

FORENV – EU Foresight on emerging environmental issues

Emerging Issues at the Environmental-Social Interface (see below for full topic)

Cycle 1 Autumn 2018 – Autumn 2019

STEP 2 – SENSE MAKING (**SET 1**)

December 2018

Cycle 1 topic:

Environmental and social issues are intrinsically linked. On the one hand, environmental risks and environmental policy measures may affect social groups differently, e.g. through the unequal distribution of pollution (air, water, noise, chemicals), climate impacts and access to natural resources, but also through differing outcomes generated from environmental taxes, or the way rights to a healthy environment are guaranteed. On the other hand, social trends and movements may have a strong impact on the environment, e.g. through dietary changes, green jobs, consumer choices, the changing perception of nature, awareness raising (e.g. through social networks), demands for environmental/climate justice and environmental crimes. Which emerging trends should EU policy-makers be most aware of and act upon?

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1. Employment of migrants boosted with 'green jobs' (SOCIAL)

SUMMARY: The Swedish government has presented a new initiative to boost appalling employment figures among the mass influx of migrants. Sweden is testing unorthodox methods, such as employing immigrants in unskilled jobs including picking brushwood or tidying beaches. Simple jobs are presented as a welcome way into the labour market for the newly arrived and the long-term unemployed, which offers them a sort of a springboard for switching to more qualified labour in the future. The project will involve up to 5,000 people in the next three years. Over this period, they are intended to gain skills for future employment in forestry and nature conservation. Having successfully completed their courses, the participants will receive a license to use a sawmill and a chainsaw.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: This initiative provides unskilled migrants with access to the labour market and encourages / sustains business activity in a sector that has an employment deficit. The Swedish government aims to provide new arrivals and the long-term unemployed with a chance for a good education and job experience, so that they can work in green industries. It is expected that by increasing migrants' access to the labour market there will be a reduction in broadening disparities between ethnic Swedes and the "newcomers" in terms of living standards and employment.

DATE OF PUBLICATION: 9 January 2018

SOURCE: <https://sputniknews.com/europe/201801191060888253-sweden-migrants-jobs/>

2. Doctors issue 'Nature Prescriptions' to patients (SOCIAL)

SUMMARY: A new 'Nature Prescriptions' programme is being rolled out to GPs in the Shetland's Islands in Scotland. After a successful pilot at a local surgery, all of Shetland's doctors can now prescribe 'nature' to their patients as part of their overall treatment strategy. The [Nature Prescriptions calendar](#) helps doctors describe the health benefits of nature and provides plenty of local ideas to help doctors fire-up their patients' imaginations and get them outdoors. The new programme enables doctors from all 10 surgeries across Shetland to prescribe nature to their patients, but with time it's possible more areas and health boards in the UK will adopt the scheme.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Benefits of 'Nature Prescriptions' are: its free, easily accessible, and allows increased connection with surroundings, which could lead to improved physical and mental health for individuals. The 'Nature Prescriptions' programme is expected to deliver important health outcomes, helping people manage diabetes, depression or cancer.

DATE OF PUBLICATION: 9 October 2018

SOURCE: <https://www.sciencealert.com/doctors-in-scotland-are-literally-prescribing-nature-to-patients-shetland-gps-pilot-benefits-health-mental>

3. Fear of invasive species driving persecution of European hornet (SOCIAL)

SUMMARY: A British wildlife charity has warned that a spate of bad news stories about the invasive Asian hornet is leading to the persecution of its home-grown equivalent. Asian hornets

are devastating to honeybees, with the insects raiding and destroying colonies. A number of reported cases has emerged of people exterminating the European hornet (*Vespa crabro*) thinking it was the troublesome Asian hornet (*Vespa velutina*). The persecution of the European hornet is one of the factors behind their recent decline. Some European countries are urgently acting to conserve their remaining hornets; in Germany, for example, it has long been illegal to destroy a hornet nest. The British wildlife trust charity has suggested that while it is advisable for people to be aware of the threat of the Asian hornets, they should immediately follow official guidelines on suspected cases. This means not destroying the nest and instead carefully photographing the insect without disturbing the nest and submitting an online sighting report to the GB Non-native Species Secretariat (NNSS).

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The case of the 'persecuted European hornet' raises the need for more *agile* risk communication from environmental agencies to 're-appropriate', construct and pass on risk-relevant information to people through social media platforms.

DATE OF PUBLICATION: 4 October 2018

SOURCE: <https://www.theguardian.com/environment/2018/oct/03/asian-hornet-sightings-spark-persecution-of-european-species-in-uk>

4. Is opening borders the solution to climate change? (SOCIAL)

SUMMARY: The great irony of global warming is that its causes and consequences are inversely distributed. The rich nations of the global North are responsible for 70 percent of historical CO2 emissions, but they bear only about 18 percent of the total costs. It is the South that takes the hit. According to the Climate Vulnerability Monitor, the global South loses nearly \$600bn each year due to drought, floods, landslides, storms and wildfires. As climate change worsens, their losses will reach a staggering \$1 trillion per year by 2030. The solution is simple, at least conceptually: open the borders. By tearing down the walls that separate the causes and consequences of climate change we can force a more honest reckoning with reality. Once the victims of climate change have the right to seek refuge in Europe and North America, it will obliterate the moral hazard of global warming. As rich nations finally start to feel the heat, so to speak, you can bet they will act fast, doing everything in their power to ensure that people's home regions remain livable. Even if it means pushing for a new, more ecological, economic model.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: This article acknowledges that opening borders might be unrealistic in the current anti-immigration climate, but it presents a way to integrate climate refugees, and at the same time spur countries in Europe and North America into action so as to avoid a future refugee crisis that is more severe, violent and destabilizing than currently experienced.

DATE OF PUBLICATION: 28 February 2018

SOURCE: <https://www.aljazeera.com/indepth/opinion/stop-climate-change-open-borders-180223144922968.html>

5. A link between air pollution and crime? (SOCIAL)

SUMMARY: The UK [Centre for Climate Change Economics and Policy](#) and the [Grantham Research Institute on Climate and the Environment](#) has conducted research to investigate the link between air pollution and crime. Researchers estimated the effects of air pollution on crime using a unique data set, which combined readings of ambient air pollution concentrations with rich administrative records on over 1.8 million criminal offences recorded in London during the years

2004-2005. The analysis considered factors such as temperature, humidity and rainfall, days of the week and different seasons. Researchers found that a 10 point rise in the air quality index (AQI) reports, which indicates how clean or polluted the air is each day, increases crime rate by 0.9%. This data suggest levels of crime in London are therefore higher on the most polluted days. The study had linked higher air pollution levels in London to increases in petty crime such as shoplifting and pick-pocketing. However, it is worth noting that the researchers found no significant impact on serious crimes such as murder, rape or assault resulting in severe injury. Findings from the study suggest that improving air quality in urban areas may provide a cost effective way to reduce crimes. The link between pollution and crime suggests that the optimal deployment of law enforcement resources (e.g. local policy personnel) should incorporate information from pollution forecasts.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Given the link between air pollution and crime, the researchers suggest that examining the effects of air pollution on health impacts alone may lead to a substantial underestimation of its societal costs.

DATE OF PUBLICATION: 26 April 2018

SOURCE: <http://www.lse.ac.uk/GranthamInstitute/publication/crime-is-in-the-air-the-contemporaneous-relationship-between-air-pollution-and-crime/>
<https://theconversation.com/air-pollution-increases-crime-in-cities-heres-how-95975>

6. Youth leaders influence the establishment of US Marine Protected Area (SOCIAL)

SUMMARY: ThinkOcean, an environmental group of youth leaders founded by a 19-year-old University of Pennsylvania student, organised a campaign *Sea Youth Rise Up*. In 2016, Sea Youth Rise Up leaders met with a US Council on Environmental Quality at the White House to stop oil drilling off the coast of Cape Cod. The unscathed area was about to be subjected to oil exploration and exploitation by fisheries. Instead, the government agreed to create the first US Marine Protected Area in the Atlantic Ocean. The Sea Youth Rise Up campaign brought together young leaders from around the globe to speak with world leaders, and in so doing, combined the willpower and enthusiasm of a growing network of young leaders to influence government decision-making.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The Sea Youth Rise Up campaign illustrates how *young voices*, when properly channelled, can harness a collective power that is strong enough to influence environmental decisions at local to the international level.

DATE OF PUBLICATION: 27 August 2018

SOURCE: <https://www.unenvironment.org/news-and-stories/story/three-reasons-our-oceans-need-young-people>

7. Retailers make sustainable fashion more affordable for Generation Z (SOCIAL)

SUMMARY: Most sustainable fashion naturally comes with a higher price point because of the devotion to ethically sourced fabrics, thoughtful construction methods, improved factory conditions, and improved pay for workers. When the average cost of one eco-friendly item is about \$80 (at the low end), young people often have no choice but to shop elsewhere. H&M's **Conscious Exclusive collection** and Zara's **Join Life** line are making sustainable fashion affordable and on trend. A brand such as H&M recognizes its contribution to the problem as a fast fashion leader, and has a long-standing and strong commitment to textile recycling to help offset that. It

recognises the challenge of young people wanting to be more sustainable but unable to afford it, and is responding by delivering a practical solution.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The growing sustainable movement has the potential to fundamentally change the fashion industry and reduce the environmental burden of 'fast fashion'. However, if the potential of sustainable fashion is to be realized then it has to be made more affordable to Generation Z or millennials that represent a larger portion of the market.

DATE OF PUBLICATION: 11 September 2018

SOURCE:

https://www.sustainablebrands.com/news_and_views/next_economy/meredith_ferguson/how_young_people_are_changing_fashion_industry

8. Flood risk awareness campaign targets young people (SOCIAL)

SUMMARY: The UK Environment Agency has launched a 'Flood Action Campaign' to help prepare those at risk. The campaign is set to [target younger people](#) through social media and online advertising and encourage them to check their flood risk at GOV.UK where they can sign up for free warnings to take action when flooding hits. Research shows that 18 to 34 year olds, are least likely to spot early warning signs of flood risks in their area, nor do they know how to protect their homes or where to go for information. Figures also suggest that young people are at the highest risk of fatality, as they are less likely to perceive their own personal risk. Social-media advertising has been used to target the younger demographic, while earned media and no-cost social channels targeted the broader population. More than 800 partners and supporters with a combined reach of 4.6m people also disseminated the campaign message, while a Facebook Live and Instagram livestream event, hosted by The National Student magazine and Birmingham University, also gained traction.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Flood risk awareness campaigns that include information and messages tailored to specific audiences have a greater potential of reducing the impacts on vulnerable groups and infrastructure.

DATE OF PUBLICATION: (1) 16 February 2018; (2) 28 March 2018

SOURCE: (1) <https://www.openaccessgovernment.org/environment-agency-warn-frequent-flooding/42717/>

(2) <https://www.prweek.com/article/1460571/prepare-act-survive-environment-agency-tells-people-risk-flooding>

9. Gap in climate concern between younger and older generations (SOCIAL)

SUMMARY: Evidence of the gap in climate concern between younger and older generations has emerged in a new UK poll of 1,300 children and young people, which demonstrates significant support for a low carbon shift towards renewable energy and electric vehicles. Approximately 70 per cent of the 1,300 people quizzed at the UK Energy Institute's science and engineering fair said they often thought about climate change and took action in their daily lives towards combatting it. Low carbon technologies also proved popular among those polled, with 80 per cent in support of renewables making up the majority share of the future electricity mix and 70 per cent saying they would like to drive an electric vehicle in future. This data follows a [YouGov survey in April](#) which suggested global warming was a top concern among people between the ages of 18-24.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The gap in climate concern between younger and older generations illustrates the need for targeted communication (i.e. tailored messages for a specific audience) to raise awareness on environmental issues.

DATE OF PUBLICATION: 3 July 2018

SOURCE: <https://www.businessgreen.com/bg/news/3035227/poll-young-people-believe-older-generation-not-doing-enough-to-combat-climate-change>

10. Dining out associated with increased exposure to harmful chemicals (SOCIAL)

SUMMARY: A study carried out the University of California, Berkeley suggests regularly dining out at restaurants, cafeterias and fast-food outlets may boost total levels of potentially health-harming chemicals called phthalates in the body. Phthalates, a group of chemicals used in food packaging and processing materials, are known to disrupt hormones in humans and are linked to a long list of health-related problems. People who reported consuming more restaurant, fast food and cafeteria meals had phthalate levels that were nearly 35 percent higher than people who reported eating food mostly purchased at the grocery store, according to the study. The association between phthalate exposure and dining out was significant for all age groups but the magnitude of association was highest for teenagers. Certain foods, and especially cheeseburgers and other sandwiches, were associated with increased levels of phthalates -- but only if they were purchased at a fast-food outlet, restaurant or cafeteria.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The University of California researcher stated that "pregnant women, children and teens are most vulnerable to the toxic effects of hormone-disrupting chemicals, so it is important to find ways to limit their exposures. Future studies should investigate the most effective interventions to remove phthalates from the food supply."

DATE OF PUBLICATION: 29 March 2018

SOURCE: <https://www.sciencedaily.com/releases/2018/03/180329095722.htm>

11. Gender balance in the energy sector could progress the green agenda (SOCIAL)

SUMMARY: Nearly two-thirds of the leading 89 energy companies in the UK have [no women on their boards](#) and industry events with men-only panels, or just one woman, are common. Catherine Mitchell, a professor of energy policy at the University of Exeter (UK), said poor gender diversity meant the industry was less open to new ideas, in particular the move to a lower-carbon energy system. Mitchell said it was not a given that women are more progressive on energy issues than men, but noted that the "conventional" parts of the sector – fossil fuel power generation and energy networks – are more male-dominated than greener, innovative companies. Juliet Davenport, the chief executive of the energy supplier Good [Energy](#), said the argument was credible. "The energy sector is lagging sorely behind other industries in terms of diversity, meanwhile sustainable [green] businesses are very balanced. So the idea that lack of diversity is contributing to the issue of transition to renewables is very plausible," she said. A lobby group, Energy UK, for the six big energy companies are making efforts to address the gender imbalance; for example, they have banned men-only panels at their energy events.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Industry experts claim the energy sector is undergoing a huge period of transition, which brings with it a significant

opportunity to increase gender balance. The lack of women in energy companies is holding back the sector's efforts to tackle climate change so addressing this gender imbalance could expedite the transition process.

DATE OF PUBLICATION: 11 February 2018

SOURCE: <https://www.theguardian.com/business/2018/feb/11/the-energy-industrys-power-problem-too-few-women>

12. People lose control of their own destiny [SOCIAL]

SUMMARY: People feel more and more that they can't control their own destiny anymore. This is the result of several developments. In particular, individuals are beginning to feel their socio-economic security is being eroded with new developments like the rise in automation and AI. Furthermore, people across Europe are worried about the loss of their social identity, a trend compounded by immigration. Individuals may also feel in fear of their own physical safety.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

This is an important trend, leading to:

- Erosion of trust in policy makers (including environmental policy makers)
- people not being open to or in favour of a focus on environmental issues; they have other problems
- environmental policy should consider what effects their policy action could have on social-economic situation of people, on their identity or on their safety, etc.

DATE OF PUBLICATION: November 2017

SOURCE: <https://www.foreignaffairs.com/articles/americas/2018-08-14/against-identity-politics-tribalism-francis-fukuyama>
<https://www.robert-schuman.eu/en/european-issues/0466-europe-and-the-identity-challenge-who-are-we>

13. Can crypto help solve, rather than accelerate the challenge of climate change? [TECHNOLOGICAL]

SUMMARY: Many crypto and blockchain-based companies are looking to the technology to help solve social and environmental issues of our time, such as sustainable supply chains and decarbonizing and democratizing energy systems. That said, the exponential energy consumption and carbon emissions produced from the proof-of-work algorithm required for mining Bitcoin and other cryptocurrencies is directly at odds with this vision for the technology. But other cryptocurrencies and blockchain platforms have been experimenting with alternative protocols with much lower energy consumption.

Nearly three-quarters of Bitcoin mining currently occurs in China. Companies have flocked there for access to cheap energy, the majority of which is powered by coal-fired power plants. But if the industry is to curb its carbon emissions this pattern needs to change. The good news is there are other options. For example, there is also a trend for mining facilities to gravitate to sources of hydro-electricity, another relatively cheap energy option but one that is renewable. *In another possible twist to this story these miners searching the world for cheap energy might inadvertently become the biggest investors in clean energy generation.*

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: If clean, renewable energy is going to be adopted by miners, rates for renewables will have to be competitive with the price of non-renewable energy. It's critical we pay attention and continue to innovate to find

solutions to ensure blockchain and crypto are contributing to the decarbonization of our economy, not accelerating the problem.

DATE OF PUBLICATION: 31 October 2018

SOURCE: <https://www.forbes.com/sites/jemmagreen/2018/10/31/can-crypto-help-solve-rather-than-accelerate-the-challenge-of-climate-change/#44c16a159133>

14. Children at higher risk from climate-sensitive diseases (SOCIAL)

SUMMARY: Children are estimated to bear 88% of the burden of disease related to climate change, according to a paper [published in the journal Paediatrics](#). The new paper highlights some studies on the implications of climate change for children's health. These include those causes of deaths that can be climate-sensitive. For instance, certain changes in climate can make it more suitable for the transmission of malaria. Similarly, climbing temperatures have been tied to an increased incidence of waterborne bacterial infections that cause diarrhea. When compared with a future without climate change, an estimated 48,000 additional deaths due to diarrheal illness are projected among children younger than 15 by 2030, according to the [World Health Organization](#). As for nutritional deficiencies, about 95,000 additional deaths due to childhood undernutrition are projected for 2030, according to the WHO. Extremely high seasonal temperatures and extreme weather events could damage crops, impacting the food supply and thus childhood nutrition.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The key message of the paper is that climate change is disproportionately affecting the most vulnerable populations, including children. Impacts on vulnerable groups require nations to better prepare for the health risks, not just in the future but in the present.

DATE OF PUBLICATION: 8 May 2018

SOURCE: <https://edition.cnn.com/2018/05/08/health/climate-change-children-pediatrics-study/index.html>

15. Increasing heatwaves pose global health risk (SOCIAL)

SUMMARY: This summer's heatwave swept through the Canadian province of Quebec, killing more than 90 people in little over a week. The unrelenting sunshine threw the disparities between rich and poor into sharp relief. It was the poor and isolated who quietly suffered the most in the heat – a situation echoed in overheated cities across the world. In the US, immigrant workers are three times more likely to die from heat exposure than American citizens. In India, where 24 cities are expected to reach average summertime highs of at least 35C (95F) by 2050, it is the slum dwellers who are most vulnerable. And as the global risk of prolonged exposure to deadly heat steadily rises, so do the associated risks of human catastrophe. In 2017, [researchers from the University of Hawaiiian](#) projected that the share of the world's population exposed to deadly heat for at least 20 days a year will increase from 30% now to 74% by 2100 if greenhouse gas emissions are allowed to grow. They concluded that "...an increasing threat to human life from excess heat now seems almost inevitable. The young and elderly are at particular risk, but we found that this heat can kill soldiers, athletes, everyone".

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The article concluded that there is a key role for urban planning in mitigating future extreme heat and "proactively incorporating an environmental justice perspective and addressing racial/ethnic disparities".

DATE OF PUBLICATION: 13 August 2018

SOURCE: <https://www.theguardian.com/cities/2018/aug/13/heat-next-big-inequality-issue-heatwaves-world>

16. A shift in working hours due to climate change will affect the health of outdoor workers (SOCIAL)

SUMMARY: A new study published in *Earth's Future*, a journal of the American Geophysical Union, indicates that if society tries to avoid the economic impacts of climate change on outdoor labour by shifting working hours, outdoor workers in many regions will need to start working well before dawn at the end of this century to avoid the effect of excessive heat stress.

Outdoor workers are exposed to excessive heat stress, particularly in hot seasons, a trend that is expected to increase as a result of climate change. This will reduce the capability of physical labour and eventually cause economic loss. Shifting working time earlier in the morning, when it is cooler than during midday, can be an effective way to reduce the effect of heat stress. However, the plausibility and efficacy of such an intervention has not been quantitatively assessed on a global scale.

The results of the study showed that although a time shift was effective to reduce the effect of heat stress, the required amount of change in working times was not realistic. The expected start time for outdoor workers would be well before dawn unless stringent climate-change mitigation was achieved. Under the highest greenhouse-gas emission scenario, the required shift globally was 5.7 (4.0–6.1) hours on average by the end of this century. The current social system would not allow such a drastic working time shift to come into practice, according to the study's authors.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Shifting working time to early hours of the morning can cause harmful effects such as circadian rhythm disorders.

DATE OF PUBLICATION: 2 November 2018

SOURCE: <https://phys.org/news/2018-11-climate-outdoor-workers-earlier.html#jCp>

17. Wealthier people are less likely to contribute to the fight against climate change (SOCIAL)

SUMMARY: A collective-risk dilemma experiment with members of the public in Barcelona has shown that people are more or less likely to contribute money to fighting climate change depending on how wealthy they are. The principal finding of a citizen science experiment where participants were encouraged to act collectively against global warming was that wealthier people do less in the struggle against climate change.

Researchers from the University of Barcelona tested the economic effort of more than 320 individuals toward reducing climate change. This was done by assessing how much each individual in a group was expected to contribute for a common benefit, in this instance the fight against climate change. The results showed that, although all the groups achieved the collective goal of contributing a total of 120 euros to the cause, “the effort distribution was highly inequitable”. Participants with fewer resources contributed significantly more to the public good than the richer, sometimes up to twice as much. The researchers concluded that the poorest participants congregated within the two “generous clusters” whereas the richest were mostly classified into a “greedy cluster”.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The authors of the study suggested that “cooperation is better than competition at achieving socially desirable outcomes

and that, in the case of climate change, cooperation is needed between all the agents involved". The broader implications of the results imply a need for greater understanding of climate justice action and the importance of 'fairness' to achieve equitable contributions.

DATE OF PUBLICATION: 5 November 2018

SOURCE: <http://diaridigital.urv.cat/en/wealthier-people-do-less-in-the-struggle-against-climate-change/>

18. The rise of the quasi-public space and its consequences for cities and culture (SOCIAL)

SUMMARY: A new phenomenon is emerging in London: quasi-public spaces. These are open spaces that look and feel like public places, open to all; however, they are in fact private spaces that are only conditionally made available to the public. This paper argues that whilst appearing new, quasi-public spaces have emerged from a process of investment restructuring over the last 50 years. The profound change that is set in motion is a loss of control of public space and its cultural uses in cities.

The new quasi-public spaces are a subtle hybrid, which offer deceptive access that can be revoked at any time. However, in the short-term developers have invested significant sums in such sites, with landscaping and design of a high quality; moreover, as reported here, some have also programmed cultural events (in fact providing what cash-strapped local authorities cannot). When proposed and developed these sites are seen as enabling, and cost-saving, for public authorities; many promises are made regarding access: but, these are often legally weak, or malleable.

...in the longer-term developers, who commonly see such developments as a loss-leader in long-term project development; as the site reaches full letting, the 'public space' is under threat. Moreover, the programming of the site is always going to be in the interest of the land owners or investors, they are not accountable to the taxpayers and general population and to represent a wider cultural diversity.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Privatised public space may raise issues of equality of access, and change the role of public spaces in cities. A balance will need to be struck between the rights of landowners to promote and protect their investments and the expectations of citizens that, in a city, an open space is a public space.

DATE OF PUBLICATION: 28 November 2017

SOURCE: <https://www.nature.com/articles/s41599-017-0048-6>

19. The next big battle may not be fought over treasure or territory—but for fish (SOCIAL)

SUMMARY: Humans have always depended on the sea. For as long as there have been fishermen, there have been conflicts over fish. And though it may seem anachronistic, the odds that a squabble over fishing rights could turn into a major armed conflict are rising. The return of great-power competition has actually increased the likelihood of a war over fish. The past 17 years of the fight against terrorism, and [Washington's] renewed focus on developing high-end capabilities to prepare for great-power conflict, have led to a lack of preparation for a low-end, seemingly mundane but increasingly likely source of conflict in the world: food.

As incomes and populations rise around the world, so too does the demand for food—especially protein. The supply of both wild and farmed fish will not keep up.

The political leaders of rising powers will feel enormous pressure to secure the resources their citizens demand—even if it means violating international norms and rules. This pressure could sow the seeds of potential conflict in two distinct ways. The first is that some states will overplay their hand when using fishing fleets and fisheries enforcement to exert influence in contested waters. The second is that illegal fishing, driven by exploding domestic demand and collapsing supply, will be met with increasingly aggressive enforcement by America or its allies—which could quickly escalate and spill over into actual conflict.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Fisheries and fisheries policy is already a contentious issue in Europe. Europe is also a major important of fish and seafood. Conflict in Europe over fish may be unlikely, however conflicts elsewhere could threaten EU supply and place additional pressure on EU fisheries.

DATE OF PUBLICATION: 12 September 2018

SOURCE: <https://foreignpolicy.com/2018/09/12/food-fight-illegal-fishing-conflict/>

20. Climate change makes beer more expensive [SOCIAL]

SUMMARY: Beer could become scarce and more expensive as a result of climate change. With an unabated rise in temperature, beer prices worldwide would almost double on average, reports an international research team in the journal Nature Plants.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

Beer production and the recent trend of 'craft beer' is a major industry in Europe - climate change could bring pressure on this industry and the beer culture in Europe. Could an increase in prices of beer costs encourage people to pay attention to climate change?

DATE OF PUBLICATION: October 2018

SOURCE: <https://www.thetimes.co.uk/article/trouble-brewing-as-climate-change-affects-beer-supply-gkct9tm0r>
<https://www.scientificamerican.com/article/trouble-brewing-climate-change-closes-in-on-beer-drinkers/>
<https://www.theguardian.com/environment/2018/oct/15/climate-change-to-cause-dramatic-beer-shortages-extreme-weather-price>

21. Using environmental imperatives to reduce meat consumption [ENVIRONMENTAL]

SUMMARY: Sustainable food consumption is an important issue globally, that will intensify if current projections of population growth, urbanisation and the growing 'middle-classes' in developing countries continues.

Currently, sensory perception, health, convenience and price are more immediately influential than environmental concerns in determining meat consumption practices.

This paper argues that environmental factors need to be promoted alongside known influential determinants of purchase decisions in order to make the idea of reduced-meat consumption a more attractive option for consumers.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Meat consumption is very high in many EU countries, with environmental and health consequences. A move to less

meat consumption would have environmental benefits (but also would require changes to the food system / agricultural sector).

DATE OF PUBLICATION: 25 March 2018

SOURCE: <https://www.tandfonline.com/doi/full/10.1080/1177083X.2018.1452763>

22. Climate Change & Gender: Unequal impacts, unequal response? [SOCIAL]

SUMMARY: In many parts of the globe women are disproportionately affected by climate related distress due to their role in the community, livelihoods or other reasons. What is becoming increasingly clear is that due to advocacy and gendered communities of practice, there may also lie a source of strength in this gender divide.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Europe must be at the forefront of gender neutral impacts and response to climate change.

DATE OF PUBLICATION: 2018

SOURCE: <http://womensgenderclimate.org/gender-just-climate-solutions/>
<https://www.iucn.org/news/europe/201806/putting-women-and-girls-heart-conservation-and-climate-action>
<https://www.mdpi.com/2071-1050/10/3/627/htm>
<http://www.unwomen.org/en/news/stories/2017/11/announcement-first-ever-gender-action-plan-on-climate-action-adopted>

23. Upcycling in fashion industry: A potential to foster sustainable consumption and production? [SOCIAL]

SUMMARY: Upcycling is the creation or modification of a product from used materials, components and products which is of equal or higher quality or value than the original. In the fashion industry, upcycling is starting to be positively considered, as exemplified by the 2017 Paris Fashion Week where a famous award was given to a designer using upcycled fabrics.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: So far, upcycling remains a niche, as many social innovation initiatives, but it has the potential to contribute to a paradigm shift related to consumption behaviours. Indeed, not only products can be recycled or reused to extend product lifetime, but also high added value can be created through upcycling, which can provide higher incentives for action. Mainstreaming would require however restructuring whole production processes in the fashion industry.

DATE OF PUBLICATION: 19 November 2018

SOURCE: https://www.lemonde.fr/m-styles/article/2018/11/19/l-upcycling-le-nouveau-standing_5385362_4497319.html

24. Entomophagy: The Next Environmentally-Friendly Diet In Europe? [SOCIAL]

SUMMARY: Eating insects is quite common all around the world. Not in Europe, where the main source of proteins is mammal and bird meat. There are emerging signals that, due to changing populations in Europe, globalisation and growing pressure on agricultural production, insect might

be viewed as a viable and desirable source of proteins for food and feed, influencing current agricultural practices and land use.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: This new diet could contribute significantly to the reduction of CO₂ and CH₄ emissions if it were to substitute meat consumption. This emerging production sector would require new regulation and health standards.

DATE OF PUBLICATION: 5 October 2018

SOURCE: <https://www.bbc.com/news/science-environment-45745242>

25. IT changes social communication and communality [SOCIAL]

SUMMARY: Today, more than 20 billion devices and machines are networked via the Internet; Tendency rising. Digitization is thus in full swing and is changing our society. It affects how citizens communicate, how they form their opinions, how they decide, how to connect, how they build their knowledge, how they exchange information. As a result, digital participation in the near future becomes an elementary prerequisite for social participation and at the same time digital participation leads to the delimitation of familiar categories and social spaces e.g. partly replaces personal communications, changes the places where we communicate and how etc. This leads to new opportunities and risks.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

- Digital technology makes information (including environmental information) available everywhere and immediately.
- The trustworthiness of the information available is increasingly difficult to assess (Fake News)
- Human learning and decision processes change - e.g. digital assistants are increasingly relieving the user of cognitive tasks (for example, digital assistants could motivate people acting more sustainable, but also encourage them to more non-sustainable behaviour)
- The speed at which information disseminates and the power of digital analysis can influence individual and social opinion forming and decision-making processes (pro and contra the environment).

DATE OF PUBLICATION: 2017

SOURCE:

<http://oxfordre.com/climatescience/view/10.1093/acrefore/9780190228620.001.0001/acrefore-9780190228620-e-369>

<http://journals.sagepub.com/doi/abs/10.1177/0733464817732518?journalCode=jaga&>

<https://uclouvain.be/en/discover/news/2018-ucl-honorary-doctorate-recipients.html>

26. Social Innovations - an underestimated opportunity? [SOCIAL]

SUMMARY: In Europe and many other countries, initiatives – by companies, civil society, non-state actors and local communities – increasingly emerge to develop social innovations in order to address environmental or social challenges (or both) that matter to them, such as climate change. Social innovations are new social practices e.g. new ways to live, work, communicate or cooperate, and can extend over all social areas like mobility, consumption, leisure activities, work, etc.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

Social innovations may:

- Help to deliver new solutions for societal problems and challenges – often in addition to /

replacing / smartly combined with technological, economic and other more conventional forms of innovation.

- For that reason the variety and the mainstreaming of social innovations should be supported by policy makers and researchers (probably on the same scale like technological innovations).

DATE OF PUBLICATION: 2017

SOURCE: <https://drift.eur.nl/projects/social-innovation-community>
https://www.siceurope.eu/news/fairer-more-inclusive-europe-sign-sideclaration?alt_path=node/1445

27. From individual to system-oriented policies to foster behavioural change for sustainability [SOCIAL]

SUMMARY: How effective is individual environmental and climate action, when it is systemic social change that is needed? Individuals make choices, but these are constrained by the society in which they live. Therefore, it may be more useful to question the system that requires and/or encourages many of us, for example, to travel and consume energy as we do.

For example, some strategies aim to make existing patterns of consumption less resource-intensive through technical innovation alone (e.g. decarbonisation policies- encouraging renewable energy sources, electric cars, energy efficiency policies- decreasing energy input/output ratio of appliances, vehicles, buildings). However, these do not lower energy demand, because they don't address resource-intensive consumption patterns that often emerge from more energy efficient technologies.

A solution may be to focus more on social change. Energy efficiency and decarbonisation policies need to be combined with "social innovation" if we want energy use and carbon emissions to reduce.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

In contrast to policies aimed at individuals, policies that frame sustainability as a systemic, institutional challenge can bring about the many forms of innovation that are needed to address problems like climate change.

A sustainability policy that focuses on systemic issues reframes the question from "how do we change individuals' behaviours so that they are more sustainable?" to "how do we change the way society works?" This leads to very different kinds of interventions. For example, this is where behavioural change policies may be relevant. The third pillar of climate change policy tries to steer consumer choices and behaviours in a more sustainable direction.

DATE OF PUBLICATION: July 2018

SOURCE: <https://www.lowtechmagazine.com/2018/07/we-cant-do-it-ourselves.html#more>

28. Volatile climate shapes the way people think [SOCIAL]

SUMMARY: Researchers with the National Bureau of Economic Research, propose a wide-reaching theory of climate and human behavior: in the realm of loss-aversion—the propensity for economic actors to prefer an avoidable loss over a sudden windfall and therefore avoid risky but profitable ventures. Historically, people living in climatically turbulent regions tend to make riskier decisions than those in relatively more stable environments. Those who enjoy relative ecological stability have less incentive to adapt.

It appears to reflect the so-called "high-level equilibrium trap formulated by environmental historian Mark Elvin which explains why the Industrial Revolution took hold in Britain rather than China. British society, stuck in a world of economic scarcity, was driven toward riskier production methods and unpredictable innovation—the very loss-neutral behavior described in the new NBER paper. While humanity has long left the limits of agricultural society behind, its decision-making logic hasn't gone away. Indeed, individuals and ethnic groups that originated in regions with relatively stable environmental conditions are still "characterized by greater intensity of loss aversion, while descendants of regions characterized by greater climactic volatility have a higher propensity towards loss-neutrality," according to Galor and Savitskiy. That "nothing ventured, nothing gained" attitude is, apparently, an evolutionary trait.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

As a result of this phenomenon (historical loss-aversion preferences), the Global South expresses consistently high-levels of loss-aversion, making it unlikely to take risks despite the disproportionate impact of climate turbulence there. Might this have similar implications for particular regions in Europe that are more vulnerable to climate change? It has been shown that the US and Canada show low levels of loss-aversion despite high temperature volatility, whilst Spanish and French language regions of South-America show high levels of loss aversion despite lower temperature volatilities (the latter originating from European immigrants moving in the post-Columbian exchange era).

DATE OF PUBLICATION: 26 November 2018

SOURCE: <https://psmag.com/environment/how-a-volatile-climate-shapes-the-way-people-think>

29. Plastic to ride: Indonesians swap bottles for bus tickets [SOCIAL]

SUMMARY: Under a scheme launched by April, commuters in Surabaya, Indonesia, can ride red city buses by dropping off plastic bottles at terminals or directly 'paying' a fare with bottles. A two-hour bus ticket costs 10 plastic cups or up to five plastic bottles, depending on their size, which the city hopes will help it meet an ambitious target of becoming free of plastic waste by 2020. A bus can collect up to 250 kg (550 lb) of plastic bottles a day, or roughly 7.5 tonnes in a month, the data shows.

After collection, labels and bottle caps are removed from the waste and it is auctioned off to recycling companies. Money earned from the auction goes toward running the bus operations and to fund green spaces in the city, located on the eastern tip of Java, Indonesia's main island.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Indonesia is one of the biggest contributors in the world for plastic waste, and through this initiative, they hope to raise public awareness on the environment and reduce plastic waste. Public engagement campaigns which directly reward the public for environmentally-friendly behaviour could be seen as important tools in enabling sustainable living across Europe.

DATE OF PUBLICATION: 23 October 2018

SOURCE: https://www.reuters.com/article/us-india-pollution/smog-in-indian-capital-severe-after-unfettered-festival-fireworks-idUSKCN1NDOAC?utm_campaign=Innovation%20of%20the%20Day%20&utm_source=hs_email&utm_medium=email&utm_content=67069440&_hsenc=p2ANqtz-9cPo4maX1Cq5_klPYRt1blo-6zx6LibROjuQgez5sXTktOGr9c3NhYh3ljtzvr4j-pzlQga56KVjReafNlsMgozE1bWgTS_Q174pxkblSjLm-yll0&_hsmi=67070117

30. Rugosity and concentricity: in urban planning look to edges not just the core [SOCIAL]

SUMMARY: Catherine Brinkley is a professor of human and community development and human ecology at UC Davis. So it's interesting that in a recent published paper, she advocates that cities should work more like coral reefs - supporting a diversity of niches and uses for sustained vigor and resilience. In ecology and medical sciences, the term for a physical form with such topographic complexity is rugosity.

Traditional urban planning favors "concentric" layouts with a downtown core surrounded by suburbs and farmland (right). But Catherine Brinkley argues instead that cities should plan for "rugosity" (left) with more interfaces between functions. An example in Europe is that of Copenhagen's (Denmark) Five Finger Plan from 1947 in which urban planners constructed a transport system which spread like fingers from the palm of central Copenhagen. Copenhagen is widely regarded as a leading example of a city geared for bikes, pedestrians and green spaces.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: "these findings push the boundaries of modern planning to reconsider the periphery as important in shaping total landscape development." Importantly for the environment, cities with high rugosity often have features such as preserved wildlife corridors, farmland conservation/integration but further accommodate more population growth and reduce the stratification of society within cities.

DATE OF PUBLICATION: 26 April 2018

SOURCE: <http://blogs.ucdavis.edu/egghead/2018/04/26/rugosity-concentricity-urban-planning-look-edges-not-just-core/>
<http://www.scandinaviastandard.com/a-brief-look-at-urban-planning-in-copenhagen/>

31. The European resistance against tourism is starting to get organised [SOCIAL]

SUMMARY: With the continent sweltering under a heatwave nicknamed Lucifer, tempers have been boiling over, too, as a wave of anti-tourism protests take place in some of Europe's most popular destinations. Yet, as "tourism-phobia" becomes a feature of the summer, the World Tourism Organisation (UNWTO) has defended the sector, calling on local authorities to do more to manage growth in a sustainable manner.

In Barcelona, where tensions have been rising for years over the unchecked surge in visitors and impact of sites such as Airbnb on the local housing market, Arran, the youth wing of the radical CUP (Popular Unity Candidacy), have been filmed slashing the tyres of rental bicycles and a tour bus. An Arran spokesperson told the BBC: "Today's model of tourism expels people from their neighbourhoods and harms the environment." Spanish prime minister Mariano Rajoy described the group as "extremists". In Venice more than 20 million visitors per year cause rising rents and pollution to the city's environment. The SET network (cities of Southern Europe facing mass tourism) want to promote common protect actions and pressure tactics to set limits to the tourism industry.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: This is another example of division across Europe. There are environmental implications that must be addressed from the increasing impacts from tourism but also social implications, such as rising house prices in tourist areas that impact on local inhabitants. Despite the benefits that mass tourism can bring a local and regional economy, the increase in the tourist numbers in Europe is putting huge pressure on these locations. There is a worry that "politics isn't out for the ordinary person anymore and until that is addressed ... the protest movement will not subside".

DATE OF PUBLICATION: 25 April 2018

SOURCE: <https://www.theguardian.com/travel/2017/aug/10/anti-tourism-marches-spread-across-europe-venice-barcelona>

32. King of the plastic bottle castle [SOCIAL]

SUMMARY: Robert Bezeau has built the world's first plastic bottle castle. The Canadian's four-storey fortress on Panama's Bocas del Toro island shows how plastic waste could be made into low-cost sustainable housing. He's also building an eco-village using the same method. He wants the world to realise that we can reuse plastic bottles in many applications such as home insulation, rapid temporary insulation, buildings for animals on farms, building swimming pools and far more. Robert was the first foreigner to win the Environmental Excellence Award in Panama for his project, which educates children and creates incentives for them to pick up plastic waste.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: This initiative was intended to enable citizen's engagement and co-involve citizens. These types of initiatives are important across Europe to reframe the way we approach disposable and one-use waste.

DATE OF PUBLICATION: 22 April 2018

SOURCE: <http://www.bbc.com/news/av/business-43825834/king-of-the-plastic-bottle-castle>

33. More than 2bn new homes are needed globally over the next 80 years [SOCIAL]

SUMMARY: By the end of this century, the world's population will have increased by half – that's another 3.6 billion people. According to the UN, the global population is set to reach over 11.2 billion by the year 2100, up from the current population which was estimated at the end of 2017 to be 7.6 billion. With the global population rising at 45m per year, comes the inevitable rise in demand for food, water and materials, but perhaps most essentially, housing. As people live longer and one and two-person households increase, the number of future households required rises faster than the population. In 2014, urban think-tank CityLab dubbed the situation the "world's ticking household bomb".

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: If the difference between household demand and population growth occurs globally at around 7-8% over the next 80 years, this will require an additional 800m homes. Taking an average global three-person household (1.2 billion homes) coupled with that 8% demographic factor of total global population over the period results in a need for more than two billion new homes by the end of the 21st century. What is this figure in Europe and can it be met?

DATE OF PUBLICATION: 28 Feb 2018

SOURCE: <http://theconversation.com/the-world-needs-to-build-more-than-two-billion-new-homes-over-the-next-80-years-91794>

34. Tell your boss: when US workers stay home, they save 2 billion billion joules per year [SOCIAL]

SUMMARY: Americans are spending more time at home—so much that from 2003 to 2012, U.S. homebodies cut national energy consumption by a whopping 1.8%, according to a new study. Researchers dug into data from an annual government survey that asks 11,000 Americans about their daily schedule—when they eat, where they work, and how they go about their day. The survey revealed that Americans spent eight more days at home per year in 2012 compared with a decade earlier, thanks in large part to an uptick in teleworking, watching movies at home, and online shopping and gaming. That meant Americans were less likely to visit offices, malls, and other nonresidential spots—and spend less time traveling to them. Given how much energy transportation sucks up, the net effect of these lifestyle changes was an annual reduction in energy use of nearly 2 billion billion joules, enough energy to power nearly 50 million homes per year, the team reports today in the journal *Joule*.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: It is important to analyse and modernize the classical approaches adapting to new technologies and jobs across Europe. It is part of the shift whereby the concept of ‘space’ is being redefined. The shift in the above study was more pronounced for younger people (ages 18-24). If trends suggest people are going to spend more time at home there is motivation for policymakers to focus on efficiency programs for homes.

DATE OF PUBLICATION: 29 January 2018

SOURCE: <http://www.sciencemag.org/news/2018/01/tell-your-boss-when-us-workers-stay-home-they-save-2-billion-gigajoules-year>
<https://theconversation.com/americans-are-saving-energy-by-staying-at-home-90303>

35. Blockchain as a solution to environmental crime? (TECHNOLOGICAL)

SUMMARY:

Europe remains a hub for wildlife trafficking because it is a transit region for endangered species of flora and fauna between continents. However, blockchain has the potential to combat this type of crime (and other environmental crime) because it enables trust between all parties that need to participate in a system and enables greater transparency in supply chains. For example, using either serial numbers or tamper-proof crypto seals, individual shipments and products can be tracked from the supplier to the manufacturer, and then on to wholesalers and retailers. That visibility into the chain of custody works to squeeze out illicit trade by preventing illegal products (timber, fish, natural resources) from entering the supply chain in the first place.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

This has implications for reducing not just environmental crime, but also large scale organized crime, corruption and insecurity. Importantly, to ensure effective use of this technology, the right incentives have to be provided to businesses, and the solutions must not adversely affect those who are operating and trading with no criminal intent currently.

DATE OF PUBLICATION: 10 May 2018

SOURCE: <https://www.forbes.com/sites/samantharadocchia/2018/05/10/why-blockchain-can-be-an-effective-tool-for-fighting-environmental-crime/#7a801d87589f>

36. Ceramic honeycomb air filters to cut city pollution (TECHNOLOGICAL)

SUMMARY:

A new air filter design has been awarded a \$3 million Horizon Prize on materials for clean air for its ability to reduce the particulate matter in urban areas. The combination of material and design leads to a highly effective filtration system. The design of the final system is still being finalized, but a full-size unit could be around 10 meters tall and deliver 3.6 million cubic meters of purified air every day. Prototypes have been used successfully in Shanghai and Paris, keeping local levels of particulates (2.5 PM) below WHO recommended thresholds.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

This technology has potentially significant benefits to human and environmental health in cities. However, it may also be the case that technologies such as this one act as disincentives to policy makers when implementing pollution mitigation strategies, and may act as an easy course of action whilst not tackling the underlying problem.

DATE OF PUBLICATION: 30 October 2018

SOURCE: <https://phys.org/news/2018-10-ceramic-honeycomb-air-filters-city.html>

37. Does virtual reality have a role to play in providing access to nature? (TECHNOLOGICAL)

SUMMARY: We are a technological species—we've always been one. But for hundreds of thousands of years our technologies were rudimentary. When our minds evolved from Paleolithic to Neolithic to now, our technologies did, too. We're drawn to technologies not only because they are foisted on us by corporations, but also because the impetus for them lies within the architecture of our very being.

Given the increasingly complex and realistic nature of virtual reality experiences there is reason to believe that we can employ technological nature, in the form of VR as an additional way of accessing nature, but not as its substitute for actual nature.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: VR may provide opportunities for individuals to connect or engage with nature across Europe. The benefits of this exposure could include stress recovery, and other physical and emotional wellbeing. This may be particularly pertinent for groups or individuals who are less able to access it. This includes groups such as the elderly, individuals with mobility constraints and children living in inner city environments. It may also enable better natural/environmental learning outcomes for children. However, an important aspect of this stressed in the article is that actual natural experiences should not be replaced by this form of technology

DATE OF PUBLICATION: August 08 2017 and November 08 2018

SOURCE: <https://qz.com/1048433/technology-is-changing-our-relationship-with-nature-as-we-know-it/>
<https://bluehealth2020.eu/publications/prescription-for-nature/>

38. Protein produced from electricity to alleviate hunger (TECHNOLOGICAL)

SUMMARY: A batch of single-cell protein has been produced by using electricity and carbon dioxide in a joint study by the Lappeenranta University of Technology (LUT) and VTT Technical Research Centre of Finland. Protein produced in this way can be further developed for use as food

and animal feed. The method releases food production from restrictions related to the environment. The protein can be produced anywhere renewable energy, such as solar energy, is available. Scientists estimated that it could be eight times more luminous than the actual, original moon. It is 10x as efficient as common photosynthesis, contains 50% proteins and uses 20 000 less land than is needed to produce the same amount of food by growing soya.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

Although in early stages, this process has the potential to reduce pressures on the environment from land use, reduce water consumption but also meet the nutrition and calorific demands require across Europe and globally.

DATE OF PUBLICATION: 31 October 2018

SOURCE: <https://www.theguardian.com/commentisfree/2018/oct/31/electric-food-sci-fi-diet-planet-food-animals-environment>

39. Cities designed for children [TECHNOLOGICAL]

SUMMARY: Currently, there are five main challenges for urban children: traffic and pollution; high-rise living and urban sprawl; crime, social fears and risk aversion; isolation and intolerance; and inadequate and unequal access to the city. Society’s mistake is that our current planning are geared around cars, housebuilding and the economy, rather than the environment, health and quality of life. Urban planners are in agreement with this, but this is the case because ‘our decision-makers are short-termist politicians who don’t need to look beyond the next two or three years’.

However, in urban neighbourhoods around the world, child-friendly design is gaining momentum: from community-led projects, using paint and planters to tackle dangerous routes to schools and playgrounds, to citywide policy reimagining housing policies and neighbourhoods for children. Continued support of this movement is extremely important.

Fr example, voted the least attractive city to grow up in in 2006, Rotterdam has since spent €15m (£13.2m) on improvements to public spaces, housing and safe traffic routes in lower income neighbourhoods in an effort to build a child-friendly city. An open space in a city park forest has been converted into a nature playground – Natuurspeeltuin de Speeldernis – giving children the opportunity for unstructured play. Kids can enjoy the biodiversity of “wild” space; build dens, fires and rafts, and camp out. It now draws 35,000 visitors a year.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

Child friendly design is vital to reduce dangers to children, reduce their exposure to pollution (to which lower socio-economic groups are further exposed) and enable them to access nature. The former mayor of Bogotá, Enrique Peñalosa, once said: “Children are a kind of indicator species. If we can build a successful city for children, we will have a successful city for everyone.”

DATE OF PUBLICATION: 28 February 2018

SOURCE: <https://www.theguardian.com/cities/2018/feb/28/child-friendly-city-indoors-playing-healthy-sociable-outdoors>

40. Edible packaging for liquids can reduce impacts of plastics [TECHNOLOGICAL]

SUMMARY: Ooho is a sustainable flexible packaging material for liquids made from seaweed-extract; it is a 100% natural alternative to plastic bottles, cups and sachets. The Ooho material degrades in a natural environment in about 6 weeks on average and is also edible.

Almost any liquid can be contained in Ooho packaging but it is designed primarily for substances used 'on-the-go', which best suits the materials natural properties. Ooho is being trialled as a replacement for small water bottles used out and about, for fresh juices that are made daily, for sauces and condiments used by fast food restaurants and included in fresh salads, and for hydration in sporting events like marathons.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Sustainable packaging can reduce the use of plastics with short life spans that are a common sources of pollutions. Sustainable concepts such as 'Ooho' offer consumers an opportunity to make more sustainable choices with positive benefits for the environment.

DATE OF PUBLICATION: 12 April 2017

SOURCE: <http://skippingrockslab.com/ooho!.html>
https://www.youtube.com/watch?v=gxqcujl_8n0

41. Bitcoin emissions alone could push global warming above 2°C [TECHNOLOGICAL]

SUMMARY: Bitcoin is a power-hungry cryptocurrency that is increasingly used as an investment and payment system. This paper shows that projected Bitcoin usage, should it follow the rate of adoption of other broadly adopted technologies, could alone produce enough CO₂ emissions to push warming above 2 °C within less than three decades.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Climate change is a critical issue for Europe (and the world). Reducing emissions from existing / historic sources is already a major challenge. There is a need to account for new / emerging drivers of CO₂ emissions in EU climate policy.

DATE OF PUBLICATION: 29 October 2018

SOURCE: <https://www.nature.com/articles/s41558-018-0321-8>

42. 3D printing coral reefs [TECHNOLOGICAL]

SUMMARY: Coral reefs are vanishing from the world's oceans. At least three quarters of these tropical marine habitats are severely threatened globally and in 2016 alone, the Great Barrier Reef lost up to 30% of its coral cover. But could modern technology simply create more reef? It may sound fantastical, but scientists are working on 3D printing new reef habitats to replace those lost from climate change, overfishing and pollution.

Recently, one the largest 3D printed coral reef was deployed at a site in the Maldives, as a way of creating new reef habitat, using a new technology called Modular Artificial Reef Structures or MARS for short. MARS consist of lattices that have been 3D printed in ceramic material and designed to be deployed from small boats and pieced together by divers. The idea is that they can be used together with coral farming – where coral is cultivated for commercial purposes or reef restoration – to create new reef habitat in areas that have been degraded or where there were no corals to begin with, such as sandy bottoms.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Coral reefs are vital for the livelihood of millions of people around the world and an important source of food. They also provide protection to coastal areas. Although importance for Europe may be indirect, coral reefs are a vital part of the global marine ecosystem.

DATE OF PUBLICATION: 8 October 2018

SOURCE: <http://theconversation.com/3d-printing-coral-reefs-can-create-new-habitat-but-it-doesnt-tackle-human-destruction-103927>

43. 'Cooling-off effect' causes public perception of novel environmental technology to improve over time [TECHNOLOGICAL]

SUMMARY: Researchers have published a paper providing evidence that a 'cooling off effect' can lead to increased public acceptance of new environmental technologies over time. The scientists analysed survey results from over 1000 respondents in Germany, using solar radiation management (SRM), a controversial climate engineering technique, as a test case. They found that, following a cooling-off period of either one month, 12 months, or 18 months, acceptance of SRM increased significantly — and that the longer the cooling-off period, the larger the increase.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Public perception of new environmental technology plays an important role in the development of relevant policy: if a novel technology is not acceptable to the public it is unlikely to be widely adopted. This research suggests that initial public opposition to novel environmental technologies is not necessarily permanent. These findings have far reaching implications, both for the deployment of SRM and for climate policymakers seeking to more accurately measure the public acceptability of novel interventions.

DATE OF PUBLICATION: 22 February 2018

SOURCE: Science for Environment Policy, Issue 503

Original source: Braun, C., Rehdanz, K. and Schmidt, U. (2017). Exploring public perception of environmental technology over time. Journal of Environmental Planning and Management. DOI: 10.1080/09640568.2017.1291414.

44. Gamification & new serious and persuasive games [TECHNOLOGICAL]

SUMMARY: Gamification as well as persuasive and serious games are increasingly common in all areas of life and work. Due to the playful-interactive setting and a low entry level, extra-ordinary situations and simulations lead to attention of sustainability issues and thus environmental awareness can be increased. Additionally, a creative motivation and a good communication culture could be fostered to improve the cooperation behaviour, the handling of complexity and decision-making processes. This is an essential condition for success in solving environmental questions. Companies like PepsiCo are beginning to recognize the potential of gamification in reaching young people with an environmental platform, for example their 'Recycle Rally' has engaged students and incentivised them to track their bottle and can recycling.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Gamification can support environmental action through:

- direct and indirect sensibilisation for environmental topics
- access to young generation (link to millennials).
- new techniques for environmental scientists and policy makers

DATE OF PUBLICATION: 2017

SOURCE: <https://games4sustainability.org/2018/09/06/exploring-minecrafts-potential/>
<https://www.growing-pathways.com/2015/11/video-games-could-be-the-future-for-circular-economy/>

<https://www.finchandbeak.com/1291/change-agents-for-circular-economy-business.htm>
https://www.huffingtonpost.com/tom-szaky/the-positive-impact-of-en_b_11386874.html

45. Autonomous mobility is shared [TECHNOLOGICAL]

SUMMARY: “Connected, Autonomous, Shared, Electric: Each of these has the power to turn our entire industry upside down. But the true revolution is in combining them in a comprehensive, seamless package” explained Dr Dieter Zetsche Chairman of the Board of Management of Daimler AG recently. That this could be the future is not only his vision. In 2018, Waymo for example is going to launch America’s first commercial robotaxi service. Also GM and Ford are both developing competing fleets. However, there are still some technical and regulatory hurdles for implementation e.g. safety regulations. And don’t forget the people, who have to accept this. The shared mobility revolution is dependent on a well-functioning IT infrastructure, because the technology can only be successful, when a rider hails a car, and the car responds and is there in an accurate and timely manner.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

- Swapping human-driven vehicles for autonomous ones alone is not likely to make things much better in terms of environmental issues. The numbers of cars remain the same. However, if the future mobility is shared, the numbers of cars will decrease. As part of this, automotive companies will face the challenge selling less cars – on the other hand with an early orientation towards a platform offering mobility as a service will offer new business segments.
- Shared autonomous mobility has the potential to solve urban problems such as traffic jams, air pollution and even affordable housing by allowing cities to replace an auto-centric infrastructure such as parking garages with a people-centric infrastructure - housing nearer to jobs. But with high probability there will be a need from the regulator’s side to set the frame.

DATE OF PUBLICATION: November 2018

SOURCE: <https://www.wired.com/story/robotaxis-are-coming/>

46. Blockchain platform launched to market wind-power [TECHNOLOGICAL]

SUMMARY: The west German city of Wuppertal's municipal-owned energy company has launched a blockchain-based trading platform, allowing customers to buy certified local wind and other renewable-generated electricity. The German company sees big potential for the blockchain platform, called Tal.Mark, in selling electricity from projects older than 20 years. The trading platform could help secure a future for the roughly 5,000 wind turbines that will reach the end of their 20-year support period by 2020. “The wholesale electricity market earnings they can then expect look unlikely to cover operation and maintenance costs, leading to turbine dismantling — a waste of economic resource,” said Stadtwerke CEO Andreas Feicht.

"Our model allows wind turbine and solar operators to sell directly to local end-customers and achieve earnings that cover costs," he added. The current legal framework allows such trading. Additionally, the portal allows investors to build up a group of local customers large enough to encourage construction of new wind or solar farms outside the Renewable Energy Act auction support system, according to the company.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Blockchain might allow a new way to sell renewable energy directly to the consumers + new business models for older projects leaving national support schemes. It may enable individuals to trade energy among themselves and remove the middleman. The blockchain technology provides an opportunity to

put more power in the hands of the people, and enable circular economies within local communities (keeping money within communities instead of sending them to a utility located hundreds of miles away).

DATE OF PUBLICATION: 21 November 2017

SOURCE: <https://www.windpowermonthly.com/article/1450798/blockchain-platform-launched-market-local-wind-power>
<https://www.renewableenergyworld.com/articles/2017/05/how-smart-contracts-could-simplify-clean-energy-distribution.html>

47. Microsoft is throwing its servers in the sea to keep them cool [TECHNOLOGICAL]

SUMMARY: The BBC reports that Microsoft has encased a tiny data center with 12 racks of servers in a cylinder that'll sit on the ocean floor for up to five years. The idea is to use the sea as a natural coolant, helping to reduce the energy needed to run the centre. It's the company's most ambitious such experiment to date. An undersea cable will bring power to the servers and ship data back to shore. But if anything goes wrong with a machine, it can't be replaced—the cost of hauling the cylinder up is simply too great.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Computers in data centres get really hot, so finding alternatives to conventional cooling systems can save money and reduce a company's carbon footprint. In addition to sinking servers, companies are putting them in mines and outdoors in vats of cooling oil. Furthermore, half the world's population lives within 200km of the ocean, so the ability to put data centres in water means they can always be located close to population centres enabling lower latency connections.

DATE OF PUBLICATION: 6 June 2018

SOURCE: <https://www.bbc.com/news/technology-44368813>

48. How close are we to a Black Mirror style digital afterlife? [TECHNOLOGICAL]

SUMMARY: Eter9, created by Portuguese software developer Henrique Jorge, is a social network that uses artificial intelligence to learn from its users and create a virtual self, called a "counterpart", that mimics the user and lives on after he or she dies. Similarly Eterni.me, founded by MIT fellow Marius Ursache, scrapes the posts and interactions on your social media accounts to build up a digital approximation that knows what you "liked" on Facebook or bragged about on LinkedIn. The service has yet to launch, but the plan is to allow people to interact with their dead loved ones via Eterni.me's mobile apps.

More ambitious are efforts to extract thoughts directly from the brain, rather than scavenging the digital footprints we leave behind. So far, brain-computer interfaces have been used for relatively simple tasks, such as restoring motor control in paralysed patients or enabling basic communication for locked-in patients with brain injuries. These interfaces typically decode brain signals from the surface of the skull through EEG or implanted electrodes and then translate the signals into a motion command for a robotic prosthetic limb or a cursor on a keyboard.

While these brain-controlled devices are cutting-edge, they are a long way from the "merger of biological intelligence and machine intelligence" proposed by Elon Musk through his recently launched company Neuralink as a way to allow humans to stay competitive with AI systems. Musk

proposes using a mesh-like “neural lace” implant that could read and write brain signals, allowing for two-way communication that would allow, at least in theory, people to draw on cognitive power from super-intelligent computers without having to type search queries. The Silicon Valley startup Kernel has similar ambitions but is focusing on interfacing with diseased brains such as those with memory loss, Parkinson’s or epilepsy – the risks associated with brain surgery make it an extremely tough sell for medical boards and healthy patients.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: There is an emerging interest in the digital afterlife, and how technology such as artificial intelligence and brain-computer interfaces could one day be used to create digital replicas of ourselves or loved ones that could live on after death. Is there a danger that these the technologies, combined with social and environmental problems, could lead to individuals moving towards, or being moved towards digital versions of reality?

DATE OF PUBLICATION: 9 Jan 2017

SOURCE: <https://www.theguardian.com/tv-and-radio/2018/jan/09/how-close-are-we-black-mirror-style-digital-afterlife>.

49. ‘Predictive policing’ is gaining ground [TECHNOLOGICAL]

SUMMARY: Tech firm PredPol - short for predictive policing - claims its data analytics algorithms can improve crime detection by 10-50% in some cities. It takes years of historic data, including the type, location and time of crime, and combines this with lots of other socio-economic data, which is then analysed by an algorithm originally designed to forecast earthquake aftershocks. The software tries to predict where and when specific crimes will occur over the next 12 hours, and the algorithm is updated every day as new data comes in.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: "Machine learning provides a suite of approaches to identifying statistical patterns in data that are not easily described by standard mathematical models, or are beyond the natural perceptual abilities of the human expert," says Prof Brantingham. What effect might this have on environmental crime?

DATE OF PUBLICATION: 30 Oct 2018

SOURCE: <https://www.bbc.com/news/business-46017239>

50. Societal change as a result of move to renewable energy sources [ECONOMIC]

SUMMARY: Imagine waking up tomorrow in a world that doesn't depend on oil. That might seem far-fetched, but as engineers and scientists come up with new ways to harness renewable energy, those new sources of energy may soon shape the way our societies function and how we live our daily lives.

"We're going to stop depending on oil long before we run out of it, so we really need to exercise our imaginations about what other futures are possible," explains University of Alberta associate professor Sheena Wilson, who heads the Future Energy Systems energy humanities theme.

Decentralization of energy through the development of wind, solar, biofuels and geothermal could mean that communities no longer need to be centralized. Societal power structures defined by those who presently control energy and wealth could also fundamentally change.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: In a transition from fossil

to renewable energy communities might need to be organized in entirely new ways—around social and environmental sustainability, instead of around the easy flow of traffic and consumer goods.

DATE OF PUBLICATION: 30 March 2018

SOURCE: <https://phys.org/news/2018-03-society-renewable-energy-sources.html#jCp>

51. Crowdfunding renewable energy [ECONOMIC]

SUMMARY: Crowdfunding is proving an important source for the development of small renewable energy projects.

With the ability to post a project with all its details to the web and its global reach, the opportunity to tap into the minds and investment wealth of large numbers of people is an obvious one. This is particularly true for smaller scale projects that are outside the scope of the traditional larger investment institutions or investment banks.

For their part, the investors aren't in it for nothing and the lure is an often attractive projected return over the project lifetime, generally based on energy sales. Illustrative of the growing popularity and potential of crowdfunding, an estimated €4.2bn was raised through platforms in Europe in 2015.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Increasing popularity and uptake of crowdfunding renewables projects could fundamentally change the way (small) projects are funded, governed and managed.

DATE OF PUBLICATION: 19 June 2017

SOURCE: <https://www.engerati.com/article/crowdfunding-renewable-energy-solar-wind>

52. Why are greens turning away from a carbon tax? [ECONOMIC]

SUMMARY: Taxing carbon to tackle climate change is one of those big ideas that have long held a kind of bipartisan sway in Washington — endorsed by Al Gore and former members of Ronald Reagan's Cabinet, economists from both parties and even Exxon Mobil. But environmentalists are increasingly ready to look elsewhere.

The fuel-tax riots in Paris and the defeat of a carbon-fee ballot measure in Washington state show the difficulty of getting people to support a levy on the energy sources that heat their homes and power their cars. Meanwhile, in the US, even the most liberal Democratic candidates this year gave carbon taxes scant if any mention in their climate platforms, focusing instead on proposals like a phaseout of fossil fuels and massive investments in wind and solar power. In the US, even some progressives who support a carbon tax, see it as one of a wide range of possibilities, in addition to investment in renewable technology. Currently, only 11 countries have carbon taxes in place.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The implementation of a carbon tax is a complicated affair. People are sensitive to taxes, but will approve of them if they're perceived to be getting value. Should carbon taxes be framed in terms of the service they are providing to the taxpayer rather than environmental performance? Carbon tax backers say that the approach has been successful in places like British Columbia, Ireland and Norway.

DATE OF PUBLICATION: 5 January 2017

SOURCE: <https://www.politico.eu/article/germany-pushes-for-tax-hike-on-meat-and-cheese/>
<https://www.ecorys.com/sites/all/sites/default/files/files/Impact%20of%20Food%20Taxes%20-%20Final%20Report.pdf>

53. Governmental revenues from environmental taxes in Member States of the EU are still very low [ECONOMIC]

SUMMARY: Governmental revenues from environmental taxes in member states of the EU reached a total of EUR 364.4 billion in 2016, compared to EUR 296.5 billion in 2006. In this period, the share of environmental taxes in the total of taxes dropped from 6.4 percent in 2006 to 6.3 percent in 2016, according to data from Eurostat. Taxes on energy accounted for more than three quarters of the total revenues from environmental taxes (76.9 percent of the total), well ahead of the taxes on transport (19.7 percent) and those on pollution and resources (3.4 percent).

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Taxation will be one of the main incentives to create more sustainable business models. Are there opportunities to increase governmental revenues from environmental taxes, and what are the barriers currently preventing this?

DATE OF PUBLICATION: 2018

SOURCE: <http://www.business-review.eu/news/share-of-environmental-taxes-in-romania-among-highest-in-eu-156839>

54. Free public transport in Germany? [ECONOMIC]

SUMMARY: Germany has surprised its European neighbors with a radical proposal to reduce road traffic by making public transport free, as Berlin scrambles to meet EU air pollution targets and avoid big fines. The move comes just over two years after Volkswagen's devastating "dieselgate" emissions cheating scandal unleashed a wave of anger at the auto industry, a keystone of German prosperity. "We are considering public transport free of charge in order to reduce the number of private cars," three ministers including Environment Minister Barbara Hendricks wrote to EU Environment Commissioner Karmenu Vella in the letter seen by AFP Tuesday.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: But cities were quick to warn that more planning was needed if free travel was to succeed. "I don't know any manufacturer who would be able to deliver the number of electric buses we would need" to meet increased demand if transport was free, Bonn mayor Ashok Sridharan told news agency DPA. Meanwhile, Association of German Cities chief Helmut Dedy warned that "we expect a clear statement about how (free transport) will be financed" from the federal government. Other attempts around the world to offer citizens free travel have failed, including in US city Seattle.

DATE OF PUBLICATION: 14 Feb 2018

SOURCE: <https://www.euractiv.com/section/air-pollution/news/germany-mulls-free-public-transport-to-quash-air-pollution-menace/>

55. Environmental impact of tobacco [ENVIRONMENTAL]

SUMMARY: Recent work has established the significant impact that the tobacco industry has on the environment. In total, six trillion cigarettes are produced and discarded annually. The industry

uses 22 billion tons of water each year and causes up to 5% of global deforestation (being 10x more aggressive than all other deforestation factors). Tobacco crop production leads to accelerated soil degradation and cigarette butts have become the most discarded waste item worldwide.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

In line with Article 17 and 18 of the Convention on Provision of Viable Alternative Activities and Protection of the Environment, the Secretariat of the WHO FCTC is calling on governments to better regulate tobacco agriculture and to work on helping tobacco farmers worldwide, switch to environmentally-friendly alternative crop production. This is being encouraged through the use of incentives such as access to credit, and by providing training on environmentally-friendly practices, among other measures. The UN tobacco control watchdog also recommends that Parties to the treaty urgently adopt regulations that make the industry responsible for the impact that it has on the planet.

This represents a new angle of attack on the tobacco industry. Given the extent of the environmental impacts, and the EU's commitments to tackling environmental issues, does this add impetus to the anti-smoking movement?

DATE OF PUBLICATION: 4 September 2018.

SOURCE: <https://news.un.org/en/story/2018/09/1018302>

56. Precision technology in farming: environment and crop protection [ENVIRONMENTAL]

SUMMARY: Currently, agricultural techniques that are economical, productively, and socially, environmentally sustainable are on real demand. The concept of precision farming is increasingly becoming an attractive venture for realizing sustainable agriculture and utilizing natural resources. Precision farming among many other things enables the reduction of farm chemical use during crop production while decreasing farming risks and contributing to field-specific crop applications. In return, this makes the production processes more specific and designable which increases profitability.

For precision farming to be adopted widely however there will be need to rid out the old stereotypes, by bring farmers up-to-date and training them as a preparation for adopting new farming techniques. Thus the new and older generation of farmers should be encouraged – especially the younger generation.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Agriculture is a major employment sector in many regions, so changes in farming practices will influence employment. Changing the use of chemicals will also have environmental and social benefits.

DATE OF PUBLICATION: September 24, 2018

SOURCE: <https://www.farmmanagement.pro/the-impact-of-precision-technology-on-the-future-of-the-environment-and-crop-protection/>

57. Innovative seaweed - based gel coating for urban homes able to capture harmful air particles [ENVIRONMENTAL]

SUMMARY: Air pollution via small particulate matter (PM) from diesel fumes and other sources is of growing concern in urban areas, and contributes to poor air quality.

In European urban areas, PM pollution often exceeds World Health Organization (WHO) safe levels for human wellbeing. In response to this, the European Commission has encouraged researchers to develop a low cost, sustainable material that captures these particles in order to clean the air. This study created a new PM capture material using sustainable chemical processes where the carbon footprint and energy use of the production process of the remediation material is taken into account. The newly developed porous material is called 'SUNSPACE' (an acronym derived from '(S)UstaiNable materials Synthesized from By products and Alginates for Clean air and better Environment').

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Air pollution is a major health and environmental concern in EU urban areas. Such materials could help mitigate pollution from PM and reduce impacts on human health.

DATE OF PUBLICATION: 15 November 2018

SOURCE: Science for Environment Policy, Issue 516.

Original source: Zanoletti, A., Bilo, F., Depero, L., Zappa, D., and Bontempi, E. (2018). The first sustainable material designed for air particulate matter capture: An introduction to Azure Chemistry. *Journal of Environmental Management*, 218: 355–362.

58. Potential contamination of copper oxide nanoparticles and possible consequences of urban agriculture [ENVIRONMENTAL]

SUMMARY: Researchers have assessed the phyto-toxic effects of copper nanoparticles on vegetables grown within urban gardens, comparing increasing doses of these nanoparticles to simulate potential aerial deposition to extreme pollution of CuO-NP in a range of increasing exposure periods. Lettuce and cabbage absorbed high amounts of copper nanoparticles, after 15 days of exposure, which interfered with photosynthesis, respiration and also reduced growth. Under the specific exposure conditions of the study the researchers indicate that metal nanoparticles could lead to potential health risks to humans from the contamination of crops from pollution.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Urban agriculture is becoming increasingly popular and can provide significant amounts of food. However, crops in urban areas are more likely to be exposed to chemicals in air pollution from traffic or industry.

DATE OF PUBLICATION: 12 April 2018

SOURCE: Science for Environment Policy, Issue 505

Original source: Xiong, T.T., Dumat, C., Dappe, V., Vezin, H., Schreck, E., Sahid, M., Pierart, A. & Sobanksa, S. (2017) Copper Oxide Nanoparticle Foliar Uptake, Phytotoxicity, and Consequences for Sustainable Urban Agriculture. *Environmental Science and Technology*. 78:5774-5782.
DOI:10.1021/acs.est.6b005546

59. Air quality monitoring fails to consider health impacts of emerging pollutants [ENVIRONMENTAL]

SUMMARY: Advances in knowledge on the toxicity of substances and their emissions in the atmosphere have shown that certain pollutants that may have an impact on human health are not currently taken into account in regulatory monitoring. ANSES recommends the national surveillance of 1,3-butadiene and the enhanced monitoring of ultrafine particles (UFPs) and carbon black. Regarding 10 other pollutants (manganese, hydrogen sulphide, acrylonitrile, 1,1-2-

trichloroethane, copper, trichloroethylene, vanadium, cobalt, antimony and naphthalene), the Agency emphasises that the TRVs can be exceeded in specific contexts (especially industrial) and recommends the acquisition of additional data in order to ensure, among other things, the adequacy of regulatory monitoring for emissions of these pollutants.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Knowledge of the health effects of ambient air pollution has been well established for some years now. In Europe, the monitoring strategy for air quality is based on European Directives 2008/50/EC of 21 May 2008 and 2004/107/EC of 15 December 2004. The results of this expert appraisal will provide input for the discussions launched with a view to the revision of Directive 2008/50/EC on air quality monitoring initiated by the European Commission in July 2017. 1,3-butadiene is emitted by industrial activities using plastic and rubber, as well as by motor vehicle exhaust and cigarette smoke. It is classified as a classified as a 1A carcinogen and a 1B mutagen under CLP Regulation and as a Category 1 carcinogen by the IARC.

DATE OF PUBLICATION: 28 June 2018

SOURCE: <https://www.anses.fr/en/content/ambient-air-quality-anses-recommends-surveillance-13-butadiene-and-enhanced-monitoring>

60. Risks of adjuvants in pesticide formulations for people living or working in agricultural areas [ENVIRONMENTAL]

SUMMARY: Pesticide formulations consist of mixtures of the active ingredient (the pesticide) and percent-levels of up to 50 other chemical additives, called adjuvants. The adjuvants help to make the pesticide more effective in killing the pests, but are in the risk assessment considered largely 'in-active', i.e. non-toxic. The risks of the adjuvants and the pesticide formulations are in Europe therefore not tested to the same extent as the active ingredient. The recent case of the pesticide Glyphosate used in formulations such as Roundup has however raised awareness that the adjuvants and the formulation mixtures can be as or more toxic than the active pesticides. This raise concern for whether people living and/or working nearby agricultural fields where pesticides are used are being exposed to unsafe levels of pesticide mixtures. This is partially supported by studies showing that organic farmers have less risk of developing cancer.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

Pesticide formulations are widely used across Europe by farmers. Importantly, adjuvants are present in higher levels than active ingredients, but the risk associated with these chemicals has only been tested to a limited extent. Their risks are likely to be underestimated (for single substances and for mixtures). However, adjuvants are typically surfactants and have been linked to immunotoxicity, abortion, and endocrine disruption.

People living and/or working in areas where pesticide formulations are used can be expected to be exposed to substantially higher levels of pesticide and adjuvant mixtures, and may therefore be at higher risk for developing disease. Particularly pregnant women/foetuses in agricultural areas may be at risk. The public awareness and concern on the potential risks of pesticides for human health is high.

DATE OF PUBLICATION: 2018

SOURCE: https://www.lemonde.fr/planete/article/2018/10/22/l-alimentation-bio-reduit-significativement-les-risques-de-cancer_5372971_3244.html

Defarge, N., Spiroux de Vendômois, J., & Séralini, G. E. (2018). Toxicity of formulants and heavy metals in glyphosate-based herbicides and other pesticides. *Toxicology Reports*, 5(October 2017), 156–163. <http://doi.org/10.1016/j.toxrep.2017.12.025>

Mesnage, R., Defarge, N., Spiroux De Vendômois, J., & Séralini, G. E. (2014). Major pesticides are more toxic to human cells than their declared active principles. *BioMed Research International*, 2014(Table 1). <http://doi.org/10.1155/2014/179691>

61. Land mass management: implications for neighbourhoods [ENVIRONMENTAL]

SUMMARY: Surplus soil and rock materials must be utilised as close to their place of origin as possible and without long-term storage. In countries with low density and virgin resources such as Finland, supply and demand do not currently meet either in terms of quality, time, or geographical location. This situation results currently in a massive truck 'rally' around growing, dense urban settlements with implications on local dwellers (traffic, noise) and emissions (health, climate impacts).

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: At a time of need for urban densification and sustainable development, Europe must spearhead practices of sustainable land use. Land mass management provides opportunities for sustainable circular economy business models, environmental justice and safer neighbourhoods.

DATE OF PUBLICATION: 2017

SOURCE: <https://circhubs.fi/en/tietopankki/soil-and-rock-materials/>
http://www.syke.fi/en-US/Research_Development/Research_and_development_projects/Projects/CIRCWASTE_Towards_Circular_Economy_in_Finland
<https://6aika.fi/circvol/>

62. Noise & Air Pollution: Under-considered social & health implications [ENVIRONMENTAL]

SUMMARY: New tech advances provide the opportunity to tackle 'traditional' environmental nuisances that have proven social implications for health and wellbeing. Yet the opportunity seems to not be taken seriously, and the social costs of (globally) increasing noise and air pollution are rarely taken into account when considering the (life cycle) costs.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: It is an opportunity for Europe to develop expertise and show leadership in tackling also the 'traditional' environmental issues related to urban environments and traffic using new technology and emerging solutions.

DATE OF PUBLICATION: December 2017

SOURCE: <https://futurism.com/future-noise-pollution>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4873188/>

63. Humans drive other animals to become more nocturnal [ENVIRONMENTAL]

SUMMARY: Researchers analyzed 76 previous scientific studies about human impact on mammal activity. These studies had captured the 24-hour movements of medium- and large-bodied mammals, ranging from opossums to African elephants, encompassing 62 species across six continents. The team's analysis showed mammals are becoming an average of 1.36 times more

nocturnal due to high human disturbance. Gaynor explains what that means: “If you have an animal that typically splits its activity 50–50 between the day and the night, that means it would then become 68 percent nocturnal [due to humans]—so that’s pretty striking.” The effect was particularly large in a number of species typically only active during the day.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: This is important as you can start to see the pattern across a larger scale—to see these trends are occurring across continents, across different species and across different human activities.” Although scientists do not yet know the consequences of such a dramatic lifestyle change for individual species, they suspect it may hurt those highly adapted to finding food, communicating with others or escaping predators while the sun is shining. “Patterns of competition and predator–prey interactions might change with the nocturnal behavioral changes,” Gaynor says. If one species—say a top predator—starts hunting at night and goes after different types of prey, it will likely have innumerable trickle-down consequences for everything along the food chain. This is another relatively under-researched topic concerning the impact of humans on the natural world.

DATE OF PUBLICATION: 14 June 2018

SOURCE: <https://www.scientificamerican.com/article/humans-are-driving-other-mammals-to-become-more-nocturnal/>

64. How your diet affects climate change [ENVIRONMENTAL]

SUMMARY: You are what you eat, as the saying goes, and while good dietary choices boost your own health, they also could improve the health care system and even benefit the planet.

Healthier people mean not only less disease but also reduced greenhouse gas emissions from health care. As it turns out, some relatively small diet tweaks could add up to significant inroads in addressing climate change.

“To my knowledge, this is the first time anyone has done this,” said study director David Cleveland, a research professor in UC Santa Barbara’s environmental studies program and geography department.

“People have looked at what effect diets have both on climate and on health, but they’ve never examined the potential to mitigate climate change through the food system and the health care system together.”

The food system contributes about 30 percent of total U.S. greenhouse gas emissions, with the largest proportion coming from animal-based food.

Then, using life-cycle assessment data for the foods that changed in the healthier model diets, they analyzed the effects of the diets on greenhouse gas emissions for the food system.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The study implies that there are co-benefits in people switching to healthier diets not just for health reasons but for environmental reasons too. Furthermore, improvements in the environment have feedback effects on human health too. This adds weight to the argument for a radical shift in diets across much of Europe.

DATE OF PUBLICATION: 8 May 2018

SOURCE: https://www.eurekalert.org/pub_releases/2018-05/msu-ifd050118.php

65. A tour of India’s waste mountain [ENVIRONMENTAL]

SUMMARY: In an in-depth investigation of India’s fight against mountains of consumerist waste, are robust statistics, compelling history and telling case studies. As Doron and Jeffrey show, waste in India has generated a vast recycling culture — a world apart, of garbage buyers, scavengers and

‘rubbish rajas’- unorganized waste-pickers do most of the dirty work in highly hazardous conditions. The authors reveal the complex cultural, social, political and religious hurdles that hamper the country’s struggle with waste, from unjust pressure on ‘low-caste’ Dalits to collect human excreta to unenforced environmental regulations. Meanwhile, the mountain of waste builds by an average 100,000 tonnes a day — a fraction of the US tally, but problematic nevertheless. The investigation also discusses India’s waste market. The world’s largest ‘ship-breaking’ industry is in Alang. Here, retired ships are imported and dismantled, and their parts and materials — primarily steel — are sold for profit.

The authors rightly call for a sustainable system. To be practical, this must be motivated by profit, discipline, need, pride or better still, a combination of these. In 2013, China signed up to a ‘circular economy’ model devoted to recycling as much as possible. This is one approach to sustainability. But India has, as other strengths that could unite municipalities and individuals. One is its 40,000 civic organizations and action groups that could catalyse coalitions between garbage buyers, professionals, scientists, engineers, ethical businesses and, importantly, politicians.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: What can Europe learn from this? What does this have to offer Europe in its transition to sustainable systems?

DATE OF PUBLICATION: 14 March 2018

SOURCE: <http://www.natureasia.com/en/nindia/article/10.1038/nindia.2018.31>

66. Protect the last of the wild [ENVIRONMENTAL]

SUMMARY: A century ago, only 15% of Earth’s surface was used to grow crops and raise livestock. Today, more than 77% of land (excluding Antarctica) and 87% of the ocean has been modified by the direct effects of human activities. In a recent article in nature, it was found that 20 countries contain 94% of the world’s remaining wilderness (excluding the high seas and Antarctica). More than 70% is in just five countries — Russia, Canada, Australia, the United States and Brazil (see ‘What’s left?’). Thus, the steps these nations take (or fail to take) to limit the expansion of roads and shipping lanes, and to rein in large-scale developments in mining, forestry, agriculture, aquaculture and industrial fishing, will be critical.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Numerous studies are revealing that Earth’s remaining wilderness areas are increasingly important buffers against the effects of climate change and other human impacts. But, so far, the contribution of intact ecosystems has not been an explicit target in any international policy framework, such as the United Nations’ Strategic Plan for Biodiversity or the Paris climate agreement. This must change if we are to prevent Earth’s intact ecosystems from disappearing completely. Within Europe, France, Denmark, Norway and the UK rank within the top twenty countries containing 94% of the world’s wilderness and this should be recognized in European environmental policy.

DATE OF PUBLICATION: 31 October 2018

SOURCE: <https://www.nature.com/articles/d41586-018-07183-6>

67. Right wing populism and environmental damage [POLITICAL]

SUMMARY:

With recent examples in Brazil (President Bolsonaro) and America (Donald Trump) the increase in the popularity of right-wing leaders ready to back business over the environment has the potential to result in adverse environmental impacts. For example, in Brazil, voters are backing a politician who has vowed to pull out of the Paris Agreement, abolish the main government agency

tackling deforestation, end the demarcation of indigenous land and scrap environmental regulations. Right-wing populist parties challenge sustainable energy transformations by blaming mainstream parties for subordinating national interests in the contexts of climate change policies.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE:

History tells us that when environments deteriorate, societies turn to supposed strongmen and religious zealots rather than smart pragmatic leaders. Politicians remain popular within European countries despite potentially damaging environmental agendas. What social implications does this have across Europe socially and environmentally?

DATE OF PUBLICATION: 24 October 2018

SOURCE: <https://www.theguardian.com/commentisfree/2018/oct/24/planet-populists-brazil-jair-bolsonaro-environment>

68. EU taken to court by families in ‘People’s Climate Case’ over inadequate 2030 emissions target [LEGAL]

SUMMARY: A group of families from around the world have banded together to take the European Union to court over its failure to protect them from climate change. The 10 families include representatives from Portugal, Germany, France, Italy, Romania and Sweden, as well as Kenya and Fiji.

They have called the current emissions target inadequate, as they say it will allow high levels of these harmful greenhouse gases to continue until 2030. The group has stated that climate change already impacting their livelihoods, homes and culture.

Maurice Feschet, the grandfather of the French plaintiff family, described how their farm in Provence had lost over 40 per cent of its harvest in six years “due to the impacts of climate change hitting us harder and harder”. “The EU must now listen to its citizens who are impacted by climate change and implement the necessary measures to protect them.”

Dubbed the “People’s Climate Case”, the participants hope their action will overturn three EU emission regulation acts that have recently been approved by the European Parliament and the Council of the European Union. The action is supported by Climate Action Network (CAN), an umbrella group of environmental NGOs working to tackle climate change.

WHY IT IS IMPORTANT FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: All Europeans will be impacted by climate change, with those in southern Europe and the Mediterranean maybe most significantly affected. If such litigation becomes common place it could represent a major challenge for European policy institutions and change in the way climate (and environmental) policy is developed and implemented.

DATE OF PUBLICATION: 24 May 2018

SOURCE: Independent newspaper: <https://www.independent.co.uk/news/world/europe/eu-emissions-targets-peoples-climate-case-change-european-parliament-global-warming-a8367146.html>

69. Trend of environmental litigation against holding corporations on the increase [LEGAL]

SUMMARY: Environmental litigation against holding corporations for environmental damage caused by their subsidiaries abroad, globally, is increasing. In England, these claims have origins in employers liability claims of the 1990s, when the workers of foreign subsidiaries began suing

holding corporations in the English courts for alleged health and safety breaches. The English courts have since been presented with several environmental claims.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Litigation against multinational corporations based in EU (and vice-versa corporations from elsewhere with operations in EU) could affect business strategy and have social/employment implications. As such litigation is becoming increasingly prevalent it has the potential to substantially disrupt business activities or operations, with subsequent cost implications.

Key risks to business associated with climate change litigation, among others, include exposure to damages claims, financial and reputational cost of defending litigation, disruption to operations and enforcement of financial disclosure requirements.

DATE OF PUBLICATION: See below

SOURCE: <https://www.commercialriskonline.com/trend-environmental-litigation-holding-corporations-increase/> (8 February 2018)
<http://www.nortonrosefulbright.com/knowledge/publications/169607/climate-change-litigation-is-your-business-prepared> (27 August 2018)

70. Inadequate harmonisation between groundwater and climate laws [LEGAL]

SUMMARY: Although the climate and groundwater systems have close links, the international climate change regime and global groundwater laws have developed independently, despite being negotiated within a few years of each other. Hence this article addresses the question: Do global legal instruments on climate change and groundwater consider the geophysical links between the two systems, and how can their legal frameworks be improved? It argues that there are six geophysical links between groundwater and climate change which are presently inadequately accounted for in the legal regimes and there are four key contradictions between the two legal systems: (1) lack of links between the agreements, despite the close substantive relationship between climate change and water; (2) differences in framing the climate and water problem; (3) differences in key norms; and (4) differences in process.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Better recognition and accounting for the interdependencies between climate and groundwater systems would require a re-framing of aspects of climate and groundwater regulations, with implications for the social / economic management of water.

DATE OF PUBLICATION: 23 August 2017

SOURCE: Water International Volume 42, 2017 - Issue 6: Groundwater and Climate Change – Multi-Level Law and Policy Perspectives:
<https://www.tandfonline.com/doi/full/10.1080/02508060.2017.1354415>

71. Climate justice opens a new approach in climate action [LEGAL]

SUMMARY: The concept of climate justice was formally introduced in the 2015 Paris Agreement after its emergence in the early 2000s. It highlights issues of responsibility, equity, solidarity and growing inequalities both between countries and within countries. The concept also relates to the growing number of legal actions taken by citizens or NGOs against States or companies. For

example, in the Netherlands, following a complaint by 900 citizens, the State was condemned for insufficient measures to address climate change and was ordered to increase emissions cut.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The concept of climate justice remains to be defined juridically and to be further integrated into public policies.

DATE OF PUBLICATION: June 2018

SOURCE: <https://www.theguardian.com/environment/2018/oct/09/dutch-appeals-court-upholds-landmark-climate-change-ruling>
http://temis.documentation.developpement-durable.gouv.fr/docs/Temis/0088/Temis-0088156/THEMA_39.pdf

72. Pre-packaged food 'vital' for some disabled people [ETHICAL]

SUMMARY: In January 2018 the UK government published a 25-year plan for the environment and targeted excess packaging, while Marks&Spencer (A UK shopping chain) was forced to remove its 'cauliflower steak' from sale after it was criticised for being little more than a pricey, plastic-covered, sliced vegetable. But, for some disabled people, the convenience of pre-packaged food can be vital.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Moves to transform our food production and consumption system should consider needs of specific consumer groups, such as the disabled who can have specific needs.

DATE OF PUBLICATION: 13 January 2018

SOURCE: <https://www.channel4.com/news/pre-packaged-food-vital-for-some-disabled-people>

73. First prosecution for air pollution from a ship [Legal]

SUMMARY: The captain of a cruise ship found to be burning fuel with excessive sulphur levels has been fined €100,000 in a Marseille court, the first such ruling in France. The prosecution was intended to signal a new seriousness in tackling pollution from cruise ships after a spot-check in March on the Azura, operated by P&O Cruises, found it contained unauthorized bunker fuel. The American captain, Evans Hoyt, knew the fuel was illegal – it contained 1.68% sulphur, 0.18% above the European limit – and the company was using it to save money, prosecutors said during the trial.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The trial is politically sensitive for Marseille as the southern port city is on a drive to become the Mediterranean's top cruise liner destination with two million visitors in 2020 - up from 1.55 million this year. At the same time, it has been tackling rising problems linked to smog with authorities saying that up to a fifth of the dangerous particulate matter in Marseille's air comes from such ships. These reach levels 100 times higher near the city's busy port than further inland.

It is important for placing accountability on individuals and companies for their own pollution. Environmental groups are pushing for lower limits for the sulfur quantities allowed to be emitted by ships.

DATE OF PUBLICATION: 26 November 2018

SOURCE: <https://www.theguardian.com/world/2018/nov/26/cruise-ship-captain-fined-100000-for-using-dirty-fuel>

74. Social movements becoming part of corporate life [ETHICAL]

SUMMARY: Whether making a public statement or internal shifts, many businesses are finding they can no longer afford to remain neutral.

That can be literally true for consumer brands. According to the 2017 Edelman Earned Brand Study, 57 percent of consumers will boycott or seek out a certain brand because of its position on a social issue.

“Brands that live their beliefs in all that they do, and invite consumers to take action with them, will be rewarded with more conversation, more conversion, and ultimately, more commitment,” said Mark Renshaw, global head of Edelman’s brand practice, in a company blog post in June 2017.

Fueled by the rise of social media, unprecedented brand transparency and a greater consumer emphasis on corporate integrity, ethics are weighed more heavily than ever. Laying low is over -- the future will be built on the companies that do the right thing.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Social movements in relation to ethical and environmental concerns may encourage corporations to increasingly lead on social and environmental issues. May also present challenges for governance.

DATE OF PUBLICATION: See below

SOURCE: <https://www.bizjournals.com/washington/news/2018/05/17/too-big-to-ignore-how-social-movements-are.html> (17 May 2018)
<https://www.forbes.com/sites/forbestechcouncil/2018/04/17/corporate-activism-three-reasons-staying-silent-is-the-bigger-risk/#67d70a011beb> (17 April 2018)

75. The role of water stress in instability and conflict [ETHICAL]

SUMMARY: Water stress is likely to become a prominent non-traditional security challenge, causing conflict. Understanding more fully how water stress contributes to violence, conflict, and instability—while historically falling short of causing war—can help decision makers allocate resources to prevent or dampen conflict in critical areas. This report concludes that understanding the relationship between water stress and conflict will become increasingly important to protect U.S. interests and national security.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Water stress related instability and conflict will also be a risk for EU interests. Water stress is also expected to become an increasing problem in Europe, especially southern EU Member States.

DATE OF PUBLICATION: 1 December 2018

SOURCE: https://www.cna.org/CNA_files/pdf/CRM-2017-U-016532-Final.pdf

76. Banning electric bikes – reducing mobility for those with special needs [ETHICAL]

SUMMARY: Electric bikes have been banned off-road in Washington state, unless specifically allowed for by the managing jurisdiction, and are not allowed on most natural surfaces and many paved “bike” paths across the country. New York City only lifted its ban on e-bikes in April 2018 after a former crackdown. Bike motors capable of pushing you at a speed of over 20 mph remain forbidden.

While bans on electric bikes may have merit. They can be speedy, dangerous and misused, especially when mingling with pedestrians and ordinary bicycles. But what if someone with a muscular degenerative disease wants to ride an e-bike on a bike trail in a National Forest? E-bikes are limited to off-highway vehicle routes in forest service areas [in the US], so they would be forced to bike alongside ATVs and Jeeps.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Taking account of those with specific mobility needs in considering limitations to the use of e-bikes may be necessary.

DATE OF PUBLICATION: 16 August 2018

SOURCE: <https://studybreaks.com/thoughts/environmental-disabled/>

77. Sent packing: Hong Kong's elderly cardboard collectors [ETHICAL]

SUMMARY: In Hong Kong around 2,900 collectors, mainly women over the age of 60, pick up discarded packing boxes from shops, markets and residential buildings, selling them for a few dollars to recycling depots, where cardboard is more valuable than plastic.

The depots then ship it abroad -- up to 95 percent of it to mainland China in 2016, according to local authorities -- as Hong Kong has no recycling plants of its own to convert it into usable materials.

However, as China closes the door to imported rubbish, even from semi-autonomous regions such as Hong Kong, such women's livelihoods are under threat.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The wider socio-economic impacts of waste management changes need to be considered. Equally for Europe if third countries such as China ban or reduce the amount of imported waste they will accept this could disrupt the EU waste sector.

DATE OF PUBLICATION: 27 August 2018

SOURCE: <http://www.thejakartapost.com/life/2018/08/27/sent-packing-hong-kongs-elderly-cardboard-collectors.html>

78. The biohacker who experimented on himself is making DIY mutant frogs [ETHICAL]

SUMMARY: Gene editing technology (CRISPR) is being made available to the DIY biology community: For \$499, anyone can order a kit containing six frogs, cages, food, and all the materials necessary to replicate Zayner's frog muscle therapy at home. Zayner believes the experiment is legal: The Animal Welfare Act exempts "cold-blooded" animals, including frogs, which the FDA regards as a "minor" species anyway. Maybe not minor enough, though, after their DNA has been altered. "The FDA does not regulate the kits you mention; however, the agency does regulate animals that contain intentionally altered genomic DNA," an FDA spokesperson says.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: Zayner says he wants to democratize science, helping people understand today's technologies and make the most of what modern medicine has to offer. However, what are the ethical implications of this initiative? Is Zayner at the forefront of a movement in which biotech is trickling down to garage entrepreneurs, in the same way that democratized computer and coding technology let curious tinkerers build

Silicon Valley? What would the implications be for plant-based experimentation? Could it give rise to individuals offering to sell their bio-technological DIY services to farmers or the public?

DATE OF PUBLICATION: 15 October 2018

SOURCE: <https://www.bloomberg.com/news/articles/2018-09-12/biohacker-makes-diy-mutant-frogs-and-hopes-they-don-t-croak>

79. Would you eat human meat grown in a lab? [ETHICAL]

SUMMARY:

Richard Dawkins wants to know if lab-grown meat will eradicate the taboo against cannibalism. In a tweet on March 3, the outspoken evolutionary biologist linked to an article about the possible commercialization of meat grown in a laboratory by the end of 2018. Dawkins was practically drooling, but it wasn't over the food: "I've long been looking forward to this," he wrote. "What if human meat is grown? Could we overcome our taboo against cannibalism?"

Lab-grown meat, he continued, would be an interesting test case "pitting consequentialist morality against yuck reaction absolutism". In other words, lab-grown human meat might be ethical in the sense that no one experiences any bad consequences — no killing, no desecrating corpses — but humans might still instinctually recoil at the idea of eating it.

Lab meat, also known as "in vitro" meat or clean meat is grown from just a few stem cells taken from a living animal. The first lab-grown meat was consumed in 2013 at a news conference in London. It was a burger made by Mark Post, a pharmacologist at Maastricht University in the Netherlands, and the two tasters reported that it was a bit dry. Still, there are almost certainly going to be a few people who want to try synthetic human meat, Schaefer said, including performance artists who might want to serve a derivative of themselves to make a statement, or celebrities who might want to cash in by selling their fans the opportunity to taste their flesh.

IMPORTANCE FOR THE ENVIRONMENT AND SOCIAL ISSUES IN EUROPE: The ethical and sociological aspects need to be analysed. Is it a necessary technology to develop when feeding the world could be done using cultured animal meat instead?

DATE OF PUBLICATION: August 29 2018

SOURCE: <https://www.livescience.com/62008-lab-grown-human-meat-grown-cannibalism.html>