

ECSTATIC ECONOMICS

The Second Brief

Regenerative and Circular Economics for an Organisation, and for a Household

Ammanuel Santa Anna

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Regenerative and Circular Economics for an Organisation, and for a Household

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A NOTE BEFORE YOU READ

This work is offered for education and leadership development. It is not legal, financial, accounting, investment, medical or psychological advice; take the advice of a qualified professional who knows your circumstances. Companies and events are described from the public record as the author understands it; characterisations are the author's analysis. Examples are illustrative, and no particular outcome is promised to any reader.

ABSTRACT

Somewhere this week a team writes the word circular at the top of a plan, and almost nobody in the room can say what condition anything is meant to be in at the end of it. This book is for the person who would like to be able to say, on an ordinary Monday, with the budget already in hand. Regenerative and circular economics for an organisation and a household: twelve chapters, a tool in each, and a workbook.

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CHAPTER ONE

The Second Brief

A sentence on a whiteboard

Somewhere this week, in a meeting room with a whiteboard, a team is writing the word *circular* at the top of a plan. It may be a packaging change, a take-back scheme, a new supplier, a promise in an annual report. The word will be underlined. Somebody will draw two arrows bending back on themselves. And almost nobody in the room will be able to say, if asked, what condition anything is meant to be in at the end of it.

This book is written for the person in that room who would like to be able to say.

It is a business book about regenerative and circular economics, and it takes a narrow and practical view of a large subject. The large subject is the claim, now about sixty years old, that an economy can be organised to leave the systems it depends on in better condition than it found them: the soil, the water, the skills of a workforce, the trust of a town. The narrow view is what that claim asks of one organisation or one household, on an ordinary Monday, with the budget it already has.

Ammanuel Santa Anna puts the difference between the two possible briefs in two sentences in *Ecstatic Economics*, the book this one is written beside:

> *Sustainability aims to do less damage. Regeneration aims to increase life.*[1]

Most organisations that have a plan of this kind are working to the first sentence. That is not a criticism. Doing less damage is necessary and difficult, and much of what this book recommends begins there. But the first brief has a ceiling, which is zero, and an organisation that reaches it has done nothing yet for the systems it draws on except stop harming them. The second brief has no ceiling. It asks for a surplus, and it asks the organisation to know, in terms someone outside could check, whether the surplus is real.

Why this, and why now

There are three reasons a leader might want a careful book on this subject now, and none of them depends on a forecast.

The first is that the vocabulary has outrun the practice. In 2017 a team of researchers counted one hundred and fourteen definitions of the circular economy in circulation.[2] *Regenerative* is on course to have more. A

word that loose is easily spent on a slogan, and an organisation that spends it that way pays twice: once in credibility, when someone asks what it meant, and again in attention, because the work the word promised was never scoped. Chapter 2 sets out where the ideas actually came from, and the answer is older and more specific than the vocabulary suggests.

The second is that the evidence has matured. For a long time the case for circular and regenerative practice rested on drawings and celebrated companies. It now also rests on measurement, and some of the measurement is sobering. A global study of material flows found that only about four of the sixty-two gigatonnes of material processed by the world economy in one year came round again.[3] Another line of research showed that closing a loop can, under ordinary market conditions, increase total production rather than reduce it.[4] A leader who knows these findings plans differently from one who does not, and chapter 3 sets them out fairly, each with a route through it.

The third is that the instruments are now simple enough to use. Nothing in this book requires new software, a certification or a consultant. The tools are a ledger with three columns, a map drawn on a large sheet of paper, a six-question test, an inventory of what leaves the building, and a ninety-day plan. Each was designed to be filled in by the people who do the work, in an afternoon or a month, and each produces something a board or a family can read. They are gathered, with a ninety-day sequence, in the workbook at the end of the book.

The question underneath

Behind the vocabulary sits a question simple enough to pin to a wall. Santa Anna puts it in his notes in *The Luminous Sauce*, a volume of the Developmental Canon, as the question regenerative design asks:

> *"How can this system give more than it takes? How can it restore and enhance the health of the whole?"*[6]

Chapter 2 returns to it as a test any project can be put through. The whole of this book can be read as an attempt to make that question answerable in practice: to say what *the whole* is for a given organisation, how its health can be described, and how a leader would know whether the system was giving more than it took.

The question also explains why this is a book about economics and not only about environmental management. A firm that gives more than it takes is not running a charity alongside its business. Santa Anna's book is plain that "you can't regenerate anything if you go bankrupt", and most of the tools in these pages carry a financial line beside their other columns. The claim is narrower and more demanding: that the way a business earns its living can itself be one of the ways the systems around it are kept healthy. Sometimes that is easy to arrange. Often it is not, and the book says so where it is not.

Who this book is for

It is written for four readers, and it tries to keep all four in mind on every page.

The person who runs something. A chief executive, a managing director, an owner of a business with six staff or six thousand. This reader needs to know what to do first, what it will cost, what to say to the board and how to tell, in a year, whether it worked. The field manual in chapter 8 and the chapter on measurement are written chiefly for this reader.

The person who carries the plan. A head of operations, a sustainability lead, a procurement manager, the person who will actually draw the map and run the test. This reader needs the finer points: which loop to prefer, where to draw the boundary, how to ask a supplier what the relationship returns to them, how to keep a change alive through a bad quarter. Most of the book's tools are built for this reader's hands.

The person who has to be persuaded. A board member, a union representative, a business partner, a sceptical finance director, a spouse. This reader is not hostile but has heard the word *regenerative* before and seen what it usually meant. Chapter 10 is written for the conversations with this reader, with scripts, and with the honest concessions that make those conversations go well.

The household. One person, or a family, deciding how to spend, mend, keep and pass on. Most of the material flows the researchers measured pass, sooner or later, through a home. Chapter 11 takes the whole book down to the scale of a kitchen table, and most chapters include a few lines on what their idea looks like there.

How the book is built

The first five chapters after this one were developed from a series of essays in *Ecstatic Economics*, the Haute Lumière lineage that reads money and markets as living systems. They have been revised for a book: the repetition removed, the sources re-checked, and each one still ending with a tool written out in full.

Chapter 2, *A Loop Older Than Its Name*, traces the idea from Kenneth Boulding's essay on a closed spaceship in 1966, through the engineers who named industrial ecology in 1989 and Walter Stahel's argument for repair, to John Fullerton's eight principles of regenerative capitalism in 2015. Its tool is the Three-Column Ledger.

Chapter 3, *Where the Loop Leaks*, is the fair critique: what the measurements say about how circular the world really is, why thermodynamics does not negotiate, how a loop can grow the pile, why "copy nature" is three claims dressed as one, and why the word *regenerative* needs an object. Its tool is the Leak and Rebound Test.

Chapter 4, *A Forest in Generative Surplus*, is the living-systems reading: a firm read as a metabolism rather than a conveyor belt, with five design principles drawn from nature turned into five questions a leader can answer. Its tool is the Metabolism Map.

Chapter 5, *The Café and the Compost*, works chapters 2, 3 and 4 through Kalundborg's industrial symbiosis and a composite café, labelled as one, with every figure's provenance stated. Its tool is the Waste-Is-Food Inventory.

Then the chapters written for this book. Chapter 6 is a deep case on Interface, the carpet maker whose founder set out in 1994 to make it restorative, read for its mechanism and with its figures traced to what the company itself reported. Chapter 7 returns to Kalundborg at length and sets beside it Patagonia's 2022 change of ownership: two cases, one about neighbours and one about owners, the two relationships on which a regenerative commitment most often survives or fails. Chapter 8 is the field manual, the whole implementation sequence written week by week, with roles and decisions, for a leader who wants to run it. Chapter 9 is about measurement: what to count, how to read it honestly, and how to tell a stock from a flow. Chapter 10 is about the hard conversations. Chapter 11 is the household. Chapter 12, *Life at the Edges*, joins the regenerative brief to the companion books on the doughnut, the commons, patient capital and gainsharing, and closes on the reading of the whole. Chapter 13 is the workbook.

What the book is not

It is not a manifesto. It does not argue that capitalism should end, and neither does the most careful source it relies on: Fullerton's paper says in plain words that regenerative capitalism "is not about ending capitalism, but evolving it".[5]

It is not a promise. No chapter claims that a regenerative organisation will outperform a conventional one, because the research to show that, with good controls, does not yet exist in a form this book would rely on. Where a case reports striking results, the book says whose account they are and what they cannot show. Where a figure is a teacher's illustration, as in the café, it says so in the same paragraph.

It is not investment advice, and it names no security, fund or return.

And it is not a set of permissions borrowed from nature. Santa Anna's own workbook warns that "the leap from 'nature does X' to 'therefore humans should do X' is not always straightforward",[7] and this book keeps that warning in view. Biology is used here as a source of questions: where does this output go next, how many ways can this fail, what does each party get back. It is never used as proof that a plan is right.

The one change in measure

If the book has a single argument, it is about measurement. An economy, a firm and a household are usually judged by what passes through them: revenue, units, spending, growth. Boulding's capsule was judged

by something else, the condition of the stock the crew kept. Santa Anna's book puts the blindness of the first measure in one sentence about accounting, that a forest has value only when it is cut down, and the chapters that follow keep returning to the same correction. Beside the question *what did we spend, or sell?*, put a second: *what is in better condition than it was, and how do we know?*

That second question is cheap to ask and hard to answer. It needs one stock chosen on purpose, described so that someone outside could check it, and watched over a long enough time to see it move. It needs the honesty to write *not measured* where that is true. And it needs the patience to let a change run for a season before deciding whether it worked. Most of this book is about how to do those three things inside an organisation that is also, every month, trying to pay its way.

How to read it

A leader in a hurry can read this chapter, the field manual in chapter 8 and the workbook, and begin. A person carrying the plan should read chapters 2 to 5 in order, because each tool builds on the one before. A reader who has to persuade a board should read chapters 3, 6, 9 and 10 before the meeting. A household can begin at chapter 11 and come back.

Every chapter ends with something to do. None of it needs capital. All of it needs attention, which is the scarcest resource an organisation has in a bad year, and which is why the tools are written into weeks and forms rather than left as good intentions.

Back in the meeting room, the word *circular* is still underlined at the top of the plan. The work of this book is to write one line beneath it: the name of the stock, and its condition today.

CHAPTER TWO

A Loop Older Than Its Name

Two briefs on one desk

A design brief is a short document, and most of its power sits in its verb. *Reduce* produces one kind of building. *Restore* produces another. The architects, the budget and the site can be identical, and the verb will still decide what gets drawn.

Economics has been handed two verbs for the same desk in the last sixty years, and it has tended to treat them as one. The first is *sustain*: do the damage more slowly, until, ideally, there is none. The second is *regenerate*: leave the system you touched more alive than you found it. They sound like neighbours. They are not. A factory can meet the first brief by emitting nothing and still meet none of the second, because the second asks for a surplus, not a zero.

Ammanuel Santa Anna puts the difference in two sentences in *Ecstatic Economics*, the book this book reads beside the research:

> *Sustainability aims to do less damage. Regeneration aims to increase life.*[8]

That is the claim this chapter examines. Not whether regeneration is a good idea, which few people dispute in the abstract, but where the idea actually came from, what its most careful modern statement says, and what changes on Monday for someone who runs a firm or a household and wants to take the second brief seriously. The chapters after it follow from that claim: the third sets out where the ideas go wrong, the fourth reads them as a living system, the fifth works one case in full, and the cases, the field manual and the closing chapter carry them into practice.

The story usually told begins around 2010, with a foundation, a diagram shaped like a butterfly and a set of corporate pledges. That story is not false. It is late by about half a century.

A spaceship, in 1966

The cleanest origin is an essay by the economist Kenneth Boulding, "The Economics of the Coming Spaceship Earth", published in 1966 in a volume from Resources for the Future.[9] Boulding contrasted two economies. The first he called the cowboy economy: an open plain, apparently limitless, where success is meas-

ured by throughput, by how much passes through the system from extraction to discard. The second he called the spaceman economy: a closed capsule, where nothing can be thrown overboard because there is no overboard, and where the measure of success is the condition of the stock the crew keeps rather than the volume it consumes.

The essay is short and its point is structural. In the cowboy economy, consumption is good because it is the engine of throughput. In the spaceman economy, consumption is a cost to be minimised, because every unit consumed has to be regenerated from the capsule's own reserves. Boulding did not use the phrase *circular economy*. He described the condition that makes one necessary.

Two decades later the engineers arrived at the same place by a different road. In 1989, Robert Frosch and Nicholas Gallopoulos, then at General Motors Research Laboratories, published "Strategies for Manufacturing" in *Scientific American*.[10] They proposed that industry be organised as an *industrial ecosystem*, in which the use of energy and materials is economised and the effluents of one process serve as the raw material for another. The article gave a field its name: industrial ecology. It also, quietly, borrowed its central image from biology, which matters for the fourth chapter in this book.

The economist and architect Walter Stahel, writing in *Nature* in 2016, traces his own work on what he calls a loop economy to a research report written with Geneviève Reday for the European Commission in 1976.[11] That date is his own account; the work reached print as a book in 1981, *Jobs for Tomorrow: The Potential for Substituting Manpower for Energy*, with Reday-Mulvey as co-author, and its title states the argument.[12] His case was practical rather than visionary: that extending the life of goods through repair, remanufacture and reuse substitutes skilled labour for energy and materials, which is to say it moves spending from mines to workshops.

So by the time the phrase *circular economy* was widely used, the idea already had three parents: an economist's thought experiment about a closed capsule, an engineer's proposal to copy an ecosystem's metabolism, and a practitioner's argument about labour and repair. None of the three required a new technology. All three required a different measure of success.

One hundred and fourteen definitions

A concept with three parents and fifty years of use collects meanings. In 2017, Julian Kirchherr, Denise Reike and Marko Hekkert published an analysis of the definitions in circulation, and the title of their article gives its finding before the reader opens it: "Conceptualizing the circular economy: An analysis of 114 definitions".[13] They found the term used to mean anything from recycling programmes to a wholesale redesign of production, and they found that relatively few definitions named the social side of the economy at all.

A practitioner can take two lessons from that. The first is a warning: when a supplier, a consultant or a board paper says *circular*, it is worth asking which of the hundred and fourteen it means, because the cheapest meaning is the one most often intended. The second is a permission. A term that loose belongs to whoever uses it carefully, and the careful use is the one that keeps Boulding's question in view: what is happening to the stock?

Martin Geissdoerfer and colleagues, also in 2017, set the circular economy beside sustainability and asked whether it was a new paradigm or a subset of the old one.[14] Their answer was that the two overlap heavily but are not the same: sustainability is the broader and vaguer aim, the circular economy a narrower set of means. Neither of their definitions requires that a system end up *better* than before. That is the gap the word *regenerative* was brought in to fill.

Eight principles, in Fullerton's words

The most careful attempt to say what a regenerative economy would be, rather than what it would avoid, is a white paper of April 2015 by John Fullerton, who left JPMorgan in 2001 after a career of nearly twenty years and went on to found the Capital Institute. It is called *Regenerative Capitalism: How Universal Principles and Patterns Will Shape Our New Economy*, and it is worth reading in the original, because the summaries have tended to sand it down.[15]

Fullerton's starting point is stated as one idea:

> *The universal patterns and principles the cosmos uses to build stable, healthy, and sustainable systems throughout the real world can and must be used as a model for economic-system design.*[15]

From that idea he distils eight principles: *In Right Relationship*, *Views Wealth Holistically*, *Innovative, Adaptive, Responsive*, *Empowered Participation*, *Honors Community and Place*, *Edge Effect Abundance*, *Robust Circulatory Flow* and *Seeks Balance*. Three of them carry most of the economics.

Views Wealth Holistically says that "true wealth is not merely money in the bank" and that it must be measured across "social, cultural, living, and experiential" forms of capital, adding a line any engineer will recognise: "The whole is only as strong as the weakest link."[15]

Robust Circulatory Flow draws the body into the ledger: "Just as human health depends on the robust circulation of oxygen, nutrients, etc., so too does economic health depend on robust circulatory flows of money, information, resources, and goods and services."[15]

Seeks Balance is the one most often skipped, and the most demanding. Regenerative systems, Fullerton writes, "harmonize multiple variables instead of optimizing single ones", balancing "efficiency and resilience; collaboration and competition; diversity and coherence".[15]

The paper also corrects a myth of its own. In the principle on adaptation, Fullerton takes the line usually attributed to Charles Darwin, that the fittest win at the expense of their rivals, and argues that Darwin meant something closer to the opposite: that the most fit is "the one that fits best", the one most adaptable to a changing environment.[15] The phrase *survival of the fittest* was in fact Herbert Spencer's, which Darwin later adopted; the correction Fullerton makes is the more important one. A regenerative economy is not one in which the strong eat the weak more efficiently. It is one in which fitness means fit.

And Fullerton is plain about what the project is not: "Regenerative Capitalism is not about ending capitalism, but evolving it."[15] Readers who come to the word *regenerative* expecting either a revolution or a marketing campaign will find neither in the source.

What the paper cannot do is prove itself. It is a synthesis of other people's science and of Fullerton's experience, written by an advocate. It offers no controlled comparison of regenerative and conventional firms, and it does not claim to. Its value is that it states, in one place and in plain words, what a second brief would require.

The forest that counts as zero

Santa Anna's book arrives at the same distinction from the side of measurement. Its sharpest passage on the subject is about what accounting can and cannot see:

> *In standard economic accounting, a forest has value only when it's cut down.*[16]

The point is not new to environmental economists, who have spent decades building satellite accounts for natural capital. What the book adds is the claim that this blindness is not an oversight to be patched but a symptom of the first brief. If the measure of an economy is throughput, then a standing forest, which produces nothing that passes through a market, reads as idle. If the measure is the condition of the stock, the same forest is the most productive thing in the valley.

In his notes outside the book, Santa Anna puts the design question in the form a team could pin to a wall. In *The Luminous Sauce*, a volume of the Developmental Canon, he writes that regenerative design asks:

> *"How can this system give more than it takes? How can it restore and enhance the health of the whole?"*[17]

That question is the second brief, stated as a test. It can be asked of a product, a supply chain, a job, a school timetable or a household budget, and it gives a different answer from the first brief nearly every time. A packaging redesign that cuts plastic by a fifth passes the first brief. It fails the second unless something, somewhere, ends up healthier than before.

In an earlier Notion volume, *Luminous Holonics Earth*, he describes what changes in the arithmetic when the brief changes:

> *In linear economies, value is created by producing and selling more stuff. In circular economies, value comes from extending the life of materials, designing for multiple use cycles, and creating services rather than products.*[18]

That sentence is close to Stahel's 1976 argument, reached independently and in different words. It is also where the first brief and the second begin to part company in a balance sheet: a firm that makes its money from the *life* of a material rather than the *sale* of it has an interest in that material staying healthy.

The same brief at a kitchen table

It would be easy to read all of this as a matter for boards and engineers. Boulding's essay suggests otherwise. His spaceman economy was not a factory; it was a crew, and the crew's first task was to know the condition of what it had.

A household meets the two briefs every week without naming them. A family that buys a cheaper coat each winter and throws the last one away is running a cowboy economy in miniature: the measure of the year is how much passed through. A family that buys one coat that lasts, has it mended when the seam goes and passes it on when a child outgrows it is running a small spaceman economy. Neither is virtuous by default. The first may be the only option on a tight budget, and the house's own writing is clear that real constraint is real. The point is that the second is a different measure of success, not merely a more expensive one.

The household version of Stahel's argument is the same as the factory's. Repair moves spending from the shop to the skill, sometimes your own and sometimes a neighbour's. The household version of Fullerton's *Views Wealth Holistically* is the question of what a year has left behind: not only the bank balance but the condition of the home, the health of the people in it, the friendships kept up and the skills learned. Santa Anna's book makes the same move at the scale of a nation, asking what GDP leaves out; a household can ask it of its own accounts in an evening.

None of this asks a household to become a homestead. It asks for one change in measure. At the end of a month, beside the question *what did we spend?*, put a second: *what is in better condition than it was?* The second chapter's tool is built for exactly that, and it works at a kitchen table as well as it works in a boardroom.

What changes on Monday

None of this is useful until it alters a decision, and the finer points of implementation are where most good intentions stall. Four of them matter in the first week.

Name the verb before the project. Most organisations have a sustainability plan and almost none have a regeneration plan, because nobody has asked which verb a given project is answering. Before the next capital request, the next supplier review or the next product brief, write at the top of the page whether it is meant to *reduce*, *sustain* or *regenerate*. Many projects will honestly be *reduce*, and that is fine. The point is to stop calling a reduction a regeneration.

Pick one stock, not one flow. Boulding's lesson is that the spaceman economy watches its reserves. A firm can choose one stock it depends on and does not own: the soil on a supplier's farms, the skills of a regional workforce, the trust of a neighbourhood, the health of a river downstream. A household can choose the condition of its own home, or of the people in it. The first move is to know what that stock looks like now, in a number or a description someone else could check.

Separate the three kinds of loop. Stahel's repair, the engineers' by-product exchange and the recycler's material recovery are different activities with different economics. Repair keeps the most value and needs skilled people. By-product exchange needs a neighbour who wants what you throw away. Recycling keeps the least value and needs the most energy. When a plan says *circular*, ask which of the three it means, in that order of preference.

Keep the money honest. Santa Anna's book is explicit that a regenerative enterprise still has to pay its way; the fourth chapter quotes him on it. The second brief is not permission to lose money on purpose. It is a demand that the money be made in a way that leaves the stock in better condition, which is harder, and which is why the tool below asks for both columns.

The companion books in *Ecstatic Economics* take up the questions this one leaves open. The companion book on doughnut economics (*The Standing Forest*) asks how large an economy can grow inside a biosphere. The companion book on the commons (*The Pasture Was Never Empty*) asks how a shared stock, like a fishery or a watershed, is governed when no one owns it. Here the question is narrower and more practical: what one organisation or one household does differently once it has chosen the second verb. For a firm that wants to see where its value is actually made and lost before choosing, the house's value chain paper at hautelumiere.life is the natural companion.

Boulding's capsule had no overboard. Most organisations still behave as if theirs does, and the first discipline of the second brief is simply to look at what goes over the side.

The Tool: The Three-Column Ledger

A one-page ledger, kept monthly, for a firm or a household. It needs no software. It asks for three columns where most ledgers keep one, and its only rule is that every line must be filled in all three before the month is closed.

Heading of the page- Organisation or household: __- Month: _- *The stock we have chosen to watch (one only, from section 4 above): - How its condition is described or measured, in words someone outside could check: - Its condition at the start of the month: ___*

The ledger, one line per significant activity (five to fifteen lines)

ACTIVITY	COLUMN 1 · WHAT IT TAKES (MATERIALS, ENERGY, TIME, ATTENTION, MONEY)	COLUMN 2 · WHAT IT RETURNS, AND TO WHOM (PRODUCT, SERVICE, WAGE, BY-PRODUCT, REPAIR)	COLUMN 3 · WHAT IT LEAVES BETTER, WORSE OR THE SAME IN THE CHOSEN STOCK	VERB IT CURRENTLY ANSWERS: REDUCE / SUSTAIN / REGENERATE

The loops, one line for anything that leaves the building

WHAT LEAVES	WHERE IT GOES NOW	COULD IT BE REPAIRED OR REUSED BEFORE IT LEAVES?	IS THERE A NEIGHBOUR WHO COULD USE IT AS AN INPUT?	IF NEITHER, CAN IT BE RECOVERED AS MATERIAL?

The close of the month- Lines where Column 3 says *better*: __ (count)- Lines where Column 3 says *worse*: _ *(count), and the one to change first: - Condition of the chosen stock at the end of the month: - One activity whose verb could move from reduce to regenerate next month, and what it would take: - Does the ledger still pay its way? Revenue or household income less costs: $___*

How to use it. Fill it in once alone, then once with the people who do the work, because they will know what leaves the building better than the person who signs for it. Do not average the three columns into a score; the point is to see them side by side. After three months, compare the first and third pages. A ledger that shows more *better* lines and an unchanged bottom line has met the second brief on a small scale, which is the only scale on which it has ever been met.

CHAPTER THREE

Where the Loop Leaks



Where the Loop Leaks

HAUTE LUMIÈRE · THE SECOND BRIEF · CHAPTER THREE

A drawing with no leaks

The diagrams are beautiful, and that is part of the problem. A circular economy is usually drawn as two loops, one for materials that return to the soil and one for materials that return to the factory, with arrows that close neatly at the top. Nothing in the drawing leaks. Nothing wears out. Nothing is burned for heat.

Nothing is added to the pile of buildings and roads that a growing economy accumulates each year. The drawing is a statement of intent, and it is often read as a description.

The second chapter in this book (chapter 2) traced the idea from Kenneth Boulding's closed capsule of 1966 to John Fullerton's eight principles of 2015, and set out the difference between a brief that asks for less harm and a brief that asks for more life. This chapter is the fair critique. It takes five problems the research has raised, states each as strongly as its authors would, and then says how a practitioner works through it. None of the five is a reason to abandon the idea. Each is a reason to use it with the measuring instruments switched on.

Ammanuel Santa Anna's own writing on the subject is unusually ready for this. In the *High Frequency Workbook*, in a chapter on learning from nature, he stops to say what should be held loosely:

> *The leap from "nature does X" to "therefore humans should do X" is not always straightforward.*[19]

That sentence is the right posture for everything that follows. The idea is good. The leap is the part to check.

How circular the world is

The first problem is scale, and it was measured before most of the pledges were written. In 2015, Willi Haas, Fridolin Krausmann, Dominik Wiedenhofer and Markus Heinz traced every material flow in the world economy for the year 2005, from extraction to disposal, and asked how much of it went round.[20]

Their figures are worth writing out. Roughly 4 gigatonnes of waste materials a year were recycled. That flow was set against 62 gigatonnes of materials processed by the world economy and 41 gigatonnes of outputs. Four out of sixty-two is a little over six per cent; the division is this book's, the figures are theirs. They gave two reasons for the low figure. First, 44 per cent of processed materials were used to provide energy, burned as fuel or eaten as food, and so were not available to be recycled at all. Second, the stock of buildings, infrastructure and durable goods was still growing fast, with net additions of 17 gigatonnes a year: material that is not waste yet, and will not be for decades.

The study's conclusion is the sharpest critique of the drawing with two loops. Strategies aimed at the end of the pipe, at recycling what is thrown away, are limited by the proportions of the flows. Most material never reaches the pipe. What moves the figure, the authors argue, is a shift to renewable energy and a significant reduction in the growth of the stock.

The route through. This is not a reason to stop recycling. It is a reason to stop treating recycling as the main event. A practitioner reading Haas and colleagues reorders the three loops named in the second chapter: repair and longer life first, because they slow the growth of the stock; by-product exchange

second; material recovery last. And the energy a firm uses becomes part of its circular plan rather than a separate line in someone else's report, because energy is the largest flow that never comes back.

What the study cannot show is how any one firm or city compares. It is a global and European account for one year. A firm has to measure its own.

Thermodynamics does not negotiate

The second problem is older than economics. Every time a material is used, some of its quality is lost: fibres shorten, alloys mix, coatings contaminate, and energy disperses as heat. Jouni Korhonen, Antero Honkasalo and Jyri Seppälä, in a 2018 article in *Ecological Economics* titled "Circular Economy: The Concept and its Limitations", argue that the concept, as commonly used, lacks scientific depth: a collection of ideas from several fields rather than a worked theory. Assessing it against the goal of environmental sustainability, they identify six challenges that must be met before the circular economy can contribute to global net sustainability, and the limits set by thermodynamics and by system boundaries are among them.[21] A loop can be slowed and made tighter. It cannot be made perfect, because the second law guarantees that each pass costs something.

The system-boundary challenge is the quieter one, and for a practitioner the more immediately useful: a circular economy is usually drawn for one firm, one product or one region, and the boundaries of the drawing decide what counts as closed. A loop that is closed inside the factory may be wide open at the mine.

The route through. Treat circularity as a rate of decay to be slowed, not a circle to be completed. In practice that means asking, for each material, how many useful passes it can make and what quality it keeps on each, and designing for the first pass to be long rather than for the tenth to be possible. It also means drawing the boundary on purpose and writing it down, so that a reader of the plan knows which loop is claimed to close and which is not.

Closing a loop can grow the pile

The third problem is the most counter-intuitive and, for a practitioner, the most important. In 2017, Trevor Zink and Roland Geyer published "Circular Economy Rebound" in the *Journal of Industrial Ecology*.[22] Their argument runs as follows. The appeal of the circular economy is that secondary production, from recovered materials and refurbished goods, replaces primary production from virgin ones. But that only helps if it actually replaces it. If the secondary product is not a perfect substitute, or if it is cheaper and so lowers prices and increases how much is bought, total production can rise. The lower impact per unit is offset, partly or fully, by more units.

They named the effect by analogy with the energy-efficiency rebound long known to economists, and they described two mechanisms in particular: the limited ability of secondary products to substitute for primary ones, and price effects. Their article argues that proponents of the circular economy "have tended to look at the world purely as an engineering system and have overlooked the economic part".[22]

A concrete version: a firm that sells refurbished phones at a lower price does good if its customers would otherwise have bought a new one. If the refurbished phone is bought as a second device by someone who keeps the first, the net effect may be one more phone in the world.

The route through. Every circular product carries a question its maker should be able to answer: *what does this displace?* The test at the end of this chapter asks it directly. A refurbishment business can design for displacement by offering trade-in, so the old device comes back as the refurbished one goes out. A food business that turns its waste into a new product can check whether that product is replacing something or simply adding to the shelf. Zink and Geyer's work is a theoretical argument with examples, not a measurement of how large rebound is in any sector, and that is exactly why a firm has to measure its own.

The trouble with copying nature

The fourth problem sits closest to the house's own lens. The circular economy, industrial ecology and biomimicry all lean on the same move: nature has no waste, so neither should we. The analogy is persuasive and, taken literally, wrong in several places.

Henry Dicks, in a 2016 article in *Philosophy & Technology* called "The Philosophy of Biomimicry", sets out what a philosophy of the field would have to answer. He finds four areas of inquiry: the nature of Nature itself, and then the three principles the biologist Janine Benyus gave the movement, nature as model, as measure and as mentor, which he reads as a poetic, an ethical and an epistemological question respectively.[23] The practical upshot is that "copy nature" is three different claims dressed as one: that nature supplies designs, that it supplies a standard for judging designs, and that it supplies a way of learning. Each needs its own defence. Nature is efficient in some respects and lavish in others. An oak drops thousands of acorns for each tree that grows. Ecosystems collapse, invade and burn. The lesson "do what nature does" can justify almost anything, including waste.

Santa Anna's workbook makes the same point in its own words, a few lines below the sentence quoted above:

> *Romanticizing nature can be its own form of bypass — nature is also violent, indifferent, and brutal. We are learning from its patterns of thriving, not pretending it's a garden of peace*[19]

The route through. Use biology as a source of questions, not of permissions. The useful questions are specific: what happens to this output in the next process; how many uses does this material serve before it de-

grades; where is the redundancy that lets the system survive a failure. The unhelpful move is the general one, *nature does it, so it is right*. The fourth chapter in this book reads the living-systems lens closely and keeps to the specific questions for exactly this reason.

The word that means anything

The fifth problem is the word *regenerative* itself. It has spread faster than its definition. In agriculture, where it is most used, Peter Newton and colleagues reviewed 229 journal articles and 25 practitioner websites in 2020 under the title "What Is Regenerative Agriculture?"[24] Most of the articles that used the term neither defined nor described it. Of those that did, some defined it by the practices a farm uses, some by the outcomes it achieves, and the largest group by both. The authors declined to propose a single definition and suggested instead that each user of the term define it "comprehensively for their own purpose and context". A farm can be called regenerative for adopting cover crops whether or not its soil improves, or for improving its soil whatever it does.

The same slippage is visible in business. A firm can call itself regenerative for a reforestation pledge while its core operations are unchanged. The second chapter noted that the circular economy has at least one hundred and fourteen definitions in the literature. *Regenerative* is on course to have more.

The route through. Define by outcome, and name the stock. The second chapter's ledger asked a firm or a household to choose one stock it depends on and to describe its condition in a way someone else could check. That is the defence against the empty word. A claim that something is regenerative should come with the stock it regenerates and the evidence that the stock is in better condition than before. Without both, it is a description of intent, and should be called one.

The bottleneck is not information

Behind the five problems sits a sixth, which the research names less often and Santa Anna's book names directly. The data on material flows, on climate and on soil have been available for decades. Plans built on them have not followed at the pace the data would suggest. The book's diagnosis is blunt:

> *The information hasn't been the bottleneck. The bottleneck is somatic*[25]

The claim is that extraction persists not because people lack the figures but because a nervous system organised around scarcity experiences restraint as danger. In the *High Frequency Workbook*, describing what he calls the scarcity trance, he is specific about where it lives: "The scarcity trance is not a thought. It is a somatic state".[26] The book applies the same reading to institutions: a firm under pressure tends to defend the throughput it knows rather than invest in the stock it depends on.

The evidence for a physiological account of institutional behaviour is thin, and this book says so; it is an interpretation, offered by the author as a lens, not a finding. What it explains well is a pattern any manager will recognise. Circular projects are approved in good years and cut in bad ones, because in a bad year the old brief feels safe and the new one feels like a luxury. That is the moment the plan most needs to hold.

The route through. Build the second brief into the routines that run in bad years: the monthly ledger, the supplier review, the capital request form. A practice that has to be argued for every time it is used will be dropped under pressure. A practice that is simply how the form is filled in tends to survive.

The case studies, read carefully

There is one more critique, and the house should make it of its own sources. The literature on regenerative business leans heavily on a small number of celebrated cases: Interface, the carpet maker whose founder Ray Anderson set out in the 1990s to make it restorative; Patagonia, whose founder transferred ownership to a trust and a non-profit in 2022; a handful of others. Santa Anna's book uses several of them, and it reports striking figures for Interface's reductions in emissions, waste and water alongside growth in profits.

Chapter 6 traces those figures as far as they can be traced, and the answer is instructive: most of them match what the company itself announced in 2019, for carpet tile production through 2018, and one of them, the claim about profits, is not in the company's announcement at all. Even the matching figures are the company's account, carried by trade press, not audited results a reader can open. That is not a criticism of the company. It is a description of the evidence. Figures of that kind are usually self-reported, measured against a baseline the company chose, and published by the firms that succeeded. The firms that tried something similar and failed rarely publish at all.

Statisticians call this survivorship bias, and it is the same weakness the house's papers have noted in the literature on other management ideas: the cases are chosen after the result is known. A celebrated case shows that a thing is possible. It does not show that it is likely, or that the method rather than the founder, the market or the timing produced the result.

The route through. Read a case for its mechanism, not its headline. What did Interface actually change: which materials, which suppliers, which incentives, in which order? Those are questions a practitioner can carry to their own firm. The headline percentage is not. And where a firm's own regenerative claims are concerned, the defence is the one this chapter keeps returning to: write down the prediction before the change, name the stock and its condition, and measure afterwards. A firm that does that will have better evidence about itself than any case study can supply.

What the critics leave standing

Put the five critiques together and a narrower, stronger idea remains. The world economy is far from circular, and recycling alone will not change that. Every loop leaks. Closing one can grow the pile. Nature is a teacher with a mixed record. And the word is easily emptied. What survives is the brief itself: choose the stock, slow the decay, check the displacement, define by outcome, and build it into the forms. That is less than the drawing promised. It is more than most organisations currently do.

The companion book on complexity economics (*The Economy That Keeps Becoming*) takes up a related warning, that economies are evolving systems in which interventions produce effects their designers did not plan. The companion book on the doughnut (*The Standing Forest*) takes up the question Haas and colleagues leave open, how much the stock should keep growing at all. For a firm that wants to see the external pressures on its material and energy costs before it plans a loop, the house's PESTLE paper at hautelumiere.life is the place to begin.

The drawing with two loops is still worth keeping on the wall. It is better kept with a third arrow added in pencil, leaving the page at the bottom, labelled with what is lost.

The Tool: The Leak and Rebound Test

Six questions, put to any plan described as circular or regenerative, before it is approved. Each needs a written answer. A plan that cannot answer one is not rejected; it is returned with that question marked.

The plan- Name of the plan or product: __- Owner: _ · *date: - The verb it claims (reduce / sustain / regenerate):* ___

Question 1 · Which loop? (from Haas and colleagues, and the second chapter)- Is this repair or life extension / by-product exchange / material recovery? __- If material recovery, why not repair or exchange first? ____

Question 2 · Where is the boundary? (from Korhonen and colleagues)- The loop is claimed to close inside: the product / the site / the firm / the region / other __- What happens to the same material outside that boundary, upstream and downstream: ____

Question 3 · How many passes, and at what quality? (thermodynamics)

MATERIAL	USEFUL PASSES EXPECTED	QUALITY KEPT ON EACH PASS (FULL / REDUCED / DOWNGRADED)	WHAT IT BECOMES AT THE END

Question 4 · What does it displace? (from Zink and Geyer)- The circular product or service replaces: __- Evidence that buyers use it instead of, not as well as, the primary product: _- *Is it cheaper? If so, what is expec-*

ted to happen to total quantity bought: - One design change that would increase displacement (trade-in, take-back, lease): ___

Question 5 · Which stock, and how will we know? (from Newton and colleagues, and the second chapter)- The stock this plan is meant to leave in better condition: __- Its condition now, in words or a number someone outside could check: _- *The date by which a change should be visible, and how it will be checked: ___*

Question 6 · Will it survive a bad year? (from Santa Anna's somatic bottleneck)- Which routine form, review or budget line this plan is written into: __- What would have to be true for it to be cut, and who would decide: ____

Reading the answers. A plan with clear answers to questions 4 and 5 is worth more than a plan with an impressive answer to question 1. The order of the questions is the order in which plans usually fail: they choose the cheapest loop, draw the boundary where it flatters them, forget that each pass costs quality, add to the pile instead of replacing it, never name the stock, and are cut in the first bad quarter. A plan that passes all six is rare, and is the beginning of a regenerative practice rather than a statement about one.

CHAPTER FOUR

A Forest in Generative Surplus

A leaf that stays clean

In 1997, two botanists at the University of Bonn, Wilhelm Barthlott and Christoph Neinhuis, published a paper on why the leaves of the sacred lotus stay clean in muddy water.[27] The answer, seen under a scanning electron microscope, was a surface of tiny wax-covered bumps. Water does not spread across it; it beads, and as it rolls off it collects the dirt. The leaf does not spend energy cleaning itself. Its structure makes dirt leave with the rain.

The paper became one of the founding examples of biomimicry, and it is worth starting with for a reason beyond its fame. It is specific. It is about one organism, one surface, one mechanism, measured. It does not say that nature is wise or that leaves are good. It says that a particular structure produces a particular result at no running cost. That is the ecologist's habit of attention, and it is the habit the living-systems reading of economics asks for.

The third chapter in this book (chapter 3) opened with a warning from Santa Anna's own workbook: the leap from what nature does to what people should do is not always straightforward. This chapter makes the leap carefully. It reads the regenerative enterprise the way *Ecstatic Economics* and the Luminous 100 read it, as a metabolism rather than a machine, and then turns each part of that reading into a question a leader can answer about a real organisation.

Not balance, surplus

The most common picture of a healthy ecosystem is a balance: inputs equal outputs, populations steady, the whole in equilibrium. Santa Anna's book rejects that picture in a passage that is the centre of this book:

> *A healthy ecosystem is not in equilibrium. It is in generative surplus — continuously producing more life than it consumes.*[28]

The ecology behind the sentence is defensible. A maturing forest accumulates biomass, builds soil, increases the number of niches it supports and stores carbon. It is not static. Over the timescales that matter to a business, it is net productive of the conditions for more life. The book's point is that a firm modelled

on balance will aim for zero harm, the first brief described in the second chapter (chapter 2), while a firm modelled on surplus will aim for more life than it uses, the second.

The book also refuses to make the surplus an excuse for losing money:

> *Financial sustainability is necessary (you can't regenerate anything if you go bankrupt), but it is a means, not an end.*[29]

That is a careful position, and it is the one a leader needs. The surplus is not charity added to a business. It is the business, conducted so that the systems it depends on are in better condition at the end of the year than at the start, and paid for by the same operations that produce it.

Conveyor belt and circulation

Most of the tools managers learn were drawn as lines. Michael Porter's value chain, the house's own paper on it (hautelumiere.life) notes, runs left to right: inbound logistics, operations, outbound logistics, marketing, service, with support activities underneath. It is a superb instrument for finding cost and margin. It is also, structurally, a conveyor belt. Materials enter on the left and leave on the right as product, and whatever falls off the belt is outside the drawing.

Santa Anna's specification for the house's Luminous Value Chain Ecology begins by changing the picture:

> *it replaces the metaphor of the conveyor belt with the metaphor of the circulatory system.*[30]

In a circulation nothing moves in only one direction. Blood carries oxygen out and carbon dioxide back. The specification extends that to an organisation: customers return feedback and legitimacy as well as revenue; suppliers return reliability and invention when they are paid fairly and early; employees return skill when they are developed. And it names the measure that matters: "The system is not optimizing for a single output; it is maintaining the conditions for life."[30]

The same specification contains a sentence that every operations director should read twice:

> *A circulatory system can be technically patent — all the pipes open — while still being unhealthy.*[30]

A supply chain can be fully functioning, every order filled, every invoice paid, and still be depleting the farms, the workers or the towns it runs through. The conveyor-belt drawing cannot see that, because it measures whether things are moving, not what condition the things moving through it are in.

John Fullerton's seventh principle of regenerative capitalism, *Robust Circulatory Flow*, reaches the same image from economics: "economic health depend[s] on robust circulatory flows of money, information, resources, and goods and services to support exchange, flush toxins, and nourish every cell at every level of

our human networks."[31] Two writers, working separately, chose the body's circulation as the model. That convergence is not proof, but it is a sign that the image carries something the line does not.

From waste to signal

The Luminous 100, Santa Anna's upgrade of the hundred frameworks consultancies teach, applies the same move to Lean, the discipline of removing waste that grew out of the Toyota Production System. Lean's first principle asks of every step whether it adds value for the customer. The upgrade, entry 67, changes the question:

> *the question isn't just "does this step add value?" but "does this step add life*[32]

and completes it: "to the customer, the worker, the community, and the larger living systems this organization participates in?"[32]

The upgrade then does something more practical than it first appears. It treats the seven classic wastes of Lean (overproduction, waiting, transport, over-processing, inventory, motion and defects) not only as deficits to cut but as signals to read. Overproduction, in its reading, is a sign that an organisation has not learned what the system around it actually needs; waiting is a sign of a blockage where energy is pooling. For a leader, the consequence is a change in the first question asked when waste is found. Not only *how do we remove this?* but *what is this telling us about where the circulation is blocked?*

That is the living-systems reading at its most useful: it does not replace the existing instrument. It keeps Lean's discipline and widens what the discipline is for.

Five principles, five questions

The book closes its passage on generative surplus with a list. Human economic structures, it says, can emulate the forest:

> *not by copying nature literally, but by learning from its design principles: circularity, diversity, redundancy, reciprocity, and the distribution of intelligence to every node in the network.*[28]

Each of the five can be turned into a question about a real organisation. This is where the finer points of implementation live.

Circularity: where does each output go next? Not *is it recycled*, which is the narrowest meaning, but *is someone using it*. The test is the one the lotus passes: a structure that sends what is not needed somewhere useful without extra effort. In a firm, that is a by-product with a buyer, a returned product with a refur-

bishment line, a used pallet with a supplier who wants it back. The first question is simply to list every output that leaves, and against each, the name of whoever uses it next. Blanks are the agenda.

Diversity: how many ways can this fail? An ecosystem with many species survives a disease that wipes out one. An organisation with one supplier, one customer segment, one product or one skilled person on whom everything depends is a monoculture. The finer point is that diversity costs something in efficiency, which is why Fullerton's eighth principle asks for a balance between "efficiency and resilience" rather than the maximum of either.[31] A leader should know, for each critical input, how many independent sources exist.

Redundancy: what spare capacity do we keep on purpose? Biology is full of it: two kidneys, many paths through a forest's fungal networks. Management has spent forty years removing it in the name of lean operation. The living-systems reading asks for redundancy chosen, not accidental: a small stock of a critical part, a second person trained in a critical skill, an unused afternoon in a busy team's week. The test is whether the organisation could absorb the loss of any one element for a month.

Reciprocity: what does each party get back? In the circulatory reading, a supplier squeezed on price and paid late is a vein being narrowed. The finer point is that reciprocity is measured from the other side. Ask a supplier, an employee or a neighbouring business what the relationship returns to them, and write down their answer, not yours.

Distributed intelligence: who can act on what they see? A forest has no headquarters. Every root responds to the soil it is in. Organisations that require every decision to travel to the centre are slow to notice what the edges already know. The practical question is how far down the organisation someone can stop a process, change a supplier or redirect a waste stream without asking. The companion book on the commons (*The Pasture Was Never Empty*) takes this further, through Elinor Ostrom's evidence that shared resources are often best governed by the people closest to them.

What the reading asks of a leader

Santa Anna's book states the purpose that sits behind all five questions:

> *a business exists to increase the vitality of the systems it participates in*[29]

It is easy to read that as a slogan. Read as a specification, it is demanding. It means that a leader has to know which systems the business participates in, what their condition is, and whether the business is making that condition better. Most leaders know their own balance sheet thoroughly and the condition of the systems they draw on hardly at all.

The book describes what unites the regenerative firms it surveys, from soil-building farms to energy-positive buildings, as "a shared metabolic orientation", and it defines the term in one line: "they are organized to

generate vitality rather than *consume* it."[33] A metabolism is something with inputs, transformations and outputs, all of which can be observed. That is why the tool below is a map rather than a mission statement. A team can draw it, look at it and disagree about it, which is where the useful work starts.

There is a practical consequence for how a leader spends a week. A conveyor-belt organisation is managed by watching throughput: orders, units, revenue, utilisation. A metabolism is managed by watching condition as well: the health of the suppliers, the skill of the staff, the trust of the neighbourhood, the state of the stocks the business draws on. The first set of measures is usually on the dashboard already. The second is usually nowhere, or in an annual report written by someone else. Moving even one condition measure onto the weekly dashboard changes what a management meeting talks about, and that is often the first visible sign that the reading has been taken seriously.

The limits of the reading should be stated as plainly as its strengths. A firm is not an organism. It can be split, merged, sold and closed in ways no forest can. The metaphor is a way of asking better questions, and the questions are what matter. Where the metaphor and the evidence part company, the evidence wins, and the third chapter's five critiques still apply. The companion book on complexity economics (*The Economy That Keeps Becoming*) offers the most rigorous version of the living-systems view, in W. Brian Arthur's account of the economy as an evolving system, and it is the right next reading for anyone who wants the metaphor held to a stricter standard.

A metabolism has seasons

There is one feature of living systems that the five questions do not ask about directly, and a leader who takes the reading seriously meets it within a year. Living things are not equally productive at every moment. A forest that is in generative surplus over a century is not in surplus every month. It has a season of growth and a season of rest, years of mast and years of scarcity, a fire every few decades that clears the understorey and lets the next generation in. The surplus is a property of the long run, held together by cycles that, taken one at a time, look like loss.

Organisations have seasons too, and most of their management instruments are built to deny it. The quarterly report treats every quarter as comparable to the last. The annual budget assumes the year is the natural unit of every decision. A regenerative commitment judged on those clocks will look like a cost in the quarter it is made and like a saving only in a year nobody is measuring. Soil takes years to rebuild. A second baker takes a season to train. A supplier who has been paid early for a year begins, in the second year, to bring the ideas a squeezed supplier keeps to itself.

The practical consequence is a fourth column on the leader's dashboard, beside throughput and condition: *time to show*. For every regenerative change, write down when its effect could first be visible and when it could be judged fairly. A change to packaging may show in a month. A change to how a supplier is paid may take two years. A change to the soil on a supplier's farms may take five. Writing the time down before

the change is made does two things. It protects the change from being judged too early, which is how most such changes die. And it protects the organisation from the opposite error, a change kept alive for years on hope because nobody said when it ought to have worked.

The second consequence is about rest. The book's line, quoted above, that financial sustainability is a means and not an end, has a corollary inside the organisation. A team pushed at full capacity every month is a field cropped every season with nothing returned to it. It may produce well for a while. It is drawing down a stock, the energy and judgement of the people in it, that the conveyor-belt dashboard does not show. The redundancy question asks whether the organisation could absorb the loss of one person for a month. The seasonal question asks whether anyone in it has had a month that was not at full stretch in the last year. The two are connected. An organisation without slack has no room to recover, and a team that never recovers eventually stops noticing what the edges of the map are telling it.

The third consequence is about disturbance. Ecologists have long observed that some disturbance keeps a system diverse: a meadow that is never grazed or cut fills with a few dominant plants, and a meadow grazed lightly holds many more. Organisations know the same pattern under other names: the product line that is never pruned, the committee that outlives its purpose, the supplier kept for twenty years because nobody asked whether it was still the right one. A regenerative leader is not one who protects everything. It is one who knows which disturbances renew the system and which only damage it, and who makes the first kind on purpose, at a time of the organisation's choosing, rather than waiting for a crisis to make them all at once.

None of this changes the five questions. It changes how often they are asked and how patiently the answers are read. The Metabolism Map at the end of this chapter is drawn twice, six months apart, for exactly this reason: a single drawing shows a structure, and two drawings begin to show a season.

The same questions at home

The reading is not only for firms. A household is a metabolism too, and the five questions work at its scale with almost no translation, which is a useful check on whether they mean anything.

Circularity, at home, is the question of where things go when they leave: the clothes that no longer fit, the food that is not eaten, the furniture that is replaced. Most households can name the bin and not much else. The finer point is that the most valuable loop is usually the first one, use for longer, and the least valuable is the bin marked for recycling. A household that mends one thing a month has done more for its material circulation than one that sorts its waste perfectly and replaces everything early.

Diversity, at home, is the number of ways the household earns, eats and gets help. A family with one income, one route to work and one person who knows how the finances work is a monoculture in exactly the

sense a farm can be. Nothing here argues for complication. It argues for knowing where the single points of failure are.

Redundancy is the oldest household wisdom there is: the larder, the savings held for a bad month, the neighbour with a spare key. It is also the first thing removed when money is tight, which is the moment it is most needed. The third chapter in this book (chapter 3) described how circular projects are cut in bad years; household reserves follow the same pattern for the same reason.

Reciprocity, at home, is the question of what the people and places a household depends on get back from it: the local shop, the school, the friend who looks after the children on Thursdays. It is measured, as in the firm, from their side.

Distributed intelligence is whether everyone in the household can act on what they notice. A teenager who sees the heating left on in an empty room and is expected to turn it off is a node with intelligence. One who is expected to tell someone else is not.

None of this needs a new budget. It needs an afternoon with the map below and the willingness to write down the blanks.

The leaf, again

Barthlott and Neinhuis did not set out to design a self-cleaning paint, though one followed. They set out to understand a leaf. The reading in this chapter asks a leader to do something similar with an organisation: to look at it closely enough to see where its structure sends things, where it is fragile, where it keeps a reserve, what it returns and who can act. The design comes after the looking.

The lotus does not try to be clean. It is built so that the rain does the work.

The Tool: The Metabolism Map

A one-sheet map, drawn by a team of three to six people in about two hours, on a large sheet of paper or a whiteboard. It replaces the conveyor belt with a circulation and asks the five questions of it. Draw it once now and once in six months.

Step 1 · The centre (15 minutes). In the middle of the sheet write the organisation, team or household, and one sentence: *the systems we depend on and do not own are* __, _, ___. Choose three: for example, the farms that supply us, the town our staff live in, the river we discharge to, the trade that trains our people.

Step 2 · What comes in (20 minutes). Around the left side, list every significant input: materials, energy, water, money, people's time and skill, information, goodwill. For each, write where it comes from by name.

Step 3 · What goes out (20 minutes). Around the right side, list every output: products, services, wages, taxes, by-products, waste, emissions, information, reputation. For each, write where it goes next by name. Leave a blank where you do not know.

Step 4 · What comes back (20 minutes). Draw arrows from right to left for every flow that returns: repeat custom, feedback, returned products, materials a supplier takes back, people who come back to work, referrals. Count them. A map with few return arrows is a conveyor belt.

Step 5 · The five questions (40 minutes). Answer each in writing on the sheet.

PRINCIPLE	QUESTION	ANSWER FOR THIS ORGANISATION	ONE CHANGE WORTH TRYING
Circularity	For every output, who uses it next? How many blanks in step 3?		
Diversity	For each critical input, how many independent sources? Where is there only one?		
Redundancy	Could we absorb the loss of any one supplier, person or system for a month? Which one could we not?		
Reciprocity	For our three largest relationships, what do *they* say the relationship returns to them? (Ask, then write their answer.)		
Distributed intelligence	Who below the leadership can stop a process, change a supplier or redirect a waste stream without asking?		

Step 6 · Patent but unhealthy (5 minutes). Mark with a circle any flow that is working (on time, paid, delivered) while depleting the system it runs through. These are the places the conveyor belt could not see.

Step 7 · One change (5 minutes). Choose one change from the last column, name its owner and its date. Only one.

How to read it in six months. Compare the number of blanks in step 3, the number of return arrows in step 4, and the circles in step 6. Fewer blanks, more arrows and fewer circles mean the metabolism is moving towards surplus. If the numbers have not moved, the change chosen in step 7 was the wrong one, or was never made, and the map will usually show which.

CHAPTER FIVE

The Café and the Compost

A town nobody planned

Kalundborg is a small port on the west coast of Zealand, in Denmark. Over several decades from the 1960s, a handful of firms there began to trade what they would otherwise have thrown away. By the late 1980s the arrangement had a name, industrial symbiosis, and visitors were arriving to study it. It became the case every textbook on the circular economy reaches for.

The most useful account of it is one of the first. In 1997, John Ehrenfeld and Nicholas Gertler published "Industrial Ecology in Practice: The Evolution of Interdependence at Kalundborg" in the first volume of the *Journal of Industrial Ecology*.[34] Their finding was not the one visitors tended to take home. The links among the firms, they wrote, had come about through "a sequence of independent, economically driven actions". No master plan had produced them. Each exchange had been agreed because it made sense to the two parties at the time. And they warned that the pattern "may not be easily transferable to greenfield developments": that is, to new sites designed from the start to be symbiotic.

The literature on Kalundborg describes exchanges among a power station, an oil refinery, a pharmaceutical and enzyme maker, a plasterboard factory and the municipality: surplus steam and heat, cooling water, and gypsum recovered from the power station's flue-gas cleaning used in place of mined gypsum for plasterboard.[35] The specific firms and flows have changed over the decades. The symbiosis's own site dates the collaboration to 1972 and today describes it as seventeen public and private companies, among them Novo Nordisk, Novonesis, Ørsted, Saint-Gobain Gyproc, Kalundborg Refinery and the municipality's utility, exchanging water, energy and materials.[35] Chapter 7 returns to Kalundborg at length; here it is the opening of a smaller story.

This chapter works the idea twice. First at Kalundborg's scale, through the research on what happened when others tried to copy it. Then at the scale of a single business, through a composite café, to show what the three chapters before this one (chapters 2, 3 and 4) look like when someone actually sits down with them.

Uncovered, not designed

A decade after Ehrenfeld and Gertler, Marian Chertow of Yale returned to the question of whether Kalundborg could be reproduced. Her 2007 article, titled with deliberate quotation marks "'Uncovering' Industrial Symbiosis", examined fifteen eco-industrial park projects brought to national attention by the US President's Council on Sustainable Development from the early 1990s, and contrasted them with twelve other projects that showed more signs of self-organisation.[36]

Her conclusion is in the abstract, and it is plain. Uncovering existing symbioses "has led to more sustainable industrial development than attempts to design and build eco-industrial parks incorporating physical exchanges." The recommendation that follows is to look for the "kernels" of symbiosis that already exist, the exchanges firms are making on their own, and to nurture those, rather than drawing a park on a map and inviting tenants to fill it. The article closes with a sentence that reads like a field guide: desirable symbiotic exchanges "are all around us and now we must shift our gaze to find and foster them."

For a practitioner, Chertow's finding is liberating. It says that the first step is not a grand design. It is an inventory of what already moves, and of who nearby might want what you discard. It also explains a pattern many managers have seen: the circular initiative launched from the top with a diagram tends to stall, while the arrangement a site manager made with a neighbouring farm ten years ago is still running.

What Chertow's study cannot show is how much any one exchange saves or what it does to the environment in total. It is a comparison of how projects came about and which survived, not an audit of their effects. The third chapter's warning about rebound applies: an exchange that makes a by-product useful can also make it profitable to produce more of it.

The composite: a café

What follows is a composite, built for teaching. It is not a real business, and every figure in it was set by the writer to be plausible for a small independent café-bakery in a market town. The structure of the example, not its numbers, is the point.

The café has forty seats, bakes its own bread and pastries each morning, and sells coffee from seven until four. Its owner, whom the example will call the owner, has read about regeneration, believes in it, and has had no time to do anything about it. She has a waste contract, a recycling bin and a vague sense that she should be doing more.

The idea she starts from is not hers. It is a sentence in Ammanuel Santa Anna's notes, in a Notion volume called *Luminous Holonics Earth*, describing a small closed loop:

> *the coffee grounds from a café could become rich compost for urban farms, which in turn supply fresh produce to the same café.*[37]

The same passage adds a line that matters more for her than the loop itself: "Such systems aren't just efficient—they foster relationships between communities, businesses, and the natural world."[37] That is the reciprocity question from the fourth chapter in one sentence, and it turns out to be where her real gains are.

The ledger, first month

She begins with the Three-Column Ledger from the second chapter. The stock she chooses to watch is not a material at all. It is the soil of the two market gardens within five miles that already supply some of her vegetables, because if they fail she loses her best produce and her customers lose the reason they come in on Saturdays. She describes its condition as the growers do: thin in one garden, good in the other, and both short of organic matter after a dry summer.

Her first ledger has eleven lines. Four results stand out.

Coffee grounds: about forty kilograms a week (the writer's figure), currently in general waste. Column 3, effect on the chosen stock: none. Verb: none at all.

Unsold bread: on an average day, a tenth of the morning bake (the writer's figure), given to a staff member or binned. Column 3: none.

Milk: delivered in single-use plastic, returned to nobody.

Wages: paid on time, with two of her six staff on short contracts they would like to lengthen. Column 3, read against the stock she chose: none directly, but the line makes her notice that a stock she depends on, her staff's skill, is one she has not been watching.

The ledger does not tell her what to do. It shows her, on one page, that most of what leaves the café goes nowhere useful, and that the condition of the gardens is something she affects not at all.

The map, second week

Two weeks later she draws the Metabolism Map from the fourth chapter with her head baker and her front-of-house lead. It takes them an evening. The step-three list of outputs has seven blanks, places where nobody knows where an output goes after it leaves.

The five questions produce five answers, two of which become actions.

Circularity. The grounds and the unsold bread have no next user. One of the market gardeners, asked by phone the following morning, says she will take the grounds and any vegetable trimmings if they are kept separate and collected twice a week. This is a kernel in Chertow's sense: an exchange that makes sense to both parties, arranged directly, without a programme.

Diversity. The café buys all its flour from one mill. That is a single point of failure she had not seen. No action yet, but it is written down.

Redundancy. Only the head baker knows the sourdough. If he is ill, there is no bread. The second action: one of the staff on a short contract is trained on the dough over the next two months, and her contract is lengthened. The book's line about the regenerative workplace sits behind this decision:

> *A sustainable workplace reduces employee burnout. A regenerative workplace produces employees who leave each day with more energy, skill, and sense of purpose than they arrived with.*[38]

Reciprocity. When she asks the gardener what the relationship returns to *her*, the answer is not price. It is predictability: knowing in March what the café will buy in July, so she can plant for it. That costs the café nothing but a conversation and a written estimate.

Distributed intelligence. The front-of-house lead says she sees which pastries are left at two o'clock every day but has never been asked to change the bake. From the following week she is.

The test, before anything is spent

Before the grounds start going to the garden, the owner runs the Leak and Rebound Test from the third chapter. Three of its questions change the plan.

Which loop? Composting is material recovery, the lowest of the three. Is there a repair or exchange option first for the bread? There is: a small shelf of the previous day's loaves at a lower price at opening, and a standing arrangement with a community kitchen for what remains. The bread moves from the bin to two higher loops.

What does it displace? The grounds should replace some of the compost or manure the gardener would otherwise buy. She confirms that they do. The day-old bread shelf is the harder case: does it replace a fresh loaf the customer would have bought, cutting the café's revenue, or does it reach people who would not have bought bread at all? The owner decides to watch the fresh-bread figures for a month before deciding. That is the rebound question asked honestly.

Will it survive a bad year? The grounds collection costs nothing and saves on general waste. The training costs the head baker's time. She writes the training into the rota, not into a project plan, so it does not disappear in a busy month.

Six months on

The figures below are, again, the writer's, set to show the shape of a result rather than to predict one.

General waste collected falls by roughly a third, mostly the grounds and bread, and the waste contract is renegotiated to a smaller bin. The day-old shelf sells most of its loaves, and fresh-bread sales do not fall, which suggests the shelf is reaching new buyers rather than diverting old ones. The community kitchen takes the rest. The second baker can run the morning bake alone. The front-of-house lead has cut the two o'clock leftovers by adjusting the pastry mix.

And the stock she chose, the gardens' soil? The gardener reports that the bed where the grounds have gone is holding moisture better, which is consistent with adding organic matter but is not a measurement. Six months is too short to say more. The owner writes exactly that in the ledger: *condition: slightly better in one bed, by the grower's account; not measured.* That sentence is worth more than a claim of regeneration, because it can be checked next year.

The financial line is modestly positive: a smaller waste bill, a little more bread sold, no new cost beyond time. The book is clear that this matters: a regenerative practice still has to pay its way, a point the fourth chapter quoted in full. Nothing in the example required a grant, a consultant or new equipment.

What she got wrong first

A composite is most useful where it shows the mistakes, and the café's owner, being plausible, made three before the arrangement settled. They are worth setting out because they are the ones real organisations make most often.

She started with the bin. Her first instinct, before the ledger, was to order a second recycling bin and a supply of compostable cups. Both would have reduced harm a little. Neither would have touched the stock she later chose, and the compostable cups, in her town, would have gone to the same landfill as the old ones because the local collection did not accept them. The ledger's value was that it made her look at what actually left the building before she spent anything on what might.

She tried to arrange everything at once. After the inventory she had four possible exchanges: the grounds to the garden, the bread to the community kitchen, the milk containers back to the dairy and cardboard to a local maker who wanted packing material. She set up all four in the same week. Within a month two had lapsed, because nobody had written them into a routine and the people involved were busy. She restarted them one at a time, each with a named person and a day of the week. Chertow's finding that self-organised exchanges outlast designed ones has a small-scale corollary: an exchange survives when it fits the way people already work.

She measured the wrong thing. For the first two months she counted the weight of waste diverted, because that was easy. It went up satisfyingly and told her almost nothing about the gardens, the staff or the café's finances. The Three-Column Ledger's third column was what corrected her: the question was not how

much left the bin but what was in better condition as a result. Weight diverted is a flow. The ledger asks about a stock.

None of these mistakes was expensive. Each was the ordinary consequence of starting from the first brief, less harm, and only gradually moving to the second. That gradual movement is what this book tries to describe, and the composite shows it taking about a season.

What the example shows and does not

It shows the order that works: ledger, then map, then test, then a small number of actions written into routines. It shows Chertow's finding at a tiny scale: the useful exchange was found by asking a neighbour, not designed. It shows that the second brief, more life rather than less harm, often arrives through people before it arrives through materials. Two of the café's four gains were in skill and in the use of what staff already knew.

It does not show that this café, or any café, will see these results. The figures are a teacher's. And it does not show that a loop this small changes anything at the scale Haas and colleagues measured in the third chapter. It changes one business, two gardens and six jobs. That is the scale at which Kalundborg also began.

Santa Anna's book describes a pattern beneath all the alternatives it surveys, from cooperatives to community currencies, and names its first feature as restored feedback loops:

> *Every ecstatic alternative restores that connection — making the impact of economic decisions visible, felt, and somatically real.*[39]

In the café, the restored loop is literal. The owner now knows the woman whose soil her grounds go into, and the woman knows what the café will buy in July. The companion book on the commons (*The Pasture Was Never Empty*) describes how shared resources are kept healthy by the people who use them; this is a very small instance of the same thing. The companion book on gift and reciprocity (*The Channel Keeps It*) explains, through Marcel Mauss and the experimental economists, why an exchange that begins as a favour so often outlasts one that begins as a contract. For a business with more relationships to map than a café, the house's stakeholder paper at hautelumiere.life is a natural next instrument.

On Tuesday and Friday mornings a bucket of grounds goes out of the back door, and in July a crate of tomatoes comes in at the front.

The Tool: The Waste-Is-Food Inventory

An inventory for finding the kernels Chertow describes: exchanges that already make sense and have not yet been arranged. It takes one person about an hour to start and a week of noticing to finish. It works for a business, a school, an office or a household.

Part 1 · What leaves (one week of noticing)

OUTPUT	ROUGHLY HOW MUCH, HOW OFTEN	WHERE IT GOES NOW	COST TO DISPOSE OF IT NOW	IS IT KEPT SEPARATE, OR MIXED WITH OTHER WASTE?

Include materials, food, packaging, heat, water, equipment no longer used, skills nobody is using, and time (empty rooms, idle vehicles, quiet hours).

Part 2 · Who might want it (one afternoon of calls)

For each output, list three possible users within a short distance: a farm, a garden, a school, a workshop, a charity, a neighbouring business, a maker, a local authority service. Ask each one question: *would this be useful to you, and in what form?*

OUTPUT	POSSIBLE USER 1 · ANSWER	POSSIBLE USER 2 · ANSWER	POSSIBLE USER 3 · ANSWER

Part 3 · The higher loop first

For each output with an interested user, before agreeing, ask:- Could it be used longer or repaired by us first? __- Could it be passed on whole, as it is, before it is broken down? _- *Only then: should it be recovered as material (compost, recycling)?* ___

Part 4 · The kernel

For each exchange you agree:- What it replaces for the other party (what would they otherwise buy or use?): __- What the other party says the relationship gives them, in their words: _- *What it costs us: money · time - Which routine it is written into (rota, delivery schedule, contract): - Date of first exchange: · date of first review:* ___

Part 5 · The review (three months on)- Exchanges still running: __ of _- *For each, has it replaced something, or added to the total? - The stock we chose to watch (from the Three-Column Ledger): condition now, and how we know: - The next output from Part 1 to find a user for:* ___

How to read it. Most inventories find two or three kernels in the first week. The temptation is to arrange all of them at once. Arrange one, write it into a routine, and wait until it has run for a month before arran-

ging the next. Kalundborg grew one agreement at a time over decades, and that, on Ehrenfeld and Gertler's account, is why it held.

A NOTE FROM THE HOUSE

What a firm throws away is often an input somebody, sometimes the firm itself, is already paying for. Counted from records the firm already keeps, a closed loop is a gain both sides can see. Luminous Prosperity Inc. does this work inside organisations as a gainshare, and is paid as a share of the gain it helps find.

REQUEST A CONVERSATION

CHAPTER SIX

The Carpet Maker's Promise

A book on a desk in Georgia

In 1994, Ray Anderson, the founder of Interface, a manufacturer of carpet tiles based in Atlanta, was asked to speak to an internal task force about the company's environmental position. He did not have much to say. In looking for something, he read Paul Hawken's *The Ecology of Commerce*, published the year before, and the book changed his view of his own company. He later described the experience, in a phrase that has followed the company ever since, as a "spear in the chest". Santa Anna's *Ecstatic Economics* tells the story in a few lines and adds Anderson's own verdict on what he had been running: "a plunderer of the earth."[40]

What followed is the most frequently cited case in the literature on regenerative business. Anderson committed Interface to a goal the company later named Mission Zero: to eliminate its negative impact on the environment by 2020. He went further in words than in any plan, saying that the company should become restorative, giving back more than it took. Then he spent the remaining seventeen years of his life, and the company spent the twenty-five years of its programme, trying to find out what that would require of a firm that turned petroleum into floor coverings.

This chapter reads the case carefully, for two reasons. The first is that it is the best-documented attempt by a large, publicly listed manufacturer to work to the second brief, and a leader can learn more from its mechanism than from almost any other story in the field. The second is that it is also a case study in how evidence travels. The figures attached to Interface are repeated in books, lectures and articles, including in Santa Anna's own, and they have drifted on the way. Chapter 3 warned that a celebrated case should be read for its mechanism rather than its headline. Here is that reading done in full.

What the company said it achieved

In November 2019, Interface announced that it had met the goals of Mission Zero, a year before its own deadline, and published a twenty-five-year report titled *Lessons for the Future*. The trade press carried the figures the company released with it. They were stated as applying to the production of Interface carpet tiles only, and as running through 2018.[41] As reported, they were:

- a 69 per cent reduction in the carbon footprint of Interface carpet tile products;

- a 96 per cent reduction in greenhouse gas emissions globally;
- 89 per cent renewable energy use across its factories globally, with 100 per cent renewable electricity;
- a 46 per cent reduction in energy use per unit of production;
- an 89 per cent reduction in water use per unit of production in its factories;
- a 92 per cent reduction in waste to landfill across the global business.

The announcement also described a "handprint" of one million metric tonnes of carbon dioxide equivalent, from projects in the supply chain and a landfill gas project, quantified with a method developed outside the company. And it named the company's next goal, Climate Take Back, which aims at a business that is carbon negative rather than merely neutral.

Santa Anna's book gives a similar list: emissions down by 96 per cent, waste to landfill by 91 per cent, water by 89 per cent, renewable energy at 89 per cent, "all while *increasing* revenue and *doubling* profits."[40] Three of its four environmental figures match the company's announcement; the landfill figure differs by a point, 91 against 92, which is the kind of drift that happens when a number passes through several hands and different reporting years. The claim about profits is a different matter. It does not appear in the company's announcement as reported, and it has not been traced, for this book, to Interface's own financial statements. A reader should treat it as unverified until it is. The book's broader point, that the programme did not ruin the company, is consistent with its continued existence as a listed firm through those decades; the specific claim that profits doubled because of the programme is not established here.

That distinction is worth slowing down for, because it is the commonest failure in the way regenerative cases are told. An environmental result and a financial result are reported together, and the reader infers that one caused the other. Perhaps it did, in part. But a firm's profits over twenty-five years are moved by its markets, its acquisitions, its pricing, its interest costs and its competitors, and separating the effect of an environmental programme from all of those would need an analysis nobody has published in a form this book could check. The honest statement is the narrower one: Interface reported very large reductions in the intensity of its environmental impacts, on its own measures and baselines, while remaining in business as a competitive manufacturer.

What the figures can and cannot show

Even the figures that match need reading with care, and the company's own framing supplies the tools for it.

They are intensities as well as totals. Two of them, energy and water, are stated per unit of production. A per-unit reduction is a real achievement, and it is also compatible with total use rising if production rises. Chapter 3's discussion of rebound applies: a firm that becomes far more efficient per square metre of carpet

and sells far more square metres may use more energy in total than before. The announcement as reported does not give the totals.

They have a baseline the company chose. Every reduction is measured from a starting year. The trade reports do not state the baseline year for each figure, and a reader should find it in the company's own report before comparing Interface with any other firm. A baseline set in a year of unusually high impact makes every later year look better.

They cover carpet tile. By 2019 Interface also owned other flooring businesses, and the reports note that combined figures for the whole group differ from the carpet-tile figures. A headline drawn from one product line should not be read as describing a whole company.

They are self-reported. The figures come from the company. Some of its claims, such as product carbon neutrality, were certified by outside schemes, but the twenty-five-year reductions as a set are the company's account of itself. That is normal; it is how almost all such figures reach the public. It is also why a reader should hold them as strong evidence of direction and magnitude rather than as audited precision.

None of this makes the case weak. A ninety-six per cent reduction in greenhouse gas emissions, even read as the company's own figure on its own baseline for one product line, describes a change of a different order from the five or ten per cent most firms put in their plans. The point is to know which questions remain open, so that a leader who carries the case into a boardroom does not carry it further than it will go.

The mechanism, in five moves

What, then, can a practitioner take from Interface? Not the percentages. The order of moves, as far as the public record shows it, is the transferable part.

First, a felt shift at the top. Santa Anna's book reads Anderson's conversion as somatic before it was analytical: "He didn't transform Interface through spreadsheet analysis."[40] Whatever one makes of the physiological reading, the organisational fact is clear. The programme began with the founder and chief executive changing his own view of what the company was for, and saying so in public. Most regenerative programmes begin two or three levels below the top, and most of them are cut in the first bad year, as chapter 3 described. A programme that the person at the top regards as the company's purpose survives more weather than one regarded as a department's project.

Second, a goal stated as a zero and a date. Mission Zero was not a percentage improvement. It was an end state with a year attached. That framing has a cost, because a zero is rarely reached in full and the company had to define what counted. It also has a benefit that a percentage target lacks: it rules out the comfortable improvements that leave the business model untouched. A firm aiming for a ten per cent cut can find it in lighting and logistics. A firm aiming for zero has to ask what its product is made of.

Third, a long series of specific changes rather than one large one. The public account describes many fronts at once: energy sources at the factories, the materials in the yarn and the backing, the amount of material in each tile, the recovery of used carpet, the treatment of waste and water, the carbon in transport. No single change produced the result. This is the pattern Chertow found at Kalundborg, described in chapter 5 and again in chapter 7: the regenerative result is an accumulation of small agreements and adjustments, each of which made sense on its own, rather than a single designed transformation.

Fourth, measurement published over a long period. Interface reported against its goals for a quarter of a century. Whatever the limits of self-reported figures, the discipline of publishing them each year, against the same goals, is what made the case legible at all. A firm that changes its metrics every few years cannot show a trend, and a firm that does not publish cannot be held to one.

Fifth, a next goal set before the first was declared complete. Climate Take Back was announced in the same breath as the success of Mission Zero. That is a small detail with a large meaning. A regenerative commitment that ends when its first target is met becomes, the next year, a sustainability programme in maintenance. Setting the next goal at the moment of success is how the second brief, which has no ceiling, is kept from collapsing back into the first, which has one.

What the case leaves out

A case this celebrated has a shadow, and it is worth naming so that a leader can look for it in their own organisation.

The case is told as one man's conversion. That is true to the record, and it is also a risk. Chapter 7 discusses Santa Anna's *exit problem*, the danger that a commitment resting on one person ends when that person leaves. Anderson died in 2011, and Interface continued the programme for nearly a decade after him, which suggests it had been built into the company's structures as well as its founder's convictions. How it was carried across that transition, who held it, what was written into which documents, is the part of the case most useful to a leader and least often told. Anyone studying Interface for their own organisation should look for that story first.

The case is also told without its failures. Over twenty-five years, a programme on that many fronts must have tried things that did not work: materials that could not be recovered, suppliers who could not change, projects abandoned. The public narrative, as is usual with celebrated cases, selects the successes. Chapter 3's warning about survivorship bias applies inside a single company as well as across many.

And the case is told as if the market simply rewarded it. Perhaps it did, in part; the company's own leaders said the programme made Interface more attractive to customers and employees. But the counter-factual, how Interface would have fared without it, is unknowable, and a board that is told the programme "paid for itself" should ask how anyone knows. The more defensible claim, and the one this book makes, is that a

manufacturer working in a commodity material reported very large reductions in its environmental intensity over twenty-five years without ceasing to be a viable business. That is enough to show the second brief is not a fantasy for heavy industry. It is not enough to show it is a reliable path to profit.

Reading Interface beside the book's tools

It is a useful exercise to put the case through the tools of the earlier chapters, because it shows both what they can do and where a large firm's story strains them.

The Three-Column Ledger of chapter 2 asks for one stock the firm depends on and does not own. Interface's public goals were mostly about its own impacts: its emissions, its energy, its water, its waste. Those are flows. The stock behind them, the climate system, is real but too large for any one firm to watch, which is why the company's later "handprint" accounting, crediting itself with carbon removed from the atmosphere through projects outside its own operations, is an attempt to describe an effect on a stock rather than a reduction in a flow. A leader applying the ledger to a firm of Interface's size would do well to choose a smaller and more local stock as well: the condition of the communities around a factory, or of a supply region, where a change can be seen.

The Leak and Rebound Test of chapter 3 asks what each circular product displaces. For a carpet maker, the question is whether recovered and recycled carpet replaces virgin material in new carpet or is downcycled into something else, and whether a cheaper or greener tile leads buyers to replace floors more often. The public figures do not answer it, and a leader studying the case should ask it.

The Metabolism Map of chapter 4 asks how many return arrows the organisation has. Interface's programme added several: used carpet coming back, suppliers changing their materials, customers choosing the product for its record. Each return arrow is also a relationship, and the case suggests that the relationships, with suppliers willing to reformulate yarn and customers willing to pay for a record, were as important as the engineering.

For a smaller firm

Most readers do not run a listed manufacturer. The case is still useful at small scale, if it is read for the five moves rather than the size.

A small firm can state its own zero and its own date: no food waste to landfill by a given year, no single-use packaging from a given supplier, every product repairable. It can make a series of specific changes rather than wait for a single large one. It can publish its figures, even if publication means a page on its own site updated once a year. And it can set the next goal before it declares the first one met.

What it cannot do is borrow Interface's percentages as a promise of its own results. The café in chapter 5 cut its general waste by roughly a third, on the writer's illustrative figures, and that was a good result for a

café. A comparison with ninety-six per cent would be meaningless, and a board that hears such comparisons is being sold a story rather than a plan.

The spear and the spreadsheet

Santa Anna's book calls the combination of lower extraction and continued prosperity "the regenerative paradox that the extractive mind cannot compute".[40] The chapter has argued that the evidence for the second half of that sentence, the prosperity, is weaker than the evidence for the first, the lower extraction, and that a careful reader should say so. But the book's deeper point survives the correction. Anderson did not begin with a calculation showing that the programme would pay. He began with a recognition, and the calculations came afterwards, as the company found which changes worked. Most regenerative programmes in most firms are designed the other way round: no change is made until its return is proven, and so almost none is made at all.

The practical lesson is not to skip the calculation. It is to let the calculation serve the commitment rather than gate it. Decide what the firm is for. Then use every tool in this book, the ledger, the test, the map, the measurements of chapter 9, to find the changes that serve that purpose and keep the firm paying its way. Interface's record suggests that, for a long time and across many fronts, enough such changes can be found.

A carpet tile is a small square of floor. It is laid, walked on for years, lifted and, in the best case, made into another.

The Tool: The Case Reading Sheet

A one-page sheet for reading any celebrated regenerative case, from a book, a conference talk or a competitor's report, before it is used to justify a decision. It takes about an hour with the case's own sources open.

The case- Organisation and period: __- Where the account comes from (the firm's own report / trade press / a book / an academic study): _- *Date of the figures, and the date of the account that repeats them:* ___

Part 1 · The figures

FIGURE AS QUOTED	WHERE IT FIRST APPEARS	TOTAL OR PER UNIT?	BASELINE YEAR	SCOPE (PRODUCT, SITE, WHOLE FIRM)	SELF-REPORTED OR INDEPENDENTLY CHECKED?

- Does any figure differ between the original and the account you were given? Which, and by how much: ______
- Is any financial claim (profit, revenue, cost saving) attached to the environmental results? Where is it in the firm's own financial statements: ______

Part 2 · The mechanism- Who started it, and at what level of the organisation: __- The goal as stated (a percentage, or an end state and a date): _- *The specific changes made, in the order they were made, as far as the record shows: - How results were published, and for how long: - What happened when the founder or sponsor left: - The next goal, and when it was set:* ___

Part 3 · What is missing- Failures or abandoned projects the account mentions: __ (if none, write *none mentioned*)- What the case does not show (causation, totals, comparison with similar firms): ____

Part 4 · What transfers- The one move from Part 2 that would work in our organisation, at our scale: __- The figure from Part 1 that we will not repeat to our board without its scope and baseline: ____

How to use it. Fill in Part 1 before anyone quotes the case in a meeting. Most celebrated figures survive the sheet in a narrower form, and the narrower form is the one worth repeating. Part 4 is the reason for the exercise: a case is useful when it changes what you do next, not when it decorates a slide.

CHAPTER SEVEN

Neighbours and Owners



Neighbours and Owners

HAUTE LUMIÈRE · THE SECOND BRIEF · CHAPTER SEVEN

Two relationships that decide

A regenerative commitment can be well designed, well measured and well meant, and still fail for one of two reasons. The first is that the organisation tries to close its loops alone, when almost every useful loop runs through a neighbour: the firm that wants your steam, the farm that wants your grounds, the town

that wants your waste heat. The second is that the organisation changes hands, or leaders, and the commitment turns out to have rested on a person rather than a structure.

This chapter takes one case for each. Kalundborg, the Danish port where a cluster of firms has traded by-products for half a century, is the longest-running evidence on neighbours. Patagonia, the outdoor clothing company whose founder restructured its ownership in 2022, is the most visible recent evidence on owners. Neither is a template. Each answers a question the earlier chapters left open, and each has limits a careful reader should know before carrying it into a plan.

Kalundborg, read slowly

Chapter 5 introduced Kalundborg briefly, through John Ehrenfeld and Nicholas Gertler's account of 1997 and Marian Chertow's study of 2007. Here it is worth reading more slowly, because the details are where its lessons are.

The symbiosis's own site dates the collaboration to 1972.[42] The early exchanges recorded in the literature ran among a coal-fired power station, an oil refinery, a pharmaceutical and enzyme maker, a plasterboard factory and the municipality. Surplus steam from the power station went to the refinery and the pharmaceutical plant. Heat went to the town's district heating. Cooling water and waste water were reused rather than drawn fresh from a scarce local supply. Gypsum from the power station's flue-gas cleaning went to the plasterboard factory in place of mined gypsum. Each of these was a separate agreement between two parties, and Ehrenfeld and Gertler's central finding was that the whole had come about through "a sequence of independent, economically driven actions" rather than any plan.[43]

Today the site describes the symbiosis as seventeen public and private companies, among them Novo Nordisk, Novonesis, Ørsted, Saint-Gobain Gyproc, Kalundborg Refinery, Boehringer Ingelheim, Unibio, Kalundborg Utility and the municipality itself, exchanging water, energy and materials.[42] The names have changed as firms were sold, merged and renamed; the power station has moved away from coal; new members have joined. A reader who wants figures for any current flow should ask the symbiosis directly, because its public pages, at the time of writing, give none.

Three findings from the research on Kalundborg matter most for a practitioner.

The motive was usually not the by-product. In 2006, Noel Brings Jacobsen published the first detailed quantitative assessment of some of Kalundborg's central exchanges, those involving water and steam.[44] He found that both substantial and minor environmental benefits accrued from them. More interesting for a manager was his finding about why firms took part: the economic motivation, he wrote, was often connected to upstream or downstream operational performance and not directly associated with the value of the exchanged by-product itself. A firm took a neighbour's steam not mainly because the steam was cheap, but because a reliable supply made its own plant run better, or because disposing of something had become a

constraint on production. The lesson is practical. When looking for an exchange, ask what problem in the other party's operations it would solve, not only what the material is worth.

The exchanges come in kinds. In a review of 2000, Chertow organised the early literature and projects around a taxonomy of five different types of material exchange, from exchanges inside a single firm to exchanges among firms that are not co-located but are linked across a wider region.[45] Her review also found that evolutionary approaches, letting cooperation grow from exchanges that already existed, were important in creating the level of trust that multi-party arrangements need. That is the root of her 2007 recommendation, discussed in chapter 5, to uncover symbioses rather than design them.

It took decades. Kalundborg's network did not appear in a planning cycle. It grew, one agreement at a time, across fifty years, through changes of ownership, fuel and technology. That is both its strength as evidence and its limit as a model. A firm that reads about Kalundborg and expects a network of its own in two years has misread the case. A firm that reads it and arranges one exchange this quarter, with the expectation that the second will come easier, has read it well.

What Kalundborg cannot show

The case has been studied for decades, and its limits are as well known as its strengths.

It is one place, with unusual conditions: a small town, a handful of large plants close together, a scarce local water supply that made reuse valuable, a national culture of cooperation and a long history of people who knew one another. Ehrenfeld and Gertler warned that the pattern "may not be easily transferable" to new sites designed from the start to be symbiotic, and Chertow's study of designed eco-industrial parks in the United States bore the warning out.[43]

Its environmental benefits, where measured, vary by exchange. Jacobsen's study found some substantial and some minor, and it covered water and steam rather than the whole network. No study this book has read totals the net environmental effect of the symbiosis over its life, and chapter 3's warning about rebound applies here as everywhere: an exchange that makes a by-product valuable can, in principle, make it worth producing more of it.

And it describes neighbours, not owners. Kalundborg's exchanges have survived many changes of ownership among its member firms, which is evidence that a well-founded exchange can outlive the people who arranged it. But each member firm's own commitment to regeneration, beyond the exchanges, is a separate question, and the symbiosis does not answer it.

Patagonia, in 2022

The second case is about exactly that question.

On 14 September 2022, Patagonia announced that its founder, Yvon Chouinard, and his family had transferred their ownership of the company to two new entities.[46] As widely reported from the announcement, the voting stock, about 2 per cent of the total, went to the Patagonia Purpose Trust, overseen by members of the family and their advisers, whose role is to protect the company's purpose and values. The non-voting stock, about 98 per cent of the total, went to the Holdfast Collective, a non-profit organisation that receives the profits not reinvested in the business and directs them to environmental and social causes; it is registered as a 501(c)(4) rather than as a charity of the more common 501(c)(3) kind. The company estimated that around one hundred million dollars a year would flow to the Collective, depending on the health of the business. The announcement's headline line, in Chouinard's letter, was that the Earth was now the company's only shareholder.

Santa Anna's book describes the change briefly as a transfer of ownership "to a trust dedicated to fighting climate change".[47] The fuller description matters, because the design is the lesson. Patagonia did not give the company to a charity, sell it to its employees or float it on a stock exchange. It separated control from economic benefit. The trust holds the votes and is charged with the purpose. The collective holds the economic interest and is charged with spending the profits on the mission. Neither can sell the company to the highest bidder for its own gain.

The exit problem

Santa Anna's book names the problem this structure answers. Even a business with the strongest regenerative culture faces what the book calls the *exit problem*: "Even the most mission-driven founder eventually retires",[47] and if ownership can then be sold to whoever pays most, the commitments can be undone by a new owner in a quarter. Its answer is the family of structures it calls steward ownership, of which Bosch and Zeiss, held by foundations, are the long-standing European examples:

> *Steward ownership locks the mission into the legal structure of the enterprise*[47]

Patagonia's 2022 structure is one version of that idea, adapted to American law. Its significance for this book is not that every firm should copy it. Most cannot: it required a founder with control of the company, the willingness to give up the proceeds of a sale, and the means to pay the taxes the transfer incurred. Its significance is that it makes visible a question every regenerative commitment faces, whether or not its owners ever consider a structure like it. *What happens to this when we are gone?*

What Patagonia cannot show

The case is recent, and the most important evidence about it does not yet exist.

It cannot yet show that the structure works. Three years is a short time in the life of an ownership arrangement meant to last for generations. Whether the trust holds the purpose through a change of leadership, a recession or a disagreement within the family is a question the next decades will answer.

It cannot show that steward ownership produces better environmental results than conventional ownership. Patagonia's record before 2022 was built under private family ownership. The change of structure was designed to protect that record, not to create it, and the case is evidence about durability, not about performance.

It has critics. Some commentators have questioned the use of a 501(c)(4) organisation, which may engage in political activity and is treated differently for tax purposes from a charity, and others have argued about how much the structure reduced the family's tax liability. Those are matters of tax law on which this book offers no view, beyond noting that a reader studying the case should read the criticism as well as the announcement.

And it is a single, very visible case, chosen for attention partly because it is unusual. Chapter 3's warning about survivorship applies: the firms that considered similar structures and did not adopt them, or adopted them and struggled, are less often written about.

The two cases together

Put side by side, the two cases answer the two questions this chapter began with.

Kalundborg says that a regenerative economy is built between organisations, not inside them, and that the connections are found more often than designed. Its practical instruction is the Waste-Is-Food Inventory of chapter 5, done patiently, with an eye to what problem each exchange solves for the other party.

Patagonia says that a regenerative commitment lasts only as long as the structure that holds it, and that the structure is a question of ownership and governance, not only of policy. Its practical instruction is smaller than its example. Most firms cannot restructure their ownership. All firms can ask where their commitments are written down: in a founder's speech, in a board resolution, in supplier contracts, in the articles of association, in the terms of a loan. A commitment written only in the first place is a person's. A commitment written in the last few is the organisation's.

The two meet at one point. Kalundborg's exchanges have outlived many changes of ownership because each was an agreement that made sense to both parties. A regenerative commitment that is also, in Jacobsen's terms, good for each party's operations is protected by self-interest as well as by structure. Steward ownership protects a purpose against a new owner who does not share it; a good exchange protects itself against a new owner who does not care, because it still pays. The strongest commitments have both.

Uncovering, at your own scale

Chertow's advice to uncover rather than design has a practical form for an organisation that is not a power station. It takes three habits, and none of them requires a programme.

Ask what your neighbours throw away, not only what they might take. Most inventories start with the organisation's own outputs. Half the useful exchanges start from the other side: a neighbour's waste that could replace something you buy. A bakery's flour sacks, a joinery's offcuts, a school kitchen's surplus, a printer's paper trim, a brewery's spent grain. The neighbour contact's first call is often more productive as a question than as an offer.

Look for the problem, not the material. Jacobsen's finding, that firms at Kalundborg joined exchanges for operational reasons more than for the value of the by-product, is the most useful thing a neighbour contact can carry into a call. A farm that takes coffee grounds may care less about their nutrient value than about having a regular, clean, collected supply. A firm that takes waste heat may care less about the price than about the reliability. Ask what would make the neighbour's own work easier, and the exchange designs itself.

Write each exchange down where both sides will see it. Ehrenfeld and Gertler's network grew because each agreement made sense to both parties and lasted. The café's exchanges in chapter 5 lapsed when they lived in nobody's routine. The smallest formal step, a shared schedule, a one-page agreement, a named person on each side, is what turns a favour into an arrangement, and an arrangement is what survives a change of staff.

None of these is new. They are the way neighbours have traded for as long as there have been neighbours. What Kalundborg added was patience: fifty years of one agreement after another, each found rather than imposed. A firm that arranges one exchange a year for ten years will have a small symbiosis of its own, and it will have built it in the only way the evidence suggests such things are built.

For the household

The household version of these two questions is close to the surface. The neighbour question is the inventory at home: who nearby wants what you discard, who lends and borrows, which exchanges between households already work and could be extended. Chapter 11 takes it up.

The owner question, at home, is what happens to what a household has built when its circumstances change. A family that has kept a garden's soil in good heart for fifteen years and then sells the house has no structure to protect the soil, only the hope that the next owners care. A family that has passed on skills, tools and habits to its children, or to neighbours, has written its commitments somewhere they can survive. The scale is small. The question is the same.

The harbour

At Kalundborg the steam pipes run above ground between the plants, and a visitor can follow them by eye from one firm to the next. At Patagonia the arrangement that matters is in a trust deed nobody outside will read. One is a structure you can see; the other is a structure you cannot. A regenerative organisation needs both.

The Tool: The Neighbour and Owner Audit

Two short exercises, one for each relationship. Each takes about an hour, and both are better done by two people who see the organisation from different places.

Part 1 · Neighbours

List the five organisations nearest to you, by distance or by flow, that you exchange anything with besides money for a product.

NEIGHBOUR	WHAT WE GIVE THEM	WHAT THEY GIVE US	WHAT PROBLEM IN THEIR OPERATIONS DOES IT SOLVE?	WHO ARRANGED IT, AND IS IT WRITTEN INTO A ROUTINE OR CONTRACT?

Then list three neighbours you do not exchange with:

NEIGHBOUR	ONE THING WE DISCARD THAT THEY MIGHT USE	ONE PROBLEM OF THEIRS WE MIGHT HELP WITH	WHO WILL CALL THEM, AND BY WHEN

Part 2 · Owners

For each regenerative commitment the organisation has made, mark where it is written.

COMMITMENT	FOUNDER OR LEADER'S WORD	POLICY DOCUMENT	BOARD RESOLUTION	SUPPLIER OR CUSTOMER CONTRACTS	ARTICLES, OWNERSHIP OR FINANCING TERMS

- If the organisation were sold next year, which commitments would survive, and why: _____
- If the leader who sponsors them left next year, which would survive: _____
- One commitment to move one column to the right this year, and who will do it: _____

How to read it. Part 1 finds the next exchange. Part 2 finds the commitment most at risk. A commitment that sits only in the first column of Part 2 is a promise a person has made; each column to the right makes

it more the organisation's. Steward ownership is the last column carried as far as it will go. Most organisations will not go there, and do not need to, to make their commitments a great deal safer than they are.

CHAPTER EIGHT

The Field Manual

How to use this chapter

The chapters so far have explained the second brief, tested it against its critics, read it as a living system and watched it work in a café, a carpet maker, a Danish port and an outdoor clothing company. This chapter is the sequence. It sets out, week by week across a year, what a leader does to run a regenerative programme in an organisation of between ten and a few thousand people, who does each part, and which decisions have to be made at which point.

It is written to be followed, and it is also written to be adapted. A café will move through the first quarter in a month. A manufacturer with several sites will need the whole year for the first cycle and will run several of the steps in parallel at different sites. What should not change is the order. Every step depends on the one before it, and the commonest way these programmes fail is by starting in the middle: launching an initiative before anyone has chosen the stock it serves, or committing money before the plan has been put through the test.

Santa Anna's *Ecstatic Economics* describes the most effective alternative enterprises as "clear about their values and flexible about their strategies."[48] The field manual is built on that sentence. The values, the second brief and the stock it serves, are fixed at the start. Almost everything else is expected to change as the programme learns.

The six roles

A regenerative programme needs six roles. In a small organisation one person may hold two or three. In a large one each may be a small group. What matters is that each is named, because a role nobody holds is a step nobody takes.

The sponsor. The person at the top, or as near the top as possible, who regards the programme as part of what the organisation is for. Chapter 6 suggested that Interface's programme survived because its sponsor was its founder. The sponsor's job is not to run the programme. It is to protect it in a bad quarter, to put its questions on the board's agenda and to make the decisions marked *sponsor* below.

The owner. The person who carries the plan day to day. This is usually a senior manager in operations, not a specialist in a separate department, because the work is operational. The owner keeps the ledger, convenes the map, runs the tests and holds the decision log.

The work team. Three to six people who do the work the programme touches: a supervisor from the shop floor, someone from purchasing, someone who deals with customers, someone who handles waste. They draw the map and run the inventory. They know what leaves the building better than the person who signs for it.

The sceptic. One person whose job is to put every plan through the Leak and Rebound Test of chapter 3 and to ask what each change displaces. The sceptic should be respected and should not be the owner's subordinate. A finance director often makes a good one.

The finance partner. The person who makes sure every line of the programme still shows whether the organisation is paying its way. The second brief is not permission to lose money. The finance partner keeps the second column of the accounts honest.

The neighbour contact. The person who makes the calls: to suppliers, nearby firms, farms, schools, the municipality, other users of the stock. This is often the owner in a small firm and a purchasing or community-relations manager in a large one. It needs someone who is good on the telephone and patient with slow answers.

Before week one: the three decisions

Three decisions are made before any work begins. They take a single meeting of the sponsor and the owner, and they are written down.

Decision 1 · The verb. Is this programme meant to reduce harm, to sustain a level, or to regenerate? Chapter 2 argued that most projects honestly answer *reduce*, and that this is fine. A programme can include all three. What the decision rules out is calling a reduction a regeneration. Write the verb, and if the answer is *regenerate*, continue.

Decision 2 · The stock. Choose one stock the organisation depends on and does not own. Chapter 2 gave examples: the soil on a supplier's farms, the skills of a regional workforce, the trust of a neighbourhood, the health of a river downstream, the condition of the communities around a site. Choose one, not several. Write how its condition will be described so that someone outside could check the description. If nobody knows its condition today, the first task of the programme is to find out, and that is a perfectly good first task.

Decision 3 · The boundary and the horizon. Write down which part of the organisation the first cycle covers (one site, one product line, the whole firm) and over what period it will be judged. Chapter 4 called

this *time to show*. A programme judged at three months that needs two years to show will be killed by its own reporting.

Weeks 1 to 4 · See

The first month is spent looking. Nothing is bought, changed or announced.

Week 1. The owner writes the verb on every significant proposal currently in progress: capital requests, product briefs, supplier reviews. This takes an hour and changes the conversation in every meeting that follows, because people begin to ask which verb a project answers. The owner starts the Three-Column Ledger of chapter 2, with one line per significant activity.

Week 2. The work team draws the Metabolism Map of chapter 4, in a two-hour session with a large sheet of paper. The owner facilitates; the sponsor does not attend, because people draw more honestly without the most senior person in the room. The map's blanks, the outputs whose next destination nobody knows, become the agenda for the next fortnight.

Week 3. Everyone who handles materials spends a week noticing what leaves the building, using Part 1 of the Waste-Is-Food Inventory from chapter 5. The instruction is to write things down, not to fix them. A good inventory includes heat, water, empty rooms, idle vehicles and unused skills as well as materials.

Week 4. The neighbour contact makes the calls from Part 2 of the inventory: three possible users for each significant output. The owner, the sponsor and the sceptic meet for an hour at the end of the month.

End of month 1 · Decision 4 (sponsor). From the map, the ledger and the inventory, choose *one* change and *one* exchange to take forward. One change inside the organisation, one exchange with a neighbour. The temptation, which the café's owner in chapter 5 gave in to, is to choose all of them. The rule is one of each.

Weeks 5 to 8 · Test

The second month is spent testing the two chosen items before any money is spent.

Week 5. The sceptic runs the Leak and Rebound Test of chapter 3 on both items, in writing, with the owner. The six questions are: which loop, where is the boundary, how many passes at what quality, what does it displace, which stock and how will we know, and will it survive a bad year. Any question the plan cannot answer is marked, and the plan goes back to be revised, not rejected.

Week 6. The finance partner writes one page for each item: what it costs in money and time, what it saves, what it might earn, and over what period. Where a figure is an estimate, the page says so. Where it is unknown, the page says *unknown* rather than inventing a number.

Week 7. The neighbour contact returns to the chosen neighbour with a specific proposal: what will be exchanged, how often, in what form, who will handle it on each side. The contact asks the question from

chapter 4's reciprocity principle: what would the relationship return to *them*? The answer is written down in their words.

Week 8. The owner writes each item into a routine, not a project plan. The exchange goes into a delivery schedule or a contract. The change goes into a rota, a standard operating procedure or a purchasing rule. Chapter 3 argued that a practice that has to be argued for every time is dropped under pressure; this week is when that is prevented.

End of month 2 · Decision 5 (sponsor). Approve, revise or stop each item, on the evidence of the test and the finance page. Record the reason in the decision log.

Weeks 9 to 16 · Start

The third and fourth months are the first run.

Weeks 9 and 10. The change and the exchange begin. The owner continues the ledger. Nothing else is added. This is harder than it sounds, because a programme that has begun to work attracts ideas, and every new idea dilutes attention from the two that are running.

Weeks 11 and 12. The owner checks each item against its routine. Is the exchange happening on its scheduled days? Is the change being done by the people whose rota it is in? If either has lapsed, the reason is almost always that it was written into a routine nobody uses. The fix is to move it into one they do.

Weeks 13 and 14. The sceptic returns to the displacement question. For the exchange: is the neighbour using what they receive instead of something they would have bought, or as well as? For the change: has anything else increased as a result? Chapter 5's café watched its fresh-bread sales for a month to see whether the day-old shelf was diverting customers or reaching new ones. Every programme has an equivalent figure to watch.

Weeks 15 and 16. The work team meets for an hour to say what they have noticed. This meeting matters more than its length suggests. The people who do the work see effects that do not show on any dashboard: the supplier whose driver now stays for coffee, the colleague who has started bringing ideas, the waste stream that has quietly grown somewhere else.

End of month 4 · Decision 6 (owner and sponsor). Is each item running as designed? If yes, it continues unchanged. If no, it is revised once and given another month. If it fails again, it is stopped and the reason recorded. Stopping an item is not a failure of the programme. It is the programme learning.

Weeks 17 to 26 · Hold

The second quarter of the year is about keeping what has started and preparing the second cycle.

Weeks 17 to 20. The owner adds one condition measure for the chosen stock to the weekly or monthly dashboard the leadership already reads. Chapter 9 sets out how to choose it. The point of putting it on the existing dashboard, rather than in a separate sustainability report, is that it is then discussed in the same meeting as revenue and costs.

Weeks 21 and 22. The neighbour contact calls the other users of the chosen stock: the other firms that draw on the same river, the other employers who depend on the same trade school, the other farms in the same catchment. The question is simple: what are you doing about it, and would it help to talk? This is the first step from a firm's programme towards the commons governance chapter 12 describes, and it often produces the second exchange without anyone looking for it.

Weeks 23 and 24. The sponsor and the owner go through the Neighbour and Owner Audit of chapter 7. Where is each commitment written? Which would survive a sale, or the sponsor's departure? One commitment is moved one column to the right: from a speech into a policy, from a policy into a board resolution, from a resolution into supplier contracts.

Weeks 25 and 26. The work team redraws the Metabolism Map. The owner compares it with the first: the number of blanks, the number of return arrows, the number of flows marked as working while depleting what they run through.

End of month 6 · Decision 7 (sponsor, reported to the board). The half-year review. The owner presents the two maps, the ledger, the condition of the stock (or *not measured*), the decision log and the financial line. The sponsor decides whether to begin a second cycle with a new change and a new exchange.

Months 7 to 12 · The second cycle

The second half of the year repeats the first, faster and with one difference. The first cycle chose a change and an exchange. The second also asks a structural question, taken from chapter 12: does the revenue model reward products and services that last, or does it earn more when they wear out? If it earns more when they wear out, the second cycle's change should be a small experiment in the other direction: a repair service, a lease, a take-back, a longer warranty. It may not pay at first. Its purpose is to learn whether, in this market, the second brief and the business model can be brought into line.

Month 12 · Decision 8 (board). The annual review. Chapter 10 sets out how to present it, and chapter 9 how to read its numbers honestly. The board decides three things: whether the programme continues; whether any commitment should be written into the organisation's governing documents; and what the stock's condition should be at the end of the following year, stated as a description someone outside could check.

The decision log

Every decision above is recorded in one log, kept by the owner. It has five columns: the date, the decision, who made it, the evidence it was based on, and what would cause it to be revisited. The log is the programme's memory. When the owner changes, the new owner reads the log first. When the board asks why something was stopped, the log answers. And when, two years later, the stock's condition has changed, the log is the only way to know which decisions might have caused it.

A programme without a log is a set of initiatives. A programme with one is a practice that can learn.

The three ways it usually goes wrong

It starts in the middle. The organisation launches an initiative, a take-back scheme, a new material, a pledge, before choosing the stock or running the test. The initiative may be good. It has nothing to be measured against, and in the first bad quarter nobody can say what would be lost by cutting it.

It does too much. The programme takes forward every idea from the inventory at once. Within two months half have lapsed, and the people involved conclude, wrongly, that regeneration does not work here. One change and one exchange per cycle is slow. It is also how Kalundborg was built.

It burns out its people. Santa Anna's book names this risk precisely: "Organizations built on passion and purpose are paradoxically vulnerable to the very depletion they aim to heal."[48] A programme carried by two enthusiasts on top of full-time jobs will last as long as their energy does. The roles above exist so that the work is spread, written into routines and given time in the rota. A regenerative programme that depletes the people running it has failed its own test on its first stock.

For the household

A household can run the same year with fewer roles. One person is the owner; a partner, a friend or an older child is the sceptic. Month one is noticing: what is bought, what is thrown away, what is repaired. Month two is choosing one change (mend before replacing; buy one durable thing instead of three cheap ones) and one exchange (a neighbour who wants the garden waste, a friend who will swap tools). Months three to six are keeping them going. Chapter 11 sets out the household version in full.

A year on the wall

The whole sequence fits on one page, and it is worth printing that page and putting it on a wall where the work team will pass it. A plan kept in a document is read at reviews. A plan on a wall is read on the way to the kettle, and that is where most of the useful questions about it get asked.

The Tool: The Twelve-Month Programme Sheet

One page, kept by the owner and reviewed by the sponsor at each decision point.

The programme- Organisation: __ · sponsor: _ · *owner: - Work team: · sceptic: · finance partner: · neighbour contact: - Decision 1, the verb: - Decision 2, the stock, and how its condition will be described: - Decision 3, the boundary of the first cycle: · time to show: ___*

The year

WEEKS	PHASE	WHAT HAPPENS	LEAD ROLE	DECISION AT THE END	DONE (DATE)
1–4	See	Verb on proposals; ledger; map; inventory; calls	owner, work team, neighbour contact	4 · one change, one exchange (sponsor)	
5–8	Test	Leak and Rebound Test; finance page; proposal to neighbour; write into routines	sceptic, finance partner, owner	5 · approve, revise or stop (sponsor)	
9–16	Start	Run both items; check routines; check displacement; team debrief	owner, sceptic, work team	6 · continue, revise once, or stop (owner, sponsor)	
17–26	Hold	Condition measure on dashboard; call other users; move one commitment; redraw map	owner, neighbour contact, sponsor	7 · half-year review (sponsor, to board)	
27–52	Second cycle	New change and exchange; revenue-model experiment	owner, finance partner	8 · annual review (board)	

The decision log

DATE	DECISION	MADE BY	EVIDENCE	REVISIT IF

How to keep it honest. Add nothing outside the sequence. Write *not measured* wherever that is true. If a phase overruns, extend it rather than skip the next one. At the end of the year, the sheet and the log together are the evidence the board needs, and the evidence the next owner will read first.

CHAPTER NINE

How to Know It Worked

The number that went up

In chapter 5, the café's owner spent her first two months counting the weight of waste she had diverted from the bin. It went up, satisfyingly, every week. And it told her almost nothing about whether anything was in better condition: not the gardens, not her staff, not the café's finances. She had measured a flow, and the question the book asks is about a stock.

That mistake is the commonest one in regenerative practice, and it is made at every scale. A national economy measures what passes through it. A firm measures tonnes recycled, kilowatt-hours saved, trees planted. A household measures what it spent. Each of these is worth knowing. None of them answers the second brief's question, which is whether something the organisation depends on is in better condition than it was.

This chapter is about measurement: what to count, how to describe the things that resist counting, and how to read the results honestly when they arrive. It is the chapter a finance director or a sceptical board member is most likely to read closely, and it is written to survive that reading.

A warning that came with the first number

The best-known economic measure of all came with a warning from its maker. Santa Anna's *Ecstatic Economics* tells the story in its chapter on what GDP measures and what it misses. When Simon Kuznets developed the national income accounts in the 1930s, the book notes, "Kuznets himself warned explicitly that GDP should not be used as a measure of welfare or wellbeing."[49] The book quotes his line: "The welfare of a nation can scarcely be inferred from a measurement of national income."

The warning was ignored for the most ordinary of reasons. GDP was available, comparable and published every quarter. Welfare was none of those things. A measure that exists will be used for purposes it was not designed for, simply because it exists, and the same thing happens inside every organisation. A firm that reports tonnes recycled every month and the condition of its supply region never will, within a year, be managing tonnes recycled.

The book names the risk for alternative economic practice as well as for the conventional kind. It calls it measurement myopia:

> *If a cooperative measures its success only in financial terms, it will gradually drift toward extractive behavior.*[50]

And it is honest about the difficulty of the cure, which is measurement in several dimensions at once: "Designing such measurement systems is among the most important — and most difficult — practical challenges the movement faces."[50] This chapter does not solve that problem for every organisation. It sets out the distinctions and habits that make a practical start possible.

Five distinctions

Stock and flow

A stock is an amount that exists at a moment: the organic matter in a field's soil, the number of skilled bakers on the staff, the money in a reserve, the trust between a firm and its town. A flow is a rate of change: tonnes of compost added a year, hours of training given, money saved each month, complaints received.

Flows are easier to measure, because they pass a point where they can be counted. Stocks are what the second brief is about. The useful habit is to pair them. For every flow the programme reports, write down which stock it is meant to change, and how that stock's condition will be checked. Compost added is a flow; soil organic matter is the stock it is meant to raise. Training hours are a flow; the number of people who can run the morning bake alone is the stock. A programme that reports only flows is reporting effort, not effect.

Total and intensity

An intensity is a flow divided by something: energy per unit of production, water per tonne, emissions per pound of revenue. Intensities are useful for comparing a firm with itself as it grows, and for comparing firms of different sizes. They are also how a firm can report steady improvement while its total impact rises.

Chapter 6 noted that two of Interface's headline figures were per unit of production. That was a fair way to report a manufacturer's efficiency. It is not, on its own, an answer to the question of whether the climate system, the stock behind the emissions, was affected for better or worse. The habit is to report both: the intensity, to show efficiency, and the total, to show effect. If the total is not available, say so.

Baseline and trend

Every reduction is measured from somewhere. A baseline chosen in an unusually bad year flatters every later year. A baseline changed halfway through a programme makes the trend unreadable.

Choose the baseline before the programme starts, write down why it was chosen, and do not change it. If the business changes so much that the old baseline no longer makes sense, after an acquisition, say, report against both the old and the new for at least a year, so that the reader can see the join.

Leading and lagging

Some measures move quickly and some slowly. The number of exchanges running with neighbours can change in a month. The condition of a river may take a decade. A programme needs both: leading measures, which show whether the work is being done, and lagging measures, which show whether the work is having its effect.

Chapter 4 called the gap between them *time to show*. The leading measures are what a board can reasonably judge each quarter. The lagging measures are what it judges over the horizon written down in Decision 3 of the field manual. Confusing the two is how good programmes are cut: a board looks at the lagging measure after six months, sees no change, and concludes the programme has failed, when nothing could have shown yet.

Measured and described

Some stocks can be measured with instruments: soil organic matter, water quality, the amount of a material in circulation. Many that matter most cannot: the trust of a neighbourhood, the health of a supplier relationship, the morale of a team. For those, the honest course is a description, written so that someone outside could check it.

A good description has four properties. It is specific: not "good relations with suppliers" but "of our five largest suppliers, four say they would raise a quality problem with us before it reached a customer." It is sourced: it says whose view it is and how it was gathered. It is repeatable: the same questions can be asked of the same people in a year. And it is modest: it claims no more than the evidence holds. The café's owner wrote: *condition: slightly better in one bed, by the grower's account; not measured.* That sentence has all four properties, and it is worth more than a confident claim of regeneration.

Choosing the condition measure

The field manual asked for one condition measure to be added to the dashboard the leadership already reads. Choosing it is the most consequential measurement decision in the programme, and a few rules help.

It should describe the stock, not the programme's activity. "Compost delivered" is activity. "Soil organic matter in the supplying farms, as measured by the growers' own annual tests" is condition.

It should be checkable by someone outside. If only the programme's owner could say whether the measure has moved, it is a self-assessment, not a measure.

It should be cheap enough to repeat. A measure that requires an expensive survey will be taken once. A measure that requires three telephone calls a quarter will be taken for years.

It should be one the people who depend on the stock would recognise. The growers know what their soil is like. The workforce knows whether skills are improving. A measure that the people closest to the stock would dispute is measuring the wrong thing.

It should come with a written prediction. Before the programme starts, write down what the measure is expected to do and by when. This is the single most useful habit in this chapter. A prediction written in advance cannot be adjusted to fit the result, and a result compared with a prediction tells the organisation something, whichever way it falls.

Reading the results honestly

When the numbers arrive, five habits keep the reading honest.

Compare with the prediction, not with hope. If the prediction was that soil organic matter would rise measurably in two years, and after one year it has not moved, the programme is on schedule, not failing. If after three years it has not moved, the prediction was wrong, and the reason needs finding.

Look for something to compare against. A change in the stock may have nothing to do with the programme. A dry year, a new regulation, a competitor's closure can each move a condition measure. Where possible, find a comparison: a field that did not receive compost, a site that did not run the programme, the same measure in a neighbouring region. Without one, the honest statement is that the stock changed while the programme ran, not that the programme changed it.

Check what else moved. Chapter 3's rebound effect is a measurement problem as well as a design problem. A programme that improves one stock may deplete another, or increase a flow somewhere outside its boundary. The sceptic's job, at each review, is to ask what else changed.

Report the failures with the successes. Chapter 6 noted that celebrated cases are told without their failures. An organisation's own reporting should not repeat the habit. The decision log of chapter 8 records every item stopped and why. A review that shows two items stopped and one continuing is more credible to a board than one that reports only the survivor.

Write *not measured* where it is true. It is the most useful phrase in regenerative reporting and the one least often written. It tells the reader exactly where the evidence stops. It invites the question of how the thing

could be measured, which is the beginning of measuring it. And it protects the organisation from the slow erosion of credibility that follows every claim later found to have rested on nothing.

When the measure becomes the target

There is a well-known pattern in economics and management, usually credited to the economist Charles Goodhart: a measure that becomes a target tends to stop measuring what it was chosen to measure, because people learn to move the number rather than the thing behind it. Regenerative programmes are not immune. A team rewarded for tonnes diverted will divert tonnes. A supplier scored on a questionnaire will learn to answer the questionnaire.

Three defences help. Pair every target measure with a condition description that is harder to game, and read them together. Rotate the questions in a description from time to time, so that the people answering cannot rehearse. And keep the people who depend on the stock involved in describing it, because they have the least interest in a flattering number and the most in an accurate one.

Money, in the same table

The second brief does not ask an organisation to stop measuring money. Santa Anna's book is plain that financial sustainability is necessary, and most of the tools in this book carry a financial line. The habit that matters is to put money and condition in the same table, read in the same meeting.

A table with three columns, financial line, leading measures and condition of the chosen stock, read every quarter, does something no separate sustainability report can. It makes visible the trade-offs and the alignments. A quarter in which money rose and condition fell is a warning. A quarter in which condition rose and money held is evidence that the second brief and the business can live together. A quarter in which both rose is the one every programme is looking for, and when it comes it should be reported with its comparison and its caveats, like any other result.

A worked reading: the café's first year

The café of chapter 5 is a composite, and its figures are a teacher's. It still makes a useful worked example, because the way its owner might read her first year shows the habits of this chapter in use.

Her stock was the soil of the two market gardens that supply her vegetables. Its condition at the start was described, in the growers' words, as thin in one garden and good in the other, both short of organic matter after a dry summer. That is a description, sourced and modest. A better start would have added a measure, and the growers' own soil tests, taken each spring, would have supplied one at no cost to her.

Her prediction, had she written one, might have been that the bed receiving grounds would show more organic matter in the following spring's test than the bed that did not, and that the gardener would report better moisture through the summer. That prediction has a comparison built into it, the bed without grounds, and a date.

Her flows were grounds delivered, bread passed on, and the hours given to training a second baker. Each was a leading measure, easy to count and quick to move. She reported totals, which for a café is the natural choice.

Her financial line was a slightly smaller waste bill and a little more bread sold. Her *what else moved* column should have included the fresh-bread sales she watched to check that the day-old shelf was not diverting customers, which is a rebound check in miniature.

And her condition entry at six months, *slightly better in one bed, by the grower's account; not measured*, is exactly the honest entry this chapter recommends. At twelve months, with a spring soil test in hand and a comparison bed beside it, she could replace *not measured* with a number. If the number had not moved, she would have learned that a year is too short, or that grounds alone are not enough, and she would have the decision log to show what she did and when. Either result is worth more to her than a claim of regeneration made in the first month.

For the household

A household's version of all this is short. Choose one stock: the condition of the home, the health of the people in it, the garden's soil, the household's savings held for a bad month, the skills its members have. Describe its condition now in a sentence. Write down what you expect it to be in a year. Keep the ledger of chapter 2 for the flows. At the end of the year, compare the description with the prediction, and write *not measured* where you do not know.

Santa Anna's book offers a further measure for a household, and it is one no institution can take for it. In its weekly Vitality Inventory, it asks a person to notice, after each economic event, whether they felt more or less alive afterwards, and it argues that this measure is in some respects "more reliable than any financial spreadsheet". Chapter 11 takes up that practice.

The forest, measured

Santa Anna's book observes that in standard accounting a forest has value only when it is cut down. The remedy is not to stop counting timber. It is to count the forest as well: its soil, its water, the life it holds, described as carefully as the timber is weighed, and read in the same meeting.

The Tool: The Stock Card

One card for each stock the programme watches. It fits on a single page and is updated each quarter.

The stock- Name of the stock: __- Why the organisation depends on it: _- *Who else depends on it:* ___

How its condition is known- Measured (instrument, method, who measures, how often): __- Described (the questions asked, of whom, how often): _- *If neither yet: not measured, and the first step to measuring it:* ___

The prediction (written before the programme starts)- Baseline condition, and date: __- Expected condition at the first review, and date: _- *Expected condition at the end of the time to show, and date: - What would tell us the prediction was wrong:* ___

The flows meant to change it

FLOW	LEADING MEASURE	REPORTED TOTAL OR INTENSITY?	OWNER

The quarterly reading

QUARTER	FINANCIAL LINE	LEADING MEASURES	CONDITION (MEASURED OR DESCRIBED)	COMPARISON, IF ANY	WHAT ELSE MOVED	NOT MEASURED

How to read it. Read the condition column against the prediction, not against the previous quarter alone. Read the *what else moved* column before celebrating any result. Keep the *not measured* column full of honest entries until each one has been replaced by a measure or a description. A card that has stayed the same for four quarters, with every column filled, is the best evidence an organisation can have about its own second brief.

CHAPTER TEN

The Hard Conversations

Where programmes are actually decided

Most regenerative programmes are not decided by evidence. They are decided in conversations: a board meeting at the end of a long agenda, a negotiation with a union representative, a call with a supplier who has heard promises before, a kitchen-table argument about whether to pay more for the thing that lasts. The evidence matters in each of them. So does the state of the people in the room.

Santa Anna's *Ecstatic Economics* puts the point in a sentence that is uncomfortable for anyone who prefers to think of economics as a matter of numbers:

> *The economy is not something that happens out there, in boardrooms and trading floors and legislative chambers.*[51]

The book's claim is that it happens first in the body: in the quickening of a pulse when a bill arrives, in the tightening of a jaw in a negotiation. Chapter 3 described the book's diagnosis that the bottleneck in regenerative change is somatic rather than informational, and graded the evidence for it as thin. But the pattern it describes is one every manager has seen. A proposal that is sound on paper is rejected because the person deciding experiences it as a risk. The same proposal, a year later, in a calmer quarter, is approved without a question.

This chapter takes five conversations that decide whether a programme survives, and offers for each a short account of what the other person usually needs, the concessions worth making honestly, and a script. The scripts are not lines to recite. They are a shape to adapt, written in plain words so that they can be spoken.

A few rules for all of them

Concede what is true. Chapter 3 set out five fair critiques of the circular economy: the world is far from circular, every loop leaks, closing a loop can grow the pile, nature is a mixed teacher, and the word is easily emptied. A sceptic who raises any of them is right. Saying so at once changes the conversation, because it shows that the proposal has been tested rather than merely believed.

Ask for less than you want. A first cycle of one change and one exchange, as the field manual recommends, is easy to approve. A programme presented as a transformation is easy to refuse. The ambition can be stated; the request should be small.

Name the stock. The commonest objection to regenerative proposals is that they are vague. The answer is the stock, its condition today and the prediction, written down. Nothing in the conversation is more persuasive than a specific object.

Say *not measured* before anyone else does. Where the evidence stops, say so. A presenter who marks the limits of their own evidence is believed about the rest.

Leave the decision with the person who owns it. A board decides for the organisation, a union for its members, a partner for themselves. A conversation that tries to take the decision away from them will lose it.

The board

What the board needs. Assurance that the programme will not damage the business, a clear view of what it costs, a way to judge it, and a sense that it is being run by someone competent. A board that has heard the word *regenerative* before has usually heard it attached to a pledge, a cost and no measure, and is right to be wary.

What to concede. That no controlled study shows regenerative firms outperform conventional ones on average. That the celebrated cases are read for their mechanism, not their headline figures, and that some of those figures are weaker than they are usually presented, as chapter 6 showed for Interface. That the programme will have failures, and that the decision log will record them.

What to ask for. Approval of the first cycle: one change, one exchange, a named owner and sceptic, a condition measure on the existing dashboard, and a review at six months against a written prediction.

A script.

> *We are asking for approval of a small first cycle, not a programme. The organisation depends on [the stock], which we do not own. Its condition today is [description], and here is how we know. We have chosen one change inside the business and one exchange with a neighbour. Both have been put through a written test of what they displace and whether they survive a bad year; the test is attached. The cost is [figure] in money and [figure] in time, and here is what we expect them to save. We expect the condition of [the stock] to be [prediction] by [date], and we will report against that prediction at six months, including anything we stop. Where we do not know something, the paper says not measured. We are not claiming this will raise profits.*

> *We are claiming it will not harm them, that it will leave [the stock] in better condition, and that in a year you will have evidence about this organisation that no case study can give you.*

The question a board member will ask. *What happens if we have a bad year?* The answer is the sixth question of the Leak and Rebound Test: which routine the programme is written into, and what would have to be true for it to be cut. A programme written into the rota, the purchasing rules and a supplier contract survives a bad year because cutting it takes a decision. A programme written into a project plan is cut by default.

The union, or the workforce

What the workforce needs. To know whether the programme will change their jobs, their hours or their security; whether they will be asked to do more for the same pay; and whether they will share in what it finds. A workforce that has seen previous initiatives arrive with fanfare and leave extra work behind is right to ask.

What to concede. That the programme will ask for their time and attention, and that this is work. That some changes will not succeed. That the workforce's knowledge of what leaves the building is better than management's, which is why they are being asked to draw the map.

What to offer. A place on the work team, with time in the rota for it. A clear statement of what the programme will not do: it will not be used to cut jobs or hours. And an honest account of how gains will be shared. Chapter 12 joins the regenerative brief to the companion book on gainsharing (*The Gain Was Always Shared*), which sets out the evidence for sharing productivity gains with the people who find them. The café's owner in chapter 5 lengthened the contract of the baker she trained. That is the principle at its smallest.

A script.

> *We want to look at what this site takes in, what it sends out and what it leaves better or worse. You know that better than we do, so we are asking [two or three people] to join a work team, with [hours] a month in the rota for it. Nothing in this is a cost-cutting exercise, and it will not be used to reduce jobs or hours; we will put that in writing. If the team finds improvements that save money, we want to agree in advance how those savings are shared, and we would like to agree that with you rather than decide it for you. If we ask for something that adds work without time to do it, tell us, and we will take it out.*

The partner organisation

What a supplier, customer or neighbouring firm needs. To know what the exchange asks of them, what it gives them, and whether it will last longer than the last initiative. Jacobsen's research on Kalundborg, discussed in chapter 7, found that firms usually joined exchanges because they helped their own operations, not because the by-product was valuable. A partner is persuaded by its own problem solved.

What to concede. That the exchange will need someone's time on their side. That it may not work at first. That the organisation proposing it has not always been a reliable partner, if that is true.

What to ask. The reciprocity question of chapter 4, and then the operational one: what would this need to be worth it to you?

A script.

> *We have [the by-product] that currently goes to [where it goes]. We wondered whether it would be useful to you, and in what form. Before you answer, we would like to understand what would make it worth your while: not only what the material is worth, but whether it would solve anything in your own operations. If we arrange something, we will write it into a delivery schedule on our side and name the person responsible, so that it does not depend on anyone's memory. And we would like to review it with you in three months, and stop it if it is not working for you.*

For a supplier being asked to change. The same conversation, with one addition: an offer from the organisation's side. A supplier asked to change its materials or practices and offered nothing in return is being squeezed in a new vocabulary. Payment terms, a longer contract, a predictable order book, help with the cost of the change: each is a return arrow on the Metabolism Map. The café's gardener asked for predictability, knowing in March what would be bought in July, and it cost the café a conversation.

The family

What a family member needs. To be heard on money, which is rarely only money. A proposal to buy the coat that lasts, to mend rather than replace, to give the garden's produce away or to spend a Saturday on a neighbour's compost may be received as a criticism of past choices, a threat to a tight budget, or a claim to moral superiority. Any of those will end the conversation.

Santa Anna's book offers a question for this moment, from a practice it calls co-regulation economics:

> *When you discuss money with a partner or family member, what happens to both of your bodies?*[52]

The question is worth asking silently before the conversation and, if the relationship allows it, aloud during it. A discussion of household money conducted in a state of alarm will usually end in the safer, older choice, whatever its merits.

What to concede. That the cheaper option is sometimes the only option, and that the house's own writing is clear that real constraint is real. That buying for longevity costs more at the moment of purchase, and that the saving, if any, comes later. That nobody in the household has been doing it wrong.

What to propose. One change, for one month, with a review. Not a new way of life.

A script.

> *I have been reading about keeping track of what we spend alongside what is in better shape at the end of the month: the house, the garden, us. I would like to try it for one month, just the two of us, and see whether it tells us anything. I am not saying we have been doing anything wrong. I would also like us to try one thing, mending before we replace, for that month. If it costs more than it is worth, we stop.*

The sceptic

What the sceptic needs. To be taken seriously. Every organisation has someone who has seen the word *regenerative* used as a slogan, and who will say so. That person is valuable. The field manual gives them a role.

What to concede. Everything that is true in the objection. Chapter 3 is the sceptic's chapter, and every one of its five critiques comes from serious research.

What to ask. That they run the test.

A script.

> *You are right that most of what is called circular is recycling, and that recycling is the weakest loop. You are right that a cheaper second-hand product can increase total sales rather than replace new ones. You are right that regenerative is often a word without an object. That is why we would like you to be the person who tests every plan before it is approved. Here are six questions. If a plan cannot answer one, it goes back. We would rather you stopped a weak plan now than that we discovered its weakness in a year.*

A sceptic given that role becomes, more often than not, the programme's most reliable defender, because the plans that reach the board have been through their hands.

When the conversation goes badly

Some conversations will fail. The board will decline, the union will distrust, the supplier will not call back, the family will say no. Three responses help.

Wait for the season. Chapter 4 observed that organisations have seasons. A proposal refused in a bad quarter may be approved in a good one, and the evidence gathered in between, a ledger kept quietly for six months, a single exchange arranged without fanfare, will make the second conversation easier than the first.

Make it smaller. A board that will not approve a programme may approve a ledger. A family that will not change its spending may agree to notice what it throws away. Almost every refusal leaves a smaller step open.

Look after the people carrying it. Chapter 8 quoted Santa Anna's warning that organisations built on purpose are vulnerable to the depletion they aim to heal. The person who has made the case and lost it carries the cost. A programme that ignores that cost will find, a year later, that nobody is willing to make the case again.

A conversation is a flow

In the language of chapter 9, a conversation is a flow. The stock it changes is trust: between a board and its executives, a firm and its workforce, a business and its neighbours, two people at a kitchen table. A regenerative programme that wins every argument and leaves that stock depleted has failed its own test. One that loses an argument honestly, and leaves the other person more willing to talk next time, has added to it.

The Tool: The Conversation Card

One card, prepared before any of the five conversations, and kept afterwards.

Before- Who, and what they decide: __- What they most need from this conversation (in their terms, not ours): _- *The three things in their likely objection that are true: , , - The stock we will name, and its condition today: - What we will ask for, kept small: - Where our evidence stops (not measured): - One question about the state of the room, ours and theirs, to hold in mind:* ___

After- What they decided: __- What they said, in their words, about why: _- *What we conceded: - What is now easier to ask for next time, and when: - What it cost the person who made the case, and what will be done about it:* ___

How to use it. Fill in the first half the day before, not an hour before, so there is time to change the request. Fill in the second half the same day. Keep the cards together; read them before the next conversation

with the same person. Over a year they become a record of how trust in the programme has moved, which is as important a stock as any the programme watches.

CHAPTER ELEVEN

The Household as a Small Economy

A coat, again

Chapter 2 began its household section with a coat. One family buys a cheaper coat each winter and throws the last one away. Another buys one coat that lasts, has it mended when the seam goes and passes it on when a child outgrows it. Neither family is virtuous by default. The first may be doing the only thing its budget allows. The second is using a different measure of success: not how much passed through the household this year, but what condition its things, and its people, are in at the end of it.

This chapter takes the whole of the book down to that scale. It is written for one person or one family deciding how to spend, mend, keep and pass on, and it treats the household as what the economists who coined the word assumed it was: the smallest economy, with its own stocks and flows, its own neighbours and its own seasons. *Economics* comes from the Greek for the management of a household. The second brief belongs there first.

Nothing in it asks a household to become a homestead, to give up comfort or to spend more than it has. It asks for one change in measure, a few habits, and attention, which is the resource a household under strain has least of and which is why the habits are kept small.

The household's stocks

Every household depends on stocks it can watch. Five are worth naming, because each has a condition that can improve or decline independently of the bank balance.

The home and its things. The condition of the roof, the boiler, the furniture, the tools, the clothes. A home whose things are kept in repair is a stock being maintained. A home in which everything is used until it fails and then replaced is a flow being consumed.

The people. Their health, their rest, their skills, their relationships with one another. The second brief's question, whether something is in better condition at the end of the year, applies here more obviously than anywhere.

The savings held for a bad month. Chapter 4 called this the oldest household wisdom there is: the larder, the reserve, the spare key with a neighbour. It is redundancy, in the language of living systems, and it is the first thing removed when money is tight.

The relationships beyond the door. Neighbours, friends, the local shop, the school, the people a household helps and is helped by. This is the household's commons, and like every commons it is kept healthy by use.

The ground, where there is one. A garden's soil, a window box, an allotment. Santa Anna's book puts the whole distinction of the second brief in a sentence about farming: a sustainable farm minimises soil depletion, while a regenerative farm builds topsoil, year over year. A household with a garden can do the same on a few square metres, and see it.

The first household habit is to choose one of these, as a firm chooses one stock, and describe its condition today in a sentence.

The household's flows

Against those stocks run the flows a household already knows well, because they arrive as bills and receipts: what it buys, what it uses, what it throws away, what it earns. The Three-Column Ledger of chapter 2 works at a kitchen table with almost no change. Column one: what each significant activity takes, in money, time and attention. Column two: what it returns. Column three: what it leaves better, worse or the same in the stock you chose.

A month of that ledger usually shows three things. Most of what leaves the house goes into a bin. Most of what is bought replaces something rather than adds to what the household can do. And a few activities, a meal cooked together, a repair learned, an hour given to a neighbour, return far more to the household's stocks than their cost suggests. Those are the regenerative lines, and the purpose of the ledger is to see them clearly enough to do more of them.

The three loops at home

Chapter 2 set out three kinds of loop in order of preference, and chapter 3's evidence explained why the order matters. At home they look like this.

Use for longer, and repair. The most valuable loop and the one most households undervalue. A coat mended, a chair re-glued, a phone kept a year longer, a pair of shoes resoled. Walter Stahel's argument, that repair substitutes skill for materials and energy, applies to a household exactly as to a factory: it moves spending from the shop to the skill, sometimes the household's own and sometimes a neighbour's. The finer point is that repair is a skill, and skills are a stock. A household that learns to mend is building a capacity that will serve it for decades.

Pass on whole. The second loop. Clothes passed to a younger child or a neighbour, books given away, furniture sold or offered rather than dumped, tools lent. The thing keeps its form and its full value; only its owner changes. Chapter 3's rebound question applies even here, gently: a household that buys more because it knows it can pass things on has not closed a loop, it has widened one.

Recover as material. The third loop and the least valuable: recycling, composting. Still worth doing, and the compost heap has a particular virtue, which is that it feeds a stock the household can see. But a household that sorts its recycling perfectly and replaces everything early has spent its effort on the wrong loop.

The habit is to ask, before anything leaves the house, which of the three it could go to, in that order.

The household's neighbours

Chapter 5's café found its first exchange by asking a market gardener whether she wanted coffee grounds. Chapter 7 showed the same pattern at Kalundborg, at the scale of a town. Households can do it at the scale of a street.

The Waste-Is-Food Inventory works at home. For a week, notice what leaves: food scraps, garden waste, outgrown clothes, unused tools, an empty room, a car that sits idle four days a week, a skill nobody in the household uses for anyone else. Then ask who nearby might want it. A neighbour with a compost heap. A school that needs books. A friend who would borrow the drill rather than buy one. A community kitchen. A tool library, if the town has one.

Santa Anna's book describes one such arrangement at length, community-supported agriculture, in which a household buys a share of a farm's harvest at the start of the season and shares the risk with the grower:

> *The relationship between eater and grower, severed by industrial agriculture, is restored.*[53]

It is an example of a household exchange that changes a stock beyond the household. The farm, relieved of some of the pressure to maximise each season's yield, can afford to build its soil. The household gets food, a relationship and, in a bad season, a share of the loss. Not every household can join one; where they exist, they are among the most direct ways for a family to take part in the second brief at the scale of a landscape.

The book is also realistic about scale. Writing about the alternatives it surveys, it suggests that "Perhaps the goal is not one giant cooperative but a network of small ones."[53] A street on which six households lend tools, share a compost heap and pass on children's clothes is such a network. It needs no organisation, only a few people willing to ask.

The body's ledger

Santa Anna's book adds a measure that no firm can keep for its staff and every person can keep for themselves. It calls it the Vitality Inventory, a weekly practice in which a person reviews the significant economic events of the past seven days, a purchase, a piece of work, a financial decision, a conversation about money, and notices for each one what state they were in during it, and whether they felt more or less alive afterwards.

The book makes a strong claim for the practice: that over weeks and months it reveals which economic activities serve a person's vitality and which extract from it, and that it is in some respects "more reliable than any financial spreadsheet".[54] The evidence for that claim is the reader's own to gather. What the practice does reliably, on any reading, is draw attention to a column the ordinary household budget leaves out. A purchase that was cheap and left you depleted, a repair that took an hour and left you pleased, a conversation about money that left both people tense: each is information about the household's most important stock, which is the people in it.

The household ledger at the end of this chapter adds a fourth column for this. It is optional. Some households will find it useful and some will not, and the book's tools do not depend on it.

When money is tight

The second brief can sound like a luxury for households with room to spare. It is worth being clear about where that is true and where it is not.

It is true that buying for longevity often costs more at the moment of purchase, and a household without a reserve may not be able to pay it. It is true that time is scarce in a household working long hours, and that mending and arranging exchanges take time. The house's own writing is clear that real constraint is real, and nothing in this chapter asks a household to spend money it does not have.

It is not true that the second brief is only for the comfortable. Several of its habits cost nothing or save money: repairing, passing on, borrowing rather than buying, sharing with neighbours, cooking what is already in the house. Some of the oldest regenerative practices on record, the larder, the mended coat, the shared tool, the neighbour's spare key, are habits of households that had little. What changes under strain is not whether the second brief applies, but which parts of it can be afforded first. Usually the answer is the relationships: they cost attention rather than money, and they are the stock most likely to help in a bad month.

The household's seasons

Chapter 4 observed that organisations have seasons and that a regenerative practice judged on the wrong clock looks like a cost. Households have seasons too: the year a child is born, the year of a redundancy, the

year of a move, the years of caring for a parent. In some of those years almost nothing in this chapter will be possible. That is not a failure. A household in a lean season that keeps one habit, the reserve, the relationships, the mending, has kept the stock that will let it recover.

The habit worth keeping in every season is the second question at the end of the month: beside *what did we spend?*, *what is in better condition than it was?* Even in a hard year, the answer is rarely *nothing*. Writing it down is a way of noticing that the household is still more than its expenses.

A year at one kitchen table

What follows is a composite, built for teaching. It is not a real family, and its details were set by the writer to be ordinary.

A couple with two children in a terraced house begin the Kitchen-Table Ledger in January, mostly because one of them has read this book and the other has agreed to try it for a month. They choose as their stock the house and its things, described in one sentence: *the boiler is old, the children's bikes are both broken, the shed is full of things nobody uses, and we replace most things when they fail.*

The first month's ledger shows what most first months show. Nearly everything that left the house went into a bin. Two purchases, a cheap kettle and a pair of school shoes, replaced things that had broken within a year. One line in the third column said *better*: an afternoon one parent spent fixing the brakes on a bike with a video and a borrowed tool.

In February they try one change, mending before replacing, and one exchange, a neighbour with an allotment who is glad of their vegetable peelings. In March the shed is sorted, and three things nobody uses go to a neighbour, a school and a charity shop. By June the second bike is fixed, the younger child can do the brakes, the neighbour has brought round a bag of beans, and the couple have bought one pair of shoes that cost more and are expected to last two years. They do not know yet whether it will.

By December the sentence about the house reads differently: *the boiler is still old and has been serviced; both bikes work and the children can maintain them; the shed holds tools we use; we replace fewer things and repair more.* The financial line for the year is roughly where it was. Nothing has been measured with an instrument. But the stock is described, the description has changed, and someone outside could check it.

None of this is remarkable, and that is the point. The second brief, at a kitchen table, is a set of ordinary habits kept long enough to change a sentence.

Passing it on

Chapter 7's owner question, what happens to a commitment when its owner leaves, has a household version too. A family that has built up a garden's soil, a habit of mending, a set of neighbourly exchanges and a

way of talking about money that leaves both people calm has built stocks that can outlast the household itself: in children who know how to repair a thing, in neighbours who still share tools after the family moves, in a garden the next owners find in good heart.

That is the household's version of steward ownership. No legal structure holds it. It is held in skills and habits passed on, which is how such things were held for most of human history.

The Tool: The Kitchen-Table Ledger

A monthly page for one person or one family. It takes about half an hour at the end of each month.

The page- Household: __ · month: _- *The stock we have chosen to watch this year (the home and its things / the people / the reserve / the relationships beyond the door / the ground): - Its condition at the start of the year, in one sentence: - Its condition now, in one sentence:* ___

The month, one line for each significant activity (five to ten lines)

ACTIVITY	1 · WHAT IT TOOK (MONEY, TIME, ATTENTION)	2 · WHAT IT RETURNED	3 · WHAT IT LEFT BETTER, WORSE OR THE SAME IN OUR STOCK	4 · (OPTIONAL) MORE OR LESS ALIVE AFTERWARDS?

What left the house

WHAT	WHERE IT WENT	COULD IT HAVE BEEN USED LONGER OR REPAIRED?	PASSED ON WHOLE?	ONLY THEN: RECYCLED OR COMPOSTED?

The close of the month- One thing mended, kept or passed on: __- One exchange with a neighbour, or one to try next month: _- *Income less spending for the month: $- What is in better condition than it was: - What we will keep doing next month, and what we will stop:* ___

How to use it. Fill it in together if there are two of you, and keep the conversation short. Do not score it. After three months, lay the three pages side by side and read only the *better condition* lines. If there are more of them in the third month than the first, the household has met the second brief at the only scale on which anyone ever meets it, which is its own.

CHAPTER TWELVE

Life at the Edges

Where the river meets the sea

John Fullerton's sixth principle of regenerative capitalism is the one with a landscape in it. He calls it *Edge Effect Abundance*, and he explains it with a salt marsh:

> *Creativity and abundance flourish synergistically at the "edges" of systems, where the bonds holding the dominant pattern in place are weakest. For example, there is an abundance of interdependent life in salt marshes where a river meets the ocean.*[55]

Ecologists have long observed that boundaries between habitats, a forest's edge, an estuary, a hedgerow, often hold more species than the habitats on either side. Fullerton's paper uses the observation as a principle for economies: the most innovation happens where different systems meet, and the work of regeneration is often work "across edges".[55]

This closing chapter takes him at his word. The chapters before it (chapter 2 on origins, 3 on critique, 4 on the living-systems reading, 5 to 7 on worked cases, 8 to 11 on practice) stayed mostly inside one idea. Regeneration, practised seriously, runs straight into other questions: how large an economy can grow, who governs what is shared, who owns a firm long enough to keep a promise, and how the gain from doing things better is divided. Each of those has a companion book of its own in *Ecstatic Economics*. Here they meet at the edge.

The ceiling: the doughnut

The third chapter reported Willi Haas and colleagues' measurement that only about four of the sixty-two gigatonnes of material processed by the world economy in 2005 came round again, and that the continued growth of the stock of buildings and infrastructure was one of the main reasons. That finding raises a question no single firm can answer: how much growth the biosphere can carry.

Santa Anna's book takes this up through Kate Raworth's *Doughnut Economics*, describing her figure as a ring with "the social foundation" on the inside and "the ecological ceiling" on the outside, the space between them being where humanity can thrive "without destroying the conditions for thriving."[56] The companion

book on the doughnut (*The Standing Forest*) reads Raworth and Herman Daly's steady-state economics in full.

For a regenerative practitioner, the join is concrete. A firm's circular loop, however well designed, sits inside an economy that may still be overshooting its ceiling. Zink and Geyer's rebound effect, from the third chapter, is the mechanism by which a local improvement can feed global growth. So the regenerative firm needs to know not only that its loop closes but whether its business model depends on selling ever more units. Nancy Bocken and colleagues, in a widely cited 2016 article on product design and business models for a circular economy, distinguish strategies that *slow* resource loops, by making things last longer, from those that *close* them, by recovering materials.[57] The doughnut's ceiling is an argument for preferring the first wherever there is a choice.

On Monday: look at the revenue model, not just the material flows. Does the business earn more when its products last longer, or less? If less, the loop is working against the model, and the model is the thing to redesign.

The governance: the commons

Many of the stocks a regenerative firm chooses to watch are not owned by anyone. The café's gardens in the fifth chapter belonged to their growers, but the soil health of a region, a river, a fishery or the skills of a local workforce are shared. Elinor Ostrom's life's work showed that such commons are often governed well by the people who use them, under specific conditions. The companion book on the commons (*The Pasture Was Never Empty*) sets out her eight design principles.

Santa Anna's book draws the connection in its account of what all its alternatives share. Of the three features it names, the third is distributed agency, power spread to "worker-owners, to commons members, to community currency participants, to steward-owned enterprises", and it insists that this is "not ideological … but structural".[58] The fourth chapter in this book turned the same principle into a question about who in an organisation can act on what they see.

On Monday: for the stock you chose, name everyone else who depends on it. A firm that wants a river to improve is one of many users. The regenerative move is often to join, or start, the group of users who govern it together, rather than to act alone and wonder why nothing changes.

The owner: patient capital

The hardest question a regenerative plan faces is not technical. It is whether the firm will still be run for the same purpose in ten years. A founder can make a commitment; a new owner can undo it in a quarter.

Santa Anna's book names this directly as the *exit problem* and describes steward ownership, the structure used by Bosch and Zeiss among others, in which a company's profits serve its mission and it cannot simply be sold to the highest bidder:

> *Steward ownership locks the mission into the legal structure of the enterprise*[59]

The book is also clear about the wider point. Regeneration, it argues, rests on a different logic of value, one that recognises that "the most durable forms of wealth are generated by increasing the health of the whole rather than maximizing the returns to any single part."[60] A firm whose owners are measured only on the return to their own part will find that logic hard to keep. The companion book on patient capital (*The Long Clock*) takes this up through Colin Mayer's work on corporate purpose and the evidence on short-termism.

On Monday: ask what would happen to the regenerative commitments if the firm were sold. If the answer is *they would end*, the commitments rest on a person rather than a structure. Writing them into governing documents, supplier contracts or purpose clauses is slower than a pledge and lasts longer.

The gain: sharing what is found

The last join is the one this house works on most directly. When a firm finds a better way to run, a loop closed, a waste stream turned into a supply, a skill developed that cuts errors, a gain appears. The question of who shares in it decides whether the people who found it will look for the next one.

The companion book on gainsharing (*The Gain Was Always Shared*) sets out the history and the evidence, from Joseph Scanlon's plans of the 1930s onward, for sharing productivity gains with the people who produce them. The regenerative reading adds one thing. In a circulation, a gain that flows only to one part narrows the vessels elsewhere. The café's training decision in the fifth chapter worked because the baker who learned the dough had a longer contract to show for it.

In his notes, Santa Anna puts the business case in a sentence that frames this whole book:

> *The companies that will thrive in the next economy aren't asking 'How can we do less harm?' but 'How can we design systems that improve ecological and human wellbeing with every transaction?'*[61]

For organisations that want to find where the gain is in their own operations and share in it fairly, that is the conversation Ammanuel Santa Anna and Luminous Prosperity have with leaders, and it begins at hautelumiere.life.

On Monday: for the last improvement your organisation made, write down who found it and what they received. If the answer is *nothing*, the next improvement is less likely to be found.

Monday, in one place

The chapters have produced their tools and a number of Monday points. Gathered, for a leader:

1. Write the verb (reduce, sustain or regenerate) at the top of the next significant proposal.
2. Choose one stock the organisation depends on and does not own, and describe its condition so that someone outside could check it.
3. Keep the Three-Column Ledger for one month.
4. Draw the Metabolism Map with the people who do the work.
5. Put the next circular plan through the Leak and Rebound Test before it is funded.
6. Run the Waste-Is-Food Inventory and arrange one exchange.
7. Check whether the revenue model rewards products that last.
8. Name the other users of the stock you chose.
9. Ask what happens to the commitments if the firm is sold.
10. Ask who found the last gain and what they received.

For a household, the same list works with smaller words. Choose the verb for the next large purchase. Watch one stock: the house, the garden, the health of the people in it. Keep the ledger for a month. Notice what leaves. Find one neighbour who wants something you throw away. Prefer the thing that lasts.

The household version deserves a further sentence, because it is easy to treat it as the junior partner. Most of the material flows Haas and colleagues measured pass, sooner or later, through a home. A household that buys for longevity, mends before it replaces and passes things on whole is working the slow loop that Bocken and colleagues identify as the more valuable one. It does not need a strategy. It needs a habit, kept for long enough to become ordinary.

None of the ten needs capital. All of them need attention, which is scarcest in a bad year, the year in which, the third chapter warned, circular projects are cut. That is the reason the plan below is written into weeks rather than left as a list.

The questions a board should ask

For a leader who reports to a board, or a board member who wants to know whether a regenerative commitment is real, the book reduces to six questions. Each can be answered in a paragraph, and the quality of the answers says more than any sustainability report.

Which verb? Of the organisation's significant projects this year, which are meant to reduce harm, which to sustain a level, and which to leave something in better condition? A board that hears *regenerate* for everything is hearing a slogan.

Which stock? Name the stocks the organisation depends on and does not own, and describe the condition of at least one of them now, in terms an outsider could check. A board that cannot get this answer has a commitment without an object.

Which loop? For the circular initiatives, which are repair or life extension, which are exchanges with neighbours, and which are material recovery? The third chapter's evidence suggests the order of preference, and the proportion of each in the plan is a quick test of its seriousness.

What does it displace? For each circular product or service, what does it replace, and how is that known? This is the rebound question, and it is the one most often left unasked.

What happens on sale? If the organisation changed hands next year, which commitments would survive because they are in its governing documents and contracts, and which would end because they rest on one person?

Who shares the gain? When an improvement is found, who found it and what did they receive? A board that wants its people to keep finding the next one should know the answer.

None of these questions requires a new reporting framework. They can be put at the next meeting. What they require is a willingness to hear *not measured* as an honest answer rather than a failure, because that answer is where measurement begins.

The whole, read as one living system

Step back from the separate chapters and the book has been describing a single organism at four scales. At the smallest it is a household deciding whether to mend a coat. Then a café deciding where its coffee grounds go. Then a carpet maker deciding what its factories burn, and a town of seventeen firms deciding what to do with one another's steam. At the largest it is the world economy that Haas and colleagues measured, in which four gigatonnes of sixty-two come round again. The same three questions apply at every scale, and that is the strongest evidence this book can offer that they are the right ones: what is the stock, what is flowing, and what condition is the stock left in.

Read as a living system, each scale is nested in the next. A household's loops sit inside a town's. A café's exchange with a market garden sits inside a region's soil. A firm's circular product sits inside an economy that may still be growing past its ceiling. The living-systems word for this is *holarchy*, a whole that is also a part, and its practical meaning is plain. No scale can be regenerative on its own. A household that mends everything inside an economy that rewards throwing things away is swimming upstream. A firm that closes its loop inside a market that rewards selling more units is working against its own revenue model, as the doughnut section above observed. And a national policy that rewards circularity cannot reach the café unless the café's owner has an afternoon to draw the map.

So the work moves in two directions at once. Upwards, every practitioner who has made a loop close at their own scale becomes evidence for the scale above, and a voice in it: the café's owner, asked by the town what would help, can say exactly what would. Downwards, every change at a larger scale, a rule about take-back, a public procurement standard, an owner who will not sell the mission, makes the smaller loops easier to keep. Neither direction is enough alone. The edge-effect principle that opens this chapter is the reason the two meet where they do. The most life is found where the household meets the shop, where the shop meets the farm, where the firm meets the town, because that is where what one system discards becomes what the next one needs.

The somatic reading from chapter 3 belongs here too, because it is the part of the organism that decides whether the rest of it moves. Santa Anna's book says it in a single line: "Before economics is a science, it is a felt experience."[63] A board that experiences the second brief as a threat will cut it in the first bad quarter, whatever the spreadsheet says. A household that experiences mending as a sign of hardship will stop as soon as it can afford to. The chapters on hard conversations and on the household were written for this reason. The arguments matter. The state of the people hearing them matters as much, and a regenerative practice that ignores the second will keep losing to the first brief at exactly the moment it is needed.

What, finally, is the organism for? The book's answer, quoted in chapter 4, is that a business exists to increase the vitality of the systems it participates in. Read across the whole of this book, the same sentence applies to a household, a town and an economy. Each is a metabolism. Each takes in, transforms and gives out. And each can be judged by the question Boulding asked of his capsule in 1966: not how much passed through it this year, but what condition its stocks are in, and whether the crew knows.

What remains open

A fair close says what this book has not shown. It has not shown that regenerative firms outperform conventional ones on average; the research to show that, with good controls, does not yet exist in a form this book would rely on. It has not resolved the definitional problem the third chapter described, only offered a defence against it: define by outcome and name the stock. And it has not answered the doughnut's question about growth, which is larger than any firm.

What it has shown is that the regenerative brief is old, specific and workable. Its origins run back to Boulding's capsule in 1966. Its most careful modern statement, Fullerton's, is cautious about what it claims. Its critics are right about the leaks and the rebound, and their critiques sharpen the practice rather than ending it. Its living-systems reading, in Santa Anna's book and the Luminous 100, turns into five plain questions. And at the scale of a single café, it produces modest, checkable results without new money.

Santa Anna's book states the distinction at the heart of it as plainly as anyone has:

> *A sustainable farm minimizes soil depletion. A regenerative farm builds topsoil — increasing the fertility of the land year over year.*[62]

The companion books in *Ecstatic Economics* take up the questions this one opened. The companion book on complexity (*The Economy That Keeps Becoming*) is a good companion for anyone who found the third chapter's warnings about unintended effects persuasive. And the house's PESTLE paper at hautelumiere.life is a sound instrument for reading the regulatory and market pressures that will make the second brief easier or harder to keep in a given industry.

Where the river meets the sea, the water is neither fresh nor salt, and the marsh grass holds the silt that both of them bring.

The Tool: The Ninety-Day Regeneration Plan

One page, kept by the person who owns the plan, with a short review at the end of each month. It gathers four of this book's tools, from chapters 2 to 5, into a sequence. It is written for a small or mid-sized organisation; a household can use the same weeks with fewer people.

The plan- Organisation or household: __- Owner of this plan: _ · *start date: - The stock we depend on and do not own, chosen to watch: - Its condition at the start, described so someone outside could check: - The other people and organisations that depend on the same stock: ___*

Weeks 1 to 4 · See it

WEEK	TASK	TOOL	WHO	DONE (DATE)
1	Write the verb on every proposal in progress	Chapter 2	owner	
1–4	Keep the Three-Column Ledger	Chapter 2	owner + one other	
2	Draw the Metabolism Map	Chapter 4	three to six people who do the work	
3	Run the Waste-Is-Food Inventory, part 1 (one week of noticing)	Chapter 5	everyone, briefly	
4	Inventory parts 2 and 3: calls to possible users, higher loop first	Chapter 5	one person	

End of month 1 review (one hour)- Blanks remaining on the map: __- Lines on the ledger that say *worse* in Column 3: _- *Possible exchanges found: - The one change chosen from the map: · owner ___*

Weeks 5 to 8 · Test it

WEEK	TASK	TOOL	WHO	DONE (DATE)
5	Put the chosen change and the best exchange through the Leak and Rebound Test	Chapter 3	owner + one sceptic	
5	Write down what each will displace, and how that will be checked	Chapter 3, question 4	owner	
6	Arrange one exchange only; write it into a rota, schedule or contract	Chapter 5, part 4	one person	
6	Start the chosen change; write it into a routine, not a project	Chapter 3, question 6	its owner	
7–8	Keep the ledger; note anything that surprises	Chapter 2	owner	

End of month 2 review (one hour)- Is the exchange running? __ · what does the other party say it gives them? _- *Is the change running? · has anything been displaced, or only added?* ___

Weeks 9 to 12 · Join it

WEEK	TASK	WHO	DONE (DATE)
9	Check the revenue model: do we earn more when things last longer, or less?	owner + finance	
10	Contact one other user of the chosen stock; ask what they are doing about it	owner	
11	Ask what happens to these commitments if the organisation is sold or the owner leaves; write the answer down	owner	
12	For the gains found this quarter, record who found them and what they received	owner	

End of quarter (two hours)- Condition of the chosen stock now, and how we know (or *not measured*, if not): __- Ledger: lines that moved from *worse* or *same* to *better*: _- *Financial line for the quarter (revenue or income less costs), compared with the previous quarter: - Exchanges running: · changes running: - What we now believe about our organisation that we did not believe in week 1: - The next stock, exchange or change for the next ninety days:* ___

How to keep it honest. Add nothing until the first exchange and the first change have run for a month. Write *not measured* wherever that is true. Keep the first quarter's page beside the second. The difference between them is the evidence a published study cannot provide for your organisation, which is the only one you run.

THE WORKBOOK

The Workbook

Every tool in this book, gathered in one place, in the order a programme uses them. Each is reproduced as it appears at the end of its chapter, so that the workbook can be printed and kept on a desk or a wall without the chapters beside it. The chapter each comes from explains why it is built the way it is; read that chapter once before using a tool for the first time.

The tools fall into three groups. The first six help an organisation or a household see itself and test its plans: the ledger, the test, the map, the inventory, the case sheet and the audit. The next three keep a programme honest: the stock card, the conversation card and the kitchen-table ledger. The last two put everything in sequence: the twelve-month programme sheet for an organisation that wants to run the whole year, and the ninety-day plan for one that wants to begin this quarter.

None of them needs software. All of them work better filled in by hand, by the people who do the work, and kept. A tool filled in once is an exercise. The same tool filled in every month for a year is evidence.

Copies of these pages may be made for use inside your own organisation or household.

The Three-Column Ledger

*From chapter 2.*A one-page ledger, kept monthly, for a firm or a household. It needs no software. It asks for three columns where most ledgers keep one, and its only rule is that every line must be filled in all three before the month is closed.

Heading of the page- Organisation or household: __- Month: _- *The stock we have chosen to watch (one only, from section 4 above): - How its condition is described or measured, in words someone outside could check: - Its condition at the start of the month: ___*

The ledger, one line per significant activity (five to fifteen lines)

ACTIVITY	COLUMN 1 · WHAT IT TAKES (MATERIALS, ENERGY, TIME, ATTENTION, MONEY)	COLUMN 2 · WHAT IT RETURNS, AND TO WHOM (PRODUCT, SERVICE, WAGE, BY-PRODUCT, REPAIR)	COLUMN 3 · WHAT IT LEAVES BETTER, WORSE OR THE SAME IN THE CHOSEN STOCK	VERB IT CURRENTLY ANSWERS: REDUCE / SUSTAIN / REGENERATE

The loops, one line for anything that leaves the building

WHAT LEAVES	WHERE IT GOES NOW	COULD IT BE REPAIRED OR REUSED BEFORE IT LEAVES?	IS THERE A NEIGHBOUR WHO COULD USE IT AS AN INPUT?	IF NEITHER, CAN IT BE RECOVERED AS MATERIAL?

The close of the month- Lines where Column 3 says *better*: __ (count)- Lines where Column 3 says *worse*: _ *(count), and the one to change first: - Condition of the chosen stock at the end of the month: - One activity whose verb could move from reduce to regenerate next month, and what it would take: - Does the ledger still pay its way? Revenue or household income less costs: $___*

How to use it. Fill it in once alone, then once with the people who do the work, because they will know what leaves the building better than the person who signs for it. Do not average the three columns into a score; the point is to see them side by side. After three months, compare the first and third pages. A ledger that shows more *better* lines and an unchanged bottom line has met the second brief on a small scale, which is the only scale on which it has ever been met.

The Leak and Rebound Test

*From chapter 3.*Six questions, put to any plan described as circular or regenerative, before it is approved. Each needs a written answer. A plan that cannot answer one is not rejected; it is returned with that question marked.

The plan- Name of the plan or product: __- Owner: _ · *date: - The verb it claims (reduce / sustain / regenerate):* ___

Question 1 · Which loop? (from Haas and colleagues, and the second chapter)- Is this repair or life extension / by-product exchange / material recovery? __- If material recovery, why not repair or exchange first? ____

Question 2 · Where is the boundary? (from Korhonen and colleagues)- The loop is claimed to close inside: the product / the site / the firm / the region / other __- What happens to the same material outside that boundary, upstream and downstream: ____

Question 3 · How many passes, and at what quality? (thermodynamics)

MATERIAL	USEFUL PASSES EXPECTED	QUALITY KEPT ON EACH PASS (FULL / REDUCED / DOWNGRADED)	WHAT IT BECOMES AT THE END

Question 4 · What does it displace? (from Zink and Geyer)- The circular product or service replaces: __- Evidence that buyers use it instead of, not as well as, the primary product: _- *Is it cheaper? If so, what is expec-*

ted to happen to total quantity bought: - One design change that would increase displacement (trade-in, take-back, lease): ___

Question 5 · Which stock, and how will we know? (from Newton and colleagues, and the second chapter)- The stock this plan is meant to leave in better condition: __- Its condition now, in words or a number someone outside could check: _- *The date by which a change should be visible, and how it will be checked: ___*

Question 6 · Will it survive a bad year? (from Santa Anna's somatic bottleneck)- Which routine form, review or budget line this plan is written into: __- What would have to be true for it to be cut, and who would decide: ____

Reading the answers. A plan with clear answers to questions 4 and 5 is worth more than a plan with an impressive answer to question 1. The order of the questions is the order in which plans usually fail: they choose the cheapest loop, draw the boundary where it flatters them, forget that each pass costs quality, add to the pile instead of replacing it, never name the stock, and are cut in the first bad quarter. A plan that passes all six is rare, and is the beginning of a regenerative practice rather than a statement about one.

The Metabolism Map

*From chapter 4.*A one-sheet map, drawn by a team of three to six people in about two hours, on a large sheet of paper or a whiteboard. It replaces the conveyor belt with a circulation and asks the five questions of it. Draw it once now and once in six months.

Step 1 · The centre (15 minutes). In the middle of the sheet write the organisation, team or household, and one sentence: *the systems we depend on and do not own are* __, _, ___. Choose three: for example, the farms that supply us, the town our staff live in, the river we discharge to, the trade that trains our people.

Step 2 · What comes in (20 minutes). Around the left side, list every significant input: materials, energy, water, money, people's time and skill, information, goodwill. For each, write where it comes from by name.

Step 3 · What goes out (20 minutes). Around the right side, list every output: products, services, wages, taxes, by-products, waste, emissions, information, reputation. For each, write where it goes next by name. Leave a blank where you do not know.

Step 4 · What comes back (20 minutes). Draw arrows from right to left for every flow that returns: repeat custom, feedback, returned products, materials a supplier takes back, people who come back to work, referrals. Count them. A map with few return arrows is a conveyor belt.

Step 5 · The five questions (40 minutes). Answer each in writing on the sheet.

PRINCIPLE	QUESTION	ANSWER FOR THIS ORGANISATION	ONE CHANGE WORTH TRYING
Circularity			

PRINCIPLE	QUESTION	ANSWER FOR THIS ORGANISATION	ONE CHANGE WORTH TRYING
	For every output, who uses it next? How many blanks in step 3?		
Diversity	For each critical input, how many independent sources? Where is there only one?		
Redundancy	Could we absorb the loss of any one supplier, person or system for a month? Which one could we not?		
Reciprocity	For our three largest relationships, what do *they* say the relationship returns to them? (Ask, then write their answer.)		
Distributed intelligence	Who below the leadership can stop a process, change a supplier or redirect a waste stream without asking?		

Step 6 · Patent but unhealthy (5 minutes). Mark with a circle any flow that is working (on time, paid, delivered) while depleting the system it runs through. These are the places the conveyor belt could not see.

Step 7 · One change (5 minutes). Choose one change from the last column, name its owner and its date. Only one.

How to read it in six months. Compare the number of blanks in step 3, the number of return arrows in step 4, and the circles in step 6. Fewer blanks, more arrows and fewer circles mean the metabolism is moving towards surplus. If the numbers have not moved, the change chosen in step 7 was the wrong one, or was never made, and the map will usually show which.

The Waste-Is-Food Inventory

*From chapter 5.*An inventory for finding the kernels Chertow describes: exchanges that already make sense and have not yet been arranged. It takes one person about an hour to start and a week of noticing to finish. It works for a business, a school, an office or a household.

Part 1 · What leaves (one week of noticing)

OUTPUT	ROUGHLY HOW MUCH, HOW OFTEN	WHERE IT GOES NOW	COST TO DISPOSE OF IT NOW	IS IT KEPT SEPARATE, OR MIXED WITH OTHER WASTE?

Include materials, food, packaging, heat, water, equipment no longer used, skills nobody is using, and time (empty rooms, idle vehicles, quiet hours).

Part 2 · Who might want it (one afternoon of calls)

For each output, list three possible users within a short distance: a farm, a garden, a school, a workshop, a charity, a neighbouring business, a maker, a local authority service. Ask each one question: *would this be useful to you, and in what form?*

OUTPUT	POSSIBLE USER 1 · ANSWER	POSSIBLE USER 2 · ANSWER	POSSIBLE USER 3 · ANSWER

Part 3 · The higher loop first

For each output with an interested user, before agreeing, ask:- Could it be used longer or repaired by us first? __- Could it be passed on whole, as it is, before it is broken down? _- *Only then: should it be recovered as material (compost, recycling)?* ___

Part 4 · The kernel

For each exchange you agree:- What it replaces for the other party (what would they otherwise buy or use?): __- What the other party says the relationship gives them, in their words: _- *What it costs us: money · time - Which routine it is written into (rota, delivery schedule, contract): - Date of first exchange: · date of first review:* ___

Part 5 · The review (three months on)- Exchanges still running: __ of _- *For each, has it replaced something, or added to the total? - The stock we chose to watch (from the Three-Column Ledger): condition now, and how we know: - The next output from Part 1 to find a user for:* ___

How to read it. Most inventories find two or three kernels in the first week. The temptation is to arrange all of them at once. Arrange one, write it into a routine, and wait until it has run for a month before arranging the next. Kalundborg grew one agreement at a time over decades, and that, on Ehrenfeld and Gertler's account, is why it held.

The Case Reading Sheet

*From chapter 6.*A one-page sheet for reading any celebrated regenerative case, from a book, a conference talk or a competitor's report, before it is used to justify a decision. It takes about an hour with the case's own sources open.

The case- Organisation and period: __- Where the account comes from (the firm's own report / trade press / a book / an academic study): _- *Date of the figures, and the date of the account that repeats them:* ___

Part 1 · The figures

FIGURE AS QUOTED	WHERE IT FIRST APPEARS	TOTAL OR PER UNIT?	BASELINE YEAR	SCOPE (PRODUCT, SITE, WHOLE FIRM)	SELF-REPORTED OR INDEPENDENTLY CHECKED?

FIGURE AS QUOTED	WHERE IT FIRST APPEARS	TOTAL OR PER UNIT?	BASELINE YEAR	SCOPE (PRODUCT, SITE, WHOLE FIRM)	SELF-REPORTED OR INDEPENDENTLY CHECKED?

- Does any figure differ between the original and the account you were given? Which, and by how much: _____
- Is any financial claim (profit, revenue, cost saving) attached to the environmental results? Where is it in the firm's own financial statements: _____

Part 2 · The mechanism- Who started it, and at what level of the organisation: __- The goal as stated (a percentage, or an end state and a date): _- *The specific changes made, in the order they were made, as far as the record shows: - How results were published, and for how long: - What happened when the founder or sponsor left: - The next goal, and when it was set:* ___

Part 3 · What is missing- Failures or abandoned projects the account mentions: __ (if none, write *none mentioned*)- What the case does not show (causation, totals, comparison with similar firms): ____

Part 4 · What transfers- The one move from Part 2 that would work in our organisation, at our scale: __- The figure from Part 1 that we will not repeat to our board without its scope and baseline: ____

How to use it. Fill in Part 1 before anyone quotes the case in a meeting. Most celebrated figures survive the sheet in a narrower form, and the narrower form is the one worth repeating. Part 4 is the reason for the exercise: a case is useful when it changes what you do next, not when it decorates a slide.

The Neighbour and Owner Audit

*From chapter 7.*Two short exercises, one for each relationship. Each takes about an hour, and both are better done by two people who see the organisation from different places.

Part 1 · Neighbours

List the five organisations nearest to you, by distance or by flow, that you exchange anything with besides money for a product.

NEIGHBOUR	WHAT WE GIVE THEM	WHAT THEY GIVE US	WHAT PROBLEM IN THEIR OPERATIONS DOES IT SOLVE?	WHO ARRANGED IT, AND IS IT WRITTEN INTO A ROUTINE OR CONTRACT?

Then list three neighbours you do not exchange with:

NEIGHBOUR	ONE THING WE DISCARD THAT THEY MIGHT USE	ONE PROBLEM OF THEIRS WE MIGHT HELP WITH	WHO WILL CALL THEM, AND BY WHEN

Part 2 · Owners

For each regenerative commitment the organisation has made, mark where it is written.

COMMITMENT	FOUNDER OR LEADER'S WORD	POLICY DOCUMENT	BOARD RESOLUTION	SUPPLIER OR CUSTOMER CONTRACTS	ARTICLES, OWNERSHIP OR FINANCING TERMS

- If the organisation were sold next year, which commitments would survive, and why: _____
- If the leader who sponsors them left next year, which would survive: _____
- One commitment to move one column to the right this year, and who will do it: _____

How to read it. Part 1 finds the next exchange. Part 2 finds the commitment most at risk. A commitment that sits only in the first column of Part 2 is a promise a person has made; each column to the right makes it more the organisation's. Steward ownership is the last column carried as far as it will go. Most organisations will not go there, and do not need to, to make their commitments a great deal safer than they are.

The Stock Card

*From chapter 9.*One card for each stock the programme watches. It fits on a single page and is updated each quarter.

The stock- Name of the stock: __- Why the organisation depends on it: _- *Who else depends on it:* ___

How its condition is known- Measured (instrument, method, who measures, how often): __- Described (the questions asked, of whom, how often): _- *If neither yet: not measured, and the first step to measuring it:* ___

The prediction (written before the programme starts)- Baseline condition, and date: __- Expected condition at the first review, and date: _- *Expected condition at the end of the time to show, and date: - What would tell us the prediction was wrong:* ___

The flows meant to change it

FLOW	LEADING MEASURE	REPORTED TOTAL OR INTENSITY?	OWNER

The quarterly reading

QUARTER	FINANCIAL LINE	LEADING MEASURES	CONDITION (MEASURED OR DESCRIBED)	COMPARISON, IF ANY	WHAT ELSE MOVED	NOT MEASURED

How to read it. Read the condition column against the prediction, not against the previous quarter alone. Read the *what else moved* column before celebrating any result. Keep the *not measured* column full of honest entries until each one has been replaced by a measure or a description. A card that has stayed the same for four quarters, with every column filled, is the best evidence an organisation can have about its own second brief.

The Conversation Card

*From chapter 10.*One card, prepared before any of the five conversations, and kept afterwards.

Before- Who, and what they decide: __- What they most need from this conversation (in their terms, not ours): _- *The three things in their likely objection that are true: , , - The stock we will name, and its condition today: - What we will ask for, kept small: - Where our evidence stops (not measured): - One question about the state of the room, ours and theirs, to hold in mind: ___*

After- What they decided: __- What they said, in their words, about why: _- *What we conceded: - What is now easier to ask for next time, and when: - What it cost the person who made the case, and what will be done about it:* ___

How to use it. Fill in the first half the day before, not an hour before, so there is time to change the request. Fill in the second half the same day. Keep the cards together; read them before the next conversation with the same person. Over a year they become a record of how trust in the programme has moved, which is as important a stock as any the programme watches.

The Kitchen-Table Ledger

*From chapter 11.*A monthly page for one person or one family. It takes about half an hour at the end of each month.

The page- Household: __ · month: _- *The stock we have chosen to watch this year (the home and its things / the people / the reserve / the relationships beyond the door / the ground): - Its condition at the start of the year, in one sentence: - Its condition now, in one sentence: ___*

The month, one line for each significant activity (five to ten lines)

ACTIVITY	1 · WHAT IT TOOK (MONEY, TIME, ATTENTION)	2 · WHAT IT RETURNED	3 · WHAT IT LEFT BETTER, WORSE OR THE SAME IN OUR STOCK	4 · (OPTIONAL) MORE OR LESS ALIVE AFTERWARDS?

What left the house

WHAT	WHERE IT WENT	COULD IT HAVE BEEN USED LONGER OR REPAIRED?	PASSED ON WHOLE?	ONLY THEN: RECYCLED OR COMPOSTED?

The close of the month- One thing mended, kept or passed on: __- One exchange with a neighbour, or one to try next month: _- *Income less spending for the month: $- What is in better condition than it was: - What we will keep doing next month, and what we will stop:* ___

How to use it. Fill it in together if there are two of you, and keep the conversation short. Do not score it. After three months, lay the three pages side by side and read only the *better condition* lines. If there are more of them in the third month than the first, the household has met the second brief at the only scale on which anyone ever meets it, which is its own.

The Twelve-Month Programme Sheet

*From chapter 8.*One page, kept by the owner and reviewed by the sponsor at each decision point.

The programme- Organisation: __ · sponsor: _ · *owner: - Work team: · sceptic: · finance partner: · neighbour contact: - Decision 1, the verb: - Decision 2, the stock, and how its condition will be described: - Decision 3, the boundary of the first cycle: · time to show:* ___

The year

WEEKS	PHASE	WHAT HAPPENS	LEAD ROLE	DECISION AT THE END	DONE (DATE)
1–4	See	Verb on proposals; ledger; map; inventory; calls	owner, work team, neighbour contact	4 · one change, one exchange (sponsor)	
5–8	Test	Leak and Rebound Test; finance page; proposal to neighbour; write into routines	sceptic, finance partner, owner	5 · approve, revise or stop (sponsor)	
9–16	Start	Run both items; check routines; check displacement; team debrief	owner, sceptic, work team	6 · continue, revise once, or stop (owner, sponsor)	
17–26	Hold	Condition measure on dashboard; call other users; move one commitment; redraw map	owner, neighbour contact, sponsor	7 · half-year review (sponsor, to board)	
27–52	Second cycle	New change and exchange; revenue-model experiment	owner, finance partner	8 · annual review (board)	

The decision log

DATE	DECISION	MADE BY	EVIDENCE	REVISIT IF

How to keep it honest. Add nothing outside the sequence. Write *not measured* wherever that is true. If a phase overruns, extend it rather than skip the next one. At the end of the year, the sheet and the log together are the evidence the board needs, and the evidence the next owner will read first.

The Ninety-Day Regeneration Plan

*From chapter 12.*One page, kept by the person who owns the plan, with a short review at the end of each month. It gathers four of this book's tools, from chapters 2 to 5, into a sequence. It is written for a small or mid-sized organisation; a household can use the same weeks with fewer people.

The plan- Organisation or household: __- Owner of this plan: _ · *start date: - The stock we depend on and do not own, chosen to watch: - Its condition at the start, described so someone outside could check: - The other people and organisations that depend on the same stock: ___*

Weeks 1 to 4 · See it

WEEK	TASK	TOOL	WHO	DONE (DATE)
1	Write the verb on every proposal in progress	Chapter 2	owner	
1–4	Keep the Three-Column Ledger	Chapter 2	owner + one other	
2	Draw the Metabolism Map	Chapter 4	three to six people who do the work	
3	Run the Waste-Is-Food Inventory, part 1 (one week of noticing)	Chapter 5	everyone, briefly	
4	Inventory parts 2 and 3: calls to possible users, higher loop first	Chapter 5	one person	

End of month 1 review (one hour)- Blanks remaining on the map: __- Lines on the ledger that say *worse* in Column 3: _- *Possible exchanges found: - The one change chosen from the map: · owner ___*

Weeks 5 to 8 · Test it

WEEK	TASK	TOOL	WHO	DONE (DATE)
5	Put the chosen change and the best exchange through the Leak and Rebound Test	Chapter 3	owner + one sceptic	
5	Write down what each will displace, and how that will be checked	Chapter 3, question 4	owner	

WEEK	TASK	TOOL	WHO	DONE (DATE)
6	Arrange one exchange only; write it into a rota, schedule or contract	Chapter 5, part 4	one person	
6	Start the chosen change; write it into a routine, not a project	Chapter 3, question 6	its owner	
7–8	Keep the ledger; note anything that surprises	Chapter 2	owner	

End of month 2 review (one hour)- Is the exchange running? __ · what does the other party say it gives them? _- *Is the change running? · has anything been displaced, or only added?* ___

Weeks 9 to 12 · Join it

WEEK	TASK	WHO	DONE (DATE)
9	Check the revenue model: do we earn more when things last longer, or less?	owner + finance	
10	Contact one other user of the chosen stock; ask what they are doing about it	owner	
11	Ask what happens to these commitments if the organisation is sold or the owner leaves; write the answer down	owner	
12	For the gains found this quarter, record who found them and what they received	owner	

End of quarter (two hours)- Condition of the chosen stock now, and how we know (or *not measured*, if not): __- Ledger: lines that moved from *worse* or *same* to *better*: _- *Financial line for the quarter (revenue or income less costs), compared with the previous quarter: - Exchanges running: · changes running: - What we now believe about our organisation that we did not believe in week 1: - The next stock, exchange or change for the next ninety days:* ___

How to keep it honest. Add nothing until the first exchange and the first change have run for a month. Write *not measured* wherever that is true. Keep the first quarter's page beside the second. The difference between them is the evidence a published study cannot provide for your organisation, which is the only one you run.

Beginning on Monday

If you are not sure where to start, start with three things this week. Write the verb, reduce, sustain or regenerate, at the top of the next proposal you sign. Choose one stock you depend on and do not own, and write its condition today in one sentence someone outside could check. And open the Three-Column Ledger for this month. Everything else in this workbook follows from those three, in the order the ninety-day plan sets out.

Ecstatic Economics is the book this one was written beside. The companion books on the doughnut (*The Standing Forest*), the commons (*The Pasture Was Never Empty*), patient capital (*The Long Clock*) and gainsharing (*The Gain Was Always Shared*) take up the questions chapter 12 opens. More from Ammanuel Santa Anna and Haute Lumière at hautelumiere.life.

The condition things are left in

A plan marked circular should be able to say what condition anything is meant to be in at the end of it. The figures that answer are usually already in the drawer.

Luminous Prosperity Inc. takes this work into organisations as a gainshare. The flow is opened from the inside, with the people who already hold what the firm knows. The gain is counted from records the firm already keeps, against a measure both sides sign before anyone knows the answer, and the house is paid as a share of what is found: between thirty and ten per cent of it.

The field manual carries one organisation through the sequence. What your own operations leak, and what closing a loop would return, is read from your records and your people. That begins with a conversation.

REQUEST A CONVERSATION

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