

Economic value of the environment

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Marine protection improves fish stocks. Female fish produce up to 100 times the eggs of smaller fish of the same species. Pavan Sukhdev says environmental services, provided by nature are not measured or accounted for in our economics. They are known as externalities. Examples are bees for pollination, forests cleaning air and water and oceans providing fisheries. In Costa Rica, farmers have been paid to retain forests. Deforestation has stopped, water supply increased, and overall farm productivity increased downstream. In Kampala Uganda, a swamp was saved after realising it was acting as a free cleaner of sewerage. Slowly says Sukhdev, business is getting the message that the environment has economic value despite there being no market for environmental preservation.

Transcript

Robyn Williams: Time is valuable, but so is clean air and our healthy forests. How would you know? Well, ask a former banker. Pavan Sukhdev was once with Deutsche Bank in a senior position. Now he's head of the United Nations 'Green Economy Report', and on arriving in Australia a few days ago he was startled first of all by reports about our abandoning marine protected areas.

Pavan Sukhdev: I've been in Australia for the last five days and I read a lot in the newspapers about plans to scrap marine protected areas or to not do more marine protection. Well, that seems to be economically strange because there's a lot of evidence gathering now, especially submitted to my project team, which suggests that marine protection actually is a very good way of restoring fish stock. We have examples all the way from the developed world, like the Georges Bank area of the US where haddock stock was restored to a point where it could provide 70% of US catch, and that's basically all relying on a very simple biological fact that if you let female fish grow to twice the size, depending on which species they are and where they are, they produce 10 to 100 times more eggs, which is basically what restocks fish.

Robyn Williams: And of course they leak across the protected areas outside, so the fishers get more as well.

Pavan Sukhdev: Yes, exactly, nobody actually tells the fish where the line is, so they quietly move along and they get caught.

Robyn Williams: Indeed, in fact there was a publication in *The Proceedings of the National Academy of Science*, Terry Hughes from the north in James Cook University was one of the lead authors, and they found that there was a huge increase in fish in the Barrier Reef as a result of this set-aside project.

Pavan Sukhdev: It doesn't surprise me because apart from big deep-sea areas like I just mentioned there's also evidence the same thing happens in coral reef fisheries. We have, again, found all kinds of evidence from the Caribbean and other places where the same effect is taking place.

Robyn Williams: So the politics of not setting aside, you observed that. Is it something that you deplore?

Pavan Sukhdev: I think it's not smart because basically what you're doing if you do not have marine protection is you are actually depleting the economic value of your fisheries and that's not smart economically. What should be done...and, by the way, globally (and this may not be the case in Australia)...but globally there's almost \$27 billion of fisheries subsidies, many of which are for increasing trawler capacity. But, you know, the scarce resource is not trawler capacity, it's fish, and economics is about scarce resources. So the commonsense economist will tell you that you must invest to increase the scarce resource, which is fish. So that's the reason why I don't think it's a bright idea to not have marine conservation.

Robyn Williams: Tell me, how is it known to what degree biodiversity is good for the human population in terms of creating riches?

Pavan Sukhdev: It's actually huge in terms of what it provides to humanity, but the challenge is that it's almost all economically invisible. So forests clean the air, provide flood prevention and drought control, oceans provide free fisheries, coral reefs and mangrove forests provide protection against storms and cyclones. All of this stuff gets done for free. Bees provide pollination, but when did you see an invoice from a bee, or for that matter from a tree for cleaning your air and providing soil carbon? So these are the challenges we have in our economy where we don't measure stuff that's valuable, we only measure stuff that's traded and markets. So anything that comes for free from nature gets treated as an externality, that's

what the economists call it, an externality. In other words, something that's not part of a deal between you and me in a marketplace.

Robyn Williams: A positive or a negative, yes.

Pavan Sukhdev: It could be a positive. In this case these are positive externalities which we are ignoring. But of course you cannot manage what you do not measure, and if you don't measure it you will lose it.

Robyn Williams: But I thought that many of the things that you've been saying should be generally well known by now, aren't they?

Pavan Sukhdev: That's the surprising thing, Robyn. You'd imagine they are well known, but many a time I have conversations, many a time I read a newspaper article which suggests that they've missed this boat completely.

Robyn Williams: And what are you doing about it as part of your program?

Pavan Sukhdev: I must say that the program's main purpose in fact is to reduce or hopefully even eliminate this economic invisibility. It's almost a kind of disease; not looking at things simply because they don't have a market price attached to them. The fact is, humanity does value commonsense in a lot of things, whether it's love or friendship or marriage or whatever it is that you value. There's no market for marriage or love or friendship, but you do value it, right? So I'm making the same point about nature. It provides a lot of what is valuable, why not value it? Because if you don't and if you lose that then, guess what, the nutrients and fresh water that flows from the forest to the field of the poor farmer will have to be replaced by fertilisers and irrigated water which costs money. Who's got that money? Certainly not the poor farmer.

Robyn Williams: Give me a few examples of the sorts of schemes that have impressed you where people are turning this around, in any part of the world.

Pavan Sukhdev: Sure. I think, if it's any part of the world, the one that really impresses because it started more than almost 15 years ago is in Costa Rica, a tiny country which is in the neck of Mesoamerica, between North and South America. They have found that they were losing soil fertility and forest losses were very high, mainly because forests were being converted to pasture for cattle farming, and cattle ranching was producing just about \$50 per hectare per year. But they realised, without doing the calculations, that actually their losses were much more than that.

So what they did, a very smart thing, they gave rich farmers who had forests on their lands a payment of \$50 per hectare per year to keep the forest standing. As a result of that, deforestation stopped, and it was not just a good thing for the rich farmers who had the forest but also for the poorer farmers around there who benefited from more fresh water coming through, more biomass coming through getting absorbed, increasing soil fertility. Guess what, productivity went up, not just in the land of the rich farmers but also elsewhere.

Today Costa Rica has the scheme not only good for farming and for forests but today the big supporter of this scheme is the electricity generating companies because due to the increase in forest cover which has gone up almost 50% from 20%-something to almost 50%, due to that their catchment has improved, so there's more water level in their dams and therefore electricity is better. Here's a positive example of paying to capture positive externalities.

Robyn Williams: Could that work in a completely different country like Indonesia with a huge population and vast problems with deforestation due to palm oil growing and so on? Could that work there?

Pavan Sukhdev: It might work in areas of Indonesia where there is high population and fresh water matters and agricultural productivity matters, but then there are other areas of Indonesia which are deep forest where there are light populations and it may not work. But certainly there are areas where it could definitely work.

Robyn Williams: Have you been to Indonesia?

Pavan Sukhdev: Oh yes, many times. I used to work in Singapore many years ago.

Robyn Williams: I see, and when you go there does your heart sink or lift?

Pavan Sukhdev: I just get flustered, again, because of the economics not making sense to me and I'm seeing that people are actually giving up their wealth for a lot less than they could get from it, and that bothers me. And when these people are poor communities, that bothers me even more.

Robyn Williams: One good example in Costa Rica. Give me another.

Pavan Sukhdev: I'll give you a small example of a good economic decision being made. This was in Uganda. Near their capital city, Kampala, there's a swamp about 40 square kilometres. At some point they decided, in their wisdom, 'let's dam this swamp, drain it and convert it to agricultural land'. But thankfully around that time came an economist from the IUCN and she did a study to show that this swamp was actually absorbing the human sewage from the city of Kampala and in fact it was basically a waste treatment facility. If Kampala had decided to build an alternative waste treatment facility, that would cost them ten times as much as the agricultural output that they were trying to get from this place. So then, thankfully, they got the message, they changed their decision, and that swamp still today is providing a capture for the sewage.

Robyn Williams: You know that everybody in the world believes in the market, and therefore we have to convince people in business that this is a good idea. Are they on side with you when you say these things?

Pavan Sukhdev: Frankly if you'd asked me this question three years ago, Robyn, I'd have said completely not, but I'm glad to say that today the penny has dropped. My own experience at Davos early in January this year and in Dubai when I was part of the council (my council which I lead is the Biodiversity Council), we found a lot of resonance with a number of people; people exploring freshwater problems were asking us about forests, people exploring migration problems were asking us about coral reefs, people exploring food security were asking us about pollinators dying and stuff like that. So I think there's a lot of business interest coming through. Awareness is growing.

Robyn Williams: Yes, it does seem to me, as a casual onlooker, that in many ways some of the traditional technologies seem to be unbelievably old fashioned. I'll give you an example. The *New Scientist* reported this week that if all the food thrown away in America were used as a source of biofuels (in other words you use the fat, you melt it down, you get oil out of it), it's equivalent to the total amount you get from offshore drilling for oil.

Pavan Sukhdev: Wow, what an amazing number. I hadn't heard this, I'll read the article, it's incredible. But, you know, it strikes a chord with me because I am aware from a study that UNEP had done on food production which basically said that we waste about 50% of our production, so 10% of that actually is lost on the field, but there is 10% that is actually wasted, as in literally dumped down our wastepaper baskets in the kitchens. So it doesn't actually surprise me to hear you saying that.

Robyn Williams: And as for people in business who are not convinced, how do you go about telling them something that is really going to turn them around?

Pavan Sukhdev: Partly it's to show them opportunities and to show that companies like Veolia which are massive successes in waste management and show them, for instance, the kind of waste management opportunity that there is in India. Partly it's to give them the sense that there are new businesses coming up. There is a scheme, part of the Kyoto discussions, called REDD-plus, it's basically reduced emissions from deforestation and forest degradation, that's REDD. What it is is essentially rich countries paying developing countries with tropical forests to hang onto their forests. Already \$4.5 billion has been put together, mainly by Norway, that's \$2 billion, and several others, and they've paid \$1 billion each to Indonesia and Brazil. So the thing is, for the scheme to work properly you need to control it, manage it, measure it, so you need guys who are forestry experts to project manage, you need Google Earth and stuff like that, technology to monitor it, report it. There's a hell of a lot of business opportunity around here. So I talk about, hey, this is a new business, potentially \$100 billion of it, are you interested?

Robyn Williams: Lots of people think that the losses are so gigantic that this is in fact a small gesture in a gale, as if the tide (just to mix the metaphor completely) is going in the other direction. What is your honest impression? I know it's your job to promote this stuff but do you think it's going to be turned around?

Pavan Sukhdev: I'm a scared optimist. I must confess that if everything that's being done to make people aware of the economic value of nature fails to have its effect, then yes, the answer is serious problems. But at the same time, just looking at the trend, as in what I felt, the glazed eyes, the glazed looks that I'd get three years ago versus the eye contact that I'm getting today, gives me a sense that, hang on, maybe we are on a trajectory which is positive.

Robyn Williams: Thank you.

Pavan Sukhdev: Thank you Robyn.

Robyn Williams: Pavan Sukhdev who is originally from India, once with Deutsche Bank and now heads the United Nation's *Green Economy Report*