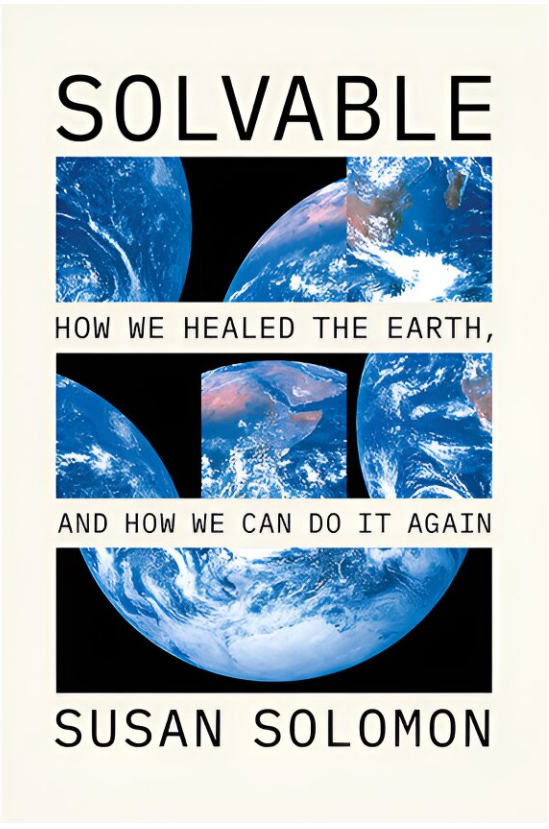
Q&A: What past environmental success can teach us about solving the climate crisis

July 15 2024, by Paige Colley



"Students today have grown up in a very contentious and difficult era in which they feel like nothing ever gets done. But stuff does get done, even now," says Professor Susan Solomon. "Looking at how we did things so far really helps you to see how we can do things in the future." Credit: Susan Solomon by Justin Knight

Susan Solomon, MIT professor of Earth, atmospheric, and planetary sciences (EAPS) and of chemistry, played a critical role in understanding how a class of chemicals known as chlorofluorocarbons were creating a hole in the ozone layer.

Her research was foundational to the creation of the Montreal Protocol, an international agreement established in the 1980s that phased out products releasing chlorofluorocarbons. Since then, scientists have documented signs that the ozone hole is recovering thanks to these measures.

Having witnessed this historical process first-hand, Solomon, the Lee and Geraldine Martin Professor of Environmental Studies, is aware of how people can come together to make successful environmental policy happen. Using her story, as well as other examples of success—including combating smog, getting rid of DDT, and more—Solomon draws parallels from then to now as the climate crisis comes into focus in her new book, "Solvable: How we Healed the Earth and How we can do it Again."

Solomon took a moment to talk about why she picked the stories in her book, the students who inspired her, and why we need hope and optimism now more than ever.

You have first-hand experience seeing how we've altered the Earth, as well as the process of creating international environmental policy. What prompted you to write a book about your experiences?

Lots of things, but one of the main ones is the things that I see in teaching. I have taught a class called Science, Politics and Environmental Policy for many years here at MIT. Because my emphasis is always on

how we've actually fixed problems, students come away from that class feeling hopeful, like they really want to stay engaged with the problem.

It strikes me that students today have grown up in a very contentious and difficult era in which they feel like nothing ever gets done. But stuff does get done, even now. Looking at how we did things so far really helps you to see how we can do things in the future.

In the book, you use five different stories as examples of successful environmental policy, and then end talking about how we can apply these lessons to climate change. Why did you pick these five stories?

I picked some of them because I'm closer to those problems in my own professional experience, like ozone depletion and smog. I did other issues partly because I wanted to show that even in the 21st century, we've actually got some stuff done—that's the story of the Kigali Amendment to the Montreal Protocol, which is a binding international agreement on some greenhouse gases.

Another chapter is on DDT. One of the reasons I included that is because it had an enormous effect on the birth of the environmental movement in the United States. Plus, that story allows you to see how important the environmental groups can be.

Lead in gasoline and paint is the other one. I find it a very moving story because the idea that we were poisoning millions of children and not even realizing it is so very, very sad. But it's so uplifting that we did figure out the problem, and it happened partly because of the civil rights movement, that made us aware that the problem was striking minority communities much more than non-minority communities.

What surprised you the most during your research for the book?

One of the things that I didn't realize and should have, was the outsized role played by one single senator, Ed Muskie of Maine. He made pollution control his big issue and devoted incredible energy to it. He clearly had the passion and wanted to do it for many years, but until other factors helped him, he couldn't. That's where I began to understand the role of public opinion and the way in which policy is only possible when public opinion demands change.

Another thing about Muskie was the way in which his engagement with these issues demanded that science be strong. When I read what he put into congressional testimony I realized how highly he valued the science. Science alone is never enough, but it's always necessary. Over the years, science got a lot stronger, and we developed ways of evaluating what the scientific wisdom across many different studies and many different views actually is. That's what scientific assessment is all about, and it's crucial to environmental progress.

Throughout the book you argue that for environmental action to succeed, three things must be met which you call the three Ps: a threat much be personal, perceptible, and practical. Where did this idea come from?

My observations. You have to perceive the threat: In the case of the ozone hole, you could perceive it because those false-color images of the ozone loss were so easy to understand, and it was personal because few things are scarier than cancer, and a reduced ozone layer leads to too much sun, increasing skin cancers. Science plays a role in

communicating what can be readily understood by the public, and that's important to them perceiving it as a serious problem.

Nowadays, we certainly perceive the reality of climate change. We also see that it's personal. People are dying because of heat waves in much larger numbers than they used to; there are horrible problems in the Boston area, for example, with flooding and sea level rise. People perceive the reality of the problem and they feel personally threatened.

The third P is practical: People have to believe that there are practical solutions. It's interesting to watch how the battle for hearts and minds has shifted. There was a time when the skeptics would just attack the whole idea that the climate was changing. Eventually, they decided 'we better accept that because people perceive it, so let's tell them that it's not caused by human activity." But it's clear enough now that human activity does play a role. So they've moved on to attacking that third P, that somehow it's not practical to have any kind of solutions. This is progress! So what about that third P?

What I tried to do in the book is to point out some of the ways in which the problem has also become eminently practical to deal with in the last 10 years, and will continue to move in that direction. We're right on the cusp of success, and we just have to keep going. People should not give in to eco despair; that's the worst thing you could do, because then nothing will happen. If we continue to move at the rate we have, we will certainly get to where we need to be.

That ties in very nicely with my next question. The book is very optimistic; what gives you hope?

I'm optimistic because I've seen so many examples of where we have succeeded, and because I see so many signs of movement right now that

are going to push us in the same direction.

If we had kept conducting business as usual as we had been in the year 2000, we'd be looking at 4 degrees of future warming. Right now, I think we're looking at 3 degrees. I think we can get to 2 degrees. We have to really work on it, and we have to get going seriously in the next decade, but globally right now over 30% of our energy is from renewables. That's fantastic! Let's just keep going.

Throughout the book, you show that environmental problems won't be solved by individual actions alone, but requires policy and technology driving. What individual actions can people take to help push for those bigger changes?

A big one is choose to eat more sustainably; choose alternative transportation methods like public transportation or reducing the amount of trips that you make. Older people usually have retirement investments, you can shift them over to a social choice funds and away from index funds that end up funding companies that you might not be interested in. You can use your money to put pressure: Amazon has been under a huge amount of pressure to cut down on their plastic packaging, mainly coming from consumers. They've just announced they're not going to use those plastic pillows anymore. I think you can see lots of ways in which people really do matter, and we can matter more.

What do you hope people take away from the book?

Hope for their future and resolve to do the best they can getting engaged with it.

More information: Solvable: How We Healed the Earth and How We Can Do It Again: press.uchicago.edu/ucp/books/b … o/S/bo216089946.html

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