



Stanford eCorner

Understanding Ecosystem Services

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What does the natural world mean in monetary terms, beyond the idea of raw materials? Conservation International Executive VP Jennifer Morris believes it is critically important quantify the value of "ecosystem services," those resources and processes nature provides for planet and human survival. She shares two quantifiable examples: the value of insect pollination to agriculture, and the pharmaceutical industry's dependence on natural plant resources.



Transcript

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.