



## Stanford eCorner

### Effective Models for Sustainable Growth [Entire Talk]

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In this informative lecture, Conservation International Executive Vice President Jennifer Morris shares her organization's commitment to creating programs to support sustainable development. Morris articulates the importance of developing innovative financing and business models to address ecosystem services and resource management issues. She also describes the entrepreneurial initiatives her organization has built to sustain partnerships between corporate partners and local communities around the globe.



#### Transcript

Let's welcome a graduate of Emory University and Columbia University. Let's welcome her to Stanford University - Jennifer Morris. Thank you so much. I'm really happy to be here today and I'm honored to be taking off your Spring Series here at Stanford. As Tom said, my name is Jennifer Morris and I do work in Washington DC. However, I'm living in a place that is sometimes not considered very entrepreneurial. I like to get out into the world and as Tom mentioned, we have offices all over the world. I did just arrive from Singapore late last night. So if I start to fade, my time clock is telling me that it's the middle of the night right now so I've asked you to please throw some water on me during the presentation if I start to sort of fail in a bit. But I'm here to talk to you about Conservation International and the interesting work that we do around the world.

And I'm really looking forward to engaging you in a conversation about CI and about a new area that you may and may not have heard of called ecosystem services. Ecosystem services are relatively new concept, in terms of thinking in the United States and in Europe and other countries, about how we can monetize nature. How can we actually bring in the market principles to nature other than just thinking about nature as something that we need to take and exploit. So I'm going to talk a little bit about ecosystem services and ecosystem service markets, and also some interesting entrepreneurs in this space, both government and companies. And as well to encourage all of you, who are thinking about your future careers, to get involved in this very exciting area of ecosystem service market development. But first I want to tell you a story about how I got involved in conservation. Quick geography test, does anybody know where this tree is from? Any guesses? Yes, in the back? Africa. Senegal. Senegal. Close, right continent.

Anyone else? This is a tree from Namibia. It's actually quite a... Did you know that? It's quite a unique tree and I'm not surprised you didn't get it but it is a tree that's endemic to the country of Namibia. And this is where I started my journey to conservation. After I graduated from college, I spent a year in Japan teaching and I decided that I wanted to go into public health. And I also was very interested in Africa. So I went to the country of Namibia and was a volunteer with the program through Harvard called WorldTeach. I lived in a little community next to a clinic and spent my weeks teaching women English. Namibia just become independent from South Africa and English was now becoming very common and all the women who hadn't had access to formal education English were anxious to study the new language of freedom, really, of Namibia. So I went there thinking I was going to go into public health.

So I spent my weekends... Teaching during the week and my weekends are spent in the villages with mostly women and their families. And we spent probably about 90% of our time collecting water and collecting firewood because in countries like

Namibia and many others throughout the world, there's no access to electricity. There's no access to water unless you actually go out and fetch it. And of course, wood is really critical for cooking in these communities. These people living in this area which is an increasingly arid area of the world... It's very arid already but because of deforestation, these resources are becoming harder and harder to find. So these women, instead of going to school or working, were spending most of their time actually just collecting basic natural resources for their survival. In addition to that, when they're out in these places collecting firewood and water, they're subject to malaria. There were a lot of malaria in this area but when they're out deep into the woods collecting water and firewood, they're more prevalent to disease.

This whole community that I was living in had a lot of diseases which were really natural resource related. So I started thinking about my career path and said, "You know, I'm actually really interested in the drivers of poverty and the drivers of health issues which really were related to natural resource deprivation." So I decided to change my career path and instead, think about the intersections between human developments, especially related to women's issues when women are not able to take advantage of educational opportunities because they're spending all their time just trying to find fuel wood and water to support their families. So this sort of interconnection between natural resources, poverty and development became very important to me and lead me, then, to Conservation International. After I went back to school and to Columbia and studied Business and Economics and then found my way to CI. As Tom mentioned, CI, many of you may not know our name. We are based in Washington DC but we do have offices throughout the world and we're working indirectly in 30 countries but are actually through partnerships. Partnerships are really critical part of CI in over 60. We do have 800, and just under 900, total staff. And I should mention that a big thing that I think differentiates us a bit from other non-profit organizations based in the US is that we're really focused on not going into in another country, a developing country, and saying "This is what you should do for conservation and development," but really having those answers and those solutions come from local people themselves. So about 98% of our staff are actually from the countries in which we're working so that we ensure that it's all about local solutions and local leadership.

So the leaders that we have all around the world, across the world, really are entrepreneurs in the environmental world. Let me tell you a little bit about Conservation International's approach. Science is the pillar of our success and our focus. We are very committed to creating and developing scientific solutions to some of nature's problems. And this is a key cornerstone of our credibility and how we can walk in to the president of Guyana, for example, and sit down with him and show him the science, the maps behind ecosystem services and how important it is to conserve these things. In addition, field demonstration. If you can't see it, it's very difficult to explain it and to demonstrate the importance of what we're trying to do. So in all the places where we work, either ourselves or through partners, it's all about demonstrating success through entrepreneurial solutions to the world's problems. Partnerships, critical. The problem of environmental degradation is way too big for one organization obviously.

So we have a very strong focus on partnerships. In fact, about 30% of our annual budget is actually going directly to provide financing, either in the forms of grants or in loans, but primarily grants, to partner organizations-other non-profit organizations worldwide. Policy. In order to be credible and to really achieve scale, we have to address policy issues. So whether it's the International Climate Convention that we're actively participating in or working with national governments or regional governments, policy is a critical piece of the puzzle that we're trying to address. And then, finally, this is our whole objective. It's not to stop development, of course. Our whole objective is to create a more sustainable future for the planet, so to achieve enduring economies or green economies. Those economies that can really achieve success, both growth, but have growth in a sustainable fashion. So that's what CI is all about now, is really this focus on enduring economy.

It's not about just protection. It's about growth with sustainability. So I want to talk about this whole area of what we call ecosystem services. Does everybody heard this term before? Some yes, some not. Yes. So ecosystem services are basically those services that our planet provides that are critical not only for the planet's functioning but also for humans. So things like water. Things like carbon and climate. Things like food and health are really critical aspects of our society which you sometimes think about, the things that nature provides. So let me give you a couple of examples of ecosystem services that sometimes are talked about but what the whole movement is trying to do now is actually quantify ecosystem services.

So not just say, "Oh, yeah, water's important. We need to have fresh water." But what does that mean in dollar terms? And in terms of pollination, this is one that I find particularly interesting that pollination, meaning that the natural pollinators-the insects, birds, etcetera-are measured to achieve about a \$190 billion a year in value to agriculture. OK, so that's just the insect pollinators that those agricultural crops could not do well without those natural pollinators. So the importance of those pollinators for agriculture is critical. So we need to think about how to preserve them. Medicines. Probably most of you know that a lot of our pharmaceutical drugs come specifically from naturally-derived genetic resources. But it's very significant, not only in dollar terms as you see there, but also 80% to 85% of all pharmaceutical drugs on the market come from actual, originate from a natural plant, primarily plants. So this is very, very significant. We have to think about these things and be able to measure them to appreciate them.

So this goes to my next point which is accounting for nature. So those are two examples where I think we've been able to develop some actual dollar terms behind the importance of nature. But there are other things that, now, many countries are saying, "We should not just be looking at gross domestic products. Shall we not be changing the way we think about measuring the products and services that a country provides and develop something called green GDP?" Or a GDP which actually can measure in value things like water, things like pollinators, I already mentioned. Those types of ... And also, the carbon that's stored in forest, which I'll talk a lot about today. If we can't actually measure it, these things often won't be valued because people just assume that they're there. But if you can't really quantify it and bring in what we call those externalities into our accounting system, it's going to be very difficult to measure and to then ultimately value these things. So there are several new things that are happening in this space where countries and companies are starting to try to bring in the value of externalities on to their own balance sheets, whether they're GDPs or the balance sheets or companies. And we'll see where this goes.

There's a very new venture space but a really critical first step to go from good accounting to then actually to markets. So what we really need is a complete market transformation. How are we able to bring in these externalities? And it's not just about the costs of inputs that are increasing as resources decline but really, how do we incorporate all of those provisioning services into the markets and how we think about goods and services. So there are some markets that have developed. There's carbon market, there's a water market, and I'll talk a little bit about that, whether or not it's a true market yet. But what is the demand right now of these? When I said talk a little bit about carbon, I'm sure many of you are familiar with the carbon market, has a lot of press here in California in particular. But I want to show you the statistics because it relates directly to the development of an area called forest carbon. So in terms of our global emissions, many people don't know this, but deforestation, actually when the trees are cut and carbon is released into the atmosphere, the annual emissions from deforestation alone is more than two times the total emissions from all cars, trucks, planes combined. So just think about around the world. That's almost 16% of total emissions.

All around the world, in places, in particular like Indonesia and Brazil which represents the majority emissions from deforestation. In fact, Indonesia alone, 80% of their emissions are from deforestation, only from deforestation. So imagine that the magnitude of this problem continues to be incredibly significant. However, there are some interesting new opportunities in terms of markets. And the area that CI is particularly engaged with is an area called forest carbon. So how do we monetize, again thinking about new markets, how do we monetize something that we can't see, something that has never tried to be valued before. How can we monetize this? There's a whole area, a new area, of development called forest carbon. It's very much in the venture space but there is some very exciting opportunities here. Right now, you look at the whole carbon market. So this is the market that trades what are called CDN's or verified emissions reductions which is under Kyoto Protocol.

It's about a \$15 billion market. Out of that entire piece, less than 1% is related to forest carbon or land use. So this is the situation today. Still a very small piece of the pie and there are many reasons for that which I'll explain. But what we want to see in the future, if you look at the market projections, up to 2020, it's a \$150 billion in projected size of the carbon market. OK, so the traditional carbon market in terms of trade is basically a, let's say a factory in China or India, switches its technology to lower carbon technology, there's a credit that's created from doing that and under a cap and trade system, there can be buying and selling between companies for those that have more than they need to those that have less a need to buy a carbon on the market. So right now, if you're thinking into the future by 2020, \$150 billion is the pie. And with some changes and some entrepreneurial thought in this space, we're hoping that it can get up to \$30 billion. That's the potential of the trade for forest. But there are some challenges and some opportunities.

So the challenges are, that apparently, there's no global, regulatory framework for forest carbon or what we call reduced emissions from deforestation degradation or REDD. Kyoto hasn't approved it yet. So this regulation is not confirmed in the market place. However, we do have a shining light and example, subnational, in the California case of a cap and trade system that was passed. As you probably may all be familiar with AB 32 as passed. So allowing utility companies, other companies, to try to cut their emissions as much as they can and that which can't. They can't reach the goals that they're trying to achieve, they can actually trade purchased carbon to achieve their emissions reduction goals. For the first time ever, this AB 32 allows for carbon offsets. Carbon offsets from forests, so forest carbon offsets. And this is the first time we can have a regulatory market for forest carbon which is incredibly exciting.

So the market potential is a billion dollars. However, there are some serious challenges with trying to monetize this asset. And I wanted to bring this up to you today because all of you in this room have the potential to be incredible entrepreneurs and help us think through these challenges and really work it to monetize this critical asset. One issue is, of course, regulation. We need to go beyond California to really have a huge market for this. So we need an international regulatory framework that will allow for forest carbon offsets or there won't be the huge incentive for companies to use forest carbon as a credible mechanism for offsetting their emissions. Carbon tenure. So most of you probably know that land tenure in many countries is very different from United States where land tenure, rights to land, ownership of land is often unclear. Well, the same goes by extension to carbon. We don't know who owns the land.

We often don't know who owns the carbon. It's very difficult to monetize an asset if you don't have an owner or the ownership is a little bit unclear, very unclear in many cases. So this has been a huge challenge. How do you establish carbon tenure in these projects? Who owns the carbon? Addition, financing. The financial flows from forest carbon are very lumpy. You need a lot of money upfront to actually get the project up and going. And once you have that finance and can actually monetize the asset then it becomes a little bit easier. But start-up finance has been a critical challenge for a lot of these projects. But there are some entrepreneurs in this space. Companies like Disney, Walt Disney Company.

So Walt Disney is a corporate partner of Conservation International and they came to us and made a corporate commitment a few years ago saying, "We want to get to zero waste and zero emissions. We want to stop emitting as much as we can and have zero net carbon emissions." For any of you who have been to a Disney Park, you can understand how challenging that would be in terms of all the products and services and mouseketeer hats and castles and everything that Disney produces that creates a lot of carbon. So they realize that they need to offset their carbon and had come to us and said, "Can we work on a forest carbon offset program with you?" We understand that currently we can't trade this credit. But again, Disney being an entrepreneur and a first mover company had said that, "In the event that we may be forced to regulate, we want to participate in the voluntary market space, forest carbon market space." So we said, "OK, we'll work with you on that." We're working with them on developing two projects. One in Peru and one in the Democratic Republic of Congo. Not so easy places, especially in Democratic Republic of Congo where land tenure and carbon tenure are very challenging to establish. And this isn't just at DRC, this is in Eastern DRC. So if you know anything about the history of eastern DRC, history and present, there's a lot of conflict in that region. But we like challenges. So we are now working with Disney on helping them to monetize 900,000 tons of carbon that they can then claim only as a voluntary credit right now.

So this was very exciting because it was the largest forest carbon partnership deal that's ever been done with \$7 million, 900,000 tons which we will deliver to them in 2014 working with our partners and communities on the ground. So there is hope. We need entrepreneurs in this space. We need first movers companies who will recognize that yes, okay, it's not regulated yet that we can use forest carbon to trade, but it could be in the future. And besides, it's just a really good thing to do. But it's not just about CSR. This is really beyond philanthropy because Disney realizes this is good for its business. Now, I want to turn to water "markets." Speaking of water, can we have some? So I put markets in quotes because carbon evolving market, water... Well, you be the judge. I'll tell you a little, some stories about the water markets.

There are a lot of issues around waters. It's not the same as carbon, which is a global commodity which doesn't really. It's no different if it's carbon from Guyana in South America to a piece of carbon or a ton of carbon from DRC, for example. Water's a little bit different, more localized, a little bit more challenging. I want to talk a little bit about watershed service transactions. So those watershed services and water payments that are directly related to conservation or forest protection of key watersheds. And that's obviously the space of the market that CI is very interested in, which is different from say wetlands banking or other types of water trading which is more common in the United States. We're really providing financial incentives to people who manage land to protect their watershed. So this is really important for a variety of different reasons, from businesses to community's access to not only fresh water but also electricity. So for those of you that don't understand this exactly, so basically we have fresh water flows and if deforestation happens upland from this fresh water flows, then a couple of things happen.

One, you have greater siltation and sedimentation that flows into the water because of deforestation and when the rains come, all of the soil that was on top that was currently held down by the trees goes into the water. Well, that's really challenging for dam companies. Dam companies who need fast water flowing through their dams to create efficient electricity, deforestations are a real problem. So a lot of dam companies have said, "Maybe we should start paying for those farmers upstream or those land managers upstream to stop deforesting." So it's a great market mechanism for protecting watersheds. In addition to the benefit to the dam companies, there are also the community benefits and of course, climate and ecosystem service benefits. So the market right now, this is actually due to a 2008 numbers, \$9 billion in payments, a 113 active programs, China representing almost 50% of the market and there's a very important reason for that. Often, it's related to dams. However, well, some of the challenge in this is people just assume water is a public good. "It's just there, it's for us. Why should we pay? If we pay, let's just pay a little bit.

The government should be providing us water. It's a public good." I mentioned before the challenges with water versus carbon. Often it's just a single buyer, the municipality and electrical company. So how do you trade watershed services? We haven't quite gotten to the maturation of the market yet. But again, thinking through some issues in specific countries and example's from some really interesting projects in China and in the United States and some entrepreneurs like yourselves, we can hopefully to a market for this. Same issues of carbon relate to water. Who owns it? Right? If it passes through your land, do you own it and you have the right to trade it? Or is it really still just in a domain of the government? I do want to mention some entrepreneurial projects that CI and companies like Marriott and dam companies in China are doing. Here's an example from Szechuan province. Pingwu is the name of the town and it's called the Pingwu Water Fund and this is basically, as I mentioned before, a dam company, coming to CI and working with Marriott. Marriott has about 34 hotels in China and is

looking to expand significantly over the next few years and recognizes that they use a lot of water in their hotels.

So they're very concerned about water. In this particular area, this province and this watershed supports 400 million people with drinking water-critical watershed throughout China and the rest of south and Southeast Asia for water. They're a critical area. So together we created the Pingwu Water Conservation Fund which is working with us, Marriott, and the local government and utility company to create a fund that will help mitigate deforestation above the watershed to stop that run-off that's going into the dams. The dam companies provide reduced price of electricity to the communities in exchange for the conservation activities. But recognizing, of course, that people need to deforest to plant crops and often to use trees for housing construction, but promoting sustainable livelihood is a key part of this. So Marriott is helping them and CI is helping them with honey production and mushroom farming that been there than selling in their hotels. And as well, as this is helping to protect 24,000 hectares of critical habitat. So the communities win, Marriott wins, the dam companies win because of reduced deforestation and it's a great win for climate and conservation of watersheds in this area. So I wanted to just finish up by encouraging all of you, as you think about your future careers and where you want to go and what you want to do, that entrepreneurship in the environmental world is absolutely crucial.

There are so many opportunities to do interesting things and I would also say that it's not just about creating a new thing, that you can be an entrepreneur in a larger organization. I think, as Tom mentioned in the outset, CI has been a great place to do that with. We are trying to be innovative. We're trying to be creative because the solutions are incredibly complex. Working with the business, working with the governments and numerous communities all around the world, it's all about creating new ideas and solutions together. So I encourage you in whatever career path that you take, even if you're in a large organization, you also can be an entrepreneur. And I just would also challenge you all o think about your skills that you're getting here and as you go out into the world, work as much as you can in the environmental sector. And as we need you all, we need your bright minds to work on these complex solutions for the environment and for human development. So with that I will close and will be happy to take any questions that you might have. OK.

Thanks so much for your talk. It sounds like you guys work with a lot of large organizations and the entrepreneurial piece comes from sourcing, I guess, on the ground, maybe from local businesses. What's your process for identifying the best entrepreneurial ideas and setting those entrepreneurs up for success? So we do that in a variety of different ways. So I didn't get in to the details of some of the funds that we have in the partnership vehicles that we have, but basically, we do one thing through one of the funds called ecosystem profiling process where we would sit down with a bunch of different communities. And depending on where the location that we're going to invest in, we develop a localized plan and we solicit proposals. We and our partners-and it's not we sitting in DC doing this; this is a local group that does this-will then look at the different ideas and, in a committee format, decide which one of those ideas deserve financing. So it's a very transparent open process. And we've seen that that mechanism is very well respected on the ground, so that people understand that's not about picking favorites. It's really about analyzing, using different indicators for success and ensuring that they're contributing to the larger investment plan that it's a very open and transparent process. Any other questions? Tom? What is CIs budget and where does it come from? So we have budget this year of \$145 million.

It comes from a variety of different places. It comes from concerned private foundations. It comes from governments, not just the US government, but actually increasingly European government. The French Development Agency is a very significant supporter. And it, also, increasingly, comes from business. So we have many corporations that are quite interested in... I mentioned Marriott, Disney. Starbucks is one of our big supporters. We're working with a multitude of different corporate partners from the mining, and oil and gas sectors in trying to develop solutions together. So that's another major source of funding.

Yes? How important is the creation of carbon regulation mechanism in the United States to move these initiatives forward? Yeah, it's a great question. I think it's crucial. Not just in the United States but I think in Europe. The European trading system as well needs to ensure that REDD or the reduced emissions component, of forest, carbon, is included for it to take off. And it's great that California is taking the initiative and we hope that government's climate initiative will then be expanded throughout that will hopefully lead to a national legislation. We're not there yet. Yes? I'm sure for CI, this is more of you must have a cost and benefit analysis behind a sustainable business model. For example, for the program you have with Marriott in China. It sounds for me it's more like a future damage protection. So I'm interested, could you explain more about the benefit or like the revenue generated from this fund management? So this fund specifically is not necessarily a revenue generating fund in the sense that it's trying to make a profit.

It's trying to make sure that it has sufficient resources to continue providing resources to those communities upstream so they won't deforest, recognizing there's an opportunity cost to preserve the forest. So it's not necessarily a profit model. It's really about sustainable financing. So the funding that's going into that is coming from the Chinese government. There's a percentage of money from the dam companies that is also going into that because remember this is not about CSR for them. This is about ensuring that siltation and sedimentation into the water stops because it's much more expensive for them to try to

fit or to clean up the dam than it is for them to stop deforestation. So this is all about enlightened self-interest. They recognize this is critical. So they're putting money into that fund. Marriott is putting money into the fund again because they're using a lot of water from this area and then CI is raising its own resources to put into that fund.

So that's the whole model. But to your general question, we look at cost benefits across the whole organization, so depending on what we're trying to do. As a non-profit, we're trying to create mechanisms that will be sustainable. A key part of our work that I didn't mention is our work in related to setting up trust funds and endowment funds. Because we recognize that short-term grants will probably lead to short-term success. So ensuring longevity and creating endowment funds which can be invested in capital markets. And instead of using the principal, we just use the interest that's earned every year on that. So we're doing that all over the world. We have a \$100 million fund that was financed by the Gordon and Betty Moore Foundation specifically for creating trust funds for different projects all over the world. In such a long term investment, how do you measure the performance? So we measure the performance on much different ways.

Financial performance, we look at how the fund is doing financially. Impact performance, so we have a series of indicators and metrics that look at social issues. But also, obviously, as a conservation organization, we're very concerned about, is the money that's being contributed from these various funds going to the right places? Is it going to really protect conservation or is it going to fund the administration? So we have a whole series of metrics around efficiency that we analyze for each of these funds. And as Tom said, we're trying to run our NGO as a business. So we take the lessons from Silicon Valley in terms of the entrepreneurial lessons but also understanding that efficiency has to be a key part of our business model. Yes, sir. As a, say, globalized macro amounts in the context of \$100 trillion global GDP, what is the amount that would ever involve itself in this movement? Would it be 1 trillion, would it be 10 trillion? If you just could do everything you did and you want the amount in play, in other words. We'd love for it to be a trillion at least. The magnitude of the problem is just going to be expensive so we need to expand and keep pace with the development trajectory. So to put an absolute number on it is virtually impossible but...

Or the magnitude. Trillions. Yeah. Yeah, we need to get to the point. But we don't want to do it ourselves, clearly. We're doing it through partners. It's a critical component. We can't just... We're not going to go out and raise it. Well, trillion dollars, that would be nice but ...

Raising it, the idea is actually putting them into play and then it comes in time and it goes to her and stuff like that. Exactly. And it's more than that too. What we want is a complete change in the business model of development. So it's not just about raising money and putting it to projects. It's about getting government and businesses to incorporate these externalities or these things that are not currently in their business model into their business model. So whether it's a president of country or a CEO of a company, to start thinking about "What is the footprint of my business or my country on the world?" and bring those different externalities into whether their accounting systems. Or then if you can finally get to the accounting systems, then ultimately into how they do business on a daily basis. Yes? So given that you're telling these towns that they can't cut down their trees because it will mess up the dam downstream, how do you ensure these towns can still develop economically? Yeah, so that's a key part of our work, is to develop alternatives. So there are many, many, many different ways we do that.

We recognize there's an opportunity cost. We don't go into a community and say, "Stop trying to feed your family." Clearly, that's not what we're about or what is realistic. So we sit down and develop a development model with the community that not only helps everyone to understand what the value of what their doing is, in terms of their children and children's children, but recognizing of course that people have to feed their family today. So thinking about things like increased productivity on existing agriculture, we're working with a lot of like in Madagascar-with rice farmers. Big problem around in Madagascar is deforestation for planting rice. And so, how do farmers with very simple basic technological inputs-whether it's just changing the way they irrigate or very simple techniques which don't cost them anything-can increase their productivity on their own land without cutting new land of the same amount of rice? In addition to that, ecotourism is a big part of what we look at in the context of Madagascar where they have these amazing lemurs that the whole world wants to come and see. But when they deforest for rice, they lose critical habitat. Most of Madagascar's forest is already gone so ensuring that those final patches where the lemurs are still able to survive is there because that provides an economic resource and jobs for people. So we're developing ecotourism throughout the country there. Yes? So I'm in a class about conservation and kind of combining conservation with economics, I guess.

The professor is involved in a project that kind of pushes the concept of natural capital. I'm just wondering if that's something that comes out on your teaching like ecosystem service to government, things like that. Is that a pretty widespread term? Yes. OK. It is in the United States. And we did a survey in other countries of this term, natural capital, house residents and it depends on the country. But it's more of, I think, a US-centric term. But yeah, absolutely, it means all about natural capital. When I'm talking about ecosystem services, that's what we mean, natural capital. So that's definitely the term of art right now.

It's what we're trying to do. I'm not going to call on you. Here you go Please. I really want to do something... for the environment and I want to be an entrepreneur. But for me, I feel that as a young people, it's really hard to get the chance from

government because when I start out little and I'm powerless. So I just want to know how you start out and then get so many chances from the government, from Silicon Valley, from the companies. And do you have advice for us, young people, in how could we start out with this phase? That's your question. Great, really good. Fantastic question, thank you for that.

I would say that, if you were to go back to your home country with all this information that you're getting here at Stanford and work with local organizations, whether it's CI or there's plenty of others, they're thinking about this on a daily basis. And with your contacts and new knowledge that you found here, there are many many ways that you can engage in this space. So I would encourage you. But again, it's not about us trying to go into China and any other country and say, "This is how you should do it." It's about people like you who are smart and interested and passionate to go home and really develop solutions with the government. The governments, in the case of China-I was just in Indonesia, meeting and sitting with our China team-they said the thing that resonates most with the governments, whether their national governments or provincial governments in China is these field demonstrations. So examples, like the Pingwu Water Funds, they see that we're working with the private sector. We're working with the Chinese provincial government, and the dam companies and they're seeing results that are preventing deforestation. So those kind of localized examples and creating those when you go back to your home country is a fantastic way that you can be an entrepreneur in this space. So I will definitely encourage you to do that. Do you do internships? Yes.

Or take college graduates. Yes. What are some stories of that? Yeah we have an internship program. Summer internship program and then we have a fellowship program as well. And we love to have interns. We usually have 20 or 30 in our offices in the summer time. And we're also doing some work with business school students to take them out to visit some of our field projects for say a six-week period and really do a consultancy project. For example, we have a fund called Verde Ventures which specifically works with small businesses. And so we bring MBAs from the US to sit down with these entrepreneurs and help them think through their business plan, help them think through the metrics around success or specific things related to marketing or product development. So we do lots of different things.

We'd love to engage Stanford in a program like that. So please, after this you're welcome to come up and give me your information and we can certainly keep in touch. That'd be great. Yes, sir, in the back. Can you talk about how you find your corporate partners and how you managed those relationships and expectations given? And while the companies you talk about are big and diverse and may have conflicting interests. Sure. So we find our corporate partners in a variety of different ways. One, they either come to us directly because they find out through the various things we're doing that we're good partner to work with. Or we will go and try to find them, if they're working in a particular area. For example, an oil palm which is something that I'm just coming back from Indonesia, thinking a lot about in how we engage the oil palm sector through sustainable practices.

So those two different ways is how we find them or they find us. We do exhaustive due diligence on our partner. And that's exhaustive because I'm involved so a lot of it is very intense where we are analyzing not only the publicly available documents but also talking to all of our board members who may have connections with these companies and also our field programs. So if there's a large mining company that we're working with, we want to make sure. We want to see what their practices are in all these different countries and see really are they interested in changing or improving or being a model for their industry. In terms of the conflicting interests, yes, that can sometimes be an issue. Although if they're coming to us for a specific reason, then we know that they're committed to working on whatever the issue is. For example, I'm working with an oil and gas company right now on what's called a biodiversity offset plan. So they've come to us and they recognize they need to mitigate their footprint or offset their footprint to the extent that they can. So working with us to develop a project with them in communities where we work or our partners work that can then help offset the project that they're doing, the oil and gas or mining.

We do a lot of mining offset work as well. Good question. And managing those partnerships is a full time job. I have a team of about 40 people. Many of them are involved on day to day basis, managing relationships with corporate partners. What percent of the corporate partners are US and what other countries do you find local partners? Yeah, so I'd say in terms of percentage... It's a good question. I don't know the exact percentage. Roughly, I'd say probably about 40% to 50% of the companies are US but most are multinationals. We do work with a lot of European companies as well and then of course, domestic companies.

So it's a mix. Some of the corporate partners are big ones. Walmart is a huge corporate partner of ours that we've helped steward through a lot of their sustainability initiatives. Starbucks, we're just finishing it. We've been working with them for 10 years on working on coffee farmers and now we're helping them to climate change proof their coffee supply chain. Again, for these companies it's not about CSR. It's about really enlightened self-interest. How do they ensure that their supply chains will be sustainable in a changing world, whether it's coffee or fish or gold? In the case of jewelry, for Walmart, we work on the whole sustainability program. And just understanding those supply chains, analyzing their supply chains and then analyzing the risk to the environment or risk to the supply chains is really critical. Had you run into US A.I.D.? Or done similar work? Yes.

Yes. So in fact, we are just now, getting ready to announce a big partnership between the Walmart Family Foundation, CI

and US A.I.D. in Indonesia on a public-private partnership. It will be \$20 million to start in bringing in other companies to help develop sustainable supply chains in two different places for it's REDD, its carbon market plus a multitude a lot of other job-creating industrys. So, yes, we do a lot with the global development alliance with public-private partnerships with US A.I.D. Yes, ma'am. So what kinds of strategies do you have for scaling up these individual projects that you do all over the globe? Yes. It seems like after you've put in the effort to come up with the strategy of this one area, that the natural thing to do would be then to scale it. Right. Great question.

So I'll give you an example from Ecuador. So we started a project in a little indigenous community called the Cachi. We're working on what's called the Conservation Incentive Agreement. It's basically a contract, a performance based contract, with the community. In exchange for agreeing not to hunt and deforest this one critical area, they receive a package of benefits. So it's a long negotiated project, many, many years of discussion about what the community needed and there's a package of benefits that are provided - education, health primarily, in the case of the Cachi. So this project, very successful, stopped deforestation, community was happy. Went to the government, we brought the Ministry of Environment to this community and they were thinking about using oil revenue, royalty tax on oil revenue, for a national poverty alleviation fund. So we said to them what about combining poverty alleviation and environment using this Cachi model and expanding it throughout the country and they said, "OK, let's give it a shot." So now, this program has been going on for about three years now, very, very successful, in hundreds of communities throughout Ecuador and is now part of this national program called Socio Bosque for protecting both the environment and providing development packages, primarily in indigenous communities in Ecuador. So that would be one example of scaling it.

Now, they're interested in doing it in the marine side, the social mores for the marine space working with fishing communities. So very successful model. We're doing this in China as well. We brought ministers from regional governments in China to Ecuador to see the model. Just recently, we brought folks from South Africa - development ministers, 15 different government officials from South Africa - to Costa Rica where the former Minister of Environment of Costa Rica is on our staff and was instrumental in developing a payment for ecosystem services water fund. So these officials just went to Costa Rica to see how it was working and now are going back to South Africa and thinking about a national program for ecosystem service payment. So these are some of the examples of either making it a national policy so we scale up small projects and have them be larger than just a... Great question. Yes. So you mentioned the partnerships with big corporations like Marriott and government.

Have you also had a relationship with smaller business or let's say a start-up in Latin America that is environmentally concerned? Do you have one of those? Maybe. It's kind of like a leading question. Yes, we do. We have a fund called Verde Ventures which provides primarily debt finance to small and medium enterprises. And it's right now \$15 million and we're looking at scaling that up significantly, spinning it off from CI and raising more money. But we invest in eco-tourism businesses. Starbucks is one of our major investors in that fund. We do a lot of sustainable coffee and we're getting into marine stewardship council-certified fish. So yes, so under \$5 million in total assets is a sweet spot for Verde Ventures in trying to address this issue of the missing middle where there's microfinance and there's commercial or some private equity but there's nothing in the middle. So for those companies or cooperatives in the case of agricultural supply chains that don't have access to finance which is a huge problem.

They have to borrow from money lenders and they need a \$125,000 from a money lender. You can do the math money on the interest rates they're charging. It's unbelievable. So thinking about demonstrating to the commercial finance sector that you can do lending at the small medium enterprise level sustainably and it can be cost effective. So we're bringing banks out to our training programs and really showing them that biodiversity lending or environmental lending can be profitable. So, yes we do. Well, can I have one more question? Yes, you may. What are the organizations, like CI, do you admire or partner with, in terms of environmental groups that tend to bring an entrepreneurial through their work? Good question. There's a lot. Large or small.

Yeah Just have an idea that... I would say, there's a group based in DC called Forest Trends which is one that I admire that's relatively new, very much a start-up and is very active in ecosystem service markets doing some really interesting things like I was talking about in terms of trying to monetize ecosystem services. That will be one. The big NGOs, the World Wildlife Fund and the Nature Conservancy are all doing great work. So again, we're giving 30% of our money away to organizations like those because we recognize that we alone can't do it all. So there's a lot of these organizations out there. And then, what ways do you get involve with universities? Yes. How does that happen? So we are involved in the universities both at a local level and pretty much all the countries that we work in. We rely on university students to do some of our monitoring, our third party monitoring. Of course, research, we're working with lots of national and internationally known universities on a variety of different topics.

So it's a very important part of our work, those partnerships. OK. One more. One more. Let's do one more. Yes. Are you doing anything in preserving biodiversity? If so, could you share a few details with us? So yes. So our whole mandate is really about preserving biodiversity so most of our programming is involved in preserving biodiversity. So the China example I gave,



in those watersheds. We picked not only ecosystem service value areas but also areas that are important for biodiversity.

So that area that I mentioned, Pingwu is also really an important panda habitat. So that would be one example. Every single project that we work on pretty much has rich biodiversity. In fact, our real estate, historically where we invest the majority of our time and resources are what we call the biodiversity hotspots. So those areas that are most under threat but have the largest number of endemic species. We're still doing that work but now we're expanding that to include watersheds and other really key ecosystem service areas that we need to preserve as well. So we haven't lost our biodiversity focus. It is a key focus of our work. OK. Thank you.

Thank you.