

## Dana's Answers

By Molly Ryan, Summer 2016

Donella “Dana” Meadows was a pioneer in systems thinking and sustainability, a MacArthur Fellow, a professor, a farmer, and a mentor and friend to countless people. Twenty years ago, Dana founded the Sustainability Institute (now called the Donella Meadows Institute) while working as a part-time professor at Dartmouth College. This summer, in the weeks before my senior year at Dartmouth, I’ve interned at the very same institute. My responsibilities here include reading some of Dana’s writing every day. This is no tiresome, repetitive task; Dana wrote twelve books, (including co-authoring the groundbreaking work, *Limits to Growth*), countless articles, monthly newsletters to friends and family, and a weekly newspaper column that was nominated for a Pulitzer Prize. It is no surprise that her writing remains varied, dynamic, and vibrant.

As I come to work every morning, my mind is full of thoughts and worries about the state of the world, my work as an Environmental Studies and Geography major, and my own future after college. As questions spin in my mind while I peruse Dana’s work, I often find that she has written answers, or at least guidance, for me. Her words and wisdom still hold true, many years later, in the serendipitous, timeless conversation that we have held for these past weeks.

Below, I’ve collected some of these questions that I am wrestling with in the form of an interview with Dana, so that she can speak for herself about her life and views of the world. Anything in italics is in Dana’s original words, with the source as a footnote at the bottom of the page. I hope Dana’s answers provide some insight for you, too.

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*As I imagine our conversation, I picture us at Cobb Hill, the cohousing community that Dana founded. We’re sitting in the living room of the farmhouse that used to serve as the headquarters of the Institute. Sunlight streams in through windows that frame extensive fields. Dana looks at me over a steaming cup of tea and smiles as I begin...*

Dana, how would you describe yourself?

*An ex-biophysicist, opinionated columnist, perpetual fund-raiser, fanatic gardner, opera-lover, baker, farmer, teacher, and global gadfly...<sup>1</sup> who lives on a sheep farm and writes on a Macintosh computer with a Buddha sitting on top of it, a cat on her lap, and a dog at her feet.<sup>2</sup>*

You say “ex-biophysicist”... you were trained as a scientist, with a BS in Chemistry and a PhD in biophysics from Harvard. But after traveling in Asia for a year, you became intrigued by systems dynamics, which was a relatively new field at the time. What is systems dynamics?

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<sup>1</sup> poster in DMI office

<sup>2</sup> *Global Citizen* p.13

*[Systems dynamics] is the opposite of science, which is reductionism, taking everything apart and looking at the pieces. Systems is putting everything together and looking at the whole and how things interact.<sup>3</sup> The behavior of a system cannot be known just by knowing the elements from which a system is made.<sup>4</sup> [So] as our world continues to change rapidly and become more complex, systems thinking will help us manage, adapt, and see the wide range of choices we have before us.<sup>5</sup>*

Because of your new interest in systems, you turned down a post-doc position at Harvard. What made you change your plans?

*My husband and I spent a year driving through Turkey, Iran, Afghanistan, Pakistan, and India...<sup>6</sup> In every country, villages [were] expanding and wilderness areas and delicate natural balances [were] being very rapidly and irreversibly destroyed by the foolish, shortsighted attempts to “modernize,” and to accommodate increasing population. Our travels... so much impressed on me the urgency of implementing population control and pollution control measures, that I [felt] an obligation to devote my energies to those problems.<sup>7</sup>*

*When I was there in Asia, I wasn't saying, 'I'm going to drop everything and become an environmentalist.' That came later. But the experience...<sup>8</sup> I [saw] so much more of the world, and it [was] so incredibly beautiful.<sup>9</sup> It made me drop a lot of old assumptions. And it also made me really kind of committed to the whole world, not just my self-absorbed Western culture.<sup>10</sup>*

Wow. That makes me want to travel! And giving up that post-doc allowed you to co-author a book called *The Limits to Growth* for the Club of Rome, published in 1972. The book, which was based on a computer model of global population and economic output, had a groundbreaking message: we can't have infinite material growth on a finite planet.

*We wrote it not to predict doom but to challenge the myth of growth as the answer to all problems.<sup>11</sup> Our point was that the world economic system is likely to overshoot and erode environmental limits, because human society gets only delayed, noisy, confused signals about the state of our environment. Not only is our information delayed, so are our responses. Even when limits are obvious, institutions, markets, and technologies*

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<sup>3</sup> 1995 Interview in Vermont Sunday Magazine, box 3, folder 15, Rauner Special Collections library

<sup>4</sup> *Thinking in Systems* p.7

<sup>5</sup> *Thinking in Systems* p.2

<sup>6</sup> *Global Citizen* p.15-16

<sup>7</sup> draft of letter to Harvard advisor, <http://donellameadows.org/danas-story/>, box 2, folder 2, Rauner Special Collections Library

<sup>8</sup> 1995 Interview in Vermont Sunday Magazine, box 3, folder 15, Rauner Special Collections library

<sup>9</sup> draft of letter to Harvard advisor, <http://donellameadows.org/danas-story/>, box 2, folder 2, Rauner Special Collections Library

<sup>10</sup> 1995 Interview in Vermont Sunday Magazine, box 3, folder 15, Rauner Special Collections library

<sup>11</sup> *Global Citizen* p.30

*cannot stop causing damage instantly.*<sup>12</sup>

I see. So in a world where “unlimited growth” is the goal, delays in the system can make it difficult to react to problems that we face. Can you give an example?

*It took 15 years for the world to believe scientific warnings about ozone thinning and 15 more years to stop making ozone-depleting chemicals. Fisheries are crashing all over the world, while we postpone the political pain of calling in the boats. We can grow ourselves way beyond sustainable limits, not because we can't adapt to those limits, but because we adapt too late. The scarcest resources aren't oil, food, water or fish; they are information, time, and political will.*<sup>13</sup>

You faced a lot of backlash and hostility from people who believed that you had predicted global collapse. But when you and your team published the 20 year update, *Beyond the Limits*, you did find that we have surpassed many, if not most, of the limits that you warned us about.

*Surely, I thought... All that needs to be done is to communicate the message, and then we will wake up and start managing ourselves and the planet wisely. Right?*<sup>14</sup> *But since we wrote Limits [in 1972] the human economy... more than doubled its physical presence, from vehicles to electric power plants to garbage. At the same time there has been great erosion of the planetary resource base.*<sup>15</sup>

So if showing the data didn't help slow down these worrisome trends, what do you and your team think is the purpose of modeling? How does modeling contribute to our understanding of the world?

*We think modeling is an essential tool of management. If we could only learn about complex global dynamics by experiencing them, we'd only learn by collapsing the world... We can't wait for catastrophes before we take action.*<sup>16</sup> *[But] how to seize the opportunity to bring into being a world that is not only sustainable, functional, and equitable but also deeply desirable is a question of leadership and ethics and vision and courage, properties not of computer models but of the human heart and soul.*<sup>17</sup>

I've spent a lot of my time at Dartmouth thinking about “sustainability” and what it truly means to live a “sustainable” life in a “sustainable” world. What do you mean when you talk about sustainability?

*I mean a great deal more than a world that merely sustains itself unchanged. I mean a world that evolves, as life has evolved for three billion years, toward ever greater*

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<sup>12</sup> <http://donellameadows.org/archives/george-washington-and-i-are-subjects-of-groundless-rumors/>

<sup>13</sup> <http://donellameadows.org/archives/george-washington-and-i-are-subjects-of-groundless-rumors/>

<sup>14</sup> *Global Citizen* p.217

<sup>15</sup> <http://donellameadows.org/archives/is-the-future-our-choice-or-our-fate/>

<sup>16</sup> 1992 interview with *E Magazine*, Box 3, folder 15, Rauner Special Collections Library

<sup>17</sup> <http://donellameadows.org/archives/a-synopsis-limits-to-growth-the-30-year-update/>

*diversity, elegance, beauty, self-awareness, interrelationship, and spiritual realization.<sup>18</sup> Sustainability means... a complete vision of the world I want to work for and live in.<sup>19</sup> What would a sustainable world be like? It would have no poverty and therefore, as in present societies where there is no poverty, a stabilizing population. People would have learned how to meet their material needs efficiently and their nonmaterial needs nonmaterially — and therefore they would be much happier than they are today. I see no reason why a sustainable world couldn't be democratic, market-oriented (with wise regulation), creative, dynamic, decentralized, flexible, diverse, tolerant, and technically advancing. Because of the limits of the earth, we are going to have to redesign our human world in any case. We might as well design it to be the world we really want."<sup>20</sup>*

People often assume that to be concerned about the environment is to be arguing for strict regulation and sacrifice, that people will need to give up the comfortable lives they lead now in order for everyone to live sustainably. What would you say to those people?

*Environmentalists have failed perhaps more than any other set of advocates to project vision... The most widely shared picture of a sustainable world is one of tight and probably centralized control, low material standard of living, and no fun... We promise survival and not much more.<sup>21</sup> [But] it's because of the people who are working toward sustainability, and because of my own experience, that I know how quickly the decision to go that direction, though it may start out with a feeling of sacrifice, turns into a lifetime of rejoicing.<sup>22</sup>*

*The more I learn about the planet-level megaproblems, the more I see grounds for hope. The solutions to these problems are not exotic; they will not require extreme sacrifices. They are exactly the things we need to do anyway to solve other problems – conserve energy, preserve forests, stop producing toxic chemicals, and above all, stabilize population growth and channel economic growth toward need not greed.<sup>23</sup>*

What I hear you say is that the transition to sustainability is entirely within our reach, and yet I can't help noticing a lot of resistance to this message, or just general apathy. Should we blame those individuals who refuse to hear the message – who don't believe in climate change, or drive SUVs, or waste food and resources and energy – for our environmental problems?

*Unsustainability does not arise out of ignorance, irrationality or greed. It is largely the collective consequence of rational, well-intended decisions made by people caught up in systems – ranging from families and communities to corporations, governments and*

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<sup>18</sup> “Beyond the Limits,” speech given in Spain, Fall 1993

<sup>19</sup> <http://donellameadows.org/archives/definition-of-sustainability/>

<sup>20</sup> <http://www.donellameadows.org/archives/what-does-sustainability-mean/>

<sup>21</sup> <http://donellameadows.org/archives/envisioning-a-sustainable-world/>

<sup>22</sup> poster on wall in DMI office

<sup>23</sup> *Global Citizen* p. 193

*economies – that make it difficult or impossible to act in ways that are fully responsible to all those affected in the present and to future generations.*<sup>24</sup>

*What we are rarely told is that solutions are as interconnected as problems. One **good** environmental action can send out waves of **good** effects as impressive as the chain of disasters that results from environmental evil.*<sup>25</sup>

That's reassuring – I hope that means that my own actions can have a positive impact and help move us to a more sustainable world. But you've also said that "there's no way to live an ecologically pure life in an industrial society."<sup>26</sup> Is there any way to live a good, green life in the current world?

*For a while I was a self-righteous eco-snob, the kind that gives rise to the stereotype. The problem is... [c]ompromises are inevitable.<sup>27</sup> Now I try to base my life on the idea of sufficiency – that there is just enough of everything for everyone and not one bit more.*<sup>28</sup>

*Living green is not a matter of doctrine, it's a matter of learning. It's sweeter, more fun, more creative, way more satisfying than living in a way that impoverishes people and nature. We'll make mistakes. We'll live with contradictions along the way. But it's a way of adventure.*<sup>29</sup>

As I prepare for my senior year of college, people are asking me what I am planning to do with the rest of my life. They are disappointed when they hear that I am still unsure about my future. In your life, you sometimes chose to reject a typical career path. For example, you turned down a tenure position at Dartmouth to become a newspaper columnist. How did you make that decision?

*One of our worst human copouts (it is certainly one of my own worst) is to go on doing what we've always done, because it seems so much easier than trying something new — even though the something new might actually work.<sup>30</sup> I was finding the state of the world and the feeble responses of policymakers intolerable. I didn't think that more writing for academics or preaching to the converted would help. I wanted to see a system-based, globally oriented, long-term viewpoint on the editorial pages of the newspapers. I kept waiting around for someone else to write it, but no one did. So I did.*<sup>31</sup>

How do you handle that uncertainty and take the leap to try something new?

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<sup>24</sup> <http://www.donellameadows.org/wp-content/userfiles/mission-evolution.pdf>

<sup>25</sup> *Global Citizen* p. 273-274

<sup>26</sup> <http://donellameadows.org/archives/living-green-isnt-a-sacrifice-its-an-adventure/>

<sup>27</sup> <http://donellameadows.org/archives/living-green-isnt-a-sacrifice-its-an-adventure/>

<sup>28</sup> *Global Citizen* p. 17

<sup>29</sup> <http://donellameadows.org/archives/living-green-isnt-a-sacrifice-its-an-adventure/>

<sup>30</sup> <http://donellameadows.org/archives/mop-and-bucket-solutions-keep-us-forever-cleaning-up/>

<sup>31</sup> *Global Citizen* book pg. 11

*We talk about our fears, frustrations, and doubts endlessly, but we talk only rarely and with embarrassment about our dreams.<sup>32</sup> I would rather be guided by positive visions than by fears...<sup>33</sup> [So to] keep myself going, [I] keep my feet firmly on the ground of present reality but my eyes on a vision for a better world.<sup>34</sup>*

Do you have any more advice you would give me about moving forward, beyond college, into our flawed, beautiful, extraordinary world?

*Start with the vision, be open to any path by which the vision will be realized, be patient and persistent, be true to the vision, and things will work out.<sup>35</sup>*

*It is not easy to practice love, friendship, generosity, understanding, or solidarity within a system whose rules, goals, and information streams are geared for lesser human qualities. But... [I] urge you to try.<sup>36</sup>*

*We are not helpless and there is nothing wrong with us except the strange belief that we are helpless and there's something wrong with us. All we need to do... is to stop letting that belief paralyze our minds, hearts, and souls.<sup>37</sup> Be patient with yourself and others as you and they confront the difficulty of a changing world. Understand and empathize with inevitable resistance; there is resistance, some clinging to the ways of unsustainability, within each of us... Listen to the cynicism around you and have compassion for those who believe in it, but don't believe it yourself. Seek out and trust in the best human instincts in yourself and in everyone.<sup>38</sup>*

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<sup>32</sup> <http://donellameadows.org/archives/envisioning-a-sustainable-world/>

<sup>33</sup> <http://www.donellameadows.org/archives/what-shall-we-do-about-america/>

<sup>34</sup> Global Citizen p.267-268

<sup>35</sup> <http://www.donellameadows.org/archives/dear-folks-march-19-1989/>

<sup>36</sup> <http://donellameadows.org/archives/beyond-the-limits-to-growth/>

<sup>37</sup> <http://donellameadows.org/archives/the-arctics-on-thin-ice-and-we-aint-seen-nothin-yet/>

<sup>38</sup> <http://donellameadows.org/archives/beyond-the-limits-to-growth/>