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Silence, then a Roar for Climate Action

October 2014

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**YCELP in the
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**[Biz Asia
 America:
 Angel Hsu
 Interview](#)**

(Segment at 06:00)
 CCTV
 September 24, 2014

**[Bottom-Up
 Climate Fix](#)**

(Dan Esty's op-ed)
The New York Times
 September 22, 2014

**[24 Hours of
 Reality:
 Discussion
 with Dan Esty
 and Maggie
 Grace](#)**

A Note from the Associate Director

By **Joshua Galperin**, Associate Director, Yale Center for Environmental Law & Policy

The summer is a quiet time on a college campus. While students leave for summer jobs those of us who remain have time to plan for the coming school year. I'm pleased to say our summer was very productive, and the Yale Center for Environmental Law & Policy has a full roster for the 2014-2015 school year.



We are launching a new project, spearheaded by Faculty Director Dan Esty, called the Climate Change Brainstorming Dialogue. This project aims to invigorate the international climate negotiations by ramping up the global response to climate change with an eye on the 2015 climate meeting in Paris. The Dialogue will convene a series of brainstorming sessions with climate change thought-leaders from around the world. These experts will develop novel and actionable proposals that will influence the Paris negotiation process over the coming year.

We are hosting a *Pioneering Policy* speaker series in collaboration with Yale Climate & Energy Institute; our guests include James Cameron from Climate Change Capital, who will talk about options for including cities, states/provinces, and private companies in international climate agreements, and Peter Lehner, the executive director of the Natural Resources Defense Council, who will highlight the intersection of agriculture and climate policy. Our *On the Environment* podcast lineup includes a series of Yale World Fellows, and other visitors to Yale. Please keep any eye on envirocenter.yale.edu for all the upcoming events.

Over the past several summers we have offered the YCELP Summer Research Prize to support student research at the intersection of science and public policy. I am proud to report that the research we've funded is getting well-deserved attention. Two Yale doctoral students - T. Rob Fetter and Erica Barth-Naftilan - are presenting their YCELP-sponsored research into the regulation and impacts of unconventional oil and gas exploration at a conference this month.

As always, we are growing the Environmental Performance Index (EPI), and we are thrilled to welcome Jason Schwartz to the EPI team as a staff

24 Hours of Realty
September 16, 2014

[Soil Pollution in China Still a State Secret](#)

Scientific American
June 18, 2014

[Map Monday: 50+ Shades of Air Pollution](#)

Scientific American
June 16, 2014

[Obama's Global Warming Initiative: Dan Esty Interview](#)

The Colbert Report
June 3, 2014

Recent Podcasts

[Why Our Brains Are Wired to Ignore Climate Change: A Conversation with George Marshall](#)

[Fighting Invasives: Working Dogs for Conservation](#)

[Theory Of Change: A Conversation with Greenpeace's Matt Daqqett](#)

[Faith and Madness on the Alaska Frontier: a Conversation with Tom Kizzia](#)

The full collection is available on [iTunesU](#) and [SoundCloud](#).

Who's in Your Country's 'Social

manager. Jason will assist Angel Hsu in managing student researchers, maintaining the website, coordinating with experts, and various other facets of the project. With Jason on board, the team is focused on developing new metrics, continuing to promote and consult on the 2014 EPI, and already looking forward to 2016.

Silence, then a Roar for Climate Action

By **Alisa Zomer**, Yale F&ES '14 and **Amy Weinfurter**, Yale F&ES '15

The [People's Climate March](#), held in New York City on September 21, was a giant rally for climate action. Its goal was simple: raise awareness, build solidarity, and demonstrate that people demand action on climate change. The most amazing, goose-bump-raising moment of the march took place during the midday moment of silence. Hands rose into the air to signal silence, and for a moment the streets quieted in honor of those affected by climate change. Then, a tidal wave of noise surged forward from the back of the march with tsunami-like force. It was the power of hundreds of thousands of people - over 400,000, at last count - rallying for action. Below are a few images and words to capture, in a small way, this momentous call for change.



Kate: "A measure of success for this march wouldn't happen today. A measure of success would be a slow ripple effect towards changing the conversation."

Network?'

Yale's Environmental Performance Index (EPI) team is conducting a survey to see which countries people perceive as comparable to their own on issues of policy direction, economic models, and/or institutional reform. Using this data, we hope to reveal "social" relationships beyond traditional country groupings by GDP or geography.

Within the United Nations Climate talks, countries are often aligned in negotiation blocs. Brazil, South Africa, India, and China - all major emerging economies - comprise the BASIC group; small-island states have their own bloc called AOSIS, or Alliance of Small Island States; and, the Like-Minded Developing Countries is made up of a diverse group of developing nations. Ultimately, the goal of the survey is to harness the power of behavioral norms to elevate environmental issues on the global policy agenda and improve the substance and ambition of environmental performance.

Do you think your country is a leader in policy development? What countries are similar to yours? **Please take a minute to fill out [this survey](#) and add to a growing dataset of perspectives from around the globe.**

Thank you for your



[LEFT] **Irina**: "I'm marching today because there's strength in numbers. I really hope this is the Civil Rights March of our generation."

[RIGHT] **Rebecca**, with New York Interfaith Power and Light, one of over 1,500 religious, scientific, or community groups that participated in the march: "What three adjectives best describe my feelings today? Forgiveness, love, and hope."



Pioneers in linking environmental issues with religion, Yale Professors **Mary Evelyn Tucker** and **John Grim** marched alongside students. They are well known for their Emmy-winning documentary [Journey of the Universe](#), the epic journey of cosmic, earth, and human transformation.

help!



Ken and Lisa, on one of many stops in the nationwide [Great March for Climate Action](#): "One thing that's unique to this march is that there's such a large variety of people, with different blends of thoughts, here."



[LEFT] **Pat**: "Individual change is good, but we need top-down action. I'm ready to pay the real cost of the energy that we use as consumers, in a tax that goes towards things like funding research and development."

[RIGHT] **Natt**: When asked about the three adjectives that best describe his feelings on being a part of the march: "Serious. Silly. Committed." He stands with a sign honoring *Curious George* author H.A. Rey's championing of renewable energy.



Devin: In response to a question on what would be a measure of success for the march: "For hundreds and thousands of people around the country and the world to realize that what they care about is related to climate change. And we're all in the same fight."



Early estimates put the total number of participants at 310,000; by Monday morning, a count of nearly 400,000 had been confirmed, making this the largest climate march in history. The number 400 also coincides with dangerous levels of carbon dioxide in the atmosphere, which exceeded [400 ppm](#) (parts per million) this year. [350 ppm](#) is considered to be a "safe" level and an important "tipping point" past which will accelerate climate change impacts.



Over half of the world's population live in urban areas and cities account for an estimated 80% of greenhouse gas emissions. Many believe cities will be the place where the [battle for sustainable development](#) (and the fight against climate change) will be won or lost.



Dozens of Yale students and alumni sported aqua t-shirts featuring the smiling face of environmental leader **Gus Speth** (pictured above). Speth is the former Dean of the Yale School of Forestry and Environmental Studies and made headlines in an [act of civil disobedience](#) protesting the Keystone-XL pipeline in Washington, DC.



Memorable march moments and creative signs.



The march had a festival-like atmosphere and was truly multi-generational. As one marcher said, when asked about her ideal outcomes of the march, "It's just really good to be around other people who care about our environment, and want to make a change."

Photos by Alisa Zomer (@azomer) and Amy Weinfurter. All photos can be shared under [Creative Commons](#).

5 Things UN Negotiators Should Do to Ensure the SDGs are Measurable

By **Angel Hsu**, EPI Project Director, and **Whitney Johnson**, Yale F&ES '16

As the world turns its attention towards the 69th Session of the United Nations General Assembly commencing this week, all eyes are on the proposed set of Sustainable Development Goals (SDGs). The SDGs will

replace the set of eight Millennium Development Goals (MDGs) when they expire in 2015 and will inform the UN's development agenda for the next 15 years. However, unlike the MDGs, negotiators are starting to consider indicators and targets for the SDGs early. With [17 proposed goals](#) and around 169 core indicators, the SDGs are nothing short of ambitious - if not, too ambitious.

Based on our experience developing the [Environmental Performance Index](#) (EPI), we provide five recommendations negotiators should keep in mind when debating the content and metrics for the SDGs.

1. K.I.S.S. - Keep the SDGs Simple.

The latest SDG draft proposes 17 goals and 169 associated indicators, numbers that balloon in comparison to those found in the MDGs. The MDGs contained only 8 goals and 48 indicators. Both sets are too unwieldy for countries to effectively manage. Even paring down the number of indicators to around 100, as the [Sustainable Development Solutions Network](#) (SDSN) recommends, would still amount to roughly six indicators per goal. Because many indicators apply to more than one Goal, it may be advantageous for negotiators to look for overlap to reduce the number. Goals should be simple, "tweetable" even.

2. Targets must be clearly defined and universal.

The MDGs were primarily targeted at developing countries, whereas the SDGs are meant to apply universally. With the universality requirement, the divide between "developed" and "developing" is eliminated, potentially also eliminating assistance from developed countries to developing countries for meeting or tracking the SDGs. Many developing countries advocate for language that harkens back to the [Principle of Common but Differentiated Responsibilities](#), a concept of international law that is a key tenet of the [UN Framework Convention on Climate Change](#) (UNFCCC).

Many developed countries are opposed. One way to make both sides happy is through tiered targets according to level of economic development, environmental performance, or capacity. Much discussion also centers on whether there should be separate targets for financial support to developing countries, but such mechanisms have been particularly caustic in the UNFCCC negotiations.

3. Goals must also be science-based and measurable.

The SDGs have been criticized for being too political and not [science-based](#). Early drafts of the negotiation text emphasized the need for science-based policy, although specific mention of science-based targets is now excluded. Language for global temperature limits and emission peaks for climate change, for example, has been all but eliminated. This move is reminiscent of the watershed Copenhagen talks in which major emerging economies like China blocked similar language due to uncertainty regarding when emissions would peak.

Part of the problem in adopting these targets is uncertainty with respect to allocation or how responsibility is divided among countries. Should countries who are the greatest contributors to the problem bear the brunt of the responsibility? Should historical considerations be taken into perspective, or the stage of economic development? Leveraging a scientific basis to determine measurable targets is a first step.

4. Aid for data must be increased.

Another challenge faced by the MDGs was the amount of time between data collection and data reporting, in some cases a three-year lag. At minimum, annual reporting must be required, and ideally infrastructure would be instated to support eventual real-time data collection. Countries

face technical and capacity issues with respect to their ability to collect and report data in a timely manner.

International aid towards data collection and reporting remains at less than \$500 million USD per year, representing only a fraction of total development assistance. If the SDGs are expected to involve a '[Data Revolution](#),' more investment needs to be made to increase capacity in countries that suffer from low statistical expertise or limited technical infrastructure.

5. Assemble a more diverse team of actors that can contribute to data.

Multiple and new actors can help move closer to the so-called 'Data Revolution' for the SDGs. As a team of Yale EPI researchers argued earlier this year in [Nature](#), governments are not up to the task of collecting the much-needed data to track progress for the SDGs. Major gaps exist for understanding agricultural impacts on the environment and the sustainability of food production, water quality, species loss - to name a few. The Data Revolution is already happening in the business and tech sectors, so the SDG process needs to open official channels by which these non-state, non-traditional actors can participate.

Data can also be driven from the bottom-up. Already, the UN sourced an impressive number of datapoints globally through its [MyWorld initiative](#) to crowdsource feedback on global SDG priorities. This effort is proof-of-concept that innovative data sourcing techniques exist and can be used. Now is the time to capitalize on these early successes to extend creative data collection to the crowd.

Time is running out for negotiators to frame the SDG targets and indicators in measurable and actionable ways. The early inclusion of data-related discussion in crafting the SDGs is encouraging, however it is not enough. It is critical that the SDGs be tied to a manageable set of simple, specific, and measurable indicators that harness available data-collection technology. Countries must know exactly what to track and be equipped to do so. Negotiators must structure a more equitable and sustainable path towards realizing the SDGs, and in doing so, line it with opportunities to course-correct along the way.

Small Nation Palau Makes Big Waves

By **Amy Weinfurter**, Yale F&ES '15

It's easy to run into questions of scale when thinking about tiny Palau. Like many small island nations, Palau faces environmental burdens beyond its making. A perfect storm of overfishing, pollution, ocean warming, and acidification have put oceans - and the human and ecological communities that depend on them - at unprecedented risk.

To make matters worse, reaching across political boundaries to address the causes of these threats is exceptionally difficult. Solutions that seem like drops in the bucket from a scientific perspective can be enormous asks inside the arena of international environmental policy.

By proposing the world's first National Marine Sanctuary, Palau hopes to narrow this "knowing-doing" gap. In an effort to act despite the international inertia regarding climate change and rapidly dwindling fish stocks, the nation has announced its intention to create the world's first National Marine Sanctuary, which would ban commercial fishing within its [Exclusive Economic Zone](#) (EEZ). The proposed Sanctuary would protect Palau's 1,300 fish and 700 coral species, and ensure that its reefs maintain the ability to support the world's [greatest concentration of coral](#)

[fish and invertebrates](#) per square mile. Since an EEZ encompasses a 200-mile offshore radius, Palau's proposed National Marine Sanctuary would include [230,000 square miles](#), to create a protected area roughly the size of France.

In addition to extending the physical footprint of Palau's marine conservation efforts, the Sanctuary also has the potential to shape [Sustainable Development Goals](#) focused on reversing declines in ocean health. At the September 2014 United Nations Climate



Summit, Palau's President, Tommy Remengesau, Jr., led the Pacific Island Forum in calling for a stand-alone Sustainable Development Goal to protect oceans - and the people who depend on them. Despite Palau's status as a leader in environmental conservation - among other accomplishments, it has created the world's [first shark sanctuary](#), developed a [national framework for community-based conservation](#), and implemented [some of the world's most stringent regulations](#) outlawing bottom trawling - finding the international traction to address climate change and tighten international fishing regulations has proved difficult. During his address to the United Nations this February, Palau's President, Tommy Remengesau, Jr., made this connection explicit, [stating](#) "the ban would last until world leaders 'implement programs to reverse the devastation to our oceans and seas.'"

An evolving economic relationship with the sea may help Palau take this harder line on restricting access to its waters. While cutting ties with industrial fishing operations [could hurt its economy](#), the nation is betting that the benefits of protecting tourism will outweigh the tax losses from a fishing ban. In the [words of Carl Safina](#), the "tuna, sharks, and other fish in Palau are worth much more alive than dead." Tourism supports [56 percent of Palau's gross domestic product](#). Its pristine reefs, Rock Islands, and marine lakes [draw](#) more than 100,000 tourists to the nation each year, providing economic benefits marked enough to change the fate of specific species. A [2011 study](#) found that a live reef shark contributes almost two million dollars to Palau's economy over its average 16-year lifespan. In contrast, the harvest of a shark's fin offers a one-time payment of a few hundred dollars.

A reef shark contributes almost two million dollars to Palau's economy over its average 16-year lifespan.

There has been [some speculation](#) that the ban's most damaging economic losses could take the form of reduced financial support from Japan and the United States. Both nations have provided funding for crucial fisheries data collection, and both currently hold fishing contracts with Palau. Perhaps in an effort to guard against the bind this could create, Palau is turning to funding mechanisms as pioneering as the conservation work it hopes to achieve.

On July 23, Palau became the first nation to launch a campaign on [Indiegogo](#), a crowd-funding platform more synonymous with budding entrepreneurs and independent filmmakers than with environmental public interest goals. [Stand with Palau](#) aims to fund the Sanctuary's monitoring and enforcement activities. Michael K. Dorsey, Interim Director of Energy and Environment at the Joint Center for Political and Economic Studies, notes that this use of social media is groundbreaking in a number of ways. In addition to tapping new revenue streams, the campaign also enables the wider Palau community - people across the world who "applaud Palau's actions" and care deeply about this place - to support the islands'

protection, even if they live miles away. NGOs focused on environmental conservation and visitors eager to preserve the nation's unique natural heritage are among the 420 donors that have helped [Stand with Palau](#) raise \$53,177 of its initial \$100,000 goal.

If the campaign meets this target by its October 14 deadline, it will fund the continued collection of fisheries data collection by local fishermen, who would maintain fishing access under the proposed Sanctuary. "The data is less about the collapse of fisheries - which everyone agrees is happening - and more about monitoring different kinds of ecological responses to the Sanctuary," Dorsey said.

Palau, in other words, would be able to contribute a unique data set about the impact of protected areas, to help guide its own and other marine conservation efforts. The campaign also hopes to generate enough revenue to ensure that eco-tourism remains environmentally sustainable, and to research the use of unmanned technology, such as drones, to monitor illegal fishing in Palau's waters. At the moment, Palau's single patrol boat faces steep odds against preventing illegal harvesting in protected waters; unmanned technology could help level this playing field.

After Palau created the world's first shark sanctuary in 2001, 10 countries established similar reserves, building a 4.9 million square-mile network of protected areas.

The conservation community hopes - and the [tuna industry worries](#) - that National Marine Sanctuaries will have a similar effect in changing the balance of protected ocean territory. After Palau created the world's first shark sanctuary in 2001, [10 countries established similar reserves](#), building a 4.9 million square-mile network of protected areas that safeguard sharks and other marine life. If enough nations follow suit again, Palau's sanctuary could trigger an even more extensive network of protected areas. Since EEZs extend 200 miles out from a nation's coastline, even the participation of a few small island nations could create vast new stretches of reserves.

Given the implications of effective protected areas, the Sanctuary's potential "domino effect" has generated almost as much excitement and speculation as the reserve itself. Fisheries sit on the edge of a frightening precipice: 87 percent of global stocks are [fully- or over-exploited](#). Protected areas cover [just over 2 percent](#) of the world's oceans, despite an international goal of 10 percent. The [Yale Center for Environmental Law & Policy's 2014 Environmental Performance Index \(EPI\) found that only 2 percent](#) of the 178 countries it researched met goals for reducing the intensity of gear used to harvest fish off the coastal shelf. Due in part to a lack of reliable data and monitoring from countries, [none of the 178 nations the EPI considered met the report's targets](#) for sustainably managing fish stocks.

Perhaps more discouragingly, protected areas do not always deliver better outcomes than unprotected ones. A recent study found that marine protected areas "often fail to reach their full potential," due to illegal or detrimental harvesting, or to the migration of marine life outside of reserve boundaries. Successful protected areas shared five distinguishing characteristics: a strict - and strictly-enforced - no-take policy; a large area, spanning at least 100 square kilometers; isolating features, such as deep water or sand buffers; and an age of at least 10 years. Fifty-nine percent of the protected areas the study surveyed lacked most of these characteristics, and "were not ecologically distinguishable from fished

sites."

Despite the many challenges facing the establishment of protected areas, [when done right](#), they make a real difference. Successfully conserved areas produce [significantly more](#) large fish species and biomass than fished areas. By enabling exhausted fisheries to recover, they also generate healthy fish that "spill over" into fished zones, supporting the long-term interests of the fishing industry.

While Palau's future still hangs in the balance of forces outside of its control, its bold vision of a National Marine Sanctuary has the potential to spark real progress towards fisheries recovery. The proposed reserve's large size and Palau's track record in ocean conservation all bode well for its success. However, while the Sanctuary allows Palau a new degree of leverage in discussions on fishing takes and practices, some realities of scale remain. Enforcing a fishing ban across such an ambitious area poses a daunting challenge for a small island nation. Palau's bold conservation model both works around the slow pace of international policy, and demonstrates the need to galvanize these discussions to achieve larger ocean conservation goals.