

# Uode Freshwater

Ukupni godišnji obnovljivi vodeni resursi (riječni tokovi i dopunjavanje podzemnih voda) u 2000. bili su preko dva puta veći od evropskog prosjeka, a skoro 15 puta veći od ukupnih mađarskih resursa (WRI, 2000). U toku rata je došlo do velikog smanjenja zagađivanja vode; i pored toga, kvalitet vode u mnogim rijekama je nezadovoljavajući. Emisija organskih zagađivača vode u 1996. bila je 250 puta niža nego u Njemačkoj, ali je ista emisija po radniku bila 1,5 puta viša (WRI, 2000).

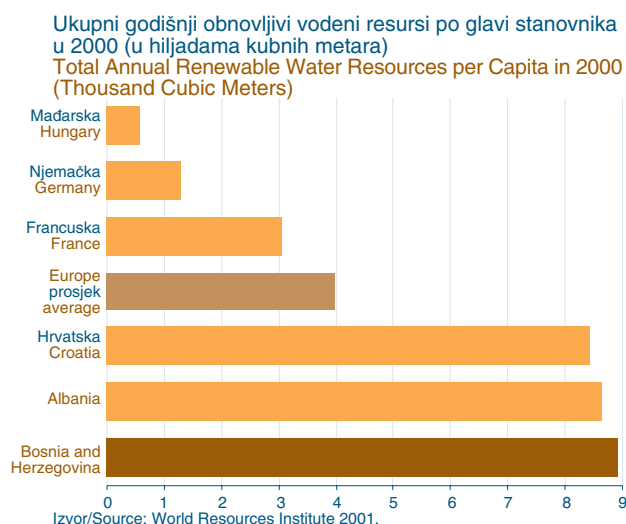
Total annual renewable water resources (river flow and recharge of groundwater) in 2000 were more than two times the European average, and almost 15 times more than the Hungarian total (WRI, 2000). There was a very large decrease in water pollution during the war; however, the quality of the water in many rivers is unsatisfactory. The emission of organic water pollutants in 1996 was 250 times lower than in Germany, but the same emission per worker was 1.5 times higher (WRI, 2000).

## Glavni trendovi u BiH

U 2000, ukupni godišnji obnovljivi izvori vode po glavi stanovnika iznosili su 8.938 kubnih metara, što je više od evropskog prosjeka, koji iznosi 3.981 kubnih metara (WRI 2001).

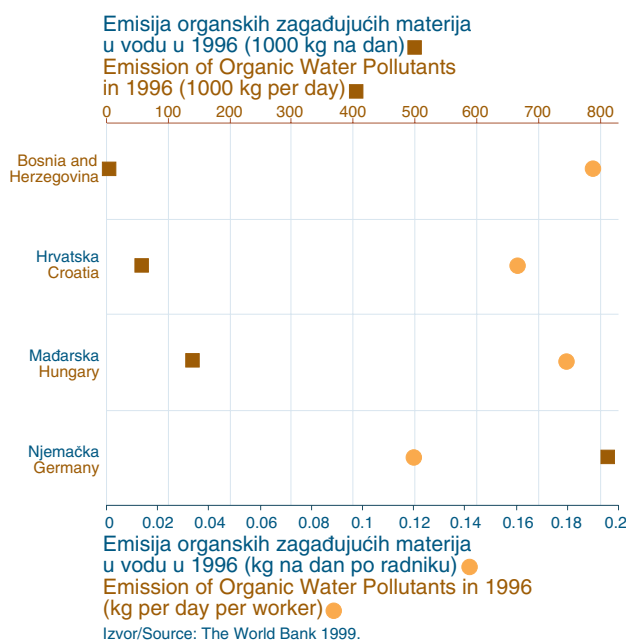
Uprkos dramatičnog pada emisije zagađivača u vodu i očiglednog poboljšanja kvaliteta vode u toku rata, trenutno je samo 3% rijeka u BiH potpuno nezagađeno a skoro 30% je eutrofikovano (REC, 2000).

Ukupna emisija organskih zagađivača vode u 1996. iznosila je 3.217 kg na dan, što je 250 puta niže nego u Njemačkoj (811.315). Ta emisija po radniku (0,19 kg) bila je, međutim, 1,5 puta viša nego u Njemačkoj (0,12) (World Bank, 1999).



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## Main BIH Trends



In 2000, total annual renewable water resources per capita were 8,938 cubic meters, which was more than the European average of 3,981 cubic meters (WRI 2001).

Despite the dramatic drop in emissions of pollutants into water and the obvious improvement in water quality during the war, currently only 3% of rivers in BIH are totally unpolluted and almost 30% are eutrophicated (REC, 2000).

The total emission of organic water pollutants in 1996 was 3,217 kg per day, which was 250 times lower than in Germany (811,315). This emission per worker (.19 kg) was, however, 1.5 times higher than that of Germany (.12) (World Bank, 1999).

## Vode

Dva su glavna problema povezana sa vodama: zagađenje i nedostatak vode. Globalno gledajući, vode ima više nego dovoljno; međutim, postoji značajan nedostatak vode na lokalnim nivoima. Najveći potrošači vode u svjetskim razmjerama su poljoprivreda i industrija.

Zagađenje vode je uglavnom prouzrokovano komunalnim otpadnim vodama u slučajevima kada kanalizacioni sistemi ne funkcionišu kako treba, kao i otpadnim vodama od poljoprivrede. Ovo prouzrokuje uglavnom organsko zagađenje vode i eutrofikaciju. Ostali bitni zagađivači vode su industrija i proizvodnja energije. Industrija može da izazove zagađenje teškim metalima, a proizvodnja energije često izaziva termalno zagađenje.

Podzemne vode su često jedini izvor vode za neke zemlje. U većini slučajeva, podzemne vode se obnavljaju mnogo sporije nego što se troše, što na kraju dovodi do nedostatka podzemnih voda i dodatnih problema, kao što su slijeganje tla iznad podzemne vode, prodiranje morske vode i opadanje vodenih stubova. Nedostatak vode u budućnosti mogao bi imati uticaj na ljudsko zdravlje, privredu i okoliš, a mogao bi dovesti i do oružanih sukoba u i među državama (OECD, 2001).

## Političke opcije

Politika bi trebalo da bude usmjerena na smanjenje subvencija za korištenje vode u poljoprivredi, na sprječavanje zagađenja vode, kao i opravku postrojenja za snabdijevanje i tretman vode kako bi se smanjili gubici. Mnoge OECD zemlje su poboljšale svoju industrijsku efikasnost (kroz bolje recikliranje i ponovnu upotrebu) i smanjile količinu vode koja se koristi u industriji. Ovo su postigle uglavnom zahvaljujući većim cijenama vode i striktnijim industrijskim standardima (OECD, 2001).

U mnogim državama odgovornost za upravljanje vodom je podijeljena između raznih lokalnih vlasti, što nije dobro, jer je potrebno da postoji integrisani pristup upravljanju na državnom i međunarodnom

## Globalni trendovi i projekcije

**P**otrošnja vode će porasti za 31% od 1995. do 2020. Značajan manjak vode postoji na lokalnom nivou; očekuje se da će, do 2020, u 25 zemalja u razvoju doći do znatnih poteškoća u snabdijevanju vodom.

**D**o dramatične redukcije raspoložive vode po glavi stanovnika došlo je u zadnjih 50 godina (sa 17.000 metara kubnih godišnje po glavi stanovnika u 1950. na 7.300 kubnih metara godišnje po glavi stanovnika u 1995). Jedan razlog je porast stanovništva, a drugi zagađivanje vode. Za očekivati je da će raspoloživa voda i dalje opadati te će do 2020, 250 miliona ljudi biti pogođeno nestašicom vode, što je 75% više nego 1995.

**U**manje razvijenim zemljama, najviše vode koristi se za poljoprivredu, dok se u razvijenim zemljama više vode koristi za industriju. Očekuje se da će u većini zemalja širom svijeta, poljoprivreda i dalje koristiti najveće količine vode, dok će industrijski sektor rasti najbrže.

**Z**agađivanje vode uzrokovano gradskim otpadnim vodama znatno je smanjeno sa porastom broja domaćinstava koja su se priključila na kanalizaciju, kao i sa boljim prečišćavanjem otpadnih voda. Procenat stanovnika priključenih na postrojenja za prečišćavanje otpadnih voda porastao je sa 51% u 1980. na skoro 60% u toku 90-ih. Međutim, stanje je mnogo gore u zemljama u razvoju (OECD, 2001).

## Global Trends and Projections

**G**lobal water consumption will increase by 31% from 1995 to 2020. Significant lack of water exists at local levels; it is expected that, by 2020, 25 developing countries will experience significant difficulties with their water supply.

**A**dramatic reduction in the availability of water per capita has occurred during the last 50 years (from 17,000 cubic meters per capita per year in 1950 to 7,300 cubic meters per capita per year in 1995). One reason for this is population growth; another is water pollution. It is expected that the availability of water will decline further, and by 2020, 250 million people will be affected by the scarcity of water, which is 75% more than in 1995.

**I**n less developed countries the largest amount of water is used for agriculture, while in developed countries, the proportion of water use for industry is higher. In most countries worldwide it is expected that agriculture will continue to use the greatest amount of water, while the industry sector will grow most quickly.

**F**reshwater pollution coming from municipal wastewater has been reduced mostly due to the increase in the number of households connected to sewers and to better wastewater treatment. The percentage of the population connected to wastewater treatment plants increased from 51% in 1980 to almost 60% during the 1990s. However, the situation is much worse in developing countries (OECD, 2001).

nivou. Iskustva pokazuju da uvođenje vodomjera u domaćinstva doprinosi boljoj naplati i manjoj potrošnji. Naplata za otpadne vode računa se na osnovu utroška vode za domaćinstva i na osnovu toksičnosti za industriju.

Neke države su uvele naplatu u poljoprivredni sektor na bazi ukupne potrošnje đubriva i azota. Ova naplata bi mogla biti značajna za smanjenje zagađenja vode. U nekim zemljama postoje limiti na količinu vode koja se uzima iz izvora u onim obastima koje pate od nedostatka vode (OECD, 2001).

## Freshwater

There are two main environmental problems associated with freshwater: pollution and scarcity. Globally, there is more than enough water; however, a significant lack of water exists at local levels. Agriculture and industry are the greatest users of water on the global level.

Water pollution is mainly caused by municipal wastewater, where sewerage systems do not work properly, and by agricultural run-off. For the most part, these cause organic pollution and eutrophication of the water. Other important polluters of freshwater are industry and power generation. Industry may cause pollution by heavy metals; power generation often causes thermal pollution.

Withdrawals from groundwater reserves are the only source of water for some countries. In most cases,

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groundwater is replenished more slowly than it is extracted, which eventually leads to groundwater scarcity and additional problems, such as subsidence of the ground above the aquifer, salinization, and decline in water tables. Water scarcity in the future could affect human health, economy, and the environment; it might also cause war conflicts in and between countries (OECD, 2001).

## **Policy Options**

Policy should be targeted at reducing subsidies for the water use in agriculture, preventing the pollution of water, and repairing water supply and treatment facilities to reduce water losses. Many OECD countries have improved water efficiency (through better recycling and reuse) and have decreased the amount of water used by industry. This was mostly achieved by setting higher prices of water and by imposing more stringent standards on industry (OECD, 2001).

In many countries the responsibility for water management is divided between the local authorities; this is not a good system, because what is needed is an integrated approach to management at the national and international levels. Experience shows that installing water meters in households contributes to more accurate pricing and lower consumption. Wastewater charges are calculated based on water consumption in the case of households and based on toxicity in the case of industrial wastewater.

Some countries have introduced similar charges in the agriculture sector based on total consumption of fertilizers and nitrogen. These charges may have a great potential for reducing the water pollution. In some countries, in the regions that suffer from water scarcity, the governments imposed limits to the amount of water that can be withdrawn (OECD, 2001).