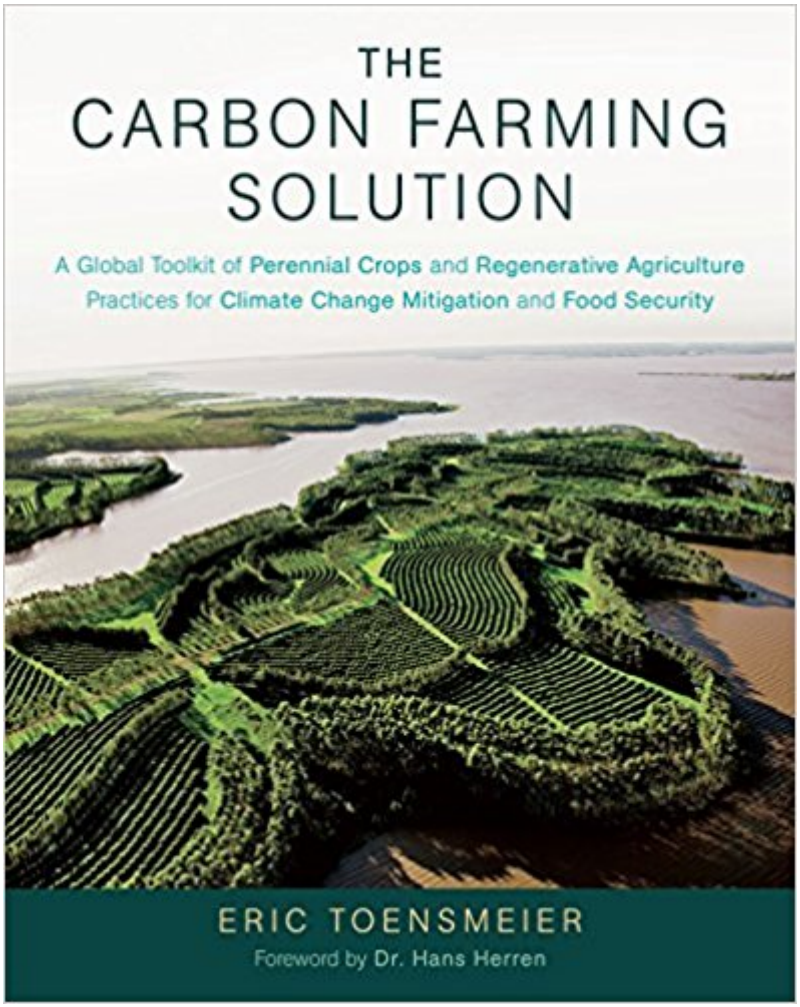
The Carbon Farming Solution: A Global Toolkit Of Perennial Crops And Regenerative Agriculture Practices For Climate Change Mitigation And Food Security

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Synopsis

With carbon farming, agriculture ceases to be part of the climate problem and becomes a critical part of the solution Agriculture is rightly blamed as a major culprit of our climate crisis. But in this groundbreaking new book, Eric Toensmeier argues that agricultureâ •specifically, the subset of practices known as â œcarbon farmingâ •â •can, and should be, a linchpin of a global climate solutions platform.Â Carbon farming is a suite of agricultural practices and crops that sequester carbon in the soil and in aboveground biomass. Combined with a massive reduction in fossil fuel emissionsâ •and in concert with adaptation strategies to our changing environmentâ • carbon farming has the potential to bring us back from the brink of disaster and return our atmosphere to the â œmagic numberâ • of 350 parts per million of carbon dioxide. Toensmeierâ ™s book is the first to bring together these powerful strategies in one place, including in-depth analysis of the available research and, where research is lacking, a discussion of what it will take to get us there. Carbon farming can take many forms. The simplest practices involve modifications to annual crop production. Although many of these modifications have relatively low sequestration potential, they are widely applicable and easily adopted, and thus have excellent potential to mitigate climate change if practiced on a global scale. Likewise, grazing systems such as silvopasture are easily replicable, donâ ™t require significant changes to human diet, andâ •given the amount of agricultural land worldwide that is devoted to pastureâ •can be important strategies in the carbon farming arsenal. But by far, agroforestry practices and perennial crops present the best opportunities for sequestration. While many of these systems are challenging to establish and manage, and would require us to change our diets to new and largely unfamiliar perennial crops, they also offer huge potential that has been almost entirely ignored by climate crusaders.Â Many of these carbon farming practices are already implemented globally on a scale of millions of hectares. These are not minor or marginal efforts, but win-win solutions that provide food, fodder, and feedstocks while fostering community self-reliance, creating jobs, protecting biodiversity, and repairing degraded landâ •all while sequestering carbon, reducing emissions, and ultimately contributing to a climate that will remain amenable to human civilization. Just as importantly to a livable future, these crops and practices can contribute to broader social goals such as womenâ ™s empowerment, food sovereignty, and climate justice.Â The Carbon Farming Solution does not present a prescription for how cropland should be used and is not, first and foremost, a how-to manual, although following up on references in a given section will frequently provide such information. Instead, The Carbon Farming Solution isâ •at its rootâ •a toolkit. It is the most complete collection of climate-friendly crops and practices currently available. With this toolkit, farmers,

communities, and governments large and small, can successfully launch carbon farming projects with the most appropriate crops and practices to their climate, locale, and socioeconomic needs.Â Toensmeierâ ™s ultimate goal is to place carbon farming firmly in the center of the climate solutions platform, alongside clean solar and wind energy. With The Carbon Farming Solution, Toensmeier wants to change the discussion, impact policy decisions, and steer mitigation funds to the research, projects, and people around the world who envision a future where agriculture becomes the protagonist in this fraught, urgent, and unprecedented drama of our time. Citizens, farmers, and funders will be inspired to use the tools presented in this important new book to transform degraded lands around the world into productive carbon-storing landscapes.

Book Information

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Customer Reviews

Journal ofÂ Agroecology and Sustainable FoodÂ Systems- "Readers interested in carbon capture and climate mitigation will welcome this newÂ resource, one of the most complete books on the market today that deals with whatÂ could be called ’carbon farming.’Â Although the focus is on perennial crops and systemsÂ often grouped under the topics of agroforestry, or more recently permaculture, the bookÂ also delves into creative and biodiverse annual cropping and livestock systems, newÂ crops, and innovative designs all focused on the issue of carbon. Toensmeier is anÂ applied ecologist with extensive experience in the Latin American tropics, and practicesÂ these principles in workshops, books, and at home. More than a reference volume, The Carbon Farming SolutionÂ is an easily read and interesting overview of this importantÂ frontier. â |Â The appendixes

to the book provide aÂ wealth of data on species and relevant references that could keep anyone truly interestedÂ Â engaged for months in following up on sources and designingÂ new systems based onÂ these ideas.Â The Carbon Farming Solution is indeed a monumental project that will help guide tropical agricultural development for decades, and Toensmeier has provided a significant resource for those concerned about climate and the future.â •Choice- "The terrestrial carbon pool is one of the most dynamic because it is directly affected by how people manage soils and implement cropping systems. The renewed interest in sequestering carbon into the soil reservoir creates a series of questions on how to introduce practices that are effective in increasing soil carbon along with providing plant resources to sustain the goods and services needed for a healthy ecosystem. In this volume, Toensmeier (Yale Univ.), co-author with David Jacke ofÂ Edible Forest Gardens,Â (v. 1)Â (CH, Jan'06, 43-2794),Â explores the carbon sequestration potential of different agroecological systems. He directly compares these systems, revealing the limitations of each and placing their dynamics in perspective. These include annual versus perennial systems and grasses and crops versus trees. As the subtitle indicates, the book uses a toolkit approach to help readers understand the value of selecting different practices and species appropriate to a given ecosystem. Included in the analysis of mitigation strategies are livestock systems and ways these can be managed in concert with plant systems to create viable agroecosystems to reduce the carbon footprint in agriculture.Â Summing Up: Recommended. All library collections.â •Booklist- "To minimize climate change, environmental engineers have recently proposed several innovative, if controversial, schemes designed to soak up CO2 or even block sunlight altogether, including spraying aerosols in the upper atmosphere. Yet, according to permaculture expert Toensmeier, a more reliable and safer solution involves trading in conventional agriculture practices for a soil-management methodology known as carbon farming. In this weighty but well-organized handbook, Toensmeier offers a wealth of guidance on cutting-edge farming techniques that reduce greenhouse-gas emissions and capture carbon in vegetation and soils. As a successful model of whatâ ™s possible, Toensmeier cites Las Canadas, in Veracruz, Mexico, where food-cooperative owner Ricardo Romero restored 250 acres of degraded farmland within 10 years. In 5 lucidly written sections, Toensmeier covers the science of carbon sequestration, perennial crop cultivation, and key financing tips. On the coattails of the recent, successful Paris Climate Summit, Toensmeier provides invaluable information and inspiration to farmers and agricultural entrepreneurs as well as everyone interested in environmentally positive farming as part of the effort to protect food sources and mitigate global warming.â •Library Journal- "Toensmeier (Perennial Vegetables) contends that shifting agricultural practices can help mitigate climate change and advocates for carbon farming, i.e., using a suite of

perennial crops and practices that simultaneously seclude carbon in the soil while maintaining the amounts of crops needed globally for food, materials, and energy. The author delineates the different types of systems that are best at sequestering carbon and also provides strategies for livestock management, supplying general information on practices such as rainwater harvesting and terrace farming that will help guarantee the successful implementation of this type of farming. A large section is devoted to perennial crops that Toensmeier maintains would be strong candidates for carbon farming.Â VERDICT:Â Both small- and large-scale farmers will find ways to apply methods that segregate carbon and therefore lessen the deleterious effects of climate change in this comprehensive title.â •â œAgriculture is currently a major net producer of greenhouse gases, with little prospect of improvement unless things change markedly. InÂ The Carbon Farming Solution, Eric Toensmeier puts carbon sequestration at the forefront and shows how agriculture can be a net absorber of carbon. Improved forms of annual-based agriculture can help to a degree; however to maximize carbon sequestration, it is perennial crops we must look at, whether it be perennial grains, other perennial staples, or agroforestry systems incorporating trees and other crops. In this impressive book, backed up with numerous tables and references, the author has assembled a toolkit that will be of great use to anybody involved in agriculture whether in the tropics or colder northern regions. For me the highlights are the chapters covering perennial crop species organized by useâ •staple crops, protein crops, oil crops, industrial crops, etc.â •with some seven hundred species described. There are crops here for all climate types, with good information on cultivation and yields, so that wherever you are, you will be able to find suitable recommended perennial crops. This is an excellent book that gives great hope without being naÃ ve and makes a clear reasoned argument for a more perennial-based agriculture to both feed people and take carbon out of the air.â •--Martin Crawford, director, The Agroforestry Research Trust; author ofÂ Creating a Forest GardenÂ andÂ Trees for Gardens, Orchards, and PermacultureÂ â œScientific observations and models are building an increasingly dire picture of the obstacles that must be crossed on the road to achieving climate and ecological health and stability on a planetÂ filled with humans.Â The relentlessly hopeful (but not naively optimistic) author ofÂ The Carbon Farming SolutionÂ reminds us thatÂ our planet is still rich in biological resources and that humanity is capable of astonishing feats of creativity and collaborative action; the picture painted here in word and image depictsÂ both the barriers and paths through them. Eric Toensmeier draws upon both the scientific literature and the worldâ ™s ethnobotanical knowledge bank to construct a logical and compelling road map for future research and investment to reinvent agriculture. But reason and facts alone are insufficient to sustain a global and long-term

agenda;Â passion is required. In the end, it is the perennialÂ plantsÂ (and their human and microbial partners) themselvesâ •lovingly portrayed here in their glorious diversity and elegant functionalityâ •that steal the show and our hearts.Â ThisÂ â ˆWhoâ ™s Whoâ ™Â of wild or orphaned potential crops can inspire a new generation of plant lovers and gardeners toÂ become the convention-questioning, dedicated, passionate,Â hopeful scientists, farmers, and leadersÂ that the movement requires.â •--David Van Tassel, PhD, senior scientist, The Land Instituteâ œThese are exciting times for soil carbon! What was once an obscure topic mainly of interest to agronomists and gardeners is now viewed by many people as a key to solving multiple challenges in the 21stÂ century, including climate change, hunger, and drought. For urgent times, we need an urgent agriculture. Thatâ ™s exactly what we get in Eric Toensmeierâ ™s new bookâ •a detailed, practical explanation of how to increase carbon in our soils, written with passion and skill by a leader in regenerative agriculture. We know what to do,Â and withÂ The Carbon Farming SolutionÂ we know how to do it. Letâ ™s get going!"--Courtney White, author ofÂ Grass, Soil, HopeÂ andÂ Two PercentÂ Solutions for the Planetâ œEric Toensmeier has done it again!Â The Carbon Farming SolutionÂ is aÂ detailedÂ vision that will become the go-to reference guide for everyone who is interested in an accessible toolkit showcasing global agroecological carbon farming in action. This indispensable bookÂ needs to be put in the hands of all climate-change policy makers, agrarians, and people who eat food, drink water, and breatheÂ air. Mr. Toensmeierâ ™s book is notÂ ground-breakingâ •it isÂ ground-healing!â •--Brock Dolman, director, Permaculture Program and WATER Institute at Occidental Arts and Ecology Centerâ œTheÂ Carbon Farming SolutionÂ is a book we will look back upon decades from now and wonder why something so critically relevant could have been so overlooked until that time. We are told we have a choice between chemical/GMO agriculture if we want to feed the world, or we can see children starve and adopt organic agriculture as a romantic and sentimental pursuit. Really?Â Toensmeier describes a future that is in alignment with how life works, a scientific and sophisticated agricultural understanding of husbandry and biology that surpasses the productivity of industrial agriculture. What is phenomenal about these land-use solutions is thatÂ they are the only way we can bring carbon back home if we are to reverse climate change. The title is accurate but humble: TheÂ Carbon Farming SolutionÂ describes the foundation of the future of civilization.â •--Paul Hawken, author ofÂ Blessed Unrestâ œEric Toensmeier presents a convincing argument that carbon farming is crucial to addressing global issues of the 21stÂ century including climate change, food and nutritional insecurity, eutrophication and contamination of water, and dwindling of soil biodiversity. Implemented in a transparent manner and with payments of just andÂ fairÂ price based on the true

societal value, carbon farming is also pertinent to alleviating poverty and addressing several Sustainable Development Goals of the United Nations. Carbon farming as a strategy is in accord with the â œ4 pour 1000â • initiative of the French Government presented during the COP-21 Summit in Paris on December 1, 2015 andÂ The Carbon Farming SolutionÂ is a befitting tribute to theÂ 2015 International Year of Soils.â •--Dr. Rattan Lal,Â Distinguished University Professor of Soil Science andÂ director of The Carbon Management and Sequestration Center,Â The Ohio State University; President Elect, International Union of Soil Sciencesâ œTheÂ Carbon Farming SolutionÂ is a book whose time has come. This detailed documentation of regenerative practices from around the world, including principles and methods, provides a practical guide for others to follow and expand upon as humanity takes on the â ˆGreat Work of Our Timeâ ™â •to restore the Earthâ ™s natural systems to ecological health.Â The Carbon Farming SolutionÂ is of enormous importance.â •--John D. Liu, founder and director, Environmental Education MediaÂ Project (EEMP)â œIf we seriously put our minds to it,Â we could easily provide ourselves with enough food, forever; and do so inÂ ecologically sound ways; and at the same timeâ •a huge bonus!â •trap enough carbon in the soil to tip the battle against global warming. The methods are those of agroecologyâ •including organic farming in general, and permaculture in particular; and as Eric Toensmeier excellently describes, farmers worldwide are already on the case. So this book offers what governments at present spectacularly do not:Â hope.â •--Colin Tudge, author ofÂ Good Food for Everyone ForeverÂ andÂ Why Genes Are Not Selfish and People Are Niceâ œEric Toensmeier has done a hugely impressive job putting together thisÂ magnum opus. It is packed with an enormous amount of information about seven hundred plant species that have a role to play in saving the planet from land degradation and climate change, while at the same time improving the lives of millions of poor farmers, especially in the tropics and sub-tropics.Â The Carbon Farming SolutionÂ covers species for every use and every situation thatÂ can be assembled in infinite agroecological combinations. On top of that, the cultivation of these crops can lead to new industries in the production of food, medicines, cosmetics, and materialsâ •creating wealth and employment. This information should be absorbed by everyone engaged in agriculture; everyone concerned about the future of the world and the well-being and health of its people; and everyone interested in protecting biodiversity. Indeed,Â The Carbon FarmingÂ SolutionÂ offers a path to a bright new world!â •--Professor Roger Leakey,Â viceÂ chairman of the International Tree Foundation and author ofÂ Living with the Trees of Lifeâ œEric Toensmeier is one of North Americaâ ™s most inventive and scientifically-minded permaculture experimenters. In this book, he offers nothing less than a new vision for world agriculture that is more resilient, supports traditional farmers, and also

helps relieve the global climate crisis. TheÂ Carbon Farming Solution offers an encyclopedic but also highly readable view of new and old carbon-trapping farming methods that can be applied around the world, and a profile of the highly adaptable, soil-enhancing perennial plant species that may just be the key to a livable human future.â •--Brian Tokar, director of the Institute for Social Ecology and author of Toward Climate Justice: Perspectives on the Climate Crisis and Social Changeâ œThe Carbon Farming Solution is an excellent reference book that convincingly explains the potential of farming practices based on perennial crops for carbon sequestration and climate change mitigation and adaptation. The numerous photographs and charts included help illustrate the food-security and multi-functionality attributes of agroforestry and other such farming systems. In addition to professionals who work on food security and climate stabilization issues, undergraduate and graduate students of these topics will find the book useful.â •--Dr. P. K. Ramachandran Nair, Distinguished Professor in the School of Forest Resources and Conservation, University of Floridaâ œDealing with climate change requires action on many fronts, and this book is the toolkit for making the soil itself a sponge for carbon. Itâ ™s a powerful vision, one that Iâ ™ve seen playing out in enough places to make me very hopeful it can presage major changes in our speciesâ ™ use of the land.â •--Bill McKibben, author of Deep Economyâ œInÂ The Carbon Farming Solution, Eric Toensmeier admirably harnesses available data with traditional wisdom to propose a practical response to climate change. Toensmeierâ ™s solution-oriented ideas combine his clear understanding of ecology, agriculture, and the magnitude of the challenge we face with a set of agriculture-based solutions that are suited to various livelihoods, communities, and systems of production. This book will surely be a benchmark in policy-relevant knowledge.â •--Dr. Cheikh Mbow, senior scientist on climate change and development, World Agroforestry Centre

Eric Toensmeier is the award-winning author of Paradise Lot and Perennial Vegetables, and the co-author of Edible Forest Gardens. Eric is an appointed lecturer at Yale University, a Senior Fellow with Project Drawdown, and an international trainer. He presents in English and Spanish throughout the United States, Canada, Mexico, Guatemala, and the Caribbean. Eric has studied useful perennial plants and their roles in agroforestry systems for over two decades, and cultivates about 300 species in his urban garden. His writing can be viewed online at perennialsolutions.org.

This is a very good book. It lays out the challenge of climate change (which is currently very much in the forefront, as the northern hemisphere is currently at 2 degrees centigrade above the baseline) and the necessity for carbon farming to sequester a great deal of carbon over the next few decades.

It also explains why carbon farming alone cannot solve our problems. The book discusses many solutions which can sequester some carbon, but the star methods which can sequester a lot of carbon per acre (or hectare) all involve trees. Not a forest, but a multifunctional landscape which includes trees. While the methods applicable to the tropics are pretty well defined, the methods applicable to the temperate zone are less certain. The book also gives a balanced view of solutions such as rotational grazing....the scientific studies tend not to support the claims of enthusiastic non-scientific studies. Yet the results of real world experiments are considerably more positive than the 'scientific' studies. Toensmeier calls for intensive study of why the 'scientific' studies yield results much less positive than the experience of real world rotational grazing enthusiasts.My own guess is that the 'scientific' studies start out with a procedure cast in stone, while the real world people engage in the art of grazing. And my guess is that grazing for carbon sequestration will always be an art more than it is a science.Don Stewart

This book provides excellent info and I am glad their is a Kindle version, too. (I purchased both and wrote the same review for each.) As there is finally some focus by policy leaders on reducing Green House Gas (GHG) pollution from the electric power sectors to reduce global warming, this book provides a menu of practical ways of capturing carbon and reducing other green house gasses through agricultural practices that also feeds more people safe, healthy and nutritious food, provides farmers more stable income, and restores the environment on the farm and around it. The tables comparing the GHG benefits and the nutrition benefits are extremely valuable. As the author indicated, there is need for more research to quantify the net GHG benefits of some of the practices but in all my research, to date, I have not found a better source for comparing "carbon farming" practices and their associated benefit.Also those involved in international development, food security, economic development and even home gardeners will get great benefits from reading this book or having it as reference source.(I would recommend that the next version of the book not sight the stats from GRAIN on the greenhouse gas impacts of agriculture. While the they make an important point, I have not found another source that shows agriculture's GHG impact as high as GRAIN indicates.)I greatly appreciates the authors hard work and scholarship that went into developing this excellent resource!

In all the time I've been reviewing books for permies.com, I've always said that I would never give a score of 10 out of 10 acorns. But now a book has turned up which is so important and has such a capacity to change the world for the better, that I have to eat my words.Eric Toensmeier's new book,

The Carbon Farming Solution, is subtitled A Global Toolkit of Perennial Crops and Regenerative Agriculture Practices for Climate Change Mitigation and Food Security. That's quite an ambitious aim, but this book really does measure up. There are nearly 500 pages of comprehensive, meticulously researched information with full color photos, charts, tables and references, all perfectly organized, well laid out, clearly written, and presented in a way that is both completely accessible to the layman and also appropriate to use as a text book for courses or college studies.In the introduction, Eric tells us that "Carbon farming alone is not enough to avoid catastrophic climate change, even if it were practiced on every square meter of farmland. But it does belong at the center of our transformation as a civilization. Along with new economic priorities, a massive switch to clean energy, and big changes to much of the rest of the way our societies work, carbon farming offers a pathway out of destruction and a route to hope. Along the way it can help address food insecurity, injustice, environmental degradation, and some of the core problems with the global food system. In the pages to come we'll explore the promise and pitfalls of this timely climate change solution."The book itself is divided into five main parts, each containing several chapters.Part 1: The Big Idea introduces the concepts and science behind how increased carbon in the atmosphere is effecting climate, and the need to put it back in the soil where it belongs. The chapter on carbon sequestration gives us some idea of how different agricultural practices differ widely in their potential to do this, and that while our understanding of the fine details is still lacking, there is sufficient data already available to guide us to choose the best core practices. Then the idea of agroforestry is introduced, where trees may be integrated with annual crops, livestock systems or complete forest gardens. The benefits of perennial crops, which live for several years and are non destructively harvested, are explained. The final chapter in this section discusses the concept that we permaculturists know as function stacking, where each element in a system performs many functions. Eric acknowledges the value of permaculture, but is also not afraid to point out where he feels we might be starting to go astray. The main concept he's trying to impress on us is that when we design systems to sequester carbon, then we should design them to also perform other functions such as producing food or stabilizing slopes. He discusses compatible functions such as ecosystem services, soil improvement, and socioeconomic benefits.Much of the rest of the book is concerned with choosing the most appropriate growing systems for your situation, and the best perennial plants to use in those systems.Part 2: A Global Toolkit of Practices and Species is to me the most interesting section, discussing different types of system and the pros and cons of each one.The three main types of systems discussed are annual cropping systems, livestock systems and perennial cropping systems.Although annual cropping offers the least potential to sequester

carbon, it currently accounts for 89 percent of all cropland, so finding ways to transition this from being a net emitter to a net sequesterer of carbon while allowing us to grow the annual crops with which we are all so familiar would make a tremendous difference overall. Various annual systems are discussed, including conservation agriculture, strip intercropping, alley cropping, swidden and successional intercropping, among others. Each is presented separately, described accurately, placed into context, and the pros, cons and relative potential for carbon sequestration discussed, allowing the reader to make comparisons and select the ones most appropriate to their own situation.The chapters on livestock systems and perennial cropping systems are laid out in much the same way.Livestock systems are controversial and Eric takes care to present as much information as possible to help us understand the controversy. 70 percent of farmland is devoted to pasture, and a third of cropland is used to grow food for livestock, so, again, any improvements in the way we raise and feed livestock can have a huge overall impact on carbon sequestration. Whatever our personal views on the matter, it is important that better systems are implemented globally. Some of the livestock systems discussed include livestock integration, silvopasture, fodder banks, outdoor living barns and green corrals, and restoration agriculture.Perennial cropping systems offer no controversy, but they do require more change to both our diets and food systems. Systems discussed include multistrata agroforests, which Eric believes should be a priority, perennial monocultures, managed bamboo, coppice, herbaceous biomass crops, woody agriculture and perennial grains.A short chapter on additional tools, not directly related to growing crops, looks at rainwater harvesting, terraces, keyline, biochar, productive restoration and, my own favorite, indigenous land magagement. And finally this section is rounded off by a look at plant species, breeding, perennializing, GMOs, and invasives. He also reminds us that there whilst thre are no intrinsically "bad plants", neither are there any "superplants" waiting to save us, nor any excuse to clear healthy forest to plant any of them.Part 3: Perennial Staple Crops and Part 4: Perennial Industrial CropsThese two sections speak for themselves really. Each has an introductory chapter outlining the potential and any problems of such crops, followed by chapters on more specific crop types.According to Eric, "Perennial staple crops are trees and other long-lived perennial plants that provide these basic proteins carbohydrates, and fats. They include cereal grains, pulses (dry beans), nuts, dry pods, starchy fruits, oil-seeds, leaf protein concentrate starch-filled trunks, sugary saps, and aerial tubers." Examples of each are discussed in the following chapters, some species being described in detail while comprehensive tables provide basic details on virtually all known examples of appropriate plants to use. I'll leave you all to discover your own favorites, but if anyone knows where I can get hold of some bunya nut, I'd like to hear from them!The section on perennial

industrial crops was the most eye-opening for me. Here are a few quotes which hit home pretty hard."an eighth of petroleum is used to synthesize materials and chemicals. A full 10 percent of petroleum is used as feedstock to synthesize chemicals, with another 10 percent used to power the process.""there simply isn't enough land to grow both food and fuel""One barrel of oil yields as much energy as twenty-five thousand hours of human manual labor - more than a decade of human labor per barrel.""My proposal is that we reduce our consumption, acquire most of our energy from wind, water, and solar (WWS), and produce materials and chemicals from non-destructively harvested perennials.""A large-scale wind water and solar energy system can reliably supply the world's needs, significantly benefiting climate, air quality, ecology and energy security ... the obstacles are primarily politcal, not technical.""I don't have the road map laid out from here to a full proposal to replace petroleum and all its uses, but I think these species and pactices are the building blocks of a post-petroleum civilization."The chapters that follow cover biomass, industrial starch, industrial oil, hydrocarbon and fiber crops, followed by a chapter on other industrial uses such as dyes, cork, tannis, waxes, gums, pesticides, medicinal plants and soaps, again with detailed descriptions of some plants and comprehensive tables outlining any others of interest.Finally, Eric rounds off the book with Part 5: Road Map to Implementation in which he presents chapters about a three-point plan to scale up carbon farming, how to support farmers and farming organizations to mate the transition, how to effectively finance carbon farming, the importance of removing national and international policy barriers, and strategic next steps, including the need to provide examples of carbon farming in action in our own neighborhoods so that people can learn what carbon farming is and understand its potential.Which is, of course, where every single one of us reading these words has a role to play.Three substantial appendices provide a global species matrix, clean dry weight yield calculations and carbon sequestration rates.To say I am impressed by this book would be an understatement. In my opinion, this is a book that belongs in every library, every school, every college, and in the hands of everyone with access to land or the desire to heal the Earth.Let's try to make that happen.In short, for the first time ever -I give this book 10 out of 10 acornsEric Toensmeier, I salute you!

Bringing all the current knowledge about the various aspects of carbon emission awareness to the fields of food, fiber and industrial use farming is a daunting project.Toensmeier has done a masterful job of this.Even if you thought you knew a lot about carbon farming and all the possible plants and animals to use, I believe you will find even more possibilities.The detailed descriptions of the various plants and their potential is worth the price of the book.

The Carbon Farming Solution is an extraordinarily well researched and useful book for anyone interested in agriculture in the anthropocene. The tools and techniques covered in the book make up the core of any relevant agricultural design or policy for the planet. Toensmeier is the best possible person to have written the book, and he has given us all a huge gift.

The Carbon Farming Solution: A Global Toolkit of Perennial Crops and Regenerative Agriculture Practices for Climate Change Mitigation and Food Security HOMESTEADING: Farming For Beginners (Animal Books, Food, Farming, Beekeeping, Animal Farm) (Breeding Animals, Backyard, Farming Books, Farming for Dummies, ... Agriculture Business, Mini Farming Book 1) 6 books in 1 - Agriculture, Agronomy, Animal Husbandry, Sustainable Agriculture, Tropical Agriculture, Farm Animals, Vegetables, Fruit Trees, Chickens, ... Tomatoes, Cucumbers (How To Do Agriculture) Perennial Gardening: Easy To Follow Guide: Plant Once And Enjoy Your Plants, Flowers, Shrubbery and Vegetables Forever (Perennial Gardening Guide and Tips ... Herb and Shrubbery Perennial Plants Book 1) Perennial Gardening: Easy To Follow Guide: Plant Once And Enjoy Your Plants, Flowers, Shrubbery and Vegetables Forever (Perennial Gardening Guide and ... Herb and Shrubbery Perennial Plants) 21st Century Guide to Carbon Sequestration - Capture and Storage to Fight Global Warming and Control Greenhouse Gases, Carbon Dioxide, Coal Power, Technology Roadmap and Program Plan Wetland Mitigation: Mitigation Banking and Other Strategies for Development and Compliance Tropical agriculture : the climate, soils, cultural methods, crops, live stock, commercial importance and opportunities of the tropics MINI FARMING MADE EASY FOR BEGINNERS (bonus with Home-Mushroom Guide): DIY Guide To Grow Your Own Organic Foods and Plants (Mini farming, Homesteading, ... Gardening, Mini Farming For Beginners) backyard farming: The beginnerâ ™s guide to create your own self sufficient backyard (Backyard Farming Essentials - Mini Farming - Urban Gardening - Self Sustainability - Backyard Homestead) Backyard Farming: Your Guide to Building the Ultimate Self Sustainable Backyard Mini Farm (Backyard Farming Essentials - Mini Farming - Urban Gardening - Self Sustainability - Backyard Homestead) The Complete Guide to Organic Livestock Farming: Everything You Need to Know about Natural Farming on a Small Scale (Back-To-Basics Farming) Returning Carbon to Nature: Coal, Carbon Capture, and Storage Rodd's Chemistry of Carbon Compounds, Part D: Membered Heterocyclic Compounds With More Than 2 Heteroatoms in the Ring (Rodd's Chemistry of Carbon Compounds 2nd Edition) Will Bonsall's Essential Guide to Radical, Self-Reliant Gardening: Innovative Techniques for Growing Vegetables, Grains, and Perennial Food Crops with Minimal Fossil Fuel

and Animal Inputs The Anthropology of Climate Change: An Integrated Critical Perspective (Routledge Advances in Climate Change Research) Climate Bogeyman: The Criminal Insanity of the Global Warming / Climate Change Hoax Social Security & Medicare Facts 2016: Social Security Coverage, Maximization Strategies for Social Security Benefits, Medicare/Medicaid, Social Security Taxes, Retirement & Disability, Ser HIV/AIDS And Human Development In Sub-Saharan Africa: Impact Mitigation Through Agricultural Interventions: An Overview and Annotated Bibliography ... Leaders in Agriculture and the Environment) Food, Farms, and Solidarity: French Farmers Challenge Industrial Agriculture and Genetically Modified Crops (New Ecologies for the Twenty-First Century)