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BAD AIR TO BETTER OCEANS: 6 ENVIRONMENT AND DEVELOPMENT STORIES TO WATCH IN 2018

展望 2018，全球環境與發展的 6 大焦點

WORLD RESOURCES INSTITUTE

The big question for 2018 is whether last year's troubling trends for environment and development – rising global carbon emissions, multiple billion-dollar natural disasters, U.S. President Donald Trump's abandonment of climate action — will continue or turn in a more positive direction. As WRI President and CEO Andrew Steer noted during the Stories to Watch event in Washington on January 10, 2018,

本期摘要(KEY INFORMATION)

◎展望 2018 年全球的環境與發展，美國世界資源研究所(WRI)提出了必須密切關注的六大焦點：(1)空污問題已成為全球首位環境健康風險，中國限制鋼鐵產量並減少煤炭使用，哥倫比亞的 PurpleAir 個人空污感知器則可讓市民即時監測和報告污染水準——究竟政府和新興技術是否會遏制此日益嚴重的危機呢？(2)大型汽車製造商正擴展電動汽車規模，而英國，法國，挪威和荷蘭則預計在 2040 年後禁用新的汽油動力汽車，石油是否走向綠色產業？(3)川普總統宣示要讓美國退出巴黎協定，但顯然其他國家正在推展氣候行動，9 月份在加州舉行的全球氣候行動高峰會、12 月份在波蘭舉行的聯合國氣候變遷會議(COP24)將是各國進一步加強的關鍵時刻。(4)氣候行動通常聚焦在多少國家需要減少二氧化碳排放量，其實負面排放最具成本效益的途徑是種植樹木、灌木、作物和保存土壤，但這種方法沒有得到足夠的投資，其他尚包括較昂貴的技術策略，如生物工程結合碳捕捉與封存（BECCS）等。(5)水資源壓力往往是人道主義危機的潛在觸發因素，例如敘利亞內戰前的旱災。聯合國安理會今年可能會提出氣候解決方案，正式承認缺水在預防衝突方面的作用。(6) 有 40 個國家已禁止或限制使用通常流向海裡的塑膠袋。去年聯合國任命了海洋問題特使，各國在聯合國海洋會議上做出了 1400 項保護海洋的承諾，今年加拿大承諾將把海洋列入即將舉行的 G7 高峰會議程。重要的海洋資產價值高達 24 兆美元，這是政商界領袖們應該注意的。

◎根據聯合國的資料，2008 年至 2015 年間每年平均有 2640 萬人因氣候災害而流離失所。氣候科學資料顯示到 2100 年，海平面可能上升三英尺，淹沒沿海地區和有人居住的島嶼。知名智庫蘭德公司(Rand Corporation)提出聯合國等組織應考慮修改國際法，為環境難民提供法律上的保護。氣候變化是一個倫理和社會關切的概念，畢竟富有國家是造成暖化的最大因素，但發展中國家的窮人將受到最嚴重的影響，也有其他見解認為溫室氣體排放的主要國家，應該吸收更多的難民。

developments across several key topics will determine the answer.

1) Bad Air Days

"In November, breathing the air in New Delhi for a day was the same as smoking 50 cigarettes," Steer said. The city isn't the only one with polluted skies—one in nine deaths globally are now caused by air pollution, making it the world's top environmental health risk.

Will governments and emerging technologies rein in this growing crisis?

China is already limiting steel production and cutting down on coal use, and Beijing's air pollution dropped 20 percent in 2017. While India has moved forward with policies like national and city action plans and cleaner fuel standards, it's unclear if they'll be sufficiently enforced.

Meanwhile, monitoring is improving. Personal air pollution sensors like Colombia's PurpleAir allow citizens to measure and report pollution levels in near-real time. The Sentinel-5P satellite, launched last year, will deliver more data in 2018. "We don't have consistent air pollution data from cities worldwide," Steer said. "This will give it to us from outer space."

2) The Future of Oil

Despite the recent rise in renewable energy development, "Big Oil is still very big," Steer said. Five of the world's top 12 companies by revenue are oil companies.

Yet disruptive forces are at work to dethrone Big Oil. Will they move the industry in a greener direction?

Major automakers like Volvo, Ford and GM are expanding their electric vehicle fleets, while the UK, France, Norway and the Netherlands have outlawed new gasoline-powered cars after 2040. More than 150 shareholder resolutions called on oil companies to embrace sustainability, such as by disclosing their climate risks. And the insurance company AXA dropped oil sands from its portfolio.

Oil companies are starting to respond. Exxon will disclose its climate risk and Shell and StatOil committed to reduce their emissions intensity, but more action is needed.

3) Progress on International Climate Action

Trump may have gutted national environmental regulations and pledged to pull the United States out of the Paris Agreement, but it's clear that the rest of the world is moving forward with climate action. Who will lead?

Watch for action from Europe, China and India. While China's emissions and coal use rose last year, the country is also the world leader in renewable energy investment and will launch a national carbon market this year. It will need to reconcile these two realities to secure status as a global climate leader. India has some of the most ambitious renewable energy commitments, seeking to install 100 gigawatts of solar power by 2022. The country has already made significant progress in expanding its solar capacity. Will it keep pace with its lofty goals?

The Global Climate Action Summit in California in September and COP24 in Poland in December will be key moments for countries to step up further.

Meanwhile, U.S. cities, states and businesses representing $10 trillion have stated their continued commitment to climate action. Will this momentum continue to build in 2018 in the face of inaction at the federal level?

4) Negative Emissions

The narrative on international climate action typically focuses on how much countries will need to reduce their carbon dioxide emissions in order to avoid the worst impacts on climate change. “What they don’t tell you is that even if you work incredibly hard to reduce greenhouse gas emissions, it’s not enough, especially if you want to [limit global temperature rise] to 1.5 degrees C (2.7 degrees F),” Steer said. “You have to go the extra mile and suck the carbon already in the sky down to Earth.”

The question is, will policymakers and others pay attention, and if so, how will they get this carbon out of the atmosphere?

The easiest and most cost-effective path to negative emissions is to plant and conserve trees, bushes, crops and soil. This approach isn’t getting nearly enough investment, but there are more than 2 billion hectares (5 billion acres) of degraded land globally – an area the size of Australia -- that are potentially ripe for restoration.

Other methods include costlier, more technical strategies like bioengineering combined with carbon capture and storage (BECCS), enhanced weathering, direct air capture and more. The world’s first zero-emissions gas power plant will open in Texas in 2018, which could give a signal about the potential for these kinds of options to gain traction.

5) Water and Conflict

Most people point to sociopolitical dynamics and economics as the reasons behind humanitarian crises, but water stress is often another underlying and underreported trigger. Drought preceded Syria’s civil war. The drying up of Lake Chad led to the displacement of more than 2 million people. Without interventions, the situation is poised to worsen: Projections show that 33 countries will face extremely high water stress by 2040.

At the same time, the world is making major progress in monitoring the world’s water. Can early warnings prevent future conflict?

The UN Security Council may take up a climate resolution later this year, which would formally recognize water scarcity’s role in conflict prevention. Emerging platforms like the Aqueduct mapping tool can provide data to support better resource management: It evaluates current and future water stress, and will soon analyze water availability’s potential impact on staple crops in every region of the world.

6) Ocean Rising

Half the world's corals have been lost to bleaching; nearly 60 percent of fisheries have been fished to capacity; and experts predict the oceans will hold more plastic than fish by 2050. "This is a tragedy of the commons writ large," Steer said.

Oceans are rising — literally, in terms of sea levels — and also on political agendas. Will it be enough to save the seas?

Forty countries have already banned or restricted the use of plastic bags that often end up in the water. Last year, the UN appointed a Special Envoy for Oceans, while countries made 1,400 commitments to ocean protection at the UN Ocean Conference.

This year, Canada has promised to put oceans on the agenda for the upcoming G7 meeting. We will see new initiatives introduced to improve ocean management at theWorld Economic Forum later this month. And negotiations may begin for a UN Treaty on the High Seas. Research shows that world needs to bring 30 percent of the world's oceans under protection in order to achieve sustainability. Political and business leaders would do well to pay attention—key ocean assets are worth a whopping $24 trillion.

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MOVING COUNTRIES, SEEKING REFUGE FROM CLIMATE CHANGE

為氣候移民尋求避難協助

Wildfires tearing across Southern California have forced thousands of residents to evacuate from their homes. Even more people fled ahead of the hurricanes that slammed into Texas and Florida earlier this year, jamming highways and filling hotels. A viral social media post showed a flight-radar picture of people trying to escape Florida and posed a provocative question: What if the adjoining states were countries and didn't grant escaping migrants refuge?

By the middle of this century, experts estimate that climate change is likely to displace between 150 and 300 million people. If this group formed a country, it would be the fourth-largest in the world, with a population nearly as large as that of the United States.

Yet neither individual countries nor the global community are completely prepared to support a whole new class of "climate migrants." As a physician and public health researcher in India, I learned the value of surveillance and early warning systems for managing infectious

disease outbreaks. Based on my current research on health impacts of heat waves in developing countries, I believe much needs to be done at the national, regional and global level to deal with climate migrants.

Millions Displaced Yearly

Climate migration is already happening. Every year desertification in Mexico's drylands forces 700,000 people to relocate. Cyclones have displaced thousands from Tuvalu in the South Pacific and Puerto Rico in the Caribbean. Experts agree that a prolonged drought may have catalyzed Syria's civil war and resulting migration.

Between 2008 and 2015, an average of 26.4 million people per year were displaced by climate- or weather-related disasters, according to the United Nations. And the science of climate change indicates that these trends are likely to get worse. With each one-degree increase in temperature, the air's moisture-carrying capacity increases by 7 percent, fueling increasingly severe storms. Sea levels may rise by as much as three feet (PDF) by the year 2100, submerging coastal areas and inhabited islands.

The Pacific islands are extremely vulnerable, as are more than 410 U.S. cities and others around the globe, including Amsterdam, Hamburg, Lisbon and Mumbai. Rising temperatures could make parts of west Asia inhospitable to human life. On the same day that Hurricane Irma roared over Florida in September, heavy rains on the other side of the world submerged one-third of Bangladesh and eastern parts of India, killing thousands.

Climate change will affect most everyone on the planet to some degree, but poor people in developing nations will be affected most severely. Extreme weather events and tropical diseases wreak the heaviest damage in these regions. Undernourished people who have few resources and inadequate housing are especially at risk and likely to be displaced.

Recognize and Plan for Climate Migrants Now

Today the global community has not universally acknowledged the existence of climate migrants, much less agreed on how to define them. According to international refugee law, climate migrants are not legally considered refugees. Therefore, they have none of the protections officially accorded to refugees, who are technically defined as people fleeing persecution. No global agreements exist to help millions of people who are displaced by natural disasters every year.

Refugees' rights, and nations' legal obligation to defend them, were first defined under the 1951 Refugee Convention, which was expanded in 1967 (PDF). This work took place well before it was apparent that climate change would become a major force driving migrations and creating refugee crises.

Under the convention, a refugee is defined as someone "unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion." The convention legally binds nations to provide access to courts, identity papers and travel documents, and to

offer possible naturalization. It also bars discriminating against refugees, penalizing them, expelling them or forcibly returning them to their countries of origin. Refugees are entitled to practice their religions, attain education and access public assistance.

In my view, governments and organizations such as the United Nations should consider modifying international law to provide legal status to environmental refugees and establish protections and rights for them. Reforms could factor in the concept of "climate justice," the notion that climate change is an ethical and social concern. After all, richer countries have contributed the most to cause warming, while poor countries will bear the most disastrous consequences.

Some observers have suggested that countries that bear major responsibility for greenhouse gas emissions should take in more refugees. Alternatively, the world's largest carbon polluters could contribute to a fund that would pay for refugee care and resettlement for those temporarily and permanently displaced.

The Paris climate agreement (PDF) does not mention climate refugees. However, there have been some consultations and initiatives by various organizations and governments. They include efforts to create a climate change displacement coordination facility and a U.N. Special Rapporteur (PDF) on Human Rights and Climate Change.

It is tough to define a climate refugee or migrant. This could be one of the biggest challenges in developing policies.

As history has shown, destination countries respond to waves of migration in various ways, ranging from welcoming immigrants to placing them in detention camps or denying them assistance. Some countries may be selective in whom they allow in, favoring only the young and productive while leaving children, the elderly and infirm behind. A guiding global policy could help prevent confusion and outline some minimum standards.

Short-Term Actions

Negotiating international agreements on these issues could take many years. For now, major G20 powers such as the United States, the European Union, China, Russia, India, Canada, Australia and Brazil should consider intermediate steps. The United States could offer temporary protected status to climate migrants who are already on its soil. Government aid programs and nongovernment organizations should ramp up support to refugee relief organizations and ensure that aid reaches refugees from climate disasters.

In addition, all countries that have not signed (PDF) the United Nations refugee conventions could consider joining them. This includes many developing countries in South Asia and the Middle East that are highly vulnerable to climate change and that already have large refugee populations. Since most of the affected people in these countries will likely move to neighboring nations, it is crucial that all countries in these regions abide by a common set of policies for handling and assisting refugees.

The ConversationThe scale of this challenge is unlike anything humanity has ever faced. By midcentury, climate change is likely to uproot far more people than World War II, which displaced some 60 million across Europe, or the Partition of India, which affected approximately 15 million. The migration crisis that has gripped Europe since 2015 has involved something over one million refugees and migrants. It is daunting to envision much larger flows of people, but that is why the global community should start doing so now.

原始連結：

https://www.rand.org/blog/2017/12/moving-countries-seeking-refuge-from-climate-change.html