

# Introduction

The goal of this handbook is to empower you to *practice sustainability wisely*—so you can improve practices in households, organizations, and communities to help create a better future for everyone. Inside you’ll find a “cookbook” of “recipes” breaking down projects into achievable steps on pathways to sustainability, plus a full complement of scientific, technical, engineering, and financial knowledge.

Our theme is to think globally and act locally to go from good intentions to effective action. Earth’s surface is the only habitat in the known universe that can sustain human life; our planet provides air, water, food, goods, and everything else we require. Dividing Earth’s 15.77 billion acres of habitable land by 8.2 billion human inhabitants equals less than *two acres* (an area smaller than 100 meters by 100 meters). Our urgent sustainability challenge is to meet our needs using less than a hectare of habitable land per person, so Earth can sustain everybody in perpetuity.

## What Is Sustainable?

A sustainable future is possible. Science shows that our planet’s life-support systems naturally operate in a *global safety zone*. For instance, the Stockholm Resilience Centre has identified “a set of nine planetary boundaries within which humanity can continue to develop and thrive for generations to come.” Although unsustainable practices are causing climate change *and eight more* global challenges, choosing more sustainable practices will keep our impacts within safe limits. Only if we pollute and consume excessively will we diminish and eventually destroy Earth’s ability to sustain human beings.

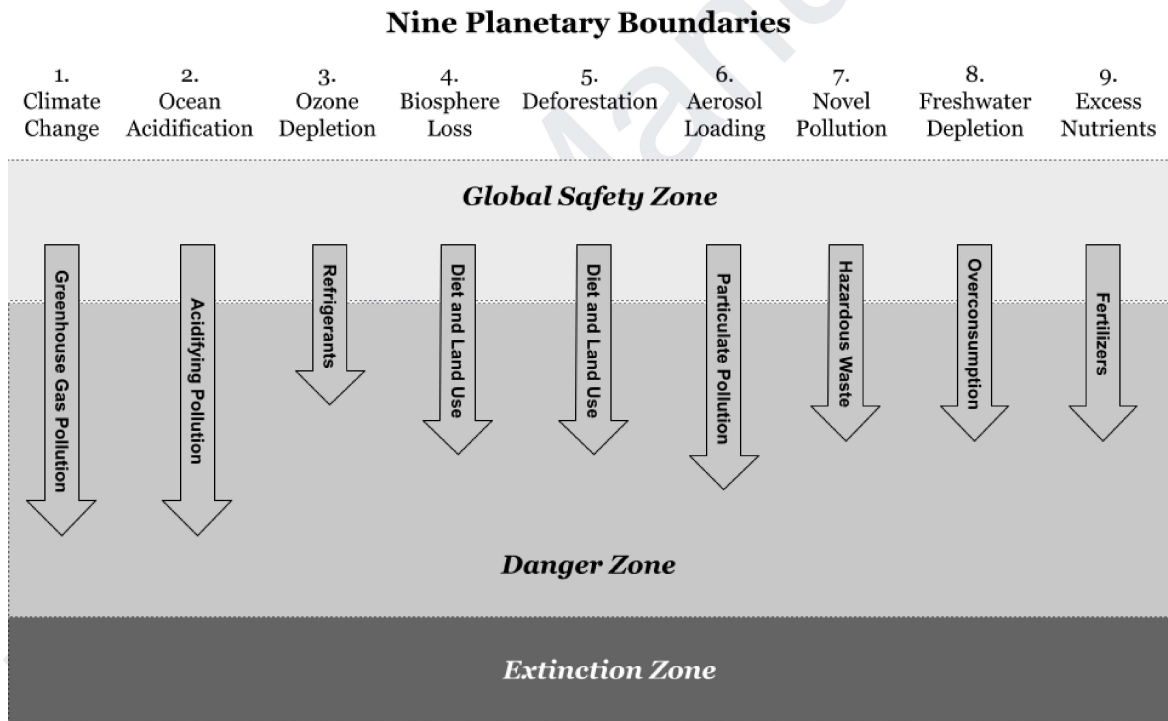


Figure adapted from the work of Johan Rockström et alia, as publicized by the Stockholm Resilience Centre

You can learn about sustainability science in this handbook; however, our main purpose is to empower you to chart a course that moves us away from danger and toward safety. Sustainable solutions to global challenges like deforestation are not political campaigns or corporate policies, but practices like eating more plant-based meals. When considering your own impacts, divide our global safety zone into 8.2 billion “life rafts” (one for each person on Earth). Take responsibility for your lifeboat by causing less detrimental and more beneficial environmental impacts to save your tiny ship from sinking.

## How Do You Practice Sustainability?

The food you will eat, the air you will breathe, the fresh water you will drink, and all the goods you will enjoy are being made somewhere on Earth—mostly by a complex system of living organisms. By your practices, you choose whether to save or degrade the small part of our planet’s lifegiving ecosystem that sustains you. Not only do you choose *whether* to save your planet, you also choose *how*.

As a sustainability *activist*, you could try to persuade politicians to pass laws or ordinances to leverage government power to change practices. This triggers political debates: Which actions should be incentivized? What incentives will persuade people to change their practices? Who should pay for incentives? How will bureaucracies manage incentives? One approach is to master the material in this handbook, especially the [Understanding Sustainability](#) chapter, to fight and vanquish political foes, if that’s what you enjoy doing. Another approach is to apply your knowledge in a less confrontational, directly practical way that is more about solving problems than about winning battles.

While activists spend their days and evenings lobbying and legislating, as a sustainability *practitioner*, using this handbook, you help save your planet using a complementary “bottom up” method. Without waiting for politicians to pass laws or corporations to go green, you figure out how to change practices in your own household and organizations to reduce your negative environmental impacts and increase your positive impacts. Then you help other people, by studying options, planning practical pathways to sustainability, taking feasible steps to improve, and measuring results. Those are the practical subjects covered in depth in this handbook. We assume you *want* to be improving your own community step by step from the ground up—if so, you’re reading the right book!

## How Affordable Are Sustainable Practices?

The more modest your needs, the easier to meet them in sustainable ways. The cheapest strategy is [conservation](#): practices like turning down the thermostat or taking shorter showers conserve resources but sacrifice some comfort or convenience for the common good. Everyone can financially afford that.

A much harder challenge is to raise your standard of living while lowering your environmental impacts. That requires a different strategy: [efficiency](#). You’ll need to invest time or money in better techniques or technology. For example, an [LED light bulb](#) costs more than an incandescent bulb but uses less power to provide the same amount of light for much longer.

Many sustainable practices save money over the long run, but some don’t. Whether you should spend to be more sustainable depends on your values. For instance, if you’re burning fossil fuel, you are not paying the full price of your pollution. Your emissions only cost you a guilty conscience—and you can sidestep even that moral burden if you ignore the consequences of your actions, convince yourself that your pollution does no harm, or point the finger at someone else who is burning more fuel than you are. You can decide whether you want to take steps to stop polluting, keep polluting yourself but pay someone else to stop polluting, or just keep on polluting and devote your time and money to other priorities. What you choose to believe and how you choose to spend your own time and money shows what you truly value.

This comprehensive handbook helps you practice sustainability wisely whether you want to *save* money, live more simply, and conserve resources, or *invest* money, enjoy more creature comforts, and use resources more efficiently. You’ll find out which sacrifices really make a difference and which just make life more difficult for insignificant environmental benefit. You’ll discover a comprehensive system for measuring your environmental impacts, so you can avoid the trap of tunnel vision: rather than myopically obsessing over devilish details that do little to improve your sustainability score, you can turn your attention to easy opportunities for massive gains. You’ll learn which investments earn a financial return over time, and which are charitable gifts for future generations, not resulting in pecuniary rewards but creating lasting positive change in the world.

## How Do You Use This Handbook?

As a handbook, this work organizes a vast amount of information so you can look up what you need to know when you need to know it. We assume too much knowledge is better than not enough.

You can use this handbook in many ways:

- Browse through it for ideas and inspiration.
- Study it on your own or as part of a class or team.
- Rely on it for real projects, either work you are doing in your own home or organization, volunteer work you are doing for a friend or charity, or paid work you are doing for clients.

Every practice in this handbook is based on science and has results you can measure. We've selected best practices from many thousands that have been suggested by environmental groups, government agencies, and other authors. Some practices apply to everyone, some apply only to homeowners or business people. We attempt to provide everything you need to know to practice sustainability in whatever stage of life or situation you find yourself.

The first part of the handbook introduces practices and how to measure results. Later sections of the handbook provide reference material to help you understand finances, math, science, technology, and sustainability concepts and history. In an age when Internet searches serve up what paying advertisers want you to see, artificial intelligence chatbots hallucinate with aplomb, and government websites are becoming increasingly partisan, our goal is to provide you with a comprehensive and trustworthy source of science-based sustainability knowledge so you can make wise decisions on important matters.