Beth Dooley - monitoring carbon content of soils as an indicator of soil health

Beth Dooley is currently the Head of Partnerships at Downforce Technologies and a Board Member at Farm Commons. Beth also serves as a member of the Editorial Board for the International Yearbook of Soil Law and Policy. With a background in agricultural and environmental policy research, Beth has worked in various roles such as Agri-Environmental Policy Specialist, Research Officer, Mediator, and Consultant. Beth holds a Doctor of Philosophy in Sociology, a Master of Laws in Global Environment and Climate Change Law, a J.D. with a Food & Agriculture Certificate, and a Bachelor of Arts in Spanish with minors in International and Communication Studies.

What is a key challenge you are tackling right now?

I care deeply about the land and those who manage it. Farming is part of my heritage – my brothers and I are the 6th generation on our family farm in north central Iowa back in the States. But having lived in Europe for 15 years, my experience has been more on the Common Agricultural Policy and how family farms across the EU continue to run thriving, resilient businesses that produce high-quality food, feed and fibre for millions of people.

Deteriorating soil quality is a major challenge facing not just European farms but also the global community, putting food security at risk not just for those directly managing the land but also for the billions who rely on the continued production of crops and livestock from functioning soils. I work for a company called Downforce Technologies that is responding to this crisis by providing at-scale assessment and monitoring of soil organic carbon globally.

Carbon content is a good indicator of soil health, building its capacity to retain and cycle water and nutrients, reduce erosion and prevent runoff, and withstand extreme weather events such as droughts and floods. Utilising publicly available data specific to the land in question, e.g. soil type, land use, terrain, climate data, etc., in combination with remote sensing satellite data collected every 10 days back to 2017, farmers and land managers can see how different crops, management practices and seasons have impacted the soil carbon. Thus, they can undertake data-driven strategic management to improve their soils' health and potentially access better financing due to the improved risk profile of their farm's base asset or price premiums from their supply chain.

More information about Downforce technologies here

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A person, failure or pivotal moment that changed your path or perspective. What did it teach you?

A pivotal moment in my journey working in agriculture was back in 2010 during my juris doctorate training at Drake University Law School when I saw the documentary King Corn about the industrial food system through the lens of corn production, processing, use in manufacturing and consumption. The follow-up Big River was about the environmental, health and livelihood impacts of mass monoculture production, and it set me on a now 15-year path of exploring from a legal, policy, business and finance perspective how agriculture can be more sustainable.

What very concrete issue in agriculture is most on your mind at the moment, and why?

Thus, if I had to choose one issue facing agriculture that is most on my mind at the moment, it would have to be the alarmingly rapid loss of fertile soils (every 5 seconds, the equivalent of a soccer pitch of soil is eroded) and the need to quickly change the status quo to avoid declining productivity, prevent desertification and reverse the current trajectory of 95% of all soils being degraded by 2050.