



Transcript of the Tyler Prize Lecture and Q&A

Watch the event on June 3rd 2021: https://youtu.be/2b7wWZI_UM8



Laureate Lecture of Prof. Gretchen Daily, Tyler Prize Winner 2020:

Thank you so much. We're all here together to talk about the revolution that we've been dreaming of driving, working to drive across our lives. I'm happy to report basically tremendous progress even in the face of the terrible times we're living thinking about the pandemic, the climate extremes, the tremendous social challenges, and other problems that beset us here in the United States and globally. But basically, at the same time, there's an emerging transformation, one that brings me and many others great hope that we will bring our better selves to the cause to arrest the problems in time and to achieve the outcomes that we all hope for people and the planet.

So the core of this is to recognize first off that people are an intimate part of nature from when we wake up in the early morning hearing the bird song, drinking coffee and recognizing that it was little wild bees from the rain forest that came out and pollinated that coffee and made its quality and abundance possible, to turning on the tap and recognizing how much its forests and wetlands that made the flow of that pure and safe drinking water possible. In all of these ways, we're deeply connected to nature, and more and more, we're seeing these connections reflected in policies, in finance, in actual day-to-day decision-making.

One of the ways in which this is most powerfully being driven is through three basic steps. The first is demonstrations, bringing leaders together from communities all over the world in many different sectors, whether it's in agriculture and rural landscapes on which all of our lives depend intimately, or in the heart of cities where people are planning where the next development's going to go. These innovative partnerships between researchers and those trying to embed the values of nature into decisions are yielding second to very systematic way of going about this that's now embedded in software.

"We need standards, we need sort of table manners around the great buffet that is nature"



It sounds like maybe just a Silicon Valley approach, putting into software and data what we need, and yet this is a way of becoming ever more systematic about it and bringing in in an open source way contributions from thousands of scientists. We're now seeing more and more. Through this software, we can identify where and how to transform and how to align livelihoods with this integration of nature's values into all that we do. We're now in the third step beginning to see standards emerge, from first the demonstrations, second to embedding all of this into software enabling others to adapt and adopt the approaches. And now third given that we all live in an evermore interconnected way across the planet with so much of what we do completely dependent on what others in other parts of the world are doing.

We need standards, we need sort of table manners around the great buffet that is nature feeding us, and we need an agreement on how we're going to sit politely at the table and share and protect and restore all that nature has given us. So these standards are reflected in one of the most exciting recent changes was by the United Nations Statistical Commission in March of 2021 blessing a new metric that has been co-developed, led by China, but ready for implementation across the world.

It's called Gross Ecosystem Product, and it's alongside gross domestic product, a way of accounting for all of the benefits that come from nature, who receives those benefits, and how to ensure their continued supply. So this is now being scaled along with many other dimensions of that three-step pathway from demonstrations to software and tools, making them accessible and actionable globally, through to standards. This is all being scaled thanks to the major development banks. These are entities like the Inter-American Development Bank serving Latin-America and the Caribbean, the Asian Development Bank serving countries across Asia, and the World Bank serving countries globally.

All are aiming to mainstream the values of nature into all of their activities and together they account for investments of about \$100 billion per year through different loans and other mechanisms around the world. They're meant to drive human development and basically drive a change in how we think about development and what human development really needs to be in the century ahead. So with all of this, we're now at the cusp where Pavan really needs to pick up and is picking up in a tremendous way of bringing the private sector into this. We have a lot of public-facing governments, central banks, development banks, and many other institutions society-wide coming together around these standards and this way of approaching our problems.

But we need much more private sector involvement, and I'm thrilled to turn over to Pavan in helping to explain where things stand, illuminate the hope for us, and a clear path forward. Thank you.



Laureate Lecture of Pavan Sukhdev, Tyler Prize winner 2020:



Thank you, Gretchen. Indeed, that's what I'd like to talk about, how the private sector can recognize the value of nature, unwinding economics' most dismal failure. This is about valuation. Valuation is a human institution and a habit of human nature. As Professor David Pierce used to say, "It can be explicit or implicit, but it cannot fail to happen at all." As humans, we recognize nature's values intuitively as individuals and communities and we've done so for centuries. When Yellowstone was declared a national park in 1872, there was no economic valuation that was needed. President Grant just decreed it so as American heritage in the interest of posterity.

Then secondly, we often demonstrate these values in economic terms, in the accounts of society for example, as natural capital

adjustments using the recently announced United Nations System of Environmental and Economic Accounts. Or we can express them in the impacts of business through environmental profit and loss accounts as Puma did, or as integrated profit and loss accounts as was done by Sveaskog, Sweden's largest forestry company, or Yarra Valley Water, Melbourne's water utility. We can also demonstrate this in policy decisions as Kampala City did by leaving its Nakivubo Swamp undammed because these wetlands had demonstratively larger economic value as a natural sewage treatment plant for the city than by damming them up.

Sometimes, finally, we can also capture these values of nature through policies and mechanisms and markets, national policies such as Costa Rica's payments for ecosystem services to cattle ranchers based on the acres that they conserve, or local policies such as New York's agreement with farmers in the Catskills to keep their aquifers unpolluted in order to provide water for city residents, and finally in business decisions such as reforestation funded by the shipping industry alongside the Panama Canal to prevent excessive siltation of the canal, in other words, to avoid higher insurance premiums.

We need to recognize that environmental impacts arise from human economic activity through various major drivers; greenhouse gas emissions of business, waste generated, pollution and our use of land and the oceans.

"I believe that economics' most dismal failure is that it fails to recognize ... private sector externalities."



And in today's largely free market economy, with two thirds of the economy being private sector in terms of gross value added or jobs, the drivers of most of these environmental impacts are actually the private sector.

I believe that economics' most dismal failure is that it fails to recognize or to measure or to value or to provide any mechanisms to manage private sector externalities. What are these externalities?

They are basically impacts. They are third-party costs of doing business which are simply not accounted for by the parties conducting their business. For example, an automaker makes profits by making and selling cars and its customers enjoy the utility of the car that they've purchased. Both are happy. However, neither of them have accounted for the air pollution from the car which has caused respiratory diseases to some pedestrians or the greenhouse gas emissions of the car which has contributed to climate change costs such as the destruction caused by increased storms and cyclones and sea level rise.

These externalities of the private sector have grown by leaps and bounds and they are now estimated to cost society over \$11 trillion annually.

That's about 15% of the global gross domestic product. These externalities are there for undoubtedly the biggest free lunch in the history of the universe. But can any free lunch last forever? Is it actually possible to escape internalization of externalities? I don't think so. Today's externalities are tomorrow's risks and the day after tomorrow's losses, and the community that understands this reality perhaps the sharpest and the best and the most painfully is the investor community.

They fear the internalization of externalities. They know that the negative externalities of the corporate sector are the hidden negative alpha of major investment portfolios. Asset owners, be they family offices or insurers or pension funds or indeed sovereign wealth funds, do know that the interest of stakeholders has to be considered alongside the interest of shareholders not just because that's the right ethical choice, but because it's the right risk management choice as well. Asset managers, be they large or small, are under increasing pressure from asset owners to recognize, measure, and manage their portfolios impacts on society, not only their portfolios returns on capital invested.

Asset managers may also decide to use one of several hundred ESG rating methodologies that have been evolved so far. But as the Harvard Business School has recently pointed out, ESG ratings don't measure impacts, only impact valuation does, and it is a relatively new science. So the question that springs to mind is, how prepared is the investor community today across asset managers and portfolio managers and asset owners to use impact valuation as their new sustainability yardstick? I believe they're ready. I see today a veritable tsunami of interest from asset managers to quantify and track and measure and value the impact of their portfolios on societies. In other words, their portfolios externalities.



In doing so, I believe these investors are moving to a new world and indeed to a new modern portfolio theory in which they not only measure risk and return, but also the quality in terms of sustainability of their portfolios. In doing so, they are sparking the next big transformation, that's society's transition from the old, unsustainable world of shareholder capitalism to the brave new world of stakeholder capitalism.

Truly therefore, the key to unwinding economics' most dismal failure is to reprogram economics to be able to recognize, measure, value, and manage private sector externalities.

Jayde Lovell (Host):

Wow, Pavan. Thank you so much for that great rethink of our economic system. I hope that there's a lot of investors out there taking notes. We're now going to start with our Q&A discussion, so if you haven't already contributed your questions, please do so here on YouTube in the comments section or by tagging us on Twitter @TylerPrize. Now, if our laureates don't get to answer your questions during this discussion today, don't worry, they'll be answering throughout the week on our social media. So please make sure you're following us on Facebook, Instagram, and Twitter so that you don't miss out on those answers.

To kick off our Q&A, I'll hand over to Julia Marton-Lefèvre, chair of the Tyler Prize for Environmental Achievement to ask the first question. Are you there, Julia?

Julia Marton-Lefèvre, Chair, Tyler Prize:

Yes, I'm here, Jayde. So, the first question is a great one. It simply asks, "It seems to me that what you're suggesting is so obvious. So what are the obstacles? Why doesn't everyone agree with what you're saying?"

Pavan Sukhdev, Tyler Prize winner 2020:

Yeah, Julia you're right. It is obvious. But let me try and address your question, which is... Actually, the answer differs depending on whether you're an investor or a corporation or a policymaker. I think investors get it and they want to move in this direction. Their problem is just lack of information and data.

In the case of the corporations, I'm sorry to say, it's a free lunch, right? Why wouldn't you keep enjoying your free lunch unless it stops? So we need to think of the policy levers, the incentives, the disincentives, and finally public pressure from everyone in order to make change of behavior happen, in order to make sure that externalities are recognized in the way that business plans are drawn up, business investments made. So there's work to do out there.

And finally, policymakers. ***I mean, honestly, I am a little disappointed. It's not surprising that policymakers are weak-willed and they lack the guts and gumption to do the right thing. It is a bit disappointing though.***



Prof. Gretchen Daily, Tyler Prize Winner 2020:

A final key point here is there's a lot of skepticism when the wealthy countries in the world are not doing this themselves and instead are maintaining so many aspects of their economic and other levels of wellbeing at the expense of others.

"We cannot continue on the current trajectory towards all of the planetary boundaries hitting one after the other in disastrous succession."

Jayde Lovell (Host):

"It sometimes feels like corporations only take action when enough scrutiny is placed on them. And even then, they tend to only do the minimum. So do you think it's really possible for us to switch from a model of shareholder capitalism to stakeholder capitalism?"

Prof. Gretchen Daily, Tyler Prize Winner 2020:

The way corporations are structured today makes me fear that they'll never really change, that they'll always be focused on profits first. If corporations don't change, we're all in for one hell of a time.

So, Pavan, help us out here.

Pavan Sukhdev, Tyler Prize winner 2020:

I completely agree with Gretchen. I mean, yes, we have to change, there is not a choice. We cannot continue on the current trajectory towards all of the planetary boundaries hitting one after the other in disastrous succession. That can't be the way forward for humanity or indeed for other life on this planet. We need to recognize the reality that we have willingly adopted an economic system which has defects, it doesn't measure or value externality, and we need to fix those defects. So I think the time for action is now.

Julia Marton-Lefèvre, Chair, Tyler Prize:

Here's an interesting one. "Some in the conservation space have said your approach is commodifying nature. How would you respond?"

Pavan Sukhdev, Tyler Prize winner 2020:

I think there is a misunderstanding here which I'd like to clarify.

We are not commodifying nature. The difference between what we are recommending, which is valuation and pricing and marketization and modification, there's a huge difference, right? Value, valuation, is about

valuing what you receive, price is what you pay. When it comes to nature, she provides most of our gifts to us for free. So we are receiving these gifts for free, and because we don't value them, we end up destroying them and that doesn't help anybody or anything.



Prof. Gretchen Daily, Tyler Prize Winner 2020:

The real problem that we face today is that nature is not accounted for anywhere in decision-making. It's basically a zero. And saying that nature is infinitely valuable, however much and however many of us might hold that view, that's not a pragmatic way to help in decision-making.

Nature's being destroyed at an evermore rapid rate and we need to come together in an agreed way to bring at least the lower bound values of nature in decision-making for things that we all hold dear, which include clean water, protection from flooding, a stable climate, and a bright future for our children.

Pavan Sukhdev, Tyler Prize winner 2020:

And remember, the challenge of working in an existing system without valuation and without an appropriate recognition and demonstration and capture of these values of nature has been the destruction that you've seen for decades on end.

We've tried everything else. We've tried appeals to the heart, we've tried arguing with policymakers, but what perhaps needs to be tried is using the toolkit of valuation.

Jayde Lovell (Host):

This next question is actually a comment from one of your fellow Tyler Prize laureates, Dr. Paul Ehrlich, who said, "We don't need to know a single additional thing on the scientific front to know what direction we ought to be heading." So my question is, do you think that we should be redirecting our resources away from more research and towards more action?

Pavan Sukhdev, Tyler Prize winner 2020:

Well, Paul is right. ***There is enough information, there is enough research, there's enough knowledge. What there isn't is action***, and the reasons for that are many. Some are to do with a lack of will, lack of public understanding of the issues, and some are to do with the mechanics of measuring and valuing externalities. And I would say Gretchen and I think that if we can move in this direction, which is about engaging the private sector from the investor side and then also engaging the private sector from the corporate side, the buy side and the sell side together, these engagements can actually change the tenor of the conversation.

Prof. Gretchen Daily, Tyler Prize Winner 2020:

I couldn't agree more. This is a time to move way beyond more research and into ever more impactful ways of engaging in how we develop the research, engaging with the people who would actually use it so that it's

"We don't need to know a single additional thing on the scientific front to know what direction we ought to be heading."



designed in a way to be maximally effective and impactful. And I couldn't agree more that the action, the real action ahead, is mostly on the social side.

Jayde Lovell (Host):

Speaking of action and making change, here's a question for Pavan. Pavan, "Do you know if economic students today are still being taught to use externalities to write off the damage that corporations are doing?"

Pavan Sukhdev, Tyler Prize winner 2020:

Well, I think externalities typically come up in chapter 11 of the 12th chapter of economics textbook. So the level of importance that the subject deserves, it does not get, right? The teaching of externalities and how to measure them, how to value them, how to manage them, and what it means for policy makers and administrators and businesses, and indeed the common people, ***this should be part of every economics course. Unfortunately, it is not, and I think that's a huge failing of the educational institutions of our time.*** They should correct this failing yesterday.

Julia Marton-Lefèvre, Chair, Tyler Prize:

Here's a question from one of our former Tyler Prize laureates, Jane Goodall, who I think everybody on the planet knows.

Dr Jane Goodall, Tyler Prize winner 1997:

How do we address the disparity between the rich and the poor? How do we make an even playing field so that we actually can move towards a more sustainable future?

Pavan Sukhdev, Tyler Prize winner 2020:

I'm fond of saying that:

to make poverty history, you need to make nature the future.

But let me explain a couple of examples of what I mean by that. Firstly, when we look at the dependency of poor, stressed communities living in fertile lands and we see how much they depend on nature, we need to recognize that nature is actually a very large part of the GDP of the poor as I call it. So if we want to support them, if we want to improve their agricultural practices, we want to improve their livelihoods and reduce their dependency on local forest for fuel wood and reduce their dependency on local nature for their survival, we need to help them be more productive in a sustainable way, which means sustainable agriculture.

Out of the billion-odd people who are small holder farmers, the majority are actually in small holder situations where they have small lots and we need to make those small lot holders able to have higher resilience against the vicissitudes of climate change, we need to give them the support they need to make their model sustainable, and we need to give them fair pricing. So these are the things that we need to do for the poor to bring them up the curve of wealth and to enable them to enjoy and benefit from what society can offer.



Jayde Lovell (Host):

We have another question from one of your fellow Tyler Prize laureate, Dr. Michael Mann. And he asks a really tricky one, which is, “It’s easy for us to all be having these philosophical discussions, but what hard policy changes do we need to make right now in order to make a tangible difference?”

Pavan Sukhdev, Tyler Prize winner 2020:

That’s a great question, Dr. Mann, because hard policy changes are exactly what we need. Firstly, by recognizing and communicating through public interests advertising the risks of pursuing today’s economic direction to oblivion, right? Now, ***COVID sadly, tragically gives us an opportunity to talk about the reality that the genesis of this is our inability to live in harmony with nature. We enable due to the destruction of nature, due to the ingress of natural systems into human systems, we enable the virus to propagate that has destroyed almost two million lives.*** So we should talk about that.

We should talk about the fact that storms and cyclones, floods and droughts are destroying at an ever-increasing rate farm productivity and properties along coastlines. This should be communicated. This messaging needs to take place through public interest advertising funded by governments. I think that’s policy change number one.

Prof. Gretchen Daily, Tyler Prize Winner 2020:

I think in driving these approaches forward on the scale required and at the pace required, the biggest challenge really will be in trust.

What would help drive things successfully, creating that trust, I think is to have very successful demonstrations that engage as key partners, players that could also engage much more widely.

Pavan Sukhdev, Tyler Prize winner 2020:

Today, we are far too focused on trying to tax the “goods”, if you like; profits, ingenuity profits, corporation tax, right? Hard work, salaries, income tax. We are far too focused on taxing the goods and not enough on taxing the bads. So why can’t we recognize that as the economy becomes more challenged, you can see what’s going on, the pie is shrinking for us to be able to increase corporation tax, politically unacceptable, or increase income tax, right? So we need to look at other ways of adding fiscal balance, and those other ways are effectively resource taxation.

When we do that, ***when we start taxing the bads and not taxing the goods, we will actually be addressing the problem of externalities by pushing economics in the direction of reducing those externalities,*** reducing those third-party costs.



Jayde Lovell (Host):

That's given us some heavy information to think about, but I want to switch now to some positive news. "Can you give us some examples of the most tangible, positive success stories that you've seen and what you think it might take to scale up these success stories?"

Prof. Gretchen Daily, Tyler Prize Winner 2020:

The one that stands out for me is just in zoning land. This sounds so obvious and we're used to zoning land for lots of different reasons. Today, many countries are picking up on land zoning for nature, for human wellbeing, and we're seeing this being done to secure drinking water supplies for major cities. Over 50 cities in Latin America have now zoned land in the upper reaches of their watersheds to maintain a steady, reliable flow of clean and healthy drinking water. We're also seeing it on coastlines where people, all the communities living on coastlines are zoning land for protection from floods and sea level rise and storm surges.

"Number one, there's a role for everyone, and number two, bringing your energy and heart to this cause can only do good."

In both of those examples, people are being paid. There are real finance mechanisms enabling this zoning and aligning livelihoods of people who live in those places with the production of these benefits that everybody's counting on.

Pavan Sukhdev, Tyler Prize Winner 2020:

Absolutely. I think payments for ecosystem services of the kind that you described, zoning as a device, as a mechanism, these are all great initiatives. But I think the other side of the coin needs to be addressed, which is, today, we have so much money being invested in and spent on environmentally and socially destructive policies and initiatives. Why do we have \$300 billion of subsidies basically for farming which causes the health problems of today? Why do we have \$35 billion of subsidies for unsustainable fishing?

I think we need to start declaring what these subsidies are which are actually pushing the economy in the wrong direction, disclosing them, and talking about them, making them the topic of public interest that they need to be, because this is destroying our future generations.

Julia Marton-Lefèvre, Chair, Tyler Prize:

"Do you have final words for those individuals at home who are watching us who might want to help find those solutions?"

Prof. Gretchen Daily, Tyler Prize Winner 2020:

As an individual, it's really hard to know what to do sometimes. I would say, number one, there's a role for everyone, and number two, bringing your energy and heart to this cause can only do good.



Pavan Sukhdev, Tyler Prize Winner 2020:

If you look at greenhouse gas emissions, people think farms contribute 23%, but if you look at food systems all the way from the forests that are destroyed to create the space to grow the corn or the soya to feed the beef, more forest clearance to feed the people, if you account for all of that and the waste and the emissions of transportation across continents, that's almost half the greenhouse gas emissions of this planet. What can we do to tackle food systems? What can you do to tackle food systems? Buy smart, buy food which has low footprint, by local, by food which does not have huge pesticide and fertilizer input because that's one of the ways in which you can improve your own health.

The Global Nutrition Report in 2016 said that

our diets have become the number one burden of disease. That's saying something, that's what we eat is causing our ill health more than anything else in the world

and the cost of that ill health. So I think what we eat, how we eat, where we buy from, buy local, buy organic if it's available, by natural if that's available, and steer the demand pressures on this economic system called food systems. I think that's something that all of us can do as individuals, contribute in the right direction for society and for the poor farmers as well.

Prof. Gretchen Daily, Tyler Prize Winner 2020:

There's always a worry that there'll be winners and losers. The challenge for us is to find some way of forging a win-win path.

Jayde Lovell (Host):

Well, thank you for what's been a very vigorous discussion. But that's all we have time for for today. Thank you so much to our two laureates, Gretchen and Pavan. I know that there was a few questions in the comment section that weren't quite answered today, but our laureates will be answering them after the show and we'll be releasing those answers on our Tyler Prize Instagram, Facebook, and on Twitter throughout the week. So don't forget to follow us on those social media platforms. But for now, I'll hand back over to you, Julia.

Julia Marton-Lefèvre, Chair, Tyler Prize:

So now the call for nominations for the 2022 Tyler Prize is open and on our website. The Tyler Prize executive committee welcomes nominations from all parts of the world.

Jayde Lovell (Host):

A huge thank you to our promotional partners, all of whom are working towards our common goal of valuing natural capital. We invite you to share this conversation with any who you think might be interested and also check out our educational resources on our website, tylerprize.org. Thank you so much for joining us today.