

Drawdown: the most comprehensive plan ever proposed to reverse global warming (2017)  
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The world's industrial consumption technology is great at producing stuff by consuming natural resources. It is even better at generating a lot of waste, very toxic waste, that is dumped into our land, water and air. In 2016, it is estimated that 36 gigatons of Co2 was released into the atmosphere. How much? Well, one gigaton equals 400,000 Olympic swimming pools. Note, this is only one of many greenhouse gases being dumped into our atmosphere. It is these gases that are heating the earth which if it continues will threaten life itself, at least as we know it.

The team of scientists responsible for Drawdown, provides realistic solutions to **stop the dumping of greenhouse emission.**

Solutions to remove the greenhouse gases already in the atmosphere by **sequestration** are considered a necessary stepping stone to a healthy atmosphere.

By referencing Drawdown, individuals like you and I can find constructive things to do. Yet it is clear that eventual human success has to be based on a 'WE' approach. Meaning it will require a global commitment that is politically neutral.

When you review some of the solutions you will realize success will also require major changes in culture practices that are imbedded. Perhaps, as suggested in Drawdown, we should start by no longer subsidizing the oil and chemical industries.

Archeologist and historians study cultures that failed to make adjustments to their beliefs and practices as needed. What is at stake here goes way beyond the death of a culture.

There are 80 ranked solutions spread out in seven general areas: energy, food, women and girls, buildings and cities, land use, transport, and materials. Each solution is ranked in terms of its ability to reduce C02 emissions over a 30 year period. A net cost and a net savings is computed. For example, #2 solution, land based wind



turbines would reduce C02 by 84.6 gigatons at a net cost \$1.23 trillion with a saving of \$7.4 trillion.

It is clear that no one solution will solve the problem of climate change. There are two ways solutions can be accomplished. One may result by market pressures but others may need government regulation. The #1 solution refrigeration would be a clear example of the need to have government regulation. The refrigerant, hydrofluorocarbons (HFCs) being used is 9,000 times more toxic than CO2. It is great news that regulations are already in the making.

It is refreshing to read that educating girls and family planning would be in the top 10. Discover why. Perhaps surprising is that reducing food waste along with increased consumption of plant-rich diets are ranked 3 & 4. For example, beef production is problematic because cattle emit huge amounts of methane. Methane is a greenhouse gas more severe than CO2.

Worldwide, eating a steak has become symbolic of economic success. This is a good example of a cultural belief in need of being reassessed

There are a total of 12 solutions in the top 28 that deal with food. All of the solutions for changes to our present food systems involve the concept of **regeneration** or rebuilding whether it is farming, ranching or land management. It is so ironic that the much of our food production and consumption habits actually threaten our very survival in many ways much like our use of fossil fuels. Know this, every time a field is plowed CO2 is released into the air with 50% carbon in the soil lost in the last few centuries. Now, there are many ways to successfully sequester greenhouse gases. Yet it is important to recognize that there are limits to what the soil and oceans can absorb. As the earth gets hotter, it becomes even more problematic and limiting. This is why reducing emissions is so vital.

Finally, ecologists are just now beginning to understand the relationship of life in the soil and life that lives on the soil. In a healthy state, there is a dynamic relationship between the two elements which many indigenous cultures have known.

*\*I am often asked why I do these reviews. My answer is that it is: a part of my academic training, it keeps my mind active and I believe it is important to share*