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INTERVIEW / INTERVJU

AMBASADOR BRAZILA U SRBIJI

José Mauro da Fonseca Costa Couto

AMBASSADOR OF BRAZIL TO SERBIA

INTERVIEW / INTERVJU

MINISTAR INFORMISANJA I TELEKOMUNIKACIJA

Mihailo Jovanović

THE MINISTER OF INFORMATION AND TELECOMMUNICATIONS

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GLAVNI I ODGOVORNI UREDNIK
Olivera Krstić
EDITOR IN CHIEF

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REČ UREDNIKA

EDITOR WORDS

Poštovani čitaoci,

U novom broju magazina „Green News" istražujemo fascinantan svet biomase kao ključnog obnovljivog izvora energije. Kroz ovu temu, želimo da vam predstavimo najnovija dostignuća i inovacije u oblasti proizvodnje, korišćenja i zaštite biomase, istovremeno naglašavajući njen značaj u očuvanju našeg okruženja.

U fokusu našeg istraživanja su različiti aspekti biomase, uključujući najnovije tehnološke inovacije, ulogu biomase u smanjenju emisije štetnih gasova i njen doprinos očuvanju šuma i biljnih resursa. Takođe, analiziramo izazove i mogućnosti u korišćenju biomase, kao i primere uspešnih inicijativa koje promovišu njenu održivu upotrebu širom sveta.

Nadamo se da će naša publikacija proširiti vaše znanje o značaju biomase u održivom energetskom sistemu i zaštiti životne sredine. Pozivamo vas da se pridružite našoj misiji za stvaranje održivijeg sveta i koristimo priliku da vam zahvalimo što ste uz nas na tom putu.

S poštovanjem,
Olivera Krstić

Dear readers,

In the latest issue of „Green News," we delve into the fascinating world of biomass as a crucial renewable energy source. We would liike to present to you the latest achievements and innovations in the production, utilization, and protection of biomass, while emphasizing its importance in preserving our environment.

Our exploration focuses on various aspects of biomass, including cutting-edge technological innovations, the role of biomass in reducing harmful gas emissions, and its contribution to the conservation of forests and plant resources. Additionally, we analyze the challenges and opportunities in biomass utilization, as well as successful initiatives promoting its sustainable use worldwide.

We hope that our publication will expand your knowledge of the significance of biomass in sustainable energy systems and environmental protection. We invite you to join our mission to create a more sustainable world, and we take this opportunity to thank you for being with us on this journey.

Best regards,
Olivera Krstić

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We Open Doors to New Knowledge and Skills

Mihailo Jovanović

THE MINISTER OF INFORMATION AND TELECOMMUNICATIONS

It is extremely important that all young people in Serbia have access to tools that will enable them to participate in digitally developed economies such as Serbia

Mihailo Jovanović

MINISTAR INFORMISANJA I TELEKOMUNIKACIJA

Otvaramo vrata novim znanjima i veštinama

Neizmerno je važno da svi mladi ljudi u Srbiji imaju pristup alatima koji će im omogućiti učešće u digitalno razvijenim ekonomijama kakva je Srbija

Mihailo Jovanović

MINISTAR INFORMISANJA I TELEKOMUNIKACIJA

Danas sa ponosom možemo da kažemo da na Portalu eUprava više od 2,1 miliona građana koristi na stotine različitih elektronskih usluga

Osluškujući potrebe dece, roditelja, odnosno građana Srbije, Ministarstvo je 2023. godine unapredilo onlajn platformu čkoja promoviše podizanje digitalne pismenosti, digitalnih kompetencija i digitalne bezbednosne kulture kod svih građana Srbije, kaže u intervjuu za naša magazin Mihailo Jovanović, ministar informisanja i telekomunikacija Srbije.

GN ***Radi se mnogo na tome da se akademska zajednica poveže na brz i efikasan internet. Koliko je bitan kvalitetan pristup internetu za razvoj obrazovanja i nauke u našoj zemlji?***

- Kako bismo nastavili da predvodimo region u procesu digitalizacije, važno je da našu decu od najranijeg uzrasta, usmeravamo ka modernim tehnologijama. Jedan od ciljeva koji nam je važno da ostvarimo u narednom periodu je osnaživanje oblasti obrazovanja u informaciono-komunikacionim tehnologijama. Kroz ulaganje u digitalne tehnologije u obrazovanju, otvaramo vrata novim znanjima i veštinama koja su neophodna za uspeh u savremenom društvu. Takođe, programiranje je postalo obavezan predmet u osnovnim školama od petog do osmog razreda. Kada su u pitanju srednje škole za skoro 10 puta povećali smo specijalizovana IT odeljenja, dok je na svim tehničkim fakultetima broj studenata koji upisuje različite IT smerove povećan za 20 odsto. Uveli smo specijalizovane master programe na fakultetima i poseban Master 4.0. Neizmerno je važno da svi mladi ljudi u Srbiji imaju pristup alatima koji će im omogućiti učešće u digitalno razvijenim ekonomijama kakva je Srbija. Jednako i moderno školovanje za sve ostaje imperativ. Ministarstvo informisanja i telekomunikacija je uz podršku Vlade Republike Srbije u junu 2023. godine uspešno završilo kapitalni projekat Povezane škole kroz koji smo u proteklih pet godina uveli brz, pouzdan i bezbedan internet u više od 3.800 školskih lokacija osnovnih i srednjih škola, sa 35.000 nastavnih prostorija u kojima se školuje više od 730.000 đaka i radi preko 100.000 nastavnika i profesora.

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Mihailo Jovanović

THE MINISTER OF INFORMATION AND TELECOMMUNICATIONS

Today, we can proudly say that more than 2.1 million citizens use hundreds of different electronic services on the eGovernment Portal

Listening to the needs of children, parents and citizens of Serbia, in 2023 the Ministry improved the online platform Pametno i bezbedno (Smart and Safe), which promotes the development of digital literacy, digital competences and digital security culture among all citizens of Serbia, says Mihailo Jovanović, the Minister of Information and Telecommunications of Serbia.

GN ***A lot of work is being done to connect the academic community to fast and efficient Internet. How important is quality access to the Internet for the development of education and science in our country?***

- In order to continue to lead the region in the digitization process, it is important to direct our children towards modern technologies from the earliest age. One of the goals that is important for us to achieve in the coming period is strengthening the field of education in information and communication technologies. By investing in digital technologies in education, we open doors to new knowledge and skills that are necessary for success in modern society. Also Programming has become a compulsory subject in elementary schools from the fifth to the eighth grade. When it comes to secondary schools, we have increased specialized IT classes almost by 10 times, while at all technical faculties, the number of students enrolling in various IT modules has increased by 20 percent.

We have introduced specialized master's programmes at faculties and a special Master 4.0. It is extremely important that all young people in Serbia have access to tools that will enable them to participate in digitally developed economies such as Serbia. Equal and modern education for all remains imperative. The Ministry of Information and Telecommunications, with the support of the Government of the Republic of Serbia, successfully completed capital project of the Connected school in June 2023, through which we introduced fast, reliable and secure Internet in more than 3,800 primary and secondary schools, with 35,000 classrooms over the past five years, where more than 730,000 students study and over 100,000 teachers and professors work. When the Government of the Republic of Serbia, at the initiative of the Prime Minister, Ana Brnabić, set digitization and education as two key priorities six years ago, one of our goals was that our children start using digital skills of the 21st century on a daily basis, and that those skills become tools for learning, training, research and entertainment, following the trends of the fourth industrial revolution, as well as making the digital society in Serbia a safe digital environment. For this reason, the Ministry pays great attention to the fact that awareness of information security must be developed from an early age, already with the first children's meeting and communication on the Internet.

In 2017, the National Contact Center for Children's Safety on the Internet was formed, the first and, for now, the only institutional mechanism in the region that deals with prevention and response to the child endangerment in the digital environment. Listening to the needs of children, parents, and citizens of Serbia, in 2023, the Ministry improved the online platform Pametno i bezbedno (Smart and Safe), which promotes the development of digital literacy, digital competences and digital security culture among all citizens of Serbia. In addition to extremely important advice, training and other useful content on the correct use of the Internet, safe content posting and online protection options, it is possible to report threats to Internet security to the operators of the National Contact Center via a contact form.

GN ***Fast and high-quality internet access is necessary for the development of smart cities, smart infrastructure and a modern IT society. How Serbia is progressing in providing internet access in all parts of the country?***

- In December 2022, we started work on one of the largest projects of the Ministry of Information and Telecommunications, which is the development of broadband communication infrastructure in rural areas of the Republic of Serbia. By the end of 2025, the plan is to introduce high-speed optical internet, with a flow of over 100 Mb/s, in more than 700 villages, and to build more than 4,700 km of optical cable routes and to connect more than 120,000 households. The great advantage of this project is that it will contribute to starting a business, as well as the possibility of using electronic services and electronic commerce so that agricultural and other products are available at any time via the Internet. Fast optical internet will give citizens the opportunity to do their jobs in any part of our country, and thus we will significantly contribute to the economic development of rural areas. At the same time, we invest in our youngest and a better future for Serbia. Regardless of whether schools are in the center of the largest cities in Serbia or in rural parts of the smallest municipalities, we want to provide equal conditions and equal opportunities to all students in our country. So far, the Ministry has completed its work in over 150 locations with almost 25,000 households and 68,500 inhabitants, while commercial operators are currently connecting all interested households to the introduced high-speed Internet.

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Mihailo Jovanović

MINISTAR INFORMISANJA I TELEKOMUNIKACIJA

Očekujem da ćemo do kraja februara položiti kamen temeljac za izgradnju Inovacionog distrikta u Kragujevcu, novu fazu razvoja Državnog data centra

Kada je Vlada Republike Srbije pre 6 godina, na inicijativu predsednice Vlade, Ane Brnabić, postavila digitalizaciju i obrazovanje za dva ključna prioriteta, jedan od ciljeva nam je bio da naša deca digitalne veštine 21. veka počnu da koriste svakodnevno i da im one postanu sredstvo za učenje, usavršavanje, istraživanje i zabavu, da prate trendove četvrte industrijske revolucije, kao i da digitalno društvo u Srbiji bude ujedno bezbedno digitalno okruženje. Iz tog razloga, Ministarstvo veliku pažnju posvećuje tome da svest o informacionoj bezbednosti mora da se razvija od najranijeg uzrasta, već sa prvim susretom i komunikacijom dece na internetu. Još 2017. godine formiran je Nacionalni kontakt centar za bezbednost dece na internetu, prvi i za sada jedini institucionalni mehanizam u regionu koji se bavi prevencijom i reagovanjem na ugrožavanje dece u digitalnom okruženju. Osluškujući potrebe dece, roditelja, odnosno građana Srbije, Ministarstvo je 2023. godine unapredilo onlajn platformu Pametno i bezbedno koja promoviše podizanje digitalne pismenosti, digitalnih kompetencija i digitalne bezbednosne kulture kod svih građana Srbije. Pored izuzetno važnih saveta, edukacija i drugih korisnih sadržaja o pravilnom korišćenju interneta, bezbednom postavljanju sadržaja i mogućnostima onlajn zaštite, putem kontakt forme moguće je prijaviti ugrožavanje bezbednosti na internetu operaterima Nacionalnog kontakt centra.

GN *Za razvijanje pametnih gradova, pametne infrastrukture i modernog informatičkog društva neophodan je brz i kvalitetan pristup internetu. Kako Srbije napreduje u obezbeđivanju internet pristupa u svim delovima zemlje?*

- U decembru 2022. godine započeli smo radove na jednom od najvećih projekata Ministarstva informisanja i telekomunikacija, a to je razvoj širokopojasne komunikacione infrastrukture u ruralnim predelima Republike Srbije. Plan je da se do kraja 2025. godine uvede brzi optički internet, protoka preko 100Mb/s, u više od 700 sela i da se u tu svrhu izgradi više od 4.700 km trasa optičkih kablova i da se poveže više od 120.000 domaćinstava. Velika prednost ovog projekta je što će doprineti pokretanju biznisa, kao i mogućnosti korišćenja elektronskih usluga i elektronske trgovine kako bi poljoprivredni i drugi proizvodi bili dostupni u svakom trenutku preko interneta. Brzi optički internet će dati mogućnost građanima da svoje poslove obavljaju u bilo kom delu naše zemlje, a samim tim značajno ćemo doprineti privrednom i ekonomskom razvoju seoskih područja. Ujedno ulažemo i u naše najmlađe i bolju budućnost Srbije. Bez obzira da li je škola u centru najvećih gradova u Srbiji ili je u nekom ruralnom delu najmanjih opština, želimo da svim đacima u našoj zemlji omogućimo jednake uslove i jednake šanse. Ministarstvo je, do sada, završilo svoj deo posla u preko 150 naselja u kojima ima skoro 25.000 domaćinstava

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Mihailo Jovanović

MINISTAR INFORMISANJA I TELEKOMUNIKACIJA

i 68.500 stanovnika, dok komercijalni operatori trenutno povezuju sva zainteresovana domaćinstva na uvedeni brzi internet.

Dugi niz godina bavite se procesom digitalizacije u Srbiji, koja doprinosi poboljšanju kvaliteta života građana i zaštiti životne sredine. Šta biste izdvojili kao najuspešnije projekte u oblasti digitalizacije?

- Srbija je zahvaljujući velikoj podršci predsednika Republike Aleksandra Vučića i viziji predsednice Vlade Ane Brnabić, na vreme prepoznala da digitalizacija postaje glavni katalizator modernizacije, poboljšanja kvaliteta života, unapređenja privrede i ekonomskog rasta u zemlji. Kao najznačajniji i kapitalni projekat od neizmernog značaja za Srbiju, izdvojio bih pre svega razvoj elektronske uprave. Prema poslednjem izdanju globalnog izveštaja Ujedinjenih nacija, koji prati razvoj elektronske uprave, Srbija je među 10 zemalja sveta koje su ostvarile najveći napredak u ovoj oblasti. Svetska banka nas rangira na visoko 4. mesto u Evropi u oblasti digitalne transformacije. Danas sa ponosom možemo da kažemo da na Portalu eUprava više od 2,1 miliona građana koristi na stotine različitih elektronskih usluga pristupajući Portalu eUprava ali i mnogim drugim državnim portalima svojim jedinstvenim nalogom sa mobilnog telefona. Dobili smo efikasnu, transparentnu, javnu upravu u službi građana koju svakodnevno nastavljamo da nadograđujemo. Kroz eUpravu, povezali smo građane, privredu i državnu administraciju. Neke od usluga koje se najčešće koriste su: zakazivanje i dobijanje ličnih dokumenata građana, uverenja, upis u vrtiće, osnovne i srednje škole, registracija novorođenčadi, eRecept, elektronska prijava imovine, usluga „Biomedicinski potpomognuta oplodnja sa

Mihailo Jovanović

THE MINISTER OF INFORMATION AND TELECOMMUNICATIONS

I expect that, by the end of February, we will lay a cornerstone for the construction of the Innovation District in Kragujevac, a new phase of the development of the State Data Center

For many years, you have been involved in the digitization process in Serbia, which contributes to improving the quality of life of citizens and protecting the environment. What would you single out as the most successful projects in the field of digitization?

- Thanks to a great support of the President of the Republic, Aleksandar Vučić, and a vision of the Prime Minister, Ana Brnabić, Serbia recognized in time that digitization is becoming the main catalyst for modernization, the improvement of the quality of life, the economy and economic growth in the country. As the most important and capital project of immense importance for Serbia, I would single out first of all the development of electronic government. According to the latest edition of the global report of the United Nations, which monitors the development of electronic government, Serbia is among the 10 countries in the world that have made the greatest progress in this area. The World Bank ranks us a high 4th place in Europe in the field of digital transformation. Today we can proudly say that on the eGovernment Portal more than 2.1 million citizens use hundreds of different electronic services by accessing it and many other state portals with their unique mobile phone account. We got an efficient, transparent, public electronic government at the service of citizens, which we continue to upgrade every day. Through eGovernment, we have connected citizens, the economy and the state administration. Some of the services that are most often used are: making appointments for obtaining citizens' personal documents, certificates, enrollment in kindergartens, primary and secondary schools, registration of newborns, ePrescription, electronic declaration of property, „Biomedically assisted fertilization with donated reproductive material" service. Since February 1, 2023, diplomatic and consular missions around the world have become the registration body of the Office for IT and eGovernment, so that all our citizens in the diaspora who have valid biometric documents (identity cards or passports) can become eCitizens in diplomatic and consular missions (DKP).

As part of the programme „Leap into the future - Serbia 2027", projects from your sector have also been announced. Some of them are the start of the construction of the Innovation District, the completion of the work on Ložionica, the investment in a new supercomputer and much more. What can you tell us about these projects?

- This program represents a victory for Serbia when it comes to the advancement of our country. As part of the programme presented by the President of the Republic, Aleksadar Vučić, Prime Minister Ana Brnabić and colleagues ministers, we have six issues, one of which is the improvement of the standard of living of all citizens in our country, the rise of salaries, pensions and a minimum wage. The number two is modernization , that is, everything that will position Serbia even better on the world map when we talk about innovations. Modernization also means further digitization, investment in science and technology, as well as indispensable artificial intelligence.

I expect that by the end of February we will lay a cornerstone for the construction of the Innovation District in Kragujevac, a new phase of the development of the State Data Center. Within the district, there will be separate areas for IT, such as business incubators, startups, a section for the application of artificial intelligence, as well as laboratories. There will also be a center for monitoring information security systems and a section for bioinformatics and bioengineering. Our goal is to gather young people from Kragujevac and its surroundings, and there will also be an educational center for students' training - small startup spaces, workshops for the young and school-age children, a center for the promotion of science. The 5th science and technology park in Serbia will be built in the Innovation District.

Just a year ago, we started the reconstruction of the old Belgrade Ložionica (stokehold), which is located near the Mostar loop. Many European and world cities have old centers that are being adapted and turned into meeting places for young people. We want to create a center that will be a gathering place for young creative people, those who deal with culture and art, and digitalization as well. Our idea is to create an attractive workspace where everyone can work. There will be many workshops and incubators where we will help young people start their businesses, and we also want to create a point where citizens and eGovernment will meet. Within the Ložionica complex there is the Water Tower, whose second project was given by our scientist Milutin Milanković. He designed the top of the Water Tower in the shape of a raindrop in order to collect water that served steam locomotives on the turnpike. There will also be a footbridge where all interested visitors can enter and see the Water Tower. The completion of the work awaits us at the end of this year.

Serbia is going one step further in the world of artificial intelligence. The procurement of a new supercomputer followed after we saw that the first supercomputer stored a large amount of data, and that is why the additional investment in this computer is part of the Serbia 2027 programme. The first supercomputer has been given free of charge for the use to all universities, science and technology

Mihailo Jovanović

MINISTAR INFORMISANJA I TELEKOMUNIKACIJA

Na portalu green.gov.rs građanima su dostupne informacije koje u realnom vremenu iz minuta u minut prikazuju koliko je do sada digitalizacijom usluga javne uprave uštađeno stabala, vode, papira i struje

darovanim reproduktivnim materijalom". Diplomatsko-konzularna predstavništva širom sveta su od 1. februara 2023. godine postala registraciono telo Kancelarije za IT i eUpravu tako da svi naši državljani u dijaspori koji poseduju validan biometrijski dokument (ličnu kartu ili pasoš) mogu u diplomatsko-konzularnim predstavništvima (DKP) postati eGrađani.

U okviru programa „Skok u budućnost – Srbija 2027" najavljeni su i projekti iz vašeg resora. Neki od njih su početak izgradnje Inovacionog distrikta, završetak radova na Ložionici, ulaganje u novi superkompjuter i još mnogo toga. Šta možete da nam kažete o ovim projektima?

- Ovaj program predstavlja pobedu Srbije kada je reč o unapređenju naše države. U okviru programa, kako su predsednik Republike, Aleksadar Vučić, premijerka Ana Brnabić i kolege ministri predstavili imamo šest tačaka, od kojih su pod jedan unapređenje standarda svih građana naše zemlje, rast plata i penzija kao i minimalnih zarada, a već pod broj dva modernizacija, to jest sve ono što će Srbiju još bolje pozicionirati na mapi sveta kada govorimo o inovacijama. Modernizacija znači i dalja digitalizacija, ulaganje u nauku i tehnologiju kao i neizostavnu veštačku inteligenciju. Očekujem da ćemo do kraja februara položiti kamen temeljac za izgradnju Inovacionog distrikta u Kragujevcu, novu fazu razvoja Državnog data centra. U okviru distrikta nalaziće se zasebni prostori za IT, kao što su biznis inkubatori, startapove, deo za primenu veštačke inteligencije, kao i laboratorije. Tu će se nalaziti i centar za nadgledanje sistema informacione bezbednosti i deo za bioinformatiku i bioinžinjering. Cilj nam je da okupimo mlade iz Kragujevca i okoline, te će se tu nalaziti i edukacioni centar za obuke studenata – mali startap prostori, radionice za mlađi i školski uzrast, centar za promociju nauke. U Inovacionom distriktu će biti izgrađen i 5. naučno-tehnološki park u Srbiji.

Pre samo godinu dana započeli smo rekonstrukciju stare beogradske Ložionice koja se nalazi nadomak Mostarske petlje. Mnogi evropski i svetski gradovi imaju stare centre koje adaptiraju i prave mesto susreta mladih. Želimo da napravimo centar koji će biti mesto okupljanja mladih kreativnih ljudi, onih koji se bave kulturom i umetnošću, ali i digitalizacijom. Ideja nam je da napravimo atraktivni radni prostor gde svi mogu da rade. Imaćemo mnogo radionica i inkubatora, gde ćemo pomagati mladima da pokrenu svoj biznis, a želimo i da napravimo tačku gde će se susretati građani i eUprava. U okviru kompleksa Ložionice nalazi se i Vodotoranj, čiju je drugu projekciju dao naš naučnik Milutin Milanković. On je projektovao vrh Vodotornja kao oblik kišne kapi kako bi se tu skupljala voda koja je opsluživla parne lokomotive na okretnici. Tu će biti pasarela gde će svi zainteresovani posetioci moći da uđu i vide vodotoranj. Kraj radova očekuje nas krajem ove godine.

Naravno, Srbija ide korak dalje i u svetu veštačke inteligencije. Nabavka novog superkompjutera usledila je nakon što smo uvideli da se u prvom superkompjuteru čuva velika količina podataka, te je zato dodatna investicija u ovaj kompjuter deo programa Srbija 2027. Prvi superkompjuter besplatno je dat na korišćenje svim univerzitetima, naučno tehnološkim parkovima i startapovima i to je jedan ekosistem mladih naučnika koji razvija i radi uz pomoć AI. Superkompjuter je računar koji može da obradi veliku količinu podataka za kratak rok, a tim računarom analiziraju se podaci vezani za privredu, medicinu i ekologiju i donose određene zaključke koja pomažu u razvoju. Cilj nam je da u narednom periodu više pričamo na ovu temu kako bismo građanima objasnili da će nam sve to pomoći u razvoju Srbije, umesto da će tu biti roboti koji će doneti nešto loše. Želimo da ostvarimo pun potencijal digitalne transformacije i da se 2027. godine na specijalizovanom EKSPO koji se održava u Beogradu predstavimo kao država pobednik u regionu.

Digitalizacija igra ključnu ulogu u smanjenju ekološkog otiska. Na koji način Ministarstvo informisanja i telekomunikacija podržava implementaciju digitalnih rešenja koja doprinose očuvanju životne sredine, posebno u kontekstu sektora obnovljivih izvora energije?

- Ispostavilo se da je ključna stvar bila prepoznati značaj koji može da donese razvoj i primena digitalizacije. Uvođenjem elektronskih usluga za građane i povezivanjem velikih baza podataka, omogućili smo elektronsku razmenu dokumenata, pa građani ne moraju više da budu kuriri i da idu od šaltera do šaltera kako bi prikupili dokumenta, već se isti razmenjuju po službenoj dužnosti. Zahvaljujući tome, kao i usluzi „Bebo, dobro došla na svet", elektronskom upisu u vrtić, osnovnu i školu i mnogim drugim elektronskim uslugama sačuvali smo preko 600 miliona listova papira i skoro 65 hiljada stabala. Sve ovo dovelo je i do očuvanja još jednog dragocenog resursa, a to je vreme naših građana. Kako nisu morali da za pribavljanje svakog dokumenta potroše očekivanih sat vremena, uštedeli smo im stotine miliona sati. Na portalu green.gov.rs građanima su dostupne informacije koje u realnom vremenu iz minuta u minut prikazuju koliko je do sada digitalizacijom usluga javne uprave uštađeno stabala, vode, papira i struje.

Mihailo Jovanović

THE MINISTER OF INFORMATION AND TELECOMMUNICATIONS

parks and startups, and that is an ecosystem of young scientists developing and working with the help of AI. A supercomputer is a computer that can process a large amount of data in a short period of time, and it analyzes data related to the economy, medicine and ecology and makes certain conclusions that help in development. Our goal is to talk more about this topic in the coming period in order to explain to the citizens that all this will help us in the development of Serbia, and not robots that will bring something bad. We want to realize the full potential of digital transformation and present ourselves as the winning country in the region at the specialized EXPO that will be held in Belgrade in 2027.

Digitization plays a key role in reducing the ecological footprint. How does the Ministry of Information and Telecommunications support the implementation of digital solutions that contribute to the preservation of the environment, especially in the context of the renewable energy sector?

- It turned out that a key thing was to recognize the importance that the development and application of digitization can bring. By introducing electronic services for citizens and connecting large databases, we enabled the electronic exchange of documents, so citizens no longer have to be couriers and go from counter to counter to collect them. They are exchanged by official duty. Thanks to that, as well as the service „Baby, welcome to the world", electronic enrollment in kindergarten, elementary and secondary school and many other electronic services, we saved over 600 million sheets of paper and almost 65 thousand trees. All this led to the preservation of another precious resource - the time of our citizens. Since they did not have to spend the expected hour to get one document, we saved them hundreds of millions of hours. On the green.gov.rs portal, information that shows in real time, minute by minute, how many trees, and how much water, paper and electricity have been saved so far by digitizing public administration services is available to citizens.

GREENNEWS

Energetska rešenja IZ SRCA PRIRODE

OVAJ TEKST PRUŽA DETALJAN UVID U RAZLIČITE METODE KORIŠĆENJA BIOMASE ZA PROIZVODNJU ENERGIJE, ISTIČUĆI PREDNOSTI I NEDOSTATKE OVOG VITALNOG RESURSA

Iskorišćavanje energije iz živih organizama, poznato kao biomasa, ima duboko ukorenjenu istoriju koja seže unazad do najranijih humanoida. Oni su već tada koristili drvene vatre ne samo za kuvanje, već i za održavanje toplote. Biomasa, kao organski materijal nastao od biljaka i životinja, obuhvata širok spektar materijala, uključujući biljke, drvo i različite vrste otpada.

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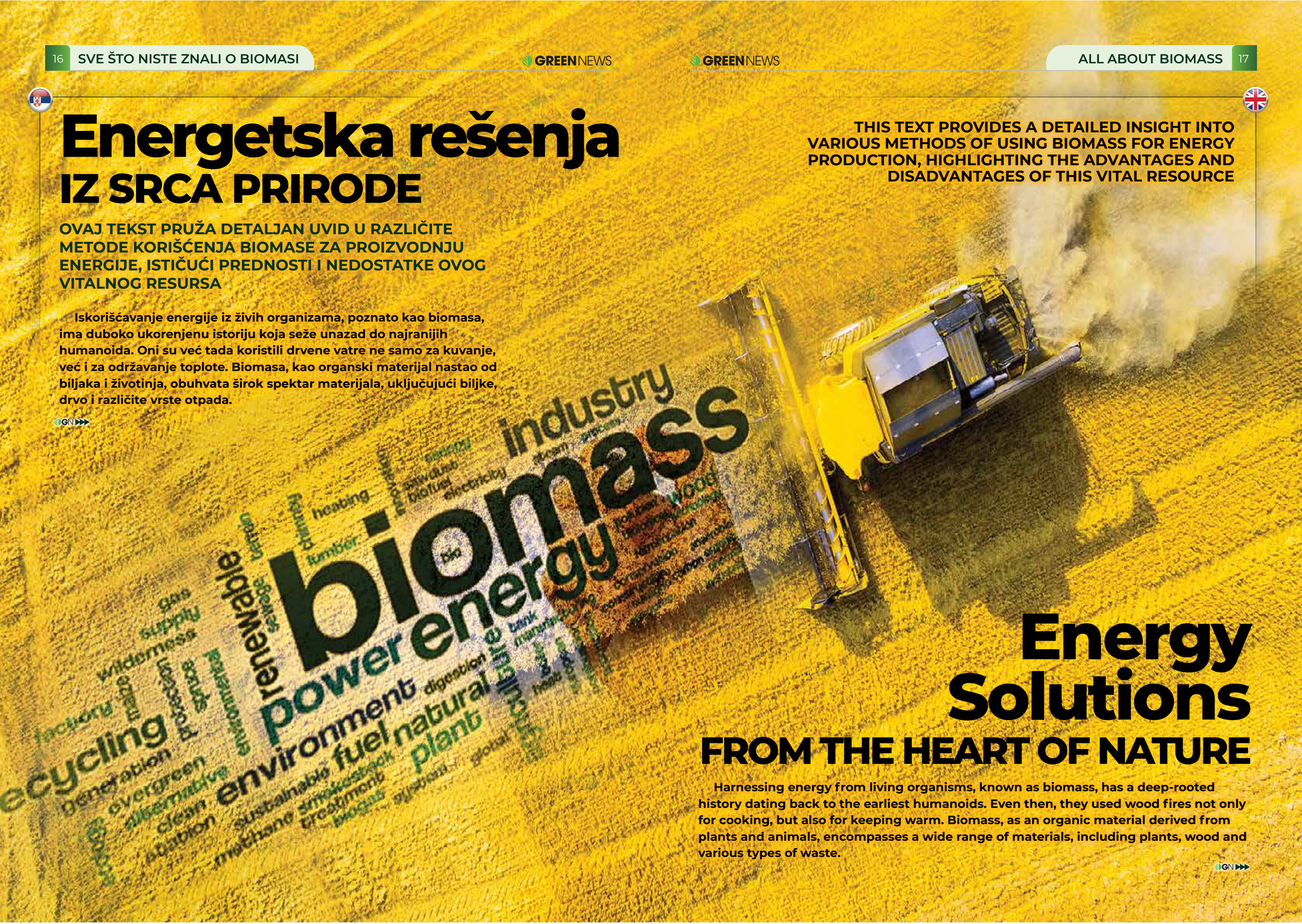
THIS TEXT PROVIDES A DETAILED INSIGHT INTO VARIOUS METHODS OF USING BIOMASS FOR ENERGY PRODUCTION, HIGHLIGHTING THE ADVANTAGES AND DISADVANTAGES OF THIS VITAL RESOURCE



Energy Solutions FROM THE HEART OF NATURE

Harnessing energy from living organisms, known as biomass, has a deep-rooted history dating back to the earliest humanoids. Even then, they used wood fires not only for cooking, but also for keeping warm. Biomass, as an organic material derived from plants and animals, encompasses a wide range of materials, including plants, wood and various types of waste.

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TERMIČKA KONVERZIJA

Od biljaka do energetskih izvora

Ključna metoda za pretvaranje biomase u korisnu energiju je termička konverzija. Ovaj proces obuhvata sagorevanje, su-sagorevanje, pirolizu, gasifikaciju i anaerobnu dekompoziciju.

Direktno sagorevanje i su-sagorevanje omogućavaju proizvodnju toplote ili električne energije, smanjujući emisije gasova staklene bašte kada se biomasa koristi zajedno sa fosilnim gorivima. Piroliza, proces zagrevanja biomase u odsustvu kiseonika, proizvodi pirolizno ulje, sin-gas i bio-ugljen. Ova raznovrsna upotreba piroliznog ulja i bio-uglja ima značajne ekonomske i ekološke implikacije. Gasifikacija direktno pretvara biomasu u energiju pod kontrolisanim uslovima, proizvodeći sin-gas koji se može koristiti za različite energetske svrhe.

ANAEROBNA DEKOMPOZICIJA

Od otpada do metana

Anaerobna dekompozicija, proces u kojem mikroorganizmi razlažu materijal u odsustvu kiseonika, igra ključnu ulogu na deponijama i farmama. Ovaj proces proizvodi metan, koristan izvor energije koji može zameniti fosilna goriva.

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ANAEROBIC DECOMPOSITION

From waste to methane

Anaerobic decomposition, the process in which microorganisms break down material in the absence of oxygen, plays a key role in landfills and farms. This process produces methane, a useful energy source that can replace fossil fuels.

THERMAL CONVERSION

From plants to energy sources

The key method for converting biomass into useful energy is thermal conversion. This process includes combustion, co-combustion, pyrolysis, gasification and anaerobic decomposition. Direct combustion and co-combustion enable the production of heat or electricity, reducing greenhouse gas emissions when biomass is used together with fossil fuels. Pyrolysis, the process of heating biomass in the absence of oxygen, produces pyrolysis oil, SYN gas and biochar. This diverse use of pyrolysis oil and bio-char has significant economic and environmental implications. Gasification directly converts biomass into energy under controlled conditions, producing SYN gas that can be used for a variety of energy purposes.

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BIOGORIVA

Putevi ka održivoj mobilnosti

Biomasa, jedini obnovljivi izvor energije koji se može konvertovati u tečna biogoriva poput etanola i biodizela, pruža alternativu za održivu mobilnost. Iako nešto manje efikasna od benzina, biogoriva mogu se mešati sa njim kako bi se vozila pokretala bez emisija povezanih sA fosilnim gorivima.

BIO-UGLJEN

Skladištenje ugljenika i oplemenjivanje zemlje

Proizveden tokom pirolize, bio-ugljen ima ključnu ulogu u smanjenju emisija gasova staklene bašte. Osim toga, ovaj porozan materijal poboljšava kvalitet zemlje, zadržavajući vodu i hranljive materije.

BIOFUELS

Paths to sustainable mobility

Biomass, the only renewable energy source that can be converted into liquid biofuels such as ethanol and biodiesel, provides an alternative for sustainable mobility. Although slightly less efficient than gasoline, biofuels can be blended with it to power vehicles without emissions associated with fossil fuels.

BIOCHAR

Carbon storage and soil enrichment

Produced during pyrolysis, biochar plays a key role in reducing greenhouse gas emissions. In addition, this porous material improves the quality of the soil, retaining water and nutrients.

VODONIČNE GORIVNE ĆELIJE

Potencijalna revolucija u transportu

Biomasa, bogata vodonikom, može se ekstrahovati vodoničnim gorivnim ćelijama radi proizvodnje energije. Iako trenutno ograničene na specifične primene, vodonične gorivne ćelije imaju potencijal za revoluciju u transportu.

BIOMASA I OKOLINA

Održivo kruženje ugljenika

Uključena u ugljenični ciklus na Zemlji, biomasa doprinosi održavanju ravnoteže između atmosfere, hidrosfere, biosfere i litosfere. Važno je sprovoditi održivo upravljanje biomasom kako bismo sačuvali planetu za buduće generacije.

HYDROGEN FUEL CELLS

A potential revolution in transportation

Biomass, rich in hydrogen, can be extracted by hydrogen fuel cells to produce energy. Although currently limited to specific applications, hydrogen fuel cells have the potential to revolutionize transportation.

BIOMASS AND THE ENVIRONMENT

Sustainable carbon cycling

Included in the carbon cycle on the Earth, biomass contributes to maintaining the balance between the atmosphere, hydrosphere, biosphere and lithosphere. It is important to carry out sustainable biomass management in order to preserve the planet for future generations.

Crni likvor i energija iz papira

Proizvodnja papira generiše crni likvor, visokoenergetski otpad koji, recikliranjem, može efikasno napajati operacije fabrika papira, čineći šumarsku industriju energetski efikasnom.

Black liquor and energy from paper

Paper production generates black liquor, high-energy waste that, when recycled, can efficiently power paper mill operations, making the forestry industry energy efficient.

ALGE I ENERGIJA

Brži put ka održivosti

Alge, brzo rastući organizmi koji ne zahtevaju zemljište ili slatku vodu, pružaju alternativu biomasi. Iako trenutno skupi za proizvodnju, alge predstavljaju potencijalno revolucionaran izvor energije budućnosti.

Biomasa predstavlja svestran izvor energije s minimalnim uticajem na životnu sredinu. Njeno pretvaranje u različite oblike energije označava korak ka održivom budućem energetskom pejzažu. Važno je pravilno upravljati biomasom, održavajući ravnotežu između korišćenja i obnavljanja, kako bismo sačuvali našu planetu za buduće generacije.

ALGAE AND ENERGY

A faster path to sustainability

Algae, fast-growing organisms that do not require soil or fresh water, provide an alternative to biomass. Although currently expensive to produce, algae represent a potentially revolutionary energy source of the future.

Biomass is a versatile source of energy with minimal impact on the environment. Its conversion into different forms of energy marks a step towards a sustainable future energy landscape. It is important to properly manage biomass, maintaining a balance between the use and renewal, in order to preserve our planet for future generations.

Obnovljivi izvori energije čine nas nezavisnijim od geopolitičkih okolnosti ako posmatramo sadašnji profil međunarodne trgovine fosilnim gorivima

AMBASADOR BRAZILA U REPUBLICI SRBIJI

Žoze Maura da Fonseka Kosta Kouto

Očuvanje životne sredine nije eko-glupost

AMBASSADOR OF BRAZIL TO SERBIA

José Mauro da Fonseca Costa Couto

Environmental protection is not eco-nonsense

Renewable energy sources make us more independent from geopolitical circumstances if we look at the current profile of international trade in fossil fuels

Every year, Brazil moves further towards achieving an even more sustainable green economy in all available renewable sources. Certainly our geographical conditions are favorable for increasing the share of solar energy in our energy availability and we should take this into account before comparing our share of renewable energy sources with other countries. But we should know that other friendly countries could also advance in this direction considering that they have more available energy technological means, such as biomass (or raw materials), geothermal sources, wind, tidal and wave sources, among others, he says. in an interview with Green News, Brazil's ambassador José Mauro da Fonseca Costa Couto.

GN ***Mr. Ambassador, can you give us an insight into the current share of renewables in Brazil's energy mix, and how it has evolved over the past few years?***

- Thank you for your interest in discussing Brazil's Renewable Fuels Program. As you may be aware, BRICS countries (Brazil, Russia, China, India, and South Africa) presently have total 35% of the world's GDP and have been recently joined by new members: Egypt, Ethiopia, Saudi Arabia, United Arab Emirates, and Iran. That represents a slightly superior share of the world's GDP than the G7, and this also means that, as we promote further growth, we will need more energy. Fully aware that having an increased leading role in the world economy also means that we have greater responsibilities for the preservation of the environment, we see ourselves responsible for furthering the quality of this greater participation in global prosperity. This implies investing in renewable energy, and encouraging other countries to do the same.

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Žoze Maura da Fonseka Kosta Kouto

AMBASADOR BRAZILA U REPUBLICI SRBIJI

Brazil svake godine napreduje dalje ka postizanju još održivije zelene ekonomije u svim dostupnim obnovljivim izvorima. Svakako da su naši geografski uslovi povoljni za povećanje učešća solarne energije u našoj energetskoj dostupnosti i to bismo morali da uzmemo u obzir pre nego što uporedimo svoj udeo obnovljivih izvora energije sa drugim zemljama. Ali treba da znamo da bi i druge prijateljske zemlje mogle napredovati u tom pravcu s obzirom na to da imaju više raspoloživih energetskih tehnoloških sredstava, kao što su biomasa (ili sirovine), geotermalni izvori, izvori vetra, plime i talasa, između ostalog, kaže u intervjuu za Green News ambasador Brazila Žoze Maura da Fonseka Kosta Kouto.

GN ***Gospodine ambasadore, možete li da nam pružite uvid u trenutni udeo obnovljivih izvora energije u energetskom miksu Brazila i kako se on razvijao tokom poslednjih nekoliko godina?***

- Hvala vam na interesovanju za razgovor o brazilskom programu obnovljivih goriva. Kao što možda znate, zemlje BRIKS-a (Brazil, Rusija, Indija, Kina i Južna Afrika) trenutno imaju 35 odsto svetskog BDP-a i nedavno su im se pridružile nove članice: Egipat, Etiopija, Saudijska Arabija, Ujedinjeni Arapski Emirati, i Iran. To predstavlja malo superiorniji udeo u svetskom BDP-u od zemalja G7, a to takođe znači da će nam, pošto promovišemo dalji rast, trebati više energije. Potpuno svesni da imati vodeću ulogu u svetskoj ekonomiji takođe znači da imamo veću odgovornost za očuvanje životne sredine, smatramo

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José Mauro da Fonseca Costa Couto

AMBASSADOR OF BRAZIL TO SERBIA

Solar panels require maintenance, but they do not require as much investment and effort as compared to a hydraulic energy source

According to the Brazilian Ministry of Mines and Energy 2023 report, the renewability index of our energy matrix, meaning all energy generated in power plants, industry, and households, including transportation, reached a share of 47.4%, compared to the average 14.4% in the world in 2021 – considering 11% as the OECD country average. This is the result of a continuous and joint effort of Brazilian authorities, industry, and citizens in our country for decades, since we first launched the Pro-Alcohol project, in 1975. By then we had developed the first efficient biofuel made from sugarcane. Over the past decade we have accelerated in the direction of innovation: in 2014, for example, the share of bio-fuels corresponded only to 39.5% - which was already an outstanding result, considering the world average. Still, we kept working diligently to do better.

Specifically in the electrical matrix, we reached 87.9% of renewability in 2022, contrasting with a world average of around 28%. Our entire energy matrix, beyond renewables, is also diversified: biomass represents 15.4%; hydraulic power, 12.5%; wind power 2.3%; black liquor and other biofuels 7%; and solar energy, 1.2% among other sources.

The presence of renewables in the electric matrix has expanded to 9.8%, if we consider only the sources that generated electric power in 2022. In that same year, hidraulic electricity generation totalled 61.9%, and increased by 17.7% in comparison to the previous year; wind generation reached 11.8%, and grew by 12.9%; biomass attained 8%, maintaining its performance; while solar energy climbed to 4.4%, and thus grew a significant 79.8%. We must remember that solar power has more potential for larger increases, for its relatively smaller share in our electric matrix.

In a changing world, sustainability became an important political decision involving Brazilian authorities, but also all of industry's main players. It is relevant to stress that lately we have also been hit hard by the world climate change effects, like floods and heat waves. So, leading a change has become a matter of priority for the new Administration. That is why we offered to host the COP summit in Belém, in Pará, in Northern Brazil, which was recently elected as the seat of the Conference of the Parties — COP 30 --, in 2025. COP 30, as you may be aware, is a yearly formal meeting held under the umbrella of United Nations Framework Convention on Climate Change (UNFCCC), where countries strive to discuss how to monitor and reach more sustainable practices concerning the environment. Renewable energy is key for keeping our economic growth sustainable.

GN ***How does Brazil plan to improve its renewable energy production capacity in the coming years? Are there concrete initiatives or policies that will contribute to increasing the share of renewable sources in the energy sector?***

- The share of renewable sources in Brazil is already quite high, so the country must keep that in mind, when considering what are the limits of our renewables program. Nevertheless, we have been accelerating the pace towards achieving an increased renewable energy platform in the previous decades. In 2023, for example,the National Bank for Economic and Social Development (BNDES) of Brazil increased investments in clean energy by 62%, compared to 2022. The total amount of BNDES funding was USD 4 billion in this segment. That represents 44% of the USD 7.6 billion invested by that bank in transport, logistics, mobility and sanitation renewable energy projects.

As you mentioned, we are certainly interested in raising our investments in renewable energy sources for addressing and preventing environmental problems, but we must also consider that renewable sources of energy make us also more independent of geopolitical circumstances – at least if we observe the present profile of international trade of fossil fuels. This also means that we must take our circumstances increasingly more seriously, as discussed by philosopher Ortega y Gasset, without which we cannot save ourselves. Thus energy autonomy, by making more use of renewable energy sources, is a matter of pragmatism of the State for preserving our economic self-determination, political independence and freedom of action in a large range of issues in the international agenda.

Respecting nature and preserving the environment is no eco-nonsense at all!

When we propose cooperation for developing biofuels trade and a biodiverse economy, we are aiming at a more stable world, with a better distribution of energy supply. Joint efforts will favor the safety of our citizens – for we are part of the same world, each day more interconnected. Realism in the 21st century means reckoning the well-being of our peoples depends on each other, and building a shared vision of the future.

GN ***What are key strategies and projects that Brazil implements in order to diversify its energy portfolio through renewable energy sources? Is there a particular focus on certain types of renewable sources, such as solar, wind or biomass?***

- 2022 was a year with a record expansion of intermittent renewable sources, our emphasis on photovoltaic solar generation, because that year we succeeded in approving the legal framework of the Distributed Energy Generation (DEG) modality,

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Žoze Maura da Fonseka Kosta Kouto

AMBASADOR BRAZILA U REPUBLICI SRBIJI

Solarni paneli zahtevaju održavanje, ali ne zahtevaju tako velika ulaganja i napore u poređenju sa hidrauličnim izvorom energije

sebe odgovornim za unapređenje kvaliteta ovog većeg učešća u globalnom prosperitetu. To podrazumeva ulaganje u obnovljive izvore energije i podsticanje drugih zemalja da učine isto.

Prema izveštaju brazilskog Ministarstva rudarstva i energetike za 2023. godinu, indeks obnovljivosti naše energetske matrice, što znači sva energija proizvedena u elektranama, industriji i domaćinstvima, uključujući transport, dostigao je udeo od 47,4%, u poređenju sa prosečnih 14,4% u svetu 2021. – uzimajući u obzir 11% kao prosek zemalja OECD-a. Ovo je rezultat decenijskog kontinuiranog i zajedničkog napora brazilskih vlasti, industrije i građana u našoj zemlji, od kada smo prvi put pokrenuli projekat Pro-Alcohol, 1975. Do tada smo razvili prvo efikasno bio-gorivo napravljeno od šećerne trske. Tokom protekle decenije ubrzali smo u pravcu inovacija: u 2014. godini, na primer, udeo biogoriva je bio samo 39,5% – što je već bio izvanredan rezultat, s obzirom na svetski prosek. Ipak, nastavili smo marljivo da radimo na tome da budemo bolji.

Konkretno u električnoj matrici, dostigli smo 87,9% obnovljivosti 2022. godine, za razliku od svetskog proseka od oko 28%. Cela naša energetska matrica, osim obnovljivih izvora, takođe je raznovrsna: biomasa predstavlja 15,4%; hidraulična snaga 12,5%; snaga vetra 2,3%; crna tečnost i druga bio-goriva 7%; i solarna energija, 1,2% među ostalim izvorima.

Prisustvo obnovljivih izvora u električnoj matrici je prošireno na 9,8%, ako se posmatraju samo izvori koji su proizveli električnu energiju u 2022. Iste godine hidraulična proizvodnja električne energije iznosila je 61,9% i porasla je za 17,7% u odnosu na prethodnu godinu; proizvodnja vetra dostigla je 11,8%, a porasla je za 12,9%; biomasa dostigla 8%, zadržavajući svoje performanse; dok se solarna energija popela na 4,4% i time porasla za značajnih 79,8%. Moramo zapamtiti da solarna energija ima veći potencijal za veća povećanja, zbog svog relativno manjeg udela u našoj električnoj matrici.

U svetu koji se menja, održivost je postala važna politička odluka koja uključuje brazilske vlasti, ali i sve glavne igrače u industriji. Važno je naglasiti da smo u poslednje vreme takođe bili teško pogođeni posledicama svetskih klimatskih promena, poput poplava i talasa vrućina. Dakle, upravljanje promenom je postalo pitanje prioriteta za novu Vladu. Zbog toga smo ponudili da budemo domaćin samita KOP (COP) u Belemu, u Pari, na severu Brazila, koji je nedavno izabran za sedište Konferencije potpisnica pariskog sporazuma - KOP 30, 2025. KOP 30, kao što možda znate, jeste godišnji formalni sastanak koji se održava pod okriljem Okvirne konvencije Ujedinjenih nacija o klimatskim promenama (UNFCCC), gde zemlje nastoje da razgovaraju o tome kako pratiti i dostići održivije prakse koje se tiču životne sredine. Obnovljiva energija je ključna za održavanje održivog ekonomskog rasta.

GN *Kako Brazil planira da unapredi svoje kapacitete za proizvodnju energije iz obnovljivih izvora u narednim godinama? Da li postoje konkretne inicijative ili politike koje će doprineti povećanju udela obnovljivih izvora u energetskom sektoru?*

- Udeo obnovljivih izvora u Brazilu je već prilično visok, tako da zemlja to mora da ima u vidu kada sagledava šta su granice našeg programa obnovljivih izvora. Ipak, mi smo u prethodnim decenijama ubrzavali korak ka postizanju povećane platforme obnovljive energije. U 2023. godini, na primer, Nacionalna banka za ekonomski i društveni razvoj (BNDES) Brazila povećala je ulaganja u čistu energiju za 62% u odnosu na 2022. Ukupan iznos finansiranja BNDES-a u ovom segmentu iznosio je 4 milijarde dolara. To predstavlja 44 odsto od 7,6 milijardi dolara koje je ta banka uložila u projekte obnovljive energije u oblasti transporta, logistike, mobilnosti i kanalizacije.

Kao što ste pomenuli, svakako smo zainteresovani da povećamo svoja ulaganja u obnovljive izvore energije za rešavanje i prevenciju ekoloških problema, ali, takođe, moramo uzeti u obzir da nas obnovljivi izvori energije čine i nezavisnijim od geopolitičkih okolnosti – barem ako posmatramo sadašnji profil međunarodne trgovine fosilnim gorivima. To takođe znači da moramo sve ozbiljnije da shvatamo naše okolnosti, kao što je govorio filozof Ortega i Gaset, bez kojih ne možemo da se spasemo. Tako je energetska autonomija, većim korišćenjem obnovljivih izvora energije, stvar pragmatizma države za očuvanje našeg ekonomskog samoopredeljenja, političke nezavisnosti i slobode delovanja u širokom spektru pitanja međunarodne agende.

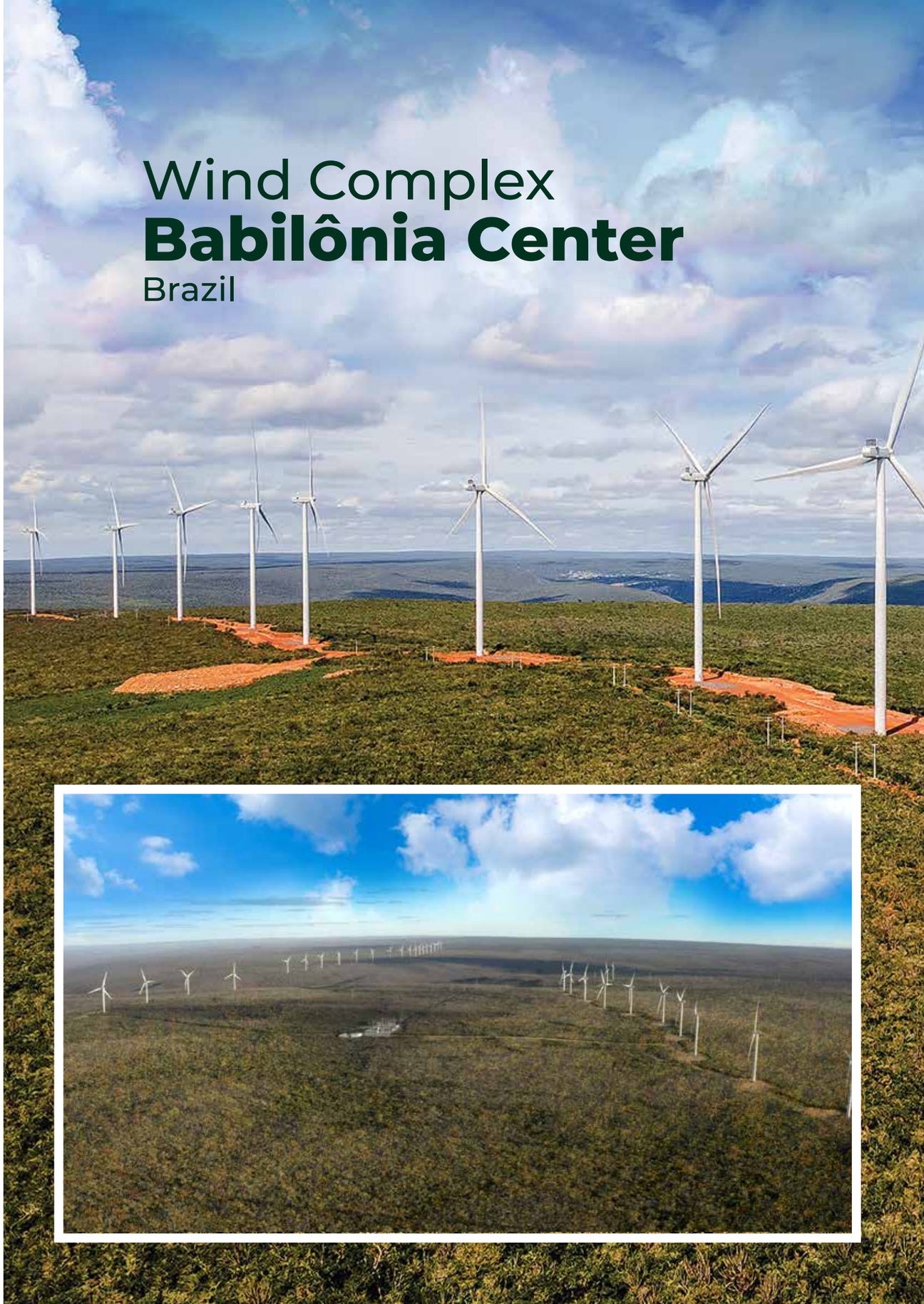
Poštovanje prirode i očuvanje životne sredine nije nikakva eko-glupost!

Kada predlažemo saradnju za razvoj trgovine biogorivima i ekonomije biodiverziteta, naš cilj je stabilniji svet, sa boljom distribucijom snabdevanja energijom. Zajednički napori će doprineti bezbednosti naših građana – jer smo deo istog sveta, svakim danom sve povezaniji. Realizam u 21. veku znači imati u vidu da je blagostanje naših naroda međuzavisno i da gradimo zajedničku viziju budućnosti.

GN *Koje su ključne strategije i projekti koje Brazil sprovodi kako bi diversifikovao svoj energetski portfelj kroz obnovljive izvore energije? Da li postoji poseban fokus na određene vrste obnovljivih izvora, poput solarnih, vetroenergije ili biomase?*

- Godinu 2022. obeležila je rekordna ekspanzija povremenih obnovljivih izvora, naš naglasak je na fotonaponskoj solarnoj proizvodnji, jer smo te godine uspeli da odobrimo zakonski okvir modaliteta distribuirane proizvodnje energije (DEG), koji se tiče tog specifičnog izvora energije u industriji i domaćinstvima. Kao rezultat toga, na nacionalnoj teritoriji je dodato 10,3 gigavata (GW) instalisanog

GN ▶▶▶



Žoze Maura da Fonseka Kosta Kouto

AMBASADOR BRAZILA U REPUBLICI SRBIJI

kapaciteta, od čega 87% dolazi iz fotonaponskih i solarnih elektrana.

Ipak, Brazil svake godine napreduje dalje ka postizanju još održivije zelene ekonomije u svim dostupnim obnovljivim izvorima. Svakako da su naši geografski uslovi povoljni za povećanje učešća solarne energije u našoj energetskoj dostupnosti i to bismo morali da uzmemo u obzir pre nego što uporedimo svoj udeo obnovljivih izvora energije sa drugim zemljama. Ali treba da znamo da bi i druge prijateljske zemlje mogle napredovati u tom pravcu s obzirom na to da imaju više raspoloživih energetskih tehnoloških sredstava, kao što su biomasa (ili sirovine), geotermalni izvori, izvori vetra, plime i talasa, između ostalog. Kao značajnog poljoprivrednog proizvođača, Srbiju vidimo i kao zemlju sa ogromnim potencijalom da postane i zemlja sa niskim nivoom ugljenika, koja štedi resurse, sa raznolikom i cirkularnom ekonomijom, i veoma smo zainteresovani da razvijamo bilateralnu saradnju u ovoj oblasti.

Zanimljivo nedavno dostignuće u saradnji u međunarodnoj areni bila je inicijativa sa Abu Dabi Mubadala Capital (ADMC), suverenim fondom Ujedinjenih Arapskih Emirata. ADMC je potpisao sporazum sa Vladom države Baije o ulaganju 2 milijarde evra u proizvodnju zelenog dizela od ulja makaube - autohtonog drveta Brazila sa visokim energetskim potencijalom - i palminog ulja.

Pored zasejavanja površine od 200 hiljada hektara, dajući prioritet degradiranom zemljištu, projekat takođe uključuje porodičnu poljoprivredu i poljoprivredu velikih razmera, stvarajući direktno zaposlenje za više od 15.000 porodica. Očekuje se da će se proizvoditi milijarda litara obnovljivih goriva godišnje, a proizvodnja će početi u prvom kvartalu 2026. Glavni fokus će biti na obnovljivom dizelu i

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AMBASSADOR OF BRAZIL TO SERBIA

As an important agricultural producer, we also see Serbia as a country with huge potential to become a low-carbon, resource-saving country with a diverse and circular economy, and we are very interested in developing bilateral cooperation in this area

concerning that specific source of energy in industry and households. As a result, 10.3 gigawatts (GW) of installed capacity were added in the national territory, 87% of which came from photovoltaic and solar plants.

Nevertheless, Brazil is advancing further every year towards reaching an even more sustainable green economy in all renewable sources available. Certainly that our geographical conditions are favourable for increasing the share of solar power in our energy availability, and that we would have to take that into account, before comparing our renewable share with other countries. But let us remember that other friendly countries could also advance in that direction considering they have more energy technology assets available, such as biomass (or feedstock), geothermal, wind, tide, and wave sources, among others. As an important agricultural producer, we see Serbia as a country with immense potential for becoming a low-carbon, resource-conserving, diverse and circular economy as well, and we are eager to develop our bilateral cooperation in this area.

An interesting recent achievement in cooperation in the international arena was an initiative with Abu Dhabi Mubadala Capital (ADMC), sovereign fund of the United Arab Emirates. The agreement was signed by ADMC with the Government of the State of Bahia, to invest EUR 2billion in the production of green diesel from macaúba oil - a native tree of Brazil with high energy potential - and palm oil.

In addition to seeding an area of 200 thousand hectares, prioritizing degraded lands, the project also involves family farming and large-scale agriculture, generating direct employment for more than 15,000 families. The expectation is to produce 1 billion liters of renewable fuels per year, with production beginning in the first quarter of 2026.

The main focus will be on renewable diesel and sustainable aviation kerosene, produced through the treatment of vegetable oils and animal fat. With this investment, the region is expected to become the world´s largest exporter of green diesel in the coming years.

Could you present some of the key projects in the field of renewable energy sources that have already been implemented in Brazil? How have these projects contributed to reducing greenhouse gas emissions and protecting the environment?

- As fresh news, we should remember that BNDES will finance projects such as the Babilônia Center Wind Complex, located in the State of Bahia. The funding was USD 600 million, the largest contribution ever approved by BNDES for renewable energy generation. The plant will have an installed capacity of 553.5 megawatts (MW). It is estimated that the wind energy complex will avoid the emission of 950 thousand tons of CO2.

As the largest solar park in Brazil, Nova Olinda certainly represents a technological achievement. In this context, can you explain in more detail how innovations in the installation of solar panels and their optimal adaptation to local conditions contribute to the achievement of high performance and efficiency in the production of electricity?

- Nova Olinda, as you know, is managed by Enel Green Power (an Italian multinaltional), and it is the largest solar plant in Latin America. The project totals 292 MW of installed capacity, 930,000 panels in an area of 690 hectares. Managed by the private sector with an investment of USD 300 million, has capacity to furnish electricity to 300,000 homes, since it is able to produce more than 600 GW/h per year. It was built in only 15 months, and that is the advantage of solar power: stable energy supply at a lower cost. Solar panels need maintenance, but they do not demand such a large amount of investments and efforts in comparison to a hydraulic power source. In addition, the environmental impacts of a solar power plant are considerably smaller, which makes it easier and faster to be approved by the Brazilian environmental authorities.

How does the Embassy of Brazil in Serbia cooperate with local partners in the promotion of technologies of renewable energy sources? Is there the sharing of experience and expertise between Brazil and Serbia in this area?

- Serbia is an important reservoir of talent in the scientific and technological fields: I am aware that this country received five Nobel prizes, laureate members of the Serbian Academy, in Chemistry and Physics, beyond the contributions of the worldly famous Nikola Tesla. We have been searching to offer Serbian students scholarships of undergraduate, master and doctoral programs in Brazil, so that when Serbian students come back, they may help build cooperation in the professional areas they choose. The inverse path should also become true: since we have been developing new renewable energy technology in Brazil, Serbia could also profit from establishing scientific cooperation by receiving Brazilian students, in order to carry on joint research in that field. Some of the large companies established in Serbia are also present in Brazil, and that interconnection may be

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AMBASADOR BRAZILA U REPUBLICI SRBIJI

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održivom vazduhoplovnom kerozinu, koji se proizvodi tretmanom biljnih ulja i životinjskih masti. Sa ovom investicijom, očekuje se da će region postati najveći svetski izvoznik zelenog dizela u narednim godinama.

GN ***Predstavite neke od ključnih projekata u oblasti obnovljivih izvora energije koji su već realizovani u Brazilu? Kako su ovi projekti doprineli smanjenju emisija gasova sa efektom staklene bašte i očuvanju životne sredine?***

- Kao najnovija vest, treba da znamo da će BNDES finansirati projekte kao što je vetro kompleks Babilonia Centar, koji se nalazi u državi Baia. Finansiranje je iznosilo 600 miliona dolara, što je najveći doprinos koji je BNDES ikada odobrila za proizvodnju obnovljive energije. Elektrana će imati instalisanu snagu od 553,5 megavata (MW). Procenjuje se da će vetroenergetski kompleks izbeći emisiju 950 hiljada tona CO2.

GN ***Kao najveći solarni park u Brazilu, Nova Olinda zasigurno predstavlja tehnološko dostignuće. U tom kontekstu, da li možete detaljnije da objasnite kako inovacije u postavljanju solarnih panela i njihovo optimalno prilagođavanje lokalnim uslovima doprinose postizanju visokih performansi i efikasnosti u proizvodnji električne energije?***

- Novom Olindom, kao što znate, upravlja Enel Green Power (italijanska multinacionalna kompanija), i to je najveća solarna elektrana u Latinskoj Americi. Projekat ima ukupno 292 MW instalirane snage, 930.000 panela na površini od 690 hektara. Pod upravom privatnog sektora sa ulaganjem od 300 miliona dolara, ima kapacitet da snabdeva 300.000 domova električnom energijom, jer je u stanju da proizvodi više od 600 GWh godišnje. Izgrađen je za samo 15 meseci i to je prednost solarne energije: stabilno snabdevanje energijom po nižoj ceni. Solarni paneli zahtevaju održavanje, ali ne zahtevaju tako velika ulaganja i napore u poređenju sa hidraulićnim izvorom energije. Pored toga, uticaji solarne elektrane na životnu sredinu su znatno manji, što olakšava i brže dobijanje odobrenja od strane brazilskih ekoloških vlasti.

GN ***Kako ambasada Brazila u Srbiji sarađuje sa lokalnim partnerima u promociji tehnologija obnovljivih izvora energije? Da li postoji deljenje iskustava i ekspertize između Brazila i Srbije u ovoj oblasti?***

- Srbija je značajan rezervoar talenata u naučnim i tehnološkim oblastima: svestan sam da je ova zemlja dobila pet Nobelovih nagrada, laureata Srpske akademije, za hemiju i fiziku, mimo doprinosa svetski poznatog Nikole Tesle. Tražili smo da srpskim studentima ponudimo stipendije za osnovne, master i doktorske programe u Brazilu, kako bi oni, kada se vrate, pomogli u izgradnji saradnje u profesionalnim oblastima koje izaberu. Trebalo bi da se ostvari i obrnuti put: budući da razvijamo novu tehnologiju obnovljive energije u Brazilu, Srbija bi takođe mogla da profitira od uspostavljanja naučne saradnje primanjem brazilskih studenata, kako bi se nastavila zajednička istraživanja u toj oblasti. Neke od velikih kompanija osnovanih u Srbiji prisutne su i u Brazilu, a ta međupovezanost može biti dragocena za više koristi i rezultata naših diplomatskih odnosa.

S druge strane, kratkoročno, Brazil takođe želi da promoviše trgovinu i investicije u toj oblasti. Što više koristimo biogoriva, ona više postaju roba univerzalne vrednosti. Vozila i uređaji takođe mogu postići veću kompatibilnost u različitim zemljama kada se oslanjaju na biogoriva, što je važan aspekt za olakšavanje trgovine.

GN ***U svetlu globalnih izazova klimatskih promena, možete li da nam objasnite kako Brazil namerava da se aktivno uključi u međunarodne napore smanjenja emisija gasova sa efektom staklene bašte, istražujući i konkretne akcije koje će podržati održivi razvoj kroz intenziviranje korišćenja obnovljivih izvora energije?***

- Po našem mišljenju, važnije od utvrđivanja ciljeva za smanjenje emisija ugljenika je preduzimanje konkretnih koraka da se to postigne. Odlučili smo da idemo mnogo dalje od većine zemalja kada ulažemo u obnovljive izvore energije, kako bismo mogli da dosegnemo više od očekivanih rezultata. Saznao sam da je i vaš veliki naučnik Nikola Tesla imao problema da obezbedi podršku za svoje vizionarske eksperimente kada je bio u Parizu. Morao je da se preseli u Sjedinjene Države kako bi pronašao umove koji su bili otvoreni za inovacije. Ali čak i tamo, kada je bio možda 100 godina ispred svog vremena i pokušao da razvije antenu u potpuno novoj laboratoriji, kao preteču tako velikog tehnološkog napretka, J. P. Morgan je više voleo da ne nastavi sa tom revolucijom. To se nije desilo zbog nezainteresovanosti – ekonomske posledice bi bile ogromne i neverovatno privlačne za one koji su prednjačili u novoj oblasti tehnologije. Ovi zastoji se obično dešavaju kada ljudi više vole da se drže onoga što već imaju, onoga što već znaju. Po našem mišljenju, intenziviranje upotrebe obnovljive energije moglo bi jednostavno da zavisi od obrnutog puta: da naša tehnološka dostignuća u Brazilu budu dostupna našim međunarodnim partnerima kao vrednost koju već imamo i za koju znamo da je moguća.

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valuable for increasing the benefits and results of our diplomatic relations.

On the other hand, Brazil is also keen on promoting trade and investments in that area in the short term as well. The more we use bio-fuels, the more it becomes a commodity of universal value. Vehicles and appliances may also reach more compatibility across countries when they rely on biofuels, an important aspect for trade facilitation.

GN ***In light of the global challenges of climate change, can you explain to us how Brazil intends to actively participate in international efforts to reduce greenhouse gas emissions, exploring concrete actions that will support sustainable development through the intensification of the use of renewable energy sources?***

- In our view, more important than establishing goals for reducing carbon emissions, is taking concrete steps to accomplish this. We have chosen to go much further than most countries when investing in renewable energy, so that we can reach beyond the expected results. I learned that your great scientist, Nikolas Tesla, also had some trouble in gathering support for his visionary experiments, when he was in Paris. He had to move to the United States to find minds that were open for innovation. But even there, when he was maybe 100 years ahead of his time, and tried to develop an antenna in a completely new lab, as a precursor of such a great technological advancement, J. P. Morgan preferred not to carry on with that revolution. That happened not because of a lack of interest – the economic consequences would be huge and incredibly attractive for those who were ahead in a fresh new technology field. These setbacks usually happen when people prefer to hold on to what they already have, to what they already know. In our view, the intensification in the use of renewable energy might simply depend on the inverse path: making our technological achievements in Brazil available to our international partners as an asset we already have, and that we already know possible.

GN

Analiza, izazovi i održivost

Najdominantniji oblik biomase za grejanje domaćinstava u Srbiji je ogrevno drvo, pri čemu bukva i hrast prednjače kao glavne vrste

Naučna saradnica Inovacionog centra Mašinskog fakulteta u Beogradu pažljivo analizira primenu biomase kao izvor energije u Srbiji. Biomasa, kao ključni deo portfolija obnovljivih izvora energije, čini respektabilnih 60 odsto ukupnih obnovljivih izvora, prema Strateškom planu razvoja energetike Republike Srbije.

Prema statističkim podacima iz 2019. godine, 12 odsto ukupno proizvedene energije u zemlji dobijeno je iz sagorevanja čvrste biomase, a očekuju se planovi za njeno dalje povećanje u budućnosti. Zanimljivo je primetiti da samo 2 odsto ove potrošnje dolazi iz toplana, dok domaćinstva zauzimaju impresivnih 80 odsto, industrija 18 odsto, a ostali sektori 2 odsto.

Najdominantniji oblik biomase za grejanje domaćinstava u Srbiji je ogrevno drvo, pri čemu bukva i hrast prednjače kao glavne vrste. Biomasa, osim šumarstva, obuhvata i ostatke poljoprivrednih kultura, brzorastuće biljke, komunalni i industrijski otpad.

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The Analysis, Challenges and Sustainability

The most dominant form of biomass for household heating in Serbia is firewood, with beech and oak leading the way as the main species

A research associate of the Innovation Center of the Faculty of Mechanical Engineering in Belgrade carefully analyzes the application of biomass as an energy source in Serbia. Biomass, as a key part of the portfolio of renewable energy sources, makes up a respectable 60 percent of total renewable sources, according to the Strategic Energy Development Plan of the Republic of Serbia.

According to statistical data from 2019, 12 percent of the total energy produced in the country was obtained from burning solid biomass, and plans are expected for its further increase in the future. It is interesting to note that only 2 percent of this consumption comes from heating plants, while households occupy impressive 80 percent, industry 18 percent, and other sectors 2 percent.

The most dominant form of biomass for household heating in Serbia is firewood, with beech and oak leading the way as the main species. Biomass, in addition to forestry, also includes agricultural residues, fast-growing plants, municipal and industrial waste

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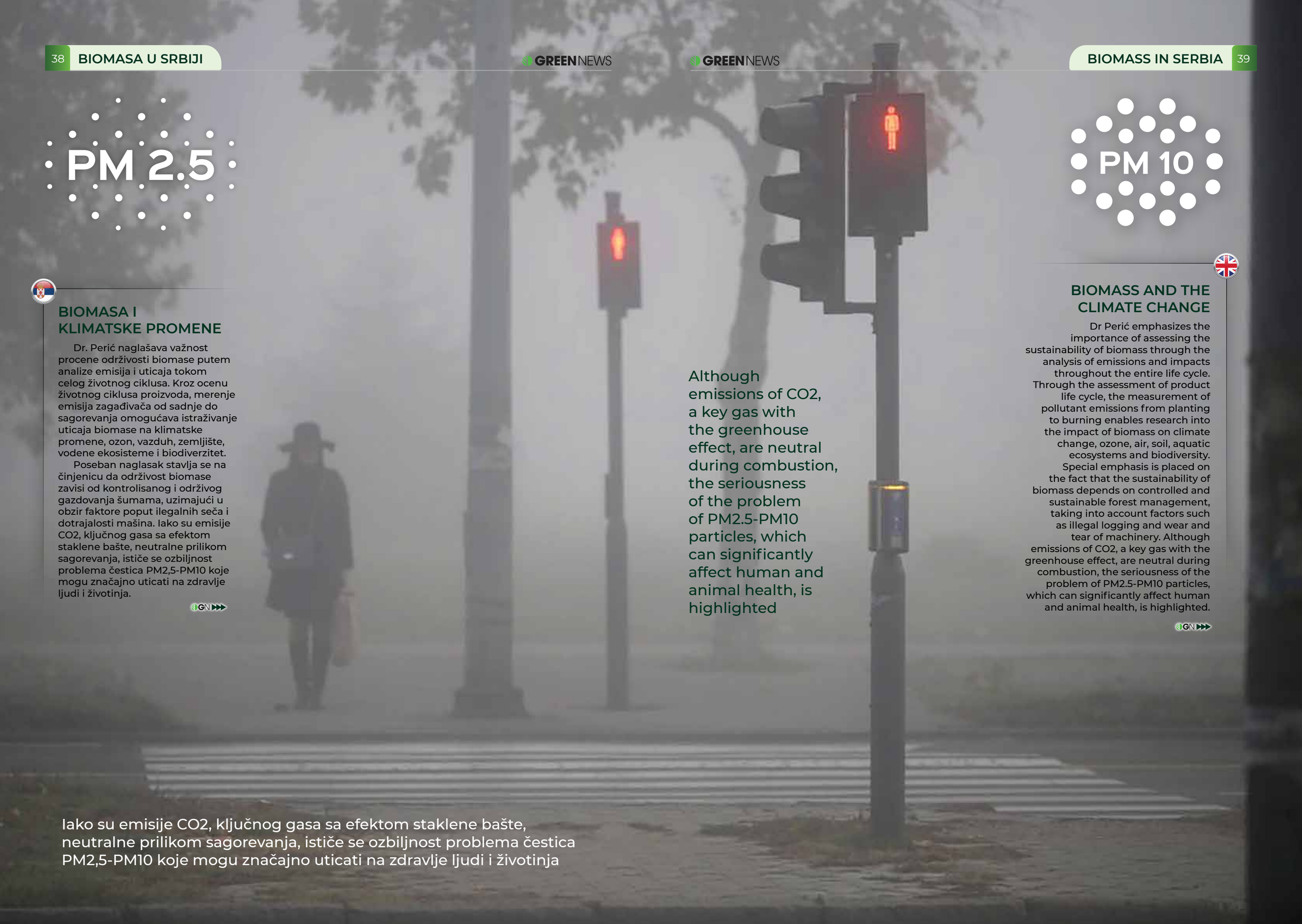

PM 2.5

PM 10

BIOMASA I KLIMATSKE PROMENE

Dr. Perić naglašava važnost procene održivosti biomase putem analize emisija i uticaja tokom celog životnog ciklusa. Kroz ocenu životnog ciklusa proizvoda, merenje emisija zagađivača od sadnje do sagorevanja omogućava istraživanje uticaja biomase na klimatske promene, ozon, vazduh, zemljište, vodene ekosisteme i biodiverzitet.

Poseban naglasak stavlja se na činjenicu da održivost biomase zavisi od kontrolisanog i održivog gazdovanja šumama, uzimajući u obzir faktore poput ilegalnih seča i dotrajalosti mašina. Iako su emisije CO2, ključnog gasa sa efektom staklene bašte, neutralne prilikom sagorevanja, ističe se ozbiljnost problema čestica PM2,5-PM10 koje mogu značajno uticati na zdravlje ljudi i životinja.

Although emissions of CO2, a key gas with the greenhouse effect, are neutral during combustion, the seriousness of the problem of PM2.5-PM10 particles, which can significantly affect human and animal health, is highlighted

BIOMASS AND THE CLIMATE CHANGE

Dr Perić emphasizes the importance of assessing the sustainability of biomass through the analysis of emissions and impacts throughout the entire life cycle. Through the assessment of product life cycle, the measurement of pollutant emissions from planting to burning enables research into the impact of biomass on climate change, ozone, air, soil, aquatic ecosystems and biodiversity. Special emphasis is placed on the fact that the sustainability of biomass depends on controlled and sustainable forest management, taking into account factors such as illegal logging and wear and tear of machinery. Although emissions of CO2, a key gas with the greenhouse effect, are neutral during combustion, the seriousness of the problem of PM2.5-PM10 particles, which can significantly affect human and animal health, is highlighted.

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PREFERIRANA ALTERNATIVA

Uprkos izazovima, dr. Perić ističe da biomasa ostaje preferirana alternativa u odnosu na ugalj, sa 70-90 odsto manjim negativnim uticajem na životnu sredinu. Ona zaključuje da je ključno nastaviti unapređivati uzgoj i korišćenje biomase kako bi postala još održivija u budućnosti.

PREFERRED ALTERNATIVE

Despite the challenges, dr. Perić points out that biomass remains the preferred alternative to coal, with 70-90 percent less negative impact on the environment. She concludes that it is crucial to continue improving the cultivation and usage of biomass to make it even more sustainable in the future.

Najveći ekološki problemi

U sukobu sa nezaustavljivim ekološkim degradacijama, 2024. godina otkriva zastrašujući niz problema koji zahtevaju hitno suočavanje. Dok se temperatura povećava, obeležavajući 2023. kao godinu s najvišim zabeleženim temperaturama, naša dragocena planeta suočava se s nezapamćenom klimatskom krizom, gde globalno zagrevanje izbija kao predvodnik ekoloških nevolja.

GLOBALNO ZAGREVANJE IZ FOSILNIH GORIVA

U senci rekordnih temperatura i porasta ugljen-dioksida iznad 420 ppm, posledice ljudske aktivnosti postaju neosporne. Katastrofalni događaji, od razorne vatre u Australiji do toplotnih talasa u Antarktiku, alarmantno ukazuju na hitnu potrebu za smanjenjem emisija gasova sa efektom staklene bašte i brzim prelaskom na obnovljive izvore energije.

LOŠE UPRAVLJANJE

Ekonomisti poput Nikole Sterna tvrde da klimatska kriza proizlazi iz tržišnih neuspeha. Pozivi za povećanje poreza na emisije ugljenika odjekuju širom sveta, ali implementacija ostaje neujednačena. Dok je 27 zemalja usvojilo nacionalni porez na emisije ugljenika, kritike upućuju na nedovoljnost trenutnih struktura i ograničenu sposobnost UN-a da sprovede globalne klimatske sporazume.

The Biggest Environmental Problems

Confronted with unstoppable environmental degradation, the year 2024 reveals a terrifying group of problems that require urgent confrontation. As temperatures rise, marking 2023 as the hottest year on record, our precious planet is facing an unprecedented climate crisis, with global warming emerging as the forerunner of environmental troubles.

GLOBAL WARMING FROM FOSSIL FUELS

In the shadow of record temperatures and the rise of carbon dioxide above 420 ppm, the consequences of human activity are becoming undeniable. Catastrophic events, from devastating fires in Australia to heat waves in Antarctica, alarmingly point to the urgent need to reduce greenhouse gas emissions and rapidly switch to renewable energy sources.

BAD MANAGEMENT

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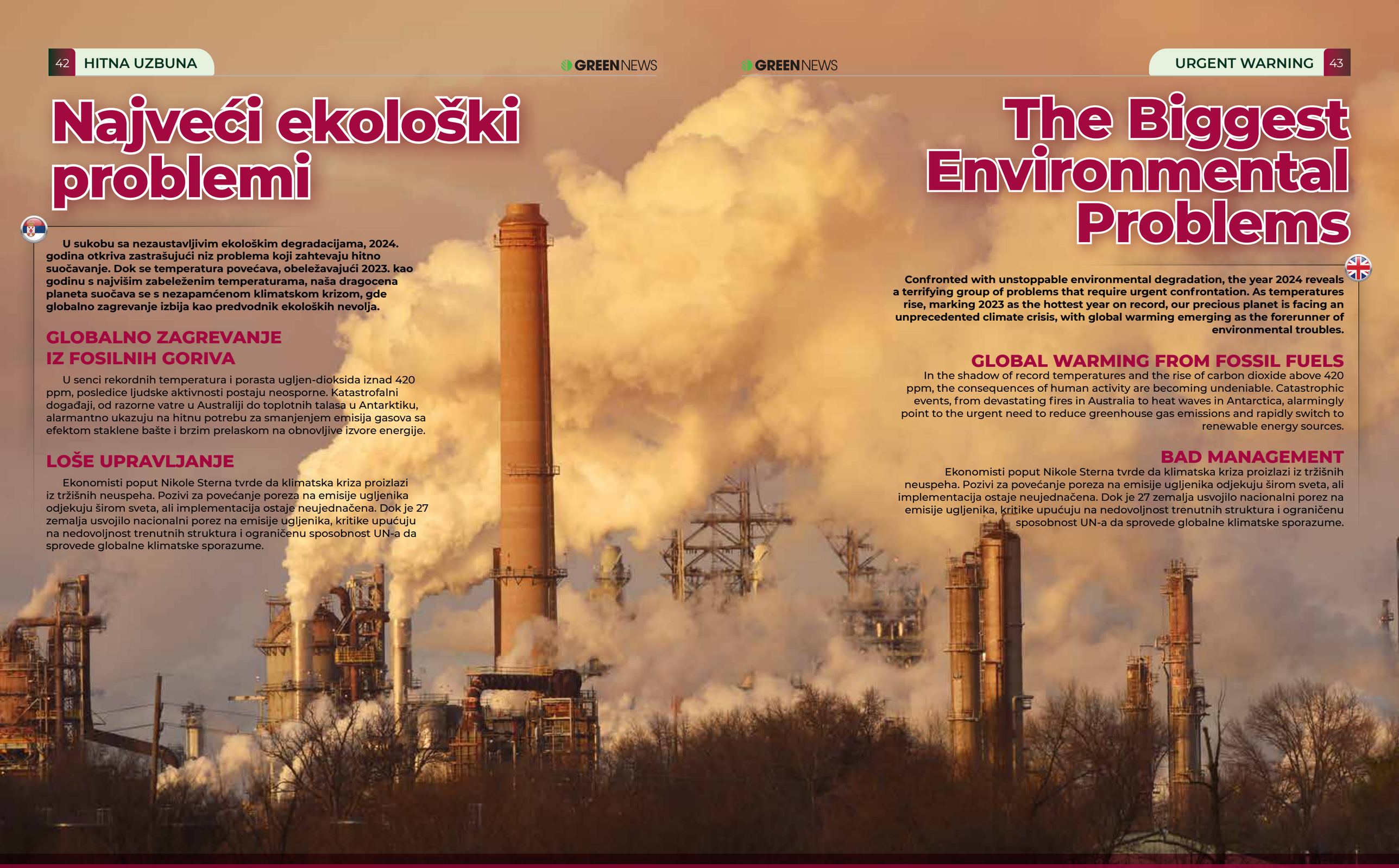

Otkrijte izazove koji zahtevaju neposrednu akciju u borbi protiv klimatske krize. Sat otkucava, pozivajući nas da preispitamo svoje prakse i da prioritet damo dobrobiti naše planete za generacije koje dolaze

2024

Find out challenges that require immediate action in the fight against the climate crisis. The clock is ticking, calling us to rethink our practices and prioritize the well-being of our planet for generations to come

GREENNEWS

OTPAD OD HRANE

Zapanjujuća trećina hrane namenjene ljudskoj potrošnji, oko 1.3 milijarde tona, završava kao otpad. Ekološki uticaj je ozbiljan, doprinoseći čak 25% godišnjih emisija gasova sa efektom staklene bašte. Odbijanje „ružne" hrane na nivou prodaje dodatno pogoršava problem, produbljujući zabrinutost zbog sigurnosti hrane.

GUBITAK BIORAZNOLIKOSTI

Ljudske aktivnosti dovode do opadanja populacija sisavaca, riba, ptica, gmizavaca i vodozemaca za prosečnih 68 odsto od 1970. godine. Promene u korišćenju zemljišta, posebno pretvaranje staništa poput šuma, livada i mangrova u poljoprivredne sisteme, ključni su faktori gubitka bioraznolikosti.

ZAGAĐENJE PLASTIČNIM MATERIJALIMA

Od proizvodnje 2 miliona tona plastike 1950. godine do zabrinjavajućih 419 miliona tona 2015. godine, problem plastike postaje eskalirajuća kriza. Sa 91% neprocesuirane plastike, posledice po okolinu, uključujući štetu staništima divljih životinja, zahtevaju hitnu globalnu akciju.

SEČA ŠUMA

Svaki sat nestaje šuma veličine 300 fudbalskih terena, pretežno potaknuto poljoprivredom. Uprkos naporima u očuvanju šumskih područja, legalna seča šuma i dalje je raširena, preteći biodiverzitetu i pogoršavajući klimatske promene.

FOOD WASTE

A staggering third of food intended for human consumption, about 1.3 billion tons, ends up as waste. The environmental impact is serious, contributing as much as 25% of annual greenhouse gas emissions. Rejecting „ugly" food at the point of sale further exacerbates the problem, deepening food safety concerns.

THE LOSS OF BIODIVERSITY

Human activities have led to a decline in the populations of mammals, fish, birds, reptiles and amphibians by an average of 68 percent since 1970. The changes of land usage, especially the conversion of habitats such as forests, grasslands and mangroves to agricultural systems, are key factors of the loss of biodiversity.

POLLUTION WITH PLASTIC MATERIALS

From the production of 2 million tons of plastic in 1950 to alarming 419 million tons in 2015, the problem of plastic is becoming an escalating crisis. With 91% of plastic unprocessed, environmental consequences, including damage to wildlife habitats, demand urgent global action.

LOGGING

Every hour, a forest the size of 300 football fields disappears, mainly driven by agriculture. Despite efforts to conserve forest areas, legal logging is still widespread, threatening biodiversity and exacerbating climate change.

Najveći ekološki problemi 2024 The Biggest Environmental Problems

ZAGAĐENJE VAZDUHA

Zagađenje vazduha na otvorenom ubija procenjenih 4.2 do 7 miliona ljudi svake godine, pri čemu industrijski izvori, motorna vozila i sagorevanje biomase igraju ključnu ulogu. Afrika je suočena sa porastom smrtnih slučajeva usled zagađenja vazduha, dok Evropa beleži više od pola miliona smrti povezanih sa toksičnim izvorima u 2021. godini.

TOPLJENJE LEDENE KAPE

Klimatska kriza zagreva Arktik više od dva puta brže nego bilo gde drugde na planeti. Sa prosečnim porastom mora od 3.2 mm godišnje širom sveta, topljenje Grenlandskog ledenog pokrivača predstavlja ozbiljan rizik za nivo mora.

OKEANSKA KISELOST

Globalno zagrevanje ne utiče samo na površinu, već je glavni uzrok okeanske kiselosti. Kada okeani apsorbuju oko 30 odsto ugljen-dioksida iz atmosfere, povećane emisije ugljen-dioksida dovode do kritičnog povećanja kiselosti okeana, ugrožavajući morske ekosisteme i koralne grebene.

POLJOPRIVREDA

Studije pokazuju da je globalni sistem hrane odgovoran za do 30 odsto svih ljudski izazvanih emisija gasova sa efektom staklene bašte. Rastući broj stoke, ribarstvo i potrošnja vode izazivaju potrebu za hitnim usvajanjem održivih poljoprivrednih praksi.

AIR POLLUTION

Outdoor air pollution kills estimated 4.2 to 7 million people each year, with industrial sources, motor vehicles, and biomass burning playing a key role. Africa faces rising deaths caused by air pollution, while Europe sees more than half a million deaths linked to toxic sources in 2021.

MELTING OF THE ICE CAPS

The climate crisis is warming the Arctic more than twice as fast as anywhere else on the planet. With an average sea level rise of 3.2 mm per year worldwide, the melting of the Greenland ice sheet poses a serious risk to sea levels.

OCEAN ACIDITY

Global warming not only affects land, but it is the main cause of ocean acidity. When oceans absorb about 30 percent of the carbon dioxide from the atmosphere, increased carbon dioxide emissions lead to a critical increase in ocean acidity, threatening marine ecosystems and coral reefs.

AGRICULTURE

Studies show that the global food system is responsible for up to 30 percent of all human-caused greenhouse gas emissions. Growing numbers of livestock, fisheries and water consumption create a need for the urgent adoption of sustainable agricultural practices.

Najveći ekološki problemi 2024 The Biggest Environmental Problems

NESIGURNOST U HRANI I VODI

Rastuće temperature i neodržive prakse u poljoprivredi povećavaju eroziju zemljišta, doprinoseći zagađenju vode i nestašici hrane. Očekivani porast globalne potražnje hrane do 2050. godine iziskuje hitne mere za rešavanje preteće globalne krize bezbednosti hrane i obezbeđivanje pristupa vodi.

BRZA MODA I OTPAD OD TEKSTILA

Industrija mode, odgovorna za 10 odsto globalnih emisija ugljenika, suočava se sa krizom prekomernog otpada tekstila. Nenormalan rast brze mode pogoršava ekološku štetu, sa odbačenom odećom koja završava na deponijama i u vodama.

PREKOMERNI RIBOLOV

Prekomerni ribolov iscrpljuje zalihe ribe alarmantnom brzinom, preteći morske ekosisteme, ribarske zajednice i biodiverzitet. Stroža regulativa ključna je za postizanje Cilja Održivog Razvoja 14 i ublažavanje uticaja prekomernog ribolova.

RUDARENJE KOBALTA

Rastuća potražnja za kobaltom, ključnim sastojkom baterija električnih vozila, izaziva zabrinutost zbog ekološke degradacije i iskorišćavanja radne snage. Etičke i ekološke posledice rudarenja kobalta zahtevaju međunarodni nadzor.

DEGRADACIJA ZEMLJIŠTA

Sa 40 odsto planete koja pokazuje znakove degradacije zemljišta usled ljudskih aktivnosti, zdravlje zemljišta postaje ključna briga. Bez usvajanja održivih praksi, globalna bezbednost hrane suočava se sa nesigurnom budućnošću, sa procenjenim padom proizvodnje hrane od 40 odsto do 2044. godine.

Dok se suočavamo sa ovim ekološkim izazovima, koordinirani i hitan globalni odgovor je imperativ. Sat otkucava, pozivajući nas da preispitamo svoje prakse i da prioritet damo dobrobiti naše planete za generacije koje dolaze.

FOOD AND WATER INSECURITY

Rising temperatures and unsustainable agricultural practices are increasing soil erosion, contributing to water pollution and food shortages. The expected increase in global food demand by 2050 requires urgent measures to address the looming global food security crisis, and ensure access to water.

FAST FASHION AND TEXTILE WASTE

The fashion industry, responsible for 10 percent of global carbon emissions, is facing a crisis of excessive textile waste. The rampant growth of fast fashion is exacerbating environmental damage, with discarded clothing ending up in landfills and waterways.

EXCESSIVE FISHING

As we face these environmental challenges, a coordinated and urgent global response is imperative. The clock is ticking, calling us to rethink our practices and prioritize the well-being of our planet for generations to come.

COBALT MINING

Growing demand for cobalt, a key ingredient in electric vehicle batteries, is raising concerns about environmental degradation and labor exploitation. The ethical and environmental consequences of cobalt mining require international monitoring.

LAND DEGRADATION

With 40 percent of the planet showing signs of soil degradation due to human activities, soil health is becoming a key concern. Without the adoption of sustainable practices, global food security faces an uncertain future, with an estimated 40 percent decline in food production by 2044.

As we face these environmental challenges, a coordinated and urgent global response is imperative. The clock is ticking, calling us to rethink our practices and prioritize the well-being of our planet for generations to come.

Najveći ekološki problemi 2024 The Biggest Environmental Problems

ZELENE novogodišnje odluke

Započnite Novu godinu sa ovih 10 zelenih odluka i svedočite tome kako male, dosledne promene mogu dovesti do ekološki osvešćenijeg i ispunjavajućeg života

U vrtlogu novogodišnjeg raspoloženja, gde rešavamo raskid sa starim navikama i grlimo novo poglavlje, često se naši visoki ciljevi pretvore u maglovita sećanja već po sredini januara. Da biste prekinuli taj ciklus, donosimo vam 10 zelenih odluka za Novu godinu koje su toliko lako ostvarive da nemate izgovora da ih zapostavite.

BORBA PROTIV FLAŠIRANE VODE

Zamenite plastiku filtrirajućim bokalom kod kuće, smanjujući time godišnju upotrebu 17 miliona barela nafte za izradu jednokratnih plastičnih flaša. Osim toga, odaberite flaše od stakla, aluminijuma ili recikliranog plastike kako biste uvek bili spremni zadovoljiti svoju žeđ.

SAVRŠENSTVO U ŠOLJI FER-TRGOVINSKE KAFE

Unošenje sopstvenog napitka u izolovanoj putnoj šoljici smanjuje otpad od kartonskih šoljica i držača. Birajte fer-trgovinsku kafu, dodajte ovseno mleko umesto običnog i koristite francuski pritisak umesto aparata sa jednokratnim kapsulama kako biste smanjili pakovanje otpada.

PAMETNA UPOTREBA UBRUSA

Smanjite upotrebu papirnatih ubrusa investiranjem u pamučne krpe i platnene ubruse. Ova jednostavna promena ne samo da olakšava održavanje, već doprinosi eliminaciji 13 milijardi funti papirnatih ubrusa koji završe na deponijama svaki dan.

KORIŠĆENJE DUGOROČNIH TORBI

Nosite sa sobom dugoročne torbe u prodavnicu kako biste smanjili broj od milion plastičnih kesa koje završe u smeću svake minute.

VOŽNJA BICIKLA ZA ZELENIJE KORAKE

Za kraće vožnje, poput odlaska do lokalnog marketa ili uživanja u sladoledu, pređite na bicikl i smanjite ugljenični otisak, tako ćete uštedeti novac na gorivu i održavanju automobila dok poboljšavate svoju fizičku kondiciju.

Zamenite obične sijalice efikasnim LED sijalicama kako biste smanjili potrošnju energije i doprineli očuvanju životne sredine

GREEN
New Year's Resolutions

Start the new year with these 10 green resolutions and witness how small, consistent changes can lead to a more environmentally conscious and fulfilling life

Replace ordinary light bulbs with efficient LED bulbs to reduce energy consumption and contribute to the protection of the environment

In the whirlwind of New Year's mood, when we resolve to break old habits and embrace a new chapter, often our lofty goals turn into hazy memories by mid-January. In order to break that cycle, we bring you 10 green New Year's resolutions that are so easy to achieve that you have no excuse to neglect them.

THE FIGHT AGAINST BOTTLED WATER

Replace plastic with a filter jug at home, reducing the annual use of 17 million barrels of oil to make single-use plastic bottles. In addition, choose bottles made of glass, aluminum or recycled plastic so that you are always ready to quench your thirst.

PERFECTION IN A CUP OF FAIR TRADE COFFEE

Bringing your own beverage in an insulated travel cup reduces waste from cardboard cups and holders. Choose fair trade coffee, add oat milk instead of regular milk, and use a French press instead of a single-use capsule machine to reduce packaging waste.

SMART USE OF TOWELS

Reduce the use of paper towels by investing in cotton cloths and linen towels. This simple change not only makes maintenance easier, but it helps eliminate 13 billion pounds of paper towels that end up in landfills every day.

THE USE OF DURABLE BAGS

Carry durable bags with you to a grocery store in order to reduce the number of a million plastic bags that end up in the trash every minute.

CYCLING FOR GREENER STEPS

For shorter journeys, such as going to a local market or enjoying an ice cream, switch to cycling and reduce your carbon footprint, saving money on fuel and car maintenance while improving your fitness.

GREENNEWS

PROTIV FANTOMSKE STRUJE

Eliminišite energiju koja se troši u režimu pripravnosti isključivanjem elektronskih uređaja i korišćenjem pametnih uređaja koji štede energiju, čime možete smanjiti račun za struju i do 10 odsto godišnje.

PODRŠKA LOKALNIM PROGRAMIMA CSA

Naručujte od lokalnih programa CSA kako biste dobili sveže, lokalno voće i povrće direktno na vrata, podržavajući istovremeno lokalne farmere i smanjujući potrebu za odlaskom na pijacu.

DELIMIČNO VEGETARIJANSTVO ZA ZELENIJI TANJIR

Smanjite unos mesa za pola, smanjujući tako vaš ugljenični otisak za tonu godišnje, istražujući ukusne recepte bez mesa za doručak, ručak i večeru.

ZELENA ENERGIJA ZA DOM

Prebacite svoje domaćinstvo na zelenu energiju, istražujući opcije obnovljive energije koje nude lokalne energetske kompanije.

SVETLO BUDUĆNOSTI UZ LED SIJALICE

Zamenite obične sijalice efikasnim LED sijalicama kako biste smanjili potrošnju energije i doprineli očuvanju životne sredine.

GN

AGAINST PHANTOM ELECTRICITY

Eliminate energy wasted in standby mode by turning off electronic devices and using smart energy-saving devices, which can reduce your electricity bill by up to 10 percent annually.

SUPPORT FOR LOCAL CSA PROGRAMS

Order from local CSA programs to get fresh, local fruits and vegetables straight to your door, while supporting local farmers and reducing the need to go to the market.

PARTIAL VEGETARIANISM FOR A GREENER PLATE

Cut your meat intake in half, reducing your carbon footprint by a tonne per year, by exploring delicious meatless recipes for breakfast, lunch and dinner.

GREEN ENERGY FOR HOME

Switch your household to green energy by exploring renewable energy options offered by local energy companies.

THE LIGHT OF THE FUTURE WITH LED BULBS

Replace ordinary light bulbs with efficient LED bulbs to reduce energy consumption and contribute to the protection of the environment.

GN

Započnite Novu godinu sa ovih 10 zelenih odluka i svedočite tome kako male, dosledne promene mogu dovesti do ekološki osvešćenijeg i ispunjavajućeg života. Ove odluke ne samo da čuvaju planetu, već čine vaš svakodnevni život uzbudljivim korakom ka održivijoj budućnosti.

Start the new year with these 10 green resolutions and witness how small, consistent changes can lead to a more environmentally conscious and fulfilling life. These decisions not only save the planet, but make your everyday life closer one exciting step to a more sustainable future.

GREENNEWS

Pošasti mikroplastike

Čestice mikroplastike su u našoj flaširanoj vodi, u našoj kuhinjskoj soli - čak su i u našoj kućnoj prašini i u vazduhu koji udišemo

Okean je dom za više od 200.000 poznatih vrsta i čak 2 miliona koje tek treba da otkrijemo. I, što je strašno, takođe je dom za 24,4 triliona komada mikroplastike. Istraživači su 2022. godine istakli koliko loše zagađenje mora mikroplastikom postaje: Ukupna količina mikroplastike deponovane na dnu okeana se utrostručila u poslednje dve decenije.

Ali čestice mikroplastike ne završavaju samo na dnu okeana. Životinje ih jedu - prijavljeno je da najmanje 1.500 vrsta guta plastiku.

Na primer, kitovi u zalivu Hauraki na Novom Zelandu konzumiraju otprilike tri miliona mikroplastike dnevno, prema istraživanju objavljenom u časopisu Science of the Total Environment, koje je analiziralo izmet kitova kako bi se uvidelo koliko je mikroplastike prisutno.

Druga istraživanja imaju još zabrinjavajuće zaključke. Studija Nature Communications otkrila je da plavi kitovi mogu progutati 10 miliona komada mikroplastike dnevno.

Shirel R. Kahane-Rapport, vodeći autor studije Nature Communications, kaže za Treehugger da je njen tim bio iznenađen količinom mikroplastike i izvorom rizika.

"Čak i u umereno zagađenim vodama kod zapadne obale SAD, kitovi i dalje mogu da gutaju milione mikroplastike i mikrovlakana dnevno", priča Kahane-Rapport.

The Scourge of Microplastics

The ocean is home to more than 200,000 known species and as many as 2 million that we have yet to discover. And, frighteningly, it is also home to 24.4 trillion pieces of microplastics. In 2022, researchers highlighted how bad marine microplastic pollution is getting: The total amount of microplastics deposited on the bottom of oceans has tripled in the past two decades.

But microplastic particles do not just end up at the bottom of the ocean. Animals eat them too - at least 1,500 species have been reported to ingest plastic.

For example, whales in New Zealand's Hauraki Gulf consume approximately three million microplastics daily, according to research published in the journal Science of the Total Environment, which analyzed whales' excrement to see how much microplastics were present.

Other research has even more worrying conclusions. A Nature Communications study found that blue whales can ingest 10 million pieces of microplastics daily.

Shirel R. Kahane-Rapport, the lead author of the Nature Communications study, tells Treehugger that her team was surprised by the amount of microplastics and the source of the risk.

Microplastic particles are in our bottled water, in our table salt – they are even in our house dust and in the air we breathe

TEKSTILNA SINTETIKA

35%

SYNTHETIC TEXTILES

AUTO GUME

28%

CAR TYRES

GRADSKA PRAŠINA

24%

CITY DUST

OZNAKE NA PUTEVIMA

7%

ROADS MARKINGS

3,7%

MARINE COATINGS

Mikroplastika

SVUDA OKO NAS

Microplastics

ALL AROUND US

2,3%

OSTALO

PROIZVODI ZA LIČNU NEGU, PLASTIČNE PALETE, VLAŽNE MARAMICE, KAPSULE ZA VEŠ ILI MAŠINU ZA PRANJE SUDOVA, KUĆNI PLASTIČNI OTPAD, KESICE ČAJA, OPUŠCI

OTHERS

PERSONAL CARE PRODUCTS, PLASTIC PALLETS, WET WIPES, TEA BAGS, CIGARETTE BUTTS, LAUNDRY OR DISHWASHER PODS, HAUSE HOLD PLASTIC WASTE

Druga istraživanja su pokazala da ako je plastika dovoljno mala, može da pređe zid creva i uđe u unutrašnje organe, iako su dugoročni efekti još uvek nejasni. Plastika takođe može da oslobađa hemikalije koje ometaju endokrini sistem, dodaju.

Ovo je očigledno loše za kitove, ali takođe ima implikacije za ljude i okean uopšte. Mi smo takođe deo ovih lanaca ishrane i redovno konzumiramo mikroplastiku. Oni su u našoj flaširanoj vodi, u našoj kuhinjskoj soli - čak su i u našoj kućnoj prašini i u vazduhu koji udišemo.

I još uvek ne znamo kakvi su zdravstveni efekti.

U međuvremenu, uticaj na kitove - i ono što on označava - zabrinjava na mnogim frontovima. “Kitovi su inženjeri ekosistema“, kaže Kahane-Rapport.

Mikroplastika se stvara u ogromnom broju naizgled svakodnevnim aktivnostima kao što je pranje veša, gde se sintetička vlakna ispiru u otpadnu vodu. Ili vožnju, gde plastika iz guma stvara više mikroplastičnog otpada nego bilo koji drugi izvor, prema istraživačima.

„Even in the moderately polluted waters off the U.S. West Coast, whales may still be ingesting millions of microplastics and microfibers per day,” says Kahane-Rapport.

Other research has shown that if plastic is small enough, it can cross the gut wall and get into internal organs though the long-term effects are still unclear. Plastic can also release chemicals that disrupt the endocrine system.

This is obviously bad for whales, but it also has implications for humans and the ocean in general. We are also part of these food chains and regularly consume microplastics. They are in our bottled water, in our table salt—they are even in our house dust and in the air we breathe.

And we still do not know what the health effects are. Meanwhile, the impact on whales—and what it signifies—is troubling on many fronts. „Whales are ecosystem engineers,” says Kahane-Rapport.

Microplastics are created in vast numbers by seemingly mundane everyday activities like doing laundry, where synthetic fibers are rinsed into the wastewater. Or during driving, where plastic from tires generates more microplastic waste than any other source, according to researchers.

GREENNEWS

Žalostan prizor na Drini: Tone otpada plutaju rekom kod Višegrada

Sad scene on the Drina: Tons of waste floating around by the river near Visegrad

Kahane-Rapport daje neke predloge o koracima koje pojedinci mogu da preduzmu:

- Pravilno odložite otpad kako ne bi završio u kanalizaciji;
- Dodajte jednostavan filter u svoju mašinu za pranje veša da biste uhvatili mikrovlakna;
- Založite se za bolji tretman otpadnih voda (koji sprečava mikroplastiku da uđe u sistem vode) u vašem gradu;
- Razgovarajte sa članovima vašeg lokalnog veća i političari mogu pomoći da dođe do većih promena i izvršite pritisak na velike korporacije da odgovorno odlažu svoj otpad.

STUDIJA ZAKLJUČUJE:
„ZA VRSTE KOJE SE BORE DA SE OPORAVE OD ISTORIJSKOG LOVA NA KITOVE ZAJEDNO SA DRUGIM ANTROPOGENIM PRITISCIMA, NALAZI SUGERIŠU DA KUMULATIVNI UTICAJI VIŠESTRUKIH STRESORA ZAHTEVAJU DALJU PAŽNJU”.

Kahane-Rapport gives us some suggestions on steps that individuals can take:

- Dispose of waste properly so it does not end up in the sewer;
- Add a simple filter to your washing machine to catch microfibers;
- Advocate for better wastewater treatment (that prevents microplastics from entering the water system) in your city;
- Speak to your local council people, and politicians can help bring about larger change.

THE STUDY CONCLUDES:
„FOR SPECIES STRUGGLING TO RECOVER FROM HISTORICAL WHALING ALONGSIDE OTHER ANTHROPOGENIC PRESSURES, OUR FINDINGS SUGGEST THAT THE CUMULATIVE IMPACTS OF MULTIPLE STRESSORS REQUIRE FURTHER ATTENTION.”

Sačuvajte hranu

Kako u svetu raste potreba za sve većom zaštitom sredine, pravilnom reciklažom i svesnom konzumacijom hrane, tako i brojne zemlje pokreću svoje programe i šeme kao odgovor na krizu. Neke države, poput Francuske, od skoro imaju i zasebne kontejnere za otpad od ogranskog voća/povrća, kao što su npr. kore od banane... Istovremeno, mnogo namirnica bacamo, čak jestivih i u „dobrom stanju“.

Nažalost, više od polovine sve otpadne hrane proizvedene u Evropskoj uniji 2021. godine – ogromnih 153 miliona tona – došlo je iz domaćinstava. UN kažu da polovina voća i povrća prodatog u EU završi u kanti za smeće. I dok čekamo da „neko drugi“ reši te probleme, zašto ne bismo pružili svoj doprinos u efikasnom sortiranju otpada ili smanjenju bacanja hrane?

Možete napraviti jednostavne promene na individualnom nivou, koje će učiniti svet boljim mestom za život.

Za početak, upoznajte se sa kompostiranjem, koje isprva može biti zastrašujući koncept: ideja o gomili ostataka hrane koja se raspada u vašem – ionako skučenom stanu – mogla bi vam delovati jezivo, međutim... Ako želite „besplatno“ zemljište bogato hranljivim materijama za vaše kućne biljke, nedostatak prostora u stanu nije nešto što bi trebalo da vas brine. Postoje opcije kompostiranja za domove svih veličina i ne, nije namenjeno samo onima koji imaju kuću i dvorište.

Budite kreativni sa korama od povrća, budući da ih ima mnogo i mogu se jednostavno koristiti u druge svrhe. Drugim rečima, „probudite strastvenog kuvara u sebi“! Probajte sa nekim ukusnim potažom, idealnim u ovim zimskim danima i pustite mašti na volju. Takođe, od kore povrća, dobro oprane, može se napraviti čips – idealna grickalica uz film.

Naša treća ideja za kreativno „ne bacanje hrane“ bila bi nabavka kvalitetnih posuda, u kojima namirnice neće tako lako i brzo propadati. Recimo, produžite život šargarepi tako što ćete je iseckati na komadiće i držati u tegli s vodom, ili sačuvajte duže bobičasto voće tako što ćete odstraniti zelene delove i takođe ga potopiti u vodu sa malo jabukovog sirćeta. Osim toga, kupujte hermetički zatvorene posude od kvalitetne plastike ili stakla.

Save the Food

As the need for greater environmental protection, proper recycling and conscious consumption of food grows in the world, numerous countries are launching their own programs and schemes as a response to the crisis. Some countries, like France, have recently had separate containers for organic fruit/vegetable waste, such as e.g. banana peels... At the same time, we throw away a lot of food, even edible and in „good condition”.

Unfortunately, more than half of all food waste produced in the European Union in 2021 – whopping 153 million tonnes – came from households. The UN says that half of the fruit and vegetables sold in the EU end up in the bin. And while we wait for „someone else” to solve these problems, why would not we contribute to efficient waste sorting or reducing food waste?

You can make simple changes on an individual level that will make the world a better place to live.

To begin with, familiarize yourself with composting, which can be a scary concept at first: the idea of a pile of food scraps decomposing in your already cramped apartment might seem creepy, but... If you want „free” nutrient-rich soil for your houseplants, lack of space in your apartment is not something you should worry about. There are composting options for homes of all sizes and no, it is not just for those with a house and a yard.

Be creative with vegetable peel, as it is plentiful, and can easily be used for other purposes. In other words, „wake up a passionate cook within you”! Try it with some delicious potage, ideal in these winter days and let your imagination run wild. You can also make chips from vegetable peel, washed well - an ideal snack with a movie.

Our third idea for creative „no food waste” would be to get quality containers, in which the food will not spoil so easily and quickly. For example, extend the life of carrots by cutting them into small pieces and keeping them in a jar of water, or preserve berries longer by removing green parts and also soaking them in water with a little apple cider vinegar. In addition, buy hermetically sealed containers made of good quality plastic or glass.

Možete napraviti jednostavne promene na individualnom nivou, koje će učiniti svet boljim mestom za život

„Kuvanje bez otpada“ je popularna vežba dekonstruisanja naših prethodno usvojenih ideja o tome kako izgleda proces spremanja hrane u kuhinji. Recimo, jedan od najelegantnijih primera za sastojke koji se mogu koristiti na „milion“ različitih načina je Aquafaba. Ostatak tečnosti u vašim konzervama sa leblebijom ili pasuljom, koji ste verovatno bacili u odvod, zapravo je tečno zlato. Da li ste znali da ga možete koristiti kao zamenu za jaja za pravljenje veganskih deserta, majoneza, pa čak i koktela?

Skoro svako lisnato zeleno povrće može se „spasiti“ uz pomoć šake kockica leda i malo vode. Ako primetite da vaša bujna zelena salata kreće da propada, primenite savete sestara kuvarica Mei i Irene Li, sa adresama u Glazgovu i Bostonu. One su izdale i kuvar u junu prošle godine, po imenu „Savršeno dobra hrana: potpuno ostvariv pristup kuvanju bez otpada“, koji demistifikuje ideju o kuvanju bez otpada i čini je pristupačnom skoro svima.

Takođe, govoreći o uštedi hrane pre nego što se pokvari, setite se da dovoljno koristite svoj zamrzivač! Postoji toliko mnogo stvari koje možete da zamrznete i sačuvate, a među njih spada i zamrzavanje svežeg začinskog bilja u posudama za led. I, naravno, uvek je pravo vreme za eksperimentisanje s novim receptima!

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„Cooking without waste” is a popular exercise in deconstructing our previously adopted ideas about what the process of food preparation in the kitchen looks like. Let’s say, one of the most elegant examples of ingredients that can be used in a „million” different ways is Aquafaba. The rest of the liquid in your cans of chickpeas or beans, which you probably throw down the drain, is actually liquid gold. Did you know that you can use it as an egg substitute to make vegan desserts, mayonnaise and even cocktails?

Almost any leafy green vegetable can be „saved” with a handful of ice cubes and a little water. If you notice that your lush green salad is starting to go bad, apply the advice of chef-sisters Margaret and Irene Lee, with addresses in Glasgow and Boston. They also released a cookbook last June called Perfectly Good Food: A Totally Achievable Approach to Zero-Waste Cooking, which demystifies the idea of zero-waste cooking and makes it accessible to almost everyone.

Also, speaking of saving food before it spoils, remember to use your freezer enough! There are so many things you can freeze and preserve, and one of them is freezing fresh herbs in ice cube trays. And, of course, it is always a good time to experiment with new recipes!

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You can make simple changes on an individual level that will make the world a better place to live

Krenite na šumsko uranjanje

Iako u prvi mah asocira na kupanje, reč je o šetnjama kroz šume za koje se veruje da imaju isceliteljsko dejstvo

Svakodnevno smo izloženi stresu i mentalnom, odnosno fizičkom naporu, a sve više smo se udaljili od prirode. Nažalost, takva navika je uzela danak i zato se danas veliki broj ljudi suočava sa raznim tegobama, a čini se da nikada nismo više pričali o blagostanju i mentalnom, odnosno duhovnom zdravlju.

U poslednje vreme, iako sam termin nije novina, mnogo se priča o tzv. „forest bathing"-u. Iako u prvi mah asocira na kupanje, reč je o šetnjama kroz šume za koje se veruje da imaju isceliteljsko dejstvo. Bilo da „forest bathing" smatrate trendom u fitnesu ili praksom svesnosti o svom telu – činjenica je da daje efekte.

Termin se pojavio u Japanu 1980-ih godina prošlog veka, kao fiziološka i psihološka vežba nazvana šinrin-joku (shinrin-yoku), što označava „šumsko kupanje" ili „uranjanje u atmosferu šume".

Svrha ove vežbe ili rituala, kako god ga nazvali, bila je dvostruka: ponuditi radnicima „ekološki protivotrov" zbog izgaranja na poslu usled tehnološkog buma u Japanu, ali i inspirisati stanovnike Zemlje izlazećeg sunca da se ponovo povežu sa šumama – i zaštite ih.

GN

Experience Forest Immersion

Although at first it is associated with bathing, it is about walks through forests that are believed to have a healing effect

We are exposed to stress, and mental and physical efforts every day, and we have become more and more distant from nature. Unfortunately, such a habit has taken its toll and that is why today a large number of people are facing various ailments. It seems that we have never talked more about well-being and mental, i.e. spiritual health.

Recently, although the term itself is not new, there has been a lot of talk about the so-called „forest bathing". Although at first it is associated with bathing, it is about walks through forests that are believed to have a healing effect. Whether you consider forest bathing a fitness trend or a body awareness practice, the fact is that it works.

The term appeared in Japan in the 1980s, as a physiological and psychological exercise called shinrin-yoku, which means „forest bathing" or „immersion in the atmosphere of the forest".

The purpose of this exercise, or ritual, whatever you call it, was two-fold: to offer workers an „ecological antidote" to burnout from Japan's tech boom, but also to inspire the residents of the Land of the Rising Sun to reconnect with forests—and protect them.

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GREENNEWS

Japanci su, inače, prilično brzo prihvatili ovaj oblik ekološke terapije, te su tokom 1990-ih godina istraživači počeli da proučavaju fiziološke prednosti „forest bathing“-a, pružajući uvide u nauku koja podržava ono što znamo i po rođenju: vreme provedeno u prirodi je dobro, lekovito za nas.

Naravno, potreba za „lečenjem prirodom“ je svojstvena svakom čoveku, ali se čini da se – tradicionalno – više manifestovala na Istoku. Onda su, vremenom, mnoge druge kulture (uključujući zapadne nacije) prepoznale važnost sveta prirode za ljudsko zdravlje.

Shodno tome, „forest bathing“ odavno nije samo praksa za ljubitelje divljine, već može biti reč i o jednostavnom hodanju kroz šumu, u bilo kom prirodnom okruženju. Fokus je na svesnom povezivanju sa svetom oko nas.

NAJLEPŠE „FOREST BATHING“ OAZE NA SVETU

Recimo, u Njujorku postoji Adirondack Park, sa stazama za pešačenje dugim više od 320 kilometara, koji je ujedno najveće zaštićeno područje u celim Sjedinjenim Državama. Prirodne zimzelene biljke koje ga krase su istovremeno i aromatične, te oslobađaju visok udeo fitoncida – esencijalnih ulja koja se prenose vazduhom i doprinose prirodnom jačanju imuniteta. Zdravstvene prednosti „kupanja“ fitoncidima mogu trajati nedeljama, dok su zimzelene iglice bora ili smrče bogate antioksidansima i vitaminom C, i mogu se potopiti u vodi i pijuckati kao čaj.

Ako vas i dalje zanima „forest bathing“, ovom prilikom vas vodimo i na Kostariku. Sa više od 50 procenata zemlje pokrivene šumom, ta egzotična država je raj za „kupanje u šumi“. Skoro šest procenata svetskog biodiverziteta se nalazi baš tu, tako da – bilo da lutate kroz šume maglovitog Monteverdea ili pešačite preko visećih mostova nadomak vulkana Arenal – dobićete svoju „dnevnu dozu“ ovog lekovitog rituala. Takođe, možete se prijaviti

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The Japanese, by the way, were quick to embrace this form of environmental therapy, and in the 1990s researchers began studying physiological benefits of „forest bathing”, providing insights into the science that supports what we know from birth: time spent in nature is good and healing for us.

Naturally, the need for „healing with nature” is inherent in every human being, but it seems that - traditionally - it has been manifested more in the East. Then, over time, many other cultures (including Western nations) have recognized the importance of the natural world to human health.

Accordingly, „forest bathing” has long been not only a practice for lovers of the wild, but can also be a matter of simply walking through the forest, in any natural environment. The focus is on a conscious connection with the world around us.

THE MOST BEAUTIFUL „FOREST BATHING” OASES IN THE WORLD

For example, in New York there is the Adirondack Park, with more than 200 miles of hiking trails, which is also the largest protected area in the entire United States. The natural evergreen plants that adorn it are also aromatic and release a high proportion of phytoncides - essential oils that are transmitted through the air and contribute to the natural strengthening of immunity. The health benefits of „bathing” in phytoncides can last for weeks, while evergreen pine or spruce needles are rich in antioxidants and vitamin C, and can be steeped in water and sipped like tea.

If you are still interested in „forest bathing”, on this occasion we will take you to Costa Rica. With more than 50 percent of its territory covered by forests, the exotic country is a „forest bathing” paradise. Nearly six percent of the world’s biodiversity is found right here, so whether you are wandering through the forests of misty Monteverde or hiking across suspension bridges near Arenal Volcano, you will get your „daily dose” of this healing ritual. You can also sign up for organized tourist tours, i.e. walks through the forest with a local expert. Manuela Siegfried is the first guide certified by

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organizovane turističke ture, odnosno šetnje kroz šumu sa lokalnim stručnjakom. Manuela Zigfrid je prvi vodič sa sertifikatom Udruženja za prirodu i šumsku terapiju u Kostariki.

I svakako, bio bi greh da ne pomenemo Novi Zeland, kada govorimo o prirodnim lepotama, zelenilu, vodama i šumama. Obavezno je posetiti šumu Waipoua, gde se nalazi najstarije i najveće kauri drveće na planeti.

Za narod Maora, kauri je sveto drvo, koje se smatra „zaštitnikom šume". Kako se smenjuju dan i noć, tako i ovaj poseban ritual na Novom Zelandu prate pesme i priče Maora. Naposletku, ali ništa manje fascinantna, tu je i Kenija – koja donosi dašak istočnoafričke kulture i lepote. U lancu Matthews, u okrugu Laikipia u dolini Rift, drevne šume su dom endemskih biljaka, kedra, divljih orhideja, više od 350 vrsta ptica... Vođene šumske šetnje, iz šumskog kampa Kitič, organizuju lokalni Samburu tragači koji dobro poznaju zvukove, mirise i prizore šume.

the Association for Nature and Forest Therapy in Costa Rica.

And certainly, it would be a sin not to mention New Zealand, when we talk about natural beauty, greenery, waters and forests. One has to visit Waipoua Forest, the home to the oldest and largest kauri trees on the planet.

For the Maori people, the kauri is a sacred tree, considered the „protector of the forests". As day and night alternate, this special ritual in New Zealand is accompanied by Maori songs and stories. Last, but not less fascinating is Kenya - which brings a touch of East African culture and beauty. In the Matthews Range, in the Laikipia District of the Rift Valley, the ancient forests are home to endemic plants, cedars, wild orchids, more than 350 species of birds... Guided forest walks, from the Kittich Forest Camp, are organized by local Samburu trackers who know the sounds, smells and scenes of the forest.

Migracija insekata na sever

Rezultati istraživanja pokazuju da su neke od zabeleženih vrsta bile retkost na južnoj obali pre jedne generacije, ali su sada postale uobičajene na severu

Istraživanja o divljim životinjama koje su sproveli ekolozi u poslednjih osam godina otkrila su da insekti migriraju na sever zbog klimatskih promena.

Na gradskoj farmi u Batu, 1.125 vrsta je zabeleženo između Tvertona i Sautdauna, od kojih su 30 nove sorte.

Rezultati istraživanja pokazuju da su neke od zabeleženih vrsta bile retkost na južnoj obali pre jedne generacije, ali su sada postale uobičajene na severu Somerseta.

Majk Vilijams, ekolog i poverenik, rekao je da su insekti važne indikatorske vrste koje pomažu ekolozima da razumeju realnost promene klime u našem prirodnom svetu.

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Migration of Insects to the North

Research results show that some of the recorded species were a rarity on the south coast a generation ago, but have now become common in the north

Wildlife research carried out by ecologists over the past eight years have revealed that insects are migrating north due to climate change.

At Bath City Farm, 1,125 species have been recorded between Twerton and Southdown with 30 of those being new varieties.

Research results show that some of the recorded species were a rarity on the south coast a generation ago, but have now become common in the north of Somerset.

Mike Williams, an ecologist and trustee, said that insects were important indicator species that helped ecologists understand the reality of climate change in our natural world.

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Pauk osa šalje poruku

Pre tri godine, prepoznatljivi pauk osa je prvi put snimljen na tom mestu, a sada je to uobičajena pojava.

“Devedesetih sam video pauka osu samo na južnoj obali Engleske, u Dorsetu. Tada nikada ne bih zamislio da će jednog dana biti pronađeni čak na severu kao Bat. Populacije leptira su takođe bile pogođene zbog suvog proleća i vlažnog leta”, kaže stručnjak i poručuje ljudima da slušaju zvuk klimatskih promena. GN

The Spider Wasp Sends a Message

Three years ago, the distinctive Wasp Spider was recorded for the first time at the site, and now it is a common occurrence.

„In the 1990s I only ever saw the Wasp Spider on the south coast of England, in Dorset. I would never have imagined then that one day they would be found as far north as Bath. Butterfly populations were also affected due to the dry spring and wet summer”, the expert says, and tells people to listen to the sound of climate change. GN

Ekološki prihvatljive bašte

One postaju platno za ekološku kreativnost, harmoničnu sintezu oblika i funkcija koje poboljšavaju prirodnu suštinu naših spoljnih oaza

Ecologically Acceptable Gardens

They become a canvas for ecological creativity, a harmonious synthesis of form and function that enhances the natural essence of our outdoor oases

In the realm of garden design, the humble garden shed is undergoing a transformation that goes beyond its traditional purpose of storing tools. Contemporary garden buildings, which stand out for their ecological versatility, set new standards for sustainable design, showing how architecture and aesthetics can work together to create innovative, practical and aesthetically satisfactory solutions.

One of the exciting trends in this environmentally conscious evolution is the integration of green roofs into garden houses. This approach not only expands the covered areas, but also preserves significant areas for planting. The selection of native plant species ensures harmony with local conditions, as exemplified by a recently completed green roof project decorated with hardy native wildflowers on bike storage and rubbish area.

In a step beyond green roofs, some garden facilities explore the concept of an earth shelter. These structures, partially buried in the terrain, unobtrusively blend into the landscape, allowing the garden to spread over them. This idea may remind us of hobbit houses or contemporary structures with a green roof, which at the same time serve as a picnic spot. Although they may not be the most

Odabir autohtonih biljnih vrsta obezbeđuje harmoniju sa lokalnim uslovima, što je ilustrovano nedavno izrađenim projektom zelenog krova ukrašenog otpornim domaćim divljim cvećem na biciklističkom skladištu i prostoru za smeće

U domenu dizajna bašti, skromna baštenska kućica doživljava preobražaj koji prevazilazi njenu tradicionalnu svrhu skladištenja alatki. Savremene baštenske zgrade, koje se ističu ekološkom svestranosti, postavljaju nove standarde održivog dizajna, pokazujući kako arhitektura i estetika mogu zajedno stvoriti inovativna, praktična i estetski zadovoljavajuća rešenja.

Jedan od uzbudljivih trendova u ovoj ekološki svesnoj evoluciji je integracija zelenih krovova u baštenske kućice. Ovaj pristup ne samo da proširuje natkrivene prostore, već i očuva značajne površine za sadnju. Odabir autohtonih biljnih vrsta obezbeđuje harmoniju sa lokalnim uslovima, što je ilustrovano nedavno izrađenim projektom zelenog krova ukrašenog otpornim domaćim divljim cvećem na biciklističkom skladištu i prostoru za smeće.

U koraku dalje od zelenih krovova, neki baštenski objekti istražuju koncept zemljanog skloništa. Ove strukture, delimično ukopane u teren, nenametljivo se stapaju sa pejzažem, omogućavajući bašti da se širi preko njih. Ova ideja može nas podsetiti na kuće hobita ili savremene strukture sa zelenim krovom, koje istovremeno služe kao piknik mesto. Iako možda nisu najekonomičniji izbor, pristupačnost se postiže kroz upotrebu recikliranih materijala i spremnost za samostalan rad, što se ilustruje letnjikovcem u uglu dvorišta sa prirodnom travnatom krovnom padinom i toboganom za decu koji vodi do nižih delova bašte.

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Alternatively, recycled wood and other materials can be used to build garden sheds, adding a dose of eco-friendly creativity to the design process

economical choice, accessibility is achieved through the use of recycled materials and willingness to work independently, which is illustrated by a summer house in the corner of the yard with a natural grass roof slope and a children's slide that leads to lower parts of the garden.

For those who strive for organic integration, natural materials such as mud, adobe or straw bales offer unique and sustainable options. Walls built from these materials not only provide functionality, but also authentic aesthetics. Alternatively, recycled wood and other materials can be used to build garden sheds, adding a dose of eco-friendly creativity to the design process.

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Alternativno, reciklirano drvo i drugi materijali mogu se iskoristiti za izgradnju baštenskih kućica, dodajući dozu ekološke kreativnosti u procesu dizajniranja

Za one koji teže organskoj integraciji, prirodni materijali poput blata, adobe-a ili baliranog slame nude jedinstvene i održive opcije. Zidovi izgrađeni od ovih materijala ne samo da pružaju funkcionalnost, već i autentičnu estetiku. Alternativno, reciklirano drvo i drugi materijali mogu se iskoristiti za izgradnju baštenskih kućica, dodajući dozu ekološke kreativnosti u procesu dizajniranja.

Razmišljanje koje prelazi tradicionalne pravougaone oblike, uključujući upotrebu zaobljenih ili zakrivljenih oblika, dodatno unapređuje sposobnost baštenskih kućica da se stopi sa prirodnim okruženjem. Fleksibilnost koju pružaju materijali poput blata, adobe-a ili balirane slame, zajedno sa prirodnim završnim slojem, otvara nove mogućnosti za oblikovanje, čineći strukturu neprimetnim delom organskog toka bašte.

Kohezivno razmišljanje je ključno u dizajnu bašte i kućica. Razmatranje pozicije strukture ide dalje od puke logistike, zahtevajući holistički pristup koji razmatra uticaj na okolne prostore i biljni svet. Integrisane dizajnerske funkcije, poput prikupljanja kišnice, vertikalnih bašti ili ugrađenih staništa za divlje životinje, podižu baštensku kućicu izvan uloge pukog objekta za skladištenje, pretvarajući je u simbiotički element koji obogaćuje kako baštu, tako i njene stanovnike.

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The selection of native plant species ensures harmony with local conditions, as exemplified by a recently completed green roof project decorated with hardy native wildflowers on bike storage and rubbish area

Thinking beyond traditional rectangular shapes, including the use of rounded or curved shapes, further enhances the ability of garden sheds to blend into the natural environment. The flexibility provided by materials such as mud, adobe or straw bales, together with a natural final layer, opens up new possibilities for the design, making the structure an inconspicuous part of the organic flow of the garden.

Cohesive thinking is a key in garden and cottage design. Consideration of a structure's position goes beyond mere logistics, requiring a holistic approach that considers the impact on surrounding spaces and plant life. Integrated design features, such as rainwater harvesting, vertical gardens or built-in wildlife habitats, elevate the garden shed beyond its role as a mere storage facility, turning it into a symbiotic element that enriches both the garden and its inhabitants.

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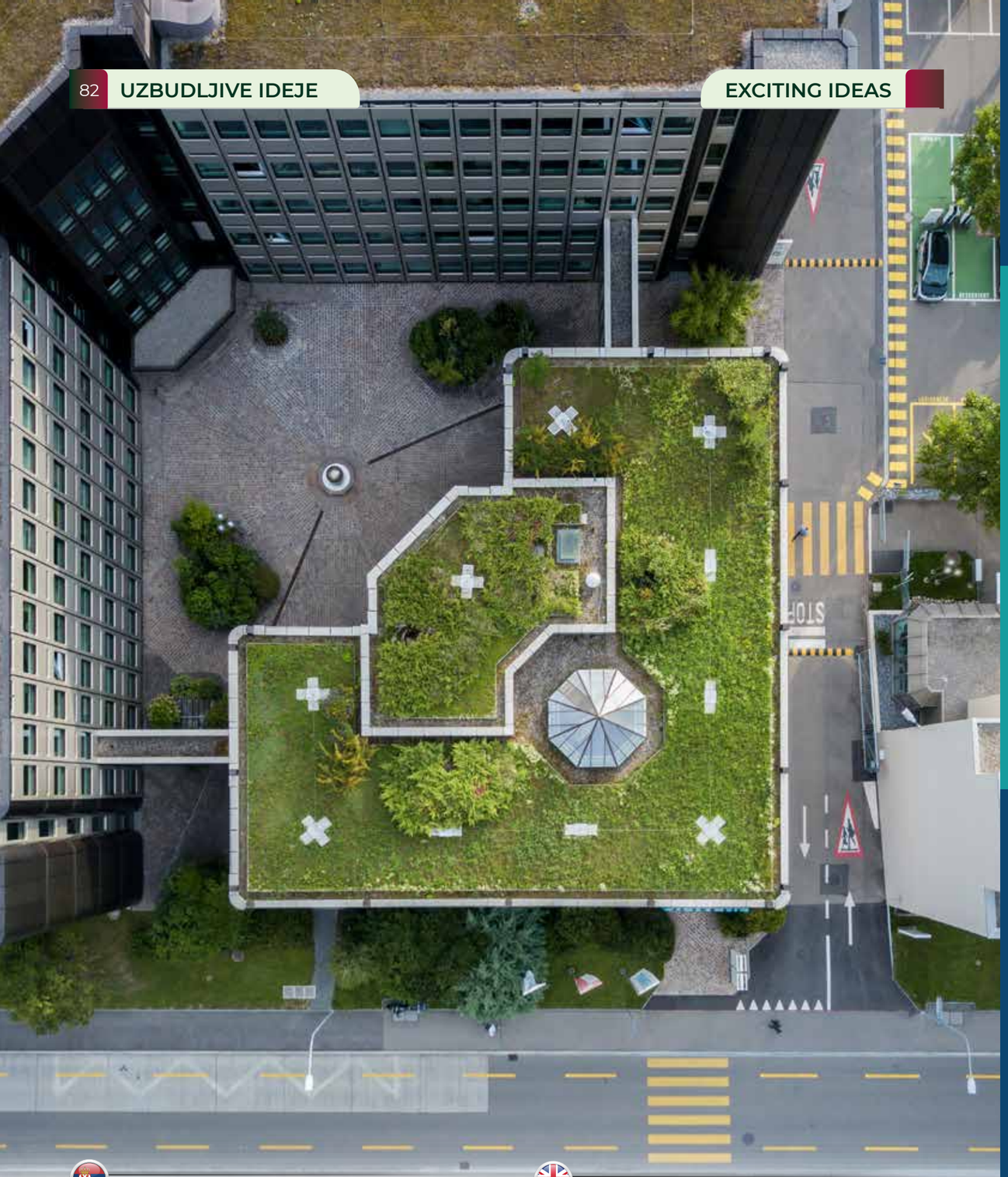

U stalno evoluirajućem svetu dizajna bašte, ovi inovativni pristupi pokazuju da spoljne strukture ne moraju stajati po strani, već mogu aktivno doprineti lepoti i održivosti prostora za baštovanstvo. Dok ponovo razmišljamo o baštenskim kućicama, one postaju platno za ekološku kreativnost, harmoničnu sintezu oblika i funkcija koje poboljšavaju prirodnu suštinu naših spoljnih oaza. DGN

In the ever-evolving world of garden design, these innovative approaches show that outdoor structures do not have to stand aside, but can actively contribute to the beauty and sustainability of a gardening space. As we rethink garden sheds, they become a canvas for ecological creativity, a harmonious synthesis of form and function that enhances the natural essence of our outdoor oases. DGN

Infrastruktura za ekstremne vremenske uslove

Najgori scenario je kvar kritične infrastrukture tokom teških vremenskih prilika, uključujući sisteme za odvodnjavanje i vodu, morske zidove i električne mreže, što sve može zaustaviti društvo i dovesti do humanitarne krize

Kao rezultat klimatskih promena u budućnosti bismo mogli da se součimo sa ekstremnim vremenskim prilikama, zbog čega ćemo već sada morati da počnemo da razmišljamo o održivoj infrastrukturi na predstojeće izazove.

Međuvladin panel za klimatske promene definisao je ekstremne vremenske prilike kao “pojavljivanje vrednosti vremenske ili klimatske varijable iznad praga koji se nalazi blizu kraja opsega posmatranja za tu varijablu”.

Prema Šestom izveštaju o proceni IPCC-a, klimatske promene su već dovele do ekstremnih klimatskih uslova širom sveta, uključujući toplotne talase, obilne padavine, suše i tropske ciklone. Ako se emisije gasova staklene bašte ne obuzdaju u dovoljnoj meri, verovatno će se i dalje dešavati ekstremni vremenski uslovi.

Veliki deo infrastrukture izgrađen je da izdrži normalne vremenske uslove, uz povremene teške događaje, ali i dalje u okviru standardnog opsega. Na primer, most može biti projektovan za 100 godina upotrebe i četiri teške vremenske prilike godišnje. Međutim, očigledno će biti problema ako bude osam teških vremenskih pojava godišnje umesto četiri.

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Infrastructure for Extreme Weather Conditions

The worst-case scenario is the failure of critical infrastructure during severe weather conditions, including drainage and water systems, seawalls and power grids, all of which can bring society to a standstill and lead to a humanitarian crisis

As a result of climate change, we could face extreme weather in the future, which is why we need to start thinking about sustainable infrastructure for the upcoming challenges.

The Intergovernmental Panel on Climate Change defined extreme weather conditions as „the occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable”.

According to the IPCC’s Sixth Assessment Report, climate change has already led to extreme weather conditions around the world, including heat waves, heavy rainfall, droughts and tropical cyclones. If greenhouse gas emissions are not sufficiently curbed, extreme weather events are likely to continue.

A large part of the infrastructure is built to withstand normal weather conditions, with occasional severe events, but still within the standard range. For example, a bridge may be designed for 100 years of use and four severe weather events per year. However, there will obviously be problems if there are eight severe weather events per year instead of four.

The worst-case scenario is the failure of critical infrastructure during severe weather conditions, including drainage and water systems, seawalls and power grids, all of which can bring society to a standstill and lead to a humanitarian crisis.

AUSTRALIJSKI EKSTREM

Na primer, istočna Australija se suočila sa razornim poplavama 2021 - 2022. godine, gde veliki deo lokalne infrastrukture nije bio u stanju da izdrži obilne padavine koje su se desile, što je dovelo do širokog razaranja širom Kvinslenda i Novog Južnog Velsa.

Pored toga, Kraljevska komisija za nacionalne aranžmane za prirodne katastrofe osnovana je nakon požara 2019-20, sa ciljem da se daju preporuke za reformu odgovora na prirodne katastrofe u Australiji.

VIJADUKT MIJO U FRANCUSKOJ

Još jedan primer infrastrukture otporne na vremenske prilike je francuski vijadukt Mijo, najviši most na svetu.

Vijadukt Mijo je izgrađen da izdrži jake vetrove i zemljotrese, sa fleksibilnim dizajnom koji mu omogućava da se ljulja i prilagođava silama koje deluju na njega.

Most takođe uključuje sistem protiv zaleđivanja, uključujući funkciju grejanja kako bi se sprečilo nakupljanje leda na površini mosta. Izgrađen je da ublaži gužve na putu od severne Francuske do obale Sredozemnog mora, i predstavlja čudo inženjeringa i vremenskih prilika otpornih na vremenske prilike.

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Australia faced devastating floods in 2021 - 2022, where much of the local infrastructure was unable to withstand the heavy rainfall that occurred

THE AUSTRALIAN EXTREME

For example, eastern Australia faced devastating floods in 2021 - 2022, where much of the local infrastructure was unable to withstand the heavy rainfall that occurred, leading to widespread destruction across Queensland and New South Wales.

THE MILLAU VIADUCT IN FRANCE

Another example of climate-resilient infrastructure is the French Millau Viaduct, the highest bridge in the world.

The Millau Viaduct was built to withstand high winds and earthquakes, with a flexible design that allows it to sway and adapt to the forces acting on it.

The bridge also includes an anti-icing system, with a heating function to prevent ice from building up on the bridge surface. Built to relieve congestion on the road from northern France to the Mediterranean coast, it is a marvel of engineering and weather resiliance.

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HOLANDSKI PRIMER ODBRANE

Postoje neverovatni primeri infrastrukture otporne na klimu širom sveta, a možda je najistaknutiji holandski Delta Vorks. Delta Vorks, izgrađen između 1954. i 1997. godine, izgrađen je da zaštiti kopno jugozapadne Holandije od poplava izazvanih olujama u Severnom moru.

Veliki deo Holandije je ispod nivoa mora, a sa raznovrsnošću evropskih reka koje teku kroz zemlju do mora, uvek je prisutna velika količina vode. Sastoji se od 13 brana i sistema brana, nasipa i barijera od olujnih udara, Delta Vorks efektivno skraćuje obalu Holandije, smanjujući dužinu nasipa koji štite kopno od mora.

Ova čuda inženjerstva su dokaz da smo dovoljno sposobni da izgradimo infrastrukturu koja može da izdrži ekstremne vremenske uslove.

THE DUTCH EXAMPLE OF DEFENSE

There are incredible examples of climate-resilient infrastructure around the world, perhaps the most notable being the Dutch Delta Works. The Delta Works, being built between 1954 and 1997, was designed to protect the mainland of south-western Holland from flooding caused by the North Sea storms.

A large part of the Netherlands is below sea level, and with various European rivers that flow through the country to the sea, there is always a large amount of water present. Consisting of 13 dams and a system of dams, embankments and storm surge barriers, the Delta Works effectively shortens the Dutch coastline, reducing the length of the embankments that protect the land from the sea.

These engineering marvels are a proof that we are capable enough to build infrastructure that can withstand extreme weather conditions.

GREENNEWS

Tkanina od plute

Cork Fabric

Ono što se ističe kao glavna prednost je šira primena u modi, bez ugrožavanja drveća, i činjenica da služi kao „veganska koža“, odnosno alternativa životinjskoj

What stands out as the main advantage is its wider application in fashion, without endangering trees, and the fact that it serves as „vegan leather”, that is, an alternative to animal leather

U vreme kada smo prazasićeni veštačkim materijalima i sve izloženiji zagađenju – posebno iz modne, automobilske i prehrambene industrije, logično je da imamo potrebu da se „vratimo“ Majci prirodi. Ali, tako da je ne ugrožavamo, već iskoristimo njene potencijale na održiv, ekološki način. U moru raznih materijala, počev od pamuka, preko konoplje i lana, pa do vune, kašmira i drveta (korišćenog sve više i u gradnji), posebno se izdvojio jedan materijal: pluta.

Naravno, znamo da pluta dolazi od drveta, ali koliko je zaista održiva i da li joj je mesto u našim „etičkim“ ormarima? Ono što se ističe kao glavna prednost je šira primena u modi, bez ugrožavanja drveća, i činjenica da služi kao „veganska koža“, odnosno alternativa životinjskoj. Pluta se, inače, koristi hiljadama godina unazad, a nama je danas verovatno najpoznatija u proizvodnji čepova za flaše ili potpetica za sandale.

U prošlosti, ljudi su dugo bili fascinirani ovim prirodnim i veoma korisnim materijalom, ali je upotreba plute - kao savitljive tkanine - relativno nova. Prirodna tkanina od plute, poznata i kao „pluta koža“, pravi se od strugotine dobijene direktno sa drveta hrasta (Quercus suber). Zimzeleno drvo hrasta srednje veličine je poreklom iz severozapadne Afrike i jugozapadne Evrope (Španija, Francuska, Italija, Portugal, Alžir, Tunis i Maroko). Većina plute na tržištu danas je iz Portugala, svetskog lidera u proizvodnji i „domu“ najveće kolekcije hrastove plute. Ova vrsta drveta je jedinstvena i veoma vredna, ima tamno sivu koru koja je debela i neravna, a unutar koje se nalazi pluta.

KAKO SE PRAVI TKANINA OD PLUTE

Proces dobijanja tkanine od plute počinje „berbom“, gde se spoljašnji deo kore ljušti, da bi se „otkrila“ unutrašnja pluta. Ovo se, pritom, može učiniti bez oštećenja samog drveta jer je spoljna kora u stanju da se sama regeneriše! U stvari, neki stručnjaci su

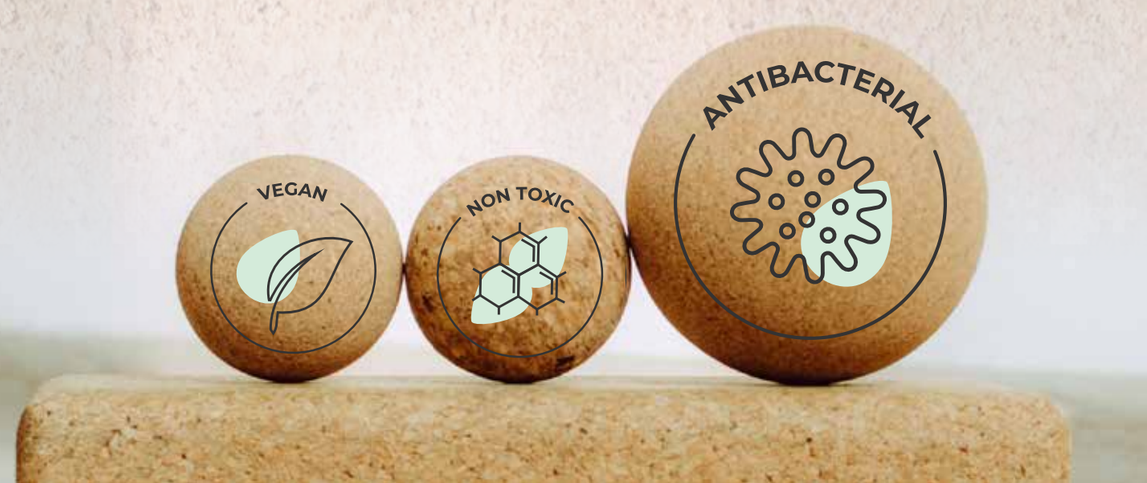
At the time when we are saturated with artificial materials and increasingly exposed to pollution - especially from the fashion, automotive and food industries, it is logical that we have a need to „return” to Mother Nature but not to endanger it, but to use its potential in a sustainable, ecological way. In the sea of various materials, starting from cotton, over hemp and linen, to wool, cashmere and wood (used more and more in construction), one material has stood out in particular: cork.

Naturally, we know that cork comes from wood, but how sustainable is it really, and does it have a place in our „ethical” wardrobes? What stands out as the main advantage is wider application in fashion, without endangering trees, and the fact that it serves as „vegan leather”, that is, an alternative to animal leather. Cork, by the way, has been used for thousands of years, and is probably best known to us today in the production of bottle stoppers or sandal heels.

In the past, people were long fascinated by this natural and very useful material, but the use of cork - as a flexible fabric - is relatively new. Natural cork fabric, also known as „cork leather”, is made from shavings obtained directly from the oak tree (Quercus suber). A medium-sized evergreen oak tree is native to northwestern Africa (Algeria, Tunisia, and Morocco), and southwestern Europe (Spain, France, Italy, and Portugal). Most of the cork on the market today is from Portugal, the world leader in production and „home” of the largest collection of oak cork. This type of tree is unique and very valuable, it has a dark gray bark that is thick and uneven, inside which there is cork.

HOW IS CORK FABRIC MADE?

The process of obtaining cork fabric begins with „harvesting”, where the outer part of the bark is peeled off, to „reveal” the inner cork. This can be done without



GREENNEWS

Pluta se koristi hiljadama godina unazad, a nama je danas verovatno najpoznatija u proizvodnji čepova za flaše ili potpetica za sandale

sugerisali da sakupljanje plute može čak produžiti životni vek kore.

Kada drvo napuni 25 godina, pluta se može sakupljati svakih 9 do 12 godina bez nanošenja trajnog oštećenja kori. Kod prosečnog hrasta, pluta se može dobiti kroz 16 sesija berbe. Ovde je, takođe, bitno pomenuti da nije potrebno koristiti mašinu, već samo alat, a nakon skupljanja – pluta se ostavlja na sušenje šest meseci. Uglavnom je umotana, dok ne postane izuzetno ravna i tanka.

ZA ŠTA SE NAJVIŠE KORISTI OVAJ MATERIJAL

Pluta se koristi za sve vrste stvari: podove od plute, izolaciju, čepove za boce vina, „ekološki prihvatljive“ prostirke za jogu i, sve više, za održive modne artikle kao što su novčanici, tašne, cipele.

Glavna svojstva plute – lagan i relativno elastičan materijal – jesu razlog zašto se tako široko primenjuje u raznim industrijama. Pritom, u pitanju je materijal koji nije zapaljiv, otporan je na mrlje i ogrebotine, i slično vosku – odbija vodu.

KOLIKO JE PLUTA ECO-FRIENDLY

Dovoljno je reći da, dobijanje plute ne samo što ne oštećuje drveće, već je i manje štetno po planetu od proizvodnje kože. Istina je da u procesu dobijanja ovog materijala dolazi do nekog procenta trošenja

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Cork has been used for thousands of years, and is probably best known to us today in the production of bottle stoppers or sandal heels

damaging a tree itself because the outer bark is able to regenerate itself! In fact, some experts have suggested that harvesting cork can even extend the life of the bark.

Once a tree is 25 years old, cork can be harvested every 9 to 12 years without causing permanent damage to the bark. In an average oak, cork can be obtained through 16 harvesting sessions. Here, it is also important to mention that it is not necessary to use a machine, but only a tool, and after collection - cork is left to dry for six months. It is mostly rolled until it becomes extremely flat and thin.

WHAT IS THIS MATERIAL MOSTLY USED FOR?

Cork is used for all sorts of things: cork flooring, insulation, wine bottle stoppers, „eco-friendly” yoga mats and, increasingly, sustainable fashion items like wallets, purses, and shoes.

The main properties of cork - a light and relatively elastic material - are the reason why it is so widely used in various industries. At the same time, it is a non-flammable material, it is resistant to stains and scratches, and similarly to wax, it repels water.

HOW IS CORK ECO-FRIENDLY?

It is enough to say that obtaining cork does not damage trees, and it is also less harmful to the planet than leather production. It is true that in the process of obtaining this material a certain percentage of water is wasted but the water can be returned to the Earth again, without damage.

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vode, ali se voda nanovo može vratiti Zemlji, bez oštećenja.

Jedna od glavnih prednosti upotrebe plute, ili većine materijala na bazi drveća, jeste njena sposobnost da ukloni CO_2 iz naše atmosfere. Prema jednoj studiji koja je ispitivala čepove za vino od plute, ispostavilo se da je količina izdvojenog ugljenika, zapravo, bila veća od emisija potrebnih za proizvodnju i transport čepova od plute - i same flaše vina! To znači da je, slučaju vinske boce, upotreba plute smanjila njene ukupne emisije (bez vina) do 40 odsto.

Kada razmišljamo o održivosti plute, takođe je važno razmotriti širu sliku (tj. njeno mesto u našem svetu). Hrast plute raste u „mozaiku“ drugih vrsta drveća i u oblastima sveta poznatim po raskošnom biodiverzitetu. S tim u vezi, ističemo da portugalska „šuma plute“ (gde se nalazi više od polovine svetske plute) pruža stanište iberijskom risu, koji je - sa manje od 500 predstavnika vrste - najugroženija mačka na svetu.

One of the main benefits of using cork, or most tree-based materials, is its ability to remove CO_2 from our atmosphere. According to one study that examined cork wine stoppers, it turned out that the amount of carbon sequestered was actually greater than the emissions required to manufacture and transport the cork stoppers - and a wine bottle itself! This means that, in the case of a wine bottle, the use of cork reduced its total emissions (without wine) by up to 40 percent.

When we think about the sustainability of cork, it is also important to consider the bigger picture (i.e. its place in our world). A cork oak grows in a „mosaic” of other tree species and in areas of the world known for their rich biodiversity. In this regard, we point out that the Portuguese „cork forest” (where more than half of the world’s cork is found) provides a habitat for the Iberian lynx, which - with fewer than 500 representatives of the species - is the most endangered cat in the world.

GREENNEWS

Ružičasta jezera

Jezero u Nacionalnom rezervatu divljih životinja Kealia Pond na Havajima doživelo je misterioznu transformaciju u oktobru, pretvarajući se u jezero živopisno roze boje, koja bi mogla parirati Barbinom svetu snova.

Laboratorijski testovi sprovedeni na Univerzitetu Havaja ukazali su na bakterije koje vole so kao verovatne umetnike iza ove nekonvencionalne kreacije.

Veruje se da je organizam odgovoran za ovaj fenomen halobakterija, vrsta arheje koja prosperira u vodenim telima sa visokim koncentracijama soli.

Druga prirodna ružičasta jezera rasprostranjena su širom sveta. Jezero Retba u Senegalu, Salinas de Torevijeha u Španiji i nekoliko jezera na jugu Zapadne Australije poprimili su ružičastu nijansu od svojih stalnih bakterija. A postoji i jedno u Srbiji, u okviru banje Pačir.

Iako jezera mogu izgledati upečatljivo, svako povećanje vode u boji Barbi može biti znak zagrevanja temperature i sušnijih uslova izazvanih klimatskim promenama. Ova dva uticaja bi mogla da učine vodu slanijom – tako da u Zapadnoj Australiji naučnici očekuju da će videti više ružičastih jezera, kaže Angus Lori, specijalista za ekologiju slanih jezera na Univerzitetu Mardok, Loren Smit i Entoni Panciji iz Australijske radiodifuzne korporacije (ABC) .

Ove vode sa visokim sadržajem slane vode mogle bi predstavljati nevolje životinjama poput ptica selica koje se oslanjaju na njih za hranu, iako se čini da ptice u jezeru Kealia nisu povređene promenom boje.

“Nepoznato je koliko brzo se ovi organizmi mogu prilagoditi ovom promenljivom okruženju“, kaže Lori.

Veruje se da je organizam odgovoran za ovaj fenomen halobakterija, vrsta arheje koja prosperira u vodenim telima sa visokim koncentracijama soli

It is believed that the organism responsible for this phenomenon is halobacteria, a type of archaea that thrives in bodies of water with high levels of salt

Pink Lakes

A lake at Hawaii’s Kealia Pond National Wildlife Refuge underwent a mysterious transformation in October, turning into a vivid pink colour that could rival Barbie’s dream world.

Laboratory tests conducted at the University of Hawaii pointed to salt-loving bacteria as probable artists behind this unconventional creation.

It is believed that the organism responsible for this phenomenon is halobacteria, a type of archaea that thrives in bodies of water with high levels of salt.

Other natural pink lakes are spread around the world. Lake Retba in Senegal, Salinas de Torrevieja in Spain and several lakes in southern Western Australia have taken on a pink hue from their resident bacteria. And there is one in Serbia, in Pačir Spa.

While the lakes may look impressive, any increase in Barbie-colored water could be a sign of rising temperatures and drier conditions caused by climate change. These two impacts could make the water more salty - so in Western Australia scientists expect to see more pink lakes, says Angus Lawrie, a salt lake ecology specialist at Murdoch University.

These waters with high levels of salt could cause problems for animals like migratory birds that rely on them for food, although it seems that birds at Kealia Pond National Wildlife Refuge are not harmed by the change of colour.

“ The unknown is how quickly these organisms can adapt to this changing environment“, says Lawrie.

REVOLUCIONARNO REŠENJE

U zavisnosti od lokacije i hidrologije jezera, klimatske promene mogu imati suprotan uticaj: sa naletima obilnih padavina, neka jezera koja su već ružičasta mogla bi da izgube deo svoje boje, kaže naučnik za životnu sredinu Tilo Masenbauer za ABC.

I dok neka vodena tela mogu tek postati ružičasta, suša izazvana klimatskim promenama može dovesti do toga da druga jednostavno presuše.

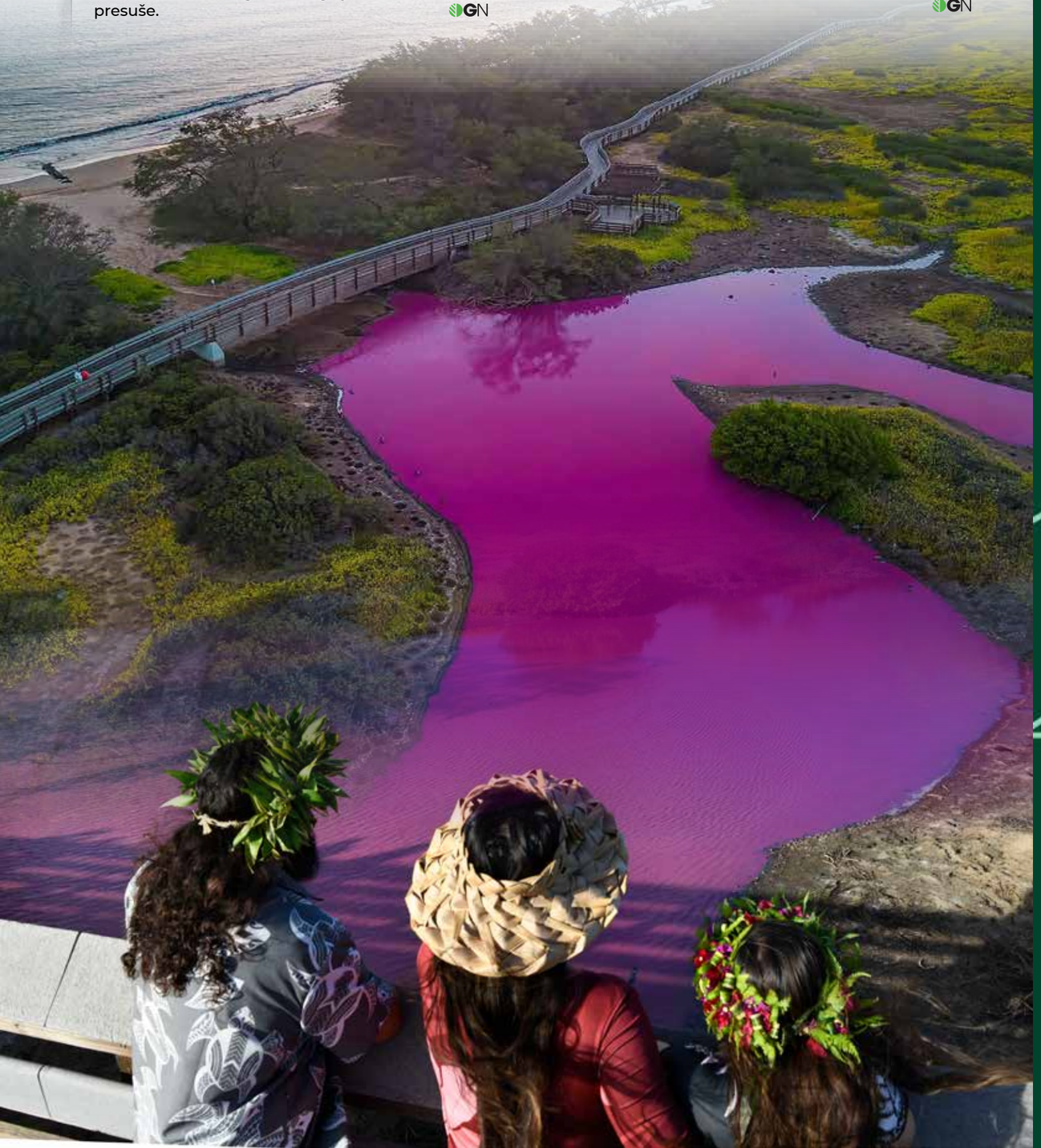
DGN

A REVOLUTIONARY SOLUTION

Depending on a lake's location and hydrology, climate change could have the opposite effect: with bouts of heavy rainfall, some lakes that are already pink could lose some of their color, an environmental scientist Tilo Massenbauer told ABC.

And while some lakes may just turn pink, drought caused by climate change may cause others to simply dry up.

DGN



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