

Symphony of the Soil

Symphony of the Soil
A Multi-Film Project by Deborah Koons Garcia

www.symphonyofthesoil.com

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- Press Kit -

OVERVIEW

*Symphony of the Soil is a 103-minute documentary feature film that explores the complexity and mystery of soil. Filmed on four continents and sharing the voices of some of the world's most esteemed soil scientists, farmers and activists, **the film portrays soil as a protagonist of our planetary story.** Using a captivating mix of art and science, the film shows that soil is a complex living organism, the foundation of life on earth. Yet most people are soil-blind and "treat soil like dirt." Through the knowledge and wisdom revealed in this film, we can come to respect, even revere, this miraculous substance, and appreciate that treating the soil right can help solve some of our most pressing environmental problems. In addition to the feature film, there are several short films, *Sonatas of the Soil*, that delve deeply into soil-related topics, and several short clips, *Grace Notes*, that are available to stream on the film's website.*

PRESS RELEASE

Mill Valley, California...**Symphony of the Soil** will premiere at the **March 2012 Environmental Film Festival in the Nation's Capital**. It is the most recent film from filmmaker Deborah Koons Garcia, best known for her internationally acclaimed 2004 film, *The Future of Food*. *The Future of Food* premiered at Film Forum in New York and has screened widely around the world in theaters, film, food and farming festivals and conferences and in community screenings on every continent, including in India, Kenya, Bulgaria, Brazil and Indonesia.

DETAILED SYNOPSIS

The first third of *Symphony of the Soil* is devoted to soil science: the birth of soil, the life cycle of soil, the physical components of soil, the soil orders, the microorganisms that cycle nutrients, soil and plants, and interrelationship of the many members of the soil community, including humans. By delving deeply into soil science with hands-on and charismatic soil scientists, viewers will develop an interest in, and fascination with, this miraculous substance.

Soil science is increasingly cutting edge and relevant. Because of advances in technology like electron microscopes and satellite images, we can examine this diverse material in ever greater detail. Soil is alive, and its health and survival are intricately connected to that of all life. A sampling of what we see in this first section includes: a visit to the glaciers of Norway with Dr Ignacio Chapela of UC Berkeley; an exploration with Dr. Peter Vitousek of Stanford University of an active volcano in Hawaii and the soil that develops from its tephra, ranging from 50 year old soil to 4 million year old soil; Dr John Reganold shows us some of the most fertile land in the world, the Palouse of Washington State; Dr Elaine Ingham enthuses about the billions of organisms that create the cycles of fertility in soil. The film includes hand painted animation to explain various processes such as photosynthesis and the nitrogen cycle.

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The second third of the film focuses on our human relationship with soil, especially our use of soil as an agricultural medium. This section begins with Patrick Holden, longtime director of the Soil Association in the U.K., standing in his fields in Wales, declaring that agriculture is a “dance with nature.” We visit farmers and scientists who eloquently explain why we must give back to the soil, returning to it what we take out in the form of crops, a concept that is known as Sir Albert Howard’s “Law of Return.”

Various wholesome farming practices are explored: to till or not to till; composting; cover crops - the value of legumes to replenish nitrogen to the soil; and crop rotation. We are exposed to a variety of farming systems such as organic agriculture, permaculture, and Biodynamic farming. At the Rodale Institute, we see their 30-year field trials comparing industrial practices with organic methods and learn how soil with organic matter in it vastly improves water use. MacArthur Fellow Dr. David Montgomery leads us through a history of agriculture and the use and misuse of soil through the ages. Peter Segger and Ann Evans in Wales and Warren Weber, founder of Star Route Farms, the first certified organic farm in California, tell us about their evolving techniques for enhancing soil fertility. Judith Redmond of Full Belly Farm in California talks about the value of animals on the farm. In India, Jaspal Singh Chattha, a Biodynamic farmer in the Punjab, shares the “art of making compost” and how he has regenerated his land after the ravages of the Green Revolution. Dr Michael Hansen of Consumers Union and Dr. Warren Porter of University of Wisconsin report the latest science about the dangerous environmental and health effects of the toxic chemicals and nitrates so prevalent in industrial farming today. This section also covers such topics as biofuels, genetic engineering and overuse of nitrogen, as well as the crucial role soil plays in sequestering carbon.

The third section of the film explores Big Picture ideas such as soil and climate change, water use, health and a variety of other topics that support the case for treating soil with care. For example, Fred Kirschenmann, Distinguished Fellow at The Leopold Center for Sustainable Agriculture explains how returning to small scale organic farming is a viable solution to the problems of resource depletion, climate change and the end of oil. Vandana Shiva, physicist and environmental activist, speaks of the importance of seeds and seed saving from her fields in India. The Intervale in Burlington, Vermont had been farmland during revolutionary times but had become literally the town dump when entrepreneur Will Raap worked to revitalize this bottomland. Now the many farms and community gardens there provide 10% of the fresh produce in the city. Stone Barns, just north of New York City, is the home of a world class restaurant and a gathering place for the community. A wonderful back and forth discussion between acclaimed chef Dan Barber and Four Seasons Farm Manager Jack Algieri reveals an admirable dynamic between chef and grower. Esteemed soil scientist Dr. Daniel Hillel, now 80 years old, philosophizes about our origins as people of the soil.

The film ultimately raises consciousness about how we think about and treat soil. We see that destructive land use practices degrade and poison the soil and that we must take responsibility for protecting and improving soil for the generations to come. This heightened, science-based awareness can inform our responses to proposed U.S. Farm Bill policies, improve our backyard gardening skills and educate us about the consequences of our food choices on the environment. For example, Symphony of the Soil shows how municipalities, such as the City of San Francisco, have taken on large scale composting initiatives. These days many backyard gardeners, small scale farmers, and organic food enthusiasts recognize the necessity for turning food and yard waste into compost which can enhance soil fertility. Indeed, healthy soil creates healthy plants which create healthy people.

Why should we care about soil? As climate change and the increase in carbon emissions in the atmosphere cause more and more disasters, carbon sequestration becomes increasingly important. Healthy, living soil enhances the earth’s natural ability to hold carbon in the soil, thus reducing the emission of “greenhouse gasses” into the atmosphere and thereby alleviating global warming. Improving soil also improves water use. Understanding and respecting the power and potential that soil has to help solve environmental problems is essential. Once people have that understanding and appreciation, they will move towards appropriate action. As Dr. Fred Kirschenmann, farmer and philosopher, tells us, restoring the fertility of our soil is the single most important challenge we face today.

SYMPHONY OF THE SOIL—DISTINGUISHED SCREENINGS

A special work-in-progress version of Symphony of the Soil was shown at U.C. Berkeley as The Hans Jenny Memorial Lecture in the spring of 2010. The film includes several of the

university's distinguished soil scientists. This special version was also shown at Yale University and California State University at Fresno, as part of the school's 100th Anniversary Celebration. More food is grown in Fresno County than any place in the world.

SONATAS OF THE SOIL—SHORT FILMS

These short films are unique, stand-alone films, twelve to twenty minutes in length. They serve a dual purpose of promoting interest in the feature length film and providing in depth information on specific topics such as dry farming, nitrogen, the Transition Movement, Biodynamic farming, composting, soil/water relationships, and carbon sequestration. There will ultimately be twenty of these films available.

Soil in Good Heart, 2008, 13 minutes,

A brief introduction to soil fertility. Special Jury Recognition Award at the Aspen Shortsfest Film Festival

The Promise of Biochar, 2008, 12 minutes

The Promise of Biochar is a glance at the deep history and modern potential for biochar to revolutionize soil management practices. Carbon filled Terra Preta, a prehistoric form of Biochar, may have helped Amazonian natives to sustain fertility on poor tropical soils for centuries. Will Biochar be modern agriculture's equivalent savior?

Portrait of a Winemaker: John Williams of Frog's Leap, 2011, 15 minutes

Portrait of a Winemaker tells the remarkable story of John Williams and Frog's Leap Vineyards in the Napa Valley where organically dry-farmed grapes make award winning wine.

Sekem Vision, 2011, 14 minutes

Sekem Vision features the sustainable development and business pioneers Dr Ibrahim Abouleish and his son, Helmy Abouleish as they discuss their vision for the comprehensive development initiative, Sekem, a giant biodynamic farming community in the deserts of Egypt.

Transition Town Totnes, 2011, 13 minutes

Transition Town Totnes features Transition movement founder Rob Hopkins as he discusses the core principles of the Transition Initiative, a global community response to the twin pressures of climate change and peak oil. The film won Best Short in the 2011 Yale Environmental Film Festival.

Biography: Deborah Koons Garcia

Deborah Koons Garcia has a Master of Fine Arts from The San Francisco Art Institute. She has made fiction, educational and documentary films. Her film production company, Lily Films, is located in Mill Valley, California. For the last ten years, she has focused primarily on films about agriculture and the food system.

Her film The Future of Food premiered at Film Forum in New York City. It continues to play widely all over the world in theaters and at film, food and farming festivals and conferences and at thousands of community-organized screenings. Garcia has personally taken her film to innovative venues such as Google headquarters, Burning Man arts festival in the desert of Nevada, and shown it to inmates in the gardening program at San Quentin prison.

Filmography: Deborah Koons Garcia

All About Babies, 1987, 5 Part series narrated by Jane Alexander 150 minutes

Poco Loco, 1995, 103 minutes

Grateful Dawg, 2000, 81 minutes (chief creative consultant/participant)

The Future of Food, 2004, 88 minutes|

Soil In Good Heart, 2008, 13 minutes

The Promise of Biochar, 2008, 12 minutes

Portrait of a Winemaker: John Williams of Frog's Leap, 2011, 15 minutes

Sekem Vision, 2011, 14 minutes

Transition Town Totnes, 2011, 13 minutes

Symphony of the Soil, 2012, 103 minutes

People Involved/Interviewed for Symphony of the Soil:

Helmy Abouleish, Managing Director of the Sekem Initiative

Professor Ibrahim Abouleish, Chairman of Sekem Group and Founder of Sekem

John Aeschliman, Farmer, J.E.A. Farms Ltd., Colfax, WA

Jack Algieri, Four-Season Farm Manager, Stone Barns Center for Food and Agriculture

Dan Barber, Chef, Stone Barns Center for Food and Agriculture and Blue Hill Restaurant, New York

- I thought you make compost, you make compost, right? But there's a recipe to that that's as interesting and as profound and as important as the recipes that I'm making in the kitchen.

Dr. Charles Benbrook, Chief Scientist of The Organic Center

Dr. Viraj Beri, Professor and Head of Department of Soils, Punjab Agricultural University

Bob Cannard, Farmer, Cannard Farms, Sonoma, CA

Dr. Lynne Carpenter-Boggs, BIOAg Specialist with the Center for Sustaining Agriculture and Natural Resources, Washington State University

Dr. Oliver Chadwick, Professor of Geography, University of California, Santa Barbara

Dr. Ignacio Chapela, Microbial Ecologist and Associate Professor, University of California, Berkeley

- Most of the planet is not living—it is mineral, It has never known life, it is just this rock. And yet soil starts forming on it and creates this crust, this very thin layer where life is possible.

Jaspal Singh Chattha, Farmer, J & P Organic Farm, India

Dr. I.M. Chhibba, Senior Soil Chemist, Department of Soils, Punjab Agricultural University

Philippe Coderey, Bonny Doon Vineyard, Santa Cruz, CA

Dr. Julia Cooper, Research Associate, Nafferton Ecological Farming Group, Newcastle University

Dr. Laurie Drinkwater, Associate Professor, Department of Horticulture, Cornell University

Umendra Dutt, Executive Director, Kheti Virasat Mission, Punjab, India

Dr. Tewolde Berhan Gebre Egziabher, Director General of the Environmental Protection Authority of Ethiopia and PhD in Plant Ecology

Dr. Kimberly Epps, Post-Doctorate in Soil Science, Stanford University

Anne Evans, Farmer, Blaencamel Farm, Wales

Josh Frye, Poultry Farmer, Wardensville, WV

Dr. Jerry Glover, Soil Scientist, The Land Institute, Salina, KS

Dr. Keith Goulding, Head of the Department of Soil Science at Rothamsted Research, Harpenden, United Kingdom

Randall Graham, Owner, Bonny Doon Vineyard, Santa Cruz, CA

Dr. Zakaria El Haddad, Professor of Agriculture at Benha University and Director of the Egyptian Biodynamic Association

Dr. Michael Hansen, Senior Scientist with Consumers Union, Publisher of Consumer Reports

- There are so many microorganisms in one gram of soil that 70 to 80 percent of them still have never been identified. Soil is more properly viewed like this ecosystem. It's a living thing.

Dr. Paul Hepperly, Research Director 2002-2009, The Rodale Institute

Dr. Hans R. Herren, Co-Chair of the International Assessment of Agricultural Knowledge, Science and Technology for Development

Dr. Daniel Hillel, Retired Professor of Soil Physics and Hydrology and Senior Research Scientist at the Center for Climate Systems Research, Columbia University

- We banish ourselves from the Garden of Eden by despoiling it.

Angela Hofmann, Coordinator of Agriculture and Instructor for Agricultural Engineers, Sekem

Patrick Holden, Farmer, Director of the Soil Association, United Kingdom 1995 - 2010

- In a way, agriculture is a dance with nature.

Rob Hopkins, Founder of Transition Town Totnes and the Transition Network

Dr. David Huggins, Soil Scientist, USDA Agricultural Research Service, Pullman, WA

Dr. Elaine Ingham, President and Director of Research, Rodale, 2011; President and Director of Research, Soil Foodweb Inc 1996 - 2011

- It's Times Square on New Year's Eve all the time in the soil. When you take that soil and you put it under a microscope and you start looking, it is a place full of life.

Brad Jaeckel, Manager of Washington State University Organic Farm

Vijay Jardhari, Seed Saver, Farmer, Activist, Uttarakhand, India
Jennifer Johnson, Graduate Student in Biology, Stanford University
Parminder Kaur, Natural Farmer, Kothy Gradhirin Wala, Punjab, India
Surinder Kaur, Natural Farmer, Kheti Virasat Mission, Punjab, India
Dr. Fred Kirschenmann, North Dakota biodynamic farmer, Distinguished Fellow at the Leopold Center for Sustainable Agriculture

- *The way my grandfather farmed was that he'd break up a piece of prairie, and he would grow wheat and oats usually, sometimes corn, until the nutrients were depleted. And then he would break up a new piece of prairie. That's not ecological farming. That's-that's sort of slash-and-burn farming.*
- *The most important thing that we can do right now is to take seriously what Sir Albert Howard called the "Law of Return." What he meant by that was the best way to enhance and retain the living capacity of the soil and its capacity for self-renewal is to return to the soil all of those things that we use that we get from the soil.*
- *Sixty percent of our/ ecological systems now are reaching the point of collapse. If that were to happen, then it will fundamentally change the functioning of the planet.*
- *How do we continue to produce an adequate amount of food for a population of 6.5 billion people and getting larger? We have increasing energy costs, depleting water resources and we have more unstable climates and more severe weather events.*
- *The only thing that I can see that really looks promising is to get back to the fundamentals of the soil.*
- *The success that we've had in our food system over the last 70 years or so has been due to a unique convergence of circumstances. One is that we have had this incredible supply of cheap energy in the form of oil and natural gas and coal.*

Jerry Konanui, Mahiai Farmer, Hawaii

Dr. Raj Kumar, Senior Pedologist, Department of Soils, Punjab Agricultural University

Satish Kumar, Editor of Resurgence Magazine and Program Director of Schumacher College

Dr. Tim LaSalle, CEO 2007 - 2010, The Rodale Institute

- *What we need is healthy soil with organic matter in it.*

Dr. Johannes Lehmann, Department of Crop and Soil Sciences, Cornell University

Ala Lindsey, Researcher with Stanford University Research Team, Kohala, Hawaii

Penny Livingston-Stark, Co-Director of the Regenerative Design Institute and Co-Manager of the Commonweal Garden Organic Farm, Bolinas, CA

- *We don't grow plants. We grow soil, and soil grows plants.*

Kevin Lunny, Rancher, Lunny Ranch, Inverness, CA

Harry MacCormack, Organic Farmer, Sunbow Farm, Corvallis, OR

- *When you look at the real things that we're dealing with on this earth at a molecular, cellular level, change is life. So we're in constant change. We're in constant creation. And it's that constant creation that we get to help manage on a farm.*

Klaas Martens, Organic Farmer, Martens' Farm, Penn Yan, NY

- *If this soil is healthy and balanced, this cabbage plant is going to be healthy and balanced.*

Bill McKibben, Scholar in Residence at Middlebury College

Mary Howell Martens, Farmer and Manager of Lakeview Organic Grain, Martens' Farm, Penn Yan, NY

Professor Steve McGrath, Senior Principal Scientist, Rothamsted Research, Harpenden, United Kingdom

Dr. David R. Montgomery, Professor of Earth and Space Sciences, University of Washington

- *There's an incredible diversity of soils on the planet. There's not just one kind of good dirt.*
- *There are two very fundamentally different outcomes that agriculture can bring to a soil. It can improve it or degrade it. Agriculture is not necessarily destructive. And the difference depends on how one treats the soil.*
- *If we continue to aggressively pursue plow-based conventional agriculture the way that we are at present, we'll eventually deplete the supply of soil. Eventually the areas of highly fertile, highly productive agricultural soils will become very valuable and fought-over. They will become sort of the central organizing element of the geopolitical reality.*
- *We could be in a situation where we're essentially trading a system that mines oil for a system that mines soil. In which case we've just changed the time frame over which*

we're going to engineer disaster

Jeffrey Moyer, Farm Director, The Rodale Institute

Dr. David Pimentel, Professor of Ecology and Agricultural Sciences, Cornell University

Dr. Warren Porter, Professor of Zoology & Environmental Toxicology and an Affiliate Faculty

Member of Engineering Physics, University of Wisconsin, Madison

Dr. Sohan Prihar, Retired Professor of Soil Physics, Punjab Agricultural University

Will Raap, Environmental Entrepreneur, The Intervale, VT

Judith Redmond, Farmer and Partner at Full Belly Farm, CA

Dr. John Reganold, Regents Professor of Soil Science, Washington State University

- Soils have parents just like we have parents.

- We have 30-40 inches of today's soil that's being farmed. This is over 30 inches of a prehistoric soil, which is over another 30 inches of prehistoric soil. And it just keeps going down.

Dr. Kate Scow, Professor of Soil Science and Microbial Ecology Department of Land, Air and Water Resources, University of California at Davis

Ray Schutte, Community Garden Advocate and President of P-Patch Trust, Seattle, WA

Peter Segger, Farmer, Blaencamel Farm, Wales

Bob Shaffer, Agronomist, Horticulturist and Viticulturist, Soil Culture Consulting

- This is about one million pounds of recycled organic food and recycled organic green waste.

Dr. Vandana Shiva, Physicist and Environmental Activist

- For one seed you plant, you get a thousand... For thousands of seeds you plant, you get a million... Fertility really is the power of the soil to keep producing. The power of the seed is to keep reproducing year after year after year.

Balwinder Singh, Farmer, Kothy Gradhirin Wala, Punjab, India

Chamkour Singh, Farmer, Kheti Virasat Mission, Punjab, India

Dr. M.P. Singh, Soil Scientist, Navdanya Farm, Dehradun, India

Rajendra Singh, Water Conservationist and Founder of Tarun Bharat Sangh, Rajasthan, India

Sally Smith, Head of Information and Training at Garden Organic Ryton, Coventry, United Kingdom

Dr. Saran Sohi, Soil Researcher, Rothamsted Research, Harpenden, United Kingdom

Dr. Janice Thies, International Professor for Soil Biology, Cornell University

Dr. Peter Vitousek, Professor of Biology, Stanford University

- What makes Hawaii such a great place to study and understand soils is, first of all the volcano. You can go from places where the volcano is active and the rock was hot yesterday to places where you have soils being affected/ by life for 5 million years.

Warren Weber, Farmer, Star Route Farms, Bolinas, CA

- We started this farm back in 1974. One of the things they told us was that we wouldn't really be able to farm organically in California because California is an arid climate. ... And we were told that probably you weren't going to be able to farm organically in any commercially successful way because you couldn't get the humus levels high enough - -- to have the bacteria in the soil hold the nitrogen and the fertility elements that need it for the crops... in fact we're farming organically all over the state now and this farm is the oldest certified organic farm in California.

Hans Werner, Founder of Sekem Medical Clinic

John Williams, Owner and Winemaker, Frog's Leap Winery, Rutherford, CA

Dr. Edward Yeboah, Research Scientist, Soil Research Institute, Ghana, and Rothamsted International African Fellow, Rothamsted Research, Harpenden, United Kingdom

Resources for Learning More

Biodynamic Farming and Gardening Association

<http://www.biodynamics.com>

Dig It!

The Smithsonian's national exhibit about Soil

<http://forces.si.edu/soils/>

www.symphonyofthesoil.com

Food Democracy Now

Dedicated to building a sustainable food system

<http://www.fooddemocracynow.org/>

Soil Association (U.K.)

<http://www.soilassociation.org>

Soil Science Society of America

<https://www.soils.org/about-soils/>

Transition US

Seeking to build a resilient society without fossil fuels

<http://transitionus.org/>

United States Department of Agriculture,

Natural Resources Conservation Service

<http://www.soils.usda.gov>

Live Real-

Young people working to change the way we eat

<http://www.livereallnow.org/>