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INTERVJU / INTERVIEW

DEKAN FAKULTETA  
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SUOSNIVAČ I DIREKTOR  
KOMPANIJE „KADENA PROPERTIES“

**Živorad Vasić**

A COFOUNDER AND DIRECTOR  
OF THE COMPANY KADENA PROPERTIES

**Globalno zagrevanje  
obara zastrašujuće  
rekorde**

**Global Warming  
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**PUT** ka održivoj  
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## Zelena budućnost Green Future

REČ UREDNIKA

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Dragi čitaoci,

S velikim zadovoljstvom vas pozdravljam u novom izdanju magazina Green News, vašeg vernog pratitelja u istraživanju obnovljivih izvora energije i borbi za očuvanje naše dragocene životne sredine. U ovom broju, duboko zaronjeni u teme održivosti, istražujemo ne samo tehnološke inovacije i naučne proboje, već i ljudske priče i inicijative koje daju novi zamah našoj borbi za zeleniju budućnost.

Dok se suočavamo sa sve ozbiljnijim posledicama klimatskih promena i neodrživog korišćenja resursa, Green News se predano posvećuje pružanju ne samo informacija, već i inspiracije. Verujemo da je put ka održivosti i čistijem okruženju put pun izazova, ali i prilika za zajedničko delovanje, inovacije i rast.

Zato vas pozivamo da se udobno smestite i uživate u čitanju ovog izdanja, nadajući se da će vam naše priče osvetliti put u održiviju budućnost i podstaknuti vas da se pridružite našem globalnom pokretu za zaštitu planete.

Sa iskrenom zahvalnošću što ste deo naše zajednice, želim vam ugodno čitanje i inspirativno iskustvo.

Sa poštovanjem,  
Olivera Krstić



Dear readers,

With great pleasure, I welcome you to the latest issue of Green News magazine, your faithful companion in exploring renewable energy sources and the fight to preserve our precious environment. In this edition, deeply immersed in sustainability topics, we delve not only into technological innovations and scientific breakthroughs but also into human stories and initiatives that propel our quest for a greener future.

As we face increasingly serious consequences of climate change and unsustainable resource use, Green News is dedicated to providing not only information but also inspiration. We believe that the path to sustainability and a cleaner environment is fraught with challenges but also opportunities for collective action, innovation, and growth.

Therefore, we invite you to settle in comfortably and enjoy reading this issue, hoping that our stories will illuminate the path to a more sustainable future and inspire you to join our global movement to protect the planet.

With sincere gratitude for being part of our community, I wish you pleasant reading and an inspiring experience.

Sincerely,  
Olivera Krstić



## Živorad Vasić

SUOSNIVAČ I DIREKTOR KOMPANIJE „KADENA PROPERTIES“

# Budućnost je u prostorima koji neguju društveni karakter

Mi vidimo „Kadena Properties“ kao predvodnika talasa razvoja projekata koji teže nečemu više od puke maksimizacije površine projekata



**Kada pričamo o pametnim gradovima, povezanosti i korisničkom iskustvu, aktivno radimo na tome da povežemo različite tehnologije iz svakodnevnog života sa korišćenjem naših objekata, kaže za naš magazin Živorad Vasić suosnivač i direktor kompanije „Kadena Properties“.**

**GN** *Možete li nam predstaviti neke od ključnih projekata koje kompanija Kadena Properties sprovodi kako bi unapredila održivost gradnje i života u gradovima?*

- Od projekata koji su trenutno u izgradnji posebno bih spomenuo Viva Residences na Zvezdari, kao i Victory Gardens na Čukarici koji svojim dizajnom stavljaju objekat u viši energetski razred od onog zahtevanog lokalnim propisima. Konkretno objekti su projektovani da ostvare „B“ energetski razred iako je propisima zahtevano manje. Kako se ovo odražava na održivost? To znači manji utrošak energije, manji „carbon footprint“ i naravno 15-20 odsto niže račune za energente koje će budući stanari plaćati usled bolje toplotne izolovanosti objekta u poređenju sa zahtevanim kriterijumima.

**GN** *Imajući u vidu važnost očuvanja naše planete, možete li nam objasniti na koji način Kadena Properties implementira obnovljive izvore energije u svoje građevinske projekte i koje inovativne tehnologije koristite kako biste smanjili ekološki uticaj vaše gradnje?*

- Mi u Kadenu volimo princip 3R – Reduce, Reuse i Recycle, i kao glavni princip trudimo se da uvek naši projekti idu ka što efikasnijoj i manjoj potrošnji energenata kako tokom izgradnje tako i u krajnjoj eksploataciji.

Ako bismo to morali da dodatno opišemo, rekli

bismo da volimo pasivne tehnologije koje nam obezbeđuju da trošimo manje enrgije bez uticaja na krajnji komfor. Ovakav princip je oslikan i na našem projektu Victory Gardens gde je tokom razvoja projekta implementirana:

- termoizolacija visokih performansi,
- upotreba trostrukih stakala na svim prozorima koji takođe poboljšavaju termalnu izolaciju i smanjuju zagađenje bukom u životnom prostoru,
- upotreba pasivnog zasenčenja u vidu eksternih zastora koje u letnjim mesecima pomaže sa hlađenjem prostora,
- upotreba LED svetala u celom objektu koji troše i do 10 puta manje energije u poređenju sa klasičnim svetiljkama,
- upotreba centralnog sistema za tretman vode koji omogućava korisnicima da na svakom točućem mestu imaju vrhunski kvalitet vode bez kamenca koji će buduće stanare rasteretiti od kupovine flaširane vode što smanjuje upotrebu plastike, a pritom će produžiti životni vek i efikasnost njihovih uređaja.

Takođe bih voleo da spomenem da naše nanovije projekte, čiji je razvoj u toku (a o kojima ne mogu danas da otkrijem više), razvijamo tako da ostvare LEED i WELL sertifikaciju, što će u slučaju WELL-a biti prvi takav stambeni projekat u regionu.

**GN** *Da li vaša kompanija podržava koncept pametnih gradova kroz primenu tehnologija poput Internet stvari (IoT) i pametnih senzora?*

- Kadena Properties dosta investira u tehnologiju. Mi volimo tehnologiju i u nju verujemo, baš kao i ceo koncept povezanosti koji u našim projektima izlazi iz okvira „Internet of things“.

Ono o čemu posebno vodimo računa jeste





## Živorad Vasić

A COFOUNDER AND DIRECTOR OF THE COMPANY KADENA PROPERTIES

# The Future is in Spaces That Nurture Social Character

We see Kadena Properties as the leader of a wave of project development that strives for something more than just maximizing the area of projects



**When we talk about smart cities, connectivity and user experience, we actively work to connect different technologies from everyday life with the use of our facilities, says Živorad Vasić, a co-founder and director of the company Kadena Properties.**

**GN Can you present us some of key projects Kadena Properties implements to improve the sustainability of construction and urban living?**

- Out of the projects that are currently under construction, I would especially like to mention Viva Residences in Zvezdara, as well as Victory Gardens in Čukarica, whose design places buildings in a higher energy class than that required by local regulations. Specifically, the buildings are designed to achieve the „B” energy class, although the regulations require less. How does this affect sustainability? This means lower energy consumption, a smaller „carbon footprint” and, of course, 15-20 percent lower energy bills that future tenants will pay because of better thermal insulation of the buildings compared to required criteria.

**GN Considering the importance of preserving our planet, can you explain to us how Kadena Properties implements renewable energy sources in its construction projects, and what innovative technologies you use to reduce the environmental impact of your construction?**

- We at Kadena like the 3R principle - Reduce, Reuse and Recycle, and as a main principle we always try to make our projects go towards more efficient and reduced consumption of energy sources, both during construction and in the final exploitation. If we had to describe it further, we would say that we like passive technologies that ensure that we consume less energy without affecting final comfort. This principle is also reflected in our project Victory Gardens, where during the development of the project the following was implemented:

- high performance thermal insulation,
- the use of triple glazing on all windows which also improves thermal insulation and reduces noise

pollution in the living space,

- the use of passive shading in the form of external curtains, which helps cool the space in summer months,
- the use of LED lights in the entire facility, which consume up to 10 times less energy compared to conventional lamps,
- the use of a central water treatment system that allows users to have top-quality water without limescale at every tap, which will relieve future tenants of buying bottled water, reduce the use of plastic, and at the same time will extend the life and efficiency of their devices.

I would also like to mention that our latest projects (and I cannot reveal more about them today), are being developed to achieve LEED and WELL certification, which in the case of WELL will be the first such residential project in the region.

Does your company support the concept of smart cities through the application of technologies such as the Internet of Things (IoT) and smart sensors?

- Kadena Properties invests a lot in technology. We like technology and believe in it, just like in the whole concept of connectivity that in our projects goes beyond the framework of „Internet of things”.

We take special care of the user experience, and we strive to make all our projects as easy to use as possible, with as little user interaction with the control in the space as possible. This is best seen in the common areas of our facilities where lighting, ventilation and air conditioning are controlled via sensors. The application of these systems helps end users to control and reduce energy consumption, and therefore their monthly expenses.

When we talk about smart cities, connectivity and user experience, we are actively working to connect different technologies from everyday life with the use of our facilities. A good example is what we aim for in the use of the garage in our Victory Gardens project, which is the possibility to use ENP tags used at motorway tollbooths as a method of accessing a tenant's garage without having to stop a vehicle, asking for an access



## Živorad Vasić

SUOSNIVAČ I DIREKTOR KOMPANIJE „KADENA PROPERTIES“

Volimo princip 3R – Reduce, Reuse i Recycle, i kao glavni princip trudimo se da uvek naši projekti idu ka što efikasnijoj i manjoj potrošnji energenata kako tokom izgradnje tako i u krajnjoj eksploataciji



korisničko iskustvo gde težimo da svi naši projekti budu što jednostavniji za korišćenje sa što manje potrebne interakcije korisnika sa kontrolama u prostoru. Ovo se najbolje vidi u zajedničkim prostorima u našim objektima u kojima su osvetljenje, ventilacija i klimatizacija kontrolisani putem senzora. Primena ovih sistema pomaže krajnjim korisnicima da kontrolišu i smanje potrošnju energije, a samim tim i svoje mesečne izdatke.

Kada pričamo o pametnim gradovima, povezanosti i korisničkom iskustvu, aktivno radimo na tome da povežemo različite tehnologije iz svakodnevnog života sa korišćenjem naših objekata. Dobar primer je ono čemu težimo u korišćenju garaže u našem projektu Victory Gardens, a to je mogućnost korišćenja ENP tagova koji se koriste na naplatnim rampama na autoputu kao jednog od metoda pristupa stanarskoj garaži bez potrebe za zaustavljanjem vozila, traženja kartice ili taga za pristup i slično. Sličan princip planiramo i za naše elektro punjače za vozila i njihovo umrežavanje u Evropsku EV mrežu, što će omogućiti korisnicima da sa svojom aktivacionom karticom za svoj lični punjač u garaži koriste punjače širom Evrope.

**GN** *Kako vaši osnovni principi doprinose stvaranju stvarne konkurentske prednosti u industriji, gde investitori u nekretnine (institucionalni ili individualni) često nailaze na izazove u pronalaženju pouzdanih developera kao partnera?*

Naši principi su veoma jednostavni – mi se uvek trudimo da:

1. Projekat koji danas oblikujemo mora biti ispred svog vremena i u trenutku kada počne aktivno da se koristi.
2. Kreiramo fantastičnu destinaciju – odnosno prostor koji će svojim kvalitetom i sadržajima biti društveni atraktor u bližoj ili daljoj okolini u zavisnosti od skale projekta.
3. Kreiramo odlično korisničko iskustvo, od trenutka kada pomislite na kupovinu vaše nove nekretnine do trenutka kada ste se već uselili i aktivno koristite vaš novi životni prostor.

Verujemo da je to ono što život svim našim

kupcima čini lakšim i praktičnijim, a što oni zauzvrat prepoznaju kao dodatnu vrednost i dodatni kvalitet u našim projektima. U tom smislu naš fokus na korisničko iskustvo je neuporediv sa bilo kim na tržištu i on čini veliki deo našeg uspeha.

4. Više kvadrata ne znači više profita. Iako ovo zvuči kontraintuitivno, ovo je istina. Mnogi investitori u početku imaju poteškoća u sagledavanju ovog pristupa, ali lepota brojeva je to što brojevi na kraju dana ne lažu. Ovaj princip je direktno vezan za našu težnju kreiranja atraktivne destinacije i ogleda se u delikatnom balansiranju maksimizacije potencijalnih kapaciteta projekta sa ostvarivanjem potrebnih kvaliteta destinacije zarad ostvarivanja najoptimalnijeg profita. Uprošćeno – nekada je moguće ostvariti isto profita i sa manje ulaganja i to je ono zbog čega nam se investitori vraćaju.

**GN** *Kako vidite ulogu Kadena Properties u oblikovanju budućnosti gradova i doprinos globalnim naporima zaštite životne sredine?*

- Mi vidimo Kadena Properties kao predvodnika talasa razvoja projekata koji teže nečemu više od puke maksimizacije površine projekata.

U našim očima budućnost je u prostorima koji neguju i unapređuju društveni karakter izgrađenog prostora, pospešuju ozelenjenost, troše manje energije dok nude više komfora, nude mnoštvo sadržaja i aktivnosti svojim korisnicima, smanjuju zavisnost od automobila, neguju aktivan životni stil i koji pre svega nude jednu bezbednu i bezbrižnu sredinu u prostoru koji se koristi lako i jednostavno kako bi životni fokus ostao na onome što je bitno – porodici i prijateljima.

Takvim pristupom obezbedila bi se: bolja upotreba pasivnih tehnologija i smanjenje potrošnje energije, manja zavisnost od automobila što bi smanjilo više vidova zagađenja od zagađenja vazduha do zagađenja bukom, negovanje aktivnog životnog stila što bi imalo uticaj na fizičko zdravlje i plemenitije korišćenje vremena u sredini koja neguje društvene aspekte života, a na kraju i doprinos sveopštem zadovoljstvu građana.

**GN**

U našim očima budućnost je u prostorima koji neguju i unapređuju društveni karakter izgrađenog prostora, pospešuju ozelenjenost, troše manje energije dok nude više komfora

## Živorad Vasić

A COFOUNDER AND DIRECTOR OF THE COMPANY KADENA PROPERTIES



card or tag, and similar. We plan a similar principle for our electrical chargers for vehicles and their networking in the European EV network, which will enable users to use chargers throughout Europe with their activation card for their personal charger in the garage.

**GN** *How do your core principles contribute to creating a real competitive advantage in an industry where real estate investors (institutional or individual) often face challenges in finding reliable developers as partners?*

Our principles are very simple - we always try:

1. The project that we are designing today must be ahead of its time and at the moment when it starts to be actively used.
2. We create a fantastic destination - i.e. a space that, with its quality and contents, will be a social attractor in the immediate or distant environment, depending on the scale of the project.
3. We create a great user experience, from the moment you think about buying your new property to the moment you have already moved in and are actively using your new living space.

We believe that this is what makes life easier and more convenient for all our customers, and what they in turn recognize as added value and added quality in our projects. In this sense, our focus on user experience is unmatched by anyone on the market and it forms a large part of our success.

4. More square footage does not mean more profit. Although this sounds counterintuitive, this is true. Many investors have difficulty seeing this approach at first, but the beauty of numbers is that numbers do not lie at the end of the day. This principle is

directly related to our aspiration to create an attractive destination, and is reflected in the delicate balancing of the maximization of potential capacities of the project with the realization of necessary qualities of the destination in order to achieve the most optimal profit. Simplified - sometimes it is possible to make the same profit with less investment and that is what keeps investors coming back to us.

**GN** *How do you see Kadena Properties' role in shaping the future of cities and contributing to global efforts of environmental protection?*

- We see Kadena Properties as the leader of a wave of project development that strives for something more than just maximizing the area of projects.

In our eyes, the future is in spaces that nurture and improve the social character of the built space, promote greening, consume less energy while offering more comfort and a variety of contents and activities to their users, reduce dependence on cars, nurture an active lifestyle, and above all, offer a safe and carefree environment in a space that is easy and simple to use so that life's focus remains on what is important - family and friends.

Such an approach would ensure better use of passive technologies and reduction of energy consumption, less dependence on cars, which would reduce several types of pollution, from air to noise pollution, fostering an active lifestyle, which would have an impact on physical health, and better use of time in an environment that nurtures social aspects of life, and ultimately contributes to the general satisfaction of citizens.

**GN**



# Evropa korača ka održivoj budućnosti

Evropska Unija postavlja smernice za ključne ciljeve u borbi protiv klimatskih promena

The European Union sets guidelines for key goals in the fight against climate change



Evropska Unija predstavila je nove, izuzetno ambiciozne ciljeve za 2030. godinu u oblastima klime i energije, što označava ključan korak ka održivoj budućnosti. Ovi ciljevi su deo sveobuhvatnih napora usmerenih na smanjenje emisija gasova sa efektom staklene bašte, povećanje udela obnovljivih izvora energije i unapređenje energetske efikasnosti. Predloženi okvir, koji je predstavila Evropska komisija, postavlja čvrste smernice i obavezujuće ciljeve za sve članice EU.



# Europe is Moving Towards a Sustainable Future



The European Union has presented new, extremely ambitious targets for 2030 in the fields of climate and energy, marking a key step towards a more sustainable future. These goals are part of comprehensive efforts aimed at reducing greenhouse gas emissions, increasing the share of renewable energy sources and improving energy efficiency. The proposed framework, presented by the European

Commission, sets firm guidelines and binding targets for all EU members.

Reducing greenhouse gas emissions by 40% below the 1990 level is a key goal, while at the same time it is planned to increase the share of renewable energy to at least 27% in the total energy consumption in the EU. The plan also includes increasing energy efficiency in all member states.





Evropska Unija izlazi na čelo borbe za održivost postavljajući jasne i ambiciozne ciljeve za 2030. godinu. Ova slika ističe posvećenost EU u pružanju odgovora na klimatske izazove i stvaranju održivije budućnosti za sve

## Povećanje udela obnovljive energije za +27%

Smanjenje emisija gasova sa efektom staklene bašte za 40% ispod nivoa iz 1990. godine predstavlja ključni cilj, dok se istovremeno planira povećanje udela obnovljive energije na najmanje 27% u ukupnoj potrošnji energije u EU. Plan također obuhvata i povećanje energetske efikasnosti u svim članicama.

Ova ambiciozna strategija za 2030. godinu ima za cilj kreiranje konkurentnog, sigurnog i održivog energetskog sistema u EU, što uključuje i reformu sistema trgovanja emisijama (ETS) EU-a radi osiguranja stabilnosti tržišta i povećanja otpornosti sistema. Planira se i jačanje nacionalnih planova za energetske efikasnost i obnovljive izvore energije.

Ova inicijativa odražava neprekidnu posvećenost EU borbi protiv klimatskih promena i poboljšanju energetske sigurnosti. Predloženi ciljevi su rezultat temeljnih analiza i razmatranja troškova i koristi, uzimajući u obzir i dugoročne ekonomske i energetske implikacije.

The European Union is at the forefront of the fight for sustainability by setting clear and ambitious goals for 2030. This image highlights the EU's commitment to responding to climate challenges and creating a more sustainable future for all



## Increase the Share of Renewable energy to +27%

This ambitious 2030 strategy aims to create a competitive, secure and sustainable energy system in the EU, which includes the reform of the EU Emissions Trading System (ETS) to ensure market stability and increase system resilience. It is also planned to strengthen national plans for energy efficiency and renewable energy sources.

This initiative reflects the EU's continued commitment to fighting climate change and improving energy security. The proposed goals are the result of thorough analysis and consideration of costs and benefits, taking into account long-term economic and energy implications.



Predloženi ciljevi ne samo da postavljaju standarde za smanjenje emisija gasova sa efektom staklene bašte i povećanje udela obnovljivih izvora energije, već i podstiču ekonomski razvoj i stvaranje novih radnih mesta u sektoru zelene energije. Ova refleksija naglašava višestruke koristi koje donosi odlučna akcija u oblasti klime i energije.

## Smanjenje emisija gasova sa efektom staklene bašte za 40%

Predsednik Evropske komisije, Žose Manuel Baroso, istakao je važnost ovih ciljeva za konkurentnost EU, ističući potrebu za smanjenjem zavisnosti od uvoza energije i otvaranjem novih radnih mesta u sektoru obnovljivih izvora energije. Takođe je važno naglasiti da ovi ciljevi imaju i ekološki i ekonomski značaj, podstičući investicije u obnovljive izvore energije i povećavajući energetska efikasnost, što stvara temelje za održiv rast i razvoj.

U skladu sa prethodnim klimatsko-energetskim paketom za 2020. godinu, koji je postavio ambiciozne ciljeve za smanjenje emisija gasova sa efektom staklene bašte i povećanje udela obnovljivih izvora energije, novi okvir za 2030. godinu predstavlja nastavak evropske posvećenosti održivom razvoju i zaštiti životne sredine.



The proposed goals not only set standards for reducing greenhouse gas emissions and increasing the share of renewable energy sources, but also encourage economic development and the creation of new jobs in the green energy sector. This reflection highlights the multiple benefits of decisive climate and energy action



## Reducing greenhouse gas emissions by 40%

The President of the European Commission, José Manuel Barroso, has emphasized the importance of these goals for EU competitiveness, stressing the need to reduce dependence on energy imports and to create new jobs in the sector of renewable energy sources. It is also important to emphasize that these goals have both environmental and economic significance, encouraging investments in renewable energy sources and increasing energy efficiency, which create the foundations for sustainable growth and development.

In accordance with the previous climate and energy package for 2020, which set ambitious goals for reducing greenhouse gas emissions and increasing the share of renewable energy sources, the new framework for 2030 represents a continuation of Europe's commitment to sustainable development and environmental protection.





Evropsko veće će raspravljati o ovom okviru na sastanku zakazanom za mart, što će dodatno učvrstiti evropsku politiku u oblasti klime i energije. Novi klimatsko-energetski okvir za 2030. godinu predstavlja ključni korak ka stvaranju održivije i konkurentnije Evrope, sa snažnom posvećenošću borbi protiv klimatskih promena i unapređenju energetske efikasnosti.



The European Council will discuss this framework at a meeting scheduled for March, which will further strengthen European climate and energy policy. The new climate and energy framework for 2030 is a key step towards creating more sustainable and competitive Europe, with a strong commitment to fighting climate change and improving energy efficiency.



### Elnos Grupa - vaš internacionalni partner za elektroenergetiku!

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# Sustainable Development - The Long-Term Existence of Human Society

**Srđan Žikić**

DEKAN OF THE FACULTY OF SOCIAL SCIENCES



Nije veliko zlo ako student pogreši.  
Ali ako veliki umovi greše,  
svet će skupo platiti njihove greške.  
Nikola Tesla

**Srđan Žikić**

DEKAN FAKULTETA DRUŠTVENIH NAUKA

## Održivi razvoj - dugoročno postojanje ljudskog društva

Osnovna filozofija ovog koncepta je da se naša Planeta pretvori u bolje mesto za život ljudi, kako sadašnjih, tako i budućih generacija



The basic philosophy of this concept is to turn our planet into a better place for people to live, both for today's and future generations



## Srđan Žikić

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### Koncept održivog razvoja podrazumeva uravnotežen ekonomski, socijalni i kulturni razvoj bez ugrožavanja životne sredine

**Kako bi se zemlja sačuvala za današnje, ali i za buduće generacije, neophodno je da savremeni svet bude svestan zajedničke odgovornosti i da svoj razvoj uskladi sa potrebama ljudi i prirode, kaže u intervjuu za Green News Srđan Žikić, dekan Fakulteta društvenih nauka.**

**GN** *Poslednjih godina u naučnoj i široj javnosti dosta se govori o pojmu "održivog razvoja". Možete li nam reći šta on podrazumeva i kada je nastao?*

- Od vremena kada je počeo da se koristi pojam "održivi razvoj" proteklo je više od pet decenija. I pored činjenice da je koncept održivog razvoja nastao je u razvijenim društvima i privredama, od samog početka okrenut je ka globalnom upravljanju ekonomijom, politikom, socijalnim prilikama i ekologijom. Osnovna filozofija ovog koncepta je da se naša Planeta pretvori u bolje mesto za život ljudi, kako sadašnjih, tako i budućih generacija. Održivi razvoj se najčešće dovodi u vezu sa zaštitom životne sredine, odnosno nastojanjem da se zabrinutost za

opstanak živog sveta na planeti Zemlji poveže sa očuvanjem prirodnih resursa i brojnim ekološkim izazovima koji stoje pred svakim društvom i čovečanstvom u celini. Sam koncept održivog razvoja je nastao kao odgovor na velike ekološke debate koje su se vodile počev od 1968. godine i pojave prvog izveštaja Rimskog kluba. Tokom procesa razvoja termina „održivosti“ i „održivog razvoja“, osim ekološke ravnoteže vezane za te termine, sve više su se isticali ekonomska sigurnost i socijalna pravednost.

Održivi razvoj podrazumeva razvoj društva koji raspoloživim resursima zadovoljava ljudske potrebe a pri tome ne ugrožava prirodne sisteme i životnu sredinu. Na taj način se osigurava dugoročno postojanje ljudskog društva i njegovog okruženja, tako da ujedno predstavlja novu strategiju i filozofiju društvenog razvoja. Aktualnosti samog pojma doprinosi ugroženost životne sredine, koja se ogleda u ekološkim izazovima i problemima kao što su: globalno zagrevanje, smanjivanje ozonskog

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The concept of sustainable development implies balanced economic, social and cultural development without endangering the environment



**In order to preserve the planet for today's and future generations, it is necessary for the modern world to be aware of shared responsibility and to harmonize its development with the needs of people and nature, says Srđan Žikić, dean of the Faculty of Social Sciences, in an interview with Green News.**

**GN** *In recent years, the term „sustainable development“ has been talked about a lot in the scientific and general public. Can you tell us what it means and when it was created?*

- More than five decades have passed since the term „sustainable development“ began to be used. Despite the fact that the concept of sustainable development originated in developed societies and economies, from the very beginning it was oriented towards the global management of the economy, politics, social conditions and ecology. The basic philosophy of this concept is to turn our planet into a better place for people to live, both current and future generations. Sustainable development is most often associated with environmental protection, that is, the effort to connect concern for the survival of the living world on the planet with the preservation of natural resources and numerous environmental challenges every society and humanity as a whole face. The very concept of sustainable development arose as a response to the great environmental debates that began in 1968 and the appearance of the first report of the Club of Rome. During the process of developing the terms „sustainability“ and „sustainable development“, apart from the ecological balance related to those terms, economic security and social justice were emphasized more and more.

Sustainable development implies the development of a society that meets human needs with available resources and does not endanger natural systems and the environment. In this way, the long-term existence of human society and its environment is ensured, so that it also represents a new strategy and philosophy of social development. The actuality of the term contributes to the threat of the environment, which is reflected in ecological challenges and problems such as: global warming, reduction of the ozone layer, the greenhouse effect, the disappearance of forests, the conversion of fertile land into deserts, the appearance of acid rain, the extinction of animal and plant species.

In order to preserve the earth for today's and future generations, it is necessary for the modern world to be aware of its shared responsibility and to harmonize its development with the needs of people and nature. With the help of sustainable development, favorable conditions can be created for future generations, as well as the preservation of the natural wealth of our

planet.

**GN** *Did certain organizations participate in the creation of the concept of sustainable development?*

- Global reports on the state of the environment and natural resources during the second half of the 20th century have become worrisome. In the first place, the scientific and expert public warned the world about the need for completely different understanding of the problems and principles of the protection of the environment and natural resources. The very idea of sustainable development was first clearly articulated and published in the World Conservation Strategy document adopted in 1980 by the well-known international organization International Union for the Conservation of Nature and Natural Resources (IUCN), with the financial support of the United Nations Environment Program (UNEP). After that, the General Assembly of the United Nations formed the World Commission on Environment and Development in 1983. This commission was chaired by Gro Harlem Brundtland, the Prime Minister of Norway. The commission hired many experts and organized several discussions on the basis of which it prepared and published a final report in 1987 entitled Our Common Future. This report, also known as the Brundtland Report, served as the basis for the Second World Environmental Summit held in 1992 in Rio de Janeiro.

**GN** *Given that the development of human civilization is on the rise, increasingly intensive and disproportionate exploitation of natural resources is expected in the future. How can the concept of sustainable development prevent this?*

- With the development of the market economy, the attitudes and behavior of business entities are increasingly based on the assumption of unlimited natural resources and the possibility of using them more and more intensively and aggressively, without taking into account the necessity of their restoration and protection of the natural environment. As a reflection of the aggressive behavior of business entities towards nature globally, the flows of their optimal reproduction and protection of the environment as a whole are visibly disrupted.

The concept of sustainable development implies balanced economic, social and cultural development without endangering the environment. It envisages the preservation of natural wealth, whereby the level of consumption of renewable resources will not exceed the limits in which natural systems can compensate for it, while the level of consumption of non-renewable resources will not exceed the



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Održivo upravljanje životnom sredinom ne predstavlja neku vrstu trenda, već je za mnoge organizacije to je postalo nužnost i zajednički cilj



omotača, efekat staklene bašte, nestanak šuma, pretvaranje plodnog zemljišta u pustinje, pojava kiselih kiša, izumiranje životinjskih i biljnih vrsta.

Kako bi se zemlja sačuvala za današnje, ali i za buduće generacije, neophodno je da savremeni svet bude svestan zajedničke odgovornosti i da svoj razvoj uskladi sa potrebama ljudi i prirode. Pomoću održivog razvoja mogu se stvoriti povoljni uslovi za buduće generacije, kao i očuvanje prirodnog bogatstva naše Planete.

**GN** *Da li su u kreiranju koncepta održivog razvoja učestvovala određene organizacije?*

- Globalni izveštaji o stanju životne sredine i prirodnih resursa tokom druge polovine XX veka postali su zabrinjavajući. Na prvom mestu naučna i ekspertna javnost je upozorila svet na potrebu potpunog drugačijeg razumevanja problema i principa zaštite životne sredine i prirodnih resursa. Sama ideja o održivom razvoju prvi put je jasno artikulirana i objavljena u dokumentu World Conservation Strategy koji je 1980. godine donela poznata međunarodna organizacija „Međunarodna unija za konzervaciju prirode i prirodnih resursa“ (IUCN), uz finansijsku podršku Programa Ujedinjenih Nacija za okolinu (UNEP). Nakon toga je Generalna skupština Ujedinjenih nacija formirala 1983. godine Svetsku komisiju za okolinu i razvoj (The World Commission on Environment and

Development). Ovom komisijom je predsedavala Gro Harlem Brundtland, premijerka Norveške. Komisija je angažovala mnoge eksperte i organizovala više rasprava na osnovu kojih je pripremila i 1987. godine publikovala završni izveštaj pod nazivom Naša zajednička budućnost (Our Common Future). Ovaj izveštaj poznat i kao Brundtland Report, poslužio je kao osnova za Drugi svetski ekološki samit održan 1992. godine u Rio de Žaneiru.

**GN** *S obzirom da razvoj ljudske civilizacije ide uzlaznom linijom, očekuje se sve intenzivnija i nesrazmerna eksploatacija prirodnih resursa u budućnosti. Na koji način koncept održivog razvoja može to sprečiti?*

- Razvojem tržišne privrede, stavovi i ponašanje privrednih subjekata sve više su zasnovani na pretpostavci o neograničenosti prirodnih resurse i mogućnosti da se sve intenzivnije i agresivnije koriste, ne vodeći računa o neophodnosti njihovog obnavljanja i zaštite prirodne sredine. Kao odraz agresivnog ponašanja privrednih subjekata prema prirodi u globalu, vidno su poremećeni tokovi njihove optimalne reprodukcije i zaštite životne sredine u celini.

Koncept održivog razvoja podrazumeva uravnotežen ekonomski, socijalni i kulturni razvoj bez ugrožavanja životne sredine. To predviđa očuvanje prirodnog bogatstva, pri čemu stepen





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Sustainable environmental management does not represent some kind of trend, but for many organizations it has become a necessity and a common goal



limits according to which they can be replaced by renewable resources. Also, sustainable development implies that the emission of pollution does not exceed the capacity of soil, water and air to preserve quality according to standards that are at least sufficient for the life and well-being of people, flora and fauna. In this way, future generations will be enabled to develop at the same or higher level.

The essence of the concept of sustainable development is the correlation of economic development and the environment while respecting the laws of ecological systems. This concept is aimed at the rational use of the country's natural wealth and, accordingly, at raising the quality of the environment and the quality of life. In order to achieve sustainable development, it is necessary to establish new social values that are based on knowledge, creativity and the ability of human resources, on the creation of quality personnel with the tendency to transform the current society into a learning society.

**GN** *We can conclude that the issues of energy shortage and negative impacts of fossil fuels have become alarming. What solution does sustainable development propose?*

- During industrialization and with the growth of the population on the Earth, the need for energy resources was getting bigger, and the reserves of non-renewable resources were decreasing. It is very

difficult to estimate the exact amount of fossil fuel reserves, because so far only the amount of discovered reserves has been known, while the amount of undiscovered reserves can only be guessed. If today's trend of uncontrolled consumption of fossil fuels continues, estimates are that in the next few decades all their reserves, which were created millions of years ago, will have been used, while future generations will unfortunately not have the opportunity to meet their energy needs from these sources.

On the other hand, the negative impacts of energy supply from fossil sources have become more pronounced over time. The fact is that the consumption of fossil fuels is the main reason for the anthropogenic effect of the greenhouse, and their use will have to be limited in order to reduce the negative consequences of global warming. At the same time, it is necessary to point out that one of the most acute problems is the problem of climate change, which experts in these fields have confirmed.

Humanity has become aware of these problems and the necessity of searching for alternative sources of energy in the last decade. At the same time, renewable energy sources are imposed as an environmentally acceptable solution. The use of renewable energy sources is one of the key components of sustainable development that enables rational positive economic, environmental and social effects. The development of sustainable energy

Foto: Saša Džambić





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potrošnje obnovljivih resursa neće prelaziti okvire u kojima prirodni sistemi mogu to da nadoknade, dok stepen potrošnje neobnovljivih resursa neće prevazilaziti okvir prema kome se mogu zameniti obnovljivim resursima. Takođe, održivi razvoj podrazumeva da emisija zagađenja ne prevazilazi kapacitete zemljišta, vode i vazduha za očuvanjem kvaliteta prema standardima koji su u najmanju ruku dovoljni za život i blagostanje ljudi, biljnog i životinjskog sveta. Na taj način će se i budućim generacijama omogućiti da se razvijaju na istom ili višem nivou.

Sušтина koncepta održivog razvoja čini korelaciju privrednog razvoja i životne sredine uz uvažavanje zakonitosti ekoloških sistema. Ovakav koncept je usmeren na racionalno korišćenje prirodnog bogatstva države i u skladu sa tim, na podizanje kvaliteta životne sredine i kvaliteta života. U svrhu ostvarivanja održivog razvoja, neophodno je uspostavljanje novih društvenih vrednosti koje se zasnivaju na znanju, kreativnosti i sposobnosti ljudskih resursa, na stvaranju kvalitetnih kadrova sa tendencijom da se sadašnje društvo transformiše u društvo koje uči.

**GN** *Možemo zaključiti da su pitanja energetske nestašice i negativnih uticaja fosilnih goriva postala alarmantna. Kakvo rešenje predlaže održivi razvoj?*

- Tokom industrijalizacije i sa porastom stanovništva na Zemlji potrebe za energetskim resursima postajale su sve veće, a rezerve neobnovljivih resursa sve manje. Veoma je teško proceniti kolike su tačne rezerve fosilnih goriva, jer je do sada poznata samo količina otkrivenih rezervi, dok se količina neotkrivenih može samo nagađati. Ukoliko se današnji trend nekontrolisane potrošnje fosilnih goriva nastavi, procene su da će se u nekoliko narednih decenija iskoristiti sve njihove rezerve, koje su stvarane milionima godina unazad, dok buduće generacije nažalost neće imati mogućnost da zadovolje svoje energetske potrebe iz ovih izvora.

Sa druge strane, negativni uticaji snabdevanja energijom iz fosilnih izvora vremenom su postali sve izraženiji. Činjenica je da potrošnja fosilnih goriva predstavlja glavni razlog za antropogeni efekat staklene bašte i njihovo korišćenje će morati da se ograniči kako bi se umanjile negativne posledice globalnog zagrevanja. Pri tome je neophodno istaći da je jedan od najakutnijih problema, problem promene klime, što su i stručnjaci iz ovih oblasti potvrdili.

Čovečanstvo je poslednje decenije postalo svesno ovih problema i neophodnosti traženja alternativnih izvora energije. Pri tome se kao ekološki prihvatljivo rešenje nameću obnovljivi izvori energije. Upotreba obnovljivih izvora energije je jedna od ključnih komponenti održivog razvoja koja omogućava racionalne pozitivne ekonomske, ekološke i socijalne

efekte. Razvoj održive energije predstavlja koncept razvoja koji zadovoljava energetske potrebe sadašnjih generacija, uzimajući u obzir i energetske potrebe budućih generacija.

Ekonomski i društveni aspekti korišćenja obnovljivih izvora energije odnose se prvenstveno na korišćenje lokalnih izvora, povećavajući na taj način stepen zaposlenosti i prelivanje sredstava ka drugim privrednim granama, na primer poljoprivredi i turizmu. Brojna istraživanja jasno pokazuju da proizvodnja energije iz obnovljivih izvora dovodi do ukupnog društvenog razvoja doprinoseći poboljšavanju standarda života lokalnih zajednica i ravnomernom regionalnom razvoju. Masovna primena obnovljivih izvora energije, dugoročno posmatrano, može ojačati ekonomiju zemlje, stvoriti radna mesta i generalno poboljšati kvalitet života.

Posebno značajnu prednost ovog oblika energije predstavlja mogućnost njenog većeg iskorišćenja, odnosno podizanje energetske efikasnosti. Princip energetske efikasnosti podrazumeva racionalnu upotrebu energije, odnosno eliminaciju ili minimiziranje gubitaka energije, kako u sektoru potrošnje, tako i u sektoru proizvodnje energije. Zbog svega navedenog, ciljevi većine nacionalnih energetske strategije postavljeni su u kontekstu štednje energije i smanjenja zagađenja životne sredine, uz upotrebu obnovljivih izvora energije.

**GN** *Fakultet društvenih nauka ima jako zanimljiv studijski program Menadžmenta na master akademskim studijama u okviru koga postoji modul Menadžment životne sredine i održivi razvoj. Kako ste došli na ideju da akreditujete takav smer?*

- Održivo upravljanje životnom sredinom ne predstavlja neku vrstu trenda, već je za mnoge organizacije to je postalo nužnost i zajednički cilj. Rukovodstvo fakulteta shvatilo je neophodnost unošenja sadržaja održivog razvoja i zaštite životne sredine u visokoškolsko obrazovanje. Opšte podizanje ekološke svesti kod studenata, kao i obrazovanje za održivi razvoj važni su preduslovi za uspešnije rešavanje nagomilanih problema u odnosu čoveka i društva prema prirodnom okruženju. Master akademske studije Menadžment životne sredine i održivog razvoja namenjene su studentima koji žele da razviju ključne menadžerske veštine sa naglaskom na zaštitu životne sredine i održivost. Ovaj program studija čini osmišljeni skup predmeta i prakse koji ima za cilj da omogući razumevanje savremenih pitanja korporativne društvene odgovornosti i važnosti održivog upravljanja na lokalnom i globalnom nivou. Univerzitetsko obrazovanje može imati značajnu ulogu ukoliko se njegovi akteri opredele za to da se putem akademskog obrazovanja utiče na veću svest studenata i življenje u skladu s principima održivog razvoja.

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Foto: Saša Džambić

represents a development concept that meets the energy needs of current generations, taking into account the energy needs of future generations.

The economic and social aspects of the use of renewable energy sources refer primarily to the use of local sources, thereby increasing the level of employment and transferring resources to other economic sectors, for example agriculture and tourism. Numerous studies clearly show that the production of energy from renewable sources leads to overall social development, contributing to the improvement of the living standards of local communities and balanced regional development. Mass deployment of renewable energy sources, in the long term, can strengthen the country's economy, create jobs and generally improve the quality of life.

A particularly significant advantage of this form of energy is the possibility of its greater utilization, i.e. the increase of energy efficiency. The principle of energy efficiency implies the rational use of energy, that is, the elimination or minimization of energy losses, both in the consumption sector and in the energy production sector. Because of all the above, the goals of most national energy strategies are set in the context of saving energy and reducing environmental pollution, using renewable energy sources.

**GN** *The Faculty of Social Sciences has a very interesting Management study programme at Master's*

*academic studies, which includes Environmental Management and Sustainable Development module. How did you come up with the idea to accredit such a module?*

- Sustainable environmental management does not represent some kind of trend, but for many organizations it has become a necessity and a common goal. The management of the Faculty understood the necessity of introducing the content of sustainable development and environmental protection into higher education. The general raising of environmental awareness among students, as well as education for sustainable development, are important prerequisites for a more successful solution to the accumulated problems in the relationship of man and society to the natural environment. The Master's degree in Environmental Management and Sustainable Development is intended for students who want to develop key managerial skills with an emphasis on environmental protection and sustainability. This study programme constitutes a designed set of subjects and practices aimed at providing understanding of contemporary issues of corporate social responsibility and the importance of sustainable management at the local and global level. University education can play a significant role if its actors decide to use academic education to influence greater awareness of students and the living in accordance with the principles of sustainable development.

GN



JANUAR 2024.

PROSEČNA TEMPERATURA

13,14°C

NAJTOPLIJI JANUAR U ISTORIJI  
OD KADA SE VRŠE MERENJA

JANUARY 2024.

AVERAGE TEMPERATURE

13,14°C

THE WARMEST JANUARY IN HISTORY  
SINCE THE MEASUREMENTS ARE MADE

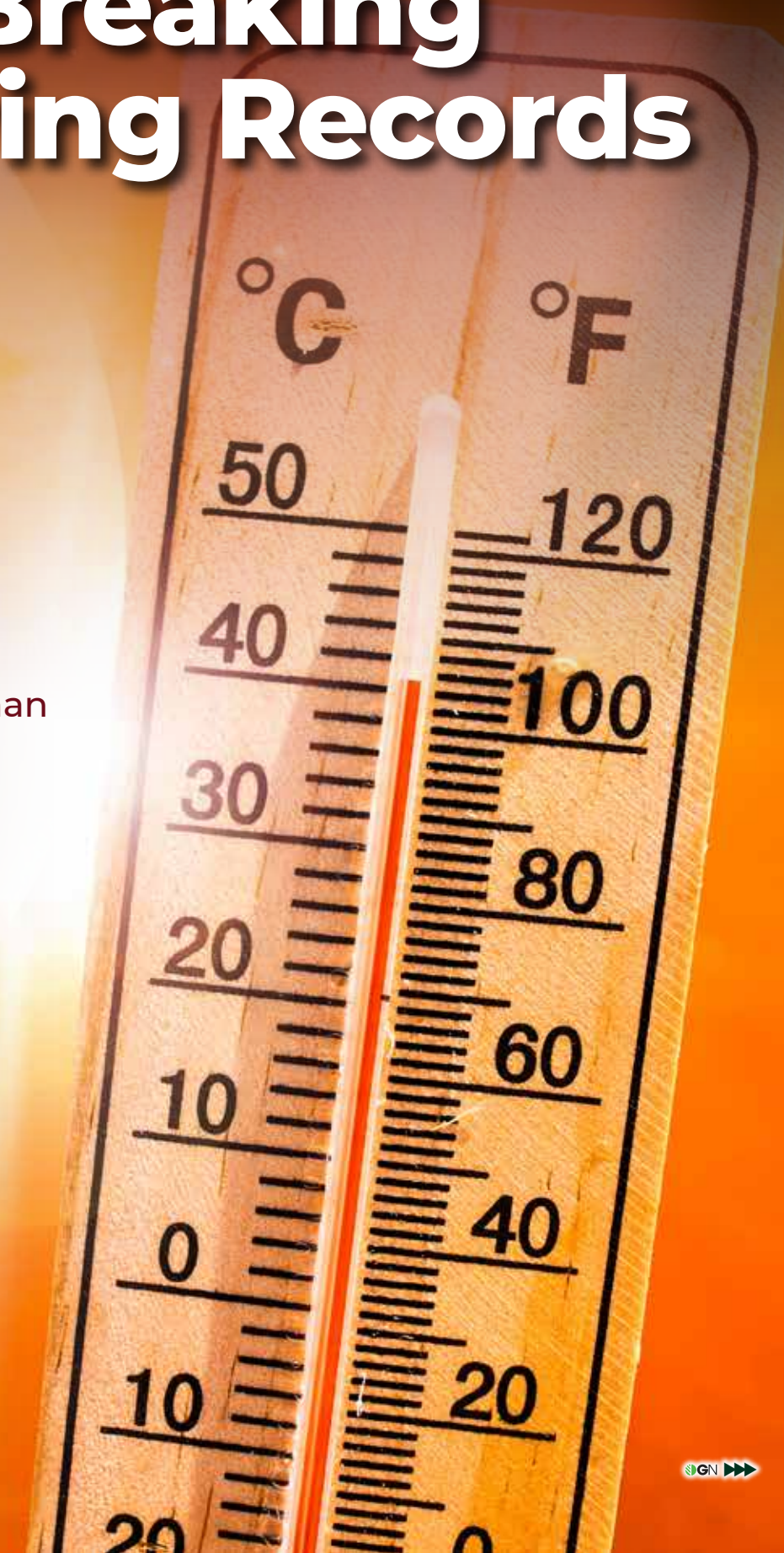


# Global Warming is Breaking Terrifying Records

The climate has already warmed by about 1.2 degrees Celsius more than in the period 1850-1900

Klima se već zagrejala za oko 1,2 stepena Celzijusa više u odnosu na period 1850-1900

## Globalno zagrevanje obara zastrašujuće rekorde







Prvi put u istoriji planeta je u periodu od 12 uzastopnih meseci zabeležila zagrevanje od 1,5 stepeni Celzijusa u odnosu na predindustrijsku eru, saopštila je danas evropska opservatorija Kopernikus, uz objavu o novom toplotnom rekordu za mesec januar ove godine.

Od februara 2023. do januara 2024. temperatura vazduha u svetu bila za 1,5 stepeni Celzijusa viša od perioda 1850-1900. I sa prosečnom temperaturom od 13,4 stepena Celzijusa prvi mesec 2024. bio je najtopliji januar od kada se vode merenja, prema podacima evropske mreže.

To što je temperatura od februara 2023. do januara 2024. bila viša za 1,5 stepeni, ne znači da je pređena granica zagrevanja određenja na pariskoj konferenciji o klimi 2015. godine potrebna da se spreče klimatske promene i njene posledice, rekao je Ričard Bets direktor studija o uticaju klime u britanskoj nacionalnoj meteorološkoj službi.

On je naglasio da je za to potrebno da se ta granica prelazi stabilno tokom više decenija.

„Ipak radi se o novom podsećanju o dubokim promenama koje smo već doneli našoj svetskoj klimi i na koje sada treba da se prilagodimo“, rekao je Bets.

Brajan Hoskins, direktor Instituta Grantam za klimatke promene u Imperijal koledžu u Londonu rekao je da se radi o „brutalnom upozorenju“ na hitnost preduzimanja mera da bi se ograničile klimatske promene.

Johan Rokstorm iz Instituta Potsdama za istragu o uticaju klime (PIK) upozorio je da se radi o „važnom i katastrofalnom signalu, upozorenju koje kaže čovečanstvu da se približavamo brže nego što je predviđeno granici od 1,5 stepeni toplije klime“.

Klima se već zagrejala za oko 1,2 stepena Celzijusa više u odnosu na period 1850-1900. Prema sadašnjem tempu emisija Međuvladin panel za klimatske promene (IPCC) predviđa da granica od 1,5 stepeni Celzijusa ima 50 odsto šanse da bude pređena tokom perioda 2030-2035.

Sa prosečnom temperaturom od 13,14 stepeni Celzijusa januar 2024. je najtopliji taj mesec od početka merenja, posle rekordno tople 2023. godne.

To je 0,12 stepeni Celijusa više od prethodnog rekorda za januar, koji je bio u januaru 2020, i za 0,70 stepeni više od nomrale za pariod od 1991. do 2020. A u poređenju sa predindustrijskom erom to je toplije za 1,660 stepen Celzija.

Kopernikus navodi da je januar osmi mesec zaredom u kome je oborena rekordno visoka mesečna temperatura.

Mesec je obeležen toplotnim talasom u Južnoj Americi, gde su registrovane rekordne temperature i razorni požari u Kolumbiji i u Čileu, sa desetinama poginulih u regionu Valparaiso.

Uprkos epizodama hladnoće i ponekad velikih padavina u nekim delovima sveta, izuzetno toplo vreme takođe je konstatovano u Španiji i na jugu Francuske kao i u nekim delovima SAD, Kanadi, Africi, Bliskom istoku ili centralnoj Aziji.

JANUAR 2024.

PROSEČNA TEMPERATURA

20,97°C

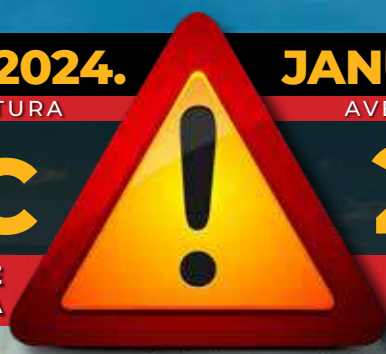
NAJVIŠA TEMPERATURA POVRŠINE OKEANA OD KADA SE VRŠE MERENJA

JANUARY 2024.

AVERAGE TEMPERATURE

20,97°C

HIGHEST SURFACE TEMPERATURE OF THE OCEAN SINCE THE MEASUREMENTS WERE MADE



Copernicus, the European Union's Earth Observation Programme, has announced that the warming of 1.5 degrees Celsius has been recorded for the first time in the history of the planet, in the period of 12 consecutive months, compared to the pre-industrial era, with the announcement of a new heat record for the month of January this year.

From February 2023 to January 2024, the global air temperature was 1.5 degrees Celsius higher than in the period 1850-1900. And with an average temperature of 13.4 degrees Celsius, the first month of 2024 was the warmest January since measurements have been taken, according to data from the European network.

The fact that the temperature was 1.5 degrees Celsius higher from February 2023 to January 2024 does not mean that the warming threshold set at the Paris climate conference in 2015 to prevent climate change and its consequences, is exceeded, said Richard Betts, the head of climate impact research at the UK's National Weather Service.

He emphasized that for this it is necessary to cross the threshold continually over several decades.

“Nevertheless, it is yet another reminder of the profound changes we've already made to our global climate which we now need to adapt to,” Betts said.

Brian Hoskins, the director of the Grantham Institute for Climate Change at Imperial College London, said it was a „brutal warning“ about the urgency of taking action to limit climate change.

Johan Rockström from the Potsdam Institute for Climate Impact Research (PIK) warned that it was „an important and catastrophic signal, a warning to humanity that we are approaching the threshold of 1.5 degrees Celsius of warmer climate faster than predicted“.

The climate has already warmed by about 1.2 degrees Celsius more than in the period 1850-1900. At the current rate of emissions, the Intergovernmental Panel on Climate Change (IPCC) predicts that the 1.5 degrees Celsius threshold has a 50 percent chance of being exceeded during the 2030-2035 period.

With an average temperature of 13.14 degrees Celsius, January 2024 was the warmest month since the beginning of measurements, after the record warm 2023.

That is 0.12 C higher than the previous record, which was set in January 2020, and 0.70 C higher than the average for the period 1991 to 2020. Compared to the pre-industrial era, it is 1,660 degrees Celsius warmer.

Copernicus states that January is the eighth month in a row in which the record high monthly temperature was broken.

The month was marked by a heat wave in South America, where record temperatures and devastating fires were recorded in Colombia and Chile, with dozens of deaths in the Valparaiso region.

Despite episodes of cold and sometimes heavy rainfall in some parts of the world, exceptionally warm weather was also noted in Spain and the south of France as well as in some parts of the USA, Canada, Africa, the Middle East or Central Asia.





Površina okeana takođe je preterano zagrejana sa novim rekordom za januar od 20,97 stepena Celzijusa prosečne temperature. To je drugi najtopliji mesec za površinu okeana ako se računaju svi meseci, manje od 0,01 stepen Celzijusa od prethodnog rekorda u avgustu 2023 (20,98 stepeni Celzijusa).

Ova godina počinje novim rekordno toplim mesecom, rekla je Samanta Bardžes, pomoćnica šefa za službu za klimatske promene Kopernikusa, dodajući da je „brzo smanjenje emisija gasa sa efektom staklene bašte jedini način da se zaustavi rast svetskih temperatura”.

Sredinom januara Svetska meteorološka agencija i Američka agencija za posmatranje okeana i atmosfere (NOAA) su upozorili da bi 2024. mogla da obori rekorde zabeležene prethodne godine.



The ocean surface has also been excessively warmed with a new January record of 20.97 degrees Celsius average temperature. It is the second-warmest month for the ocean surface if all months are counted, less than 0.01C from the previous record set in August 2023 (20.98 C).

This year began with another record warm month, said Samantha Barges, Deputy Director of Copernicus Climate Change Service, adding that „rapid reductions in greenhouse gas emissions are the only way to stop rising global temperatures”.

In mid-January, the World Meteorological Agency and the US National Oceanic and Atmospheric Administration (NOAA) warned that 2024 could break the previous year's records.



# Čista energija za zelenu budućnost

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Kompanija GREEN ENERGY 360 posvećena je održivom razvoju, očuvanju prirodnih resursa i energetske transformaciji kroz primenu solarne energije.

Uz distribuciju vrhunske solarne tehnologije, nudimo vam i najsavremenija rešenja u projektovanju i montaži solarnih elektrana, kao i usluge planiranja, organizacije, izgradnje i održavanja.



**Green  
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360**



# PUT

## ka održivoj budućnosti

# PATH

## to a Sustainable Future



**U vrtlogu rastućeg industrijskog otpada i neumornog iscrpljivanja prirodnih resursa, zrak cirkularne ekonomije sija kao svetionik nade za održiviju budućnost. Baš kao što je industrijska revolucija donela napredak i inovacije, tako je i ostavila za sobom tamnu senku otpada i degradacije okoline. Ipak, poput hrabrih mornara, vlade širom sveta, uključujući i Australiju, hrabro prihvataju kormilo cirkularne ekonomije kako bi se nosile s ovim uraganom izazova.**

Ali, šta krije se u dubinama same ideje cirkularne ekonomije? To je više od obične promene u načinu poslovanja; to je preobražajna filozofija koja nas uči kako resurse ne koristiti samo jednom, već ih održavati u beskrajnom kruženju kroz prakse poput deljenja, zakupa, popravke i recikliranja. Australija, bogata resursima i obdarena inovativnim duhom, stremi da bude predvodnik ove pomorske bitke, posebno u rudarskom sektoru. Dr. Glen Korder s Univerziteta u Kveenslandu vidi ovaj put ne samo



**In the maelstrom of growing industrial waste and relentless depletion of natural resources, the ray of the circular economy shines as a beacon of hope for a more sustainable future. Just as the industrial revolution brought progress and innovation, it also left behind a dark shadow of waste and environmental degradation. Yet, like brave sailors, governments around the world, including Australia, are boldly taking the helm of the circular economy to weather this hurricane of challenges.**

But what is hidden in the depths of the very idea of circular economy? It is more than just a change in the way we do business; it is transformative philosophy that teaches us how not to use resources only once, but to maintain them in an endless cycle through practices such as sharing, renting, repairing and recycling. Australia, rich in resources and endowed with innovative spirit, aspires to be at the forefront of this maritime battle, especially in the mining sector. Dr. Glenn Corder of the University







kao priliku da se ojača ekonomija, već i kao priliku da se postavi globalni primer u borbi protiv otpada.

Vizija Australijske vlade, zacrtana kroz Nacionalnu politiku i akcioni plan za otpad, usmerena je na preobražaj zemlje u kolotečinu cirkularne ekonomije. Ovaj plan ne samo da uključuje principe poput izbegavanja otpada i oporavka resursa, već i zagovara povećanu upotrebu recikliranih materijala. Ključne mere uključuju zabranu izvoza određenih vrsta otpada, smanjenje generisanja otpada po

stanovniku i povećanje stope oporavka otpada.

Na temeljima ovih inicijativa, događaju se inspirativne priče poput Nagrade za pametno upravljanje otpadom u Brisbejnu, koja ne samo što prepoznaje već i slavi pojedince i organizacije koje se angažuju u efikasnom upravljanju otpadom. Od bolnica koje transformišu tone otpada u reciklažne tokove do zajedničkih kompostnih centara, ovi naponi jasno ukazuju na zajedničku predanost izgradnji cirkularne ekonomije.



of Queensland sees this road not only as an opportunity to strengthen the economy, but also as an opportunity to set a global example in the fight against waste. The Australian Government's vision, outlined through the National Waste Policy Action Plan, aims to transform the country into a circular economy rut. This plan not only includes principles such as waste avoidance and resource recovery, but also advocates increased use of recycled materials. Key measures include banning the export of certain

types of waste, reducing waste generation per capita and increasing waste recovery rates.

Based on these initiatives, inspiring stories like the WasteSMART Brisbane Awards, which not only recognize but celebrate individuals and organizations that engage in effective waste management, are happening. From hospitals transforming tons of waste into recycle streams to community composting centers, these efforts clearly indicate a shared commitment to building the circular economy.



**REDUCE**



**REUSE**



**RECYCLE**

U istraživanju i inovacijama leži ključ za otvaranje vrata ka cirkularnoj ekonomiji

The key to opening the door to the circular economy lies in research and innovation



# Innovation

The key to opening the door to the circular economy lies in research and innovation. At institutions like RMIT University, researchers are taking bold steps forward using revolutionary methods to reuse waste materials. For example, a new method that uses bio-char from coffee grounds to strengthen concrete offers a sustainable alternative to traditional production processes.



## Inovacije

U istraživanju i inovacijama leži ključ za otvaranje vrata ka cirkularnoj ekonomiji. Na institucijama poput Tehničkog univerziteta RMIT, istraživači hrabro kroče napred koristeći revolucionarne metode za ponovnu upotrebu otpadnih materijala. Primerice, novi metod koji koristi bio-ugalj iz taloga kafe za jačanje betona nudi održivu alternativu tradicionalnim proizvodnim procesima.

## Svetionik nade

Cirkularna ekonomija sija kao svetionik nade u moru rastućeg industrijskog otpada i iscrpljivanja prirodnih resursa. Ova snažna metafora naglašava ulogu cirkularne ekonomije u pružanju putokaza ka održivoj budućnosti.

## A beacon of hope

The circular economy shines as a beacon of hope in a sea of growing industrial waste and depleting natural resources. This powerful metaphor highlights the role of the circular economy in providing a roadmap to a sustainable future.





Dok se suočavamo sa hitnošću ekološke održivosti, cirkularna ekonomija pruža putokaz ka boljoj budućnosti. Preoblikujući način na koji proizvodimo, trošimo i upravljamo resursima, gradimo temelje za ekonomski prosperitet u kojem otpad postaje dragoceni resurs, a održivost je kamen temeljac. Prihvatanjem principa cirkularnosti, Australija i druge zemlje mogu otvoriti put ka otpornijem i pravednijem svetu za buduće generacije.



## More inspirativnih priča

Inicijative poput Nagrade za pametno upravljanje otpadom u Brisbejnu predstavljaju samo vrh ledenog brega, jer postoji mnogo inspirativnih priča i poduhvata koji dokazuju predanost izgradnji cirkularne ekonomije.



## A sea of inspiring stories

Initiatives like the WasteSMART Brisbane Awards are just the tip of the iceberg, as there are many inspiring stories and ventures that demonstrate commitment to building the circular economy.



As we face the urgency of environmental sustainability, the circular economy provides a roadmap to a better future. By reshaping the way we produce, consume and manage resources, we are building the foundations for economic prosperity where waste becomes a precious resource and sustainability is the cornerstone. By embracing the principles of circularity, Australia and other countries can pave the way for a more resilient and fairer world for future generations.





# Neumoljivi marš ka globalnoj promeni

# The Inexorable March Towards Global Change

Put ka iskupljenju je uzak, pun žrtve i nesigurnosti. Ipak, to je put koji moramo pratiti, radi naše dece, naše planete i krhke mreže života koja nas sve veže



**ipcc**  
INTERGOVERNMENTAL PANEL ON  
climate change



The path to redemption is narrow, full of sacrifice and uncertainty. However, it is the path we must follow, for the sake of our children, our planet and a fragile web of life that binds us all







U nemilosrdnom pohodu ka sve toplijem svetu, ljudski rod nalazi se na ivici neizbežnih preobražaja. Dok nivo ugljen-dioksida dostiže visine neviđene u poslednjih nekoliko miliona godina, svet juri ka crnim rubovima klimatske apokalipse.

Međunarodni panel o klimatskim promenama (IPCC) upozorava na ove crne tačke: kritične tačke u sistemu Zemlje, čije prelamanje može da donese neizbrisive posledice. Ono što je nekada bilo daleko, danas je to neposredno pred nama, podstaknuto ljudskom pohlepom i kratkovidnošću prema dobrobiti naše planete.

Pre Industrijske revolucije, atmosferski nivo ugljen-dioksida bio je skroman - oko 280 delova po milionu (ppm). Sada visi na zastrašujućih 420 ppm, uznemirujući pokazatelj ljudske prekomerne eksploatacije fosilnih goriva. Sa svakom izbačenom tonom CO<sub>2</sub>, duh globalnog zagrevanja postaje bliži, pokrećući lančanu reakciju ekološke nestabilnosti.

IPCC-ova tamna lista obuhvata sedam potencijalnih kritičnih tačaka, svaka najava nadolazećeg pakla. Od krhkog ledenog plašta Grenlanda do ugrožene Amazonije, učinci su više nego ozbiljni.

Naučni konsenzus je nekad postavljao 4°C porasta temperature kao prag za kritične tačke. Međutim, poslednje procene otkrivaju daleko mračniju stvarnost: prelazak 1,5°C označava rizik od prelaska više pragova, sudbina kojoj Zemlja neumoljivo teži.



## Poprište neumitne katastrofe

Dok se Sunce njiše nad našom planetom, svedoci smo dramatičnih promena koje sevaju kroz naše nebo. Neki to nazivaju „vrela ugalj nad uzavrelim kamenjem“, opisujući neizbežnu sudbinu koja nam se čini sve bližom. U ovom stihu vremena, zemaljska scena postaje poprište neumitne katastrofe. Uzbudljivi kontrasti između svetlosti i tame, između života i propadanja, postaju sve očigledniji. Svaka čestica sunčevog zračenja nosi sa sobom teret sudbine, teret koji se možda može preokrenuti samo ako sada delujemo.

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In the inexorable march towards an increasingly warm world, the human race is on the verge of inevitable transformations. As carbon dioxide levels reach heights not seen in millions of years, the world is hurtling towards black edges of the climate apocalypse.

The International Panel on Climate Change (IPCC) warns of these black spots: critical points in the Earth's system, the breaking of which can bring indelible consequences.

What was once far away is now right in front of us, fueled by human greed and short-sightedness towards the well-being of our planet.

Before the Industrial Revolution, atmospheric levels of carbon dioxide were modest - about 280 parts per million (ppm). It now hangs at terrifying 420 ppm, a disturbing indicator of human overexploitation of fossil fuels. With every ton of CO<sub>2</sub> emitted, the specter of global warming grows closer, setting off a chain reaction of ecological instability.

The IPCC's dark list includes seven potential tipping points, each one a harbinger of the coming hell. From the fragile ice sheet of Greenland to the threatened Amazon, the effects are more than serious.

A scientific consensus used to set 4°C of temperature rise as a threshold for tipping points. However, the latest assessments reveal a far darker reality: exceeding 1.5°C means the risk of crossing multiple thresholds, a fate the Earth is inexorably heading towards.



## A scene of an inexorable catastrophe

As the Sun sways over our planet, we witness dramatic changes spreading across our skies. Some call it „hot coals on hot stones“, describing the inevitable fate that seems ever closer to us. In this verse of time, an earthly scene becomes a scene of an inexorable catastrophe. Exciting contrasts between light and dark, between life and decay, become more and more apparent. Every particle of solar radiation carries with it a burden of fate, the burden that may only be reversed if we act now.



Već sada, površinska temperatura Zemlje skočila je za 1,2°C od preindustrijskog doba. Ako emisije nastave da rastu neregulisano, zastrašujući prag od 1,5°C visi između 2026. i 2042. godine - uski prozor koji se neumoljivo zatvara

The Earth's surface temperature has already jumped 1.2°C since the pre-industrial era. If emissions continue to rise unregulated, a frightening threshold of 1.5°C will hang between 2026 and 2042 - a narrow window that is closing inexorably



Grenlandski ledeni plašt, krhki čuvar klimatske stabilnosti, približava se opasnoj propasti. Topi se alarmantnom brzinom, sada jednostrano pokrećući globalno podizanje nivoa mora, preteći obalskim zajednicama širom sveta.

Permafrost, zamrznuti deo Zemlje, krije mračnu tajnu: 1.400 milijardi tona ugljenika, spremnog da izmakne u atmosferu kako temperature rastu. Atlantska meridijanska cirkulacija preokretanja (AMOC), ključna okeanska struja, slabi pod neumitnim napadom topljenja glečera, najavljujući ozbiljne posledice za globalne klimatske sisteme.

Monsuni posreću, ugrožavajući živote miliona koji su oslonjeni na njihovu dobrotu. Amazonija, pogođena sušama i krčenjem šuma, balansira na ivici propasti, njena nekada moćna moć apsorbovanja ugljenika slabi.

Antarktik, ledeni div, uzdrhti pod teretom rastućih temperatura. Glečeri se povlače, mora se dižu, a biološka raznolikost visi o koncu.

U međuvremenu, koralni grebeni, delikatne tapiserije prirode, vene pod dvostrukim udarima izbeljivanja i ljudske ravnodušnosti.

Tu se dešava tragedija, nada titra tupo na horizontu. Poziv IPCC-a odjekuje: ograničite globalno zagrevanje na 1,5°C ili se suočite sa posledicama. Vreme za akciju je sada, hitna nužnost koja odjekuje kroz anale istorije.

Surova opomena Sir Jonathan Porritt-a zvoni istinom: „Naš način života juri ka samouništenju. Samo kroz radikalnu transformaciju - institucija, načina života i mentaliteta - možemo izbeći ambis koji nam se otvara”.

Put ka iskupljenju je uzak, pun žrtve i nesigurnosti. Ipak, to je put koji moramo pratiti, radi naše dece, naše planete i krhke mreže života koja nas sve veže.



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The Greenland ice sheet, a fragile guardian of climate stability, is approaching dangerous collapse. It melts at an alarming rate, now driving global sea level rise, threatening coastal communities around the world.

Permafrost, the frozen part of the Earth, hides a dark secret: 1,400 billion tons of carbon, ready to slip into the atmosphere as temperatures rise. The Atlantic Meridional Overturning Circulation (AMOC), a key ocean current, weakens under the relentless onslaught of melting glaciers, heralding serious consequences for global climate systems.

Monsoons falter, endangering the lives of millions who rely on their good sides. The Amazon, battered by drought and deforestation, teeters on the brink of collapse, its once-mighty carbon-absorbing power waning.

Antarctica, the ice giant, shudders under the weight of rising temperatures. Glaciers are retreating, seas are rising, and biodiversity is hanging by a thread. Meanwhile, coral reefs, nature's delicate tapestries, wither under double blows of bleaching and human indifference.

Tragedy happens there, hope flickers dully on the horizon. The IPCC's call is resonating: limit global warming to 1.5°C or face the consequences. The time for action is now, an urgent necessity that echoes through the annals of history.

Sir Jonathon Porritt's harsh admonition echoes with truth: „Our way of life is rushing towards self-destruction. Only through radical transformation - of institutions, ways of life and mentality - can we escape the abyss that is opening up to us.”

The road to redemption is narrow, full of sacrifice and uncertainty. However, it is the path we must follow, for the sake of our children, our planet and a fragile web of life that binds us all.



IZBORI 2024.

# Borba za zelenu budućnost

ELECTIONS 2024

# The Fight for a Green Future



**Dok svet korača ka najznačajnija globalnoj izbornoj godina u istoriji, senka klimatskih promena zahvata političku scenu poput guste magle. Sa procenjenih 4 milijarde birača, izbori 2024. Postaju, ne samo ključna tačka za demokratiju, već i za ostvarenje održivog razvoja.**

Nakon burne 2023, godine obeležene rekordnim toplotnim talasima i razornim klimatskim katastrofama,

hitnost u borbi protiv klimatskih promena dostiže vrhunac. Globalne prosečne temperature uspele su da se vinu na 1,48°C iznad predindustrijskih nivoa, opasno blizu pragova od 1,5°C postavljenih u značajnom Pariskom sporazumu iz 2015. Posledice koje će nastupiti ukoliko ovaj prag bude premašen su zastrašujuće, sa nepopravljivim posledicama koje već bacaju svoju senku nad horizont.



**As the world moves towards the most significant global election year in history, the shadow of climate change is engulfing the political scene like a thick fog. With estimated 4 billion voters, the 2024 elections are becoming not only a key point for democracy, but also for the achievement of sustainable development.**

After a tumultuous 2023, a year marked by record-

breaking heat waves and devastating climate disasters, the urgency to combat climate change is reaching its peak. Global average temperatures have managed to soar 1.48°C above pre-industrial levels, dangerously close to the 1.5°C thresholds set out in the important Paris Agreement of 2015. The consequences if this threshold is exceeded are terrifying, with irreversible ones which are already casting their shadow over the horizon.







Od ekstremnih vremenskih pojava do rastućih nivoa mora, posledice klimatskih promena su sveprisutne i dugoročne. Još uznemirujuće je što se nivoi atmosferskog ugljen-dioksida nastavljaju nezaustavljivo da se povećavaju, gurajući čovečanstvo na ivicu iscrpljenja preostalog budžeta ugljen-dioksida. Sa vremenskim periodom od svega nekoliko godina preostalih za izbegavanje katastrofalnih klimatskih scenarija, potreba za hitnom i odlučnom akcijom nikada nije bila preče potrebna.

U ovom kumulatu nadolazeće krize, promene u javnom mnjenju o klimatskim promenama doživele su duboku transformaciju. U istraživanjima sprovedenim od strane organizacija kao što su Program Ujedinjenih nacija za razvoj i Centar za istraživanje javnog mnjenja „Pju“, većina ispitanika prepoznala je klimatske promene kao hitan globalni problem. Talas skepticizma opada, sa manjim brojem pojedinaca koji tvrde da su klimatske promene obmana.

Ipak, uprkos rastućem osvešćivanju, javno angažovanje u borbi protiv klimatskih promena ostaje slabo. Nedavno istraživanje Univerziteta Jejl otkrilo je da, iako većina Amerikanaca priznaje stvarnost klimatskih promena, razgovori na ovu temu ostaju retki. Tek mali broj ispitanika redovno razgovara o klimatskim promenama sa svojim bližnjima.



## Senka nad politikom

Kao gusti oblak, klimatske promene lebde nad političkim horizontom, podsećajući na hitnost koja neizbežno deli izborne diskusije. Ova slikovita slika naglašava dominaciju klimatskih pitanja u svetu politike.



From extreme weather conditions to rising sea levels, the effects of climate change are pervasive and long-term. Even more disturbingly, atmospheric carbon dioxide levels continue to rise unstopably, pushing humanity to the brink of exhausting its remaining carbon budget. With only a few years left to avoid catastrophic climate scenarios, the need for urgent and decisive action has never been more urgent.

In this tumult of the looming crisis, changes in public opinions about climate change have undergone a profound transformation. In surveys conducted by organizations such as the United Nations Development Program and the Pew Public Opinion Research Center, most respondents have recognized climate change as an urgent global problem. The wave of skepticism is receding, with fewer individuals claiming climate change is a hoax.

Yet, despite growing awareness, public engagement in the fight against climate change remains weak. A recent study by Yale University found that while most Americans acknowledge the reality of climate change, conversations on the topic remain rare. Only a small number of respondents regularly discuss climate change with their relatives.




## A shadow over politics

Like a thick cloud, climate change hovers over the political horizon, reminding us of the urgency that inevitably divides election debates. This picture highlights the dominance of climate issues in the world of politics.





Dok svet balansira na ivici, uloga izbora u oblikovanju budućnosti klimatskih akcija ne može biti precenjena. Politički lideri i stranke suočavaju se sa sve većim pritiskom da daju prioritet klimatskim politikama u svojim izbornim agendama, odražavajući rastuću hitnost ovog pitanja među biračima širom sveta. Ishod izbora 2024. mogao bi biti ključan u određivanju sudbine naše planete i budućih generacija.


U svetlu ovih nezapamćenih izazova, uloga nikada nije bio veći. Dok birači odlučuju u narednim mesecima, postavlja se pitanje: Hoće li klimatske promene zauzeti centralno mesto u političkom spektru ili će ponovo biti gurnute u stranu? 

## Balansirajući na ivici

Dok se svet bori da održi ravnotežu, politički lideri i birači širom sveta stoje na ivici sudbine, odlučujući kojim putem će se kretati u borbi za zelenu budućnost. Ova slika upućuje na ključnu ulogu koju izbori 2024. igraju u globalnoj borbi za održivost.



As the world balances on the edge, the role of elections in shaping the future of climate action cannot be overstated. Political leaders and parties are facing increasing pressure to prioritize climate policies on their election agendas, reflecting the growing urgency of the issue among voters around the world. The outcome of the 2024 elections could be crucial in determining the fate of our planet and future generations.

In light of these unprecedented challenges, the stakes have never been higher. As voters decide in the coming months, the question is: Will climate change take center stage on the political spectrum, or will it once again be pushed to the sidelines? 

## Balancing on the edge

As the world struggles to maintain balance, political leaders and voters around the world stand on the edge of fate, deciding which path to take in the fight for a green future. This image points to the crucial role that the 2024 elections play in the global struggle for sustainability





# Ko se protivi ukidanju plastičnih kesa

Slučaj protiv plastičnih kesa je jednostavan. One izazivaju zagađenje u svakoj fazi svog životnog veka, počevši od vađenja nafte i gasa, koji se koriste za njihovu proizvodnju



Više od 500 gradskih uredbi zabranjuje plastične kese u SAD, kao i 12 zabrana širom države: u Kaliforniji, Koloradu, Konektikatu, Delaveru, Havajima, Mejnu, Nju Džersiju, Njujorku, Oregonu, Roud Ajlendu, Vermont i Vašingtonu. Novi zakoni bi uskoro mogli da dodaju Džordžiju i Masačusets na tu listu. Zabrana u Nju Džersiju, koja je usvojena 2022. godine, imala je najveći uticaj, eliminišući više od 5,5 milijardi plastičnih kesa godišnje. Politike u drugim jurisdikcijama eliminisale su između 45 miliona i 200 miliona plastičnih kesa godišnje, u zavisnosti od veličine populacije.



# Who is Against Plastic Bag Bans



The case against plastic bags is simple. They cause pollution at every stage of their life cycle, starting with the extraction of the oil and gas used to produce them

There are more than 500 city ordinances banning plastic bags in the U.S., as well as 12 state bans — in California, Colorado, Connecticut, Delaware, Hawai'i, Maine, New Jersey, New York, Oregon, Rhode Island, Vermont, and Washington. New bills could soon add Georgia and Massachusetts to that list.

New Jersey's ban, enacted in 2022, has had the greatest impact, eliminating more than 5.5 billion plastic bags annually

Policies in other jurisdictions have eliminated between 45 million and 200 million plastic bags annually, depending on the size of the population.







## JEDNOSTAVAN SLUČAJ

Slučaj protiv plastičnih kesa je jednostavan. One izazivaju zagađenje u svakoj fazi svog životnog veka, počevši od vađenja nafte i gasa, koji se koriste za njihovu proizvodnju.

Takođe se ne mogu reciklirati, nakon što se koriste samo jednom, u proseku oko 12 minuta, prema jednoj proceni, one se ili spaljuju ili šalju na deponiju, gde mogu da traju stotinama godina.

Plastične kese, uz plastične folije, uzrokuju više smrti morskih kornjača, kitova i delfina nego bilo koja druga vrsta plastike. One takođe mogu odbaciti sitne fragmente zvane mikroplastika, čije izlaganje može biti povezano sa metaboličkim poremećajem, neurotoksičnošću i reproduktivnim oštećenjem kod ljudi, između ostalih zdravstvenih problema.

„Čini se kao da postoji studija svake nedelje koja pokazuje da plastika ne samo da zagađuje životnu sredinu, već i ulazi u naš krvotok“, rekla je Dženet Domenik, izvršna direktorka neprofitne organizacije MassPIRG, ogranka istraživačke grupe u Masačusetsu.

Osim toga, mikroplastika oslobađa gasove staklene bašte koji doprinose klimatskim promenama.

GN ►►



Zabrana u Nju Džersiju, koja je usvojena 2022. godine, imala je najveći uticaj, eliminišući više od 5,5 milijardi plastičnih kesa godišnje



## SIMPLE CASE

The case against plastic bags is simple. They cause pollution at every stage of their life cycle, starting with the extraction of the oil and gas used to produce them.

They are also non-recyclable, after being used just once, about 12 minutes on average, according to one estimate, they are either incinerated or sent to landfill, where they can last for hundreds of years.

Plastic bags, along with plastic films, cause more deaths of sea turtles, whales and dolphins than any other kind of plastic. They can also shed tiny fragments called microplastics, exposure to which may be linked to metabolic disorder, neurotoxicity and reproductive damage in humans, among other health problems.

“It feels like there’s a study a week showing that plastics are not just littering and polluting the environment, but digging into our bloodstream,” said Janet

Domenitz, executive director of the nonprofit organization MassPIRG, a branch of the Massachusetts research group.

In addition, microplastics release greenhouse gases that contribute to climate change.

GN ►►



Microplastics release greenhouse gases that contribute to climate change





## NISU SVI ZA UKIDANJE

Ipak, zabrana plastičnih kesa ima svoje skeptike, uključujući i one koji veruju da je „narcistično“ podržavati ih dok se i dalje bave drugim ekološki destruktivnim praksama, poput vožnje automobila na benzin.

Neki istraživači su kontrainuitivno zaključili da su plastične kese dobre za životnu sredinu, u poređenju sa alternativama od papira ili platna. Jedna virusna studija iz 2018. godine tvrdila je da bi pamučna kesa morala da se ponovo koristi 20.000 puta da bi se nadoknadio uticaj na životnu sredinu proizvodnje, dok su druge studije kritikovale zabranu plastičnih kesa zbog toga što su dovele do porasta upotrebe papirnih.

Istraživanja pokazuju da je za proizvodnju papirnih kesa potrebno više energije i vode od plastičnih.

Drugi stručnjaci, međutim, kažu da studija o pamučnim kesama pravi „lažno poređenje“ između plastičnih kesa za višekratnu upotrebu i plastičnih kesa, ne uzimajući u obzir uticaje plastike na ceo životni ciklus nakon što se odloži u životnu sredinu.

Što se tiče debate o plastici ili papiru, ekološke grupe se slažu da bi poenta „dobro dizajnirane“ zabrane plastičnih kesa trebalo da bude smanjenje upotrebe kesa za jednokratnu upotrebu bilo koje vrste.

„Namera ovih zakona nije da se sa kese za jednokratnu upotrebu pređu na drugu kesu za jednokratnu upotrebu“, rekla je Celeste Meiffren-Svango, direktor kampanje Beyond Plastic Centra za istraživanje životne sredine i politike i koautor novog izveštaja.

Ona je preporučila da sve zabrane plastičnih kesa uključuju naplatu od 10 centi za papirne kese kako bi podstakle kupce da donesu alternative za višekratnu upotrebu.

Izveštaj je takođe pozvao kreatore politike da zabrane plastične kese bilo koje vrste, ne samo tanke. U nekim jurisdikcijama identifikovao je „rupu“ koja je omogućila prodavnicama prehrambenih proizvoda i drugim prodavcima da zamene tanke plastične kese za jednokratnu upotrebu debljim koje su nominalno za višekratnu upotrebu, iako istraživanja sugerišu da potrošači ne koriste ponovo deblje kese u praksi.

U Kaliforniji je ova rupa dovela do neto povećanja težine plastičnih kesa koje se koriste po osobi između 2004. i 2021.



## NOT ALL ARE FOR THE BAN

Yet, plastic bag bans have its skeptics, including those who believe it is „narcissistic“ to support them while still engaging in other environmentally destructive practices, such as driving gasoline-powered cars.

Some researchers have counterintuitively concluded that plastic bags are good for the environment, compared to paper or canvas alternatives. One viral study in 2018 claimed that

a cotton bag would have to be reused 20,000 times to offset the environmental impact of producing it, while other studies have criticized the ban on plastic bags for leading to an increase in the use of paper ones.

Research shows that the production of paper bags takes more energy and water than plastic ones.

However, other experts say the cotton bag study makes a „false comparison“ between reusable plastic bags and plastic bags, failing to consider the full life-cycle impacts of plastic after it is disposed of in the environment.

As for the plastic or paper debate, environmental groups agree that the point of a „well-designed“ plastic bag ban should be to reduce the use of single-use bags of any kind.

“The intent of these laws isn’t to shift from a single-use bag to another single-use bag,” said Celeste Meiffren-Svango, the director of Beyond Plastic campaign of the Center for Environment Research and Policy.

She recommended that all plastic bag bans include a 10-cent charge for paper bags to encourage customers to bring reusable alternatives.

The report also urged policymakers to ban plastic bags of any kind, not just thin ones. In some jurisdictions, it identified a „loophole“ that allowed grocery stores and other retailers to replace thin single-use plastic bags with thicker ones that are nominally reusable, even though research suggests that consumers do not reuse thicker bags in practice.

In California, this loophole led to a net increase in the weight of plastic bags used per person between 2004 and 2021.







# Reciklaža plastike NE FUNKCIONIŠE

Novi dokumenti pokazuju da su rukovodioci industrije gurali recikliranje plastike uprkos tome što su od 1980-ih znali da se „ne može smatrati trajnim rešenjem za čvrsti otpad“

**Već 40 godina plastične i petrohemijske kompanije pokušavaju da ubede javnost da se plastika može reciklirati. Ali isto tako dugo znaju da recikliranje plastike nikada neće funkcionisati.**

Izveštaj koji je objavio neprofitni Centar za klimatski integritet, ili CCI, beleži „decenijske kampanje prevare i obmane“ kompanije Big Oil i industrije plastike, koje promovišu recikliranje kao rešenje za krizu zagađenja plastikom.

Novi dokumenti pokazuju da su rukovodioci industrije gurali recikliranje plastike uprkos tome što su od 1980-ih znali da se „ne može smatrati trajnim rešenjem za čvrsti otpad“ i da reciklirana plastika nikada neće moći da se ekonomski takmiči sa devičanskim materijalom.

Danas je stopa recikliranja plastike u SAD oko 5 ili 6 procenata.



# Plastics Recycling DOESN'T WORK

New documents show that industry executives have pushed plastics recycling despite knowing since the 1980s that it „cannot be considered a permanent solid waste solution“

**For 40 years, plastic and petrochemical companies have been trying to convince the public that plastics can be recycled. But they have also known for a long time that plastics recycling will never work.**

The report, released by the nonprofit Center for Climate Integrity, or CCI, chronicles „decade-long campaigns of fraud and deception“ by Big Oil and the plastics industry, which promote recycling as the solution to the plastics pollution crisis.

New documents show that industry executives have pushed plastics recycling despite knowing since the 1980s that it „cannot be considered a permanent solid waste solution“ and that recycled plastics would never be able to compete economically with virgin material.

Today, the plastics recycling rate in the US is about 5 or 6 percent.



Zagovornici zaštite životne sredine kažu da je „mit“ o recikliranju plastike omogućio nesmetanu ekspanziju industrije, proizvodnja plastike je porasla za skoro 230 puta od 1950

Environmental advocates say the “myth” of plastics recycling has facilitated the industry’s unmitigated expansion — plastic production has grown by nearly 230 times since 1950





## LAŽI NAFTNE INDUSTRIJE

Autori izveštaja upoređuju kampanju reciklaže industrije plastike sa taktikom kompanije Big Oil da ubedi javnost da njeni proizvodi ne izazivaju klimatske promene. Mnoge kompanije su bile uključene u oba pokušaja, pošto se plastika pravi od fosilnih goriva.

„Laži naftne industrije su u srcu dve najkatastrofalnije krize zagađenja u istoriji čovečanstva“, poručio je Ričard Viles, predsednik CCI-ja u saopštenju.

Dokumenti snažno sugerišu da plastična i petrohemijska industrija vide reciklažu kao nešto više od načina da se ukroti gnev javnosti i odbije zakonodavstvo protiv plastike. U jednom dokumentu iz 1994. citira se predstavnik kompanije Eastman Chemical koji kaže da, iako bi recikliranje plastike jednog dana moglo postati stvarnost, „veća je verovatnoća da ćemo se probuditi i shvatiti da nećemo reciklirati svoj put iz problema sa čvrstim otpadom“.



„Laži naftne industrije su u srcu dve najkatastrofalnije krize zagađenja u istoriji čovečanstva“, poručio je Ričard Viles, predsednik CCI-ja u saopštenju



## THE LIES OF THE OIL INDUSTRY

The authors of the report compare the plastics industry's recycling campaign to Big Oil's tactics to convince the public that its products do not cause climate change. Many companies have been involved in both attempts, since plastics are made from fossil fuels.

„The oil industry's lies are at the heart of the two most catastrophic pollution crises in human history“, said Richard Wiles, the president of the Center for Climate Integrity (CCI) in a statement.

The documents strongly suggest that the plastics and petrochemical industries see recycling as little more than a way to tame public anger and fend off anti-plastics legislation. A 1994 document quoted a representative of Eastman Chemical as saying that while plastics recycling may one day become a reality, „we are more likely to wake up and realize that we are not going to recycle our way out of the solid waste problem.“



„The oil industry's lies are at the heart of the two most catastrophic pollution crises in human history“, said Richard Wiles, the president of the Center for Climate Integrity (CCI) in a statement

CO<sub>2</sub>





## MIT O RECIKLIRANJU

Danas se većina plastičnog otpada spaljuje ili šalje na deponije, gde stvara opasno zagađenje vazduha i vode koje neproporcionalno utiče na zajednice sa niskim prihodima i zajednice u boji. U međuvremenu, zagovornici zaštite životne sredine kažu da je „mit“ o recikliranju plastike omogućio nesmetanu ekspanziju industrije, proizvodnja plastike je porasla za skoro 230 puta od 1950. Očekuje se da će plastika pokretati skoro polovinu rasta globalne potražnje za naftom između 2017. i 2050. godine.

CCI se nada da će njen izveštaj „postavljati osnovu“ za ambicioznije pravne izazove protiv

industrije plastike i petrohemijske. Prema Alisi Džol, potpredsednici pravnog i opšteg savetnika CCI-a, većina tužbi do sada je bila usmerena na proizvođače određenih proizvoda — na primer, Keurig, koji je na pogrešan način stavio simbol za reciklažu „strele koje jure“ na mahune kafe koje zapravo ne bi mogle biti reciklirane.

Najviše obećavajući pritisak do sada došao je od strane državnog tužioca Kalifornije Roba Bonte, koji je 2022. godine počeo da istražuje fosilna goriva i hemijske kompanije zbog njihove uloge u, kako je on nazvao, „agresivnoj kampanji zavaravanja javnosti“ o održivosti recikliranja plastike. Ta istraga je u toku.



## THE MYTH OF RECYCLING

Today, most plastic waste gets incinerated or sent to landfills, where it creates hazardous air and water pollution that disproportionately affects low-income communities and communities of color. Meanwhile, environmental advocates say the “myth” of plastics recycling has facilitated the industry’s unmitigated expansion — plastic production has grown by nearly 230 times since 1950.

Plastics are expected to drive nearly half of the growth in global oil demand between 2017 and 2050. CCI hopes that its report “lays the foundation” for more ambitious legal challenges

against the plastics and petrochemical industries. According to Alyssa Johl, CCI’s vice president of legal and general counsel, most lawsuits so far have targeted the makers of specific products — for instance, Keurig, which misleadingly placed the “chasing arrows” recycling symbol on coffee pods that could not actually be recycled.

The most promising push so far has come from California Attorney General Rob Bonta, who in 2022 began investigating fossil fuel and chemical companies for their role in what he called an “aggressive campaign to deceive the public” about the viability of plastics recycling. That investigation is ongoing.



# Put ka održivosti počinje u IEE corporation-u

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Mi smo vaš globalni partner za razvoj investicija u oblasti čiste energije. Proteklih 15 godina, posvećeni smo stvaranju inovativnih rešenja za budućnost u okviru čiste energije i racionalne upotrebe resursa. Od hidro, vetro i solarnih postrojenja do termoenergetike i naprednih pametnih infrastrukturnih projekata, industrijskih rešenja bez emisije CO<sub>2</sub>, naša referenca govori sve.

We are your global partner for clean energy investment development. Over the past 15 years, we have dedicated to shaping innovative solutions for the future within clean energy and rational resource usage. From hydro, wind, and solar plants to thermal energy systems and advanced smart infrastructure projects, carbon-free industrial solutions, our portfolio speaks for itself.



# Kućica na drvetu na solarni pogon

# Solar-Powered Treehouse

Kućica na drvetu od 34 kvadrata se uzdiže na dva sprata i prostire se na tri stabla - jedan crveni javor i dva šećerna javora



**Da li ste nekada želeli da prenoćite u kućici na drvetu? Predstavljamo vam pravu modernu, eko kuću koju možete već sutra iznajmiti.**

Izgrađena od strane lokalne kompanije Fort Treehouse Co., kućica na drvetu od 34 kvadrata se uzdiže na dva sprata i prostire se na tri stabla - jedan crveni javor i dva šećerna javora.

Baltik je jedinstvena kućica na drvetu koja uključuje čitav niz pogodnosti poput kuhinje, kupatila, dnevne sobe, udobnog potkrovlja za spavanje, kao i luksuznih dodataka kao što je kada na drva na otvorenom.

Sa spoljašnje strane, ova kućica na drvetu na solarni pogon ima mnogo prozora, koji prostoru daju prirodno osvetljenje.

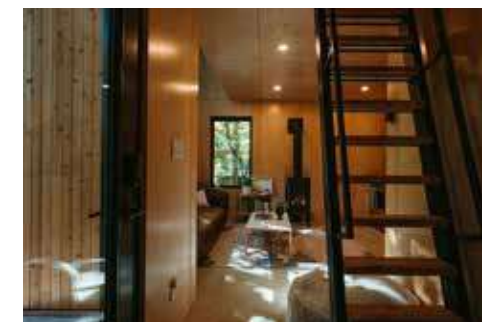
Baltik je izgrađen tehnikom koja štiti drveće što je više moguće. Na primer, oko drveća nije korišćena velika mehanizacija, koja može značajno oštetiti

po površinski koren koji upija vodu. Umesto toga, korišćen je složen sistem montaže tako da su veliki oslonci i komadi materijala bili zamahnuti ručno vučenim užadima.

Struktura se takođe nalazi na platformi udaljenoj na 3 metra od zemlje koja je podržana specijalizovanim hardverom koji je pričvršćen za drveće.

Platforma takođe služi kao mala spoljna paluba, uključujući prostor koji funkcioniše kao spoljni tuš, skriven u deblima drveća. Za ovaj projekat, potporna stabla su se nalazila izvan omotača kućice na drvetu.

Dnevna soba ima visoke prozore koji dozvoljavaju sunčevoj svetlosti da ulazi, zagrevajući pod koji je napravljen od mešavine lokalne gline, peska i slame. Ovaj zemljani pod obezbeđuje veliku toplotnu masu koja upija toplotu od sunca, a zatim je polako oslobađa tokom dana kako bi kuća ostala topla.



**Have you ever wanted to spend a night in a treehouse? We present you a real modern, eco house that you can rent tomorrow.**

Built by a local company Fort Treehouse Co., the 34-square-meter treehouse rises up two stories and spans over three trees — one red maple and two sugar maples.

Baltik is a unique treehouse that includes a full range of amenities such as a kitchen, bathroom, living room, cozy sleeping loft, as well as luxurious extras like an outdoor wood-fired hot tub.

From the outside, the solar-powered treehouse has many large windows to let in plenty of natural light.

The Baltik was built using techniques that would protect the trees as much as possible. For instance, no large machinery was used around the trees, which can damage the water-absorbing surface roots significantly.

Instead, a complex system of rigging was used so that large supports and pieces of materials were swung into by hand-pulled ropes.

The structure also sits on a platform 3 meters off the ground that is supported by specialized hardware that is attached to the trees.

The platform also serves as a small outdoor deck, including an area that functions as an outdoor shower, hidden by the tree trunks. For this project, the supporting trees were located outside of the treehouse envelope.

The living room has tall windows that let sunlight in, warming the floor which is made from a mixture of local clay, sand and straw. This earthen floor provides a big thermal mass that soaks up heat from the sun, then slowly releases it throughout the day to keep the house warm.







Za glavni izvor grejanja, tu je i kamin na propan sa strane. Ploče od iverice od baltičke breze oblažu zidove, a izabrane su jer bi ovaj materijal omogućio dinamično pomeranje koje se dešava u kućici na drvetu, više nego obični suvi zid.

Na donjem spratu smeštena je i minimalistička kuhinja, dok je na gornjem spavaći deo. Ova moderna eko kućica na drvetu izdaje se u Torontu po ceni od 300 evra za noćenje.



For the main heating source, there is also a propane fireplace off to the side. Baltic birch plywood panels line the walls, and they were chosen as this material would allow for the dynamic shifting that occurs in a treehouse, more so than regular drywall.

A minimalist kitchen is downstairs, while the sleeping loft is upstairs. This modern eco treehouse is for rent in Toronto at a price of 300 euros per night.



# Elegancija inspirisana prirodom.



Kao jedan od najbrže rastućih brendova na regionalnom tržištu kućnih aparata, Tesla nudi elegantne i kvalitetne uređaje koji olakšavaju živote, pružaju razne mogućnosti zabave, i omogućuju efikasniju i jednostavniju svakodnevicu.

Istražite ceo Tesla asortiman na [tesla.info](https://tesla.info). Dobro došli u svet u kojem tehnologija pripada svima.

Tehnologija svima

TESLA





# Kako brza moda utiče na životnu sredinu

Modni prodavci kao što su Zara, Forever 21 i H&M proizvode jeftinu i modernu odeću, kako bi zadovoljili potrebe (mlađih) potrošača. Ipak, brza moda ima značajan uticaj na životnu sredinu, a sve je više u ekspanziji. Prema Programu UN za životnu sredinu (UNEP), industrija brze mode je drugi najveći potrošač vode i odgovorna je za oko 10 odsto globalnih emisija ugljenika – što je više od svih međunarodnih letova i pomorskog saobraćaja zajedno.

Nažalost, potrošači često zanemaruju probleme brze mode,

tačnije – ne razmišljaju o tome. Važno im je da se lepo i komforno obuku; odgovornost je, međutim, i na kupcima i na trgovcima i vreme je da se „osvestimo“.

## ŠTA JE BRZA MODA

Termin „brza moda“ vremenom je postao istaknutiji u razgovorima o modi, održivosti i ekološkoj svesti, a odnosi se na „cenovno jeftinu odeću, koja kopira najnovije stilove sa modnih pista i brzo se transportuje do prodavnica, kako bi se trenutni trendovi maksimalno iskoristili“.

U suštini, ovaj način rada uključuje brz dizajn, proizvodnju, distribuciju i isto takvo promovisanje odeće, što znači da su trgovci u mogućnosti da „izvuku“ enormne količine raznih proizvoda, omogućavajući potrošačima da dobiju više – za manje para.

Termin „brza moda“ je prvi put upotrebljen početkom 1990-ih, kada je Zara stigla u Njujork, a skovao ga je Njujork tajms, sa idejom da opiše misiju te modne kompanije da put odevnog predmeta – od faze dizajna do prodaje u prodavnicama – treba da traje samo 15 dana.



# How Fast Fashion Affects the Environment

Fashion retailers such as Zara, Forever 21 and H&M produce cheap and fashionable clothes in order to meet the needs of (younger) consumers. However, fast fashion has a significant impact on the environment, and it is increasingly expanding. According to the UN Environment Programme (UNEP), the fast fashion industry is the second largest user of water, and is responsible for around 10 percent of global carbon emissions – more than all international flights and maritime shipping combined.

Unfortunately, consumers often ignore the problems of

fast fashion, or rather, they do not think about it. It is important for them to dress nicely and comfortably. However, the responsibility lies with both customers and retailers, and it is time to „come to our senses“.

## WHAT IS FAST FASHION?

The term „fast fashion“ has become more prominent over time in conversations about fashion, sustainability and environmental awareness, and refers to „cheaply produced and priced garments that copy the latest catwalk styles and are quickly transported to stores, in

order to make the most of current trends.“

Basically, this way of working involves fast design, production, distribution and promotion of clothing, which means that retailers are able to „pull“ enormous quantities of various products, allowing consumers to get more - for less money.

The term „fast fashion“ was first used in the early 1990s, when Zara arrived in New York. It was coined by the New York Times, with the idea of describing the fashion company's mission that the journey of a garment - from the design stage to sales in stores - should last only 15 days.



Modna industrija proizvodi abnormalne količine otpada koji se svakodnevno taloži na našoj planeti, jedinoj koju imamo

The fashion industry produces abnormal amounts of waste that are deposited daily on our planet, the only one we have





ETHICAL  
FAST FASHION

Prema analizi Biznis Insajdera, modna proizvodnja čini 10% ukupne globalne emisije ugljenika, koliko i cela Evropska unija



According to an analysis by Business Insider, fashion production accounts for 10% of the total global carbon emissions, as much as the European Union



## MRAČNA STRANA BRZE MODE

Prema analizi Biznis Insajdera, modna proizvodnja čini 10% ukupne globalne emisije ugljenika, koliko i Evropska unija. Isušuje izvore vode i zagađuje reke i potoke, dok 85% svih tekstila odlazi na deponije svake godine. Čak i pranje veša ispušta 500.000 tona mikrovlakana u okean svake godine, što je ekvivalent 50 milijardi plastičnih boca.

Izveštaj kompanije „Quantis International“ 2018. otkrio je da su tri glavna pokretača globalnih uticaja industrije na zagađenje (1) bojenje i dorada (36%), (2) priprema prediva (28%) i (3) proizvodnja vlakana (15%). Izveštaj je, takođe, utvrdio da proizvodnja vlakana ima najveći uticaj na povlačenje slatke vode i kvalitet ekosistema usled uzgoja pamuka, dok bojenje i dorada, priprema prediva i proizvodnja vlakana zahtevaju najviše faza. Ti koraci direktno utiču na iscrpljivanje resursa, zbog energetski intenzivnih procesa, zasnovanih na energiji fosilnih goriva.

Prema Okvirnoj konvenciji UN-a o klimatskim promenama, predviđa se da će emisije – samo iz tekstilne proizvodnje – naglo porasti za 60% do 2030. godine. U 2012. godini Zara je bila u mogućnosti da dizajnira, proizvede i isporuči novu odeću za samo dve nedelje, Forever 21 za šest nedelja, a H&M za osam nedelja.

To dovodi do toga da modna industrija proizvodi abnormalne količine otpada koji se svakodnevno taloži na našoj planeti, jedinoj koju imamo.

Taj uticaj obuhvata iscrpljivanje neobnovljivih izvora, emisiju gasova staklene bašte i korišćenje ogromnih količina vode i energije. Modna industrija je druga najveća potrošačka industrija vode, koja zahteva oko 700 galona za proizvodnju jedne pamučne košulje i čak 2.000 galona vode za proizvodnju para farmerki.

Biznis Insajder, takođe, upozorava da je bojenje tekstila drugi najveći zagađivač vode na svetu, pošto se voda koja je ostala od procesa bojenja često baca u jarke, potoke ili reke, a tu je i problem mikroplastike.

Naime, brendovi koriste sintetička vlakna poput poliestera, najlona i akrila kojima su potrebne stotine godina da se razgrade. Izveštaj Međunarodne unije za očuvanje prirode (IUCN) iz 2017. procenjuje da 35% sve mikroplastike – sitnih komada nerazgradive plastike – u okeanu potiče od pranja sintetičkog tekstila poput poliestera. Prema dokumentarcu objavljenom 2015. godine, pod nazivom „The True Cost“, svet potroši oko 80 milijardi novih komada odeće svake godine, i 400% više potrošnje u odnosu na pre dvadeset godina.

Proizvodnja kože, recimo, zahteva velike količine hrane, zemlje, vode i fosilnih goriva za uzgoj stoke. Uz sve to, treba pomenuti i upotrebu energije, potrebnu za sve ove modne procese. Proizvodnja plastičnih vlakana u tekstil je energetski intenzivan proces koji zahteva velike količine nafte i oslobađa isparljive čestice i kiseline poput hlorovodonika. Osim toga, pamuk, koji se nalazi u velikoj količini proizvoda brze mode, takođe nije ekološki prihvatljiv za proizvodnju.



## THE DARK SIDE OF FAST FASHION

According to an analysis by Business Insider, fashion production accounts for 10% of the total global carbon emissions, as much as the European Union. It dries up water sources and pollutes rivers and streams, while 85% of all textiles end up in landfills every year. Even washing clothes releases 500,000 tons of microfibers into the ocean each year, the equivalent of 50 billion plastic bottles.

The Quantis International 2018 report found that the three main drivers of the industry's global pollution impacts are (1) dyeing and finishing (36%), (2) yarn preparation (28%) and (3) fiber production (15%). The report also found that fiber production has the greatest impact on freshwater withdrawal and ecosystem quality due to cotton cultivation, while the dyeing and finishing, yarn preparation and fiber production require most stages. These steps directly affect resource depletion, due to energy-intensive processes based on fossil fuel energy.

According to the UN Framework Convention on Climate Change, emissions - from textile production alone - are predicted to skyrocket by 60% by 2030. In 2012, Zara was able to design, manufacture and ship new clothes in just two weeks, Forever 21 in six weeks, and H&M in eight weeks.

This results in the fashion industry producing abnormal amounts of waste that are deposited daily on our planet, the only one we have.

This impact includes the depletion of non-renewable resources, the emission of greenhouse gases and the use of massive amounts of water and energy. The fashion industry is the second largest consumer of water, requiring about 700 gallons to produce one cotton shirt and as much as 2,000 gallons of water to produce a pair of jeans. Business Insider also warns that textile dyeing is the second largest polluter of water in the world, since the water leftover from the dyeing process is often dumped into ditches, streams or rivers, and there is also the problem of microplastic.

Namely, brands use synthetic fibers such as polyester, nylon and acrylic that take hundreds of years to decompose. A 2017 report from International Union for Conservation of Nature (IUCN) estimated that 35% of all microplastics – tiny pieces of non-degradable plastic – in the ocean come from washing synthetic textiles like polyester. According to the documentary released in 2015, called „The True Cost“, the world consumes around 80 billion new pieces of clothing every year, 400% more than the consumption twenty years ago.

The production of leather, for example, requires large amounts of feed, land, water and fossil fuels to raise livestock. In addition to all that, we should also mention the use of energy needed for all these fashion processes. The production of plastic fibers into textiles is an energy-intensive process that requires large amounts of petroleum and releases volatile particles and acids such as hydrogen chloride.





# Tube pasti za zube su problematične

Pakovanje za proizvode kao što su šampon i pasta za zube jedva da se registruju na radaru svesti o plastici, ali bi trebalo!



**Kada razmišljate o smanjenju plastičnog otpada, prve stvari koje vam padaju na pamet su verovatno predmeti za jednokratnu upotrebu kao što su flaše za vodu ili torbe za kupovinu. Pakovanje za proizvode kao što su šampon i pasta za zube jedva da se registruju na radaru svesti o plastici, ali bi trebalo!**

Većina tuba pasti za zube napravljena je od mešavine materijala, što ih čini teškim, ako ne i nemogućim, za recikliranje. Prema Colgate-Pamolive-u (koji ima skoro 40 odsto globalnog tržišnog udela za paste za zube), 20 milijardi tuba paste godišnje se baci u smeće.

Pošto je milijardu teško zamisliti (a kamoli 20 milijardi), reći ćemo vam da bi milijarda narandži ispunila sportski stadion do vrha. S obzirom na tu mentalnu sliku, može se zamisliti koliko prostora na deponiji na kraju bude posvećeno samo tubama paste za zube.

U međuvremenu, tubama paste za zube je potrebno 500 godina da se razgrade. Dakle, imamo, recimo, otprilike 20 stadiona ispunjenih do vrha tubama paste za zube godišnje, iz godine u godinu, a te tube paste za zube ne idu nikuda vekovima.



Većina tuba pasti za zube napravljena je od mešavine materijala, što ih čini teškim, ako ne i nemogućim, za recikliranje

# Toothpaste Tubes Are Problematic

Packaging for products like shampoo and toothpaste may barely register on the plastic-awareness radar, but it should!

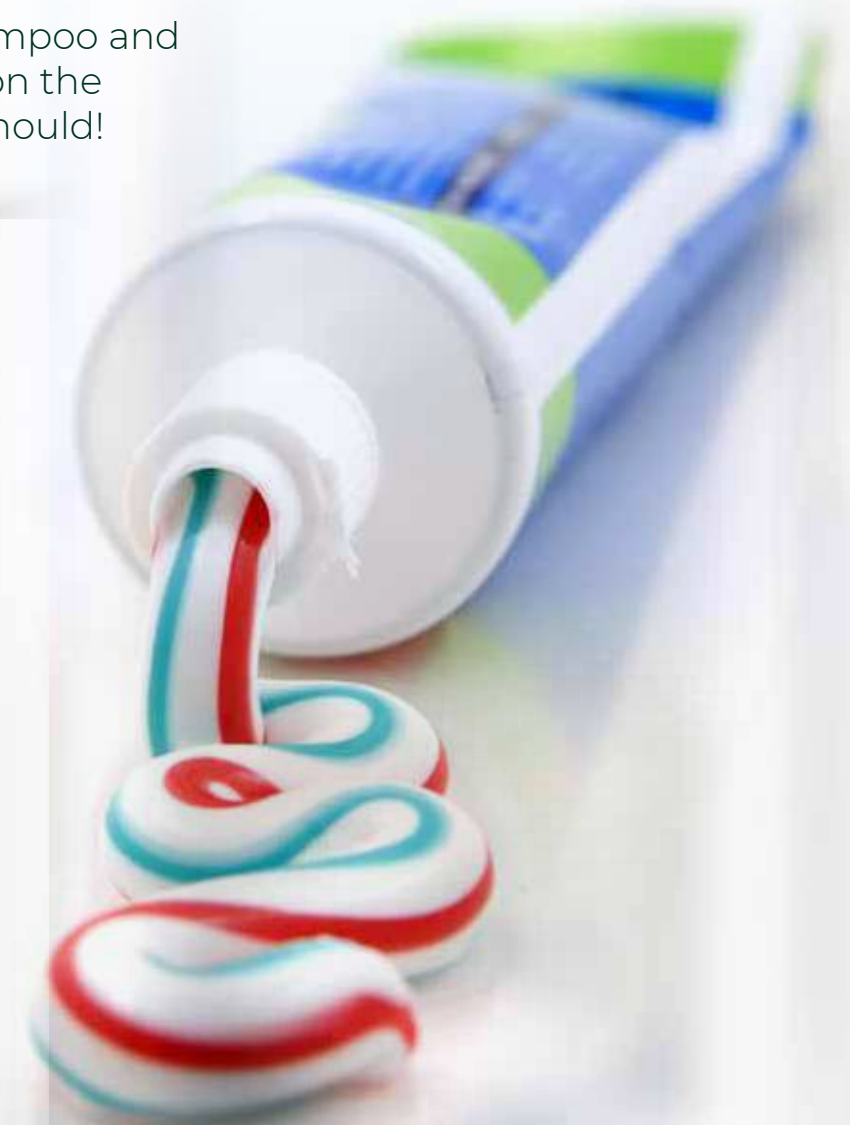


**When you think about reducing plastic waste, the first things that come to your mind are probably single-use items like water bottles or shopping bags. Packaging for products like shampoo and toothpaste may barely register on the plastic-awareness radar, but it should!**

Most toothpaste tubes are made from a mix of materials, making them hard, if not impossible, to recycle. According to Colgate-Pamolive (which has nearly 40% of the global market share for toothpaste), 20 billion toothpaste tubes are thrown in the trash every year.

Since one billion is hard to conceive of (let alone 20 billion), we will tell you that one billion oranges would fill a sports stadium to the brim. Given that mental picture, one can imagine how much landfill space ends up dedicated to toothpaste tubes alone.

Meanwhile, toothpaste tubes take 500 years to decompose. So we have, say, roughly 20 stadiums filled to the brim with toothpaste tubes annually, year after year—and those toothpaste tubes are not going anywhere for centuries.



Most toothpaste tubes are made from a mix of materials, making them hard, if not impossible, to recycle





That is an astonishing thing to consider and the reason why individuals are „infected” with toothpaste tablets.

The tablets come in a cute tin that is refillable and recyclable, they are vegan, and most importantly, they work. They are scientifically formulated with ingredients to naturally whiten teeth, freshen breath, remineralize enamel and reduce sensitivity. Plus, they are easy to use: you chew the tablet, wet your toothbrush and brush them. In addition to their reliable sustainability, they are a great option for travel as they are compact, lightweight and good for carry-on luggage.



To je zapanjujuća stvar koju treba razmotriti i razlog zašto su pojedinci „zaraženi” tabletama pasti za zube.

Tablete dolaze u slatkoj konzervi koja se može ponovo puniti i reciklirati, veganske su i što je najvažnije, rade posao. Naučno su formulisane sa sastojcima za prirodno izbeljivanje zuba, osvežavanje daha, remineralizaciju gleđi i smanjenje osetljivosti.

Plus su jednostavne su za upotrebu: sažvaćete tabletu, navlažite četkicu za zube i operet ih. I pored njihove pouzdane održivosti, odlična su opcija za putovanja jer su kompaktne, lagane i dobre za ručni prtljag.



# TRANSFERA

TRANSPORT & LOGISTICS

## VAŠ LOGISTIČKI PARTNER U ODRŽIVOM RAZVOJU

Već deset godina nastojimo da integrišemo ciljeve održivog razvoja u strateške ciljeve kompanije i transformišemo poslovanje primenom ekoloških rešenja u logistici.

[www.transfera.com](http://www.transfera.com)



# Otkrivanje sveta izvan granica konvencionalne mudrosti



Predstavljamo sedam fascinantnih naučnih čuda koja proširuju horizonte naše konvencionalne misli



## BUĐENJE RADILICA: PČELE SA KOFEINOM

U neočekivanom obrtu, istraživači su otkrili da pčele koje su izložene kofeiniziranoj šećernoj vodi pokazuju poboljšane motoričke sposobnosti potencijalno revolucionarajući njihovu efikasnost oprašivanja. Kofein pomaže u zadržavanju memorije mirisa cveta, sugerirajući da bi kofeiniranje medonosnih pčela moglo povećati njihovu produktivnost, što predstavlja primamljivu perspektivu za poljoprivrednike koji traže nove načine optimizacije oprašivanja useva.



## AWAKENING WORKERS: BEES WITH CAFFEINE

In an unexpected twist, researchers found that bees exposed to caffeinated sugar water displayed enhanced motor skills, potentially revolutionizing their efficiency of pollination. Caffeine helps retain the memory of a flower's scent, suggesting that caffeinating honey bees could increase their productivity, an alluring prospect for farmers looking for new ways to optimize crop pollination.

We present seven fascinating scientific wonders that expand the horizons of our conventional thought

## ROBOTI STVORENI IZ ŽIVOTA: KSENOBOTI

Mikroskopski roboti od ćelija žaba – ksenoboti, samosvesni i ekološki korisni, transformišu našu percepciju o stvaranju života. Neprikosnovena sposobnost samopopravke i upravljanja, pruža put za revolucionarnu primenu u očuvanju okoline. Sa životnim vekom ograničenim na dve nedelje, ova mikro čuda rastvaraju se bez traga, nudeći razne ekološke primene.



## ROBOTS CREATED FROM LIFE: XENOBOTS

Microscopic robots made of frog cells - xenobots, self-aware and ecologically beneficial, are transforming our perception of the creation of life. The undisputed ability of self-repair and management, paves the way for a revolutionary application in environmental conservation. With a lifetime limited to two weeks, these micro-miracles dissolve without a trace, offering a variety of ecological applications.

# Discovering the world beyond the boundaries of conventional wisdom





## ZAGONETNO KLIMANJE GLAVE PSA: JEZIK NEME PSIHOLOGIJE

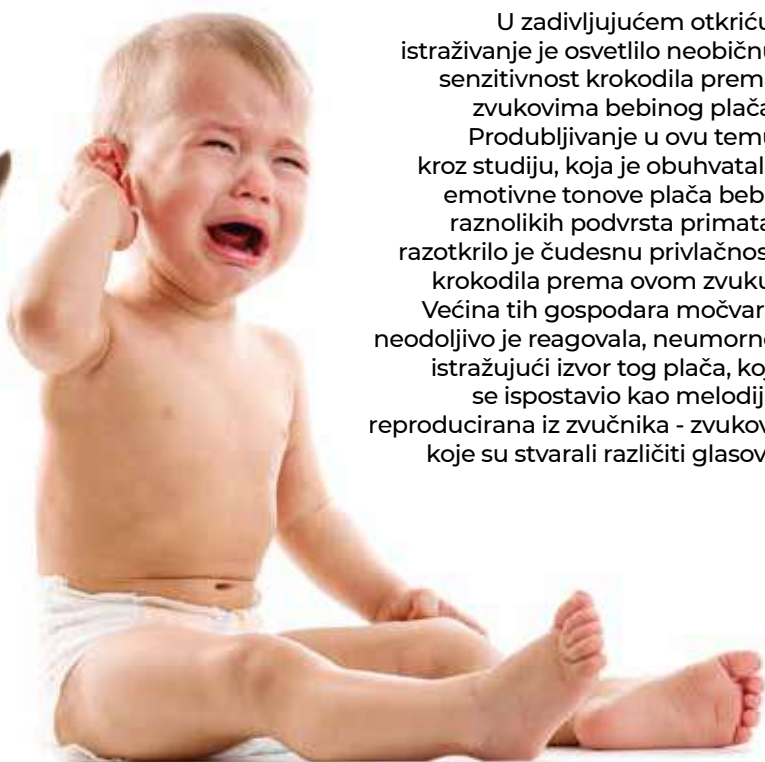
Očaravajuće klimanje glave najboljeg čovekovog prijatelja dugo je zbunjivalo zaljubljenike u pse. Teorije su raznovrsne, od procesuiranja poznatih reči do socijalnog signala razvijenog da očara ljude. Čak se navodi da psi mogu nagnuti glavu kako bi bolje čuli određene reči. Bez obzira na objašnjenje, ovo ponašanje pasa nastavlja da očarava i jača vezu između ljudi i njihovih krznjenih saputnika.

## TEHNOLOŠKI ANGAŽOVANA ZAŠTITA: AI KAO ZAŠTITNIK PRIRODE

U sjedinjenju satelitske tehnologije i veštačke inteligencije, revolucionarni kamera sistemi stvoreni od strane kompanije Archangel Imaging, Engleska, ne samo da omogućavaju precizno nadgledanje ugroženih životinjskih vrsta, već su takođe postali moćna oružja protiv lovokradica. Ovi sistemi ne samo da proširuju naše uvide u ponašanje različitih životinjskih vrsta, već pružaju čuvarima parkova trenutne informacije, omogućavajući im brze reakcije na ometanje aktivnosti lovokradica i štite divlji svet u udaljenim područjima sa ograničenom dostupnošću interneta.

## EMOTIVNI KROKODIL

U zadivljujućem otkriću, istraživanje je osvetlilo neobičnu senzitivnost krokodila prema zvukovima bebinog plača. Produbljivanje u ovu temu kroz studiju, koja je obuhvatala emotivne tonove plača beba razolikih podvrsta primata, razotkrilo je čudesnu privlačnost krokodila prema ovom zvuku. Većina tih gospodara močvara neodoljivo je reagovala, neumorno istražujući izvor tog plača, koji se ispostavio kao melodija reproducirana iz zvučnika - zvukovi koje su stvarali različiti glasovi.



## THE MYSTERIOUS NODDING OF A DOG'S HEAD: THE LANGUAGE OF DUMB PSYCHOLOGY

The charming nodding of man's best friend has long puzzled dog lovers. Theories are varied, from the processing of familiar words to a social signal developed to charm people. It is even reported that dogs can tilt their heads to better hear certain words. Regardless of the explanation, this canine behavior continues to fascinate and strengthen the bond between humans and their furry companions.

## TECHNOLOGICALLY ENGAGED PROTECTION: AI AS A PROTECTOR OF NATURE

Combining satellite technology and artificial intelligence, the revolutionary camera systems created by the company Archangel Imaging, England, not only enable accurate monitoring of endangered animal species, but have also become powerful weapons against poachers. These systems not only expand our insights into the behavior of different animal species, but also provide park rangers with real-time information, allowing them to react quickly to disrupting poacher activity and protect wildlife in remote areas with limited internet access.

## EMOTIONAL CROCODILES

In a stunning discovery, the research shed light on crocodiles' unusual sensitivity to the sounds of a baby's cry. Delving into this topic through a study, which included the emotional tones of crying babies of various subspecies of primates, revealed the amazing attraction of crocodiles to this sound. Most of those swamp lords reacted irresistibly, tirelessly investigating the source of that cry, which turned out to be a melody played from the speakers - sounds made by different voices.







## EDITOVANJE GENA U POLJOPRIVREDI: CRISPR I USEVI

Inovativna CRISPR tehnologija označava početak novog doba u poljoprivredi, omogućavajući naučnicima preciznu modifikaciju DNK biljaka. Od jačanja otpornosti biljaka na štetočine do prilagođavanja njihovog rasta različitim tipovima zemljišta, CRISPR predstavlja snažno oružje za poboljšanje useva. Potencijal za stvaranje naučno oblikovanih biljaka sa unapređenim nutritivnim vrednostima otvara puteve za rešavanje globalnih problema u proizvodnji hrane i za razvoj otpornosti u suočavanju sa ekološkim izazovima.



## GENE EDITING IN AGRICULTURE: CRISPR AND CROPS

The innovative CRISPR technology marks the beginning of a new era in agriculture, allowing scientists to precisely modify the DNA of plants. From making plants more resistant to pests to adapting their growth to different soil types, CRISPR is a powerful weapon for crop improvement. The potential to create scientifically engineered plants with improved nutritional values opens up avenues for solving global problems in food production and for developing resilience in the face of environmental challenges.



## PACOVI OBUČENI ZA DETEKCIJU MINA: HEROJI SA REPOM

Neočekivana savez pojavljuje se u borbi protiv minskih polja, dok se pacovi, poznati po izoštrinom čulu mirisa, obučavaju za otkrivanje ovih pogubnih naprava. U zemljama opterećenim minskim poljima, vlasti koriste pacove kako bi uz pomoć njihovog njuha bezbedno locirali i onesposobili ove opasne uređaje. Njihova prirodna inteligencija olakšava obuku za tu svrhu, dok njihova lagana težina omogućava prolazak preko mina bez izazivanja eksplozije.



## RATS TRAINED TO DETECT MINES: HEROES WITH TAILS

An unexpected alliance emerges to combat minefields, while rats, known for their keen sense of smell, are trained to detect these deadly devices. In countries plagued by minefields, authorities use rats to use their sense of smell to safely locate and disable these dangerous devices. Their natural intelligence makes it easy to train for this purpose, while their light weight allows them to pass over mines without causing an explosion.





ŽELUCI OD ČELIKA:  
Kako se hranljivi sastojci iz rudarstva dodaju našoj hrani

# Mineralni majstori



U harmoniji biološke simfonije, hranljive materije stoje kao nevidljivi dirigenti zdravlja, tkajući mrežu vitalnosti u tkivu našeg postojanja. Vitamini, ti tajanstveni čuvari života, često se skrivaju u šarenim odorama voća i povrća, dok minerali, čvrsti arhitekti naše fiziologije, izranjaju iz utrobe zemlje i naručja okeana. Kroz transformativno putovanje od rudarskih dubina do naših tanjira, ovi elementi

vitalnosti postaju deo umetnosti fortifikacije hrane, obogaćujući svaki zalogaj sa dubljim smislom blagostanja.

Putovanje minerala započinje u mračnim stenama zemljine kore, gde leže rudnici bogati esencijalnim elementima. Kroz procese ekstrakcije i prečišćavanja, ovi dragoceni minerali se oslobađaju iz okova stena, podvrgavajući se čarobnom procesu transformacije



In the harmony of biological symphony, nutrients stand as invisible conductors of health, weaving a web of vitality into the fabric of our existence. Vitamins, those mysterious guardians of life, are often hidden in the colorful robes of fruits and vegetables, while minerals, solid architects of our physiology, emerge from the bowels of the earth and the arms of oceans. Through a transformative journey from

mining depths to our plates, these elements of vitality become part of the art of food fortification, enriching each bite with deeper sense of well-being.

The journey of minerals begins in dark rocks of the earth's crust, where mines rich in essential elements lie. Through the processes of extraction and purification, these precious minerals are released from the shackles of the rocks, undergoing a magical process of



## RUDARSKO BLAGO NA VAŠOJ TRPEZI

U univerzumu ishrane, vitamini i minerali predstavljaju esencijalne gradivne blokove zdravog života. Njihova nevidljiva prisutnost u svakodnevnoj ishrani omogućava harmoniju našeg tela, kao i vitalnost u svakom koraku. Dok se vitamini često mogu pronaći u šarenolikom svetu voća i povrća, minerali proističu iz dubina zemlje i mora, dajući našoj ishrani čvrstinu i stabilnost. U svetu koji često zaboravlja njihovu bitnu ulogu, ovi elementalni čuvari ostaju tihi saveznici na putu ka zdravlju i vitalnosti.

## MINING TREASURE ON YOUR TABLE

In the nutritional universe, vitamins and minerals are the essential building blocks of a healthy life. Their invisible presence in our daily diet enables the harmony of our body, as well as vitality in every step. While vitamins can often be found in the colorful world of fruits and vegetables, minerals originate from the depths of the earth and sea, giving our diet solidity and stability. In a world that often forgets their essential role, these elemental guardians remain silent allies on a path to health and vitality.





u čistoću. Odatle, oni se pripremaju za svoj grandiozni ulazak u svet hrane, gde postaju ključni akteri u priči o zdravlju i blagostanju čovečanstva.

Fortifikacija hrane, kao stara alhemija, pretvara osnovne prehrambene namirnice u čarobne eliksire zdravlja. Kroz ovu umetnost, hrana postaje više od običnog goriva - postaje simbol snage, vitalnosti i održivog zdravlja. Od tamnih rudnika do svetlucah trpeza, minerali se uzdižu kao neumorni čuvari našeg blagostanja, čija prisutnost odjekuje u samim temeljima našeg postojanja.



## ALCHEMY OF MINERALS IN COOKING

**Food fortification is not just a technique, but an art that provides nutritional support to our daily lives. Through deep layers of culinary creativity, minerals become precious pearls that enrich our meals with essential nutrients. Every bite becomes an opportunity to immerse yourself in the richness of minerals, while the alchemical processes of food transformation are revealed as a key part of the path to a healthier and more sustainable way of eating.**

transformation into purity. From there, they prepare themselves for their grand entrance into the world of food, where they become key players in the story of human health and well-being.

Food fortification, like ancient alchemy, transforms basic foodstuffs into magical elixirs of health. Through this art, food becomes more than just fuel - it becomes a symbol of strength, vitality and sustainable health. From dark mines to glittering tables, minerals rise as tireless guardians of our well-being, whose presence resonates in the very foundations of our existence.



## ALHEMIJA MINERALA U KULINARSTVU

Fortifikacija hrane nije samo tehnika, već umetnost koja pruža hranljivu podršku našem svakodnevnom životu. Kroz duboke slojeve kulinarskog stvaralaštva, minerali postaju dragoceni biseri koji obogaćuju naše obroke esencijalnim hranljivim materijama. Svaki zalogaj postaje prilika za uranjanje u bogatstvo minerala, dok se alhemičarski procesi transformacije hrane otkrivaju kao ključni deo puta ka zdravijem i održivijem načinu ishrane.





In the noise of the modern age, quiet voices of nature remind us of our inextricable connection with the world around us. As we admire the fruits of fortified food, let us wonder about the deep symbiosis between man and nature, encoded in every bite. Through this harmony, we discover that the boundaries of health become increasingly blurred, opening the door to the light where health and well-being radiate unhindered.



U buci modernog doba, tihi glasovi prirode podsećaju nas na našu neraskidivu vezu sa svetom oko nas. Dok se divimo plodovima fortifikovane hrane, zapitajmo se o dubokoj simbiozi između čoveka i prirode, zakodiranoj u svakom zalogaju. Kroz ovu harmoniju, otkrivamo da granice zdravlja postaju sve nejasnije, otvarajući vrata ka svetlosti gde zdravlje i dobrobit zrače neometano.



## SIGURNIM PUTEM KA ZELENOJ BUDUĆNOSTI.



# Uključi se!



# Perfect Homemade Pasta

Do we need to say that making it at home is much cheaper than buying it from a shelf of a nearby supermarket?

# Savršena domaća pasta

Treba li da kažemo da je izrada kod kuće mnogo jeftinija nego da ih kupite sa police obližnjeg supermarketa?



## Klasična pasta sa jajima

Četiri do šest porcija

- Šolja brašna
- Pola kašičice soli
- Tri velika jaja

Promešajte sastojke i napravite rupu u centru gde će doći jaje. Zatim sve umiksajte zajedno i mesite dok ne dobijete kompaktno testo.

Ostavite testo u prekrivenoj činiji oko 30 minuta da naraste. Kada testo nadođe, razdvojite ga na četiri dela.

Ako koristite mašinu za testenine, provucite jedan deo testa kroz najdeblju postavku, preklopite testo i ponovite nekoliko puta dok testenina ne postane glatka. Zatim provucite komad kroz sledeću postavku, ne morate da radite savijanje i ponavljanje nakon prvog puta. Nastavite sa sukcesivno tanjim podešavanjima dok ne dođete do željene debljine.

Sada kada imate svoje špagete, jedino vam preostaje da osmislite sos po želji i uživajte!

Prijatno!



## Classic pasta with eggs

Four to six servings

- A cup of flour
- Half a teaspoon of salt
- Three large eggs

Mix the ingredients and make a well in the center and add the eggs. Then mix everything together and knead until you get a compact dough.

Put the dough in a bowl, cover, and let rest for at least 30 minutes. When the dough has risen, divide it into four sections.

If you are using a pasta machine, feed one section of dough through the thickest setting, fold the dough, and repeat a few times until the pasta is smooth. Then feed the piece through the next setting – you do not have to do the fold-and-repeat after the first time.

Now that you have your spaghetti, all that is left to do is prepare your desired sauce and enjoy!

Bon appetit!



# Od veganstva do ketoa

## Koja od šest popularnih dijeta ima najveći ugljenični otisak

Istraživanja govore da ono što jedemo ima veliki uticaj na planetu. U stvari, studija koju su podržale Ujedinjene nacije iz 2021. pokazala je da 34% emisija gasova staklene bašte dolazi iz sistema ishrane. S obzirom na hitnost sa kojom moramo da se pozabavimo ovim našim svetom koji se zagreva, izbor hrane može igrati glavnu ulogu za svakoga ko želi manje da učestvuje u doprinosu klimatskim promenama.

Ali je izbor hrane takođe težak. Uz mnogo faktora koje treba uzeti u obzir: od etike i pristupa ishrani i najnovijih modnih trendova, mnogi od nas prelaze sa jednog na drugi stil ishrane. Ali ako su vaši prioriteti ugljenični otisak i/ili nutritivna vrednost, onda bi nedavno istraživanje sa Univerziteta u Nju Orleansu moglo da pomogne.

Studija je uporedila šest popularnih dijeta u pogledu kvaliteta ishrane i uticaja na životnu sredinu. Istraživači su sastavili rezultate kvaliteta ishrane koristeći podatke iz više od 16.000 dijeta odraslih u Sjedinjenim Državama koje je prikupila CDC-ova Nacionalna anketa o zdravlju i ishrani, a u obzir su ušle: veganska, vegetarijanska, peskatarijanska, paleo i keto dijeta, a sve ostalo je kategorizovano pod: „svažtojedi“.

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# From Veganism to Keto

## Which of the six popular diets has the biggest carbon footprint?

Research shows that what we eat has a big impact on the planet. In fact, a 2021 United Nations-backed study found that 34% of greenhouse gas emissions come from the food system. Given the urgency with which we must address our warming world, the choice of food can play a major role for anyone who wants to contribute less to climate change.

But the choice of food is also difficult. With many factors to consider: from ethics and approaches to nutrition to the latest fashion trends, many of us switch from one eating style to another. But if your priorities are carbon footprint and/or nutritional value, then recent research from the University of New Orleans might help.

The study compared six popular diets in terms of nutritional quality and environmental impact. The researchers compiled the diet quality results using data from more than 16,000 diets of US adults collected by the CDC's National Health and Nutrition Examination Survey, which included: vegan, vegetarian, pescatarian, paleo, and keto diets, and everything else categorized under: „omnivores“.

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### KETO I PALEO REZERVOAR ZA EKOLOŠKI UTICAJ I ISHRANU

Mnogi od nas znaju da crveno meso ima visok ugljeni otisak. Tako da možda i nije iznenađujuće da su keto i paleo dijeta sa dodatkom mesa rangirane kao najmanje održive od šest ispitanih dijeta.

I verovatno nije iznenađujuće što su te dijete imale najnižu nutritivnu vrednost.

“Keto dijeta, koja daje prednost velikim količinama masti i malim količinama ugljenih hidrata, procenjuje se da generiše skoro 3 kg ugljen-dioksida na svakih 1.000 unesenih kalorija. Paleo dijeta, koja izbegava žitarice i pasulj u korist mesa, orašastih plodova i povrća, dobila je sledeću najnižu ocenu kvaliteta ishrane i takođe je imalo visok ugljeni otisak, sa 2,6 kg ugljen-dioksida na 1.000 kalorija”, navodi se u studiji.

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### KETO AND PALEO RESERVOIR FOR AN ENVIRONMENTAL IMPACT AND NUTRITION

Many of us know that red meat has a high carbon footprint. So perhaps it is not surprising that keto and paleo diets with added meat have been ranked as the least sustainable of the six diets examined.

And it is probably not surprising that those diets have had the lowest nutritional value.

“The keto diet, which prioritizes high amounts of fat and low amounts of carbohydrates, was estimated to generate almost 3 kg of carbon dioxide for every 1,000 calories consumed. The paleo diet, which eschews grains and beans in favor of meats, nuts and vegetables, received the next lowest diet quality score and also had a high carbon footprint, at 2.6 kg of carbon dioxide per 1,000 calories” the study states.

The vegan diet has had the smallest carbon footprint, producing 0.7 kg of carbon dioxide per 1,000 calories consumed, less than a quarter of the impact of the keto diet. Vegetarian diets have had the next lowest carbon footprint, followed by pescatarian diets. In terms of health, the pescatarian diet has scored the highest for nutritional quality, followed by vegetarian and vegan diets.





### OPASNA GOVEDINA

U šest dijeta uključena je i dijeta za one koji jedu sve, i u tu kategoriju spada 86 odsto učesnika ankete.

Otkriveno je da, ako bi trećina onih na dijeti "svaštojeda" jela vegetarijansku ishranu, u proseku, to bi bilo ekvivalentno eliminisanju 340 miliona milja putničkih vozila. Govedina je odgovorna za 8 do 10 puta više emisija od proizvodnje piletine i preko 20 puta više od proizvodnje orašastih plodova i mahunarki.

"Klimatske promene su verovatno jedan od najhitnijih problema našeg vremena i mnogi ljudi su zainteresovani da pređu na ishranu zasnovanu na biljkama", rekao je jedan od istraživača.

"Na osnovu naših rezultata, to bi smanjilo vaš otisak i bilo bi generalno zdravo. Naše istraživanje takođe pokazuje da postoji način da poboljšate svoje zdravlje i otisak bez potpunog odricanja od mesa", zaključuju.



### DANGEROUS BEEF

The diet for those who eat everything is included in the six diets, and 86 percent of the survey's respondents fall into that category.

It was found that if a third of omnivorous dieters consumed the vegetarian diet, on average, it would be equivalent to eliminating 340 million passenger vehicle miles. Beef is responsible for 8 to 10 times more emissions than chicken production, and over 20 times more than nut and legume production.

"Climate change is probably one of the most pressing issues of our time and many people are interested in switching to a plant-based diet," said one of the researchers.

"Based on our results, it would reduce your footprint and would be generally healthy. Our research also shows that there is a way to improve your health and footprint without completely giving up meat," they conclude.



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