wicked
solutions

a systems approach

to complex problems

Bob Williams and Sjon van 't Hof

Wicked Solutions

A Systems Approach to Complex Problems

Bob Williams and Sjon van 't Hof

A workbook

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What is this book about?

Every noble act is at first impossible.

Thomas Carlisle

It's not worth doing something unless you were doing something that someone, somewhere, would much rather you weren't doing.

Terry Pratchett

This book is about the use of core systems ideas in dealing with wicked situations. Wicked situations are those where identifying problems is not easy and selecting good solutions is even more difficult. Many societal, business and development challenges are in fact wicked problems.

Using three basic systems concepts, **inter-relationships**, **perspectives** and **boundaries**, this book will help you:

- assess wicked situations

- unpick the tangle of issues that need addressing

- design suitable ways of tackling those issues deal with some tricky aspects of working in wicked situations

- find more information about systems methods and managing interventions systemically

It is a *Workbook:* We guide you through the steps and stages of a process that addresses your own wicked problem. The locations of the tasks are highlighted in the margin of the text using the TEAMWORK icon. That doesn't mean you have to work with others, but it will help a lot if you do.

It is a *Primer:* We introduce you to some core systems ideas and suggest where you can find more information.

It is a *Learning tool:* Not only do we introduce you to a particular way of addressing wicked problems, but explain the rationale so that you can adapt the approach to your own circumstances.
We make no apologies that you might find some parts of the book difficult. We have tried to be as simple as possible but no simpler. You are after all dealing with difficult, 'wicked' issues and if there was an easy way to do it then you wouldn't be reading this book. Persevere. You will be glad you did.

Is this book for you?

Are you wrestling with a wicked problem? If you are, then it could be useful to you. Some examples:

- **entrepreneurs** and **managers** who want to secure their business in a sustainable manner by reconciling, e.g., clients' needs, employees' interests and environmental concerns;

- **researchers**, especially **action researchers**, seeking out new tools for inquiry and analysis;

- **teachers** and **lecturers** trying to teach their students how to think and learn about addressing and resolving 'wicked problems' in society and beyond;

- people in networks or **platform organisations** especially those who work between **public sector**, **private sector** and **civil society** and need to conceive effective ways for communication and collaboration;

- **policy workers** who are trying to explore the consequences of adopting various strategies and tactics;

- **evaluators** called upon to help people pass assess the value of interventions that are clearly very messy with lots of possible ways of judging worth;

- **consultants** and **coaches** who want to demonstrate that systems thinking leads to more sustainable results

- **community workers** trying to steer projects along complicated paths in difficult environments.

Apart from these professionals, this book may also prove useful to students in secondary and tertiary education, politicians, reporters, and interested members of the general public.

The book in a nutshell

The core of this book deals with the systemic design of interventions to address wicked problems. Wicked problems are systemic problems that are characterised by multiple stakeholders involved in complex and unpredictable interactions. Stakeholders are people or organisations with an interest in the (wicked) problem and its (re-)solution. Systemically designed interventions are needed because conventional understanding and management cannot address wicked problems.

Systemic design is able to take into account the complex inter-relationships and divergent perspectives of the key stakeholders and use this information in a clever way to design an effective intervention by deliberating critical issues. These issues are related to the purpose, resources, knowledge, and legitimacy of the intervention. They are also known as boundary issues and the deliberation of these critical issues is also known as *boundary critique*. A key goal of the critique is to warrant whether the purpose is attained, the right resources are under control, the knowledge is appropriate, and the intervention as a whole is legitimate.

The boundary critique does not stop there. The technique of *stakeholding entrenchment and development* is used to explore the practical design limits from both a positive and a more conservative point of view. This is followed by dialectical method known as *Option one-and-a-half* to combine the best of both the actual and the ideal world into a realistic intervention design. After that you can use regular planning methods or other systems methods to improve or finalise your intervention design.

While we have tried to keep this book as short as possible, you may still not manage to drill all the way down to the back cover. You may not even need to. You may just need a gentle push to get on your way. Consequently, this book provides you with three levels by which you can address your wicked problem. Each level takes you deeper and is more thorough than the previous one. You may need that thoroughness, or you may not. Level One, which introduces our inter-relationships/perspectives and boundaries approach, may be just what you need to get started. If it doesn't, then proceed to Level Two, which explores the ideas of inter-relationships, perspectives and boundaries by posing 12 questions. It also acts as a warm-up for Level Three — the full-on forensic approach to exploring wicked problems and developing wicked solutions

The three levels in this book

LEVEL 1 : GETTING STARTED

Introduces key concepts and
gets you started without much ado

LEVEL 2 : CORE CONCEPTS

Uses 12 key questions to provide
you with further guidance

LEVEL 3 : THE DEEP DIVE

The full works that takes you in 10 steps
from systemic inquiry to intervention design

LEVEL ONE

Getting started

Working with wicked situations

A man who carries a cat by the tail learns something he can learn in no other way.

Mark Twain

There's something, well, wicked about the word wicked. It implies something that's not exactly good but not totally bad either. There's a bit of a challenge but nothing disastrous. A hint of fun and perhaps something a little mysterious or magical. And a promise of resolution. A wave of the wand and things might just sort themselves out. There are many definitions of what elements of a wicked problem[1] are, but essentially they boil down to these six[2] :

- Every wicked problem is novel or unique
- There is a no stopping rule; you can't hit the pause button
- The problem is not understood until the formulation of the solution
- Wicked problems are complex; they have no single cause, no single effect and have no given alternative solution
- Every wicked solution is a 'one shot operation'; there is no off-the-peg 'best practice' answer.
- Solutions are not right or wrong, but they may be better or worse.

Wicked problems or wicked situations pose a whole raft of questions. Is the problem or situation unusual or common, is it resolvable, how, can anyone help me, where are they? Many books give you guidance — often very good guidance on addressing those wicked problems. In which case, what is this book's particular contribution?

There are two common reactions when faced with wicked, complicated or complex situations — or, using systems language, a *problématique* or a systems mess (yes, 'mess' is a common systems term). One is blank incomprehension. Like a deer in car headlights you are frozen into immobility. The other is to jump in and just, well, start. Neither is especially satisfactory. Freeze, and you just get hit by the situation. Jumping in creates potentially more problems, since a wicked situation will respond to your intervention. To use some more systems jargon, messy, complex situations are starting point sensitive; where you start will determine where you end up. Start anywhere and you may end up nowhere. So the very place to start is to pause, think, deliberate and carefully consider your investigation or intervention. Just because a situation is complex, just because it is not easily controllable doesn't mean that you can't craft your intervention carefully. It doesn't mean anything goes. It doesn't mean things may just come out in the wash. Deliberation may delay action by a few hours or even a few weeks, but unless triage is

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[1] Wicked problems comprise a whole field of study of its own. They were first recognised as such by Rittel and Webber in the mid-1960s. They described them in their article Dilemmas in a general theory of planning. C. West Churchman, whose ideas are covered extensively later in this book, is sometimes credited with the term.

[2] Professor Brian Collins. 23rd INCOSE International Symposium (2013). https://www.youtube..com/watch?v=5JVkj6PvjiQ Retrieved April 2014

needed to stop blood flow draining away the life of the situation, careful consideration of where and how to start can save time, lives and expensively acquired resources — like people.

> This book doesn't replace other writings; rather it focuses on a critically important question that often goes unanswered: "Where do I start?"

So this is a book that will help you design an inquiry and intervention in messy, wicked situations. However, this isn't a book that regards design as something you do just at the start and then fixed; a plan once arrived at that you slavishly follow through. Wicked situations evolve and your intervention needs to be informed by and respond to that evolution. **So the principles and tools in this book should be used throughout your intervention; a process of intermittent or even constant redesign.**

Thinking systemically: a very short introduction

There are many approaches to thinking systemically, and this book draws on an approach that people who we've worked with all over the world tell us they find helpful. This approach comprises three main building blocks:

Inter-relationships

How do specific items within a situation connect with each other? With what implications for whom? These items can be people, things, ideas, and resources, such as money, time, objects, knowledge. In systems language you will often see these called 'agents'.

Perspectives

The systems thinker C. West Churchman famously said: ***The systems approach begins when first you see the world through the eyes of another***.

What are the different ways in which a particular situation can be understood? How do perspectives influence how people make sense of that situation? How does it affect their behaviour in a situation? Later in this book you will come across references to a specific way of handling perspectives called 'framing'.

Boundaries

 Our understanding of any situation will always be limited. The possible range of responses to a situation will similarly be restricted by knowledge, resources, our perspectives, our motivations and our priorities. We set boundaries around everything we do; no task can be truly 'holistic' and at some stage we have to make a conscious or unconscious decision about what to leave in and what to leave out. And put simply that's what boundaries do — delineate between what is 'in' (e.g. important, relevant, good, included) and what is 'out' (e.g. unimportant, irrelevant, bad, excluded). But how do you make those decisions?

Tip to use this book effectively

The best way to address a complex situation is not noodling on your tablet or computer but systemically working with other people. Why do you think that is? It is not easy to explore situations from radically different perspectives on your own. Bring one other person into the discussion and you'll be surprised at the many perspectives you never thought of. It gets even better with more people and better still if those people come from radically different, even, indeed especially, opposing standpoints.

How responsible should we feel for the consequences of our boundary choices? Thus our choices have ethical, political and practical implications. To quote Churchman again: ***Who is embraced by the action area and thus benefits? Who is out and does not benefit? What are the possible consequences of this? And, how might we feel about that?***

Three key concepts

Inter-relationships	– How do things connect with each other?
Perspectives	– What are the different ways a situation can be understood?
Boundaries	– What's 'in' and what's 'out'?

So for us, the core of systems thinking is the application of these three concepts applied together:

An understanding of **inter-relationships**, and

An acknowledgement that **perspective** informs that understanding, and

Acceptance that **boundary** choices are not optional, but require deliberation for ethical, political and practical reasons.

The next section of this book looks at these three concepts in much more detail, indeed it is the foundation of this book. But before you dive into deeper water we want to give you a bit of a warm up. The concepts of inter-relationships, perspectives and boundaries are quite powerful on their own without any of the embellishments that this book adds. In fact, we've known people to get substantial insights on a situation just by playing around with these three concepts.

Here's an example (see also table 1 overleaf):

An international donor agency instigated a project designed to create leadership within a particular scientific field in North Africa. Leadership is a wicked issue — a very dangerous one since many people think that leadership is primarily about people in senior positions who are charismatic champions of a cause. But that sweeps in both heroes and despots. In reality, we judge leadership more in terms of what it does than what it is; leadership goes beyond the characteristics of individual leaders. At this point, issues of culture, ego, money, timing and reputation start being incorporated and things get messy — wicked even.

Which is pretty much what the donor agency discovered. The first three phases of their work building leadership in this scientific endeavour were difficult and understanding the reasons for this was critical to inform future phases of work. The initial three phases were:

1. Funding a single organisation to promote leadership within the field
2. Bringing in other networks of researchers and research institutions to develop collective leadership
3. Establishing a core group drawn from these networks able to exercise a leadership function.

The project officer of the donor agency used the inter-relationships, perspectives and boundaries framework to explore these issues. Her thoughts are described briefly in the following table.

Phases	Inter-relationships _How do things connect with each other?_	Perspectives _What are the different ways a situation can be understood?_	Boundaries _What's in and what's out?_
Phase One **Funding a single organisation to promote leadership within the field**	Mainly donor-funded; few generated spontaneously by the funded organisation, which rather defeated the object of building leadership.	The funder organisation took a specific _leadership_ perspective in funding this project. However, the concept of having a project solely dedicated to building leadership was hard to understand by those working in the research field who were used to working on research issues not leadership issues; they were physical scientists not social scientists. So it was unclear what the funded organisation's perspective on leadership was.	Only the funded organisation and the donor were included in the critical boundary decisions; which again rather worked against the idea of leadership. Who was the funded organisation expected to lead? Who was supposed to benefit from this leadership and how?
Phase Two **Bringing in other networks**	The funder expanded its relationships with a whole range of actors and external stakeholders in this leadership project. This created confusion over who was in charge of the project. The politics of the project became complicated because the project started interfering with existing relationships between actors and rumours that leadership was being forced on those actors.	Many other perspectives emerged. The benefits of 'leadership' varied depending on these different perspectives. Some fence-sitting and/or competitive dynamics between various stakeholders was based on their different perspectives on what they thought the project was really about.	The boundary of activity expands, yet the basis for working out who was 'in' the network and who was 'out' of the network wasn't clear. Nor were there clear definitions of 'field' and 'leadership', which again created confusion about who or what was intended to benefit from this intervention.
Phase Three **Establishing a Regional Core Group**	In an attempt to settle inter-relationship issues down, a core group of seven members representing a range of stakeholders was developed. But although there was emerging individual commitment to the project collective, ownership was not strong.	A clearer idea of leadership developed that incorporated broader stakeholder perspectives. Nevertheless there was still lots of politics involved due to different histories, past experiences with each other and different priorities. One major difference of perspective that arose was whether the purpose was to develop leadership that strengthened the field, or whether it should be about expanding the field.	Two key boundary issues needed to be resolved: Should the leadership effort be country focused or regionally focused? Should the core group comprise only of those within the field (i.e. only researchers) or include those who are affected by or able to affect the research activities (egg government policy makers, community based actors)?

Table 1.1: Using key systems concepts to explore leadership creation in a science network

Choosing an issue

Now it's your turn.

The primary reason we wrote this book was to help you use systems ideas to address specific issues or situations you are facing. This book is based on systems theories but it is not a theoretical book. It is a workbook. And it is already time for you to do some work.

You probably know more about systems ideas than you realise. So here's a chance to get your existing knowledge out in the open. The book is structured as a series of exercises. This means you can take an example and use it as the focus of these exercises. Indeed that's probably the best way to use the book. If you don't have a particular example to hand, there is a case study at the back of the book that you can use to guide you through the book.

Choose a particular issue that you are faced with, or situation that you wish to explore systemically. It's important to choose a good example that will help you explore systems issues.

Where to start

Perhaps one of the biggest challenges is knowing where to start a systemic inquiry. Commonly you have to choose one of three options:

Option One: A general situation of interest

Option Two: A particular issue or problem that interests or puzzles you

Option Three: A possible or actual solution to a particular problem.

For instance, there has been a recent spate of burglaries in your neighbourhood. Nothing especially valuable has been stolen but people are feeling less secure and there's a lot of suspicion that the robberies are being carried out by neighbourhood kids, which is creating an air of distrust between neighbours. Let's say that you are interested in this topic.

In Option One, your starting question might be: "How can I gain a general understanding of this situation of increasing fear and suspicion?" In Option Two you might start with a problem statement: "Is there a way to help people be less fearful without creating conditions where people will feel even more suspicious of each other?" In Option Three you might start with a question about a possible solution: "How can we establish an effective neighbourhood watch intervention?"

Is any option better than the others? We think the answer is yes, Option Two. At this stage of your journey into the systems field you are going to have to trust us on this, but an important thing you will learn from this book is that despite what you may have heard about 'holism' systems thinking is actually more about deciding what to leave out than what to include. Starting at Option One tends to include too much and you are likely to get lost in the enormity of it all. You may go through a whole systemic inquiry and gain no insights that will help you address the situation. Starting at Option Three tends to exclude too much and you risk missing important possible alternative ways to address the situation.

This is not a hard and fast rule.   Sometimes you have no option but to start at, say Option Three. Something has happened, someone has come up with a solution and your job is to get the solution to work. As your experience of using systems ideas develops you will be more aware of how to avoid the pitfalls that lurk underneath Options One and Three. But at this stage, for your example to work with in this book, we suggest starting at Option Two. Start with some form of problem statement that doesn't

mean you have to consider every conceivable aspect of the situation or doesn't imply a particular solution. Be warned though that many problem statements are solution statements in disguise.

Here are some more tips for choosing a good example[3] :

*   Ideally the example has to be *important* to you and, if possible, to other interested people, so you can work on it as a team. We've provided an example if you don't have anything, but we strongly recommend you select one from your own experience.
*   It is best to choose an example that requires something being done; a *useful intervention* of some kind. Systemic approaches are no more useful in addressing the big unsolvable questions of the universe than anything else.
*   The situation has to be puzzling, a *challenge*, wicked. Why bother to use systems ideas when it's obvious what the answer is? Puzzling, challenging and wicked situations also provide the greatest challenge to designing an intervention.
*   Remember you are learning new stuff, so choose something where the *potential for learning* is greatest. A really tough situation will require very skilled and experienced use of systems ideas. Mark those down for later when you've a bit more mileage under your belt.

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3 For inspiration you may also visit world problems-issues at www.uia.org , e.g., `inappropriate design of development projects'.

Describing the main features

OK, now back to the task in hand. Take out a piece of paper and write your example down on that paper.   Just the main features, and especially what it is that interests or puzzles you about the situation you have described. Don't try to analyse it too much or place too much detail. Just what it is and why you are interested in this situation or puzzle will do for now. As we wrote earlier, focus if possible on Option Two type statements. Place this description above the three sheets of large paper.

Identify inter-relationships, perspectives, and boundaries

Next, write down on the smaller pieces of paper anything about the situation or puzzle that is in some way related to 'inter-relationships' and place it on the relevant large piece of paper. Repeat this for 'perspectives' and 'boundaries'. Don't worry too much about things being 'right'. Don't worry if you are moving back and forth between categories. If you find that some aspects fit in more than one category (e.g., inter-relationships and boundaries), then write one for each category. Don't worry (yet) about precise meanings of inter-relationships, perspectives and boundaries.

Materials	Tips / instructions
Three large pieces of paper (flip-chart sheets are ideal)	Lay the sheets on the floor for you to walk around as you think.
Marker pen	Write 'inter-relationships', 'perspectives' and 'boundaries' on the sheets.
Small pieces of paper, e.g., medium sized Post-It notes[4]	Don't be tempted to work any of this case in your mind or on your computer. Trust us, it won't work as well.

Table 1.2: Materials needed for Level One

Description of main features

Table 1.3   Main features of your case

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[4] Square pieces of memo pads or the backs of day-at-a-time calendars are fine, too.

Once you've finished, take out a further sheet of paper and write down any insights or observations you have about what is now in front of you. Place that below the three sheets of paper. You may also use the template of table 1.4 below.

Inter-relationships	Perspectives	Boundaries
How do things connect with each other?	*What are the different ways a situation can be understood?*	*What's in and what's out?*
Insights and possible solutions	Insights and possible solutions	Insights and possible solutions

 Table 1.4   Template for identifying inter-relationships, perspectives, and boundaries at level one.

Enough is enough … or not?

You've just completed your first cycle of a systems based inquiry. It might be superficial or you might feel at this stage that you've gained enough insights to address the situation or puzzle. If you've gained sufficient insights then fine: stop. That's what the project officer did in our example. There's no point in over-analysing a situation. Jump ahead to the section of the book headed – Wicked Solutions

If you feel you haven't gained sufficient insights, then read on.

Pages 15 to 86 are not available in this sample

Want to learn Levels Two and Three, plus how to generate Wicked Solutions?

Go to
http://www.gum.co/wicked
and download the full book

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In an infinite universe there's no such thing as a new idea. All authors build on foundations formed by others. This book is no exception. We didn't want to load the main text down with too much theory or systems history, but we cannot finish the book without acknowledging the contribution of two key figures in the systems field: Peter Checkland and C. West Churchman.

Peter Checkland and Soft Systems

In his years as a manager at ICI, a major British plastics company, Peter Checkland became increasingly disillusioned with the application of classic systems engineering ideas to management problems. In particular, he identified that the formal definition of a particular management problem often failed to provide guidance to its resolution.

Checkland's insight was, at the time, revolutionary. Existing systems methods assumed that a given set of interrelationships would be understood by everyone in roughly the same way. His experience as a manager, however, told him that this was not so; different people within a situation are working to different objectives, based on different perspectives. These differences influence their behaviour and thus the dynamics and their understanding of a situation. Addressing a situation regarded as problematic required an understanding of the multiple perspectives that people brought to that situation.

Subsequently during the late 1960s, while Professor of Engineering at Lancaster University in the UK, Checkland developed ideas he dubbed 'soft systems' (to contrast with the more deterministic 'hard systems' of systems engineering) as well as the approach known as Soft Systems Methodology. Implicit in this approach is the idea that merely observing a situation and then mapping or modelling it will lead to fewer insights than identifying the different ways a situation can be appreciated through different perspectives and modelling or mapping each of those ways. These conceptual models, each based on a single way of framing or understanding the situation were not possible 'solutions' but tools that when compared with the rich messiness of the real life situation allowed deeper insights about the situation to be drawn and more robust solutions to be generated.

Soft Systems Methodology heavily influenced the perspective sections of this book. Indeed rich picturing is a soft systems technique.

C. West Churchman and Critical Systems

Churchman was a fascinating character and polymath. He was both a Professor of Business Administration and Professor of Peace and Conflict Studies at University of California, Berkeley. School. His concerns centred on the ethical decisions taken when constructing systems viewpoints. Indeed, much of his international fame arose from insisting, essentially, that management was not primarily a technical or even social process but an exercise in applied ethics.

According to Churchman, our most critical problem today is understanding the systems we live in. However, it is in the nature of systems to have a continuing perception and deception, an unending reviewing of the world, of the whole system, and of its components. These are inseparable from human living (and politics, management, etc.). According to Churchman the main claim to fame of the systems approach is the expansion of our capacity for inquiry. Churchman devised a scheme for the examination ('systemic inquiry') of human system interventions and their design ('planning'), which he called the 'systems approach'.

He concludes his first book on the systems approach with formulating four principles of a deception-perception approach to systems:

I.   "The systems approach begins when first you see the world through the eyes of another."
II.   "The systems approach goes on discovering that every world view is terribly restricted." Or, in Churchman's words (TSA, 231): "Every world view looks only at a component of some other system. For those who think in the large, the 'world' is forever expanding; for those who think in the small, the inner world is forever contracting."
III. "There are no experts in the systems approach." The public always knows more than any expert (or politician). The problem of the systems approach is to learn what 'everybody' knows. "At the same time, the real expert is still Everyman, stupid, humorous, serious, and comprehensive all at the same time." (TSA, 231-232).
IV.   "The systems approach is not a bad idea."

More profoundly, Churchman believed that our choice of what lies inside a system is essentially an ethical decision. By choosing what lies inside a system you implicitly or even explicitly marginalise what lies outside the system. Thus Critical Systems is essentially about boundaries. Churchman argued that your choice of what lies inside a system's boundaries depends on your perspective, or more deeply, your values. If these choices are not reflected upon they may well result in exacerbating the very problem you are seeking to address. Indeed it may well cause you to frame the problem in unhelpful ways.[23]

Other important influences

One of Churchman's students, Werner Ulrich, took Churchman's ideas rooted in the school of American Pragmatism and blended them with European schools of thought to produce the Critical Systems Heuristics that form the basis of Level 3 and beyond of this book. Over the past 20 years Gerald Midgley, Michael Jackson and Martin Reynolds have deliberated on, debated and developed

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23 The following report shows how Churchman applies his systems approach: Churchman, C. W., Nelson, H. G., & Excrete, K. (1977). Value distribution assessment of geothermal development in Lake County, CA. Retrieved from http://www.osti.gov/bridge/servlets/purl/6670871-RBjYQE/6670871.pdf

Checkland's, Churchman's and Ulrich's ideas. Their fingerprints — admittedly at times somewhat smudged — are all over this book. We take full responsibility for any deviations and misrepresentations of their work and ideas we made in this book. Consequently, we've provided some key references to their work in the next section of this book so that you can read the original texts.

Acknowledgments

Putting aside the formal, technical contributions of Messrs Churchman, Checkland, Ulrich, Midgley, Jackson and Reynolds, many other people have contributed to this book in important ways. In no particular order honourable mentions must go to Patricia Rogers, Richard Hummelbrunner, Jane Davidson, Ricardo Wilson-Grau, Heather Britt, Elliot Stern, Meg Hargreaves, Gene Bellinger, Jan Noga, Mary McEathron, Judy Oakden, Margo Beth Fleming, Stefanie Krapp, Michael Quinn Patton, Glenda Eoyang, our copy editor Nikki Crutchley of Crucialcorrections, BoJe@nne for her design advice, members of the American Evaluation Association's Systems and Evaluation Topical Interest Group, and everyone who's attended one of our workshops over the past decade; especially those workshops that didn't quite go according to plan!

Special mention to Deutsches Evaluierungsinstitut der Entwicklungszusammenarbeit (DEval) in Bonn and the IDRC funded Ecohealth Fieldbuilding Leadership Initiative (FBLI) in South East Asia which unintentionally but crucially provided the platform upon which this book is built.

Finally dear reader, and now colleague, we'd like to acknowledge your efforts in giving these ideas space in your own minds and activities. We'd like to know how you used the ideas and thoughts about where this book can accommodate those ideas in subsequent versions.

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About the authors

Bob Williams

Bob has been using systems concepts in his work for over 30 years. He was originally trained as an ecologist — one of the earliest 'systems' disciplines, and spent four years with the Systems Group at the Open University in the United Kingdom.   He is well versed in a variety of different systems methods, including relatively 'old' approaches, such as system dynamics and soft systems methodology, as well as relatively new ones such as complex adaptive systems, critical systems and activity theory.

For the past few years, Bob has been exploring how to adapt systems ideas and systems methods into the practice of evaluating and redesigning complex social programmes. In particular, he is interested in how systems concepts can be applied to methods of inquiry, analysis and design that do not originate in the systems field. In other words how to make more 'systemic' the methods you are familiar with and use expertly in your own work rather than learn an entirely new bunch of methods. Hence this book.

But if you are interested in systems methods then his book with Richard Hummelbrunner, Systems Concepts in Action : A Practitioner's Toolkit   describes twenty of them (see Further Reading).

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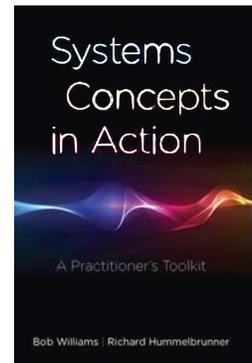
Sjon van 't Hof

Sjon got acquainted with systems thinking while working at the Royal Tropical Institute in Amsterdam. First he was introduced to multi-stakeholder learning in agricultural innovation systems (RAAKS or Rapid Appraisal of Agricultural Knowledge Systems) and a few years afterwards to the use of monitoring and evaluation to facilitate learning in rural development. He is convinced that the complexity of international development projects and programmes often goes unrecognized while at the same time the systems tools needed to deal with complexity issues are unknown, ignored, or considered impractical.

He has a background in tropical agriculture (BSc) and irrigation engineering (MSc, Cranfield University). In the early 1980s he worked as a land use planning officer in Zambia, and in the late 1980s and early 1990s as an irrigation engineer for UNICEF in Timbuktu. In more recent years he has carried out missions in Bangladesh, Burkina Faso, Cameroon, Chad, Ghana, India, China, Kenya, Mauritania and Niger. The common thread in his work is understanding and strengthening the smallholder perspective in agricultural development efforts.

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Wicked problems are complex, ill-structured, human problem situations. This book will help you design an inquiry and intervention in such messy, wicked situations. It does so by guiding you through the steps and stages of a systemic process that addresses your own wicked problem. Limited references to systems theory and history acquaint you with the key principles to work wicked problems on your own.

This book is a learning tool, but above all it is a workbook, because we believe you learn best by doing. To get you started from the very beginning the book provides you with three levels. Level one gets you going before you have turned page ten. Level two helps you make the transition to level three, where you will be doing some very serious systems thinking. We have provided a fully worked case to serve as an example. The case in combination with the stepwise approach allows for a smooth learning curve.

The focus of this book on systems thinking is on a critically important question that often goes unanswered: "Where do I start?" It also provides numerous tips and tricks to keep you on the right track. You will find that the systems approaches in this book will not only help you to address wicked problems yourselves, but also that it will give you a basic grasp of what is involved in other systems methods. Few other investments in your intellectual toolbox could claim the same.