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go above 1.5 degrees Celsius." You would be saying, "Hey, I want the fever to be reversed! I want the lump to go away!" But that's not how our world leaders are talking about climate change. They are not looking at the cancer; they are only trying to address the fever while the cancer keeps growing.

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SAILESH RAO

E.G.: You began your book "Carbon Yoga" with the idea that our stories are failing us. What stories, and how are they failing us?

S.R.: Happiness comes from consumption. That is a story that is clearly failing us. Because societies that have the most consumption, like the United States, have almost half the people on anti-depressants or anti-anxiety medications or illegal drugs on a daily basis. That's not the pursuit of happiness when you have to pop pills just to get through the day. The story of growth is failing us. We have been told, if we just keep growing the economy, then everybody will prosper, right? If we are growing the economy to the point where it is 60 percent larger than what the planet can support, and we still have 18 million people starving every day, so how much more can we do this? How long can we keep doing this, expecting that we are going to one day solve the problem?

E.G.: Do you think capitalism is the problem?

S.R.: It is not capitalism per se, because if I look at capitalism versus socialism or communism, the idea there is: Who is in charge of production?

Is it private enterprise that is in charge of production, or is it a public government that is in charge of production? Capitalism has won that argument. Because private enterprise clearly does a better job of assigning resources, of doing the right thing, and five-year plans by governments are not going to solve the problem. So I don't see that as the main issue. The main issue is the currency system that is dependent on growth. It gets associated with capitalism. I really think we can be private enterprise without requiring growth.

E.G.: You've said that even if we eradicate fossil fuels, because the aerosols that are released when we burn fossil fuels actually cool the Earth, we would still have a problem. Before we talk about solutions, can you briefly explain this little-discussed side effect of cutting down on fossil fuels?

S.R.: When we burn fossil fuels like coal, oil and gas, it isn't just carbon that's in the fossil fuel; there are lots of other compounds. We try to refine it, but you still have all kinds of things that get emitted along with the CO₂, and aerosols are one of those things, like sulfur dioxide comes mainly from coal-fired power plants. They put scrubbers (systems for removing sulfur dioxide from exhaust before it's emitted) in the U.S. because it was causing acid rain in the Catskills in the '70s, but other countries don't do that. Or, the sulfur that's in the oil, we refine it out and use refined gasoline in our cars, but we take the rest, the crud that's left behind, and we let ships burn it out in the ocean because there is no

regulation out in the ocean. Eventually, it gets up in the air and then it stays up there, and the aerosols are masking some of the effect of greenhouse gas emissions.

Editor's note: According to NASA's Web page on aerosols, "human-made sulfate aerosols are thought to outweigh the naturally produced sulfate aerosols. The concentration of aerosols is highest in the northern hemisphere where industrial activity is centered. The sulfate aerosols absorb no sunlight but they reflect it, thereby reducing the amount of sunlight reaching the Earth's surface."

If you think about it, there's CO₂, the greenhouse gas, then there's other greenhouse gases like methane and nitrous oxide, and then the third category is aerosols. All three of these are roughly the same size. The CO₂ is causing a whole bunch of heating to happen, the other greenhouse gases are causing the same amount of heating to happen, and then the aerosols are doing the same amount of cooling. So if you are going to stop burning fossil fuels, you suddenly won't get the aerosols going up in the air because you are not burning the aerosols as well, so the other greenhouse gases become the major issue. I say to people, if suddenly today, we all switched to solar, our temperature will go up, not down, by 1 degree Fahrenheit, almost within a year.

E.G.: Let's talk about your climate solutions.

S.R.: I'm a systems engineer, so I look at things from a systems perspective. If you look at environmental problems from a systems perspective, there are lots of them. It's not just climate change. We have to deal with diversity loss and ecosystems collapse, ocean dead zones, ocean acidification. We have to deal with toxic chemical pollution, and if you ask any scientist who has studied this, a systems scientist, what is the one thing you can do to address all of these problems simultaneously? It is to go on a vegan diet. Immediately, compassion is a solution for all our problems. Compassion, not just for human beings, but compassion for all creatures.

E.G.: How does going vegan solve the climate problem?

R.S.: If you look at Intergovernmental Panel on Climate Change Fifth Assessment Report, Working Group 3, Chapter 11, you will see a block diagram on land use – how much land is being used for different purposes. You will notice that 35 percent of the land area of the planet is used just to graze the animals that we raise for food. Ten percent of the land is used for crop production. Half of the crop we eat directly; the other half we feed animals. So we feed animals from our cropland; we also feed animals from all the grassland. The total amount of food that the animals eat is five times the amount of food that we eat. And out of that, we get a little bit of animal foods that we consume.

If we replace those animal foods with plant foods, you can release 35 percent of the land back to nature. So we ask the question: If we just take the grassland and replace it with the original forests that were there in 1800, how much carbon is sequestered in the recovering forests? And it's a very simple calculation because we are just replacing grasslands with native forests



PHOTO BY ARKADY BROWN

THE TRUE COST OF CATTLE

In Oregon, livestock is the greatest source of methane, a greenhouse gas with 86 times the global warming potential of carbon dioxide over a 20-year period. Read Street Roots' investigation into the environmental impact of Oregon's 1.3 million cattle: news.streetroots.org/costofcattle

when calculating the numbers – so you cannot dispute it. You total it up. On 41 percent of the land that used to be forest in 1800, you can sequester 265 gigatons of carbon, which is more than the 240 gigatons of carbon that we've added to the atmosphere since 1750. We can literally reverse climate change just by bringing back the forests, the original forests that used to be there.

E.G.: Do you see this going hand in hand with a reduction in fossil fuels, or do you think going vegan alone will reverse climate change?

S.R.: It goes hand in hand with reduction in fossil fuels. We have to do both because ultimately, you can't keep pumping toxins into the air. It's not just fossil fuels. Every industrial process that's dumping toxins into the environment has to be changed, so there is a huge amount of research we need to do as to how are we going to make everything nontoxic.

E.G.: Many climate scientists are saying that if we just cut down on our meat consumption, we can reduce the impact of global warming, but you are suggesting a 100 percent vegan lifestyle. I know a lot of people who are progressive, who understand the science, who would probably never go vegetarian, let alone vegan. Diet is such a tricky thing. Why not push for a more attainable goal, such as reduced meat consumption, or going vegetarian?

S.R.: I have faith in people. And when you ask people to do the right thing, they usually come through – they will eventually come through because this is a dire problem we face today.

Between 1970 and 2010, 52 percent of all wildlife has been destroyed, and we are destroying them at an exponentially growing rate. If you do the calculations and you see, how many years do we need before we wipe

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