interests of Croatia’s organic farmers and contributes to their training, a task that re-

quires a lot of determination. The main problem is that in Croatia, much as in the rest of the Balkans, the rural community has a very poor image. In Croatian, the word for “farmer” is *seljak*, the same as for “villager”. And it is commonly assumed that *seljaks* do not achieve much in their lives because they stay at home, missing out on the rest of the world and any progress. In other words, being a *seljak* is not so much a career-choice as a pre-ordained destiny.

That image is a major problem for the development of organic farming, according to Ms. Todorovic. Success in organic farming demands considerable expertise and bags of enthusiasm. But it seems that the average Croatian *seljak* has a hard time with both of them. Farmers are gradually showing more interest, but the vast majority have the benefit of little or no education. They are bound to be deterred by the administrative and technical requirements a certified organic farm must meet in Croatia.

Organic farming in Croatia



Source: Ministry of Agriculture, Forestry and Water in Croatia.

A successful pioneering family

The Sever family from Zagreb anticipated this trend more than 10 years ago. When their garden proved too small, the Eko-Severs, as they are now called, bought eight hectares of uncultivated land in the small village of Lepsic, about 20 kilometres east of the capital. The land, which had lain fallow for eight years, first needed to be cleared. Two years later they harvested their first crop. In those days, people thought they were very odd, explains Mario Sever, who gave up a job as an architect to become an organic farmer. For most of the people he knew, that was inconceivable. Only Mario’s wife, an agronomist by training, had the theoretical background to build up a farm.

Had he realised the amount of drudgery involved in the first years, he would never have started the project, says Mr Sever. It is hard to believe such a confession, coming from this hard-working, unassuming man. Be that as it may, the family business now covers 50 hectares and Mr

Sever can barely conceal his pride at how much it has already achieved. The Eko-Severs are no longer considered weirdoes or idealists. Pointing the way forward for farming in Croatia, their farm now ranks as a model enterprise, certified by the local Bio-Inspekta institute. It complies with guidelines comparable to those set by the Bio Suisse organization. Apart from popular vegetables, the Severs produce several types of grain, eggs, goat cheese and kid meat. Jerusalem artichokes and sweet potatoes complete the range of products which some of the more conservative customers may see as a form of culinary provocation, despite the recipes provided.

At the Dolac market in Zagreb, one of the gems of Croatia’s capital, customers amply reward the risk the Severs once took. Compared to all the other stands, theirs is always the first to be sold out, and there is no need for advertising. Now Mr Sever also sells his produce on the Internet, an idea generally known but has not yet dawned on most villagers.



Vlado Alonso *Paintball* (Belgrade 2007)

“These photos are from two series, *On the expectation side (Bor, Serbia)* and *Belgrade 07* by **Vlado Alonso**, which have been taken during the last two years. The people of these places are caught up in a series of accelerating economic processes, which in turn drive social trends that seem to obey their own logic, producing increasing inequality. Such changes are generally spread over several decades, but here they have been packed into just a few years following the post-war upheaval. These pictures represent an attempt to capture a particular place and time. It is within that specific framework that the subject matter takes on its full meaning.

A trial of photographic objectivity, which throws out any claim to realism but rehabilitates the pictorial merits of the artist's work, countering what may seem blindingly obvious and demanding that we reconsider everything, starting with what is most familiar, in the light of our astonishment.”

Michel Thévoz,
writer and former curator of the Musée d'Art Brut in Lausanne

References

- Adric, Ivo; *The Bridge on the Drina*, 1959
- Balkau, Fritz; *Learning from Baia Mare*, The Environment Times, March 2005; www.environmenttimes.net
- Birnie, Patricia and Alan Boyle; *International Law & the Environment*, Oxford University Press, 2002
- Bogdanovic, Slavko; *Legal Frameworks for Revitalization of Environment and Economy of the Danube Basin*, Belgrade, November 2000; www.danube.cjb.net
- Bourne, Charles; *The International Law Association's Contribution to International Water Resources Law*, London, 2001
- Burcham, Nikolai; *Kosovo's mineral wealth*, UNMIK, July 2007; www.unmikonline.org
- Copper mining and smelter complex Bor; www.rtbbor.com
- Csagoly, Paul; *The Cyanide Spill at Baia Mare, Romania – before during and after*, The Regional Environment Center for Central and Easter Europe, June 2000; www.rec.org
- Ecological campaign by the NGO MOST: *Necu Baru, Hocu Taru*, 2004; www.durmitorcg.com
- Energy Information Administration – Official Energy Statistics from the U.S. Government; www.eia.doe.gov
- Environment and Security Initiative; *Enhancing Transboundary Biodiversity Management in South Eastern Europe*, 2006
- Environment and Security Initiative (ENVSEC), South Eastern Europe; www.envsec.org/see
- Euronatur; *Balkan Lynx Recovery Programme 2006–2008*; www.euronatur.org
- European Agency for Reconstruction; *Fire in downtown Podgorica threatens EAR offices*, August 2007; www.ear.europa.eu
- European Bank for Reconstruction and Development – Renewable Development Initiative; www.ebrdrenewables.com
- European Environmental Agency (EEA); *Europe's Environment. The Fourth Assessment*, October 2007
- European Environment Agency; *Renewable electricity (CSI 031) – Assessment*, March 2007; themes.eea.europa.eu
- European Union; *EU environment-related indicators*, September 2007; ec.europa.eu
- European Union; *Former Yugoslav Republic of Macedonia forest fires - Summer 2007*; ec.europa.eu
- Frye, Barbara; *Kosovo: Buried Treasure*, Transitions Online, March 2007; www.esiweb.org
- Global Fire Monitoring Center, University of Freiburg, July 2007; www.fire.uni-freiburg.de
- International Federation of Organic Agriculture Movement; *The World of Organic Agriculture, Statistics & Emerging Trends 2007*; www.ifoam.org
- Kathe, Wolfgang; Honnef, Susanne and Heym Andreas; *Medical and Aromatic Plants in Albania, Bosnia-Herzegovina, Bulgaria, Croatia and Romania*, 2003
- Kempe, Iris and Kurt Klotzle; *The Balkans and the Black Sea Region: Problems, Potentials and Policy Options*, CAP Policy Analysis, Bertelsman Group for Policy Research, April 2006
- National Institute for Disaster Management; *Causes of Forest Fire*, 2004; www.nidm.net
- North Atlantic Treaty Organisation; *Helping Albania fight forest fires*, July 2007; www.nato.int
- OSCE Parliamentary Assembly; *Washington Declaration: 30 years since Helsinki: Challenges Ahead*, July 2005
- Pätzold, Britta; Danna Leaman and Susanne Honnef; *Sustainable Wild Collection of Medicinal and Aromatic Plants*, Traffic Bulletin, 2007; www.traffic.org
- Popovic, Vesna; *RS i Srbija žele integraciju elektroprivrednih sistema*, Nezavisne Novine, September 2007; www.nezavisne.com
- Proposal of the Energy Development Strategy of the Republic of Montenegro until 2025 by the Ministry for Economic Development, drafted in June 2007
- Regional Environment Center; *Transboundary Cooperation through Shared Natural Resources – West Stara Planina*; www.rec.org
- Report of the international joint UNESCO-IUSN mission to Durmitor National Park and Tara River Basin, Serbia and Montenegro, and to Bosnia and Herzegovina, January 2005
- Research Institute of Organic Agriculture (FiBL); www.fibl.org
- Salatic, Dusan; *Possibility of mineral processing creating a friendly environment in the Balkans*, University of Belgrade, 2001
- Sandwith, Trevor and Charles Besançon; *Trade-offs among multiple goals for transboundary conservation*, Wilson Center, August 2005
- United Nations Development Programme, (UNDP) Montenegro Office; *Environmental Policy in South Eastern Europe*, October 2007
- World Bank; *Project appraisal document on a proposed loan and a proposed to the Republic of Serbia for a Bor regional development project*, May 2007
- World Wildlife Fund for Nature; *Problems: Forest Fires*, September 2006; www.panda.org



The Governments of Austria and Canada, the United Nations Economic Commission of Europe (UNECE), the United Nations Environment Programme (UNEP) and GRID-Arendal have provided financial support for the project and the publication of this report.



The John Jeffries Foundation for a more visual United Nations has sponsored the use of original photography.



Price: €20