Good morning everybody. I am grateful that Dr. Durbak invited me to this session. It has been exactly one year since we met at the World Information Transfer webinar to discuss the challenges of COVID in global politics, economies, and social affairs. Let's briefly look at where we are today.

Today, the world is at a turning point in its development. The coronavirus pandemic has become the most serious challenge for everyone without exception. The habitual way of life has undergone dramatic changes. The long-term consequences of the crisis are still difficult to predict.

Rise of the New Cold War

The growth of international tensions, aggregation of regional conflicts, cross-border challenges and threats have become signs of recent years. Some countries initiated vicious cycles of conflict. Poverty and violence which, in turn, diminishes the resilience of societies and the prospects of peace. One year into the COVID-19 pandemic, as we face the possibility of a recovery, the crisis is fueling many of these drivers of conflict and instability.

As the Secretary General of the United Nations, António Guterres, said in his remarks on May 19, 2021, 'The entire contextual global governance degraded in the wake of the Second World War is being tested for strength. The world has gradually turned back to the Cold War. COVID sharpened controversies between the collective West, Russia, and China.' On Apr 21, an address by President Putin to the West serves as an official declaration that the new Cold War began. Former Russian President and now Deputy-Chairman of the Russian Security Council, Dmitry Medvedev, recalled, 'In recent years, relations between Russia and the United States have actually moved from rivalry to confrontation. In fact, they have returned to the era of the Cold War.'
On April 26, General Scott Berrier, the Director of Defense, and Intelligence Agency, in his report to the Senate stated, ‘We are in an era of strategic competition. China and Russia are pressing ahead at our expense in space and counter-space capabilities, using cyberspace to increase their operational reach into the United States’ infrastructure. They are also using the COVID-19 environment to conduct information warfare, undermine Western governments, create conflict, and drive political and economic outcomes in their favor. China poses a major security challenge and remains a long-term strategic competitor to the United States. Moscow viewed the United States and NATO as the principal threat to Russian security, its geopolitical combinations, and the preservation of the ruling regime. ‘The main threat to Britain is Russia’ Secretary of Defense, Ben Wallace, stated via telegraph on May 23.

Vaccines Diplomacy and Possible Development of Biological Weapons

There is evidence that vaccines will shape the new geopolitical order. The pandemic has vastly exacerbated the global North-South divide with wealthy Western states moving steadily toward immunity, with a majority of Asia, Africa and Latin America waiting for vaccines to trickle down on a small number of countries that use their own coronavirus vaccines. However the rest of the world depends on them for their immunizations. This causes new geopolitical narrations.

Already, there are strong indications that vaccines are being used as a tool to influence diplomacy. Referring to a notable observation on Jan 11 on this issue, ‘Why are the United States, Canada and Europe still focused on their own domestic vaccination drives? Are the vaccine producers willing to exploit global demand and use their own supply as a diplomatic instrument?’

China and Russia have both actively engaged in vaccine diplomacy, linking vaccine experts to policy concessions and favorable geopolitical considerations. China has declared that the Sinopharm vaccines are for global public good and has begun supplying them to nearly 100 countries and, in many cases, at no cost.

Still, we are living with the unclear origin of COVID-19. General Berrier stated in his report, ‘The true origin of SARS-COVID-2, the virus causing COVID-19 that emerged in China, remains unclear.’ The Defense and Intelligence Agency continues to examine new information to determine whether the initial outbreak occurred naturally through the contact with infected animals or was the result of a laboratory exit.’ He also said that ‘China probably has a technical expertise to recognize technical and biological agents and numerous existences that could be adapted to deliver these agents. China consistently claimed that it has never reached, produced, or processed biological weapons. However, China has engaged in potential use of biological activities and maintains sufficient biotechnology infrastructure to produce biological agents and or toxicants on a large scale.’

This kind of suspicion raises a logical question. Could convention or the prohibition of development, production, or stock-piling biological and toxic weapons be used to bring perpetrators to justice? Even though it is ruled that COVID is a man-made attack virus, in the expert community, the answer is negative because convention does not contain instruments of verification and punishment. Instead, the expert community raises a proposal to draft a convention on the prevention and punishment of the crime of developing, producing, acquiring, stockpiling, retaining, transferring, and using biological weapons.

Misinformation about COVID and vaccination is becoming a tool in global political competition. The Pandemic has launched a new battleground in long running wars of information within global actors.’

“Misinformation about COVID and vaccination is becoming a tool in global political competition. The Pandemic has launched a new battleground in long running wars of information within global actors.”
The United States denounced recently what it called a Russian Disinformation Campaign Against US-made COVID-19 Vaccines, saying Moscow was putting lives at risk. The Global Engagement Centre under the Department of State of the United States, whose activities include monitoring foreign propagandas, said ‘Russian intelligence was behind four online platforms involved in the Campaign. The sites have included disinformation about two of the vaccines, Pfizer and Moderna. It is very clear that Russia is up to its old tricks and, in doing so, it is potentially putting people at risk by spreading misinformation about vaccines that we know have been saving lives every day,’ the Spokesperson of the Department of State, Ned Price, stated.

The Wall Street Journal first reported on the Global Engagement Centre’s findings, which said that websites weigh up risks of the US-made Pfizer and Moderna vaccines, and an apparent need to boost Russia’s home-grown Sputnik vaccine.

In an assessment provided last year, the Global Engagement Centre said that thousands of Russia-linked social media accounts have run a coordinated campaign to undermine official narratives on COVID-19, including by spreading allegations of US involvement. The Centre found that China briefly made a similar effort but ultimately decided to make more friction by highlighting Beijing’s own efforts. It is broadly reported in European media that a PR agency, Fazze, with ties to Russia, has offered money to French and German opinion leaders to spread false accusations that the Pfizer vaccine is the cause of hundreds of deaths.

Impact of the coronavirus pandemic on the global economy

The IMF described the global decline as the worst since the Great Depression of the 1930s and said the pandemic has pushed the world into a crisis. They found that the outbreak tested the ability of the governments and central banks to control the crisis. The IMF said that the crisis could knock 9 trillion dollars of global GDP over the next two years. The IMF warned that growth in advanced economies would not get back to its pre-virus peak until at least 2022. For the first time since the Great Depression, advanced and developing economies were expected to fall into recession. The only major economy to grow in 2020 was China, with a growth of 2.3%.

2020 and 2021 are difficult years for job seekers. Many people have lost their jobs or seen their incomes cut. Unemployment rates have increased across major economies. The number of new job opportunities is still very low in many countries.

The travel industry has been badly damaged with airlines cutting flights and customers cancelling business trips and holidays. New variants of the virus discovered in recent months have forced many countries to introduce tighter travel restrictions. Data from flight tracking service, Flight Radar 24, shows that the number of flights globally took a huge hit in 2020, and it is still a long way from recovery.

The hospitality sector has been hit hard with millions of jobs and many companies migrating. Data from Transparency, a leading intelligence company that covers over 35 million hotels and rental listings worldwide, has registered a fall in reservations in travel destinations in 2020. Billions of dollars have been lost in 2020. Although the forecast for 2021 is better, many analysts believe international travel and tourism will not return to the normal pre-pandemic levels until around 2025.

Ethical dilemmas due to the COVID-19 pandemic

With every large crisis, there are even more difficult questions have to be answered! Questions are the ethical dilemmas brought to the forefront, such as the healthcare workers caring for those patients. The problem is how do we allocate scarce resources? In many countries, frontline medical staff have faced dilemmas throughout the COVID-19 crisis. Which patients should be treated first when resources are stretched to the limit? Should you save as many patients as possible, or save patients with the most urgent need?

The devastating pandemic that has a worldwide population induced an unprecedented influx of patients in intensive care units. This has raised ethical concerns, not only surrounding change and withdrawal of life support decisions, but also regarding family reasons and quality of end-of-life support. In their daily practice, receptionists are used to facing ethical concerns related to admission or non-admission
to intensive care units, to restoring or withdrawing life support, and to communication with families.

The devastating pandemic that has a wide population induced an unprecedented influx of severe ARDC syndrome, arthrogryposis-renal dysfunction-cholestasis syndrome, dramatically exceeding intensive care units capacities in several areas of many countries.

Vaccine inequity triggers a huge disconnect among countries. Although COVID-19 cases and deaths continue to decline globally, the United Nations Health Agency Chief said on May 17, 2021, that a huge disconnect is mounting between some highly vaccinated countries which see the pandemic as largely resolved, while huge ways of infection continue to impact others where shots are scarce.

On Apr 30, the World Health Organization (WHO) called unequal access to the COVID-19 vaccine one of those main problems of the pandemic. Poor countries rarely get vaccinated. Of the world’s one billion injections, only 0.3% are in poor countries. 82% of COVID vaccinations are done in wealthy countries. This was announced by the Head of the WHO, Tedros Ghebreyesusat, at the international meeting of the EU member states on the topic of access to medicine and medical supplies. ‘Vaccination is the main obstacle in defeating the pandemic,’ he said.

“The longer the virus continues to spread unchecked, the higher risk of more deadly or contagious virus emerging. The clearest pathway out of the pandemic is a global equitable distribution of vaccines, and therapeutics. The pandemic is long way from over. It is not over anywhere until it is over everywhere.” Tedros Ghebreyesusat stated.

COVID-19 and Human Rights

‘COVID-19 is a test of societies, of governments, of communities, and of individuals. It is time for solidarity and cooperation to tackle the virus and to mitigate the effects, often unintended, of measures designed to hold the spread of COVID-19. Respectful human rights across the spectrum including economic, social, cultural and civil and political rights will be fundamental to the success of public health, responses, and recovery from the pandemic,’ stated the United Nations Office for the Coordination of Humanitarian Affairs.

The high commissioner for human rights, Michelle Bachelet, said ‘much of the negative impact of the COVID-19 pandemic has been exacerbated by failure to address previously existing structural causes of inequality, social exclusion and deprivation, and the inability of many countries, rich and poor alike, to meet the basic needs of a sizable proportion of their populations.

The current multifaceted crisis has unmasked the strong linkages that have existed between race, ethnicity, and socio-economic status and health outcomes which persists to this day. Emergency measures taken by countries around the world to check the spread of the virus, sometimes involving restrictions on the free movement of persons, goods and services, have had serious consequences, at times disproportionate, to any of the public health gains made. Loss of life and livelihood, disruption of education and health services, and increased violence, particularly violence against women and children, have undermined the human rights and dignity of millions of people around the world. I recommend a book by Morten Kjaerum and Martha Davis on this issue entitled ‘COVID-19 and Human Rights’.

International crime in time of the pandemic

INTERPOL on its official site declares, ‘As the COVID-19 virus spreads around the globe, international criminals are looking for ways to exploit the fear and uncertainty surrounding the virus to generate profits. Key crime types to look out for during this period include counterfeit medical products, fraud, and cyber-crime, with criminal groups producing, distributing, and selling fake vaccines. The risks to the public are clear; this can include buying a product, which not only does not protect against COVID-19, but poses a serious health hazard if ingested or injected. Such products are not tested, regulated, or safety checked. From the very beginning of the pandemic, criminals have preyed on people’s fears to make fast cash. Fake vaccines are the latest in these scams, which is why INTERPOL is warning the public to be
extra vigilant,' INTERPOL Secretary General, Jürgen Stock, stated recently.

With criminal groups producing, distributing, and selling fake vaccines, the risks to the public are clear. This can include buying a product, which not only does not protect against COVID-19, but poses a serious health hazard, if injected. Such products are not tested. Vaccines are strictly administered and distributed by national healthcare regulations. Legitimate vaccines are not for sale.

On April 5, dozens of Pfizer coronavirus vaccines were found in Poland and Mexico. In Mexico, a fake version of the drug was detected during the vaccination. As a result, 80 people received the dose of a fake vaccine at a price of about $1000 per dose. Fake vaccine vials found in Poland probably contained an anti-wrinkle agent. Pfizer has confirmed that the identified samples are fake. INTERPOL and the United States Homeland Security Investigations have joined forces to warn the public against purchasing alleged copyright invasions and treatments online. INTERPOL announces that legitimate vaccines are not for sale. They are strictly administered. Anyone buying these products online also runs the risk of potentially paying for organized crime.

General Berrier in his Senate report states, “the COVID-19 pandemic provided new opportunities, especially for Russia and China, to identify cyber security vulnerabilities and steal information.” Foreign cyber threat actors are also disrupting the healthcare sector by stealing data and conducting ransomware attacks in the world now. In parallel with the Cold War is another one secret - hidden cyber powers of the leading countries are at war with each other.

The latest act of such cyber intervention was an attack by unknown hackers of the Irish national health service, because of which it was forced to temporarily shut down its computer system in an emergency. The Irish government believes that a cyber-attack was carried out by the Wizard Spider group based in St Petersburg. Prior to this, one of the largest American pipeline networks, the Colonial Pipeline, was hacked. A state of emergency has been declared by 17 US states. The attack carried out by the Russian cyber group, DarkSide, paralyzed the supply of oil products to the East Coast. All of this together raises the question of whether hecckery attacks on critical infrastructure are already enough for America and NATO to declare a joint defense as they did after the 2001 terrorist attack on the World Trade Centre in New York.

One thing for sure is that the Third World War will not take place on land, in the sea, and in the air, but virtually in cyberspace without tanks and the roar of guns. Günther Oettinger, former European Union commissioner said, ‘It has become evident that the pandemic has brought new opportunities for cyber criminals and for perpetrators of disinformation and fake news.

In addition, serious concerns have been raised about the role of civilians in containing outbreaks, the securitization of the healthcare debate, and the critical challenges of devising new technologies, such as context-facing apps that are effective in notifying users of potential exposure to infection while also protecting individual privacy. Hence, the pandemic has also given rise to the crisis of technology and cybersecurity and is fueling what Freedom House has termed ‘a crisis of democracy’.

The COVID-19 pandemic, the worst public health crisis in the generation, has been dubbed the great accelerator of digital transformation. For countries around the world, technology has been at the forefront of their response to the crisis.

Allison Peters, a renowned expert on cybercriminal crimes, examines what impact the COVID-19 pandemic has had on the cybercrime landscape, exploring the potential for cooperation against cybercrime at national and international levels and considering whether the awareness that the pandemic has arguably created as to the magnitude of the problem of cybercrime will act as a recap call leading to sustainable policy changes for the long term.

**Conclusion**

In conclusion, a professor from Asia and Pacific Policy Society writes, ‘If international relations in the first year of the COVID-19 pandemic was all about the politics of aid and mass diplomacy, there is no doubt that the arrival of vaccines has made the second year all about vaccination and distribution, all, of course, as an extension of existing geopolitical competition.’

COVID-19 is a test for the global community. Now is the time for solidarity and cooperation to tackle the virus and to mitigate the effects, often unintended, of measures designed to hold the spread of the virus.

COVID-19 is a global problem which needs a global solution in global partnership. Thank you for your attention.
SARS-COV-2 DELTA VARIANT AND MISINFORMATION PANDEMICS

Presentation by Dr. William N. Rom, Professor of Medicine and Environmental Medicine, Emeritus, and Research Scientist at NYU School of Global Public Health, for WIT Virtual Voices Webinar on October 13th, 2021.

SARS CoV-2 refers to the novel coronavirus, and SARS stands for Severe Acute Respiratory Syndrome. In 2003 SARS CoV-1 was a coronavirus that was also transmitted person to person, and 774 people died. It was restricted to Southeast Asia, primarily China and Hong Kong. We had lectures as doctors about this, and by closing everything down they corralled this virus, and it didn't spread around the world. There was a pandemic like this in 1918 which was an influenza virus, and 50 to 100 million people were infected with 675,000 deaths occurring in the United States. There is a seasonal flu also caused by a virus; there are three to five million cases in the U.S. The flu has a very low mortality rate of 0.1 percent, but the SARS CoV-2 is 1.7 percent which is 17 times more lethal than flu. This mortality rate is far worse than a cold and doctors and nurses are really scared of contracting this virus.

"Coronavirus mutates becoming more transmissible....or more virulent"

SARS CoV-2 was discovered January 9, 2020, as a coronavirus with person-to-person spread. On January 10, China posted the entire genetic sequence of this virus. There have been 237 million cases in the world and 4.8 million deaths; more than 3 million cases and 54,000 deaths occur per week (World Health Organization, WHO). President Biden said we were going to be through with this pandemic by July 4th but then we had a fourth wave caused by a mutant variant called delta.

In the U.S., we’ve had 44 million cases and 714,000 deaths. We’re the richest country and most advanced medically, but we have done the worst of any country in terms of mortality due to our lack of investment in public health infrastructure at the local, state, and federal level. Much of the federal government’s public health was dismantled over the last four years resulting in 1 in 500 Americans dying of Covid-19. We have 1 in 35 dying over age 85+, 1 in 150 in the ages 65 to 84, 1 in 750 ages 40 to 64, 1 in 240 Native Americans, 1 in 390 Hispanics, 1 in 480 Blacks, and 1 in 1300 Whites and Asians. These are gross disparities in the Covid-19 pandemic. The pandemic has shortened aggregate life expectancy over nine million years globally from March 2020 to March 2021. Black and Hispanics lost more than twice the quality adjusted life years than whites and 54 percent of those years were among adults ages 25 to 44. Importantly, particulate air pollution causing lung injury and inflammation increases Covid-19 cases and deaths.

Delta. Throughout evolution Darwin noticed, when he went to the Galapagos, that birds who had a big beak could crush a nut much better than birds with a smaller beak and those birds became dominant so you could see from evolution that species that become more fit will become the dominant. The coronavirus also mutates becoming more transmissible, more likely to evade the immune response, or more virulent. The coronavirus has a crown of spike proteins where the crown’s tip has a receptor binding domain where it binds to the human cell. That’s where neutralizing antibodies also bind, and if you mutate that area you will change the binding characteristics and ability of neutralization by antibodies. The fourth wave is now all delta since it has become the dominant variant.

First, the tip of the spike gets mutated and the binding of delta is two to four times stronger with the human cellular receptor. The cellular receptor is called angiotensin converting enzyme 2 (ACE2). Second, delta changes the neutralization by antibodies which is decreased by two to four times so that mRNA vaccines will work less efficiently since they are made of the original Spike mRNA. Also, neutralizing and monoclonal antibodies have less ability to neutralize the virus. Third, there is a furin cleavage site mutation which allows the spike to enter a cell much better. Also with this mutation more virus is released from the cell resulting in increased transmission. There will be an increased viral burden, e.g. the PCR test polymerase chain reaction will have an altered number of cycles detecting higher viral loads. Transmission research has found that SARS CoV-2 is transmitted by aerosols; when you speak, fine microscopic aerosols fly into the air that infect more people. The vaccines work seventy to eighty percent in neutralizing the delta variant against 95% in the original strain. Some of the monoclonal antibodies that are used as infusion treatments will neu-
vaccines are truly scientific miracles and after extensive clinical
masks is vaccination. The mRNA and adenoviral Spike mRNA
delta is that the peak is now followed by a decline by at least a
which included the furin cleavage site. The good news about
called (B.1.7.1.6.2) and came from India followed by the UK.
weren't working and they had two additional significant muta
tions to variants. One worries that the mutations will include
more sites rendering current antibodies less effective. The im-
mune response also has T cells in the immune response (CD4+, CD8+, gamma delta) that kill cells infected with the virus, and
B cells that make the antibodies; both T cells and B cells have
long memory for invading pathogens. There's no evolutionary
advantage about killing the host before spreading so we don't
think that virulence has been affected but faster replication and
tighter binding could increase virulence.

Delta came to us probably from the United Kingdom where
up to 98% were vaccinated but there was twice the hospitaliza-
tion rate with delta versus other variants. The unvaccinated were
three times more likely to contract the virus; those < 50 years
were 2.5 times more likely to get infected than older. Variants of
the SARS CoV-2 original virus were named after Greek alpha-
etical letters: alpha, beta, gamma, delta, lambda, iota, and mu.

Alpha was first (B.1.1.7) and came from the United King-
dom. Alpha was 50 percent more transmissible than the origi-
nal corona virus, and had a mutation that enhanced binding
to ACE2. The mutation was called D614G where the amino
acid is located and which new amino acid is transcribed by
the mutant. Beta came from South Africa (B.1.3.5.1), and this
one evaded the immune response. The monoclonal antibodies
weren't working and they had two additional significant muta-
tions N501Y and E484K. Gamma is called P1 from Manaus,
Brazil, that had all of the three previous mutations. Delta is
called (B.1.7.1.6.2) and came from India followed by the UK.
It's 50 percent more transmissible than alpha which was 50 per-
cent more transmissible than the original corona virus. Delta
had the three previous mutations but one also located at P681H
which included the furin cleavage site. The good news about
delta is that the peak is now followed by a decline by at least a
fourth in cases and also in deaths.

Vaccination. The most important prevention other than
masks is vaccination. The mRNA and adenoviral Spike mRNA
vaccines are truly scientific miracles and after extensive clinical
testing are remarkably effective up to 95% and safe. Vaccination
is the best protection against delta.

In the U.S. we have 56% fully vaccinated with two doses and
65% with one dose. For adults over age 12, we have 66% fully
vaccinated and 76% at one dose. Over age 65, we're at 84% at two
doses and 95% percent at one dose. Globally we're not doing as
well: we've administered 5.8 billion shots with 11 billion needed;
1 billion in China, but only 2 percent in Africa. COVAX pools
donors to provide free shots, and in six months they've donated
240 million shots to 139 countries.

Pfizer, Moderna, Johnson and Johnson, and AstraZeneca are
the major companies. Pfizer and Moderna are mRNA covered
by lipid. The challenge with Pfizer is that it needs to be kept at
minus 70 degrees and you can imagine that in rural African vil-
lages this is a real problem. Moderna is also an mRNA vaccine
developed in conjunction with the Vaccine Center, National
Institute of Allergy and Infectious Disease at NIH, that also re-
moves 20 degrees so it's slightly better. Both companies
are now worth billions with the Pfizer vaccine recently named
the best-selling medicine of all time. There is now concern
that this duopoly probably needs to be broken up to get vac-
cines around the world. Two of the board members of Mod-
era made the Forbes richest 400 people in the U.S. list. In 2022
Pfizer expects to make 4 billion doses and to donate 500 million
to low-income countries. Moderna plans to manufacture 1 bil-
ion doses in Africa next year and give 400 million to COVAX.
On the horizon is a nasal spray that would be fantastic which
will help bring it around the world much faster. Rising vac-
cine rates suppresses mutations. The unvaccinated are 10 times
more likely to be hospitalized and 11 times more likely to die.

Masks. First, in May 2020 a WHO study evaluated 196 coun-
tries for the duration of Covid-19 and the number of persons
over age 65 finding an association with high per capita mortal-
ity while those countries that had mask mandates were nega-
tively associated with mortality, p<0.001. Second, Bangladesh
reported a study of 341, 000 adults in 600 villages. Half of them
did not wear a mask and Covid-19 increased 13%; the other half
wore either cloth or surgical masks and Covid-19 was decreased
by 12% and symptoms by 12%. In the age group over 60 years,
there was 35% less Covid-19 in the villages wearing masks.
Third, the CDC has been studying masks in schools K-12 since July through early September and those counties that had mask requirements had one half the Covid-19 cases compared to the counties that did not have mask requirements. Masks work!

There’s about 71 million unvaccinated in the U.S. and President Biden wants to mandate vaccines for federal employees, contractors of the federal government, the military, and health care workers in facilities that receive Medicaid or Medicare funds. He also wants to mandate vaccination for businesses with more than 100 workers. OSHA is doing this under their emergency temporary standard which is allowed for six months to protect workers from grave danger from exposure to substances or agents determined to be toxic or physically harmful. OSHA has written this regulation and passed it on to the Office of Management and Budget yesterday. Also, if you’re a traveler and you don’t wear your mask you get a doubling of your fine. President Biden has provided more money to hospitals to care for Covid-19 patients and a billion dollars for the rapid antigen tests.

Misinformation Pandemic. This can be summarized in three broad areas: social media with amplification of misinformation, second, is Fox news promoting freedom, and third are Republicans in a cult led by Donald Trump.

Blacks, Latinos, Whites and Asians are now reaching 70% across the board in vaccination rates leveling off racial disparities. Republicans are only 60% vaccinated compared to 86% of Democrats. The vaccination rate is much greater in blue states than the red states and the death rate and case rate are far greater in red counties than blue counties. The red counties that voted for Trump >70 percent have a death rate of 47 deaths/100 000 and counties where <32 percent voted for Trump there are 10 deaths/100 000. The best messenger is your personal doctor one-on-one. In rural America there are two times more cases of Covid-19 compared to urban counties. There are 140,000 children in America who have lost a primary caregiver.

The New England Journal of Medicine has called this an infodemic where we need real-time surveillance of these falsehoods; we need an accurate diagnosis and a rapid response. For example, the idea that masks didn’t work was written up in the Federalist journal, and Tucker Carlson echoed this misinformation to 4 million; Trump picked it up and sent it around to 13 million more.

What is the legal basis for mandates and public health orders when claims of individual rights clash head-on with public health measures? The United States Supreme Court in 1905 ruled in Jackson versus Massachusetts on the legality and priority of public health measures. Mr. Jackson defied a city ordinance requiring a smallpox vaccination during an outbreak. He refused to pay the five-dollar fine. In Jacobson versus Massachusetts, Justice John Marshall Harlan in his majority opinion for Massachusetts stated, “the liberty secured by the Constitution does not import an absolute right in each person to be at all times and in all circumstances wholly freed from restraint. The Constitution rests upon the fundamental principle of the social compact that all shall be governed by certain laws for the protection safety and prosperity and happiness of the people…” The law is on the side of mandates.

Almost a century ago the Nazis perfected propaganda: “the fundamental principle of all propaganda was repetition of effective arguments but those arguments must not be too refined; there is no point in seeking to convert the intellectuals for intellectuals would never be converted, and always yield to the stronger and this will always be the man in the street. Arguments therefore be crude, clear and forcible and appeal to emotions and instincts, not to the intellect. Truth was unimportant and entirely subordinate to tactics and psychology but convenient lies (poetic truth as he once called them) must always be made credible in accordance with these general directives. Precise instructions were issued: hatred and contempt must be directed at particular individuals, and only such expressions were to be used as would generate the required emotion. Specific lies were to be disseminated, and these instructions were mandatory.” Joseph Goebbels, Nazi Party.

Wilful ignorance and selfishness may plague the unvaccinated. They are at high risk of delta variant of SARS CoV-2.
Thank you so much for this introduction and I am very pleased to meet all of you.

I will give a brief presentation to leave time for questions. The presentation has many links to videos and additional materials, I hope it will serve as a resource for you.

I will start from basic information about the SDGs and 2030 agenda for sustainable development. As you may know, all UN Member States adopted it in 2015, at this time, six years ago, and the main idea for this agenda was to reconcile peace and prosperity of human society with the notion of planetary boundaries. Because, as we know, we are now dealing with biodiversity crisis and extinction of species and ecosystems as well as climate change. The idea is to encourage people to live within the planetary boundaries but not compromise the essential needs of humanity.

There are 17 sustainable development goals. I have a video there on this slide as well as the goals that you can look at and each of them would have the information on their status. I will speak in more detail of the goals connected to climate change and clean energy. All of them are linked and it’s useful to review all and understand these connections. Climate is connected to how we eat and our food systems. Biodiversity and climate are very closely linked and we can discuss those linkages as well.

The goals have specific targets, for example Goal #7 on clean energy access. Unfortunately, we are not at all on track with this goal, we still have 759 million people in the world that lack access to electricity, even basic access to light or refrigeration. We still see that 1/3 of the world population use inefficient cooking systems, which means open fire inside the house, particularly affecting women and children bringing the wood from the forest to power these fires. The energy efficiency rate also is not fast enough.
Given that a General Assembly is now ongoing, I included some information about it and the way Secretary General is trying to speed up the process and encourage faster progress towards this goal. One example is high level energy dialogue, focusing on speeding up energy transition, that recently concluded. This is a push on high level that is being done to try and speed up this transition. During our discussion, we can, perhaps, address some of the underlying reasons why this transition is not as fast as we need. There are supply constraints and technological constraints, and also systems constraints.

The other goal that I wanted to mention is the SDG#13, focusing on combating climate change. And there also we are not on track, as you may have heard, there was a recent report of IPCC, where the scientists from around the world evaluate the progress and the situation.

The conclusions were that climate change is accelerating much faster than anticipated. Even the historic Paris Agreement that is aiming to limit the warming to 1.5 degrees, unfortunately, would not be enough. The pledges so far received from the countries will not be enough to achieve this goal, and we already are at 1.1C degrees and already see a lot of events, a lot of consequences, including, the fires, the hurricanes accelerating, floods and other impacts.

I’m sure many of you know about that and are noticing these changes, I know for sure that in Ukraine the climate has changed compared to when I was a child there.

Also, here, in the United States, significant changes are observed. Nationally determined contributions are core of this agreement with each country taking voluntary obligations to reduce emissions. My organization, UNDP, is working with the countries to strengthen this commitment. But it’s also key to unpack this policy, when it comes to the grassroots. What does it mean for the communities, how is it being implemented? How do the communities on the ground actually implement those policies? This is where the program I work in, the GEF Small Grants Program implemented by UNDP, comes in.
I also included another document of interest for you. It’s called Our Common Agenda report.

It’s a policy document, agenda of action prepared by Secretary General, which reflects his views and also the way forward for the UN to help achieve our common goals, particularly 2030 Agenda. The report has recommendations in broad areas such as peace, gender equality and many others. I highlighted the environmental recommendations, but you can also look at the entire report. It’s talking again about limiting warming to 1.5 C, which may be challenging to achieve at this point. However, we should still try to move in that direction. Every degree matters every part of degree matters because it may mean fewer natural disasters, less hunger, fewer problems. We also need to adapt and developing countries need more support for that.

To put the planet firmly on the path to 1.5 C we also need to stop using coal, and that’s something that many countries are still grappling with. Even G7 and G20 countries are still not following this key recommendation, which recently came from the International Energy Agency.

One of the ways to return within planetary boundaries is to include carbon pricing mechanisms in our economic models. And now there is also movement to not only include carbon pricing, but also price of nature and the services ecosystems provide, because we see a destruction of many ecosystems and habitats. Does the nature have a price? Because the way global economy is structured now, it doesn’t, leading to overuse of the “free” resource. A lot of scientists are now thinking about that, about pricing essential services, like provision of water and pollination. Recently the economic review commissioned by the UK Government, argued for including price of nature as well as carbon. It is also key to link together these two agendas because they are very much connected. We can see that at the General Assembly the food production was looked at closely this year. The food systems, the biodiversity and the Biodiver-
Energy underpins our life, not just electricity access. It’s heating, cooling, transportation, food, production of plastics. This is why it’s so important and the transition is so difficult, as there are so many different processes and each of them has to have a technology with the corresponding systems and applications. Remember that fossil fuels took 200 years to develop all those specific applications and technologies. And now we have to make a change in unprecedented time, which is very challenging. And that’s why it may not be moving so fast. Yet at the same time, it’s important to note that some countries don’t have access to energy at all, or have very limited access and some need energy transformation. Those in need of transformation include Ukraine and some other transitional countries. Those, who already have access to energy may need new technologies to transform their reliance on fossil fuels.

Now just a few examples from our program to illustrate these points, what we do at the community level. One such project is “Grandma’s Secret” women cooperative in the island of Mauritius. Most of these women were single or widowed. They couldn't support their children.
The children couldn’t go to school, so provision of solar energy for this co-operative help them establish production of teas based on traditional knowledge, “grandma’s secret”, which became a huge success and are now exported everywhere, in France and around the world.

This is an example of connecting livelihoods, empowerment of women and access to energy and that’s how our program usually approaches those issues in the countries that need access to energy rather than the transformation, but we target vulnerable groups in both cases. This approach shows clear co-benefits of energy access, while so many people still lack access to energy and also clean cooking, so that’s an example how you can improve the situation. Development aspect is very important for energy access.

There’s another example, for which I provided a link for you to study by yourselves, and that’s energy access for indigenous people in Peru. Overall, more people have energy access in Peru, however, in remote communities they are unlikely to have electric grid. The solar energy is the answer for the remote communities, also supporting productive activities, agriculture, food security, access to clean water and health services.

You can also have a look at some other videos where we have vulnerable groups such as refugees of war, orphans and many others who rely on fossil fuels, but cannot pay for them. So we use those communities as demonstration sites on how access to solar energy can reduce the cost and be beneficial. Some of those countries already have an established system, so we need to demonstrate how renewable energy could be complementary and where it could be the answer and where it could replace fossil fuels.

Since most of you are students, I wanted to show you what young people are doing for climate action globally and in their communities. First that comes to mind is, of course, activism.

We know Greta Thunberg and some other young activists, who are known globally. But this is not all. The activism can also be in your own country. But many young people also work on the projects in their communities, learning skills, becoming green entrepreneurs, learning to become solar engineers, agroecology and sustainable use of resources.

Globally, you can also look at YOUNGO, Youth and Children Constituency of UNFCCC, UN Framework Convention on Climate Change.
on Climate Change. They play very active role in the Conference of Parties, hold their own youth COP meetings, they welcome volunteers from around the world.

In our program we earmark funds for young people under Youth and Climate Innovation program with a priority theme of green jobs because for many young people the learning and starting their career is of primary importance. There are many examples, including young entrepreneurs from Cameroon working on green charcoal alternatives, young solar engineers in in Bahamas, young community members in Dominican Republic who work on micro hydro engineering, students in Armenia learning about renewables and many others. If we are thinking about transition, we need young people with the needed skills to be able to step up. Also, we are supporting young people in building their capacity to lead climate action, globally and at home. Ukraine is a part of this program.

Something else, we have been doing since 2015 COP in Paris is to organize a video competition for youth. It’s very grassroots, where young people were able to submit their videos about their work in their communities with the hope to become a young reporter at the COP. This year the format is different due to pandemic restrictions, it will be mostly online. The videos we received were very inspiring and eye opening, showing how young people around the world in countries with varied income levels are acting, advocating and looking for solutions. You can look at these videos at the links.
It is my great pleasure to talk to you about anti-corruption, one of the greatest challenges we face today, and of course anti-corruption in the context of the Sustainable Development Goals (SDGs) is very relevant and forward-looking.

The fight against corruption is quite a new phenomenon. Corruption has been with us as long as we can remember, but it was perceived as a black shadow over our lives, penetrating all areas and we didn’t really have any means to fight it in a very focused way.

A little more than 20 years ago, the international community took the first steps to structure the issue and to start developing a framework to fight corruption. In 1998, the General Assembly adopted the first resolution on corruption. In the fall of 2001, I was assigned as Permanent Representative of Austria to the United Nations and other offices in Vienna and a year later we started negotiating what later became the United Nations Convention Against Corruption (UNCAC). There was a little bit less than two years of negotiating in Vienna, and I was privileged to lead the negotiations on the last chapter, on the implementation of the Convention.

The convention gives us the framework to fight corruption nationally on the basis of the rule of law. One of the most important contributions the UN offers is technical assistance and capacity building. In the context of the UNCAC, that is exactly who and how to translate the legal prohibition to the end users, to the practitioners who are supposed to implement it. If that is not provided, implementation is lagging.

The United Nations Office for Drugs and Crimes (UNODC) is the UN office responsible for, among many other things, the fight against corruption. They are also what they call ‘the guardians of UNCAC’. They do very concrete work in the implementation, but on a normative level. They have been training lawmakers to knit these normative networks which are needed to implement UNCAC, to come up with strong resilient criminal law systems, for example. The next step is how do you connect these normative systems with the implementation level? How do you connect that with lawyers, with prosecutors, with practitioners in the field? To address this the plan was to start developing projects in the context of in-country implementation, then build a program around the projects, and at a certain stage, come up with a practical structure that can implement programs and projects. The idea was to do this within the United Nations, but with an independent office. In 2010, the International Anti-Corruption Academy (IACA) was founded for this purpose.

I will come back to IACA shortly, but at this point I would like to enter into the topic of the SDGs which were adopted in 2015. All the SDGs have very clean and clear targets, and Target 5 of SDG 16 focuses on the fight against corruption. The fight against corruption became the cross-cutting agenda of the entire Agenda 2030.

For implementation, you always need funds. It is very clean and clear how much funds you need to implement the SDGs. We just do not have these funds right now. During the COVID pandemic, we became aware that funds we had never considered possible were suddenly made available and nearly parachuted into economies, which of course has many implications. But, for long-term planning, we are always struggling to raise the funds, like for the SDGs.

How do we help member states increase tax revenue, some of which, in the best-case scenario, could be used to fund SDG implementation? Right now, one of the biggest questions is that we have this huge challenge, which is rais-
ing the funds, and at the same time we are looking at these enormous illicit financial flows, which have been siphoning money away from productive economies. Hence tackling corruption has become a precondition for the implementation of the SDGs.

Recently I participated in the United Nations Special Session Against Corruption in 2021 in New York. It was made very clear where we stand today with corruption; corruption today, in my analysis, is the only global issue which is not divisive.

The only international organization that is exclusively dedicated to the holistic fight against corruption is my little organization, the International Anti-Corruption Academy. As small as we are, we are the only one out there who are dedicated to the holistic fight against corruption.

Our organization has two comparative advantages. First, it is the only international organization which is dedicated to fighting against corruption. We have 80 parties, 76 member states, and 4 member organizations. In addition, we are the only international organization which is also an institution of higher learning. We are the only international organization authorized to award academic degrees, so our technical assistance program is very much based on providing academic programs and continuing education for practitioners.

In these last 10 years, we were able to create 3000 alumni in 162 countries who were all either participating in the master’s programs or in the other complementary programs. They are all bridgeheads and multipliers, so they all have their networks. We help them build the capacity to fight corruption more efficiently and they do the work better. They become eligible for better jobs in the future, better income, better work satisfaction. So, this is a win-win situation.

When the COVID pandemic struck, we translated nine years of expertise and content into an e-learning base. Six weeks after the COVID pandemic caused lockdowns, we continued providing our masters programs, but now with the students not coming to Vienna but sitting on five continents, following our modules with the lecturers connected virtually. We immediately recognized the opportunity presented by this because, first, we did not have to fly students around anymore and we could dramatically limit our ecological footprint and the costs.

Now, what is the new vision? Who are our clients? Who are the people we try to reach out to? Basically, there is no limit. We have to reach out not only to all managers of the international system, to all civil servants in the ministries, to all future diplomats, but also to the managers of the private sector because the stress is on all of them.

If you look at the legal framework, it does not only consist of the UNCAC. There is also the Convention Against Organized Crime, and the OECD Convention Against Bribery, which only has 55 members but the implementation process of which is very much advanced, which raises the compliance levels in national economies. There is now a new pressure on international companies to scale up their own compliance capacities which they can do with our help.

Now, how do we do that? Firstly, we are diversifying our academic programs to include shorter more practical courses. Secondly, immediately I arrived, the first joint project we launched was with the research branch of the United Nations. We developed a joint master’s program in anti-corruption and diplomacy which we are implementing now. We are starting this program in September. It is open for admissions already. This program will become sort of an aircraft carrier for our efforts because in many countries, people tell me, ‘We want to educate our diplomats. Make them sensitive. Help them see where corruption happens and understand the international system better.’ So, we can use this program now to train diplomats worldwide virtually. We are also offering many other programs and projects from webinars to courses,
for pay and without pay. It is worthwhile checking our home page and seeing what we offer at https://www.iaca.int.

Our second pillar are the tailor-made programs where we work with constituent member states, international institutions, and civil society to be demand-driven, and to come up with concrete projects which help them strengthen the anti-corruption systems and make them more resilient. Here, we teach civil servants in many different countries in the ministries of justice in the interior. Recently, we helped one of the Gulf countries establish an anti-corruption department in the civil bureaucracy. We also work with the private sector under this pillar. We work with our constituents to define the projects, to make them as focused as possible, to increase their impact, and of course to also make the products of our projects more valuable, so they pay for them.

Our third column is research. I am a strong defender of evidence-based decision making. I really believe in offering evidence to decision-makers, which you need to draw from research. We saw it in the COVID crisis. Those governments who relied on experts did much better than the other governments. Our first step which we are working on right now is creating a global repository of anti-corruption research. In practical terms, anyone who has a question can click himself or herself through our homepage to the results, a one-stop shop. The second stage will be to build a limited research capacity to define the gaps in research and to lead research to where it creates the best rate of return.

The third stage which we will be introducing at the end of this year, is a PhD program which will complement the three pillars - the academic pillar, the tailor-made programs, and the research pillar - and which will bring together global academic efforts. There are many universities with centers of excellence working on the rule of law and anti-corruption, but there are very few structured and integrated platforms. So, this is what we want to provide.

I hope that we can bring some people together in this shared goal. Join the fight against corruption please. Thank you.
the rubber system, basically they were slaves. In 1970’s they had no freedom, none of their rights were recognized, their children were taken to the missionary schools, and were being civilized, they were being taught that everything they had was wrong. Their culture was wrong, their worldview was wrong, their ancestors were wrong, their religion was wrong, they were wrong, and they have to become like us and become civilized to become people. They were treated in a very rough way, they were punished a lot because they did not learn properly or at the speed that they were expected to learn, and they were not taught anything except that they were wrong. The men in these camps were working for the rubber dealers or rubber merchants.

I decided to stay there for a while, and I said I will keep them company for 3 years to see if we can do something about this, and I did. And those 2 years became 50. Now, they own 26 million hectares of land of continuous rainforest. They have their land, their rights recognized by the constitution, and they are setting up their governments.

When I started with them, and I spoke that it is important that they get your land and the property of your land recognized, their first reaction was that the land does belong to us, and the land belongs to the birds, the land belongs to the animals and the trees, because they believe in this, as we all do. I think we are all to an extent, spiritual beings, or we have a spiritual tendency. We all look for a spiritual satisfaction and need in the same way as we have an intellectual or an aesthetic need, and they express this as saying that nature has guardian spirits. What are they talking about? Basically, it is not human beings that made nature, it is not human beings that control nature, nor the animals either. Nature is a big community of beings, a big community of subjects, and they are all interrelated, interdependent, there is solidarity, there is a complementarity. Consequently, for them there is something larger than us, larger than human beings, larger than nature, which they would call guardian spirits, a spiritual angle, that tells them they must respect nature, they must respect t animals, they must respect the whole com-

The Indigenous People of Colombia
munity to which we belong, this community of beings, of subjects. This profound respect for trees, for water, for the mountains, for which you have to ask for permission. Of course you can use them, of course you have to use them, but you do it in a way that you respect, you ask for permission. And it is the shaman, the traditional expert, people that learned this from the birth. They are already chosen by another shaman, and these people, once they were chosen, they would have the sensibility and the capacity, they have this feeling that this person can be a shaman. Another person could run the communal house, another one can be dealing with the rituals, and women run the whole garden, run the food with the children, but also the whole community and the relationships with nature, how one receives food and in what condition. This whole thing which they were specialized since they are born, when they stopped being fed by their mothers, and they start at the year of 1, they are already told what food they can eat, and they give a specific food and specific training to become a specialist. And as the specialist the shaman will have the same way as we think in a rational way, an individual way of our society, and that's when we talk about rights, and our rights are individual rights, in the sense that my rights and your rights start, each individual or each person is fundamental.

The indigenous people are not denying that, but they seem much more as a collective aspect, they see much more the relations between people, and their relationship with nature. The relations are fundamental, and therefore each one has their own rights. They relate together and in that way we relate together, we build together, we live together. It's the relationships that they are focusing on, because they believe at a collective approach, and as a collective, the relations are fundamental. And as a collective with nature, as a large community of which we are part of, it is the collective aspect that is fundamental. And so all the rituals, all their way of life, all their way of dealing with nature, and therefore hunting and fishing and using nature, they have to restore nature and what to take back, by either planting trees, because after they planted the trees and these gardens go back into nature after 3 years of use, they use a garden for 3 years, and it is restored back into nature. So, consequently, they have this relationship of a reciprocity and a complementarity with nature. And it's this relationship that they keep, what they would call the “Fufaka”, which is the vital energy flowing for all of nature and those that keep it or are behind vital energy is something greater than us, it is nature in its full dimension which they would call spirituality. And the shaman is trained in the same way as we are trained to be rational, and to be scientific in a way, and to balance cause and consequence. For them it was much more than a systemic approach, it is a holistic approach, is is all interdependent. So when they have to deal with something, during the day, they can talk anything and everything, then at night they sit in the circle and they start talking about what they did during the day a little bit, and then they get into a myth, that in a way is a map, it's a way that carries you through important stories, but these stories inspire you, and you connect with the spirits. They all have the stories about how people dealt with different situations, spiritually and in life and it is through the power of the word and the concentration of meditation that one person, an elder tells the stories and everyone enters into a kind of a meditation in silence, in a profound way they say their answers come down and they listen to them. At night that is the forest, you see a few animals during the day, you see parrots and you see monkeys, but at night from 6 in the evening until midnight all the animals come out and hunt and after midnight the animals go back to their dens. So these six hours are essential, all the animals are out, life in the forest is full, and that is when the spirits are there. So this meditation in the circle they have every night when they talk and they tell their myths, and they listen to the person that tells the myths, they can be quiet for 5 to 10 minutes, because you are talking with the spirits, this is the way that they connect with the spirits. And what are they doing, they are connecting with their profound self in a way of understanding the world from a systemic point of view. So they are going to hunt, or fish, or do something in the forest by connecting. And the elders known what is happening, they can see it, can understand it at a different level, they will say don't hunt here, or don't hunt there, or we can hunt here, they will ori-
ent the people as the spirits allows, because if I affect this part of nature, where I am, the territory that they belong to, their answers will be brought up. They know so well, that if I affect this part, I'll be affecting another part, so I have to start and keep a basic balance, a dynamic balance of regeneration, and of strengthening or protecting the forestry and the flow of energy in the forest. They think like that and so they are always looking into the forest that way, and that is why we can say that the indigenous people flow and live with the forest, and protect the forest.

If I compare it with our system where we say that nature is a collection of objects that I can use for my own need, for my well-being of my society, so I use the stones, oil, trees animals and there is no limit. I focus on my economy, go beyond the limits and I deteriorate the environment, and I come upon serious problems that we are confronted with such as climate change. But not only climate change, but with the enormous loss of biodiversity, which is much more serious, more dangerous and problematic. Indigenous people would not go there, they say we have limits, we cannot go beyond certain borders, we must respect everything in nature because everything has a role, even a mosquito has a role. It doesn't mean they will not kill a mosquito, but you must be aware, you must do it carefully, you must respect and not go beyond the limits and when the limits come, how do I know I am going to be on the loose? Because I see the imbalance, and the imbalance brings illness, the origin of illness for them comes from their imbalance with nature. It is nature that is sending in the illness, it is sending something against those groups that abuse of nature, and therefore we have to re-establish the balance to be able to live well. We go on diet, on full diet, on sexual reproduction diet; we control, we go to rituals, we try and balance out the energy by collecting through shamanism, the energy of the moment and restoring it back to nature, giving it back by going through diets, by not allowing certain animals to be eaten for a certain amount of time, certain trees cannot be used for a certain amount of time, etc. We are looking to keep this balance. This is not perfect as the indigenous people will say themselves, of course we commit mistakes, we are people like everybody else, and of course we find some people that do the right thing and other people that do not want to. The right thing is to maintain this balance, or try to respect the limits and try to keep your diets when you have to keep them, but then they also suffer from illness, a physical illness, a social illness, but they also have their own balance, so the indigenous people have this understanding of their living, and how they handle nature, and how to handle this relationship.

When I lived with them, I was learning with them in the 70s, and my dream to begin with, was receive 20 million hectares, that is about nearly the size of the UK, and get the land for all of them in the Columbian Amazon. The second point was to get their rights to be recognized at the level of the Constitution. Fundamentally, I meant that there must be a space to be different, a space be themselves, a space to have their culture. Because we are as a society, we are fundamentally colonialists that is we believe that our answer is the best, be it from a political point of view, from an economic point of view, from a cultural point of view, we think our answers are the best, and the best thing we can do for the world is make them become like us. Of course, by doing that we are denying other cultures, we are saying well you’re not civilized like us, you don’t have our culture, you don’t have religion, you don’t have economy, you’re poor but we’re going to go out and help you and drag you or bring you into our system. But of course then our system becomes a dominant system, and we deny other world views, we deny other ways of being a human being because there are many ways of being a human being, there are many ways of relating to nature, there are many ways of understanding the same problems that we all have. We all eat, we all sleep, we're all spiritual, we all have to have some type of an economy or produce to be able to live. Of course we all have that, but how we

"Wear your learning, like your watch, in a private pocket, and do not pull it out and strike it merely to show you have one. If you are asked what time it is, tell it, but do not proclaim it hourly and unasked, like the watchman."
- Lord Chesterfield, statesman and writer (1694-1773)
do it, how we look into it, how we deal with it, how we deal with the nature, how we deal with rights from a collective or from an individual point of view, how we deal with politics from a hierarchical point of view or from a understanding? I am not saying from a participant point the view, as we could say in a socialist approach, in our way. No, because that is not the way they ask the question. It is not a question that we have to all participate because obviously the shaman and certain people are specialized and they know more, and they can make informed decisions, but we are a community, everybody in the community has to have enough to live from, everybody has to participate in their responsibilities, in their work according to their understanding, according to their knowledge, according to their capacities. So it is a different question, we cannot compare with our terms of hierarchy, of socialism or whatever it is, because that is different. We have a different way of understanding the world, we have a different paradigm.

As we went along, first, this was in the 70s, we did the study of the land. We had a lot of opposition from politicians, although I am talking about an area where there are no rules, where there is no flowing water in the houses, you do everything by boat, by rowing, and there were traditional houses and I lived with them. I was funded by the Institute of Anthropology in Colombia. As the 70s went by, I went and completed my postgraduate studies in France, and then I came back. I was born in NY, in Manhattan, my parents were political refugees from the war, and so I was born there, and I had American nationality. But I realized that with the American nationality, it was not possible for me to get into certain spaces, political spaces, as an outsider. So I took the Colombian nationality, and with that I managed to get or was offered a job in the government as head of Indian affairs, and that allowed me to have access to the high levels. I have actually become quite close to the president of the Republic of Colombia, just telling them stories, talking about photos. It was a very difficult time in Colombia, it was a time of the drugs, of violence, it was a complicated moment in the Colombian history, I am talking about 1986 to 1990, those four years. Before that, with the previous president, who invited me to their office once a week to tell stories about nature, about Indians, about other things. Because the tension of a country like Colombia was complicated, and by telling stories, they would say okay let’s do something about this, let’s make this happen with indigenous people in the Amazon. And with the presidents, we managed to get these 20 million hectares I had aimed for.

Then I was asked to go and negotiate with the ministers, and they got the land rights recognized. I was also asked to represent Colombia in the negotiations with the UN International Labor Organization, which is the one that they had given the responsibility to recognize indigenous rights internationally, and we managed after long negotiations for six weeks during two years, to recognize indigenous people’s rights. Because we managed to get the ILO to recognized their rights. This was an interesting experience because in the ILO you have governments, trade unions, and you have the employees, but the indigenous people cannot participate, but we managed to come up with a good document, and I ended up leading the group in favor of indigenous rights but there was opposition on the other side for different reasons. I bring this up because their rights were being recognized and this was an important moment in the history of Colombia, because it was recognized officially by the constitution in 1990 and it was precisely the moment that we were discussing the Colombian constitution, a referendum for a new constitution in 1991. But when the government ratifies an international agreement on human rights, in Colombia this is the equivalent of the constitution, and it is the equivalent of legal importance. That meant the Colombian constitution could not go below what was recognized in the ILO, and this of course made the constitution very powerful in favor of the environment and particularly of the indigenous people. A very powerful constitution made the rights of the Colombian indigenous recognized.

Then I set up the Gaia Foundation, Amazon Foundation, and I invited the other NGOs that work in the area with indigenous people. We formed a group called the Consolidation of the Columbian Amazon, with indigenous people. They already own a bit more than fifty percent of the old ter-
ritory of the Colombian Amazon, which was all rainforest, and that’s where all these communities lived. We are talking about 26 million hectares. I went to the EU and the European Commission, and we got some funding and then we moved to other countries. Our basic idea is that we work together, and our basic strategies, is that we do not bring in answers, we do not bring in and tell them how they have to do it, we create spaces to analyze. It is their land now, it always has been their land, but now it's officially recognized, now there's a limit that the outside world cannot come in and do what they want, they have to ask permission. It changes the relationship, and many of the indigenous people did not understand what it was about, because it was their land and it was the whitesaying you other people don't have a right to come in and tell me what to do or to take over our land or to dominate us. So it is really putting a limit on the encroach-ment of the outside world. For the majority of the indigenous people, they want to live in their forests, hunt and fish and practice their rituals in their daily lives without outside pressure. Now they could start for the first time since they were dominated over the past 200 years by the Spanish, who were mainly in the Andes and the Portuguese who were on the coast. They came for slaves and then through the exploitation of the rubber the missionaries came. The missionaries were simply carrying out what the laws were saying, you have to civilize the aliens. This was the attitude in the 70s and the 80s, that all the indigenous people have to be integrated into the western world, and that's why they were carrying out this and the education there. But now, we are changed and we are looking for the rights of people to be different, the rights people who have their culture, the rights of people who have their land. And as I mentioned, I was influenced by my mother’s side, the Irish, who also had to fight for their independence from the British until last century, so there was this drive of independence of autonomy, of a right to be oneself which was carried in me.

We thought in 10 years we could set up the government. We received the funding but it is complicated and we are keeping going and finding answers. We did not bring in answers, they have to build their answers because if we brought in the answers, we would be basically a colonialist to a large extent. If it is the people, the local people in particular of a different ethnic group with their agenda, it is their agenda and they decide which way they want to go. I can say I am going to stay and give you a hand, or I can say I am going to go away because I do not like your agenda, that is my independence, that is my freedom. But I cannot tell them which way they have to go because if I am setting the agenda, we are again falling back into I am ruling or dominating or I have a colonist approach. So, it takes time. There are people in different rhythm, you would go up to the communities and you would sit there and have a good chat, for let’s say a week or ten days, and they would say okay Martin we’re going to think about this and I would say okay I’ll come back in a month's time. And then you go to another community, and you would go around like that and then you come back and ask them what have you thought and slowly you build this. And it was a new world, it is an intercultural world which makes it all more difficult because you’re not talking just about their culture, about their traditional way of approach, but how are you going to relate with the outside world, an outside world which had denied them and still has the basic attitude of looking down on the indigenous people. How can you create a new space of participation, of discussion, of respect?

I think that the indigenous people are people of the future. We are realizing that we will not be able to solve climate change easily. We will not be able to overcome the situation if we do not listen to the other 500 cultures that exist in the world. There are different ways of understanding and of living with nature and being nature. And I think therefore looking into the future, the indigenous people have an enormous role to play, they are essential for building solutions into the new world.

To be continued in the next issue
Transparency is one of the cornerstones of modern democracies. It is no surprise then that public expenditures are consistently judged and examined. Many political debates are fuelled by differences in budgets, budgetary priorities and how efficiently those budgets should be put to use. Yet, in the age of misinformation and general ignorance, good intentions and honourable principles are corrupted by distorted statistics and narratives. NASA is not exempt.

How is space serving us? The most immediate answer is the Earth observation satellite. The panel below contains some images related to events the reader will most likely have already heard at some point. As a quick refresher:

1. A capture of Russian deployments during military exercises in eastern Ukraine that the international community monitored really closely.

2. The maritime traffic jam caused by the Suez Canal incident: satellite-derived data became vital when shipping companies had to assess waiting times and consider whether to re-route ships around the whole African continent.

3. Using remote sensing, leakages of natural gas along a pipeline in Siberia were identified.

4. After New Orleans was harshly hit by a hurricane earlier this year, satellite images provided essential information to assess damage and coordinate rescue missions.

5. During the Californian wildfires, satellite images supported firefighters in their efforts to anticipate how the fires would evolve.

6. An oil spill in Mauritius: satellite images were critical to assess the damage and coordinate efforts to contain it.

7. The carbon monoxide signal captured during the Amazon wildfires.

8. Deforestation in the Yucatan Peninsula in Mexico.

9. The volcanic eruption in La Palma: satellites have been tracking the lava and the most likely paths it could follow towards the ocean.

10. Satellites have made possible the creation of a historical Earth observation database: here the comparison in ice coverage between the Antarctic summer and the winter.
Still, a survey from 2007 found that respondents estimated NASA’s budget at 24% of the national budget. In reality, NASA’s allocation for FY07 was 0.58%. An absolutely disproportionate overestimation: even during the fervid days of the space race, NASA’s budget only got to 4.4% of the federal budget! Public opinion seemed to be quite out of touch with the reality.

Encouraged by the democratic principles of transparency and accountability, citizens want to know how their tax dollars are put to use. Some quotes illustrate noble intentions and compassionate hearts: “NASA should not be a priority when issues such as poverty, food insecurity and homelessness exist in America”. More simplistic slogans follow the same line: “Our tax dollars should be spent on us”. Even versions that hint resentment are consistent with the rhetoric: “Space shouldn’t be treated like a personal playground for the ultra-rich”.

We should, however, take some responsibility for understanding how our tax dollars are actually being spent.

Putting numerical figures in context helps. NASA’s budget for the Fiscal Year 2020 captured around 0.48% of the federal budget, which translates to 22.6 billion dollars. That is a generous amount of money and it is, understandably, subject to public scrutiny. To put it into perspective, in the same fiscal year, expenditure in defence accounted for 714 billion dollars. Social Security programs captured $1.1 trillion of the federal budget. These are huge numbers, and the majority of citizens don’t have a baseline to compare these figures which can result in a distorted perception. So, how does NASA’s $22B budget relate to other sectors? It is less than 20% of the tobacco industry revenue: in FY16, American consumers spent $117B in tobacco products. And what about the gambling industry? In FY19, consumer expenditure reached $43.6B and it is expected to exceed $44B in FY21.

Moreover, NASA is not a fire pit for tax dollars. In its 2020 Economic Impact Study, the National Aeronautics and Space Administration reported a positive economic output of $64.3B. That is a stellar return (284% return on its $22.6B budget).

Still, justifying spending billions based solely on economic returns and comparisons to third industries might seem disconnected from the suffering of millions of people. Sister Mary Jucunda, a nun in Zambia, wrote to NASA shortly after the Apollo landing. “How could NASA justify spending billions when children starve to death?” - she asked. The letter was answered by Ernst Stuhlinger, one of NASA’s rocket scientists. His response was eloquent and compassionate. Some of the points Mr. Stuhlinger touches are still very relevant nowadays:

- **Institutional cash transfer are not straight forward**: each of the government departments (Justice, Health, Education, Interior, Transportation…) prepare their yearly budgets according to their missions.
- **NASA’s budget contains only items directly related to aeronautics and space**: If that budget is not approved by Congress, the funds proposed for it would not be available for something else. They would simply not be levied from the taxpayer.
- **Support for hungry children, or rather a support in addition to what the United States is already contributing to this very worthy cause in the form of foreign aid, can be obtained only if the appropriate department submits a budget line item for this purpose.**

Mr. Stuhlinger empathically favours his annual taxes to be increased for the purpose of feeding hungry children, but in-
sists that bringing such cash transfer program to life cannot merely be based on desisting from making plans for voyages to the Moon and Mars.

The precision and reliability requirements that were imposed upon the components of a Moon-travelling vehicle were unprecedented in the history of engineering. All that newly acquired technical knowledge was then made available for application to earth-bound technologies. The space program has made substantial contributions to the production of food: large areas of land are utilized far better when efficient methods of water control, fertilizer use, weather forecasting, crop and field selection, and many more are implemented. The best tool for precision farming is, undoubtedly, is the earth observation satellite.

Spinoffs from space projects have permeated many aspects of our daily lives: GPS, the CMOS sensor in digital cameras, infrared thermometers, cordless power tools, water purification systems, cochlear implants, baby formula, emergency blankets, firefighter suits… It is hard to anticipate how space technology will be used when it morphs into the civilian space, but when it finds an application, it yields exponential gains.

How are space technologies supporting the sustainable development goals?

Technological developments that originated in space projects have made our lives easier and better. How does space research serve the SDGs? An excellent review can be found in the report: European Global Navigation Satellite System and Copernicus: Supporting the Sustainable Development Goals. A summary of the report is provided here.

1. No Poverty

Space technologies are central to forecasting natural disasters and can help coordinate subsequent aid provision. Satellites also provide observations that can help optimising sustainable utilisation of natural resources and are able to map populated areas and monitor their access to basic services.

2. Zero Hunger

Precision agriculture integrating Global Navigation Systems and Earth Observation data can achieve yield increases over 10% while reducing fuel, fertilizer, and pesticide inputs by up to 20%. Crop productivity can be optimised through informed management process and increased efficiency in the use of existing resources. Similarly, livestock management can also be improved through enhanced monitoring and identification of suitable grazing.

3. Good Health and Well-Being

Space technology is fundamental in a range of health applications. Using remote sensing, it is possible to identify the ecological and environmental factors that contribute to the spread of vector-borne diseases, monitor disease patterns and define areas that require disease-control planning. Monitoring air quality and traffic frequently with precision can only be done from orbit. Orbital platforms also support health and disease prevention, through wearable monitoring devices. In the future we will also witness an expansion of remote healthcare enabled by orbital communication satellites.

4. Quality Education

Satellite systems will soon be able to provide high-speed internet connectivity to remote and isolated communities.

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**Sustainable Development Goals**

1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals
Through e-learning, it will be possible to monitor attendance and engineer incentives to reduce dropout rates.

5. Gender Equality

Highly related to education, satellites can support women’s empowerment by supporting access to quality education in remote and isolated communities. Satellites can provide the soft access to training, soft infrastructure and information.

6. Clean Water and Sanitation

Earth observation satellites monitor water quality and are essential to meteorological forecasting.

7. Affordable and Clean Energy

In addition to identifying optimal sites for the production of renewable energy, satellites data can be used to forecasting the production of solar and wind energy and estimate the amount of energy that will be needed from other sources. This is critical to synchronise power grids.

8. Decent Work and Economic Growth

Census counts and demographic surveys are costly, time-consuming and labor-intensive. Data from remote sensing platforms can be integrated to derive estimates of GDP and population. In addition, space research and technologies supports sectors such as service, utilities, banking and finance, agriculture and communications.

9. Industry, Innovation and Infrastructure

Remote sensing is the most reliable technology to map and monitor large infrastructures, such as road networks in rural environments. It can also be used integrated in a smart mobility framework and enable reduced fuel consumption by smarter planning and monitoring of driving behaviours.

10. Reduced Inequalities

Orbital platforms can provide reliable access to information and guarantee connectivity in remote and isolated areas. This could potentially enable the remote participation in democratic processes.

11. Sustainable Cities and Communities

Satellite images are central to urban planning. In addition to images, remote sensing can support the improvement of city services, such as smart waste management systems, monitor the air quality and monitor infrastructures.

12. Responsible Consumption and Production

The combination of earth observation, satellite telecommunications and Global Navigation Satellite Systems can assist the management of natural resources, enable precision farming and assist the tracing of foods and goods.

13. Climate Action

Space technologies play a central role. Remote sensing data is fundamental in monitoring climate change and forecasting weather.

14. Life Below Water

Orbital systems are vital for navigation. They are used to track fishing vessels and monitor illegal and unreported fisheries. Remote sensing can be used to assess marine and coastal
resources, map and monitor protected areas, and track water temperature.

15. Life on Land

Similar to above, remote sensing satellites provide the observations needed for land surface monitoring, biodiversity monitoring and can even help identify poaching areas and smuggling routes.

16. Peace, Justice and Strong Institutions

Remote sensing satellites have been a pivotal tool in conflict monitoring. The information acquired from orbit has been essential when assessing damage, collecting evidence and planning military and diplomatic strategies. As mentioned before satellites can provide access to reliable information and could, in the future, enable the participation of remote and isolated communities in democratic processes.

17. Partnerships for the Goals

Robust international cooperation initiatives are central to space programs. From the International Space Station to the Copernicus network, shared infrastructure, exchange of technical know-how, exchange of data and access to open source databases are all part of the benefits and needs of space exploration and technology development.

In 2020, the earth observation sector accounted for over 55% of the global space expenditure. Multilateral agreements and the exponential increase in the number of players will certainly expand our scientific knowledge, push technological progress and in turn, bring remarkable economic and scientific benefits for the world.

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Thank you to everyone for joining us, from whatever part of the world you may be in, for giving me the time to introduce myself and my experiences within the international media, the private sector, and my recent transition into the nonprofit world and my reasons for doing it.

I would like to begin by speaking about my experience with the yin and yang, the plus and minus of the influence that mass media has in preserving and educating humanitiy about our culture, our existence (and coexistence) of the people and their institutions. I started back in the 90’s working for three different networks, primarily European. My main role was to fill the gap between the approach of the United States’ news media stories and how the European audience would perceive the same story.

The interesting part is that even if it was understandable between English and Italian or French, the viewpoint of a story was totally different, sometimes dictated by different political views, different interests, and different social backgrounds. That really got me interested and I started to see, that there was more to the news then just the story. There is something more important than just simply delivering the news.

I expanded on my news gathering experience into creating documentaries which are a different part of the media spectrum. In the end, I realized that media, in general, is fundamental to educate different parts of the world and to expose different nations and people across reference points, across experience, and across cultures.

But at the same time, the media also has the responsibility to not dictate or impose its views of what a western culture is to the developing world. Sometimes it is seen as intimidation and creates a huge disappointment and controversy between nations. So, the media in general, as important as it is in maintaining a key role in our cultural education, are not doing that much in sustaining that. I remember working early on with television journalists - they would go after the story, go out in the field, learn from the actual person what the story was, and formulate their own opinion, right or wrong, by going through the process.

Now, unfortunately, and fortunately, there is a globalization of information, such as with Google searches and many other applications- which are very important to preserving our culture, but also made the journalistic part- the delivering of news – fall flat. Accepting information for what it is, not double-checking facts, makes it possible for the reporting to be compiled quickly and delivered immediately. The best news today is the first one posted, not necessarily the accurate one and its not just the headlines that are botched. Sometimes network bosses impose that type of journalism because of their high demand for news content. So that really took a toll on delivering quality news and that was detrimental for the media. That kind of pushed me away and pushed me into what I am trying to do today.

On the bright side, Google, or any of the prominent social media companies out there, help provide some clarity through their bias. By doing whatever they want they are showing the reality of the situation. Media is important in
maintaining the boundary of civilization and covers a little bit where the political gap is lacking. Sometimes the self-interest of a corporation pushes things in a certain direction and the media will expose that, so it keeps things in balance. And that pertains to news programming, which is not everything the media does, but it is important and dictates the trends of people who or watching, reading, and listening to gather knowledge from it.

Sadly, more and more news outlets are becoming opinionated, less reporting and more commentary. They will at the very least confuse more people in what is real and what is not. We have that experience from the last election, some mainstream networks delivered the news as if they were a part of a political party, exclusively in favor of one candidate and against the other. In the U.S., we have PBS and besides PBS, maybe there are one or two channels that have cultural programming. The major networks need to spend more time upgrading their cultural content which is already very limited. They may air something, at two o’clock in the morning, so it is difficult to get cultural information or cultural education out of mainstream television. Social media is helping a lot, but mainstream media has a responsibility to invest more time and effort to make cultural programming more appealing and entertaining so people can stay tuned and not just learn facts but also be entertained. That is the gimmick. That is the best way to produce content, to entertain the people and teach them at the same time.

So, working within the media has been, at times, a complicated part of my experience over the past thirty some odd years with my company Global Vision Group. For anybody who is in business, when you create a company, it is a baby. It is no longer a financial thing. It is your own creation, so it is hard to delegate and move away forever. But the need to be able to create alternative content, content that is completely free and clear of sponsorship or an agenda, for better or worse, from any specific need, will be open to everyone and not just the few. That is what really brought me to open a non-profit foundation.

My foundation, Freedom View Coalition, which I opened right before the pandemic, is out to tackle issues of co-existence. From my experience, I think when people are educated about other countries, which can be through a personal relation to somebody else from a different part of the world, or a passion for a foreign singer or an actor or for a specific food, it will lower the level of prejudice and instead can open the frontiers of the unknown. It allows us to be able to explore, to travel to that country, to learn about the individuals and their culture. Sometimes you fall in love. Sometimes you do business with the person. Sometimes you just explore or eat their food. That knowledge, when presented creatively within an audio-visual context and through different local and international events, will help us understand those people, to co-exist, and to profit from each other on cultural and educational levels. That is, to me, a key program that I envisioned for my foundation, of course, using the skills of my trade; I know how to create content and I know how to market it in foreign countries because we are doing it now with my main company.

These issues are very important now - more than ever - because of this fear of diversity, which I believe is the most intriguing part of our planet. Diversity means everything. It means the beauty of knowledge, culture, education and exploring. It is really life itself to be able to coexist and learn about each other.
So, that is the main reason I started the foundation, to crush this fear of diversity and preserve our cultural heritage. I was in Oklahoma a month ago, talking to Tribal Nation leaders about all the political and social issues they suffered through in the past and are experiencing again now. Their main concern was how do we preserve our heritage, how do we educate our children to keep the heritage alive and integrated in society, which is now a multicultural society. I think that it is so important to believe in those values and to have faith in their heritage. Certain events in the past, when looked at through the lens of today, are politically incorrect, but I sense it is not for us to judge it today, but to learn from it. It is important to accept what you like and what you don’t like. It is important also to understand that your freedom ends where mine begins, and vice versa. That is respect.

So, the media has a huge responsibility to keep teaching and to be the most important channel of communication for cultural education around the world. In my foundation, I am creating content while respecting what I have learned, and that is, that certain visual styles are not appealing to other cultures in other parts of the world. To integrate local voices within a new creative content we can utilize local directors, creators, and writers, and then we will be able to explain a particular issue or viewpoint, not just from a western civilization perspective but from the foreign nation’s perspective.

Television media remains the most important vehicle of integration between one culture and another. But it’s not really doing a full job. It does what is necessary from the commercial side of things. The audience share is dictated by the editorial heads of a network and the investment they do is strictly to support the sponsor. Their productions are targeted to the few.

Within our foundation, besides the project with the Tribal Nations, we have other projects that are slated to be produced over the next 5 to 10 years. Capitalism, as I mentioned before, allows many non-profits to be able to raise money but some use the money for more self-proclamation, just to put themselves in the marketplace while they invest the bare minimum in fulfilling their mission. This is not to criticize them, it is just the way the market dictates the possibility of survival in any market field, non-profit or private. Capitalism should and must play a large role in the life of any non-profit because when used correctly, it fills the funding gap to many of our societal needs that the government simply cannot. So, it’s ok to raise money, but the important thing is, the donations received should be equal, if not more, to what you spend to produce content. It is very important that you not be put in a position to compromise the mission of the foundation. The mission of the foundation should stand on its own.

My goal for the foundation is to stand on its own feet, with or without me. Not just in the decision-making process, but also in the projected mission of the foundation. That is vital. Capitalism must play a part with investing, in assisting the non-profits in general, and not just for a tax write off, but because at the end of the day, improving the cultural education of people will help to elevate society a notch above from where we started. That means less people are going to be reliant on others as more people will become providers, and there is an income for humanity.

If you can culturally improve the possibility of people to be able to dream to be something better, to be able to even-

Continued on page 32
"We have not inherited the world from our forefathers...we have borrowed it from our children"

- KASHMIRI PROVERB

"Never doubt that a small group of thoughtful committed citizens can change the world. Indeed it’s the only thing that ever has"

- MARGARET MEAD

"Every student needs someone who says, ‘You mean something. You count.’"

- TONY KUSHNER, PLAYWRIGHT (B. 16 JUL 1956)
From page 24

tually be providers and assist in teaching the next generation we can greatly reduce poverty as well. And, of course, there would be added income, for the world of capitalists, there would be an extra client, an extra consumer, but for humanity, there would be somebody who learned from the past and became the future. That is the way life should be. I do not want to be too philosophical, but all these items are part of educating and preserving our heritage. There is no future without knowing our past. History teaches people to co-exist, to learn from mistakes, and to move forward. So, my foundation is a cross-reference between political news to a cultural and heritage preservation of humanity in different aspects, in music, entertainment, travel, food, any type of culture or language which is also very important.

New York City, on its own, has over 800 spoken languages. This is just the five boroughs of a city! You can speak, learn, read the news, listen to the radio, or watch local TV, in about 800 different languages. That shows you that if you really put effort into it, you can resolve all the problems of coexisting.

That really summarizes my experience in the mainstream media and my transition away from it as well as why I needed to do this at this time in my life – to open a foundation, to continue to develop creative content towards a better need, and to be free from any commitments that are not purely cultural or educational.

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**THE INTERNATIONAL LEAD POISONING PREVENTION WEEK**

is observed on October 24-30. IPEN (International POP’s Eliminations Network) is launching a global campaign to get Rotterdam Convention listings of the lead pigments that are used as paint ingredients. Listing lead pigments will advance global lead paint elimination; help countries adopt and enforce lead paint control regulations; and make exporting countries assume major responsibilities for the control of lead pigments and the lead paints that contain them.

**5.5 DOLLARS OR LESS PER DAY**

About half of the almost 8 billion people in the world live on about 5.5 dollars or less per day. 10% about 800 million of people live on less than $2 a day, those are really on the edge as far as food availability and COVID-19 made this situation much worse. Although, the world does grow enough food and there is enough food available, the problem is distribution. That is the challenge in earlier reports when we would talk about food insecurity and people at risk. The main reason that people suffered food insecurity was conflict, followed by weather and now since 2020 the number one spot is COVID-19.

**Source:** Dr. Mark Gregory Robson is Rutgers University Board of Governors Distinguished Service Professor and Professor and Extension Specialist of Plant Biology at Rutgers School of Environmental and Biological Sciences.

**URBAN-RURAL DIVIDE**

Within 30 years, two-thirds of the world’s population will live in urban areas and 90 per cent of urban growth will occur in less-developed regions due to population growth. Experts related to building sustainable cities and communities on how to best narrow the rural and urban divide and connect their future for the decades ahead.

**Source:** UN-DESA, UNDP Webinar

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**HOW YOU CAN HELP:**

WIT is a non-profit, international, non-governmental organization, in consultative status with the United Nations, dedicated to forging understanding of the relationship between health and environment among opinion leaders and concerned citizens around the world.

You can help us with your letters, your time, and/or your donations.