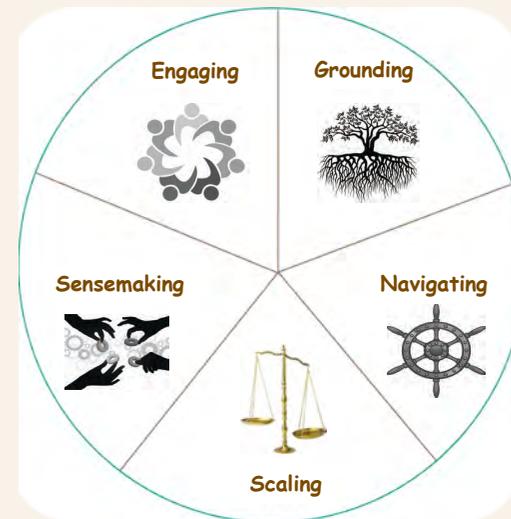




Handbook for Participatory Action Research, Planning and Evaluation

SAS2 Dialogue, Ottawa, Canada, March 2019

Revised edition, www.sas2.net



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For a complete presentation of all tools, detailed case studies and theoretical foundations, see Chevalier, J. M. and Buckles, D. J. (2019) Participatory Action Research: Theory and Methods for Engaged Inquiry, Routledge, London UK.

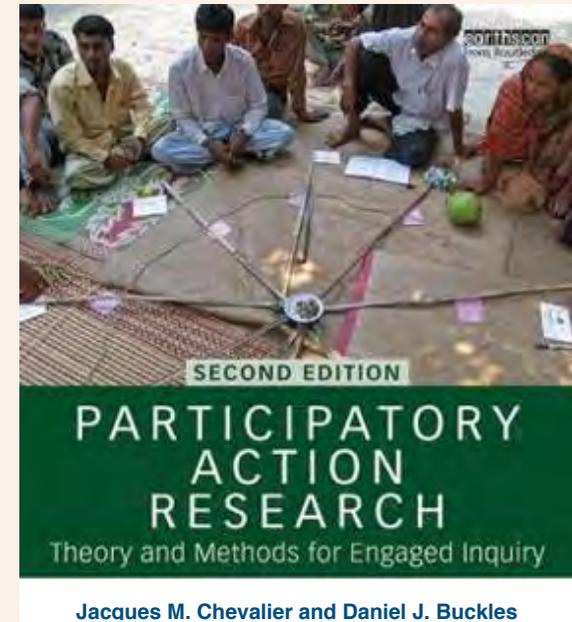


Table of Contents

- The SAS2 Initiative ii
- Overview of Handbook iii
- The weavings of science and society iv

1 SYSTEMS THAT LEARN

From theory to practice

- Theoretical foundations 3
- Process Design 7
- Skills in Means 13
- PAR ethics 21

Creating an action-learning system

- Action, Research, Training (ART) 21
- Order and Chaos 23
- Activity Mapping 25
- Planning, Inquiry, Evaluation (PIE) 27
- Roles, Skills and Values 29

2 FACT-FINDING AND MEASURING

Seeking consensus

- Validation 32
- Level of Participation 33

Measuring and mobilizing evidence

- Free List and Pile Sort 35
- Ranking 37
- Rating 39
- Scoring Tips 41
- The Socratic Wheel 43
- Weighting 47
- Information GAS
(Gathering, Analysis, Sharing) 49

3 EXPLORING PROBLEMS

Telling the story

- Timeline 55
- Previous Responses 57
- Participatory Mapping 59

Getting to the root

- Problem Tree 61
- Gaps and Conflicts 63
- Force Field 65
- Paradox 67

4 KNOWING THE ACTORS

Charting the playing field

- Stakeholder Identification 71
- Stakeholder Rainbow 73

Doing stakeholder analysis

- Social Analysis CLIP 75
- Power 79
- Interests 81
- Legitimacy 83

Knowing what matters

- Positions and Interests 85
- Values, Interests, Positions (VIP) 87
- Lessons and Values 89
- Moral Conflict Assessment 91

5 ASSESSING OPTIONS

Blue-sky thinking

- Ideal Scenario 97
- The Carrousel 98
- Tree of Means and Ends 99
- Sabotage 100

Managing expectations

- Disagreements and Misunderstandings 101
- Negotiation Fair 103
- Levels of Support 104

Possible futures

- Projections 105
- What If 107
- Hazards 108
- Results and Risks 109
- Contribution and Feasibility 111
- Attribution and Contribution 115

6 UNDERSTANDING SYSTEMS

Rethinking the interactions

- SYSTEM DYNAMICS 119
- Ecological Dynamics 123
- Causal Dynamics 125
- Social Dynamics 129
- Activity Dynamics 131

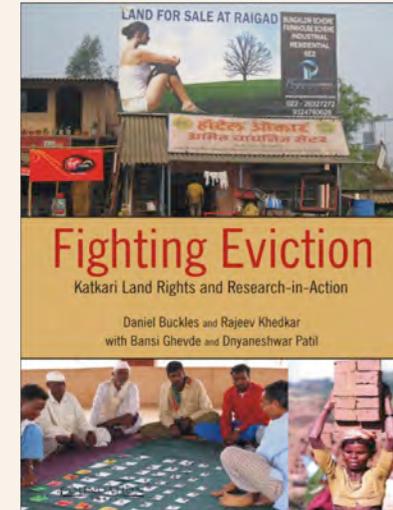
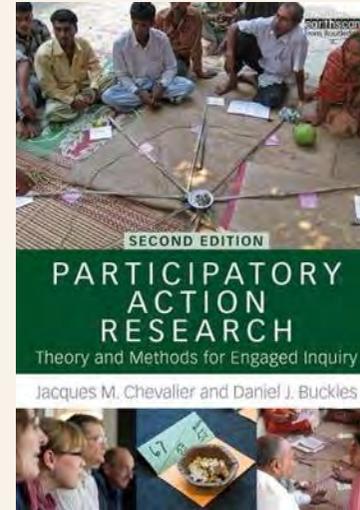
Rethinking the grid

- DOMAIN ANALYSIS 133
- Ecological Domain 139
- Activity Domain 140
- Problem Domain 141
- Option Domain 142
- Social Domain 143

The SAS2 Initiative

This handbook is an integrated collection of skilful means to engage people and mobilize evidence in complex settings involving multiple stakeholders. It draws inspiration from different disciplines, theoretical perspectives and methodological approaches. Fully participatory and flexible, the techniques and underlying ideas are accessible to beginners and will provide experienced researchers and facilitators with a new approach to educational, workplace, community and public engagement. People in the voluntary, academic, private and government sectors are using them for community-based action-inquiry and research, project or programme planning and evaluation, organizational learning and problem solving on all scales.

Thanks to a series of grants from Canada's International Development Research Centre (IDRC), organizations and colleagues on five continents contributed in various ways and at various times to this collaborative initiative, using the project title SAS². Over the last seventeen years, community members, professionals in many fields, university students and faculty, working with the authors and on their own, took part in hundreds of short and longer term action-oriented projects and capacity-building events meaningful to the people involved, in fields ranging from sustainable development and organizational change to education, gender equity, public health, governance, natural resource and conflict management.



Detailed presentations and illustrations of the approach and the tools created, adapted and used in real settings can be found in the following books:

- Chevalier, J. M. and Buckles, D. J. (2019) *Participatory Action Research: Theory and Methods for Engaged Inquiry*, Routledge, London UK.
- Buckles, D., Khedkar, R., Ghevde, B. and Patil, D. (2013) *Fighting Eviction: Tribal Land Rights and Research-In-Action*, Cambridge University Press India, New Delhi.

For more information on the initiative, the people involved and examples of results in different fields from around the world, see www.participatoryactionresearch.net.

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Overview of Handbook

The handbook is divided into six modules. **Module 1** is about the full tapestry, not the threads. The focus is on providing the theoretical foundations of PAR together with guidelines for *Process Design*. This is the thought process that shuttles back and forth between tools and context to plan an action-inquiry process at the right time, with the right people and with clear goals in view. The approach raises questions about the relationship between *order and chaos* in social life, and the 'skills in means' required to conduct an action inquiry or research process. Here we offer guidelines and tips on ways to put these 'skills in means' into practice by designing effective PAR initiatives in real settings, inspired by the collaborative ethics of PAR. Three examples of 'handy' combinations and sequences of tools illustrate the approach. Several techniques designed to cope with uncertainty and integrate planning, inquiry, action, training and evaluation are also explored.

Module 2 shows how these skills play out through the use of basic participatory tools for gathering information, defining levels of participation, and eliciting, classifying and rating elements and priorities in any domain.

The next three modules focus on questions that inevitably arise in any PAR situation.

- What are the *problems* people face and must explore (**Module 3**)?
- Who are the *actors or stakeholders* affected by a situation or with the capacity to intervene, in line with their values and interests, and how do they interact with each other (**Module 4**)?
- What *options* or alternatives for action should be considered and what are the *risks* involved (**Module 5**)?

Module 6 offers tools for understanding systems in a complex world, using soft-systems thinking. *System Dynamics* is our adaptation of input-output reasoning used in economics. It helps identify entry points into a system based on an assessment of how elements interact to create specific behaviours and problem situations. *Domain Analysis* is our social adaptation of Personal Construct Psychology developed by George Kelly. It shows how stakeholders view a domain or topic area by creating and organizing elements into 'families of resemblances'. The method uncovers worlds of 'socially-constructed differences' and helps create opportunities for building on local knowledge towards problem solving and learning.

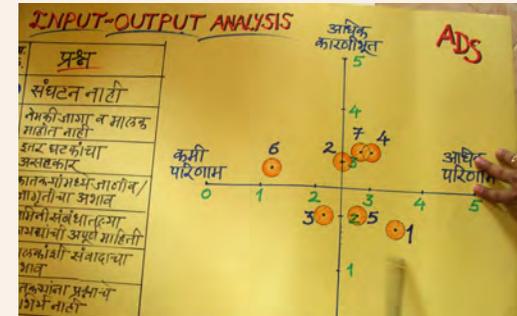


Methodological weavings

The concepts and tools presented in this Handbook illustrate means to collectively inquire and step into situations characterized by uncertainty and the competing interests and views of multiple actors. They show how to move beyond the narrow set of qualitative and quantitative methods commonly used in conventional social research. The emphasis is on creating and using skilful means to mesh the process of knowledge-making with real-life experimentation and the ideals of social justice and democracy. At stake here is an enduring effort to overcome the self-serving elitism of science and counter positivism's denial of human agency and inter-subjectivity and the negative effects of corporate science on the lives of people and their environment.



Weaving is an interlacing of yarn of different colours and textures to create a tapestry. The art of participatory action research, planning and evaluation is a similar endeavour. It mobilizes the living knowledge of people connected to each other and their environment and weaves a collective understanding of ways to act for the common good. It is a practical engagement of mind with the world that invites us to reason carefully, with rigour, while caring for others and the world we live in.



Science in society

Rethinking the art of inquiry is needed if we are to walk the talk of 'science in society'. For this to happen, we must reconnect sound research with authentic participation and meaningful action. We must explore novel ways of doing research, 'with people' instead of 'for and about' them. Assessing and addressing problems that may be messy and complex, however, raises many issues. They include forces of chaos and uncertainty; the plurality of actors and factors, local and global, intervening in social history; the diversity of disciplines, bodies of knowledge and theories that can be brought to bear on problem solving in real settings; and the diversity of tools that can be combined, sequenced and tailored to meet the requirements of action inquiry.



Systems that learn



Upaya-kaushalya

The expression skilful means is our adaptation of the Buddhist concept of upaya-kaushalya, also known as the craft of compassion. It refers to the art of bringing out potentialities in specific learning contexts and creating a shift in understanding and the way we live our lives. When seen from this perspective, new skills, methods and technology help researchers walk their own talk, by interacting mindfully with others and the world they live in. To support living inquiry, tools must be reconciled with what we are and long to be, thoughtful beings that strive to reach out and communicate with other human beings and the world that surrounds us. This is to say that the way we carry out research is as critical as the learning and the transformation we seek. The 'skilful means' of engaged research reflect first and foremost the embeddedness of ends in means.



Theoretical foundations

Promoting humanism and pluralism

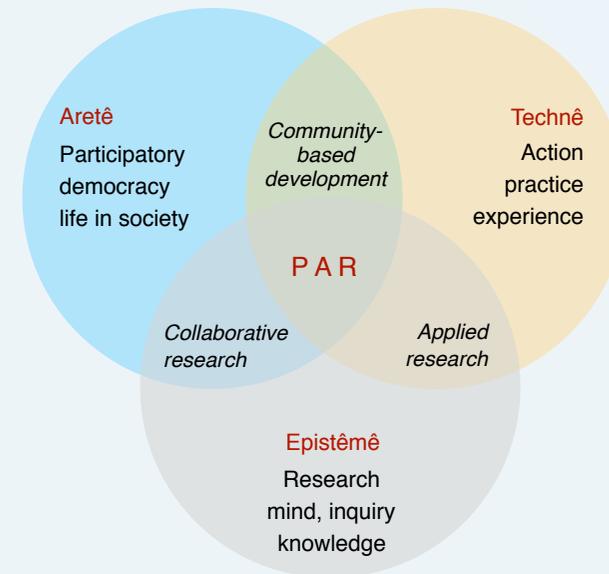
At first glance, PAR seems like a big tent that welcomes a disparate group of supporters and visitors. Despite their diversity, all proponents nonetheless converge around a humanistic critique of hard science and technocracy. They take issue with any positivist push to remove all that is profoundly human from the advancement of knowledge and society, including people other than experts and subjective experience of any kind. PAR practitioners step away from the official line of technocratic science, by removing the artificial wall build between the objective world and our deep involvement with it.

Integrating P, A and R

Humanistic stances on science-in-society are many. What makes PAR unique is its commitment to fully integrating the core elements built into the acronym, namely Participation (life in society), Action (experience, experimentation) and Research (advancing knowledge). At its heart, PAR is a social process to both understand the world and act on it. It is the art of creating a careful action-learning process based on abilities to think and act carefully, with rigour, combined with genuine caring for expressions of both difference and solidarity in the unfolding of social and natural history.

Maintaining a central vision, with lateral thinking

The integration of P, A and R is easier said than done. Many variants of PAR limit participation to the strict minimum, i.e. people contributing data to the inquiry process. Or they reduce tangible action to the possibility of action in the future, abandoning the idea of any immediate experiment in social transformation. Some also conflate research with any expression of group-based thinking, including local problem-solving inquiries that make no claim to the advancement of general knowledge. Faced with these ambiguities, PAR practitioners should reclaim the central vision and unity of P, A and R. But they should also continue to engage in lateral thinking — exploring kindred ideas, tools and frameworks that have much to offer even if they do not fully integrate the three pillars of PAR. Their contribution to some key aspect, novel ways to facilitate group dynamics for instance, can inform and inspire the practice of PAR.



PAR is a concerted effort to gain new knowledge (Gr. epistêmê), enhance practical experience (Gr. technê) and strengthen the ethics (Gr. aretê) of life in society and democracy at the same time. The goal is simple: to better understand the world, by trying try to make it better. The approach is distinct from community-based development, which is not intended to further the advancement of general knowledge; from collaborative research, which does not require immediate action; and from action or applied research, which need not be participatory.

Theoretical foundations

Walking the talk of participation

There are two common ways of defining what the letter 'P' stands for in the PAR acronym, beyond the basic idea that knowledge creation is a social undertaking. Either people *partake* equally in all project activities; they are co-researchers or co-inquirers collaboratively making decisions on all steps of the process. Or they *partner* in the sense of making distinct and complementary contributions to achieving shared goals. Both definitions create problems in that they evoke a box-like view of project-based participation. All activities evolve within clearly-delineated boundaries, and equality is upheld in a communitarian spirit: i.e. the 'same people' are expected to do the same or different things, but always for the same reasons. Participants form a single, self-directed community that carries out all phases of the action research cycle. In our view, communitarian thinking oversimplifies matters. We propose a more realistic and pluralistic view of participation understood as a journey that brings together *partnering projects* interacting on equal terms, not partners or co-researchers engaging in a single project. In essence, PAR is a crossroads for people to address shared concerns according to certain rules. Those who accept the invitation, however, may do so with concerns and goals of their own. The gathering is a nexus of multiple conversations and initiatives (public, social, territorial, organizational, professional, academic), a focal point where life spaces and paths intersect for a period of time. All those involved spend time at this junction, but the things they do and the rules they follow are directly affected by their respective origins and pursuits and the many other people they interact with. Rules of engagement are never *just about* the immediate project at hand, and each party comes to the junction with working terms, conditions and relationships of their own.

Determining the scope and depth of action

The basic orientation of PAR theory and practice is towards collective action and social change for the common good. There is, however, considerable divergence in the way practitioners define the scope and depth of social change they wish to support. Three broad approaches and their many variants have shaped the history of PAR in this regard. The first approach goes back to the works of Lewin. It revolves around the exercise of **instrumental reason**, or the *rational-pragmatic* concerns of organizational learning and problem solving, especially in workplace settings. Another approach involves group adaptations of talk therapy, using methods for 'working through' the role of the human psyche in shaping social behaviour. The focus is on the *psychosocial-transformative* dimension of **expressive reason**, towards awareness-building and strengthening interpersonal relationships. A third approach encourages counter-hegemonic thinking (Habermasian, Freirean, feminist, neo-Marxist, etc.). It underscores the *critical-emancipatory* dimension of moral thinking and **communicative reason**, in the pursuit of social justice and radical democracy. While we are firmly committed to deep social change, we also invite practitioners to bridge these differences in perspectives and related methods, and draw from what each approach has to offer. This means exercising judgment regarding which dimension should come to the forefront in a given situation, and choosing the tools that are appropriate for the task.

Defining inquiry and research

As with 'participation' and 'action', notions of 'research' are also subject to competing interpretations that are not easily reconciled. In our view, PAR can accommodate and support three forms of inquiry — diagnostic, evaluative and scientific. Practitioners may choose to investigate and analyze a given problem situation (diagnostic), assess the results of a planned intervention (evaluative) and contribute to the advancement of general knowledge (scientific) at the same time. All three inquiries complement each other and may require the use of similar investigative tools. Having said that, they reflect different goals and can be given different weights, according to circumstances and need.

Developing the skilful means of *Process Design*

Process design (described below) is the art of crafting context-specific methodologies that raise the right questions with the right people at the right time. It involves selecting and sequencing the tools that are fit for purpose, with the appropriate level of detail (i.e. 'good enough' to satisfy needs and expectations). Making room for iterative adjustments is another critical ingredient, knowing that plans may have to change and that success is never guaranteed. *Process design* is radically different from using well-packaged methodologies and ready-made tools that promise results in practically any setting. It also differs from schematic frameworks that keep their distance from instrumental methods and techniques, under the assumption that 'little-m' methods are inherently neutral and secondary compared to the overall goals pursued. In this Handbook, we choose instead to reclaim the use and development of tools, techniques or methods of knowing to support the art of engaged inquiry. The attention we choose to bring to process design, treating it as an area of innovative thinking and practice, reflects a fundamental proposition: methods and technology, be they simple or advanced, are skilful means to interact with others and the world we live in.

Going beyond mainstream methods

The spirit of participation often fails to affect the way research is actually practised. Tools continue to be viewed as neutral instruments, 'little-m' methods that need not change. As a result, many initiatives continue to rely on mainstream methods to collect and analyze quantitative or qualitative data. The common ones are questionnaires, participant or non-participant observation, focus groups and interviews (centred on key questions or themes, events, life histories, etc.). However well-tested they may be, these methods are normally designed for use by experts who need to extract data from people acting as research 'informants'. They impose serious limitations on group engagement in designing the research goals and process, gathering and analyzing data and interpreting the findings so as to plan and assess further collective action. By contrast, PAR supports real conversations between people gathering evidence and reflecting critically on matters that count, using methods that are reflexive, rigorous and dialogical all at once.

The practice of PAR should stimulate lateral thinking and open up as many forms of meaningful expression and inquiry as possible, without routinely excluding those that seem either too simple or too advanced, too qualitative or too quantitative, too story-like or too mathematical, too artistic or too rational, too playful or too serious, too quick-and-easy or too time-consuming. Most of all, practitioners must explore novel techniques to support group thinking and action.

Authentic inquiry seeks change in the world and starts with change in the world of inquiry. Gandhi was right: 'means are after all everything'. Skills in means matter greatly. They are the way we walk on the path of knowing.



Theoretical foundations

Heading, holding and handling

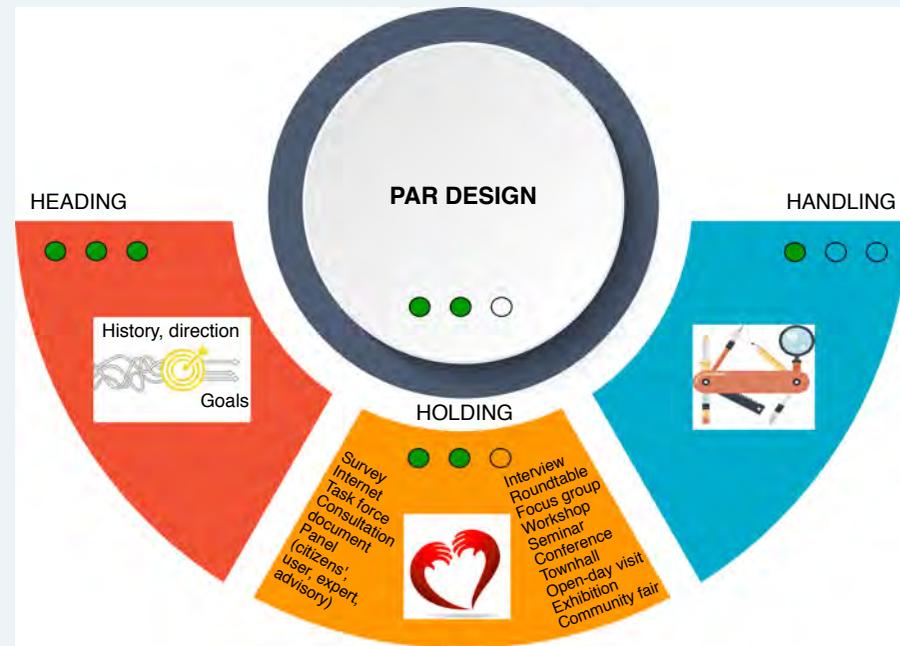
The success of PAR hinges on

- making sure the collaborative initiative, headed jointly by the parties concerned, is *heading* in the right direction;
- choosing the right *holding* environments;
- using the right methods for *handling* key moments of the process.

The design process must reflect a good sense of direction — a clear idea of where stakeholders are coming from, where they are collectively **heading**, and who should be collectively involved in heading the initiative. When it comes to designing and conducting an action inquiry, history and collective purpose must guide the process.

Success also hinges on knowing a variety of **holding** environments and choosing the right engagement setting that will effectively mobilize people and evidence to achieve shared goals. Available processes range from consultation documents and surveys to interviews and focus groups, roundtable discussions and workshops, user panels and social innovation labs, town hall meetings and open-day visits, exhibitions and community fairs, seminars and conferences, task forces and citizen's juries, Internet-based processes and advisory, citizens' or expert panels.

Last but not least, results depend on addressing the proverbial devil in the detail — using the right methods and techniques to **handle** key engagement moments according to circumstances and needs, beyond generic guidelines or mechanical instructions applicable to all settings.



In this example, the ongoing collaborative process is heading in the right direction and the holding environment is adequate even though not ideal (rated 2 out of 3). However, the precise engagement tools and methods used to handle key moments of the process are ineffective in many respects (rated 1 out of 3).



Process Design

Process Design is a flexible systems approach to help select, combine and adapt tools for participatory inquiry and action. Following are the different steps to go through when planning a PAR initiative, always mindful that circumstances may play havoc with best-laid plans.

Step 1 Define the general context and planning scenario

Process Design starts with a description of the general context and planning scenario of a proposed action inquiry. It may be useful to distinguish between three different scenarios based on varying levels of uncertainty and complexity in the setting. Adapting the design process to each scenario is key.

Scenario 1 concerns situations that are predictable and favourable enough to plan most activities in advance with considerable detail. This is the plan-and-implement scenario where there is a coherent set of objectives shared by stakeholders (as in the upper right quadrant of *Order and Chaos*, p. 23). PAR practitioners working with this scenario should be open to the possibility that some specific activities may not require a formal inquiry or detailed plan at all, either because there is no pressing need, the situation to be addressed is relatively clear, or results can be monitored through day-to-day tracking (using informal exchanges, for instance).

Scenario 2 refers to complex, multistakeholder situations rife with difficulties and uncertainty (the lower and left-hand side quadrants of *Order and Chaos* p. 23). *Process Design* in this scenario recognizes that general and specific objectives held by different people may diverge and interact, subject to negotiations, compromise and change over time. Planning occurs where the results of prior activities, the performance of key factors and stakeholder behaviour cannot be fully predicted. Information and knowledge are incomplete, links between causes and effects are not linear and straightforward, and chains of action, partners and results are messy. For this kind of situation, characterized by some degree of entropy or chanciness, *Process Design* must allow for variations in optimal levels of detail and time frames. The overall initiative is best served by formulating working hypotheses and actively integrating flexible inquiries into the plans, as needed to inform actions and continuous planning.

Scenario 3 involves situations that are so pressing only immediate events can be planned. *Process Design* becomes an ad hoc intervention focussed on a single or one-off event and the formulation of an immediate follow-up plan.

Step 2 Define the action inquiry purpose

Define the inquiry goal, scope and expected results. These hinge on the main issue that prompts the investigation in the first place. Formulate questions that have strategic value by determining who the inquiry is for and what they are expected to do with the information and conclusions reached at the end of the inquiry. (Coming up with a compelling question that needs to be solved is not the same as raising an 'interesting' question, the kind addressed through curiosity-driven research. This is not to say that the questions launching a PAR inquiry should be essentially practical and therefore devoid of theory. Kurt Lewin's maxim 'there is nothing more practical than a good theory' still holds.)



Process Design

Step 3 Identify prior decisions

When designing an action inquiry, common sense dictates that previous conversations and conclusions be taken into account. Prior decisions may concern the people who should be involved in the planning phase and in the overall inquiry. The respective roles of participants and committee members (advisory, steering, organizing, attending), how much time can be dedicated to the action inquiry, the available inputs from previous events (knowledge, other decisions) and the single or multiple roles that the facilitator should play (as instructor, expert-consultant, researcher, note taker or stakeholder) should all be mapped out (see Activity Mapping, pp. 25–26).

Step 4 Identify and clarify the specific question(s) and their sequencing

Determine the precise questions that the action inquiry is expected to answer, using concepts and language that are meaningful to the participants. This involves identifying and unpacking different aspects of the general question that seem relevant, and then clarifying and prioritizing each of them. Next comes a crucial task, one that is relatively unimportant in conventional research involving humans: organizing the questions and subquestions in sequence. Use input-output reasoning to determine how the answer to each question may serve as the input to the discussion that follows. This allows for progressive, step-by-step consensus building guided by an overall purpose and a commitment to follow-up questions and action.

Step 5 Select and sequence tools and design all steps

Tools should come into the picture only when the previous steps have been completed. Methods follow purpose in context. Select tools to answer each specific question in order and define all the steps and procedures needed. This involves choosing the right level of depth (simple or advanced) and the kind of technology needed at every step. The design must consider how explicit and detailed the instructions should be. It also involves determining the right balance of quantitative data gathering, formal analysis, description and storytelling. This is a process of scaling to fit the purpose and time available.



JUST DO IT

As important as participatory methods are, Process Design may not lead to new tools but rather familiar and well-established ways of doing things that reflect local culture, known procedures and customs. PAR practitioners must judge when the established ways to gather and analyze information, create priorities, resolve problems, take action and interact with others are working well enough for the task at hand. When they do work, the best action inquiry strategy lies in 'just doing it'. Introducing new tools or methods is never an end in and of itself, unless capacity-building or methodological innovation is a key goal shared by participants.

Step 6 Plan the documentation process

Decide how extensively to report on the group discussions, and the use to be made of the documentation. This will help determine the activities needed to document the results during and after the action inquiry. Do not assume that more documentation is always better than less. Nevertheless, don't let the experience of sharing 'in the moment' eclipse the need for records to inform follow-up actions. Consider documenting the following elements:

- the context or situation in need of attention;
- the purpose of the action inquiry;
- a summary of the process;
- a descriptive analysis of the results;
- an interpretation of the results;
- follow-up actions identified by the participants;
- observations regarding what went well or difficulties met during the process.

Some initiatives call for prior testing and capacity-building activities to support the action inquiry process. If so, plan these.

The amount of time, the level of planning and the number of meetings needed to design an action inquiry depend on how important and complex the issues are, the amount of information required and the number of people that need to engage in the process (see *Validation*, p. 32). Also, keep in mind that action-inquiry processes can extend over a few hours, weeks, months or even years. For examples, see Chevalier and Buckles (2019).

Examples of Process Design

Over-reliance on a familiar tool or a generic methodology that fits all situations is a recipe for failure. To achieve its purpose, every inquiry must develop its own methodology and adapt tools to fit the situation and purpose at hand. This means selecting, sequencing and scaling tools accordingly. Methodologies are inevitably as varied as the situations they try to address.

The following three methodologies illustrate our point. They are specific to settings described in detail in Chevalier and Buckles (2019). Refer to them with caution as no methodologies can substitute for sound judgement sensitive to context.

TIP

The design process often requires going back and forth between steps. Far from being linear, good design is iterative and subject to change.

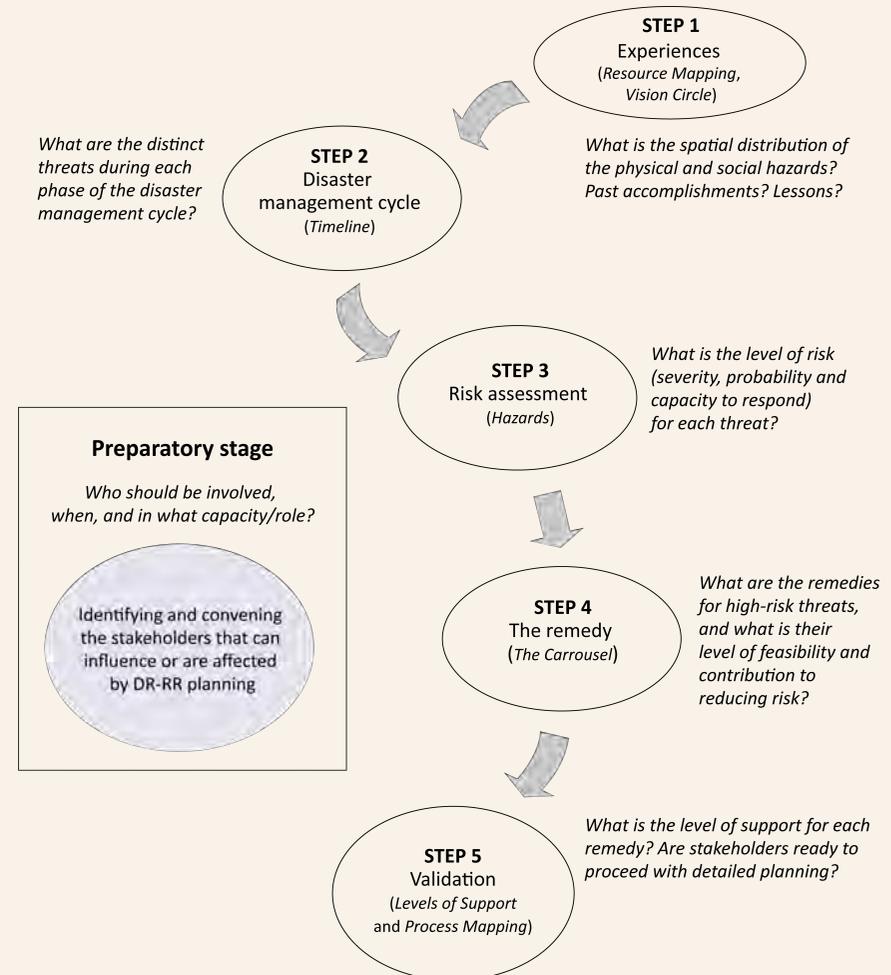
'I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail.'

Abraham Maslow

Our approach to the design of an inquiry process, including Monitoring and Evaluation, consists in constantly inventing, mixing and reconfiguring a wide array of inquiry and group facilitation tools fit-to-purpose. This means no copying and pasting of a ready-made methodology. PAR and M&E should be design-oriented, using principles, rules and tools to flexibly generate context-specific methodologies in real settings.

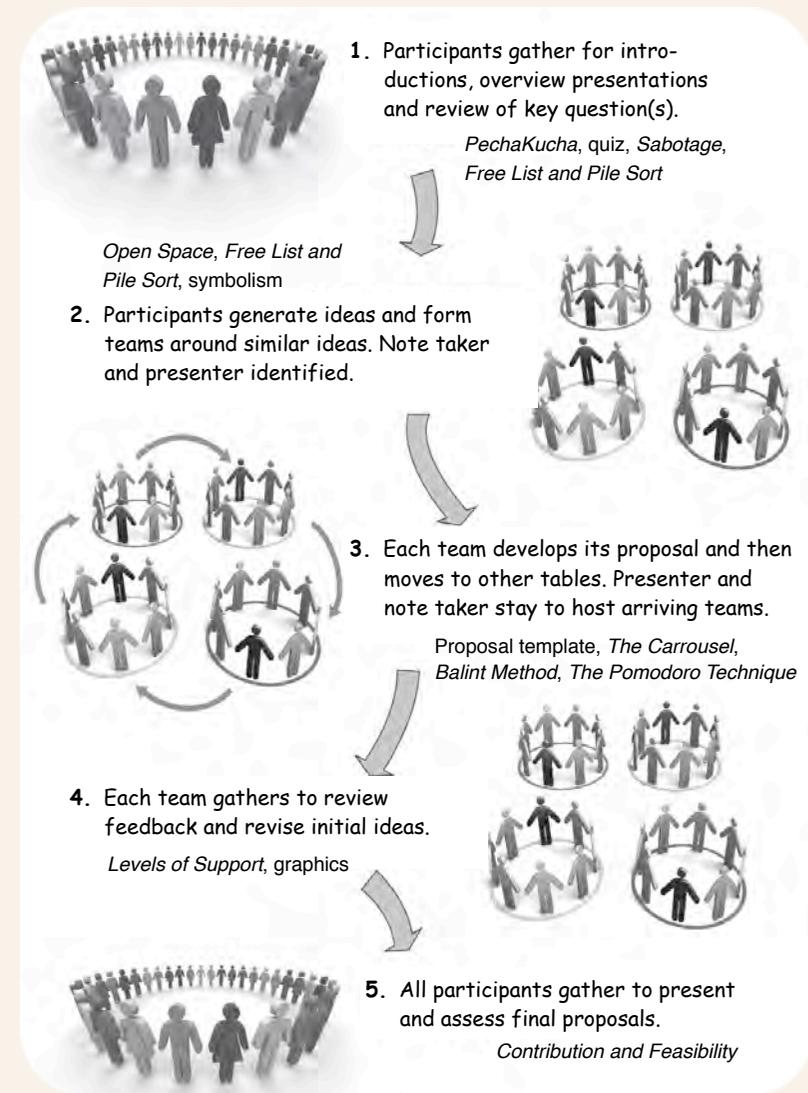
Process Design example 1: Disaster Relief and Risk Reduction

While it is well known that effective disaster relief and risk reduction (DR-RR) at the local level depends on peoples' participation, how that participation is created and for what purpose matters a great deal. This design, created for the Camillian Disaster Service, creates plans that communities can use to improve disaster relief efforts and helps people at risk build capacities for harm reduction and self-preservation. The preparatory stage begins with the formation of a core planning group charged with the task of identifying and convening the stakeholders that can influence or are affected by DR-RR planning (using *Stakeholder Identification* and *Stakeholder Rainbow*, pp. 71–74). The second stage involves a series of assessments organized in a sequence where the output of one becomes the input to the next. *Participatory Mapping* (p. 59) is adapted and combined with visioning tools to show spatial and social variations in local experiences with disasters and identify lessons. These observations are then organized as a four-part *Timeline* (p. 55) divided into the standard phases in the disaster management cycle – prevention, preparedness, emergency response and recovery. The structure helps participants characterize each phase and select where to focus their attention. *Hazards* (p. 108) involves a detailed assessment of the level of risk for priority threats, applied phase by phase, to a single phase, or to a selection of threats from all phases. It can also be done separately with different populations, men and women for example, to see who might be more or less vulnerable to specific threats. The rest of the methodology combines *The Carrousel* (p. 98) with *Contribution and Feasibility* (p. 111) to develop and share plans for solutions to priority threats, with critical feedback and improvements made along the way. Depending on the time available and the depth of evidence needed, discussions of solutions to priority threats can take people into detailed action planning specific to each context and grounded in the mandates of those involved. See the full story in Chevalier and Buckles (2019, pp. 333–41).



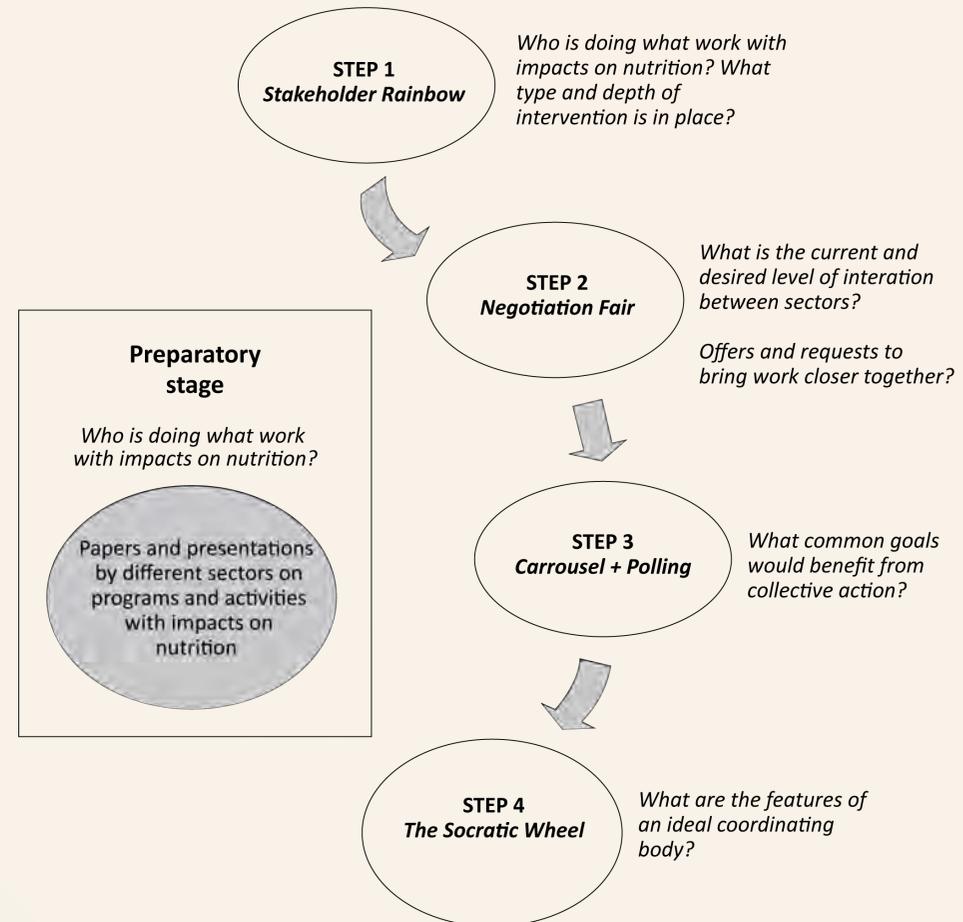
Process Design example 2: problem solving and *The Carrousel*

In 2016, Les Producteurs de porcs du Québec and the Government of Quebec (Ministry of Agriculture, Fisheries and Food) launched a three-year PAR initiative to minimize the impact of a swine disease known as the Porcine Reproductive and Respiratory Syndrome. Some 70 people representing all facets of the industry, including small- and large-scale producers, processors, government officials and scientists attended the meeting. The event started with *PechaKucha*-like presentations and a quiz on known statistics, using polling clickers to test responses. An exercise in *Sabotage* (p. 100) combined with *Free List and Pile Sort* (p. 35) followed: each participant had to write on a card a good way to make sure the disease would persist or get worse. Teams were formed around cards that showed similar ideas, and each team prepared and briefly presented their 'evil plan' to other teams. Shifting the discussion to more positive thinking, participants used a brief 'open space' time to explore promising solutions. Each idea had to be written on its own card, and teams formed around similar ideas by circulating and comparing cards (see *Free List and Pile Sort*). Six teams emerged and took half an hour to develop their proposals, using a symbol to represent the idea they wanted to advance. *The Carrousel* (p. 98) came next, with several rounds of discussion and ample breaks between each round, as in *The Pomodoro Technique*. Each team had a template to make sure their proposal addressed key questions such as who should be involved and proposed first steps. Also, participants had to bear in mind the obstacles to action evoked during the earlier *Sabotage* session. Discussions in each round were divided into three steps (based on the Balint Method): the presenter explained the team's proposal while others remained silent; travellers asked questions for clarification; and then travellers discussed the proposal amongst themselves while the presenter and note taker remained silent. Just before the original team came back to revise their proposal, the facilitator used clickers to poll all participants on their *Levels of Support* (p. 104) for each proposal. The workshop ended with six brief presentations, using graphics and a floor version of *Contribution and Feasibility* (p. 111) to assess the revised course of action advanced by each team. See the full story in Chevalier and Buckles (2019, pp. 311–15).



Process Design example 3: nutrition policy in Burkina Faso

In many parts of Burkina Faso, acute malnutrition rates exceed the WHO crisis threshold, making nutrition factors the underlying cause of up to 45 per cent of childhood deaths. Policy action to address the situation focuses on nutrition planning and intervention that brings together the work of many sectors, including agriculture, water and sanitation, education, health, social protection and research institutes. All have something to contribute but cannot on their own address the interrelated causes of malnutrition. A process designed to create synergies across sectors began with the preparation and presentation of papers on what relevant sectors are currently doing that have impacts on nutrition. A stakeholder analysis (*Stakeholder Rainbow*, p. 73) then examined the types of interventions and the depth of impact on nutrition. These two steps created a collective understanding of what other sectors are doing and the ways in which it affects or may affect what they do. *Negotiation Fair* (p. 103) followed, with each sector assessing the current and desired level of interaction with each other sector, and creating a statement of what they requested and what they could offer others that would bring their work on nutrition closer together. *The Carrousel* (p. 98) and polling of priorities converged around the importance of creating and funding an enabling policy framework and a coordinating body that could broker the remaining distance between sectors. *The Socratic Wheel* (p. 43) played a role in developing the criteria for selecting an institution that could break silos and refocus efforts on cooperatively fighting the various and interrelated causes of undernutrition.



Process Design helps structure and support the design and facilitation of PAR initiatives. Engaged research, however, cannot be guided by a general formula or science involving strict rules. Rather, it is an art based on judgement, creativity and much practice. Many considerations come into play when applying reasoning and dialogue to pressing matters involving multiple stakeholders and real-life choices. Also required is the development of an essential set of 'skills in means' for creating and mobilizing knowledge.

Following is an outline of the five skills and related tips that bring **people-based** and **evidence-based thinking** together in support of a meaningful action-learning processes for the good of all.

ENGAGING

Engaging people and knowledge from different perspectives and facilitating dialogue across social boundaries, cultural settings and modes of learning.

GROUNDING

Building inquiry and learning on felt needs and in the middle of ongoing processes, towards meaningful actions and decisions appropriate to people's goals and available resources.

NAVIGATING

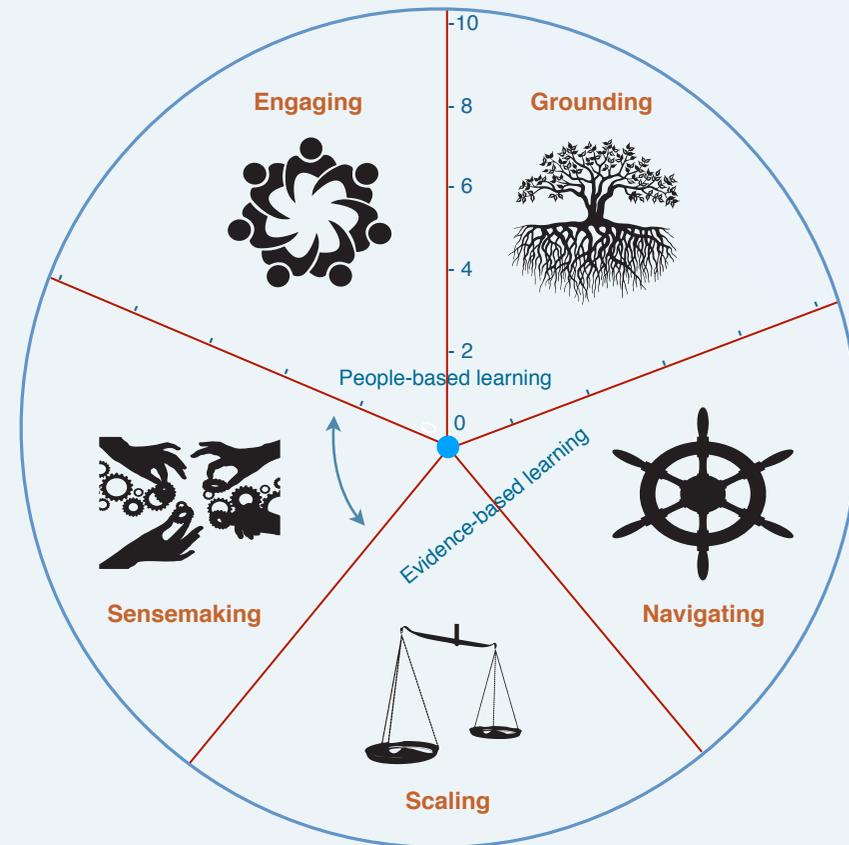
Selecting and combining different forms of inquiry, planning and participation to help people deal with complexity (the uncertain, the unknown) in a timely fashion.

SCALING

Adjusting inquiry methods and actions to fit the depth of evidence, planning and participation needed to achieve meaningful results.

SENSEMAKING

Co-creating meaning in complex situations by integrating information, analysis (quantitative, qualitative) and theoretical insights into stories and explanations that inspire and persuade.



ADAPT. Use *The Socratic Wheel* (p. 43) to assess individual or group abilities to engage, ground, navigate, scale and create meaning through participatory action inquiry and to set appropriate learning objectives.

Skills in means

WHEN ENGAGING...

Playing the role of facilitator or third party. This means

- Intervening in situations where there may be tension or mistrust, where parties take rigid positions, participants do not express themselves freely, or clear rules of order are needed.
- Deciding when facilitators or third parties can allow themselves to state their own opinions on the issues being raised, assuming they have permission from the group to do so or if they are stakeholders or members of the group doing the exercise.

Creating a safe environment. This means

- Offering an environment that inspires trust in the convening body, the facilitation team and the questions and rules used to guide the overall process.

Eliciting views and attentive listening. This means

- Formulating open questions such as *What do you mean by this . . .* or *Tell me about your experience . . .* Closed questions prompt 'yes' or 'no' answers.
- Paraphrasing your own question, using other words to make it clearer, or restating what someone has said, using the speaker's key words (*What I'm hearing is that . . . I see that . . . If I understand you well . . .* or *In other words what you're saying is that . . .*).
- Summarizing and validating the main ideas expressed during a discussion, as needed. Use key words and begin the sentence with *To sum up this point . . .* End the discussion with a synthesis and validate the synthesis (*Can we conclude that . . . Is it fair to say that . . .*).
- Facilitating note-taking by gathering ideas on flip charts. When possible, have one facilitator write on the flip charts while the other listens carefully to the participants and summarizes what should be written. Print clearly and alternate colours for each idea.
- Acknowledging the implicit, body language and emotions by reflecting on and drawing unstated meanings, non-verbal messages and feelings that people are expressing. This may add meaning to what is being said (*If I hear you well, it seems that . . . Perhaps we should talk about . . .*).
- Adjusting the pace by allowing time for people to pause and reflect on the topic (possibly in writing) before the dialogue begins. Welcome silence as well, either when people call for it or when it arrives on its own. Avoid rapid speech and frequent interruptions; don't try to fill silence. Listen while others are speaking and let go of planning what you will say when it is your turn.
- Welcoming humour, laughter and enjoyment of the process.
- Suspending judgement (*Lucky you . . . I envy you . . . Poor you . . . How awful . . .*). Don't start a sentence with *Yes but . . . I believe that . . . In my opinion . . .* At the start of a new discussion, begin with a brainstorming or free listing exercise where all ideas can be expressed freely, without being judged or interrupted by others.
- Being aware and letting go of concerns, bias, feelings or immediate reactions that may affect your ability to listen attentively.
- Showing empathy and appreciation while listening (*I understand . . . I see/hear what you're saying . . . I appreciate the fact that . . .*). Don't describe similar experiences you or another person had in the past. Encourage attentive listening and empathy toward third parties that are being talked about (*How would you state, in one sentence, what they are trying to tell you?*). Be aware of moments that are intense. Do not try to rush through them.

Skills in means

WHEN ENGAGING (continued)...

Considering local language and forms of inquiry, learning, planning and interaction. This means

- Exploring ways to accommodate differences in language, meaning and symbolism.
- Building on local forms of inquiry, learning, planning and interaction that are well established and work well in either literate or non-literate contexts.



Building on group and individual differences. This means

- Determining whether participants should first address key questions individually, in groups or both (i.e. knowing when to start with an individual rating exercise and then forming subgroups that share similar views and prepare recommendations for plenary discussion).
- Deciding whether subgroups should include a mix of people with different characteristics (heterogeneous groups) or participants that share a particular set of characteristics (homogeneous groups). Mixed groups are preferable if the exercise is intended to draw out views representative of the entire group. Each subgroup can be assigned the same or a different task, depending on whether all participants need to be involved in all parts of the inquiry.
- Paying attention to differences in views and knowledge that may affect how people assess the same issues. Forming subgroups based on age, gender, sexual orientation, marital status, ethnic origin, religion, education, their place of residence, the amount of time they have lived in a certain place, their occupation, or their role in an organization or project may be important in some contexts.
- Facilitating and managing differences regarding numbers and measurements. When discussing multiple scores, use real-time polling technology to establish their overall distribution, or place numbers on the floor for each point on the scale and invite participants to stand next to the number they think is correct for a particular criterion. The group can then focus on major differences, the reasoning of participants and adjustments needed to obtain a single rating (using a majority view rather than a simple average).

Facilitating multi-site and interactive engagement. This means

- Considering the chain of actions and partners that involve multiple sites and organizational layers (local, national and international, for instance). This helps determine key inquiry questions that are specific to each site or layer, those that concern the broader interaction of sites and layers and those that apply to all sites and layers and can be rolled up at the system level.
- Establishing how mutual accounting and learning between partners can help answer key inquiry questions and address the concerns and contributions of each partner and what is attributable to their collaborative work.
- Designing the right combination of individual or group self-evaluation with third party assistance involving outside experts.

Skills in means

WHEN GROUNDING...

Clarifying the goals. This means

Discussing and clarifying what people expect from a process (*What do you expect from this meeting? If I understand you well, you'd like to . . .*). Use various forms of attentive listening to make sure people's expectations are clearly understood.

Encouraging creative expression. This means

Using humour, games, physical movement, floor democracy and other forms of creative expression (drawing, mime, sculpting, stories) to build awareness, energize the group and connect to emotions. This helps facilitate teamwork, release tension and ground learning in real-life settings.

Creating an inviting environment. This means

Offering a physical space that is both comfortable and enabling. Whenever possible, use an open space large enough to accommodate about three times the number of participants, with moveable chairs and tables for small group work. Natural light will improve people's comfort as will periodic breaks and an absence of clutter.

Reflecting on process. This means

Welcoming questions or comments about the process being used in a discussion. State what needs to change in a positive way and adjust when possible. When unsure on how to proceed, share doubts and ask for help (*Are there suggestions on how we should proceed?*).

WHEN NAVIGATING...

Framing. This means

- Unpacking a discussion by keeping track of and noting different lines of thinking (*I'm hearing three topics being raised. They seem to be . . .*). When several issues are raised in a discussion, unpack them so that people can address each of them separately and establish priorities.
- Parking topics that may have to wait until later to be discussed in detail.
- Identifying prior inputs, making sure the documents, facts or evidence needed to have a well-informed discussion are on hand.

Sequencing questions and identifying the point of entry. This means

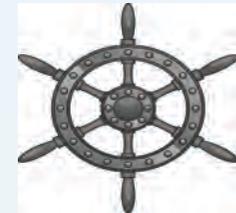
- Choosing an entry point in light of the main question(s) to be answered as well as the context, the purpose and the decisions made prior to the inquiry.
- Identifying remaining questions that should be addressed first and those to follow. Choose the right moment to end one topic and move on to the next.



WHEN NAVIGATING (continued)...

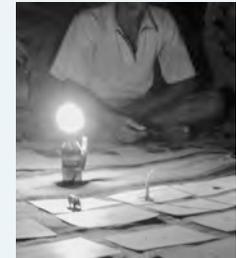
Choosing the right technology and facilitation techniques. This means

- Determining what facilitation techniques and technology should be used and how to gather and analyze information with the support of visual or kinaesthetic tools (people moving in space) that help see and discuss patterns emerging from the findings.
- Deciding whether to use software, drawings, objects, flip charts, note-taking or 'floor democracy' to facilitate data collection and analysis.
- Making a list of the supplies and equipment needed for each discussion (such as cards, post-its, masking tape, scissors, low-odour markers of different colours, drawing paper, flip charts and stands for all groups, a laptop computer and video projector, etc.).



Being flexible. This means

- Being able to change plans and adjust or replace a tool with a different one along the way. A clear understanding of where the group wants to go with an inquiry helps manage the change.
- Varying the methods and the kinds of tables or diagrams or facilitation techniques used, if only to avoid fatigue.



WHEN SCALING...

Laddering up or down. This means

- Using laddering down questions to make statements more concrete if they are too general or vague (see *Lessons and Values*, p. 89). (*Can you give an example? What makes you say that? What do you mean by this? Can you tell us about a situation that describes what you're saying?*). If statements seem too specific or concrete, use laddering up questions to make the significance clearer. (*Why is it so? What have you learned from this? Why does this matter? What do these things have in common?*)

Applying the good enough principle. This means

- Making sure that the information and analysis that are part of a discussion are 'good enough' to satisfy needs and expectations, without being either superficial or exhaustive and exhausting.

Managing time. This means

- Planning enough time to go through all the steps of a PAR tool, with breaks during the process as needed. The group may decide at any time to stop the exercise, find more information about the questions being raised and complete the exercise later.
- Saving time by dividing the group into smaller groups, and then asking each one to complete one part of the assessment (e.g. each group can assess a different option or use a different criterion to rate the same set of options).

WHEN SCALING (continued)...**Adjusting the level of participation.** This means

- Planning realistic ways to help people participate in an inquiry process. This includes determining whether all the key actors should be present or not. In some cases, it may be better to work only with stakeholders that are keen or in a position to cooperate. In other cases, stakeholders may prefer to adopt a 'shuttle' approach: that is, a third party facilitates a multistakeholder inquiry by engaging with individuals or small groups separately and then presenting the results at a general meeting where all the parties are together.

**Aiming for the right level of application.** This means

Reducing or expanding the steps involved in each inquiry and the number of tools used and questions asked. Decide how simple or advanced the process needs to be, considering the following factors:

- How much time and resources are available to dedicate to a particular inquiry.
- How complex the issues are. In some situations, summary indications of what participants think (e.g. their overall level of job satisfaction) may provide sufficient understanding and allow for fewer steps in an inquiry. In other situations, expanding the analysis by dividing a key variable into its component parts may be required (e.g. looking at the various expressions of the power variable in *Social Analysis CLIP*, p. 75).
- How reliable do the results need to be. High levels of evidence and consensus may be needed if important decisions are expected to follow immediately from the inquiry, or they are irreversible if proven wrong. Tentative decisions and actions to be verified later or monitored closely can be made on less detailed information and a narrower base of stakeholder agreement.
- How familiar the facilitators are with the tools. It is usually safer to learn with simpler applications of a tool and progress to more advanced combinations of tools as experience is acquired. Facilitators should become familiar with a tool by testing their knowledge and design in a safe context.



There are two extremes to avoid when scaling tools. The first consists in mobilizing the greatest number of actors to generate exhaustive data, analysis and text-heavy reports that make authentic stakeholder participation difficult and push actions out into a distant future, once all factors are fully analyzed by everyone. The other involves a closed circle of people using tools hurriedly and superficially, without providing the details, nuances and analyses needed to make the inquiry meaningful, useful and reliable. The middle way is to aim for a level of detail and engagement that reflects existing constraints and goals, and is 'good enough' in the context. The tool *Validation* (p. 32) is handy in this regard as it raises the question of how much evidence and/or how much participation are needed before action can be taken based on the results. Not every inquiry requires maximum participation and maximum evidence, but rather should be scaled with strategic goals, time available and urgency in mind. As with most things that matter, good enough is perfect.

Skills in means

WHEN MAKING SENSE...

Positive reframing. This means

- Restating negative statements as positive statements, when appropriate (*If I understand you well, you'd like meetings to be short and to the point . . .*).

Seeking congruency. This means

- Trying to clarify statements that seem to contradict each other them, without expressing judgement (*On the one hand . . . , On the other . . .*). When needed, note areas of both disagreement and likely agreement (*Some people seem to be saying that . . . , Others think that . . . Most are of the view that . . .*).



Combining formal analysis, narration and emotion. This means

- Using diagrams and tables to organize information and findings in ways that are clear, logical and succinct. Combine them with narration (oral or written) to provide the context, the sequence of events, a sense of purpose and details that add richness and texture to understanding the situation and how they feel about it. Blend the two kinds of thinking and adjust the relative weight of each to suit the context. When relevant, convert the findings of one kind of thinking into the starting point for another (for example, stories of successes and failures may help determine the criteria needed to rate options using *The Socratic Wheel*, p. 53).
- Ensuring that the collection of data is fully integrated with analysis and interpretation of the results through group discussion. Avoid separating the people providing data from the people doing the analysis and interpretation.

Choosing between eliciting concepts or starting with predefined terms. This means

- Knowing when to use tools that start with concepts adapted from the social sciences (e.g. *Paradox, Gaps and Conflicts, Social Analysis CLIP*) and when to use tools that allow participants to elicit their own terms and concepts (e.g. *The Socratic Wheel, Domain Analysis, System Dynamics*).

Using numbers and measurements wisely. This means

- Recognizing that numbers based on simple counts, ratings or ranking are not ends in themselves. Measurements and numbers are means to provide information, clarify people's views or knowledge about a topic, define priorities, focus attention during a group discussion, structure the conversation and find patterns. They may also reduce tensions by providing an external point of reference or bring out differences among stakeholders that were unspoken. How much attention is given to numbers and measurements depends in part on the weight given to different knowledge systems, such as science and local experience and know-how, and the importance of dialogue between them.



WHEN MAKING SENSE (continued)...

Explaining tool instructions or not. This means

- Clearly stating the main question that the tool will address and inviting participants to reformulate the question if necessary.
- Knowing when to explain all the steps of a tool and when not to. In some cases, explaining the technique in advance or step by step can help a group focus on a task and reduce tension. In other cases, too much explanation may confuse and detract participants from the substance of a discussion. Participants may want to get right into it, trusting in the expert judgement of the facilitator regarding what technique to use. The facilitator can outline and seek agreement on the inquiry's expected results and then proceed step-by-step. Participants can decide later whether they want to learn more about the technique and begin to use it themselves independently.
- Deciding when to use a technique discreetly, making sure to keep the conversation flowing while the facilitator organizes results of the conversation in her or his own mind, notebook or in a table (during or after the event).



Canada's *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (2014) requires researchers to seek the **prior, free, informed and ongoing consent** of all those participating in research. Participants must have a reasonably complete understanding of the purpose of the research, what it entails and all foreseeable risks and benefits that may result from participation. Since privacy is a factor that contributes to people's welfare, **confidentiality** tends to be the norm. This is usually obtained through the collection and use of data that are anonymous (e.g. survey data) or irrevocably stripped of direct identifiers. Criteria of **appropriate inclusion** are also needed to ensure that no particular people or groups bear an unfair share of the direct burdens of participating in research. Nor should any population or group be excluded from research without appropriate justification, arbitrarily depriving them of the potential benefits of participation obtained through information sharing, capacity building, community action-learning and problem solving. Last but not least, concern for justice calls for mechanisms to identify the dual or multiple roles of researchers and those assisting them, with a view to disclosing, minimizing or eliminating related **conflicts of interest**, whether real, potential or perceived.

Research conducted by, for and with particular communities (i.e. collectivities defined territorially, organizationally or as a communities of interests) raises additional ethical considerations, acknowledged by the Tri-Council and others.

- In collaborative research the people involved cannot be treated as 'subjects' or even 'participants' but rather must be treated as **partners** on the basis of a mutual understanding of the project goals and shared responsibilities in all phases of the process. These are subject to preliminary discussions, negotiations and adjustments over time.
- For some, **recognition** and 'being heard' may matter more than privacy and confidentiality. Respect for individuals and groups who wish to be heard and identified for their contribution to research must consequently be shown through proper quoting, acknowledgements, co-authorship, or the granting of intellectual property rights.
- **Risks** to all parties are best addressed in the language of respect for self, others and the diversity of views and interests at stake. Given its commitment to social justice and transformative action, the research may nonetheless entail negative consequences for some individuals or groups criticized.

Research **agreements** spelling out what people can expect of each other and ways to mitigate foreseeable risks can take many forms, including written documents or customary expressions of mutual trust and respect. In some contexts, verbal agreement or a simple handshake is more appropriate and a better indication of mutual obligations than a signed consent form. Some collaborative research projects may lead to deep relationships where questions of ethics are interwoven with personal commitments extending over long periods of time. Agreements may also acknowledge collective rights, interests and obligations and view community welfare as a complement to individual well-being. Agreements sensitive to indigenous knowledge and value systems may require the extension of ethical obligations to respectful relations and partnership with the deceased, future generations and life forms other than human.

PAR is always a step into the unknown. Goals and activities may evolve and create new risks as the project unfolds. This feature is particularly salient in the case of PAR methods, which tend to be consciously dynamic and flexible, inductive and reflective. Given its emergent quality and responsiveness to social context and needs, PAR cannot limit the question of ethics to the design and proposal phase. The ongoing assessment of expectations that are met or not met and options to reorient or even suspend the research is key to success and must take place as needed.

Action, Research, Training (ART)

Purpose To assess the current and desired balance and integration of three components within a learning system: 1) actions, including deciding, planning and doing things to achieve concrete goals; 2) research or inquiry, consisting of fact gathering and analysis; and 3) training or teaching, involving capacity-building events and strategies.

Step 1 Define the focus for the analysis (institution, programme, project) and list major actions, research and/or training activities of the previous six months to a year.

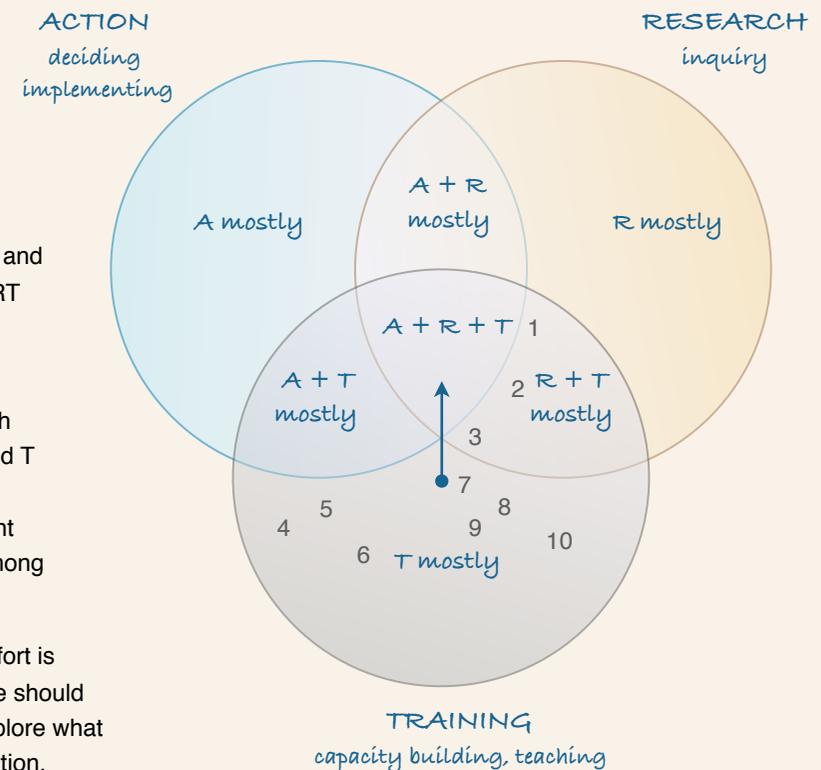
Step 2 Assess and compare the relative weight or importance given to action, research and training over the specified time. Draw a Venn Diagram representing the three ART components (Action, Research, Training) and place one mark in the intersecting circles that best reflects the existing ART profile.

Step 3 If the profile includes more than one component, assess the extent to which each component contributes to the other(s). For instance, if the profile combines R and T mostly, are the results of the research used in the teaching activities, and is the teaching useful to the research? Use a code or symbol between each component (one way, thin or thick arrows, for instance) to indicate the level of interaction among the components of the resulting ART profile.

Step 4 Review the ART profile and discuss how satisfactory it is. Decide where more effort is needed and why, and place a mark in the Venn Diagram to show what the profile should be. Draw an arrow from the current profile to the ideal profile (see example). Explore what can be done to achieve this profile, and define the first steps in the desired direction.

TIPS

- Use the ART Venn Diagram to survey and compare the views that different participants have of the same project, programme or institution, and what the profile should look like.
- Use Activity Dynamics (p. 131) to measure the level of interaction among the components in the ART profile and strengthen their overall integration.



In this example, University faculty activities 1 to 10 are mostly focussed on research and training. The university in Honduras proposes to link the university environment to local communities by adjusting the way teaching and research are conducted. This includes greater attention to agricultural extension, practicums and student research on community priorities. For the full story, see Chevalier and Buckles, 2019, pp. 73–76.

Purpose To decide on the planning approach needed by answering two questions: what are the chances of achieving project or programme goals, and how certain or confident people are in what they know?

Step 1 Define the focus for the analysis (programme, project) and review goals and plans.

Step 2 Prepare a graph (on the wall or the floor) by drawing a vertical line that crosses a horizontal line of equal length. Discuss and plot on the vertical line the chances of achieving the project or programme goals, using a scale of 0 to 10. A value of 10 would indicate that the current conditions are very favorable and the chances of achieving the goals very high. A value of 0 would show the opposite (the chances of success are very low).

Step 3 Discuss and plot on the horizontal line the level of confidence that people have in the information and knowledge they possess about the current conditions and factors affecting the project or programme. How certain are they that this information and knowledge is complete and reliable? A value of 10 would indicate that knowledge about the conditions and factors affecting the project or programme is detailed or informed by extensive experience or evidence. A value of 0 would show the opposite.

Step 4 Mark where the values from the two lines meet and label or place a drawing representing the project or programme at this intersection.

Step 5 Use the same graph to plot the chances of success and the level of certainty needed and that should be aimed for before going on with the project or programme. Mark the place where the two plotted values meet and draw an arrow from the mark showing the current situation to the mark showing the situation aimed for. Discuss ways to increase your knowledge about the conditions and factors affecting the project or programme or to modify the current conditions and improve chances for achieving goals.



Planning in example A (building a bridge) can rely on a history of success and well-developed knowledge of engineering requirements. Improvements are needed on the margins. Planning in example B (managing a conflict) needs to focus on collecting more information on the conditions and factors affecting the desired outcome, which will inevitably remain challenging.

The four quadrants created by the figure reflect different planning situations:

- A **dream** or **vision** (in the bottom left) points to an ideal that may seem unclear and unpractical.
- A **challenge** (in the bottom right) is an effort at change pursued with knowledge of the difficulties involved.
- A **wager** (in the top left) is an effort at change that looks promising but is risky, because of limited knowledge.
- A **blueprint** (in the top right) is an effort at change likely to succeed for reasons that are well known. (The real comfort zone in this quadrant lies above ratings of seven out of ten for both questions asked.)

Order and Chaos

ADAPT

- The same graph can be used to survey and compare different views of the same project or programme (donors and implementing organizations, for example). Another option is to identify several objectives or activities that are part of the project or programme, and then use the graph to plot the chances of success and the level of certainty for each objective or activity. Different planning approaches may be needed, depending on their location in the graph.
- Review the four quadrants and discuss how these call for different ways to develop a project or programme plan (for example, as a blueprint that calls for Result-Based Management, or as a challenge, a wager or a dream — a plan defined as a working hypothesis, to be tested against experience). Projects or programmes in the 'Chaos' quadrants may benefit from planning approaches that incorporate working hypotheses, further inquiry and continuous planning as ways to accommodate uncertainty and complexity.

'Many planning horizons are "iffy" from the start, which means that fixed frames of reference are always suspect. When in troubled waters, only fools let plans navigate the ship. Planning that maps out all aspects of a journey is irresponsible if it denies the unknowable. This means that the mainstream approach to project management and the inquiry process - plan before, execute after - offers a linear pathway not suited to complex endeavours, such as defusing a conflict, eradicating injustice or illness, or coping with climate change. When problems are messy and hard to define, the process of "doing" cannot be a simple derivation of efficient thinking and planning. In difficult circumstances, a good plan should not be a small picture outline of everything that needs to be done to achieve results. It should be more like a big picture riddled with working hypotheses and loose ends, subject to falsification, second thoughts and new ideas on where things are heading and where to go next.' (Chevalier and Buckles, 2019, p. 86.)



Activity Mapping

Purpose To plan action and inquiry at the right time and at the appropriate level of detail, and to adjust the two in light of unforeseen events and new knowledge.

Step 1 Define the project and discuss the overall goals and expected results. List all current and/or proposed project activities on cards using keywords (one activity per card). Use concrete action verbs to describe an activity or set of activities, instead of words for objectives or topics. For example, use 'raise funds' instead of 'resources', or 'lobby' instead of 'policy impact'. To clarify the distinction between activities and goals, use one side of each card to describe the activity and the other side to describe the corresponding goal.

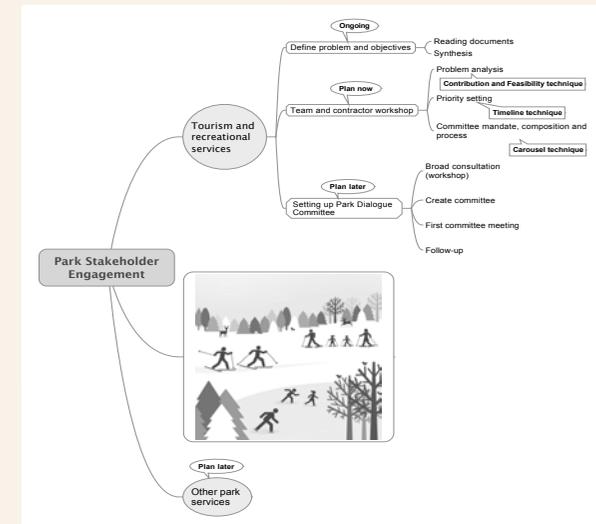
Step 2 Organize the activity cards into sets and subsets based on principles of similarity among activities (see Free List and Pile Sort, p. 35). Create a label or title for each set and for each subset.

Step 3 Create an activity map, beginning with a title card, drawing or object representing the project placed in the centre or in the upper left corner of the map. Then add the sets and subsets of activity cards to the map, creating branches and sub-branches as in a tree or a shrub.

Step 4 Decide which activity or set of activities is ready to plan in some detail and whether this can be done immediately. Focus detailed planning on immediate activities (four months and sooner, for instance).

Some activities may not require formal planning or can be planned at a later date (as in medical practice), where more information is available about the results of prior activities, the actions of stakeholders, or key conditions that need to be met. Discuss these information gaps and add new inquiry or fact-finding activities to the activity map, as needed.

Step 5 Write the details on the back of those activity cards that require immediate planning, including the start and finish dates, people involved (and their roles), material resources needed (equipment, budget), the information required, methods to be used and the expected results or outcomes. Create and use a visual code to highlight in the map some of these details or any other aspect such as levels of priority or the stage of completion for each activity. Provide the optimal level of planning detail, and decide whether further planning is needed.



Activity Mapping

Step 6 If needed, compile the planning details from sets and subsets of activity cards to produce a table. In Column 1, list project activities (some or all of all of them). Use other columns to record information for each activity on who does what, why, when and how. Alternatively, use mind-mapping software to arrange and track the data.

Step 7 When new or more detailed plans are made, modify the table and activity map.

ADAPT

- Arrange the activities in the order or sequence of implementation. Place those activities that are ongoing throughout the project or not scheduled in a separate area of the activity map.
- Include in the activity map references to major activities carried out before or following the planning period. This encourages recognition that planning occurs ‘in the middle’ of evolving situations involving other stakeholder contributions that have a prior history and no clear ending.
- When working on complex projects, you can divide participants into groups, ask each group to use Activity Mapping to map out their own set of activities, and then adjust group plans through discussions and negotiations between all groups.



COMPARATIVE FEATURES

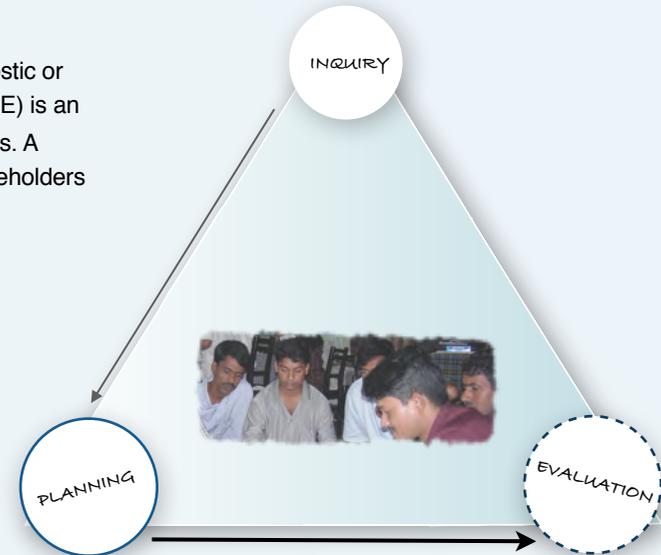
Activity Mapping acknowledges the fact that some activities require formal, immediate and detailed planning while others don't. As a visual tool, it helps people discuss project plans and, while doing so, see the forest for the trees. These features are generally absent in planning methods that use mostly text, tables and spreadsheets. Also, Activity Mapping has the advantage of accommodating a plurality of stakeholder interests and potential outcomes around a common set of actions. To achieve this, the method uses programme or project activities (goal-oriented actions) as the point of entry instead of the general and specific objectives (action-oriented goals) emphasized in conventional planning methods such as Result-Based Management. Action-oriented goals (e.g. promoting democratic governance in the management of forest resources in a certain region) tend to be abstract and overly ambitious compared to goal-oriented actions (e.g. creating a multi-stakeholder forum to co-manage a region's forest resources more fairly). Goal-oriented actions are more grounded and closer to the day-to-day language that people use to make plans and assess their progress. As in other methods, the goals built into the actions can still be defined and negotiated collaboratively.

Planning, Inquiry, Evaluation (PIE)

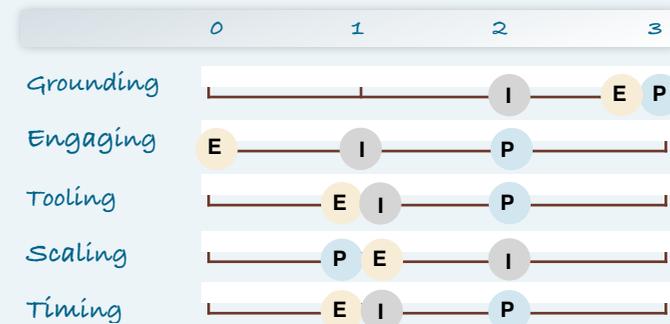
Purpose To create a learning system that balances and integrates planning, evaluation and inquiry.

Planning (P) creates logical schemes for doing things to achieve goals with appropriate inputs. A diagnostic or research inquiry (I) examines and explains facts and situations, using the appropriate tools. Evaluation (E) is an inquiry to assess results or outcomes against goals, using well-defined criteria and indicators of progress. A learning system combines all three processes. It also grounds them in meaningful action, engages stakeholders and applies a wide range of tools at the proper time and scaled to the right level of detail.

- Step 1** Define the focus for the analysis (institution, programme, project) and list major planning, evaluation and diagnostic or research inquiry activities.
- Step 2** Assess and compare the relative weight or importance given to planning, evaluation and inquiry over a specified time. Draw a triangle to represent PIE components in each corner, and add circles to indicate components that play a significant role. Adjust the size of the circle to reflect the relative weight or level of effort dedicated to each component.
- Step 3** If more than one component plays a significant role, assess the extent to which each component contributes to the other(s). Does the planning (P) build on the gathering and examination of relevant facts (I) and lessons learned about results or outcomes of the past (E)? Is the evaluation (E) well integrated into ongoing plans (P) and reflect an adequate understanding of relevant facts and experience (I)? Is the inquiry (I) well informed by existing plans and evaluation findings (P, E)? Draw arrows to indicate which component contributes to another. Adjust the arrows using solid or dotted lines to reflect the relative strength of the contribution.
- Step 4** To go deeper, rate each component on five criteria, starting with the extent to which each component engages stakeholders and addresses differences through dialogue. A rating of 3 would indicate that the component strongly engages stakeholders and is strongly informed by dialogue with them. A rating of 0 indicates that the component involves no dialogue. Also rate the extent to which each component is grounded in meaningful action, using a scale of 0 to 3 (where 3 represents the highest rating). Using the same scale, rate the extent to which each component uses a range of tools, scaled to the right level of detail and applied at the right time.



In this example, the organization pays attention to planning, informed to some degree by inquiries into related topics. Planning, which is well grounded and engaging, feeds strongly into evaluation. Other relationships are weak, and specific improvements are needed in approaches to both evaluation and inquiry.



Planning, Inquiry, Evaluation (PIE)

- Step 5** Review the PIE profile and discuss areas for possible improvement. Decide where more effort is needed and why. A flexible learning system that continuously balances and integrates PIE may be particularly important in complex situations.



'To achieve its purpose, every inquiry must develop a precise methodology, which means selecting and combining the right methods and techniques, following a particular approach to knowledge building and, ideally, testing a given hypothesis or theoretical perspective on the subject at hand . . . These distinctions are key to understanding the difference between **techniques, methods, theories and approaches** that can be discussed irrespective of context, on the one hand, and coherent methodologies that make sense only in context, on the other hand. No all-purpose methodology can address all evaluation needs. The goals and activities people want to monitor and evaluate are as varied as the projects and programmes they are involved in. So too are the baseline conditions against which the activities and their results are assessed. The implication here is that there can be no fixed M&E framework or methodology, only M&E questions. Any method or technique, whether it's a soil test or stories about struggles to prevent violence, can be used to effectively inquire into relationships between planned actions and observed results, provided it is the right tool to answer the right question, at the right time, at the right level of detail and with the right people. It follows that practically all of the inquiry methods described in this book may serve to address M&E questions, through pre- and post-assessments (baselines and measures of results). For instance, parties to a conflict may monitor social progress towards results by applying Social Analysis CLIP at one point in time, before new plans are made and implemented, and then later, to see how social conditions and relations have changed and why . . . The PAR approach to evaluative thinking is unassuming but not indifferent to methods. Each situation that calls for an assessment requires a finely-crafted methodology that can support people-based and evidence-based inquiry, with a view to meeting real action learning needs. To practise this art, it is imperative that each methodology be adjusted to fit the depth of evidence, planning and participation needed to achieve meaningful results, taking into account existing constraints in time and resources.' (Chevalier and Buckles, 2019, pp. 99–100)

Purpose To assess the current and desired balance and integration of multiple functions (researcher, teacher, consultant, actor) you carry out when doing participatory action research.

Step 1 Define the situation and determine whose functions are being assessed — those played by your organization, your project, your team or you individually.

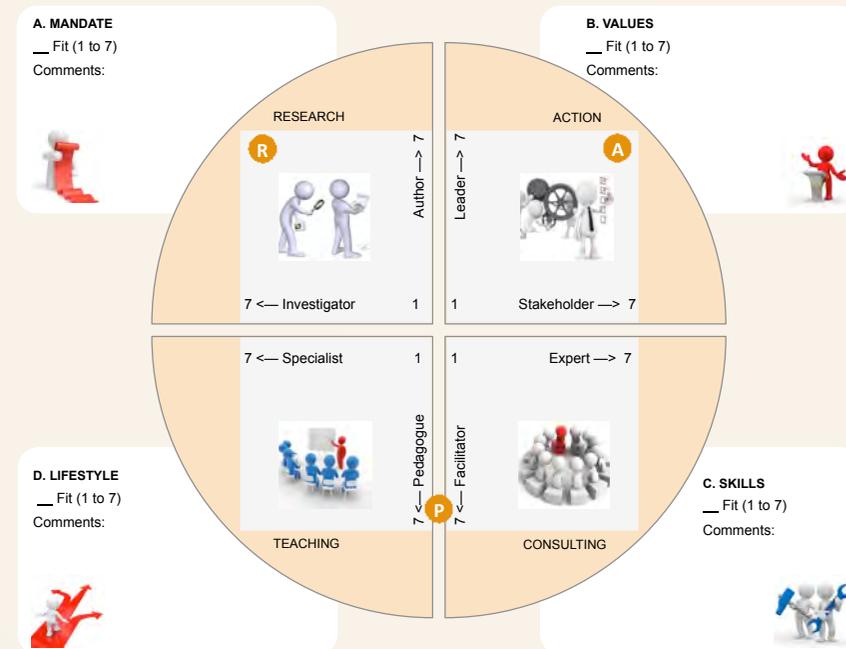
Step 2 Draw a diagram identical to the figure below.

Step 3 In the upper left square, use the lower horizontal line to mark the time and effort you spend investigating research issues, using a scale of 1 to 7 (from right to left). Use the right vertical line to mark the time and effort you spend authoring research documents, using the same scale. The space to the right and below the place where the two values meet represents the place you grant to the research function.

Step 4 In the lower left square, use the upper horizontal line to mark the time and effort you spend teaching in your area of specialty, and the downward vertical line, to being an effective pedagogue. The space to the right and above the place where the two values meet represents the place you grant to the function of teaching.

Step 5 In the lower right square, use the upper horizontal line (from left to right) to mark the time and effort you spend intervening as a content expert, and the downward vertical line, to intervening as a process facilitator. The space to the left and above the place where the two values meet represents the place you grant to the consulting role.

Step 6 In the upper right square, use the vertical line to mark the time and effort you spend intervening as an actor in a leading role, and the upper horizontal line, as a stakeholder not in a leading position. The space to the left and below the place where the two values meet represents the place you grant to the function of action.

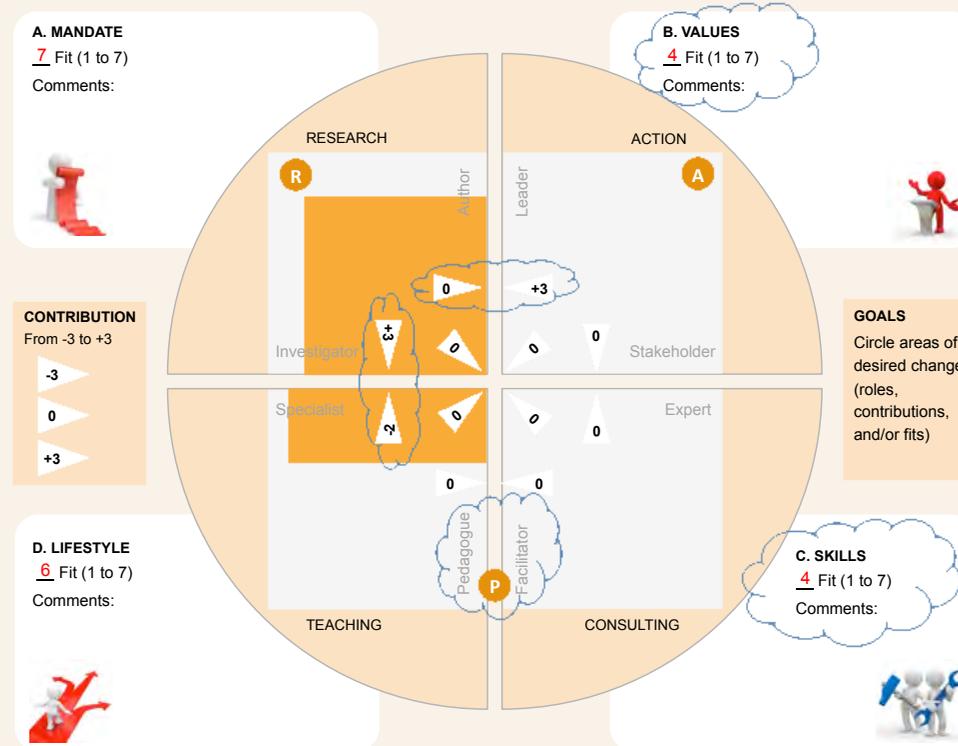


Roles, Skills and Values

Step 7 Using a scale of -3 to +3, determine the extent to which each function you carry out contributes to other functions (your own or those of others) or conflicts with them. Insert each contributing or conflicting score in a small triangle pointing in the direction of the other function.

Step 8 Using a scale of 1 to 7, assess the extent to which your overall profile fits with your mandate (upper left), your values (upper right), your personal skills (lower right), and your current lifestyle choice (lower left). Add comments to explain scores that fall below 6.

Step 9 Discuss the overall assessment. Circle areas of desired change, whether they be functions, their mutual contributions, or the extent to which they fit with your mandate, your values, your skills and your lifestyle choice. Identify specific objectives and strategies to meet your goals.



In this example, project team members spend much of their time fulfilling their academic mandate, by investigating and writing scholarly articles about indigenous livelihoods, land use and knowledge systems in Mexico, using participatory methods. Principal investigators 'take time away' from research to teach courses in social anthropology, illustrating key points in the literature with fieldwork material. Mexican villagers assist in collecting ethnographic data on an ongoing basis, but they have no expectations of immediate or future returns to their communities. Given their participatory ethics and commitment to indigenous peoples' issues, project team members would like to make better use of the knowledge and the skills they possess, organizational and pedagogical, to support local development activities in meaningful ways. To achieve this, they plan to reorient their research and facilitate participatory action-inquiry processes that will promote the sharing of knowledge and the development of sustainable livelihoods in the near future.

Fact-finding and measuring



Validation

Seeking consensus

Purpose To validate the results of an inquiry and decide whether more evidence and/or consensus is needed before action can be taken based on the results.

Step 1 Review the overall results of an inquiry, including proposed actions.

Step 2 Prepare a **graph** (on the floor or a flip chart) by drawing a vertical line that crosses a horizontal line of equal length. Write 0 and 10 at the opposite ends of each line. Discuss and **plot** on the horizontal line the extent to which the inquiry is based on evidence (sound and sufficient information and analysis). A value of 10 would indicate that the inquiry is based on **strong evidence**. A value of 0 would show the opposite (the evidence is **sketchy** and **unreliable**).

Step 3 Discuss and plot on the vertical line the extent to which the inquiry is based on stakeholder consensus (participation and agreement on the conclusions). A value of 10 would indicate a **strong consensus** achieved through active stakeholder involvement in the inquiry and complete agreement with the conclusions. A value of 0 would show the opposite (no stakeholder involvement and/or strong disagreement with the conclusions).

Step 4 **Mark** where the values from the two lines meet and label or place a drawing representing the results of the inquiry at this intersection.

Step 5 Use the same graph to plot the level of **evidence and consensus needed** to reach a firm decision and begin to act on the conclusions. Mark the place where the two desired values meet, and draw an arrow from the first mark to the second.

Step 6 Use the results of this exercise to identify what people are ready to decide and act on now. Then, identify what can be done to **complete the inquiry** to their satisfaction through (a) further information gathering and analysis and/or (b) further stakeholder involvement and stronger agreement.

TIPS Before deciding how much evidence and consensus is needed to reach a firm decision, discuss the **factors** that should influence the decision, such as how well the stakeholders understand the issue being analyzed, how much time and information is available, the urgency to act, the impact the inquiry conclusions have on stakeholder activities, and how much stakeholder approval and involvement is required. Keep in mind that not every inquiry requires maximum participation and maximum evidence, but rather should be scaled with strategic goals, time available and urgency in mind. Review these factors before deciding how much evidence and consensus is needed to reach a firm decision. As with most things that matter, good enough is perfect.



In this example, the results of a study on crop diversity incorporates a wealth of information (level 6 on evidence) but has not yet considered the perspective of women farmers (level 5 on consensus). More engagement is needed as is additional information on women's seed management practices before the results can be "good enough" to guide an intervention.

Level of Participation

Purpose To determine the level of participation in an ongoing or proposed project and assess the extent to which existing conditions limit or enable it.

Step 1 Discuss, revise and use the guidelines below to describe the **existing level of participation** in the project. Draw a **diagonal line** on a flip chart and mark the observed level of participation, using a scale of 0 to 7. Write 'Level of participation' above the mark.

Step 2 Discuss the **conditions** needed to achieve participation in project activities (see the list of conditions on p. 34). Mark the level at which these conditions are actually met, using a scale of 0 to 7. Write 'Current conditions' below the mark.

Step 3 Discuss **gaps** between levels of participation and existing conditions. Explore **ways to address those gaps**.

LEVELS OF PARTICIPATION

- 1 **Inform and educate:** gather and share the information needed to identify problems, make plans, promote awareness on a topic or change stakeholder attitudes and behaviour.
- 2 **Consult:** present information, plans and results and invite stakeholders to communicate their views on an existing situation and what should be planned. Assess the impact of project or programme activities, after implementation.
- 3 **Support participation:** offer resources or incentives to engage stakeholders in the implementation of project or programme plans.
- 4 **Facilitate independent action:** help stakeholders to independently implement activities consistent with project or programme goals.
- 5 **Seek group consent:** agree to proceed with a plan of action only if there is informed consent from all concerned parties.
- 6 **Delegate authority:** transfer responsibilities to plan and carry out some activities to one or more parties, within a broader joint work plan or governance structure.
- 7 **Decide and act jointly:** engage with all stakeholders in assessing the situation, deciding what actions to take, sharing or dividing responsibility for implementing tasks, and accounting for the results achieved and the resources used.



In this example, the project convenors acknowledge that participation from various groups (women and the elderly) has been weak so far (level 2), despite the availability of resources and locally-adapted means of communication (current conditions at a level 4). The gap needs to be addressed by considering other barriers to participation.

Level of Participation

WHAT ARE THE CONDITIONS TO BE TAKEN INTO ACCOUNT?

- Local *culture* and customs
- The *time available* for the activity and the *urgency* of the issues to be addressed
- The *resources* that are available
- The *inequalities* that exist among participants (the 'uneven playing field')
- The *workload* implications for all parties concerned
- The *expectations* likely to be created and whether those expectations can be satisfied
- The desired level of *formality* (or informality)
- The need for *trust*
- The current level of *conflict* or *sensitivity* connected to the issues at hand
- The need for better communication or *consensus building*
- The importance of *discussing differences*
- The need for a *formal outcome* or binding decisions
- The need for *new ideas* and creative output
- The number of *options* (few, many) to be explored when addressing key issues
- The level of *clarity* and *complexity* connected to the issues at hand
- The level of *leadership* and *commitment* that can be applied to any plan
- The extent to which the expected *gains* will be greater than the expected losses
- The need for adequate levels of *stakeholder representation* and accountability
- The amount of reliable *information* (neither too little nor too much) that participants need to access or produce



'In the digital age full democracy depends on flexible software - skilful means to facilitate authentic dialogue and well-informed reasoning at work, at school, in business, in community life and in the public domain. Multistakeholder interactivity through multiple channels is a major contribution in this regard. It enables all parties concerned to contribute to the welfare of society by actively fleshing out their part of the 'social contract' grounded in their immediate surroundings. They can do so in real time, without waiting for the state to dictate how parties should interact and run their affairs.' (Chevalier and Buckles, 2019, p. 277)

Free List and Pile Sort

Purpose To create and compare lists and categories of elements relevant to a particular topic.

Step 1 Define a **topic** and ask each participant or small group to identify two or more key examples of the topic. Give one to three cards to each participant or small group (depending on the number of participants and available time) and ask them to write one example or meaningful **element on each card**. They should use key words, and add details on the reverse side of the card. The elements should be **concrete**, distinct in some way and relevant to the topic. If they are vague, ladder down (p. 17) to make them more specific and meaningful.

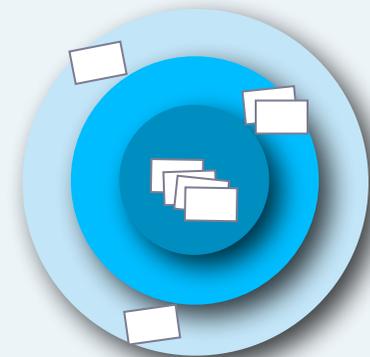
Step 2 Ask a participant to present one element and then group other cards that mean the same thing. Participants can place cards under each other when they are the same, and below each other when they represent variations or shades of meaning. Continue sharing examples, one card at a time, until all cards are **sorted into piles**. Give a label or create a drawing to identify each pile or column of cards.

Step 3 Identify what may be important but **missing** from the list of elements organized into piles. If need be, **reduce** the number of piles and columns by combining them into broader categories, or by recognizing some as less urgent or less important and deciding not to include them in subsequent steps of the exercise.

Review in detail the *Scoring Tips* (pp. 41–42). These are critical to a proper application of *Free List and Pile Sort*.

ADAPT

- Use **drawing, pictures, objects, description or storytelling** to explore the topic (for example, by describing cases of success and failure), and then use this information to identify the elements relevant to a particular topic.
- Use **brainstorming** to make a list on a flip chart, without pile sorting. Start by defining a topic and a time frame not exceeding 20 minutes. Invite people to offer elements for the list using short phrases without lengthy explanations. Ask people to agree to suspend judgement or criticism of their own ideas and the ideas of others during the brainstorming session. Mirror what people say, write down all ideas and encourage people to take turns. End the session by reviewing the list of elements and deciding which ones to carry forward for further discussion.
- Participants may put the piles or elements of each pile in a **Timeline sequence** (p. 55) that makes sense to them, especially when planning or doing a step-by-step presentation of the elements and piles.
- **Rank** each pile based on the number of cards (piles with elements that people mention most often may be the most important). Visualize the ranking by placing piles in three **concentric circles**. In the inner circle, place the core piles that have the most cards; in the middle circle, the average-size piles; in the outer circle, the piles that have the fewest cards. Discuss why some piles have more cards than others.



Free List and Pile Sort

COMPARE

Determine how **familiar** a participant or sub-group is with a topic by counting the number of core elements appearing in their list and the number of core elements appearing in a list created by all participants (see circles on p. 35). Also count the number of peripheral elements in each list.

Evaluate the level of **agreement** between two individual or group lists that *contain the same elements* by counting the number of times the elements are placed in the same circles (see p. 35) and divide this number by the total number of elements.

Evaluate the level of **compatibility** between two individual or group lists by counting the number of times the same elements are mentioned in both lists and divide this number by the total number of elements.

Compare two different lists and **negotiate a common list**. Start by creating a table (see example) where the rows represent one party's elements or piles of elements, and the columns represent the other party's elements or piles. Identify the row and the column elements or piles that have the **same meaning**. Rearrange the rows and the columns so that the elements or piles that have the same meaning appear at the beginning of each party's list and in the same order. Mark an 'x' in the cells with the same meaning and insert the cards representing these elements or piles in the corresponding cell.

Calculate the level of **agreement** between the two lists by counting the number of elements or piles that are placed in the marked cells, and divide the result by the total number of elements or piles in the table. Discuss the elements or piles that appear only in one list until parties reach a **common understanding** of most elements or piles. Redefine the elements, create new ones or change the way elements are grouped into piles, as needed. Verify the revised list by asking each party to organize the elements into piles again, and compare the results using the same table.

Comparing and negotiating Free Lists and Pile Sorts

Party 1	Party 2					
	Equity	Conservation	Peace	Development	Identity	Spirituality
Fairness	x					
Sustainability		x				
Peace			x			
Progress				x		
Education						

TREE MAPPING

Create a **map of elements and categories** using a tree-trunk and branch metaphor. **Sort all elements** into two piles of any size, according to what participants think is the **most important difference** between all the elements provided. Give a label to each branch leading out from the tree trunk. Sort each pile again into two smaller piles reflecting the most important difference between the remaining elements in the pile, and label each branch. **Repeat** the process until each element is placed at the end of a branch.

Compare individual or group tree maps involving the **same elements** by exchanging trees showing the branch labels only. Each individual or group can then locate the elements on the map according to the differences already labelled on the tree. Calculate the **level of agreement** between the resulting tree maps by counting the number of similar element cards placed at the same branch level, and then divide the number by the total number of element cards.

Compare different interpretations of tree maps by exchanging the branch labels written on cards and trees showing the elements only. Participants can then assign the labels to the differences they see between piles of elements placed on the branches. Calculate levels of agreement in the interpretation of tree maps by counting the number of labels assigned to the same branches and divide the number by the total number of labels.



Purpose To develop order within a hierarchy, from first to last, using one or several criteria.

RANKING USING ONE CRITERION

- Step 1** Define the **topic** and create a list of relevant **elements** to be ranked from first to last (see *Free List and Pile Sort*, p. 35, and *Information GAS*, p. 49). The elements should be **concrete**, distinct and clearly defined. If they are **vague**, ladder down (p. 17) to make them more specific and meaningful. Write key words or draw each element on its own card, with details on the reverse side.
- Step 2** Identify a **criterion** on which to rank the elements. Define the criterion using **positive terms** (see examples in the table below).
- Step 3** Individually or as a group, **rank** each element in the list from first to last based on the criterion. Keep track of the **reason(s)** given for each score. If ranking is done as a group, discuss the rank until participants agree based on consensus or a majority vote. Alternatively, calculate the **average ranking** for each element by adding all scores (or each score multiplied by the number of times it is given to an element) and divide the result by the number of scores received by that element. If using one criterion only, go to Step 8.

RANKING USING TWO OR MORE CRITERIA

- Step 4** If necessary, define **other criteria** relevant to the topic. Write the criteria on cards using positive terms, or create a drawing to represent each criterion.
- Step 5** Create a large **table** (on the floor using masking tape, for instance) with the cards for the list of elements in the top row and the cards for ranking criteria in the first column. Add a **final row** to record the average ranking for each column element. Ensure that the elements and the ranking criteria are clear to everyone.
- Step 6** Under each criterion, **rank** the elements from first to last. If the ranking is done as a group, discuss each rank until participants agree based on consensus or a majority vote. Alternatively, use the method of average calculations, pile sorting or paired comparisons (p. 38).

Record the scores on separate cards and place them in the corresponding cells. Keep track of the **reason(s)** given for each score on the back of the corresponding card.

CRITERIA	OPTIONS			
	Clinic	Sewage	Road	Electricity
Cost effectiveness	4	2	1	3
Sustainability	3	2	4	1
Buy-in	4	2	3	1
Gender equity	3	2	4	1
Average ranking	3.5	2	3	1.5

In this example, investments in electricity rank the highest on all but one criterion (lower cost effectiveness due to distance from major hydro lines).

Ranking

- Step 7** Record the **average ranking** for each column element in the final row, by adding all column scores (or each score multiplied by the number of times it is given to an element) and dividing the result by the number of scores received by that element.
- Step 8** **Review** the results and reasoning that went into the ranking process. Discuss the implications of the ranking for people's understanding of the topic and decisions to be made. Participants can **compare** the tables and final ranking by different individuals or groups using the same ranking criteria, or compare final rankings based on different criteria.

Be sure to review in detail the *Scoring Tips* (pp. 41–42). They are critical to a proper application of *Ranking*.

ADAPT

Paired comparisons is another ranking procedure. Start by making a ranking choice (first and second) between two elements chosen at random. Then, choose one other element at a time and find the most similar among those already ranked. Where there are many elements to compare, use a table with all the elements in both the top row and repeated in the first column (see example). Then, make **one-to-one ranking choices** (first and second) and enter the results in the cells along the top diagonal of the chart (see example). The bottom diagonal consist of cells that represent false pairs (A by A) or pairs that appear for a second time (B by A is the same as A by B). Use the last two columns to record the number of times each row element is preferred *in all cells* and the **final rank** for each element based on these numbers. If there is a tie between two elements, decide which of the two should be ranked above the other.

COMBINE

To calculate levels of disagreement and misunderstanding between the ranking tables of two individuals or groups, see *Disagreements and Misunderstandings*, p. 101.

PAIRED COMPARISON TABLE

Options	Fisheries	Grain Bank	Road	Children's nursery	Total	Rank
Fisheries	x	Grain bank	Road	Fisheries	1	3
Grain bank	x	x	Road	Grain bank	2	2
Road	x	x	x	Road	3	1
Children's nursery	x	x	x	x	0	4

In this example, the road construction project is preferred over all other options, and therefore ranks first.



Rating

Purpose To grade elements using one or several criteria. Rating differs from ranking in that it creates scores that may be the same for several elements in a list.

RATING USING ONE CRITERION

- Step 1** Define the **topic** and create a list of **relevant elements** to be rated (see *Free List and Pile Sort*, p. 35 and *Information GAS*, p. 49). The elements should be **concrete**, distinct and clearly defined. If they are vague, ladder down (p. 17) to make them more specific and meaningful. Write key words or draw each element on its own card, with details on the reverse side.
- Step 2** Identify a **criterion** on which to rate the **elements** (see sample criteria in the table below). Define the criterion using **positive terms**.
- Step 3** Establish a **rating scale** and assign a value of 1 to one end of the scale and a value of between 5 and 10 to the other end of the scale. To be more precise, identify **indicators** or 'progress markers' (p. 41) that define the meaning of each number on the scale. For instance, a score of 2 out of 10 on the criterion 'community support' could mean that about 20% of the community is expected to support a particular action.
- Step 4** Individually or as a group, **rate** each element in the list on the criterion. In a rating exercise, several elements may receive the same score or value. Keep track of the **reason(s)** given for each score on a flip chart. If rating is done as a group, discuss each rating until participants agree based on consensus or a majority vote. Alternatively, calculate the **sum of ratings** for each element. If using one rating criterion only, go to Step 9.



RATING USING TWO OR MORE CRITERIA

- Step 5** If necessary, define **other criteria** relevant to the topic. Write the criteria on cards using positive terms, or create a drawing to represent each criterion.

Rating

Step 6 Create a large **table** (on the floor using masking tape, for instance) with the cards for the list of elements in the top row and the cards for rating criteria in Column 1. Add a bottom row to record the total score for each column element. Ensure that the elements, the rating criteria and the rating scale are clear to everyone.

To weight scores according to the importance the group assigns to each criterion, add a column for the **maximum score** allowed for each criterion (see *Weighting*, p. 47).

Criteria	Arts and crafts	Fishing	Hunting	Historical route
High impact				
Cost efficient				
Skills available				
Benefits the community				
Environmentally friendly				
Total rating				

Step 7 **Rate** each element on the criteria. When rating, the same score can be assigned to two or several elements. Discuss each score until participants agree based on consensus or a majority vote. Alternatively, calculate the total score for each element. Record the scores on separate cards and place them in the corresponding cells. Keep track of the **reason(s)** given for each score on the back of the corresponding card.

Step 8 Calculate and record the **total rating** for each column element in the final row.

Step 9 Review the results and reasoning that went into the rating process and **discuss** the priorities based on the bottom row totals. Also discuss ways to modify the elements to make them more feasible, achieve greater impact, etc. Participants can compare the tables and final ratings by different individuals or groups using the same rating criteria or compare final ratings based on different criteria.

Be sure to review in detail the *Scoring Tips* (pp. 41–42). These are critical to a proper application of *Rating*.

COMBINE

- Use *The Socratic Wheel* (p. 43), using one for each element, to create a visual representation of the rating results.
- To calculate levels of disagreement and misunderstanding between the rating tables of two individuals or groups, see *Disagreements and Misunderstandings* (p. 101).

Scoring Tips

IDENTIFYING ELEMENTS AND CRITERIA

- Elements and criteria to evaluate them should be distinct and **clearly defined**. If they are **vague**, ladder down (p. 17) to make them more specific and meaningful.
- Decide whether measurements should be based on **observation** (e.g. of behaviour) or **reported views** and perceptions (e.g. levels of agreement with a statement).
- Determine whether you should use **progress markers** (what people 'expect to see', 'would like to see' and 'would love to see'), as in *Outcome Mapping*, or **SMART indicators** (specific, measurable, applicable, realistic and timely).
- Determine whether participants should generate all the elements and the criteria or whether the facilitator should supply or negotiate some based on previous decisions and the objectives pursued. Alternatively, identify them through a **combination** of methods (supplying general categories and generating specific criteria, for instance).
- A simple procedure to identify several criteria is the **catchall question**: 'Can you think of some relevant criteria to assess the elements?' Another option is the **full context** procedure: review all elements and find two that have a positive characteristic in common, and then the element that is the most different from these, and why. Use the discussion to identify one or more criteria.
- Use **description and storytelling** to explore the topic (for example, by describing examples of success and failure, observed or imagined), and then use this information to identify the elements or criteria relevant to a particular topic.



RATING SCALES

- To be more precise, identify **indicators** or progress markers that define the meaning of numbers on each scale. Keep in mind that while criteria are concepts that may be divided into sub-criteria if too general (e.g. 'gender equity in governance' is a subcategory of the 'gender equity' criterion), indicators are concrete **observables** (e.g. the number and proportion of women on the board of governors).
- Decide if the **rating scale** should be the same for all criteria (e.g. 0 to 5) or vary according to the importance of each criterion (as in *Weighting*, p. 47).
- Make sure that the highest value for each element has a **positive meaning**. This usually makes more sense intuitively and is key to interpreting the sum of ratings in rating tables.
- **Middle scores** in a rating scale may have ambiguous meanings. Results may be easier to interpret if middle scores are avoided, using a rating scale with an even number of points (such as 1 to 4 or 1 to 6).
- If numbers are a barrier, use simple **phrases** first and then convert the phrases into measurable objects (from 1 to 5 stones, for example). Another option is to score each element with the help of a grey scale: white (value 1), light grey (value 2), medium grey (value 3), dark grey (value 4) and black (value 5). A grey scale makes it easier to see patterns in a table.

Scoring Tips

RATING PROCESS

- Determine if the rating should be done **anonymously** or **openly, individually** or by **subgroups** or the **group as a whole**.
- **Pile sorting** is a simple ranking or rating procedure. Start by dividing all the elements into **3 piles**: those with high scores, those with middle scores and those with low scores. Repeat the process with each pile until a distinct ranking or rating is identified for each element.
- Another option is to place cards showing the **two polar value cards** (0 and 5, for instance) at a distance from each other. Then ask participants to rank or rate and locate each element somewhere along the **continuum**.
- For a touch of **humour**, invite participants to sit in a circle, with a number of chairs one fewer than the number of participants. One participant stands in the centre and completes the following sentence: 'Who agrees with me that . . .'. All those who agree must then leave their chairs and run to a vacant chair. The game continues with the person who fails to sit on a chair. An observer estimates the number of participants who agree with each statement made.
- **Multiple flip charts** are an alternative to creating a table. On separate flip charts, post all the information for each element: the description, the ranking or rating criteria, the actual scores and the reasons for each score.
- When differences arise regarding scores, facilitate discussion of the reasons for particular ratings or rankings and go with the **majority view** rather than an average.
- Use real-time **polling technology** with cell phones or clickers to generate and save scoring results.

MAKING AND SAVING TIME WHEN RATING

- To **save time**, divide all participants into **subgroups** that are representative of the larger group. Then, ask each group to choose one criterion (or two) to rate all the elements or one element (or two) to be rated against all criteria. Use this technique only if the participants don't need to be involved in making all the ratings.
- Place **numbers on the floor** for each point on the scale. Ask participants to stand next to the number they think is correct for a particular criterion. Agreement and differences on ratings will be easy to see. The group can then focus on major differences only, discuss them and adjust positions until a single rating is obtained.
- For any action inquiry to succeed, making time is as important as saving it. This includes setting aside enough time for participants to **go over the results** of their exercise and discuss the implications for their understanding of the topic and decisions.

WORKING WITH LARGE GROUPS

- When working with larger groups using rating or ranking, write each element and its description on its own flip chart (e.g. each contributing factor in *Causal Dynamics* or each rating criterion in *Domain Analysis*, both in Module 6). Place each flip chart in a separate part of the assembly room. Create a **jury** responsible for each flip chart element. Select jury members according to purpose (e.g. a mix of people that are representative of the larger group). Make sure that each jury and all participants understand the scoring process and instructions. Organize formal rounds of small group discussions or set a time frame during which all participants can visit any jury to express how they assess the corresponding element, their reasons and views already expressed by others. Once the discussions and visits are completed, each jury deliberates on the final score(s) and the arguments that justify them. When designing the process, decide what evidence or prior inputs are needed to inform the deliberations, whether external experts or observers should be involved and how each jury can contribute to the other juries' deliberations, if time permits. When working with a wider public, consider using a web-based platform to support these deliberations.

The Socratic Wheel

Purpose To assess and compare activities, options or learning goals using multiple criteria. Ratings at different times can be used to monitor progress against a baseline, a desired rating and a final rating.

Step 1 Define the **topic** (activities, options, learning goals) and identify relevant assessment criteria. **Elicit** the criteria from the group (by putting the question directly to the group or with the help of *Free List and Pile Sort*, storytelling, photography, etc.), **supply** predefined criteria based on established or agreed upon goals or characteristics or **negotiate** some or all the criteria, depending on the purpose of the inquiry and time available. The criteria should be **concrete**, distinct and clearly defined.

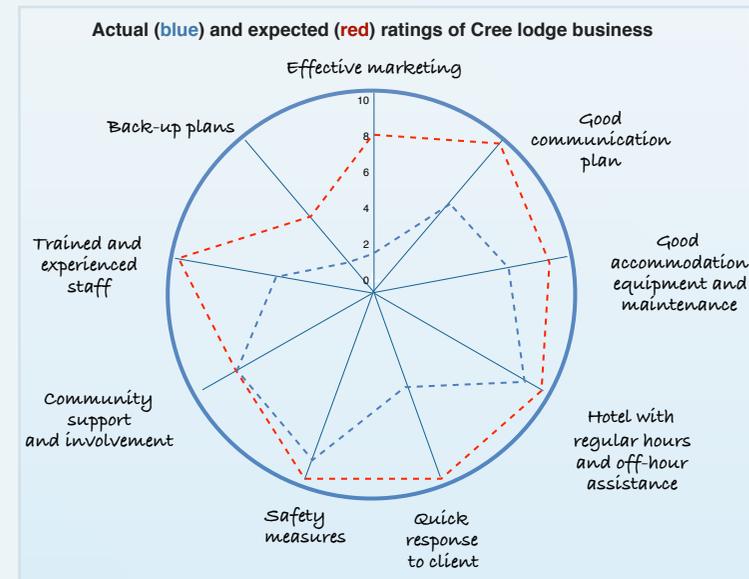
Example criteria if rating alternative options: cost and time efficiency, net impact, feasibility, gender equity, environmental sustainability, fit with local culture, local skills available, expected buy-in, etc.

Step 2 Decide on a **rating scale** (0 to 3, 0 to 5, or 0 to 10), and give the highest value for each criterion a **positive meaning**. For more precision, use **indicators** or progress markers (p. 41) to define the meaning of each number on the scale. For instance, a score of 4 out of 5 on the criterion 'community support' could mean there is strong majority support for the proposed option.

Step 3 **Create a wheel** on paper, a flip chart or on the floor and assign a criterion to each spoke in the wheel. Mark the scale on each spoke, from the centre (0) to the outer edge of the wheel (the highest value). **Label** each spoke with a title card, or use a drawing, an object or a person to represent the criterion. A relevant metaphor (see the dream catcher example) can be identified to represent the overall purpose of the exercise.

Step 4 **Rate** the activities, options or learning goals on each criterion, using the scale from Step 2. Discuss ratings and the reasoning behind the ratings until all participants agree. If agreement is not possible, use the majority rating. Record each rating on the corresponding spoke and draw **straight lines between the marks** to create a shape that defines the overall profile for each activity or option.

Review in detail the *Scoring Tips* (pp. 41–42). They are critical to a proper application of *The Socratic Wheel*.



In this example, people rated the actual state (blue) of things needed to run a successful Cree tourist lodge and the expected state (red) for the coming year. This helped guide planning for new investments in business development.

The Socratic Wheel

Step 5 Use *The Socratic Wheel* to **plan** ways to achieve goals. Start by defining a time frame and rating both **current and desired levels** on each spoke. Then identify and plan the actions needed to move from one level to the other. Incorporate these actions into work plans (see *Activity Mapping*, pp. 25-26 and *Process Design*, pp. 7–12).

Monitor or evaluate **progress over time** using three ratings for each criterion: (a) the **initial rating or baseline**, (b) the **rating aimed** for within a defined time frame, and (c) the **final rating** obtained once the time is reached. The ratings for (a) and (b) can be recorded at the beginning of a process, followed in due time by the ratings for (c). Use different colours to indicate the profile shape at each stage in the process.

SOCRATIC LEARNING

Creating an informed baseline against which changes can be measured is good science. But there is a problem: when people assess their own skills or goal achievements, perceptions can

change with the benefit of hindsight. *The Socratic Wheel* captures this effect by adding a fourth set of ratings: the 'initial ratings revised'. The starting point on each spoke is assessed again, after a final rating is made at the end of a process. As Socrates teaches, people may realize that they know more or achieved more than they thought they did, or the opposite – they thought they knew or accomplished more than they actual did. To evaluate the **real progress** over time, compare the 'final rating' with the 'initial rating revised' (see column D – C in table).

Rating criteria	Initial rating	Expected rating	Expected progress	Initial rating revised	Final rating	Real progress
	A	B	B – A	C	D	D – C
Effective marketing	2	8	6	1	6	5
Trained, experienced staff	5	10	5	6	8	2

COMPARE

Participants can **compare** the wheels made by different individuals or groups. To do so, cluster wheels with similar overall profiles and assess their distance from other clusters by comparing the shapes on each wheel (created after rating on the various criteria). To do this clustering dynamically, ask participants to move around with their wheel figures looking for other wheels that resemble their own, forming twins, triplets and then **families of wheels** with a similar profile. Each family (including small families and orphan participants) can then prepare and present to the whole group a brief description of what their wheels have in common. When a family of wheels presents their similarities, other groups (forming a larger circle) may move away if they feel their family wheel profile is very different in several ways, or come closer if the similarities are more important than the differences. At the end of the exercise, participants can plan strategies that draw on different but complementary profiles (to create well-balanced work teams that draw on different styles, for instance).



In this example, farmers compare two different crop options using the same evaluation criteria. The relative strengths and weaknesses of each option led to discussion of a third crop option that filled gaps in the first two.

The Socratic Wheel

USEFUL QUESTIONS TO CONSIDER WHEN DESIGNING THE SOCRATIC WHEEL

Purpose

- Should the tool serve to assess goals (e.g. leadership skills), set priorities, monitor progress, or evaluate final results?
- Should the assessment involve several wheels to represent and compare options, activities or learning goals? Or should it focus on a single project wheel generated by the entire group?
- If a single wheel, should the spokes stand for criteria or for the activities to be assessed (against one or two criteria)?
- Should the wheel(s) express individual, subgroup or collective assessments of the topic at hand?

Criteria

- Should some or all of the criteria be generated, negotiated or supplied?
- Should participants start with storytelling or *Free List and Pile Sort* to generate meaningful criteria?
- How many criteria should appear in the wheel? Are sub-wheels needed to represent more precise sub-criteria for each spoke?
- Would the exercise gain from using objects, drawings, pictures or people to represent each spoke on the wheel?

Ratings

- Should the ratings involve indicators or progress markers (p. 41)?
- What rating scale (short or long) should be used?
- Should the scale vary according to the importance of each criterion (see *Weighting*, p. 47)?
- Should the ratings be negotiated, averaged or determined by the majority?
- Should ratings be done in subgroups (mixed or homogeneous), divided by spoke or wheel, to save time?
- When should the ratings be done: before, during and after goals are implemented? Should initial ratings be revised at a later point in time?
- Should prior fact-finding inform the exercise?

Reporting

- Should the wheel be drawn with flip charts, masking tape on the floor or software (such as Excel or RepGrid)?
- How should the exercise be documented?



The Socratic Wheel

Combinations

The Socratic Wheel is a multi-purpose rating tool than can be combined with a wide range of techniques to answer multiple questions, depending on the purpose of the inquiry. Here are some examples of possible combinations:



- When using *The Socratic Wheel* to determine priority actions, use *The Carrousel* (p. 98) to compare and discuss the views of different groups.
- Combine *The Socratic Wheel* with *Force Field* (p. 65) to monitor and evaluate ongoing activities and to assess factors that help or limit the achievement of each goal represented in the wheel.
- Use *The Socratic Wheel* to assess differences between stakeholders (individuals, groups) and then *Negotiation Fair* (p. 103) to discuss what stakeholders can expect of each other.
- Use *Social Domain* (p. 143) and the RepGrid software to analyze the ratings of individual or group profiles obtained from *The Socratic Wheel*.

'Weighting [below] is an exercise in rating is essentially a bar chart in a spiral form. As with other graphs in this book, the appeal does not rest in its technical features but rather in the intent that sets the technique in motion: namely, group analysis and dialogue in a visual mode. The same quality applies to *The Socratic Wheel*, a rating graph where all spokes are of equal length. It is the equivalent of a radar graph in spreadsheet software. The *Socratic Wheel* follows the same logic as a rating table, but with one important difference: participants can easily visualize and discuss the differences in scores without having to record, scan and compare each number in a table. Those inclined to see the forest for the trees will appreciate the difference. Likewise, participants who fear numbers and tables, and there are many, will find it easier to engage in the discussion.' (Chevalier and Buckles, 2019, p. 125)

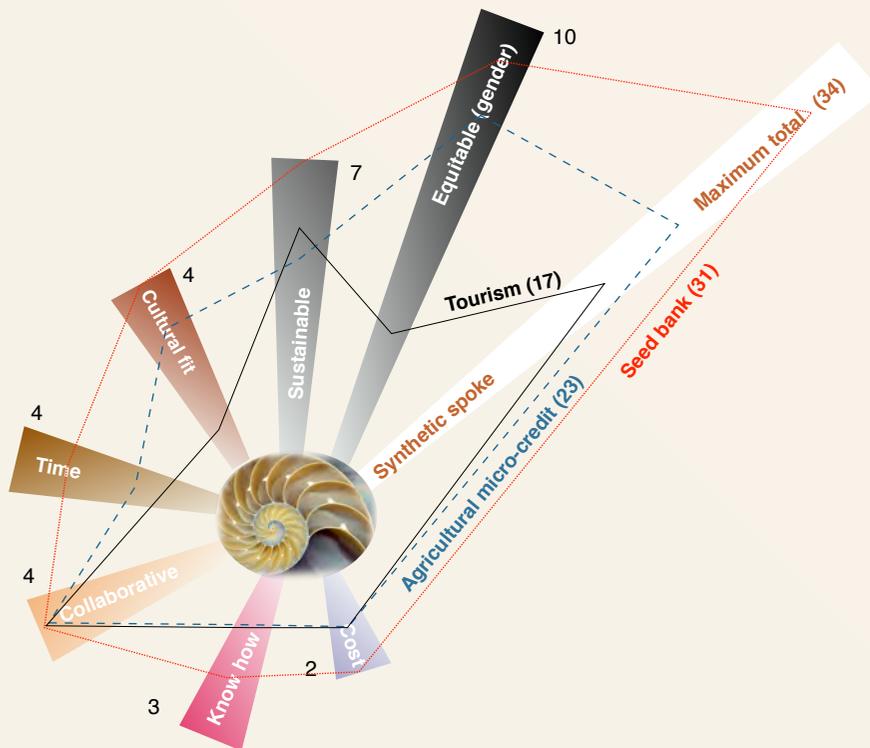
Weighting

Purpose To rate and compare elements in a list using multiple criteria and scores weighted according to the importance that people assign to each criterion.

Step 1 Define the **situation** and create a list of **relevant elements** to be rated, such as options for action (see *Free List and Pile Sort*, p. 35).

Step 2 Define the **criteria** on which to rate the elements using **positive terms**. **Elicit** the criteria from the group (by putting the question directly to the group or with the help of *Free List and Pile Sort*, storytelling, photography, etc.), **supply** predefined criteria based on established or agreed upon goals or **negotiate** some or all the criteria, depending on the purpose of the inquiry and time available. The criteria should be **concrete**, distinct and clearly defined. See examples in Step 2 of *The Socratic Wheel* (p. 43).

Step 3 Decide on a **rating scale** or maximum score for each criterion according to the importance that the criterion has for the group. For more precision, use **indicators** or progress markers (p. 41) to define the meaning of each number on the scale.



In this example, the community must choose between three possible local development strategies, using six criteria of different weights. The two most important criteria are the degree to which each option is equitable, especially when based on gender, and how sustainable it is. Considering the ratings discussed and assigned by the group, the seed bank is by far the best strategy, and tourism, the least attractive.

Rating criteria		Tourism	Seed bank	Agricultural micro-credit
Weight, from 1 to 10				
Equitable (gender)	10	3	9	7
Sustainable	7	6	7	5
Cultural fit	4	1	4	3
Time efficient	4	1	3	2
Collaborative	4	4	4	4
Local skills	3	1	2	1
Cost efficient	2	1	2	1
Total	max. 34	17	31	23

Weighting

- Step 4** Create a **table**. Insert the elements in the first row. Record the rating criteria and their maximum scores in the left column, in descending order. Calculate the **maximum total** rating for any element, and record it at the bottom of the left column (see example).
- Step 5** **Create a graph** on paper or a flip chart using spokes (or ribbons on the floor) to represent the different rating criteria established in Step 2. Adjust the **length** of each spoke to reflect its maximum score, and organize the spokes in descending order. Mark the scale on each spoke, from the starting point (0) to the other end of each spoke (representing the highest value). **Label** each spoke with a title card, a drawing or an object representing the criterion. A relevant metaphor can be identified to represent the purpose of the exercise (e.g. the nautilus shell in the example).
- Step 6** Individually or as a group, **rate** each element in the list on each criterion (several elements may receive the same rating). Record the ratings in the table and on the corresponding spokes of the graph. Keep track of the **reason(s)** given for each score on cards or a flip chart. If rating is done as a group, discuss each rating until participants agree based on consensus or a majority vote. Alternatively, calculate the average ratings for each element.
- Review in detail the *Scoring Tips* (pp. 41–42). They are critical to proper application of *Weighting*.
- Step 7** Add another longer spoke to the graph. Record the **maximum total** rating at the end of this **synthetic spoke**. Calculate the total rating for each element. Record it in the table and on the graph, with a mark on the synthetic spoke.
- Step 8** For each element, draw **straight lines** between all the corresponding marks to create a shape that defines the element's overall profile.
- Step 9** Review the results and reasoning that went into the rating process and **discuss** the priorities based on the scores. Also discuss ways to modify the elements to make them more feasible, achieve greater impact, etc.



COMBINE

See design options under *The Socratic Wheel* (p. 45). To compare the weighted ratings of two individuals or groups, see *Disagreements and Misunderstandings* (p. 101).

Information GAS (Gathering, Analysis, Sharing)

Purpose To select methods for gathering, analyzing or sharing information best suited to the needs and culture of the people involved.

Step 1 Discuss how information is likely to be used in a project or programme, for what purpose and by whom.

Step 2 Select and combine methods for information gathering, analysis and sharing appropriate to the context. Consider the culture and customs of the people involved and how formal and methodical information needs to be and the importance of storytelling as part of the inquiry process.

GENERAL LINKS

Detailed explanations of research methods and tools are available at The Cornell University Web Centre for Social Research Methods, www.socialresearchmethods.net/kb/index.php.

QUALITATIVE INTERVIEWS use a semi-structured or informal framework to gather information from individuals or focus groups. They usually start with general questions on a particular topic and then probe for details. A focussed, two-way conversation can emerge that covers both pre-defined topics and emerging issues as interviewees expand their answers and share experiences and feelings about a situation or topic.

Strengths: Supports the collection of detailed information about people, behaviours and perspectives on issues. Comments from interviewees and new lines of questioning can be incorporated into the framework. The privacy and flexibility of an individual interview may make it easier to discuss sensitive topics and to probe for underlying issues and detailed explanations.

Weaknesses: The views of the people who are interviewed may not represent the views held by a majority of community members or vulnerable groups. Unless the interview is done in a focus group, the information cannot be easily compared or verified by others.

NARRATIVE INTERVIEW, LIFE HISTORY, STORYTELLING AND DIARIES generate stories about real or hypothetical events and situations. The methods can gather broad personal or community knowledge, either in writing or orally.

Strengths: Supports the reconstruction of a series of events or situations from particular points of view. Allows researchers to probe into the importance and interests of stakeholders, the relationships among them, their beliefs, the management of time, possible ways to manage problems, and the roots and scope of a problem (relating to ethnicity, religion, kinship, politics, laws, etc.).

Weaknesses: These methods can be emotionally challenging for all parties. The information may be difficult to organize and analyze.



Information GAS (Gathering, Analysis, Sharing)

IMPROVISATIONAL THEATRE, POPULAR PERFORMANCE AND ROLE PLAY connect theatre, mime, dance, song and humour to the inquiry process. Short, structured games may be used to create an experience that enhances creativity, teamwork, leadership and learning. Participants may be asked to put themselves in a story or a pretend situation or to respond to guided imagery by acting out a scene from their point of view or the point of view of other people. Debriefing questions help share observations, feelings and learning from the activity.

Strengths: These methods may be both educational and engaging and combine well with other *Information GAS* methods. They can draw on local culture and customs and reach large numbers of people who speak different languages or have different literacy levels. They provide creative and emotionally engaging ways to create awareness and communicate key messages directly and simply. They also help people step out of a given reality and empathize with the position of others (e.g. through role reversals), making it possible to express views and ideas in ways that are not limited by present circumstances or personal interests. This may be important when the group's ability to analyze a situation is limited or empathy is lacking. New understanding and ideas are experienced through the body and emotions as well as the intellect, thus building energy, releasing tension and potentially deepening the personal impact.



Weaknesses: These methods can oversimplify complex information and may differ too much from reality to be compelling. If not grounded in a topic or task, they can seem trivial or superfluous. Skilful debriefing is needed to ground the activity.

AUDIO-VISUAL AND MULTIMEDIA PRESENTATIONS help people share information, tell stories and engage in discussions. Text, images, video and audio can be combined in various formats, including presentation software, websites or social media. Still visuals such as photography, drawings, cartoons, murals, posters and flannel boards offer ways to engage community members and professional artists in the co-creation of visual information. It may include calendars, maps and other visual material to raise awareness, provoke discussion, gain feedback for analysis and monitor issues.

Strengths: A readily accessible way to reach large numbers of people with particular messages, information and statements on outcomes. Can stimulate response and discussion among multiple stakeholders and across the barriers of age, culture, language and literacy.

Weaknesses: Effective audio-visual presentations require the careful selection of high-quality visual inputs and can be both costly and time consuming. Still visuals present information selectively and can oversimplify issues.

GRAPHICS include tables, graphs, charts, maps and various kinds of pictograms that present and summarize large quantities of information in a visual form.

Strengths: Graphics provide a sharp focus for discussion of the data supporting main findings and conclusions. In settings where tension between people is an issue, graphics help shift attention from personalities to findings.

Weaknesses: Interpreting graphics may require specialized technical knowledge. Graphics can be misleading.

Information GAS (Gathering, Analysis, Sharing)

THE INTERNET provides a wide and fast-evolving range of options for gathering, analyzing and sharing information, including polling, whiteboard platforms, chat rooms, electronic mailing lists, blogs, wikis, forums, networking sites, and so on. These allow participants from different places to discuss issues instantly during virtual meetings. Participants can also exchange and post information before, during, or after the virtual meeting.

Strengths: The Internet and its various spaces make collaborative work possible when physical meetings cannot be arranged or are too costly. These spaces involve an anonymous or controlled sharing of information. They allow large quantities of information to be stored and easily retrieved through search engines.

Weaknesses: Effective use of the Internet requires some technical knowledge and good Internet connections among all participants. To avoid frivolous or inappropriate messages, clear protocols are needed regarding who can be involved, the purpose of the discussion and boundaries regarding how information is to be shared. Organizers may not be able to confirm the identity of participants and the validity of their information.



'In the end, the real question does not lie in whether people should be asked to provide information, which has long gone without saying. Rather the question is, who does the asking and why? Despite the many functions that surveying, polling and interviewing have served throughout the ages, historical responses to the question point to the perennial problem of power - the power differential between those who are called to answer and those who are in positions to do the asking, be they government officials, business people, organizational managers, insurance companies, government agencies or scientists. All variants of participatory M&E run counter to this tradition: their goal is to get people to talk and listen to each other and mobilize the information and action learning they collectively need to assess results or outcomes against their own goals. The approach challenges the age-old practice of people in positions of power extracting and controlling the information they need from others, in pursuit of their own interests or ends.' (Chevalier and Buckles, 2019, p. 90)

'Knowing many tools and being able to mix them certainly helps. This assumes that multi-methods are inherently superior. But are they? Not really. Whether M&E can assess progress in specific settings through a single or many methods is a question that cannot be settled in advance. What drives the inquiry process lies somewhere else, in the development of M&E methodologies that are fit-to-purpose. In the end, fit determines the choice between mixed and fixed methods. The rule is simple: work with tools that work.' (Chevalier and Buckles, 2019, p. 98)

Information GAS (Gathering, Analysis, Sharing)

SURVEYS involve the use of standardized questions designed to gather information about people and their opinions and behaviours. Many surveys are designed for in-depth statistical analysis of the responses by ensuring an appropriate and randomized sample size and using scales or indexes to measure the same idea in different ways (for example, several questions may be combined to help measure the idea of 'occupational stress'). A number of procedures can be used to collect the information in a questionnaire including face-to-face interviews, telephone interviews, the post, online surveys, etc.

Strengths: Surveys allow researchers to see how a wide range of people living in different circumstances answer the same questions on a particular topic. Objective information about individuals and households such as income, age, profession, etc. can be combined with subjective information on opinions and behaviours. It allows researchers to track changes by asking the same questions at different times, and comparing responses.

Weaknesses: Interviewing an appropriate sample of a population can be a challenge as updated lists of names from which to draw a sample may be hard to come by. Questionnaires typically require a considerable amount of time from both respondents and interviewers. Because survey questions are often simple and responses may be given out of context and without discussion, results can be superficial, difficult to explain or undermined by low response rates. All the key decisions about survey design must be made before the survey begins and cannot be changed once the survey has started. Use of appropriate statistical techniques for analysis requires specialized knowledge.

PARTICIPANT OBSERVATION involves becoming a member of the community being researched, with a distinct and accepted role as an observer. Information is gathered over an extended time using a variety of methods.

Strengths: An insider's view of an organization, group or community can be created by following well-developed rules for observing, taking field notes and analyzing observations.

Weaknesses: Gatekeepers can block access to certain individuals and topics. Training is needed to protect sources and maintain researcher neutrality. Information is collected, analyzed and interpreted by the participant observer who controls the inquiry process.

ANALYSIS OF SECONDARY DATA involves the use of information that has already been gathered by another researcher, perhaps for another purpose. Sources include published books, databases and public documents collected by governments, libraries and museums.

Strengths: A wide range of information on a topic can be collected and contrasted. This may be particularly useful at the beginning of a research process when little is known about a topic. Secondary sources may contain detailed interpretations of information and links to theory.

Weaknesses: Secondary sources can be biased, out-dated or unreliable, and should be selected critically.



Exploring problems



Module 3



'PAR is a social process to both understand a situation and act on it. Root cause analysis is often a key step, followed by planning actions and the chain of means and ends that lead to expected outcomes. The process is likely to be more effective if it takes into account key factors and actors that may intervene along the way. This can be complex, which means the process should not be oversimplified for reasons of expediency. Shortcuts to avoid murky causality - evading messiness in social and natural history - can be costly. As Bertrand Russell once said about the linear view of causation, 'like much that passes muster among philosophers, [causation] is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm' (Russell, 1913 , p. 1). Wittgenstein is of the same view: 'superstition is the belief in the causal nexus' (Wittgenstein, 1922, # 5.1361). But letting positive science occupy the whole field of causation and receive criticism for its commitment to the idea is unwise. Too many issues are at stake - the way we experience and discuss relationships between events, the causes we fight for, and the responsibility we assume (or not) in choosing efficient means to achieve moral ends. When carrying out their own business, scientists would do well to reflect on and work with the many aspects of causal thinking. To be sure, they should look for the evidence they need to develop and present arguments that are clear and convincing. But they should also open up the inquiry process to public scrutiny and debate, reflect on the actual ends and people served, and be critical of the moral means used to achieve the intended results. Failing this, science may lose whatever leverage it can muster to counter the 'trumped-up facts' of our post-truth era.' (Chevalier and Buckles, 2019, pp. 184–85)

Purpose To tell a story of changes over time, significant events of the past or the sequence of steps in a current or planned activity.

Step 1 Define the **topic** and **time frame** for the analysis, and create a timeline on the floor or on a flip chart, with the 'starting point' at one end and the most distant reference for the time frame at the other end. Invite participants to add one or two milestones in-between that can stand as additional reference points on the timeline, if needed.

Step 2 Invite each participant to think of a **key moment** relevant to the topic (a change, a historical event or a step in a current or planned activity). Write (or draw) it on its own card. Add closely related **facts** to the back of the card or on a flip chart, such as the date, the positive and negative aspects associated with the key moment, the key parties involved, what they did, etc.

Step 3 Discuss each moment card and place it in the appropriate place on the timeline. Continue until the group has **reviewed** all the key changes, historical events or steps relevant to the topic and arranged them in chronological order on the timeline. To simplify the story, place minor moments in the timeline under the cards for the major moments occurring in the same time period.

Step 4 Review the result by looking for **trends** or **patterns** in the story. Identify actions relevant to the situation today based on **lessons** of the past.

TIP When accuracy or conflicting accounts are a cause for concern, participants may plan further fact-finding studies to make sure their understanding of history is well-informed, with help from historians if required.

Rupa Lake, Nepal (adapted from D. Poudel and D. J. Buckles, 2008)

- 1952 A major flood and series of landslides flattened the lower Chaur and Talbesi rivers. Large amounts of sediment were deposited in and around the lake. This reduced the size and depth of the lake.
- 1957 Local ownership and control of forests was replaced by the Forest Nationalization Act. Forest clearing became more intense.
- 1962 Flooding and landslides filled parts of the lake and wetlands with sediment. A government land survey endorsed private claims to these new lands. Lake inlets were diverted by local people to promote sedimentation and create new lands on the lakeshore.
- 1972 Flooding and landslides in three areas (Rupakot, Betayani and Hangshapur wards) deposited sediment in the lake and its nearby wetlands.
- 1976 Flooding and landslides near Hangshapur ward added sediment to the lake and nearby wetlands. A government land survey upheld private claims by local elites to new lands.
- 1979 Various permanent settlements were set up in the nearby watershed, and forest clearing became more intense.
- 1981 Flooding and landslides added sediment to many parts of the wetlands and lakeshore. The Begnas High School claimed a large area near the lakeshore.
- 1983 Fish farms were set up. Waste from the farms, along with more sediment in the lake, displaced the lotus plant and promoted the growth of harmful water plants (Water Chestnut and Water Hyacinth).
- 1984 Gravel and sand extracted from the outlet increased water flow and reduced the depth of the lake.
- 1986 Check dams and community forestry programmes were started by outside agencies and the government.
- 1988 New settlements were established or expanded.
- 1989 Forest clearing of 300 hectares and 54 hectares at Lekhnath-11 and Hangshapur-9 wards, respectively, provoked a major landslide. New lands were claimed by local elites.
- 1991 Construction of the Begnas-Bhorletar road eroded soils and caused sediment to enter the lake and wetlands.
- 1992 A potential landslide at Bandre was controlled with the help of an outside agency.
- 1994 Use of chemical fertilizers in agriculture increased, promoting the growth of harmful water plants in the lake.
- 1995 Check dams and reforestation programmes were established by outside agencies at the place where the Kalyangdi and Thulo Khola rivers meet.
- 1997 Fishing with electric currents began.
- 2001 Flooding and landslides from the Devasthan River affected settlements.
- 2003 Road building at Talbesi-Lipyani, Sourbas-Ramkot and Bhanjhyang-Begnas eroded soil that settled in the lake.
- 2004 Landslides in many areas (Khada gaindo, Banskot, Hangshapur, Archalthar, Satdobato, Majhthana, Tallo Kahere, Lekhnath-10) caused more sediment to enter the lake and wetlands.
- 2005 Harmful water plants were removed by the Rupa Fisheries Cooperative.
- 2005 Hailstorm damaged lake biodiversity.

Timeline

COMBINE *Timeline with Stakeholder identification* (p. 71). Draw or write on separate cards the key people or groups involved in each change, historical event or step. On the back of each card, record information about each stakeholder involved, such as how they contributed to the event, change or step, how they are affected by it, and the gains or losses incurred in each case.

Timeline with Force Field (p. 65). Another option is to create columns on one side of the timeline for each major **factor** that **contributed** to a particular change or event. Create columns on the other side for major factors that **counteracted** or limited the impact of a particular change or event. Show the weight or intensity of each factor by varying the height of the column.

ADAPT *Multiple lines, parallel or intersecting.* Different themes can be mapped on timelines that are parallel to each other or that cross at particular points in time.

Past and future. Events along the *Timeline* can be divided into two parts: to the left, those that occurred in the past and, to the right, those that will result if events follow their current course or if things happen according to new plans.

Ups and downs. Events along the *Timeline* can go up or down depending on their positive or negative contribution to a situation evolving over time, as perceived by participants.

Venn diagram. Elements of history (e.g. livelihood activities) can be distributed in a Venn diagram consisting of three intersecting circles representing what used to be, what is, and what is likely to be. Some elements may fall where two or all three circles intersect (e.g. fishing with electric currents started only recently and is likely to continue in the future).

Before and after. Instead of a *Timeline*, participant can create a 'before-and-after' table with five columns that describe the areas of change (Column 1), what used to be, say 20 years ago (Column 2), the present situation (Column 3) for each change area, how important these changes are (Column 4), and the causes or reasons behind each change (Column 5). The last row may be used to describe the overall difference between the past situation and the present.

Participatory Mapping (p. 59). Another good way to enrich the analysis consists in combining *Timeline* with a visual mapping of sites where events took place.

Areas of change	Before (20 years ago)	Now	Importance (from 1 to 3)	Causes
Jobs				
Environment				
Family life				
Religion				
Overall				

Previous Responses

Purpose To assess the ways that key stakeholders have managed core problems in the past.

Step 1 Define the **core problem** and create a drawing or identify an object to represent it. Then identify the key **stakeholders** involved (see *Stakeholder Identification*, p. 71).

Step 2 Identify the typical response of each stakeholder to the core problem during a defined period. Write the **stakeholder response** on its own card, using a short sentence or key words that are concrete and clear to everyone. If the stakeholder responded to the core problem in different ways at different times, select one period and the most typical response during that period.

Step 3 Create a **table** (see example). In Column 1, insert the typical response of each key stakeholder.

Step 4 Assess whether each stakeholder response involved **local customs**, **legal-administrative** measures or **Alternative Dispute Resolution** strategies (involving negotiation, mediation or arbitration). Record your assessment in Column A.

Responses By stakeholder	A Type of response Customary, legal-administrative, alternative	B Overall strategy Force, concession, accommodation, negotiation, consensus
		

Step 5 Rate the extent to which each stakeholder has generally emphasized the importance of getting the **task done** ('Task-oriented responses'). Use a scale of low, medium or high.

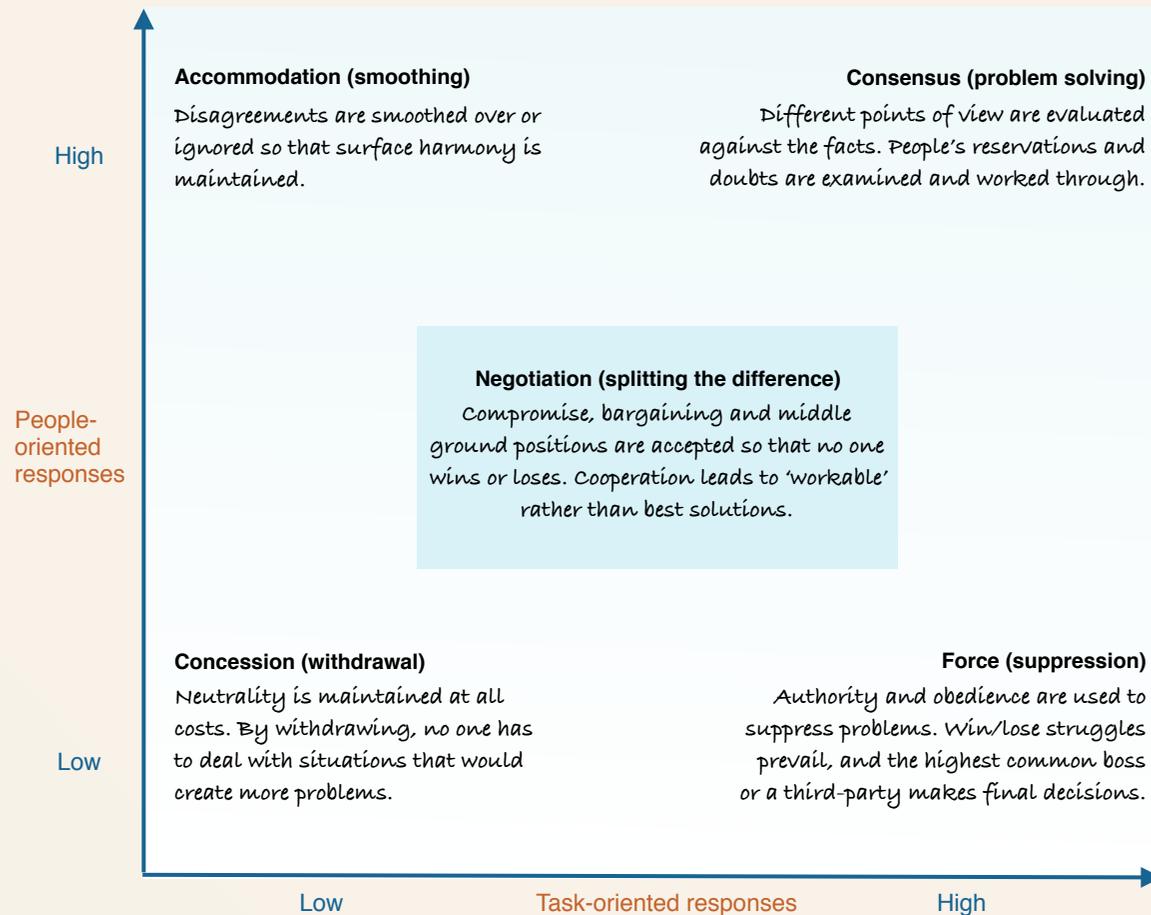
Step 6 Rate the extent to which each stakeholder has generally emphasized the importance of **meeting the expectations** of other stakeholders ('People-oriented responses'). Use a scale of low, medium or high.

Step 7 Locate each stakeholder in the **diagram** that combines the two kinds of responses (task-oriented on the horizontal axis, people-oriented on the vertical axis) established in Steps 5 and 6. The diagram below (p. 58) helps determine whether the main stakeholder strategies have been characterized by **force**, **concession**, **accommodation**, **negotiation**, or **consensus**. Record the results in Column B.

Previous Responses

Step 8 Discuss strategies with **positive effects** on the core problem (and how to reinforce them) as well as strategies that produced **negative effects** (and how to break from them).

Source Graph adapted from M. Warner et al., *Tools and Training*, Natural Resources Cluster Secretariat, Business Partners for Development, Module 5, Consensus Building (p. 12). See also Stephen Worchel and William G. Austin (eds.), *Psychology of Intergroup Relations*, Nelson-Hall, Chicago, 1986, p. 76.



Participatory Mapping

Purpose To acknowledge and visualize the spatial distribution of observed events or community resources (people, institutions, natural features, territories).

Step 1 Define the topic and its spatial boundaries. Invite participants to draw an outline of the area on the ground using chalk, on the floor using masking tape or on large sheets of kraft paper. Alternatively, use **existing maps** of the area covered with transparent plastic people can write or draw on. Add landmarks that can act as reference points.

Step 2 **Locate** and mark places of activity, interests or concern relevant to the topic. Encourage the use of colour and objects to represent resources and their spatial relationships.

Step 3 Review the result by asking people to describe what they have included in the map and why. Add new information to the map that emerges from the discussion, and photograph the result. Conclude by inviting observations about the scope and importance of reported events or resources held by different community members and the community as a whole. Acknowledge and discuss the potential contribution of these events or resources to group goals.

COMBINE

- *Resource Mapping with Storytelling.* The mapping exercise can include individual **stories** about sites that bring back vivid memories of personal experiences.
- *Resource Mapping with Timeline* (p. 55). When reviewing the resource map, ask people to comment on major changes in the resources compared to the past and create a **timeline** of these changes. Alternatively, use a Venn diagram to map resources of the present, resources of the past and resources the group wants to develop in the future.
- *Advanced Participatory Resource Mapping (PRM).* If scaling up is needed, participants may produce maps using a 3-D modelling method (using sheets of cardboard, pushpins, coloured string and paint) combined with more detailed information obtained from transect walks, videos, aerial and satellite images and from printed maps as well (covered with clear plastic sheets to capture local knowledge).



Nemaska (Cree community), The Land of Plentiful Fish

Strings of different colours are used to identify thematic routes that bring together different sites. Tourists who choose the Nemaska route will...

1. Visit the COTA and community websites
2. Call the tourism officer by phone
3. Drive to Nemaska, refilling at the gas station
4. See posters (welcome, fishing) along the road
5. Enter the community and go to the restaurant
6. Check in at the Nemaska lodge
7. Look for information, go to Band Office
8. Visit old Nemaska, go shopping
9. Go fishing, see wildlife with local guide
10. Shop for local crafts and souvenirs
11. Visit the Hydro-Québec dams
12. Drive back home

Participatory Mapping

- More advanced applications combine participatory mapping with Citizen Science, GPS (Global Positioning Systems), GIS (Geographic Information Systems) and other digital computer or Internet-based technologies (see Chevalier and Buckles, 2019, ch. 8).

Ottawa's ancient oaks

In many cities across the world green spaces and tree canopy are in sharp decline. This undermines efforts to make cities more resilient, livable and healthy. Treeless urban spaces also reinforce the accumulation of disadvantage in lower income neighbourhoods with poor access to the multiple benefits of trees. Community responses to tree loss in Ottawa (Canada) have combined *Participatory Mapping*, online and on the ground, with advocacy to challenge the construction industry, local politicians and urban planners that have failed to protect what remains and put nature at the core of urban design and planning. As part of a protest against a specific development proposal and related tree removal applications, residents in the affected neighbourhood created a **Google map** view of mature trees that had survived successive waves of residential development to the present day. These trees, each older than Canada itself and remnants of an ancient oak forest, were later recognized as 'Heritage Trees' by a provincial agency. A **blogging site** complemented the online inventory to draw attention to trees protected in theory but vulnerable in practice. **Periodic meetings** among residents and numerous local **newspaper articles** amplified voices for the unique local trees, attracting significant attention to tree loss generally across the city.

As public concern over the loss of trees mounted, private land developers adopted new tactics to meet their objectives, as did the protests and the strategic purpose of tree mapping. The community group partnered with university-based foresters to engage residents in **tree mapping** using a standardized protocol called **Neighbourwoods**, combining the data with a state-of-the-art, peer-reviewed **tree benefits calculator** from the USDA Forestry Service (i-Tree). It demonstrated the annual flow of financial benefits from the mapped trees in the form of storm water managed, energy saved through shading, air quality improved and carbon dioxide removed and stored. These numbers, and the professional standards behind the inventory, in turn allowed the residents involved to directly challenge urban policies that fail to protect and promote trees as valuable green infrastructure. Residents also pursued tree stewardship goals by identifying spaces where new trees could be planted and guiding the selection of tree species needed to maintain a healthy diversity. In the lead up to municipal elections, participatory mapping shifted to support counter-mapping politics through **a phone app** to map the 'Lost Trees of Ottawa'. The app invites people to place an icon linked to a **photograph and personal memory** of a tree lost to human or natural causes. This creates a platform for expressing emotions and for engaging with candidates at ward levels in discussions on what to do about the declining urban forest. Using **Google docs**, participants developed a set of recommendations on bylaw revisions. Through the app, hard numbers, personal meaning and local politics coexist and feed into each other, acting on events in real time and space.



Problem Tree

Getting to the root

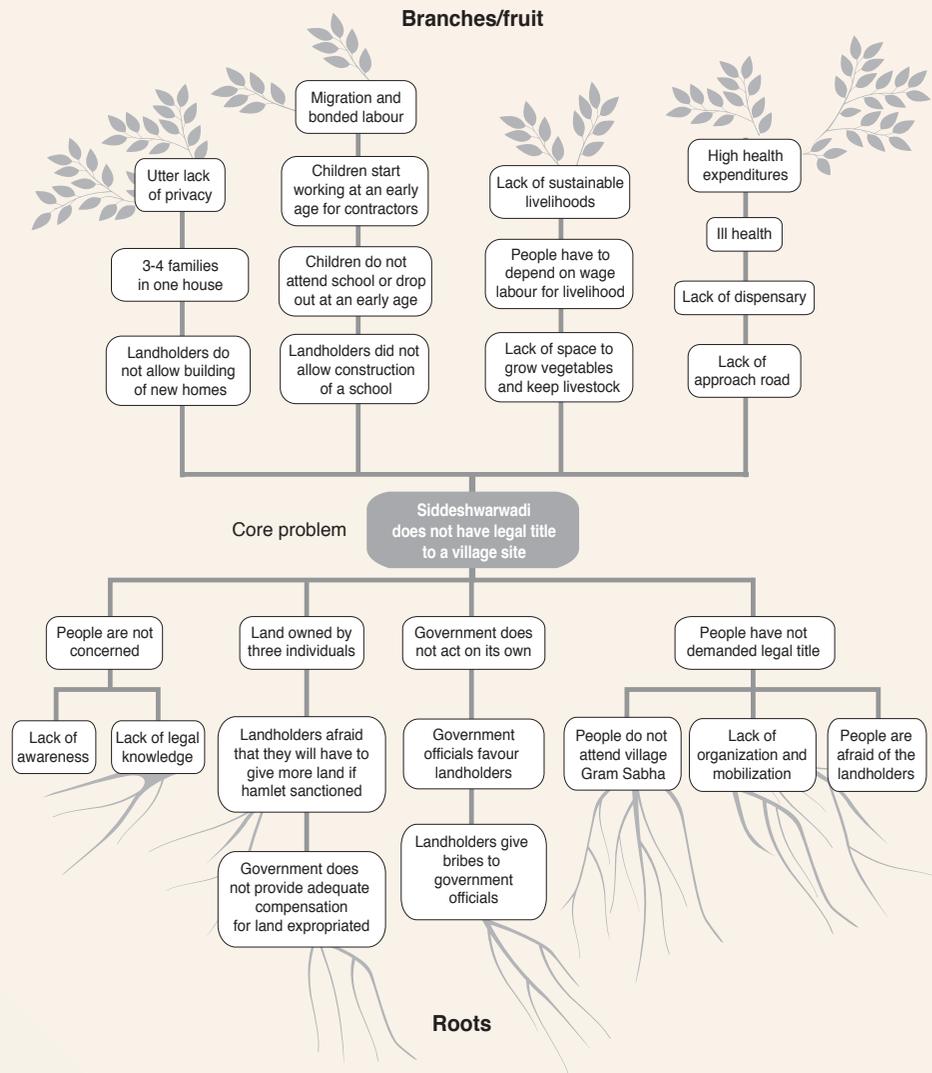
Purpose To understand the causes and the effects of a problem.

Step 1 Define the **core problem** and place a card with key words, a drawing or an object representing the core problem in the middle of the workspace. This corresponds to the trunk of the problem tree.

Step 2 Ask 'Why has this problem occurred?' Identify 4 or 5 causes directly responsible for the core problem. These are the **first-level causes** (or thickest roots) of the core problem. Describe each first-level cause on its own card using a drawing or a few key words, and add details as needed to the back of the card or on a flip chart. Place all the cards that show first-level causes in a row below the trunk showing the core problem.

Step 3 For each first-level cause, ask 'Why has this occurred?' The reasons are the **second-level causes** directly responsible for each first-level cause. Write (or draw) each second-level cause on its own card using a few key words, and add details as needed to the back of the card or on a flip chart. Place the new cards in a row below the corresponding first-level causes.

In this example, Katkari villages in India facing eviction from their village explore the root causes and fruit or effects of insecure title to the land. Impacts on the schooling of their children emerged as the most pressing chain of effects. This prompted participants to address causes they could work on immediately (organizing to demand legal title).



Problem Tree

- Step 4** Use the same method (Step 3) to determine the causes directly responsible for each second-level cause. Place these **third-level causes** in a row below the corresponding second-level causes. Connect the first, second and third level causes with lines representing the thickest surface roots and the finer deeper roots of the core problem.
- Step 5** Go through the same steps (Steps 2 to 4) to determine the **first-level, second-level and third-level effects** or implications (branches and fruit) of the core problem. Ask participants 'What is the result or consequence of this problem (or this effect)?' Keep in mind that effects of a core problem may include **actions** people are already taking in response to the situation, whether successful or not. Write each effect on its own card, and place the new cards in layered rows above the core problem.
- Step 6** **Review** the result and look for causes and/or effects that fit into both the roots and the branches of the problem tree. These may point to **loops** or 'vicious circles' that reinforce each other through direct or indirect connections to the various levels of causes and effects.
- Step 7** Identify the most important, the most pressing or the least difficult causes to handle. These may be **priorities** for action. Identify the effects that are most troubling to the people involved in the exercise, or that point to new opportunities. These may help to motivate and focus attention on the core problem and its causes.

TIPS

- Combine cards that use different words to describe the **same cause or effect**. In some situations, participants may not want to separate a particular cause and its effect(s) on different cards. Be aware of this and consider duplicating the card in several locations.
- Other **metaphors** such as parents and ancestors (for the roots) and children and grandchildren (for the branches and fruit) may help identify the various levels of the *Problem Tree*.
- See how to convert a *Problem Tree* into a *Tree of Means and Ends* (p. 99).



Gaps and Conflicts

Purpose To identify the issues underlying a core problem and its related causes by determining if they are mostly about gaps or conflicts in power, interests (gains and losses), moral values, or information and communication.

Step 1 Define the **core problem** and create a drawing or identify an object to represent it. Then identify the **main causes** of the core problem. *Free List and Pile Sort* (p. 35) or *Timeline* (p. 55) may help identify these causes. Write each cause on its own card, using a short sentence or key words that are concrete and clear to everyone.

Step 2 On each card that describes a different cause, write the **kind of issue** it represents. Is the issue one of **power, interests** (gains and losses), moral **values**, or **information** and ways of communicating (see definitions, below)? Discuss and clarify the kinds of issues, using local examples and terms. Create a label or identify an object to represent each issue. If the cause raises more than one issue (such as power *and* interests), write the same cause on two or more cards and record a different kind of issue on each card.

Step 3 Create a *Gaps and Conflicts* table. Place labels for the four kinds of issues in the first column. Place Gaps, Conflicts, and Ranking labels in the top row.

Step 4 Take each cause of the core problem and decide whether it involves a **gap** that needs to be filled or a **conflict** that needs to be resolved (see definitions below, p. 64). Record and explain each assessment on the back of the corresponding card or on a flip chart. Place the cards in the corresponding cells of the table.

Step 5 Use the last column to **rank** the **combined weight** of row issues according to the number and importance of the cards that appear in each row. Use a ranking scale of 1 for the greatest combined weight to 4 for the least combined weight.

Step 6 **Review** the result of the analysis. Consider whether the issues with the greatest combined weight are mostly about gaps that need to be filled or conflicts that need to be resolved. Discuss **priorities** for action. Keep in mind that the act of filling a *gap* (such as getting information on land ownership) can sometimes lead to a *conflict* between parties.



Gaps and Conflicts

POWER is your ability to achieve what you want by influencing others and using resources you control. These resources include economic wealth, political authority (an office, position or role recognized by an institution or by local customs), the ability to use force or the threat of force, and control over information (including knowledge and skills) and the means to communicate.

INTERESTS are the gains and losses that you will experience based on the results of ongoing or proposed actions. Gains and losses affect the resources you control such as economic wealth, political authority, prestige, the ability to use force, information, means to communicate, legitimacy or social ties.

VALUES are beliefs, judgements, norms or principles about what is important, or the degree to which something is viewed as morally right or wrong.

INFORMATION is what you know 'for a fact' and consider to be true.

COMMUNICATION is how you exchange information and make your views known to others.

A GAP involves a lack of power or control over resources; the absence of incentive or interest (gains or losses); a failure to appreciate the moral worth or value of something; a shortage of information and effective means of communication.

A CONFLICT is a struggle over how decisions are made and who makes them; how gains and losses are distributed; the values that people believe in; the information that is given out and the ways that people communicate.

GAPS AND CONFLICTS TABLE

Issues	Gaps	Conflicts	Rank
Power	Hiring new park staff to deal with complaints is impossible due to financial constraints.	There is little public consultation when park management plans are made.	2
Interests (gains and losses)	Park managers are overworked and morale is low.		4
Moral values	Park users are seen and see themselves as clients rather than potential partners.		3
Information and communication	Communications are slow and time-consuming.	Some unsatisfied park users can be aggressive.	1

In this example, gaps and conflicts in how plans and differences are communicated reinforce other tensions between the public and park administrators.



Force Field

Getting to the root

Purpose To understand existing factors that contribute to and counteract a problem or a project goal.

Step 1 Define the **topic** and place a card with key words, a drawing or an object representing the topic inside a long horizontal **bar** created on the floor, the wall or on a large sheet of paper.

Step 2 Identify **existing factors that currently contribute** to or drive the problem or project goal. *Free List and Pile Sort* (p. 35) may help identify these factors. Create a **card and a label** to represent each factor and describe it on the back of the card or on a flip chart. Place these cards above the horizontal bar.



Step 3 Identify **existing factors that currently counteract** the problem or project goal. Create a **card and a label** to represent each factor and describe it on the back of the card or on a flip chart. Place these cards below the horizontal bar.

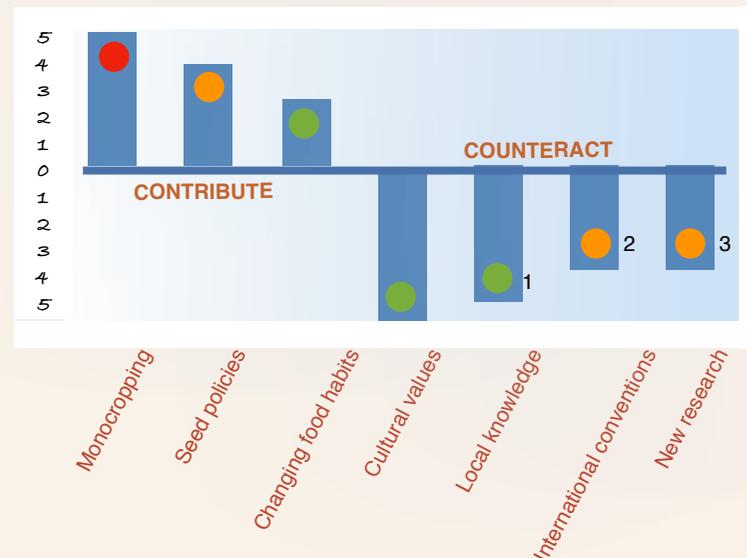
Step 4 **Rate** the current weight of each factor using scores from 1 (weak) to 5 (strong). **Record** the reasons participants provide for each score. Create **columns** for each factor and show the score by varying the height of the columns.

Step 5 Use **green dots** to identify factors that people have some control over. Use **orange dots** to indicate moderate control. **Red dots** indicate factors over which people have little or no control.

Step 6 Discuss ways to achieve key objectives by **reducing or strengthening** the current weight of the contributing or counteracting factors. Consider starting with the factors that people have some control over or can be addressed in the short term. Use **numbers** from 1 to 3 to indicate priorities for action.

TIP *Force Field* usually focusses on factors that contribute not to the problem but rather to the search for a solution. The angle is different. While the 'contributing factors' are negative in the case of a problem focus, they are positive when related to goal attainment, as in Lewin's work.

SITUATION: LOSS OF BIODIVERSITY



In this example, forces that counteract the loss of biodiversity can be further strengthened by making better use of local knowledge of biodiversity and international conventions to press for changes in seed policies. New research on the benefits of mixed cropping can also be further developed and communicated in ways to reduce farmer reliance on monocropping.

COMBINE

Force Field with Timeline (p. 55)

Convert the horizontal bar into a chronology of key changes or events in the history of the problem, situation or project. Then, rate each as either a driving or a counteracting change or event using a scale of 1 to 5. Create columns for each change or event and show the score by varying the height of the columns.

Force Field with SWOT Analysis

Identify the factors in the *Force Field* that are existing strengths (S) and those that are external opportunities (O). Identify as well the factors that are existing weaknesses (W) and external threats (T). Use a colour code to distinguish these four kinds of factors.



'The framework inspired by Lewin's work helps identify drivers of change and counteracting forces in a given situation and plan ways to upset their balance. In Lewinian theory, the exercise serves to enhance fluidity in social relations otherwise blocked by conflicting interests and values, systems of power and obstacles to communication. In current practice, however, Force Field does not always support this kind of group thinking. That is, on its own, the tool is not wedded to any particular social philosophy, and its use may carry no trace of Lewin's battle against authoritarianism and social oppression. The advantage in leaving aside the tool's theoretical origins and implications is that no explanation needs to be given about the ends pursued. The facilitator plays a low-key role, posing relatively direct and simple questions. Group members use the tool as they see fit, based on their own values, interests and priorities. In our view, this is a strength. But in it also lies a weakness. Unlike fully-developed Lewinian thinking, a Force Field diagram can serve any purpose and is not necessarily dedicated to the ideals of transformative change for the common good. When tossed into a toolbox, Lewin's Force Field becomes an empty shell.' (Chevalier and Buckles, 2019, p. 208)

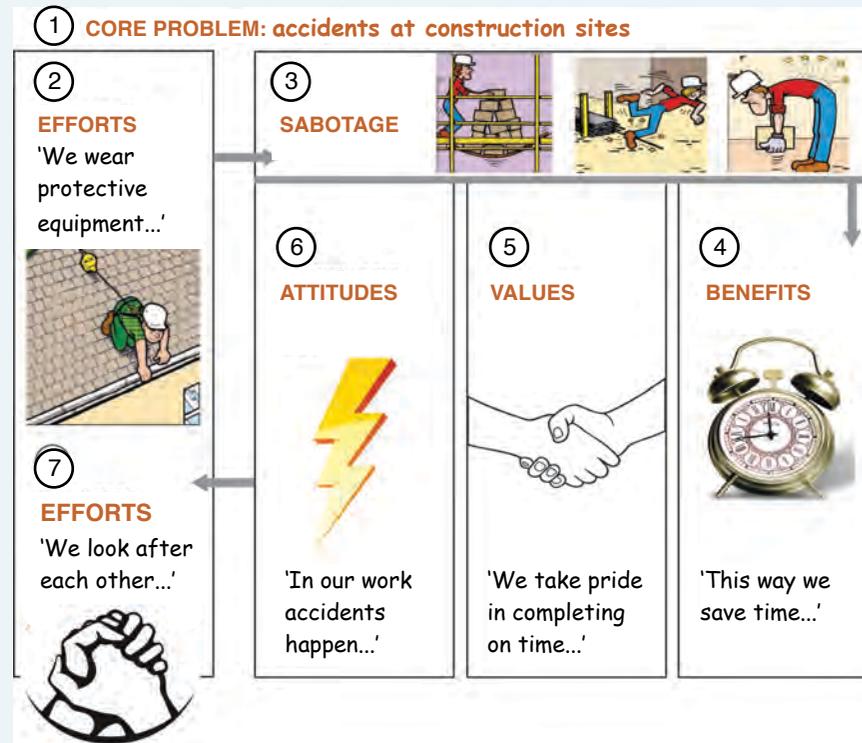
Purpose To acknowledge efforts to handle an existing problem and at the same time explore individual and collective behaviours that maintain the problem, are difficult to comprehend and draw little attention.

People may well know what they must do to address a key problem and still recognize they are not taking action for reasons that remain obscure and little discussed. These tacit reasons may be of three types:

- the **benefits** incurred from maintaining the problem;
- the principles or **values** that may justify problem behaviour;
- **attitudes** towards aspects of the problem that seem unpredictable or inevitable.

Step 1 Define the **core problem** (e.g. worksite accidents). Create a **diagram** with a column to the left, a top row to the right and three columns below the row. Write the problem identified in Step 1 above the diagram.

Step 2 Examine what each group member and the group as a whole **actually do** to address or reduce the problem at hand (e.g. 'wearing personal protection equipment'). Draw or write the key words representing each **individual and group effort** to address the problem on its own card. Place the cards in the column to the left entitled *Efforts* (see example). Discuss how real the problem is despite individual and collective efforts to address it and what group members feel when the problem is evoked.



In this example, workers discuss the role of unspoken benefits, values and attitudes in creating accidents at construction work sites. They also explore how the team can effectively juggle the requirements of safety, competitive pride, quality work and professional responsibility in situations where some risk is inevitable. Concluding comments revolve around the importance of respect, trust, mutual help and team spirit — ingredients that are often lacking in mixed teams and multi-team projects. They are essential to preventing stress, tensions, conflict and the incidents or accidents that may result. These insights lay the ground for further safety-related discussions with younger workers, to be carried out in a spirit of mutual trust and with the interest of workers, the employer and his clients in mind. See the full story in Chevalier and Buckles, 2019, ch. 10.

Paradox

Step 3 Identify what each participant and the group as a whole can **possibly do** to make sure that the problem is **maintained or reinforced** (e.g. 'climbing without safety straps'). Draw or write the key words representing each response on its own card. Place the cards in the top row entitled *Sabotage* (see example).

Step 4 Discuss what you would stand to gain individually or collectively from doing everything to maintain or reinforce the problem at hand (e.g. 'saving time'). Draw or write the key words representing each **benefit** on its own card. Place the cards in the column to the right entitled *Benefits*.

Step 5 Identify some principles or **values** you hold individually or collectively and that may justify the benefits sought by maintaining the problem (e.g. 'taking pride in work well done completed on time'). Draw or write the key words representing each value or principle on its own card. Place the cards in the middle column entitled *Values*.

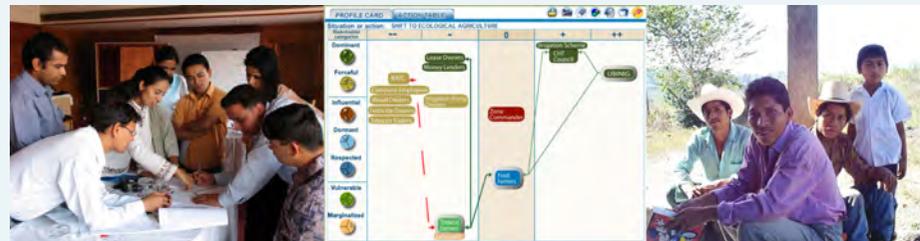
You can identify these values indirectly, by asking why each benefit from maintaining the problem matters in the first place (e.g. 'saving time allows us to meet the employer's expectations') or by exploring why these benefits do not matter to some people (e.g. 'they don't take pride in their work').

Step 6 Discuss the extent to which and why there would still be a problem even if all measures were taken to address it (e.g. 'accidents are bound to happen'). Identify concrete examples of problems that are unpredictable or inevitable (e.g. working at height is always dangerous'), and discuss the individual or group reaction to them (e.g. 'we don't think about it...'). Draw or write the key words expressing each unavoidable problem and the **reaction** to them on its own card. Place the cards in the column entitled *Attitudes*.

Step 7 Discuss individual or group measures that could be **introduced or reinforced** in order to better handle the core problem at hand (e.g. 'looking after each other's safety'). Draw or write the key words expressing each measure on its own card. Add the cards to those already placed in the column entitled *Efforts*. Discuss how these measures **negate** or **reinforce** the benefits, the values and the attitudes discussed in previous steps (e.g. 'mutual help is essential to doing good work and completing it on time').

'In the real world, reasons for ignoring reason are many, and they can withstand any test and continue to hide from everyone's scrutiny so as not to be challenged. Among best-kept secrets are basic assumptions people make about things they consider self-evident and that cannot be otherwise. This is not to suggest that we should re-examine everything that strikes us as obvious, a task that is neither desirable nor even possible. Those who undertake to disclose and justify all the assumptions they make are like dogs running after their tails; their chances of succeeding are pretty slim. All the same, some assumptions are worth questioning, especially if they keep blinding us to better ways of understanding things and acting on that understanding.' (Chevalier and Buckles, 2019, p. 213)

Knowing the actors



Module 4



'All forms of stakeholder analysis conducted in a participatory mode are a pragmatic invitation to examine the relationships among groups and individuals and their respective interests in a situation that requires collective action. They help identify key differences among groups, areas of common ground and potential interventions. Stakeholders can thus factor in the social dynamics of whatever goal or course of action they are pursuing. They do so knowing they cannot rely on a solution that is purely technological or that simply targets the right 'beneficiaries', the 'community' as a whole, or a particular 'class' considered to be the prime mover of history (the working classes in some models, large job-creating businesses in others).' (Chevalier and Buckles, 2019, p. 254)

'Many organizations acknowledge the importance of identifying project stakeholders and including them in their planning process. This, however, is not the same as committing to active representation in the investigation of social issues proper . . . Office-based stakeholder snapshots aimed at a better management of the parties involved should not be confused with a stakeholder-driven analysis of social obstacles to change and strategies to overcome them.

Reluctance to let participants identify stakeholders and map out their attributes and relationships is partly due to the longstanding division between subjective ('emic') views of the world obtained through participatory methods and objective ('etic') analyses conducted by project experts or scientists. Whatever the stand one takes on this issue, one striking tendency is for both camps to generally ignore one another. Scientists have a long tradition of seeking truth through disciplinary means alone. Advocates of participatory methods emphasize the insider look at reality and object to research ruled by experts. We make a case for exploring synergies between these two contrasting standpoints.' (Chevalier and Buckles, 2019, p. 256)

Stakeholder Identification

Purpose To identify the stakeholders involved in a situation or proposed action.

Step 1 From the list below choose the method(s) needed to identify stakeholders involved in the proposed action or the situation under analysis. Modify or combine the methods as needed.

Step 2 Review the result of the exercise after some time so that stakeholders initially left out or not involved at earlier stages can be identified.

BY EXPERTS. Use staff, key agencies (such as non-governmental organizations), local people or academics that know the situation well enough to identify stakeholders.

BY SELF-SELECTION. Use announcements at meetings, in newspapers, on local radio or other media to invite stakeholders to come forward. This will attract those who believe they will gain from communicating their views and wish to contribute to the process.

BY OTHER STAKEHOLDERS. Identify one or two key stakeholders. Ask them to suggest other key stakeholders who share their views and interests, as well as those who may have a different way of looking at the issues.

USING WRITTEN RECORDS AND POPULATION DATA. Census and population data may provide useful information about the numbers of people by age, gender, religion, residence, etc. Obtain stakeholder information from directories, organizational charts, surveys, reports or written records issued by local authorities, donor agencies, government bodies, experts, academics, non-governmental organizations, business and industry, etc.

USING ORAL OR WRITTEN ACCOUNTS OF MAJOR EVENTS. Identify key stakeholders through oral or written descriptions of major events in the history of a problem and the people who were involved in these events (see *Timeline*, p. 55).



TIPS

- Use appropriate **sampling** procedures to develop a sample of stakeholders that need to be consulted or surveyed because they are part of larger stakeholder populations and may have no other way to represent themselves as a distinct group.
- Consider when to **combine** certain actors into a broader stakeholder category and when to **separate** broad categories into smaller groups. Broad categories of stakeholders such as a geographic community or large organization may mask significant differences within the group. Very specific categories (such as environmental group A and B) may fragment stakeholders unnecessarily and overlook the common ground in a specific context.
- Decide whether to recognize the **community of all stakeholders** as a group with its own profile.
- Consider assigning some actors to **more than one** stakeholder group (e.g. leaders and public officials may have their own stakeholder profile at the same time as they speak and act for broader groups).
- When identifying stakeholders, remember that some people may accept ancestors, future generations, spirits and **non-human** species as legitimate parties to the situation.
- Make sure to **flag** in the list of stakeholders those who are doing the analysis, including convening organizations and funders. This helps to avoid the artifice of 'disinterested' actors when in reality they have agendas of their own.

Stakeholder Identification

'The contribution of SA hinges on its ability to address the complexity of social forces at play. Ensuring adequate and safe representation of weaker stakeholders is key to addressing power gaps and inherent structural and institutional problems affecting many conflict-ridden situations . . . However, given its pragmatic orientation and its business management origins, stakeholder thinking does not necessarily challenge deep-seated structures affecting local and global economics and politics. Its use can easily succumb to the naïveté of 'neocorporatism' - trading off critical thinking for expedient studies and quick settlements between parties from all sectors, including government, business, labour and civil society. When that happens, forcing people to consensus obscures diverging interests that are bound to reappear and never get resolved.' (Chevalier and Buckles, 2019, p. 258)



'The inclination to reduce the state to just one instance of many stakeholders, locally or globally, is a major issue. Stakeholder theory generally assumes that the common good can be ensured through the sum of negotiated interests. In reality, when left to themselves, stakeholders form an 'inoperative community' that brings together independent individuals, groups, organizations or states with values and interests that are often antagonistic or at best diverse. However essential it may be, dialogue between parties bent on pursuing their particular interests can never add up to the good of the whole . . . The same blind spot exists in business ethics that blur the distinction between civically-minded firms and the activities of civil society as a whole. When it comes to social life, the whole is more than the sum of the parts and needs its own voice.' (Chevalier and Buckles, 2019, p. 278)

Stakeholder Rainbow

Charting the playing field

Purpose To determine who needs to be involved in deliberations, decision making, actions or an inquiry process to define or achieve goals.

Step 1 Define the situation or proposed action and make a list of the **stakeholders** (individuals, roles or groups) who can influence or may be affected by it (see Tips in *Stakeholder Identification*, p. 71). Write the name of each stakeholder on its own **card**.

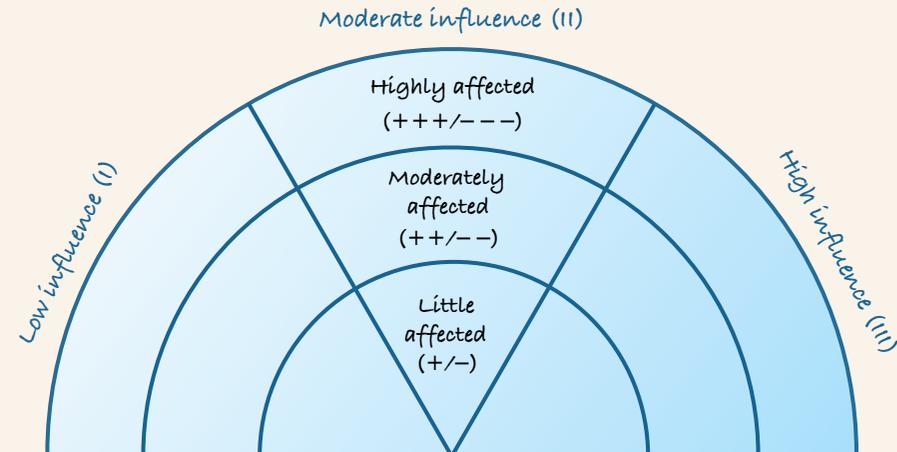
Step 2 On each card, use one, two or three plus (+) or minus signs (-) to indicate whether the stakeholder is highly, moderately or little affected by the situation or proposed action. Plus signs indicate **net gains** resulting from the situation or proposed action. Minus signs indicate **net losses**.

Step 3 On each card use one, two or three 'I' signs to indicate whether the stakeholder has high (III), moderate (II) or little (I) **influence** on the situation or proposed action.

Step 4 Create a **rainbow diagram** with three bands on a flip chart or with masking tape on the floor. In the smaller band, **insert the cards** of stakeholders little affected (+ or -). Insert the cards of stakeholders moderately affected (++ or --) in the middle band, and those of stakeholders highly affected (+++ or ---), in the larger band.

Step 5 Divide the rainbow bands into three equal parts: one part to the left, one in the middle and one to the right (see example). **Move the cards** of stakeholders with high influence (III) to the right side of the diagram. Move those of stakeholders with low influence (I) to the left side. Leave the cards of stakeholders with moderate influence (II) the middle part of the bands.

Step 6 Discuss the resulting picture and effective ways to get important stakeholders **involved** in follow-up actions. Also discuss ways to adjust the **gains or losses** experienced by each stakeholder and the **level of influence** that some stakeholders have on the situation or proposed action.

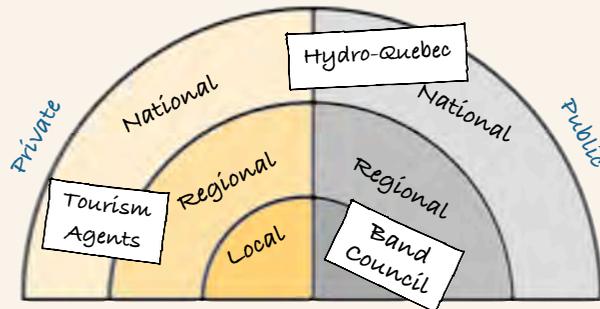
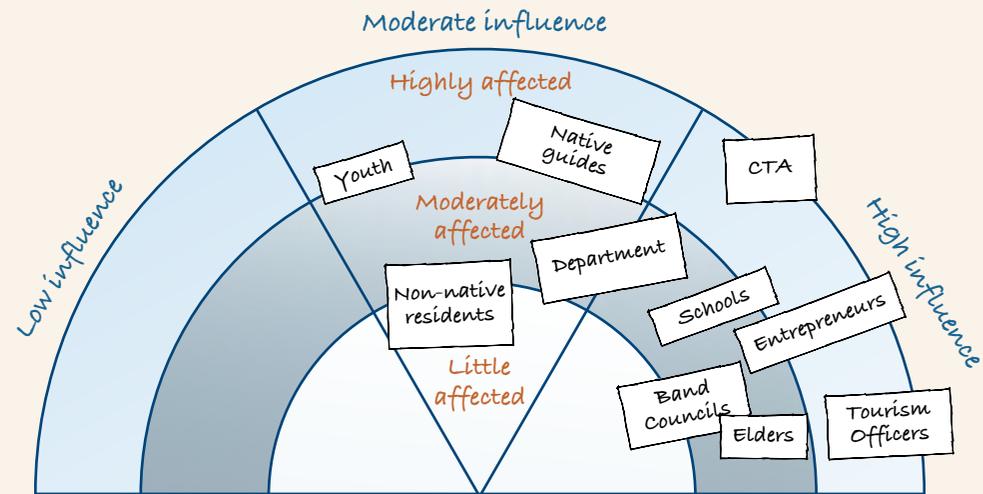


Stakeholder Rainbow

Charting the playing field

COMBINE

- **Storytelling** can help identify and gain a better understanding of stakeholders that are easily stereotyped or have no way to represent themselves in a situation. Make a list of stakeholders by describing the major events of the past or planned activities and identifying the key people or groups involved (see *Timeline*, p. 55). Use this list as the first step in a *Stakeholder Rainbow* diagram.
- Use **improvisational theatre** or personas to increase understanding and foster compassion for how stakeholders can influence or be affected by a situation or proposed action (while also being careful not to reinforce stereotypes).
- Use more **advanced methods** such as *Social Analysis CLIP* (p. 75) or *Social Domain* (p. 143) to dig deeper into stakeholder relations and strategic considerations when advocating for particular stakeholder groups.



ADAPT

- While the rainbow figure offers a simple visual support for the analysis, the same result can be accomplished with a Cartesian graph. Use the vertical line to represent different levels of influence (from 0 to 10), and the horizontal line to show the extent to which stakeholders are negatively or positively affected (from -10 to 10) by a problem situation or proposed action.
- Adapt the rainbow diagram by using other characteristics that describe the main differences between stakeholders. For instance, use the three bands to identify stakeholders working at the local, the regional and the national levels. Use a single vertical line dividing the bands to separate private sector from public sector stakeholders.

Social Analysis CLIP

Purpose To describe the characteristics and relationships of key stakeholders and to explore ways to resolve social problems and engage people strategically. (CLIP stands for Collaboration/Conflict, Legitimacy, Interests and Power.)

Step 1 Define the **situation or proposed action** clearly and precisely. Make a list of the stakeholders (individuals, roles or groups) who can influence or may be affected by it, including those that are doing the analysis (see (see Tips in *Stakeholder Identification*, p. 71). Draw or write the name of each stakeholder on its own stakeholder profile **card** (see example).

Step 2 **Discuss definitions** of power, interests and legitimacy (see below) and examples relevant to the situation or proposed action. Clarify the ideas and modify them using the participants' own definitions and terms, if they prefer. Use symbols or drawings to represent each idea, such as raising a fist or finger for power, holding out the hands for interests, or clapping hands for legitimacy.

Step 3 Discuss and describe the **power that each stakeholder can use** to oppose or promote the situation or proposed action defined in Step 1. Exclude forms of power (e.g. force) that stakeholders would not realistically apply to the situation or proposed action being discussed. Rate the level of power on each stakeholder card using one of three values: **high, middle or low/no power**. On the same card, record a description of the power or resources discussed.

Step 4 Discuss and describe the **interests** of each stakeholder — the estimated gains that each makes from the situation or proposed action and the estimated losses. Pay special attention to stakeholders' estimation of their own gains and losses, and how they assess the trade-offs to arrive at a rating of net interests (gains minus the losses). Enter the rating of net interests on each on each stakeholder card using one of five values: high net gains (++), middle net gains (+), low/no interests (0), middle net losses (–), or high net losses (– –). On the same card, record the description of the interests discussed.

Situation or proposed action:

Stakeholder (individual or group):

POWER High Middle Low/None

Description:

INTERESTS High + Middle + Low/None

 High – Middle –

Description:

LEGITIMACY High Middle Low/None

Description:

Social Analysis CLIP

Step 5 Discuss and describe the **legitimacy** of each stakeholder — i.e. the recognition by law or by local customs of rights and responsibilities **relevant** to the situation or proposed action and exercised with resolve. Rate the level of legitimacy on each stakeholder card using one of three values: **high**, **middle** or **low/no legitimacy**. If a stakeholder's legitimacy is highly disputed, assign the 'middle' value and note the dispute along with the description of legitimacy on the card.

Step 6 Create a **table** listing categories of gains and losses in the top row and stakeholder categories in the first column (grouped into upper, middle and lower blocks in the table on p. 77). **Place** each stakeholder card in the column that corresponds to its **interests** (high, middle or low/no net gains or losses) and in the row that corresponds to its **PIL profile**. Place the stakeholder in a row only where the corresponding PIL score is 'high' or 'middle'.

Don't place cards in the cells that combine contradictory attributes (such as 'dominant' stakeholders with 'low/no' interests). These cells are marked with the letter 'x' in the example (p. 77). Use bold letters (or any other code) to identify the stakeholders who are participating directly in the analysis.

Step 7 Discuss the **history of collaboration or conflict** among particular stakeholders and use a visual code (full and dotted lines and greyscale bubbles in the example) to identify these social relations and their relative strength. Include all relevant ties, even if they are unrelated to the situation or proposed action identified in Step 1. Note that stakeholders may collaborate in some areas and be in conflict in other areas.

POWER (P) is the ability to influence others and use resources controlled to achieve goals. Resources may include economic wealth, political authority (an office, position or role recognized by an institution or by local customs), the ability to use force or threats of force, access to information (knowledge and skills) or the means to communicate. (See *Power*, p. 79.)

INTERESTS (I) are the gains and losses experienced as a result of an existing situation or proposed action. These gains and losses affect the various forms of power and uses of resources. Make sure that participants do not confuse this idea of interests with 'taking an interest in' or 'being interested in something'. (See *Interests*, p. 81.)

LEGITIMACY (L) is when the rights and responsibilities of a stakeholder are recognized by other parties through law or local customs, and are exercised with resolve by the stakeholder involved. (See *Legitimacy*, p. 83.)

SOCIAL RELATIONS involve existing ties of collaboration and conflict (**C**), including group memberships, that affect stakeholders in a certain situation and that they can use to influence the situation or a course of action.



Social Analysis CLIP

In this example, the Katkari of India were faced with a strategic decision: to proceed (or not) with a claim to private land they occupied for their village site but did not own. Their assessment of the stakeholders involved and relationships among stakeholders that might determine success or failure of their claim was not promising. Positions in the table reflect the relative power and legitimacy of stakeholders that would oppose their claim, and the strength of past relationships among some of these stakeholders (Landowner with the Revenue Department and the Gram Panchayat). While they considered the NGO helping them with their claim (ADS) to be relatively powerful, their own relationship with the NGO was limited. They were also isolated from the indigenous affairs agency (ITDP) that might have been able to act as a mediator in the situation. Plans based on this analysis focussed on steps they could take to empower themselves and persuade other stakeholders to support them. They also decided to reassess the situation in six months' time, to see if their actions had improved their chances of success (see the outcomes in Chevalier and Buckles, 2019 and Buckles and Khedkar, 2013).

Stakeholder categories	Net losses			Net gains	
	High	Moderate	Low/None	Moderate	High
	--	-	0	+	++
Dominant 					
Forceful 					
Influential 					
Dormant 					
Respected 					
Vulnerable 					
Marginalized 					

Stakeholder	High Net Losses	Moderate Net Losses	Low/None Net Losses	Moderate Net Gains	High Net Gains
Landholder	x				
Revenue Department					
Gram Panchayat					
ITDP project officer				x	
ADS					x
Katkari families					x

Step 8 Discuss the resulting **stakeholder structure** showing the distribution of power, interests, legitimacy and social relations involved in the situation or proposed action. Pay particular attention to conflicts of interests, differences in power and perceptions of low legitimacy. Assess how existing ties of **collaboration or conflict** make the situation easier or more difficult to manage.

Step 9 Identify the **actions** and the **steps** that stakeholders can take to achieve their goals while dealing strategically with existing stakeholder tensions. Where the stakeholder structure is perilous for some, or the social relationships complex, participants can consider ways to modify existing relations of power, interests and legitimacy. Broadly,

- If **power differences** are an issue, find ways to increase the resources available to vulnerable or marginalized stakeholders (or measures to empower them). Involve these stakeholders in decisions regarding proposed actions. Strengthen organizations and alliances between powerful and weaker organizations. Or create opportunities for shared leadership and broader participation.
- If **conflicting interests** are an issue, find ways to modify the situation or proposed action to reduce losses or maximize potential gains. Develop a common vision of shared goals and explore underlying or longer-term interests. Share a detailed analysis of the costs and benefits of the situation or proposed action. Or create new incentives or mechanisms for the redistribution of gains.
- If **low legitimacy** is an issue, find ways to use the legal system to demonstrate rights and responsibilities. Uphold the importance of local norms. Inform people about their rights and responsibilities. Increase public awareness. Or organize demonstrations of stakeholder resolve.
- All stakeholders may benefit from a situation or proposed action (thereby appearing on the right side of the table) but have a **history of poor or limited collaboration or open conflict**. If this is the case, discuss actions and steps to develop or strengthen coalitions or reduce conflict by seeking third-party mediation or building trust. For a more detailed analysis of trust, use *Social Dynamics* (p. 129).
- Some of the stakeholders identified initially will not end up in the table if they have no or very low interests at stake and little power or legitimacy in relation to the situation or proposed action. Find ways to engage these stakeholders, or set them aside as **non-stakeholder** groups or non-actors in the current situation.
- *Social Analysis CLIP* can incorporate two other factors: the actual **positions** and the **values** that stakeholders express in real situations and that may or may not coincide with their individual or group interests (see *Position and Interests* as well as *Values, Interests, Positions*, pp. 85–88).

	INTEREST →				
	H ⁻⁻	L ⁻	None	L ⁺	H ⁺⁺
P/L					DONOR [Ⓢ]
PL					ADS [Ⓢ]
P	AGENTS [Ⓢ] PRESENT OWNERS [Ⓢ]			REVENUE DEPT. [Ⓢ]	
L				GRAM-PANCHAYAT [Ⓢ]	
T				EARLIER OWNERS [Ⓢ]	KATKARI FAMILIES [Ⓢ]

Purpose To understand and evaluate the sources and levels of power that stakeholders hold in a certain situation.

Step 1 Define the situation and discuss the **sources of power** that people can use in the situation. Ask for examples of power relevant to the situation, and discuss the definitions of sources of power. Clarify the ideas and modify them using the stakeholder's social categories and terms, if necessary.



Step 2 Create a table. In the top row, insert the sources of power. In the first column, list all the stakeholders involved in the situation identified in Step 1 (see Tips in *Stakeholder Identification*, p. 71).

Step 3 Rate the **level of power** that each stakeholder has for each source of power using a scale of 0 to 5. Record the scores in the corresponding cells. Add an **explanation** for each score to the table or on a flip chart.

Step 4 **Total the scores** for each stakeholder in a summary column. Use the total scores to identify the stakeholders that have relatively high levels of power, those that have middle levels of power, and those have little or no power. Record this summary conclusion in the final column.

Step 5 Review the result and discuss how the **distribution of power** may affect the stakeholders' ability to influence the situation identified in Step 1. If tables are done separately by different individuals or stakeholder groups, compare the results and negotiate a common understanding of the actual situation and the distribution of power that should be aimed for.

SOURCES OF POWER

ECONOMIC WEALTH includes access to or use of natural resources, the possession of material goods, property in kind, equipment, income and savings, financial capital, etc.

POLITICAL AUTHORITY is an office, position or role that is recognized by an institution or by local customs and that gives someone the ability to reach decisions and pass or implement rules and regulations.

The ability to use **FORCE** or **THREATS OF FORCE** is the power to exercise physical strength or threaten to inflict bodily harm on others.

Access to **INFORMATION** and the **MEANS TO COMMUNICATE** involves access to and control over facts, documents, knowledge, skills (technical expertise, experience) and the media (such as radio, television, the Internet, social media, newspapers, publications, public demonstrations, etc.) to make one's knowledge or views known to others.

SOCIAL TIES (group memberships, alliances, histories of collaboration) and **LEGITIMACY** (recognized rights and obligations and the resolve to exercise them) are other sources of power. Use *Social Analysis CLIP* (p. 75) or *Legitimacy* (p. 83) to assess these, if necessary.

Power

ADAPT

To obtain stakeholder profiles that reflect the relative **weight** of each source of power, create a table and insert the sources of power in Column 1. Then set a maximum possible score allowed for each source of power. This maximum possible score provides a weight to the different sources of power in the situation. For more precision, discuss what each level of power means for each source and write (or draw) these descriptions in the corresponding cells. Post the table as a reference for the discussion to follow.

Sources of power	Levels of power				
	1	3	5	7	9
Wealth	Description	Description	Description	Description	
Authority	Description	Description			
Force	Description				
Information and communication	Description	Description	Description		

Then create a new table with stakeholders in the first column and insert in the top row the sources of power and the highest possible score for each source (9 in the example of wealth). Rate the level of power that each stakeholder has for each source of power and total the scores for each stakeholder in the summary column. Use these total scores to determine the overall level of power held by each stakeholder.

Stakeholders	Wealth (max. 9)	Authority (max. 5)	Force (max. 3)	Information and communication (max. 7)	Sum (max. 24)	Rank

'Unlike all other "interested parties" the declared raison d'être of the state consists in developing institutions, laws and procedures to support effective representation, public deliberation and rational thinking towards the welfare of society as a whole. Structures of governance such as modern states are the hardware and fruit of centuries of legal and political struggle all over the world. Stakeholder thinking that treats government bodies as one stakeholder among others beg the question: if public officials (appointed or elected) choose not to stand above the fray, whose interests will they serve?' (Chevalier and Buckles, 2019, p. 264)

Interests

Purpose To evaluate the net gains and losses that may result for different stakeholders or a single stakeholder involved in a situation or proposed action.

Step 1 Define the situation or proposed action and identify the key **stakeholders** involved (see Tips in *Stakeholder Identification*, p. 71). The exercise can be done separately by all stakeholders or by a particular stakeholder group, as needed.

Step 2 Make a list of the **major categories of gains and losses** that may result from the situation or proposed action for any of the stakeholders. Include in the list gains or losses of any valued source of power or resource relevant to the situation or proposed action such as economic wealth, political authority, the ability to use force, information, the means to communicate, legitimacy and social ties (see definitions in *Social Analysis CLIP*, p. 76 and *Power*, p. 79). Divide these resources into smaller categories, as needed. For instance, divide economic wealth into monetary returns, food security, levels of consumption, possessions (such as land, equipment), etc. Add other things of value, such as a clean environment or physical security, if they are directly relevant to the situation or proposed action.



Step 3 Create a **table** with the categories of gains and losses in Column 1. In Column 2, write indicators of each category and the **information** needed to evaluate or measure the gain or loss.

Step 4 Set and record in Column 3 the **highest and lowest possible values** allowed for each gain and loss. This is an exercise in *Weighting* (p. 47). The highest and lowest values should fall somewhere between +100 for gains and –100 for losses. The range in values shows the relative importance and weight of each category of gain or loss in the situation or proposed action identified in Step 1. Gains or losses in social ties may be a lot more important than gains or losses in time, for instance. Different stakeholders may want to establish a different scale from their perspective.

Step 5 Total the **maximum possible gains** allowed when evaluating the situation or proposed action. Then, total the **maximum possible losses**. Indicate the overall scale of maximum gains and losses at the bottom of Column 3.

Step 6 Complete the remaining steps for each stakeholder (using separate tables) or for a single stakeholder. Estimate the **gain or loss for each category** that may result from the situation or proposed action, using the range of values set in Step 4. Then, total the net possible losses or gains. Record the total in the last row.

Step 7 **Review the results** and discuss the kind and level of gains and losses estimated by the stakeholders involved and the overall impact of the situation or proposed action on their interests. If different individuals or groups calculate their own gains and losses, **compare** the results. Discuss how the distribution of interests may affect the stakeholder's ability to respond to the situation or proposed action identified in Step 1.

Interests

ADAPT To obtain a **risk-adjusted value for gains and losses** for a single stakeholder, estimate **how likely** it is that expectations about gains and losses in each category will be met. This is a measure of risk. Choose a percentage likelihood and record it in Column B. Multiply the net gain or loss (recorded in Column A) by the probability (recorded in Column B) across each row. Record the results in the final column (A x B). To calculate the **net gain or loss** that may result from the situation or proposed action, total the adjusted values in the final column and record it in the last row.

Categories of gains and losses	Graduated indicators	Scale (highest and lowest values)	Net gain or loss A	Probability B	Overall value A x B
Yield		-10 to +10	+5	60%	+3.0
Monetary returns		-6 to +6	-6	60%	-3.6
Happiness		-4 to +4	-4	40%	-1.6
Product quality		-6 to +6	+3	50%	+1.5
Food independence		-8 to +8	-4	40%	-1.6
Overall		-34 to +34			-2.3

In this example, an individual farmer estimates the gains and losses from growing tobacco against five weighted criteria. While yield carries the greatest weight and expectations about yield are relatively high (60% probability), growing tobacco produces net losses overall. This is due mainly to not being able to negotiate a good sale price for tobacco leaf, despite having a good quality product. The loss of food independence and pressures on household health and well-being also contribute to losses overall.

'An alternative to rights or power-based contests is interest-based negotiation, known as the Harvard model of negotiation. The focus is on discussing underlying goals, assessing key gains and losses to each party, and negotiating a win-win solution to the dispute. It is principled in its own way, in that it is truthful and non-adversarial. It is a call for the exercise of reason and dialogue with an enlightened and creative understanding of self-interest. "Getting to YES" has nonetheless a darker side, a strictly pragmatic orientation that can accept practically anything, including unprincipled behaviour. When closely examined, the primary purpose of interest-framed dialogue is to bargain for peace and order, not to eradicate injustice. The approach is not meant to challenge existing power imbalances. Addressing individual or group interests without first attending to the non-negotiables of life - without clearly saying 'no' when 'no' is clearly called for - is objectionable. When "Yes" is simply not the "right" thing to say, truthful dialogue should enable people to voice an intractable "No".' (Chevalier and Buckles, 2019, p. 294)

Purpose To gain a better understanding of stakeholder legitimacy using the three 'R' factors, i.e. rights, responsibilities and resolve. Use this technique to investigate how the 'R' factors are distributed, and how this affects the ability of key stakeholders to handle a situation or proposed action.

Step 1 Define the situation or proposed action and list all the **stakeholders** involved (see Tips in *Stakeholder Identification*, p. 71).

Step 2 Discuss examples of the rights and the responsibilities of stakeholders in relation to the situation or proposed action identified in Step 1, and how important these are. Also discuss examples showing their resolve in exercising these rights and responsibilities. Use other terms to discuss these ideas, if necessary.



Step 3 Draw a **Venn diagram** where the circles represent the three 'Rs'. Identify the stakeholders who have high levels of rights, responsibilities and resolve. Locate these 'leaders' in the middle of the diagram. Locate the other stakeholders in the diagram according to their levels of rights, responsibilities and resolve.

Step 4 Review the results and discuss how the **distribution** of rights, responsibilities and resolve may affect the stakeholders' ability to handle the situation or proposed action identified in Step 1. If different individuals or stakeholder groups do their own legitimacy analysis, **compare** the results.



Legitimacy

ADAPT

Create a table with the list of stakeholders in Column 1. Set a range of values for each 'R' factor showing its relative weight, as seen by the participants (such as 1 to 9 for rights, 1 to 6 for responsibilities, and 1 to 4 for resolve; see *Weighting*, p. 47).

Record each stakeholder's **rights** related to the situation or proposed action in Column 2 using key words. Rate the importance of each right using the appropriate scale. Calculate the average importance of the rights of each stakeholder. This is **Score A**. If a stakeholder's rights are in dispute, assign a middle range value and note the dispute. Evaluate and rate the stakeholder's **resolve to exercise their rights** using the appropriate scale, and record the rating in Column 3. This is **Score B**. Multiply Score A by Score B for each row to arrive at an overall assessment of the stakeholder's rights and resolve, and record the results in Column 4.

Stakeholders	Rights			Responsibilities			Total legitimacy score
	Details (Score A)	Resolve (Score B)	(A x B)	Details (Score C)	Resolve (Score D)	(C x D)	

Record each stakeholder's **responsibilities** related to the problem or action in Column 5 using key words. Rate the importance of each responsibility using the appropriate scale. Calculate the average importance of the responsibilities of each stakeholder. This is **Score C**. If a stakeholder's responsibilities are in dispute, assign a middle range value and note the dispute. Evaluate the stakeholder's **resolve to exercise their responsibilities** using the appropriate scale, and record the rating in Column 6. This is **Score D**. Multiply Score C by Score D for each row to arrive at an overall assessment of the stakeholder's responsibilities and resolve, and record the results in Column 7.



To obtain the **total legitimacy score** for each stakeholder, multiply Columns 4 (A x B) and 7 (C x D). Record the result in Column 8.

Positions and Interests

Purpose To compare the positions that stakeholders take on a situation or proposed action with their underlying interests.

Step 1 Define the context and describe the **situation or proposed action** where stakeholder views and interests may differ significantly. Decide which stakeholders will be included and who will engage in the exercise and the steps that follow (see Tips in *Stakeholder Identification*, p. 71).



Step 2 Discuss and rate how strongly stakeholders feel about the situation or proposed action described in Step 1. Use values ranging from -10 (strongly opposed) to +10 (strongly in favour). This is **Score P** (for position). It is an estimate of each stakeholder's **support** for the situation or proposed action. For more precision, use **indicators** to define the meaning of each number on the scale.

Step 3 For each stakeholder ask what would the stakeholder gain if its position were adopted. Make a list of the **gains**, discuss how important the gains are and which ones are the most important.

Stakeholders	-10 I : High net loss P : Strong opposition	0 Neutral	+10 I : High net gain P : Strong support
Ranchers	I ←————— P		
Small farmers	P ●————→ I		
Women's association	P ●————→ I		

Step 4 For each stakeholder ask what would the stakeholder lose if its position were adopted. Make a list of these **losses**. Discuss how important the losses are and which ones are the most important.

In this example, Ranchers strongly support a government plan to establish an industrial port near their community, even though it will displace many and could weaken their control of agricultural land. Small farmers and the Women's association acknowledge the threat to their land, but may also benefit from new markets for products and labour.

Step 5 Calculate the **net gains** (or net losses if the position is defeatist or altruistic) the stakeholder would realize if its position were adopted. Use values from -10 (high loss) to +10 (high gain). This is **Score I** (for interests). For more precision, use **indicators** to define the meaning of each number on the scale. Make sure not to confuse the idea of 'acting in one's *interest*' with 'taking an *interest* in something.' Also, clarify the difference between *interests* and **basic needs**.

Step 6 Create the **table** shown in the example and insert the names of the stakeholders in Column 1. In each row, insert the letters P and I in the cells that reflect the stakeholder's scores for position and interests. If relevant, use the results of *Social Analysis CLIP* to order the stakeholders in Column 1 by rank based on the factors of power, interests and legitimacy. Alternatively, insert the results of *Position and Interests* in the *Social Analysis CLIP* table (see example on p. 86).

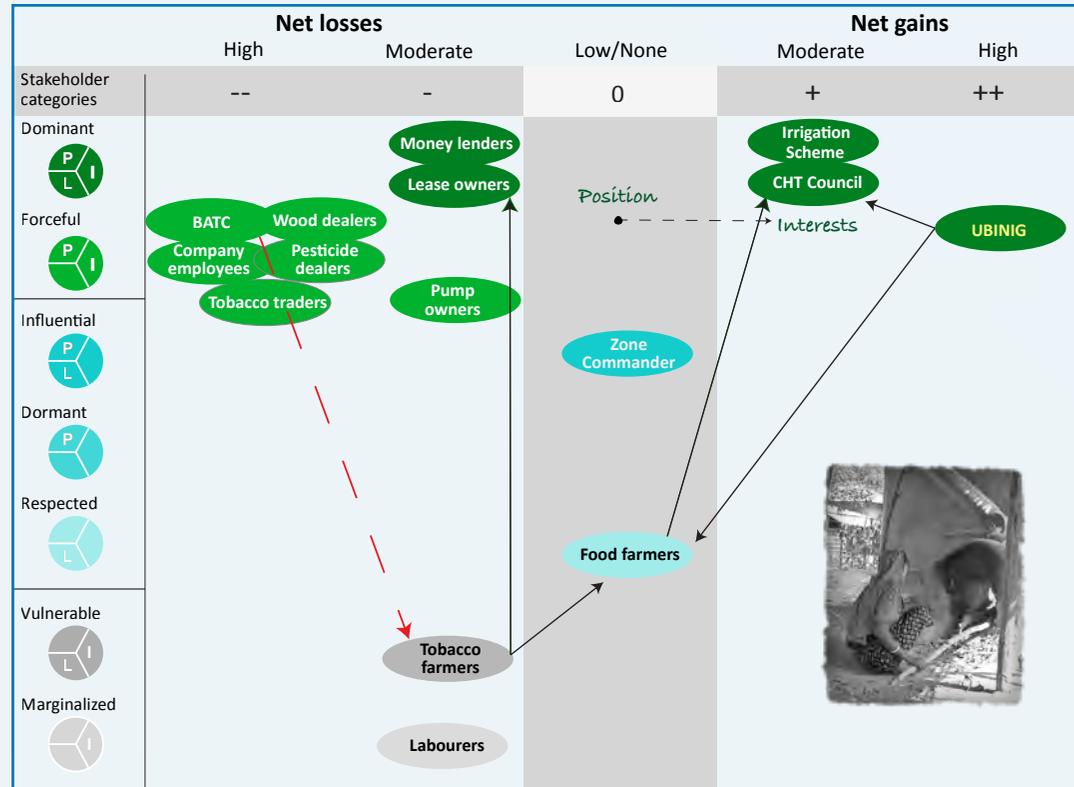
Positions and Interests

Step 7 Compare stakeholder net gains or losses (score **I**) with the stakeholder's level of support for the current situation or proposed action (score **P**). Assess the **degree and the direction of change** that could occur for each stakeholder if discussions and negotiations were based on interests rather than positions.

Step 8 Explore modifications to the situation or proposed action that could satisfy the interests of all parties concerned.

TIPS

- When using a 'why' question to identify stakeholder interests (such as 'Why do we take this position?'), keep in mind that stakeholders may adopt positions that do not reflect their own interests as they define them. People may give answers that focus on their values and **principles** or on **external factors**, not on their interests. If the answer is based on statements of rights or principles (such as 'We live here and this is our forest'), ask what are the **interests at stake** when rights or principles are being expressed. Continue asking this type of question until the underlying interests are made clear (such as 'We need firewood for cooking'). Ask in different ways, such as 'What are the benefits for us?', 'What would we gain if we did it our way?', or 'How would we be affected if it did not go our way?'
- See *Skills in Means* (p. 13) for ways to remain neutral when discussing stakeholder positions and interests.



In this example, UBINIG supports farmers in southern Bangladesh who want to shift out of tobacco farming, into ecological farming. A large block of 'dominant' and 'forceful' stakeholders stand to lose if this initiative proves to be successful. Living in conditions of poverty and marginality, tobacco farmers and labourers are not convinced that their interest is served by this shift either, at least not in the short run. UBINIG plans to undertake action-research demonstrating the long-term benefits of ecological farming. It needs support from the CHT Council and the Irrigation Scheme authorities, stakeholders who are currently assuming a neutral position (P) on this issue, despite the political gains they could achieve if they were involved in broadening markets for diverse agricultural products.

Values, Interests, Positions (VIP)

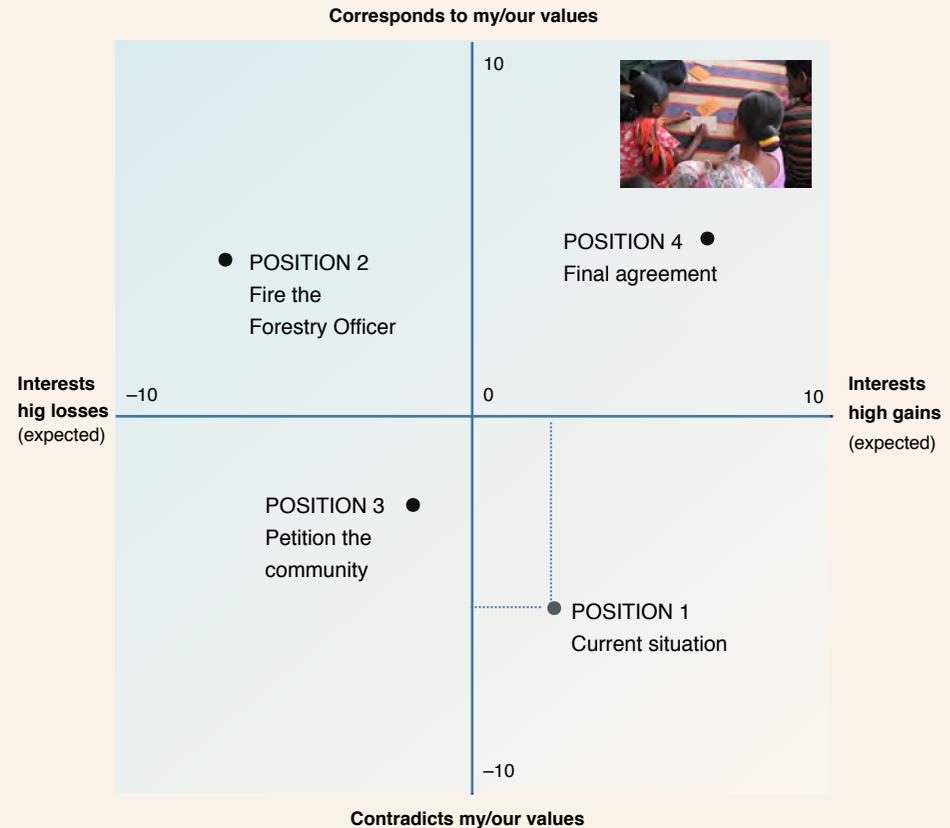
Purpose To compare the positions that stakeholders take on a situation or action (existing or proposed) with their actual interests and the moral values they hold.

Step 1 Define the situation or action where stakeholder positions must be discussed. This may be an action that stakeholders are taking and do not feel entirely satisfied with (for reasons yet to be identified). Determine whether participants should express their positions individually or as subgroups, and whether it should be done **openly** or **anonymously**.

Step 2 Create a diagram by drawing a vertical line that crosses a horizontal line of equal length. Write 0 where the lines intersect, and +10 and -10 at opposite ends of each line.

Step 3 Ask each individual or subgroup to **plot** on the vertical line the extent to which the situation or action **corresponds to the values they hold**. Use +10 to represent a situation or action that matches their values perfectly, and -10 to represent one that fundamentally contradicts their values.

Step 4 Ask each individual or subgroup to **plot** on the horizontal line the extent to which the situation or action supports their interests (financial, professional, political, etc.). These are the **net gains or losses**, expected or observed, that result from the situation or action. Use +10 to represent an action or project that brings high net gains, and -10 to represent high net losses.



In this example, the members of a lumber mill cooperative accuse the Forestry Officer, who is married to a timber buyer, of being in a conflict of interest. They assess four possible positions against their shared values and interests. One solution is to maintain the status quo (Position 1). Another is to call on the municipal government to fire her immediately (Position 2). During the discussion, the Forestry Officer threatens to organize a community petition to support her if she were fired (Position 3). The final agreement (Position 4), however, is that the municipal government will closely monitor her work and make sure there is no favoritism. See Chevalier and Buckles, 2019, pp. 287–88.

Values, Interests, Positions (VIP)

Step 5 **Mark** where the values from the two lines meet. This represents the **position** of each individual or subgroup.

Step 6 **Discuss** the results and explore how to **improve** or **modify** the situation or action so that it better matches stakeholder values or interests. Decide what action strategy to follow in a given situation: negotiate interests or make important concessions on interests to uphold values that count.

ADAPT

- **Label** the four corners of the diagram with the name of a well-known profession, historical figure or life form (animal, plant, spirit) that best represents the position obtained by the combination of extreme scores in each corner.
- Use the technique to assess **different options** (see example).
- Create a large-scale version of the diagram on the floor using masking tape. Ask each participant to create the same diagram on a card and mark their position using their individual ratings on the two factors (values and interests). Then ask them to exchange their diagram with other participants several times so that it can't be traced. End by inviting all participants to stand in the floor diagram at the location marked on the diagram now in their hands. Discussion of the distribution of positions can maintain **anonymity**, making it easier to discuss sensitive issues openly.

'In his Theory of Communicative Action, Habermas acknowledges the fact that humans are in the habit of making rational choices between efficient means to achieve particular ends. Every time we consciously allocate scarce means to competing ends, we exercise and further develop our power of 'instrumental mastery'. However, humans also behave rationally when they 'neither give in to their affects nor pursue their immediate interests but are concerned to judge the dispute from a moral point of view and to settle it in a consensual manner' (Habermas, 1981, p. 19). Disputes can be settled through moral claims expressed with truthfulness, in line with societal norms and values that are reasonably shared between subjects. Humans don't always engage in strategic action to achieve individual goals. They also strive toward mutual understanding and agreement based on consensual norms. This is a feature of everyday language and truthful communication, the foundation of deliberative and rational dialogue in democratic society.' (Chevalier and Buckles, 2019, p. 283)



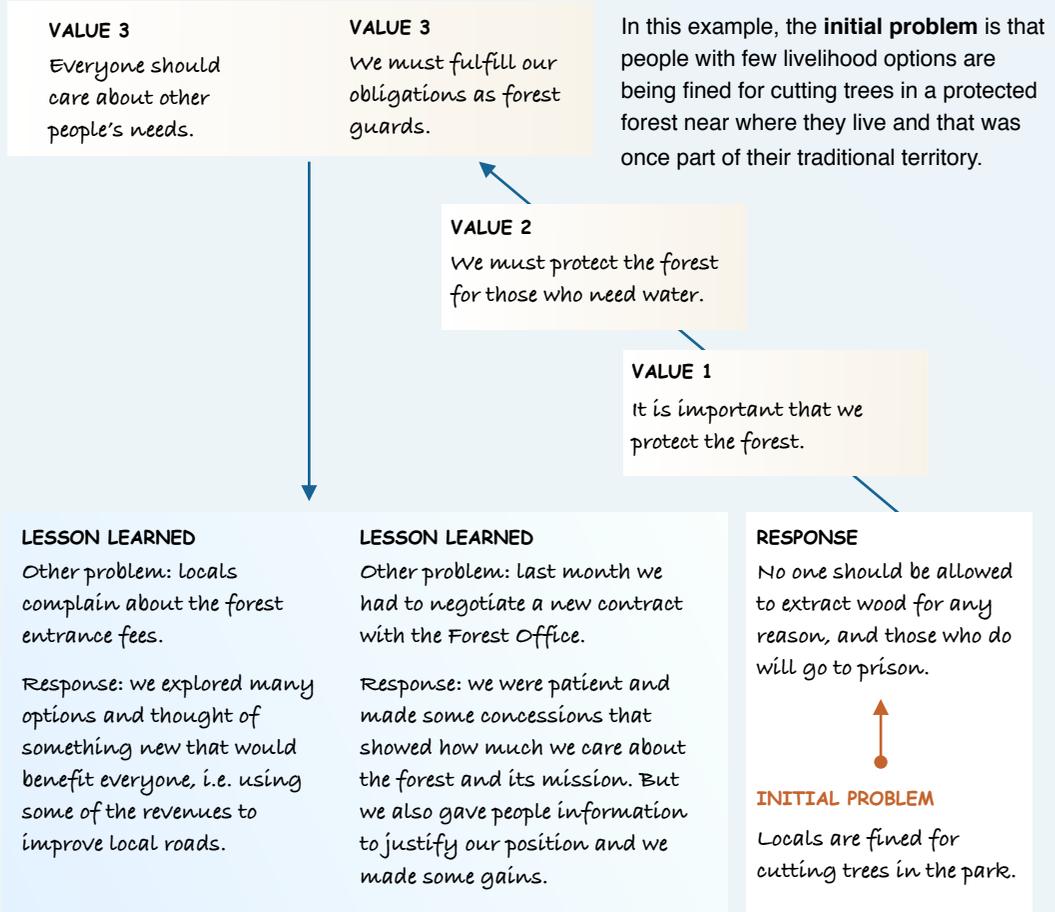
Lessons and Values

Purpose To better manage a problem by becoming aware of what moral values people hold and applying the lessons learned from successful actions that are consistent with those values.

Step 1 Identify the **problem** that participants find difficult to resolve and that has moral implications they are **not entirely satisfied with**. Describe the response or position that some have adopted, using positive terms to describe the principle or value at stake. Record the problem and the response to it on a card using a few key words or a short sentence. Add key details on the back of the card.



Step 2 Identify **why** participants are not satisfied with the response or position identified in Step 1, and record the answer on another card. If the reason is a negative statement, find positive terms to describe the **principle or value behind the reason**. Place this value card immediately above the first card.



Imagine if we did the same...

Lessons and Values

- Step 3** Discuss why the value identified in Step 2 is important. Ask in a different way, such as ‘Why does this matter?’ or ‘What will happen if we all apply this value?’ Record the **new principle or value** on its own card and place it above the other cards.
- Step 4** Repeat this process until a **core value** is reached, and place it at the top. If there are two core values that are relevant to the problem, place both of them at the top.
- Step 5** Identify at least **one positive situation where participants managed to confidently apply their core value(s)** to good effect. The situation may be different from the starting problem, but should be a real-life example involving at least some of the same actors and where the actions taken by the participants were consistent with their core values. This provides a comparison. Describe what was done in that situation.
- Step 6** Go back to the situation identified in Step 1 and **imagine** a response or position using lessons learned about how core values can guide actions toward positive results.

TIPS

- **Laddering up** to identify core values is tricky. To begin with, when using a ‘why’ question to understand behaviour, people may provide answers that explain one of three things: what factors cause them to act as they do, what they expect to gain from their response, or why it is the right and moral thing to do. In other words, the discussion revolves around either external factors, the interests that people pursue, or the principles they hold. Since *Lessons and Values* is concerned with moral issues, the question must focus on people’s sense of right and wrong. To do so, participants must ask themselves ‘Why do we think this value (e.g. peace) is so important?’ or ‘Why is this (e.g. peace) essential in life?’ These questions help people express their life ideals from a moral perspective. Participants will recognize values that are higher up the ladder when they express things that are deeply felt and are central to the image they have of their ideal selves and relationships to each other.
- The same line of questioning may be used to move in the opposite direction, from abstract principles to their practical implications. This is called **laddering down**. The end goal here is to discover the **concrete interests or needs** that follow from the rights or principles people hold. The grounding question can be formulated in different ways, such as ‘What are the benefits for us?’, ‘What would we gain if we did it our way?’, or ‘How would we be affected if it did not go our way?’ For example, principled statements about the right of people to use a forest (such as ‘We live here and this is our forest’) can be laddered down to the concrete needs at play (such as ‘We need firewood for cooking’). See *Skills in Means* (p. 13) for ways to remain neutral when discussing stakeholder values.



Moral Conflict Assessment (MCA)

Purpose To assess difficult situations where you are constrained to act in ways that go against your conscience.

Step 1 Determine whether you should examine the situation...

- individually, in groups (mixed or homogeneous) or as a single group;
- openly or anonymously;
- with or without a facilitator;
- using diagrams or the interactive online tool (see www.participatoryactionresearch.net/copy-of-history-of-sas2).

Step 2 Describe what you are constrained to do

Describe what it is **you have to do** that goes against your conscience. Write down details and key words and indicate how long it has been going on.

Alternative topic: you can apply the MCA tool to any **moral dilemma** or **personal stress** situation. To do so, write down details and key words that best describe what you are doing that causes you stress. Maintain this focus throughout the assessment.

Advanced application. Use *Timeline* (p. 55) to describe the history of your moral conflict situation (include Steps 3 and 4 below).

Step 3 Describe the effects on you

Describe how the situation **affects** you (e.g., anxiety, sleeplessness). Write down details and **key words** that best describe each effect and its **intensity level** on a scale of 1 (low) to 4 (high). Rate the **overall intensity level** of the combined effects using the following scale.

- Level 1: **Discomfort** is the uneasiness you may experience when you are pressured to act against your conscience.
- Level 2: Discomfort turns to **stress** when it affects your behaviour and personal well-being.
- Level 3: Stress leads to **suffering** when it involves high levels of anxiety, fear, anger, sorrow, guilt or shame.
- Level 4: **Distress** is acute suffering involving extreme anxiety, sorrow, guilt or pain.

Step 4 Describe how you cope

Describe the things you are currently doing to **cope** (see p. 92). Write down details and key words that best describe each thing you do.

Moral distress 'is a phenomenon now so widespread that it may have become a defining malaise of our age. Problems of conscience and the loss of meaning affect not only healthcare workers but also people providing routine frontline services in practically all settings. The growing list includes firefighters, social workers, international aid workers, street-level bureaucrats, police officers, and military personnel. One factor exacerbating the situation is political cynicism in the general public. More than ever, mistrust towards elected officials leaves citizens disillusioned with the workings of democracy, discouraging them from engaging in critical thinking, social action and civic engagement . . . To make matters worse, the lay public has more and more reasons to doubt the role of higher learning and scientific research in problem solving for the common good. In its own way, our journey to advance PAR theory and methods reflects the widely-felt need of university students, teachers and researchers to find meaning in formal education and the discovery process. In our view, science-in-society is an appeal for all of us to think ethically, by going beyond the pursuit of professional advancement and "knowledge for its own sake", and giving serious thought to the many pressing issues of our times.' (Chevalier and Buckles, 2019, pp. 405–6)



Moral Conflict Assessment (MCA)

Rate the extent to which your overall coping strategy involves

- Looking after your **personal well-being**, on a scale of 1 (one circle) to 3 (three concentric circles);
- Analyzing and **thinking through** the situation, on a scale of 0 to 10 (move your circle up or down, along the vertical axis);
- Taking **meaningful action** (individual or collective) to address the situation, on a scale of 0 to 10 (move your circle right or left, along the horizontal axis).

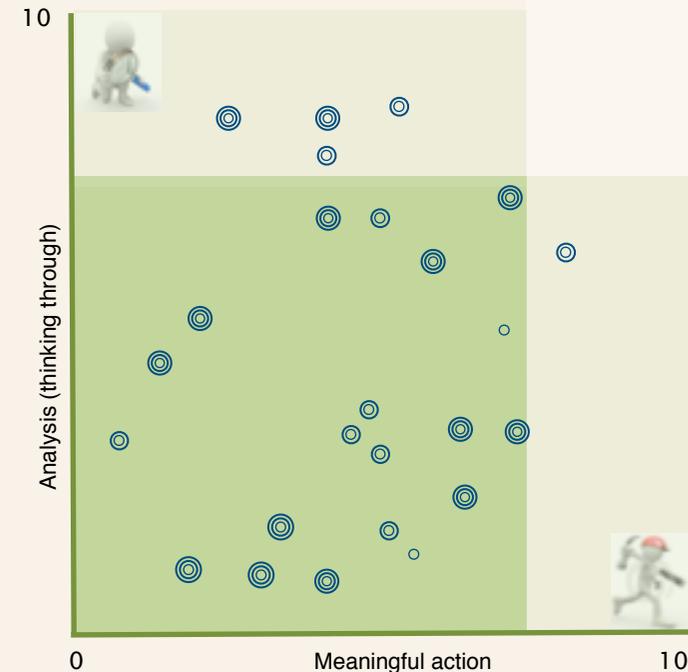
Step 5 Examine your core values and other concerns

Describe

- any core **value** that goes against or partly justifies what you are constrained to do, as described in Step 1 (e.g. caring for the most vulnerable, promoting autonomy);
- any concern you may have about your **self-interests** that goes against or partly justifies what you are constrained to do (e.g. keeping your job, getting a promotion);
- any concern you may have about your sense of **self-worth, identity or personal growth** that goes against or partly justifies what you are constrained to do (e.g. being recognized, developing your skills).

Based on what you just described, identify **keywords** that best describe each value or concern. Insert these keywords in the appropriate circles in the **Venn diagram** below. Write in **red** keywords for values and concerns that go against what you are constrained to do. Write in **green** those that partly justify what you are constrained to do.

Why should we raise and address questions of self-interest or self-worth, identity and personal growth when dealing with moral issues? Because in real life, all of these concerns often come together and need to be disentangled. People may define the problem they face as mainly ethical in nature, knowing well that **other issues are at stake**. The reasons for saying less about self-interests or issues of self-worth, identity and personal growth may be personal or political. The MCA process helps make plans for **addressing each area of concern**.

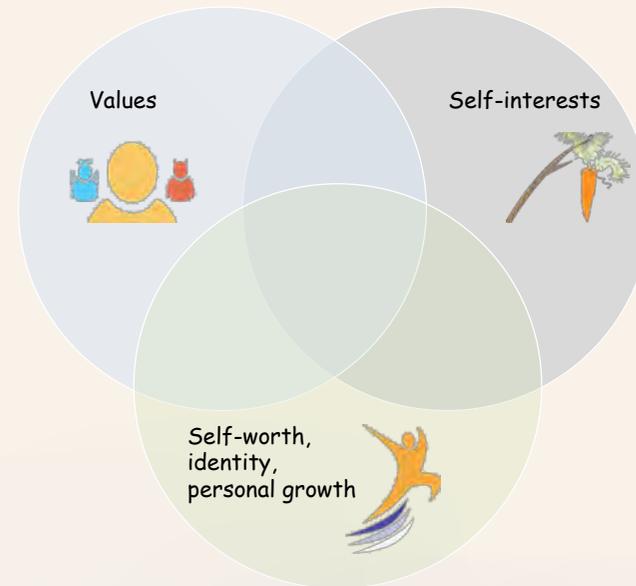


In this example, health professionals living in the Caribbean describe how they cope with specific situations of moral stress at work. While 56% (14/25) of them take healthy measures to look after their own well-being (3 concentric circles), 36% (9/25) spend much time analyzing the problem and thinking it through. About 28% (7/25) consider they can take meaningful and effective action to remedy the situation.

Moral Conflict Assessment (MCA)

DEFINITIONS

- **Values** involve principles or judgements about what is morally important in life, what you want more of in the world (e.g. compassion, justice, human dignity, etc.).
- **Self-interest** involves what is to your personal advantage or benefit, largely economic and professional in nature (e.g. job security, higher income, better working conditions, influence, etc.).
- **Self-worth, identity and personal growth** is the sense you have of your own value and progress in achieving your full potential in life (by being yourself, developing your skills, fulfilling your capacities, receiving recognition, being respected, etc.).

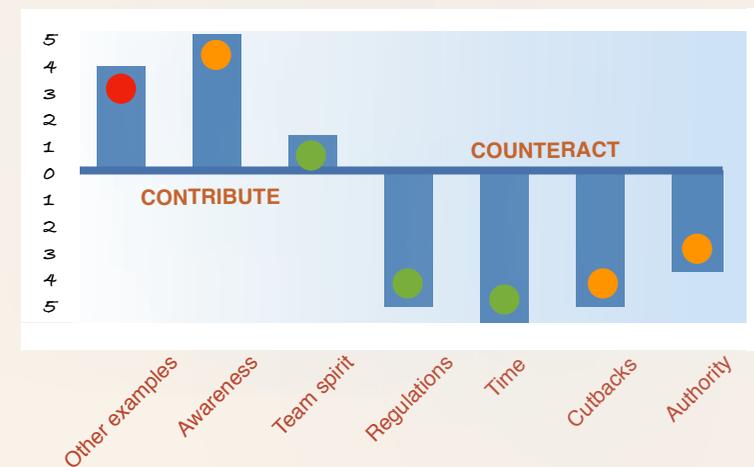


Step 6 Examine factors that help or hinder

Using *Force Field* (p. 65), describe **existing factors that contribute** and also **those that counteract** your **ability to change things** and act according to your conscience. Make sure these factors describe the current situation. For instance, we know that having money helps and having little doesn't; but the question here is which description adequately characterizes the situation you face.

Identify **keywords** (your own) that best describe each factor. For each factor, **rate three things**:

- its **negative or positive weight** on a scale of -5 (hinders a lot) to +5 (helps a lot);
- the degree of **control** you have over it on a scale of no/low (red) to moderate (orange) and high (green);
- the extent to which it is a **priority for action** on a scale of no/low (1) to moderate (2) or high (3). Focus on factors over which you have some control, by strengthening those that contribute and reducing those that counteract your ability to change things.



Moral Conflict Assessment (MCA)

Step 7 Plan new coping strategies

Review the preceding steps. Based on your review, identify several responses you can adopt to cope more effectively with the situation (see list below). Write down **keywords** and **details** that best describe each response. The list may include current things you do that are still helpful (from Step 4) and responses to reduce or strengthen priority factors (identified in Step 7). Your plan should include immediate steps and may involve only you or other people you would like to engage or partner with.



Using the same diagram from Step 4, **rate** the extent to which your new plan involves putting more effort into

- Looking after your **personal well-being**, on a scale of 1 (one circle) to 3 (three concentric circles);
- Analyzing and **thinking through** the situation, on a scale of 0 to 10 (move the circles up or down, along the vertical axis);
- Taking **meaningful action** to address the situation, on a scale of 0 to 10 (move the circles right or left, along the horizontal axis).

Step 8 Check in

Identify any **change** that the overall assessment brings to the way you feel about the situation and the effect it has on you. Write down **key words** and **details** that best describe each change. **Rate** how you now feel on the whole, on a scale from comfort (0) to discomfort (1), stress (2), suffering (3) and distress (4).

Here are some **general ways of coping** that you may wish to consider before you identify specific responses that work for you.

Looking after my/our well-being

- Create my own safe space, free of fear and stress
- Acknowledge and process strong emotions in a positive manner
- Be mindful of how I feel and its impact on mind and body
- Keep a calm mental state in difficult situations
- Be kind to myself when encountering pain and personal shortcomings
- Practice meditation and contemplation
- Express my creative potential
- Release stress through intense physical activity
- Do things that bring order into my day-to-day life
- Find satisfaction in being helpful and giving
- Find ways to better connect with others and nature

Analyzing the situation (thinking it through)

- Identify my needs and limits
- Know my strengths and areas of competence
- Establish and acknowledge the facts
- Explore and clarify my core values
- Put things into perspective
- Take into account other people's views
- Treat the situation as an opportunity to learn
- Envisage and explore positive outcomes
- Think about how I can influence things
- Think outside the box

Take meaningful action (individual or collective)

- Help create safe space for dialogue and genuine collaboration
- Express with clarity and confidence who I am and what I stand for
- Try out some promising strategies even if success is not guaranteed
- Persevere in my efforts despite initial setbacks
- Look for help and support when needed
- Exercise rigour and diligence
- Know when to be flexible and adapt

Assessing options



'Efforts to stimulate creativity for effective problem solving have a long history and have produced a rich body of tools and practice. In Chapter 3, we saw how historical changes in the way we understand science, industry and the world paved the way for the development of a new science of people- and evidence-based action experiments. This pragmatic and democratic shift in science involved a probabilistic understanding of quality control in the sphere of production, and the extension of step-by-step scientific thinking to collaborative problem solving, mostly in workplace settings. Along with this also came a more flexible understanding of the relationship between scientific reasoning and other forms of thinking, ranging from Freud's free association to Bergson's intuition (Bergson, 1952) and Osborn's 'applied imagination' (Osborn, 1963). Since the 1950s, people have developed and promoted legions of techniques to support group-based 'outside of the box' thinking. 'Creative problem solving' is now a routine part of facilitated group dynamics at work, at school, in community life and in multistakeholder settings.

While a major step in the right direction, efforts to promote creativity can fall prey to two common traps. The first consists in using creativity tools on their own (for visioning, brainstorming, ideation, etc.), without due attention to the goal-actions that bring people together in the first place. Unless they harness the skills of pragmatic and critical social thinking, creativity exercises can trivialize important issues that require effective action. The second trap is to simply insert creativity steps into fixed, standard methodologies, as though creativity were a single moment in a process that remains rational and routine-like in all other respects.

In our view, PAR needs to take creativity to a higher level, beyond isolated leaps of imagination or fully-packaged methods that incorporate creativity tools along the way. An alternative that goes further and has a wider scope consists in making the design of each action inquiry a creative act of its own. This means selecting, designing, combining, scaling and tweaking the tools that suit the precise situation, some of which may be creativity tools proper, and making sure the overall process is lively, generative, rigorous, useful and flexible all at once. Ultimately, this is the creativity we're aiming for in this book, illustrated through stories of how tools can be adjusted and combined to help people think outside the box while being methodical and action-oriented at the same time.' (Chevalier and Buckles, 2019, p. 303)

Ideal Scenario

Purpose To imagine an ideal scenario that recognizes and takes inspiration from past accomplishments and current strengths, using one or more of the following tools.

THE IDEAL SCENARIO TAPESTRY

Define a focus for a vision and invite participants to brainstorm elements of an ideal scenario (see *Free List and Pile Sort*, p. 35). Encourage inclusive language by starting each contribution with the phrase 'Yes, and . . .' (and to avoid the use of 'Yes, but . . .'). Invite participants to make drawings of elements of interest using good quality paper and drawing materials (pastels, intense colour pencils, etc.) and to enjoy the creative process without judgement. Suggest the option to use real or imaginary life forms to reflect their vision (mythical figures, animals, plants, landscapes, people, buildings, etc.). When ready, invite participants to explain their drawings to others and combine them into a collective tapestry or sequence the drawings to create a narrative of an ideal scenario. Instead of drawing, create a word cloud from key words in the ideal scenario

TRUE OR FALSE

Define a general topic and invite participants to think of a true story about a great thing they have accomplished, and a false story about something they would like to accomplish in relation to the topic and that builds on their existing strengths. Share the stories in pairs or small groups. The false story must be told convincingly while others try to guess which they think is the true story, and which is the false one. Acknowledge the aspirational qualities of the false stories and the current strengths reflected in the true ones.

THE VISION CIRCLE

Define a specific focus for the vision, and invite participants to sit in a circle. Begin by asking participants to quietly think about an ideal situation relevant to the focus, including the gains that might result, the individual and group strengths and accomplishments that would be part of it, and the factors that would make it work. Then invite participants to close their eyes and offer one or two details of their vision, starting with the words 'I have a dream'. Others can join in whenever they are ready, without stopping to object or evaluate their own ideas or those of others. People can include the statements already heard and add new elements to the vision until the activity slows down naturally. The facilitator may ask questions about what the ideal situation looks like and ask if anyone has anything else they would like to add before the activity ends. Conclude with a brief discussion of what is exciting about the vision of the future, what feels possible and what was surprising in the visions shared.



The Carrousel

Blue-sky thinking

Purpose Build consensus gradually, in light of feedback loops and iterations of one or several initial ideas.

Step 1 Define the topic and **purpose** of the exercise, and review key question(s) to be addressed.

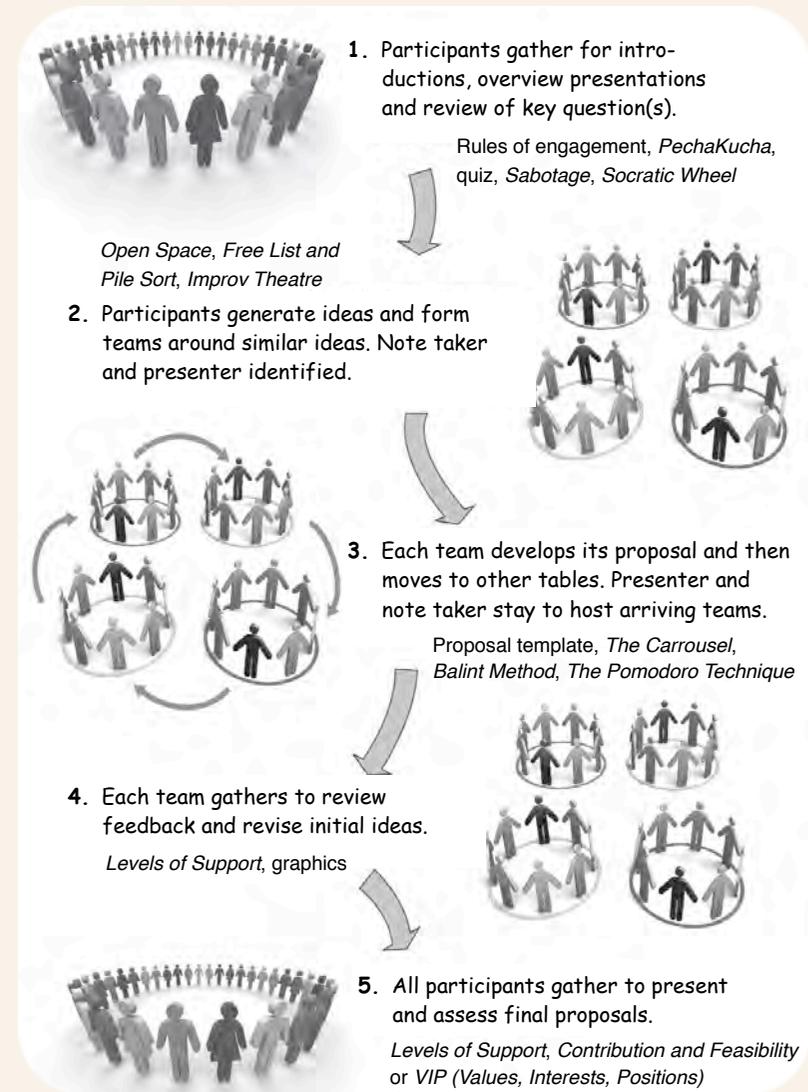
Step 2 Participants divide into **teams** to discuss and develop ideas. Consider whether to create homogenous groups to discuss matters separately or mixed groups to iron out differences from the start. Each group may work on the same question, or focus on a different task, depending on what the process is meant to achieve. Create a **template** teams can use to organize the discussion and presentation of ideas. Team members elect a skilled **note taker** and a **presenter**.

Step 3 When ready, all members of the team except the presenter and the note taker **move together** to hear the ideas of another table, provide comments, and 'steal' good ideas to advance their own team proposal. If teams are working on different tasks, travellers to other tables can focus on taking note of possible connections between different proposals, and ways to integrate them. Presenters and note takers stay at their original table, present their proposal to each visiting team, and take detailed notes of the **feedback**. They act as hosts for visiting teams. Their task is not to debate or counter the observations made by travellers, but rather to collect them as new design elements for consideration by the original proponents. Two or three rounds are usually enough.

Step 4 Teams reconvene to **review** the feedback, discuss ideas picked up from other teams and then **revise** and create a new synthesis of their own proposal.

Step 5 Conclude with a short **plenary** session where all teams present their result, with a focus on revisions from earlier iterations and an overall assessment of the proposals.

Combine The figure on the right shows how *The Carrousel* can be combined with other tools at each step of the process (see example on p. 11).



Tree of Means and Ends

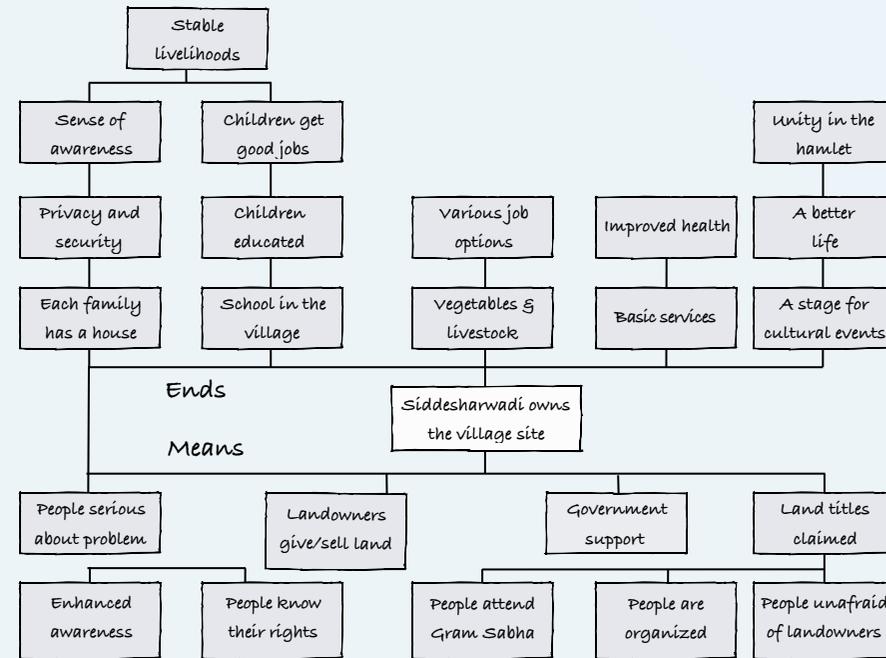
Purpose To understand the ends pursued and what can be done to achieve a core goal. The *Tree of Means and Ends* is a mirror image of the *Problem Tree* (p. 61) and can build on results from a *Problem Tree* or work as a stand-alone exercise.

Step 1 Define the **core goal** shared by the participants. Place a card with key words, a drawing or an object representing the goal in the middle of the workspace. This corresponds to the trunk of the *Tree of Means and Ends*.

Step 2 Ask 'What might happen if we achieve this goal?' Invite participants to write each response on a card using key words or a short positive statement. Add details as needed to the back of the card or on a flip chart. Place the cards above the tree trunk as though the core goal had already been achieved. These are the **first-level ends** or fruit of the core goal.

Step 3 For each first-level end ask 'What might happen if we achieve this?' The results are the **second-level ends** that emerge directly from each first-level end. Write (or draw) each second-level end on its own card using a few key words, and add details as needed to the back of the card or on a flip chart. Place the new cards in a row above the corresponding first-level ends.

Step 4 Use the same method (Step 3) to determine the ends directly emerging from each second-level end. Place these **third-level ends** in a row above the corresponding second-level ends. Connect the first-, second- and third-level ends with lines representing the branches growing from the core goal on the trunk.



Step 5 Go through the same steps (Steps 2 to 4) to determine the **first-level, second-level and third-level means** needed to accomplish the core goal. Ask participants 'What do we need to do or obtain to achieve our main goal?' Include all necessary means but leave out any that people think will have undesirable effects. Write each means on its own card, and place these in layered rows below the core goal.

Step 6 **Review** the result and look for means and/or ends that fit into both the bottom and top part of the **Tree of Means and Ends**. These may point to loops or 'virtuous circles' that reinforce each other through direct or indirect connections to the various levels of means and ends.

Step 7 Identify the most important, the most salient or the least difficult means to create. These may be **priorities** for action. Identify the ends that are most inspiring to the people involved in the exercise, or that point to reasons for achieving the goal not previously considered.

Purpose To identify and overcome habits, established patterns, doubts, fears and other barriers to success, with a touch of humour.

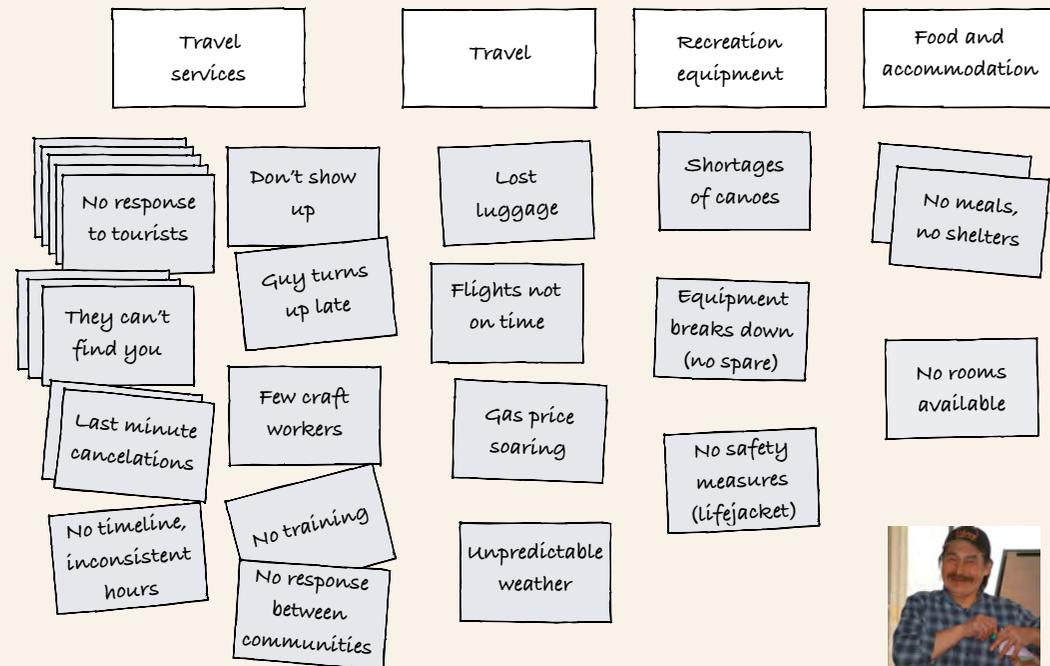
Step 1 Define a plan, activity or project and ask participants to think of one or two things they or others could do to make sure it will fail completely. Record each **sabotage idea** on a separate card. Encourage creative responses and remind everyone that they are not committed to any of the sabotage ideas stated!

Step 2 **Share** the sabotage ideas. Use *Free List and Pile Sort* (p. 35) to organize them into categories.

Step 3 **Review** the results and transform the sabotage ideas into positive statements, strategies or factors of success.

COMBINE

The Improvisational Theatre game *But Versus And* can be a follow-up to *Sabotage* if one of the behaviours consists in being too critical or to censor oneself or others prematurely. To start, identify a proposed task or action related to the issues under discussion. Ask participants to comment negatively on the proposed plan or task, starting each sentence with 'Yes, but . . .'. After a few minutes of critical feedback, ask the group(s) to comment on the same task or action starting each sentence with 'Yes, and . . .'. Review and contrast the two rounds of discussion and how people feel about the plans emerging from each round. The exercise can incorporate other *Attentive Listening* tips as well (p. 14).



In this example, Cree tourism operators discuss what they could do to make sure tourists never return and tell their friends horror stories about their trip.

Sabotage lifts 'two rules that govern normal discussions about problems that need to be resolved. The first rule is that talking about problems is serious business. The second is that people have little control over persistent obstacles that make it difficult to achieve their goals. Sabotage makes a point of breaking both rules.' (Chevalier and Buckles, 2019, p. 215)

Disagreements and Misunderstandings

Purpose To rank stakeholders' goals in order of importance, and review disagreements or misunderstandings people may have about these goals.

Step 1 Define the **situation** or proposed action and list related goals. Goals may be objectives, activities or the moral values that people hold. Define these clearly using positive terms, and write key words on cards or make drawings or objects to represent them (see *Free List and Pile Sort*, p. 35). Create two identical sets of the goals.

Competing project priorities of men and women in Mehi, West Bengal, India

Options	Ranking by men	Ranking by women	Dis-agreement	Ranking by women for men	Women's misunderstanding	Ranking by men for women	Men's misunderstanding
Mixed cropping	2	3	1	3	1	5	2
Fisheries	1	4	3	2	1	2	2
Grain bank	4	2	2	4	0	3	1
Road construction	6	6	0	1	5	6	0
Children's nursery	3	1	2	5	2	4	3
Kitchen garden	5	5	0	6	1	1	4
All activities			8/18		10/18		12/18

In this example, men and women in Mehi, West Bengal (India) ranked competing priorities for new investments in local economic development by a non-governmental organization active in the community. Differences in priorities, and the negotiation of future plans, centred around three options: maintaining fish ponds, the children's nursery and the grain bank (see disagreement column). The level of misunderstanding was high for both groups (see Women's misunderstanding and Men's misunderstanding columns), mostly around the low importance of road construction to the men and the low importance of the kitchen garden to the women. Discussion then focussed on true priorities and ways to bridge misunderstandings.

Step 2 Divide the participants into **two groups** based on some significant difference relevant to the situation (such as men and women, management and workers, community members and government officials, high and low income, etc.). Ask each group to gather separately (perhaps in different rooms) and to rank the goals in order of importance from first to last (see *Ranking*, p. 37). The most important goal should be numbered 1, with each score recorded below the goal written on the corresponding card.

Step 3 Once the ranking is complete, ask each group to rank the same goals as they think the other group would have ranked them. This will produce two rankings, one of their own priorities, and another of the **ranking they think the other group will have**. Write the second set of scores on the back of each corresponding card.

Step 4 Come together as a single group to **compare** rankings of the cards. First look for similarities and differences in **actual priorities**, and discuss the implications. Then look at each group's **understanding** of the priorities of the other group, and discuss the implications. Members of each group may wish to discuss these issues among themselves before sharing their views with the other group, especially if there is a lot at stake.

Disagreements and Misunderstandings

To show the order of priorities physically, ask members of each group to distribute cards among themselves and to form **two lines** facing each other, with cards in their hands, in the order of the groups' priorities. Discuss the differences, and then ask one line to reorganize itself as they thought the other group would have ranked the goals. Discuss the misunderstandings of this group, and then reorganize again to discuss the misunderstandings of the other group.



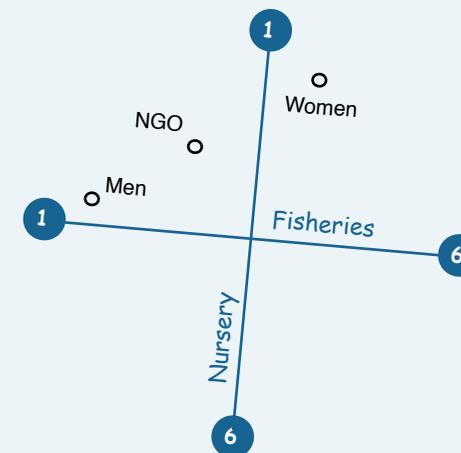
Step 5 Levels of disagreement combined with levels of misunderstanding produce **six possible scenarios** (see table). Identify the scenario that best reflects the findings of the exercise.

Step 6 This step is optional. To measure **levels of disagreement** and **levels of misunderstanding** between the rankings and priorities of the two groups, create a table, as in the example (p. 101). To assess levels of disagreement, total the differences between same-goal rankings of the two groups. Then, divide this number by the maximum difference that could have been generated by the two ranked lists. If values range from 1 to 6, then the maximum difference is 6-1, 5-2, 4-3, 3-4, 5-2, and 6-1, for a total difference of 18. Multiply the result by 100; this gives you the percentage level of disagreement. To assess **levels of misunderstanding**, use the same calculations by comparing the actual rankings of each group with the rankings attributed to them by the other group.

SCENARIO	Understanding		Misunderstanding
Agreement	Scenario 1 The parties agree and both know it	Scenario 2 The parties agree but one doesn't know it	Scenario 3 The parties agree but don't know it
	Disagreement	Scenario 4 The parties disagree and both know it	Scenario 5 The parties disagree but one doesn't know it

TIPS

- To compare and discuss the rankings of **more than two groups**, identify the **two goals** where people seem to **disagree** the most. Create a diagram by drawing a vertical line that crosses a horizontal line of equal length. Use the vertical line to represent one goal, and the horizontal line to represent the other. Write the lowest and the highest ranking numbers at the opposite ends of each line. Place each group's name into the diagram where the group's rankings on the two goals intersect.



Negotiation Fair

Managing expectations

Purpose To assess and negotiate what stakeholders can expect of each other.

- Step 1** List the **stakeholders (individuals or groups)** that want to work together to achieve common goals (see Tips in *Stakeholder Identification*, p. 71). Create a flip chart or 'post box' for each stakeholder able to participate in the exercise. Each group can also choose a symbol (plant, animal) to represent themselves.
- Step 2** Ask each stakeholder to create one **card** for each other stakeholder. Each card should indicate who it is from and to whom it is addressed (see example). One postcard may be self-addressed (with a view to strengthening collaboration within the group) and another addressed to all parties forming a network or coherent groups of stakeholders, if appropriate. (If many stakeholders in a particular context do not need to interact with each other, focus on the level of interaction that exists between one or two key stakeholders and all other stakeholders.)
- Step 3** On each card indicate what you **request** from the other party. On the other side of the card, indicate what you are willing to **offer** in return.
- Step 4** Make a **copy** of each completed card for later discussions. **Post** each original card on the flip chart or in the 'post box' of the stakeholder the card is addressed to.
- Step 5** Invite each stakeholder to **read the cards** they receive from others and decide which other stakeholder they would like to **meet** immediately to explore mutual expectations and reach agreements.
- Step 6** Set a time for a **negotiation fair** during which any stakeholder can meet any other stakeholder to discuss offers and requests and specific ways to meet mutual expectations. When two parties reach an agreement, used parchment-like paper to put the agreement in writing, including signatures and notes concerning things that needed more discussion or approvals from others. Encourage parties to **announce** agreements or successful conclusions to a discussion by clapping, congratulating each other, launching a balloon or making some other celebratory gesture.
- Step 7** All stakeholders can present their agreements in a **plenary session**, if they so wish. End the exercise by inviting all stakeholders to discuss their **expectations of the community of all stakeholders** and what they are willing to offer in return. (See instructions on how to combine *Negotiation Fair* with *Social Dynamics*, pp. 129-131.)

TO: Park administration
Request:
TO: Park administration
Offer:
FROM: Resident association



Levels of Support

Purpose To determine how stakeholder feel about a proposal or course of action and their actual level of commitment, before a decision is taken.

Step 1 Identify or describe a proposal or **course of action** under consideration. Create a descriptive title or drawing, or identify an object that represents the proposal or course of action.

Step 2 Create a scale with '**gradients of agreement**' rather than a simple 'yes' or 'no' voting procedure. The scale should consist of up to **nine statements** and no less than four statements ranging from the most negative to the most positive response to the proposal or course of action. Use phrases and local expressions that are meaningful to the people involved.

Step 3 Discuss whether participants should express their level of support as individuals, as subgroups or as a whole group. Also discuss whether they should express their level of support **openly** or **anonymously**.

Step 4 Ask each participant, subgroup or the whole group to choose the **support level** that best represents their response to the proposal or course of action, and to indicate their response on the agreement scale.

Step 5 Review the distribution of marks on the agreement scale. Discuss whether there is enough support from stakeholders to go on with the proposal or course of action, and concerns reflected in the responses. If the level of support is not as high as the group wants or needs it to be or if key stakeholders reject the proposal, participants may wish to **modify** the proposal or course of action so that it can address concerns and has enough support to succeed.

TIPS When discussing the distribution of marks on the agreement scale, invite participants to **express their concerns** directly, or use **role-play** to anonymously raise concerns people may have. Give special attention to low levels of support that may come from key stakeholders.

Source Adapted from S. Kaner et al. (1996) *Facilitator's Guide to Participatory Decision-Making*. New Society Publishers, Gabriola Island.



Projections

Purpose To visualize what can be expected if current trends continue and stakeholders' actions do not change them.

Step 1 Define the **situation** and make a list of **the positive and the negative factors** that are part of the situation. Focus on the most important factors.

Step 2 Create a **table** and insert the list of positive and negative factors in Column 1.

Step 3 In Column 2 indicate the importance or **weight** of each factor, using a scale of 1 (low) to 5 (high). Use plus (+) and minus (-) signs to distinguish the positive and the negative factors.

PROJECTION TABLE

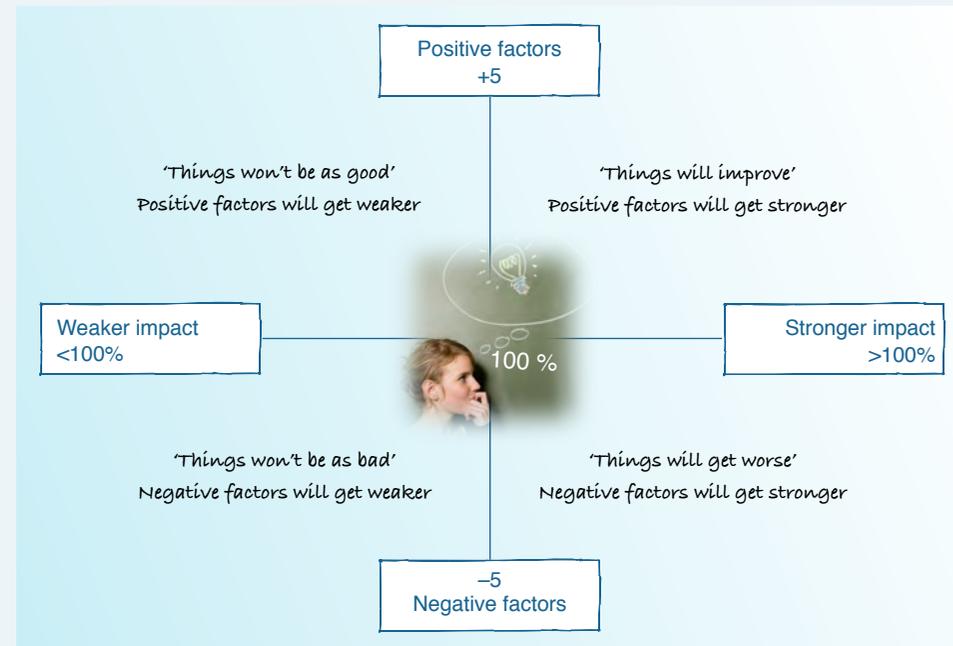
Current situation factors	A Weight -5 to +5	Main cause(s)	B Future impact < 100% (lesser) = 100% (stable) > 100% (greater)	A x B Projection score
Positive factors 1. 2.				
Negative factors 1. 2.				

Step 4 Discuss the main cause(s) responsible for each factor and current trends. Record key words to describe the **main cause(s)** in Column 3.

Step 5 In Column 4 indicate whether each cause is likely to have a **stronger or a weaker impact** over time, assuming nothing changes the current trends. Use a range of 0 to 100% and above, where 100% indicates an impact that will remain the same over time, a value below 100% a lesser impact, and above 100% a greater impact. Determine the **time** needed for these expected changes. Plan to get more information to estimate future impacts, if needed.

Step 6 Calculate the **Projection Score** for each row by multiplying scores A (Column 2) and B (Column 4). Record the results in Column 5. The more positive the overall projection score is, the more reason there is to be optimistic. The more negative the score is, the more reason there is to be pessimistic. When there are several causes for a factor, calculate the average projection score by totalling all the projection scores for the factor and dividing the total by the number of causes.

Step 7 Create a **diagram** by drawing a vertical line that crosses a horizontal line of equal length. Use the vertical line to represent the maximum positive and negative weights that could be obtained for the factors that are part of the situation (+5 and -5). Use the horizontal line to indicate impact, from the weakest score (0%) to the highest impact over time (>100%). In each corner of the diagram, describe the **scenario** obtained when the two considerations (factors and impacts over time) are combined: i.e. positive factors will get either stronger (top right) or weaker (top left), and negative factors will get either stronger (bottom right) or weaker (bottom left). To facilitate the analysis, find an idea or a symbol to represent each quadrant in the diagram.



Step 8 Using the results from Column A and Column B in the table, **locate** each factor in the diagram; use a dot to mark where the values from the two lines meet and write the factor. **Discuss** how the positive and negative factors are distributed. **Summarize** each situation that results from the negative and the positive factors and the likely future impacts of their causes. Pay special attention to factors that are likely to **change a lot** over time (extreme scores for future impacts).

TIP Different stakeholders may weigh the various factors and the future impacts differently, and give them different meanings. When contrasting views are likely, do the *Projections* separately and then discuss together.

What If

Possible futures

Purpose To develop a plan to monitor risk factors and adjust activities accordingly.

Step 1 Define a plan, project or programme and make a list of **key factors** that may have a high impact **and** are difficult to predict.

Step 2 Review the list and select the **two factors** that may have the highest impact **and** are very difficult to predict. Use *Ranking* (p. 37), if need be.

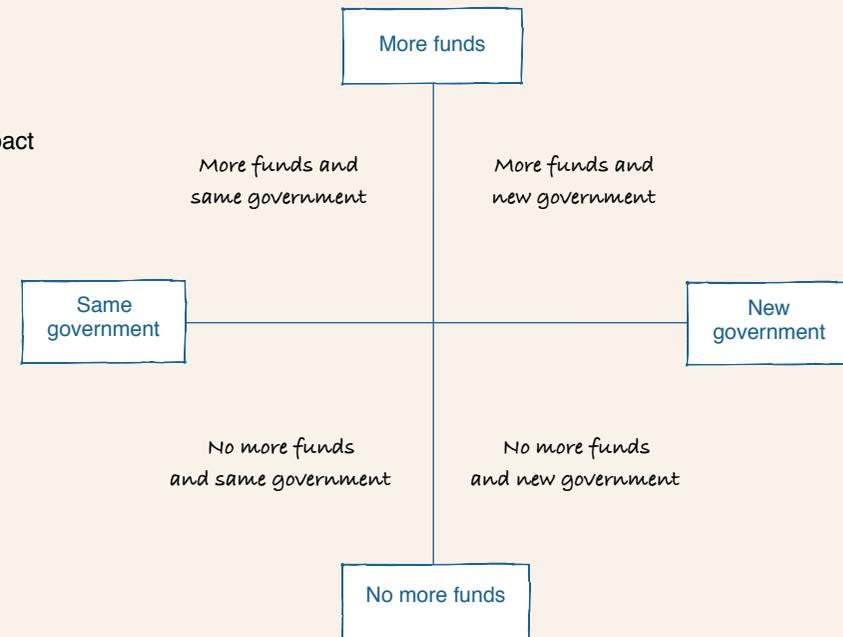
Step 3 Create a diagram by drawing a horizontal line that crosses a vertical line of equal length. On the horizontal line label **two opposite outcomes for one factor** (such as 'No more funds' versus 'More funds').

Step 4 On the vertical line, label **two opposite outcomes for the other factor** (such as 'A new government' versus 'The same government').

Step 5 In each corner of the diagram, write (or draw) the **scenario** obtained when the possible outcomes are combined.

Step 6 Discuss the potential **impact** of each scenario and record this using key words or a visual symbol in each corner of the diagram.

Step 7 Review the result and identify what **kind of information** is needed to track the two factors. Decide *when* and *how* the information can be obtained, and *who* will be responsible for doing this. Over time, adjust broader plans in light of the information collected.



In this example, funding to sustain the project and the outcome of an upcoming election are both factors that may have a high impact on the project and are currently hard to predict.

'Real-life events call for logic and rigour, to be sure. But they also call for creativity and flexibility, the kind that allows people to move in and out of risky plans in response to new circumstances and information acquired step by step, along the way, through trial and error. Good planning in complex settings includes decisions not to decide, to plan later or to make new plans, when the exercise is useful and possible, if at all. As with medicine, knowledge to address messy problems is a science of uncertainty and an art of probability. This is Aristotle's phronesis, Freire's praxis or Checkland's soft-systems thinking. It is Lyotard's work of art emerging in the doing of it.' (Chevalier and Buckles, 2019, p. 86)

Purpose To assess and address existing or perceived hazards using three criteria: their severity, their probability and people’s current capacity to respond to them.

Step 1 Define the **situation** and make a list of **the hazards** that are part of the situation (using *Free List and Pile Sort*, p. 35). Write each hazard on its own card. Organize these hazards into phases, if useful. For instance, in a disaster cycle, the phases are prevention, preparedness, emergency response and recovery.

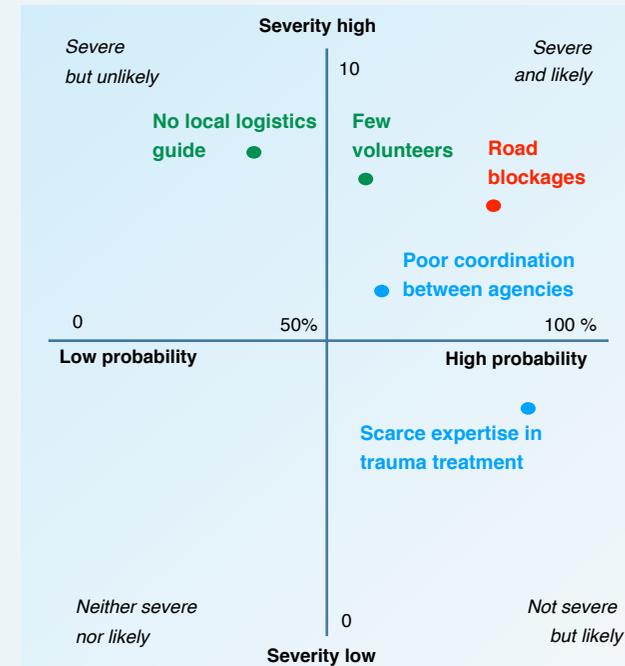
Step 2 Assess each hazard using three criteria: its **severity**, its **probability** and people’s **capacity** to respond to it. Use a scale of 0 to 10 to represent the severity or magnitude of the potential harm of the hazard. Represent the probability that the harm will occur on a scale from 0 % to 100 %. Rate peoples’ **current capacity** to respond to the hazard on a scale of low (L), moderate (M) and high (H).

Step 3 Create a **diagram** by drawing a vertical line that crosses a horizontal line of equal length. Use the vertical line to represent the severity or magnitude and the horizontal line to represent probability. In each corner of the diagram, describe the **scenario** obtained when the two considerations (severity and probability) are combined.

Step 4 **Locate** each hazard in the diagram; use a dot to mark where the values from the two lines meet. Adjust the colour of each dot to indicate people’s current **capacity** to respond to the hazard: i.e. red for low (L), blue for moderate (M), and green for high (H) current capacity to respond.

Step 5 **Discuss** how hazards are distributed. Plan ways to address high risk threats, either by reducing their likelihood or improving capacities to respond.

ADAPT Some people may be more **vulnerable** to some or all hazards compared to others. Views and responses to hazards will vary accordingly. If this is the case, invite each group (men and women, for instance) to do their own *Hazards* assessment separately and then discuss the results together.



In this example, disaster relief workers in the Philippines identified five hazards affecting responses to typhoons. They decided to focus further discussions on poor communication between agencies involved in emergency response and the scarcity of expertise in helping people deal with the psychological impacts of trauma. These were too risky to ignore and were hazards participants felt they could influence by building capacities to respond to them. For the full story, see Chevalier and Buckles, 2019, pp. 333–41.

Results and Risks

Purpose To evaluate different courses of action based on the negative and the positive results expected, the value given to specific results, and the probability that these results will occur. (This is a group adaptation of a tool negotiators and conflict mediators use to determine the BATNA – the Best Alternative To a Negotiated Agreement).

Step 1 Define a **situation** and make a list of the **actions** being considered. The actions should be concrete, distinct in some way and relevant to the situation.

Step 2 Create a **table**. List the actions in Column 1. A choice between two actions (such as 'do' or 'do not do') is the minimum you need.

Step 3 Discuss the **negative result(s)** that may be associated with each action. Using key words, record these results in Column 2.

Step 4 Give a value to each negative result, from -1 to -10; the -10 score (or 10 objects such as black pebbles) indicates the **worst** that could happen. This is **Score A**. Then, estimate how likely it is that each negative result will happen (the probability in percentage), based on current knowledge of the situation. This percentage is **Score B**. To be more precise, identify **indicators** that define the meaning of numbers and percentages on each scale. Record Score A and Score B for each action in Column 3.

Step 5 Multiply Score A by Score B (if using pebbles for Score A, reduce the number to a proportion equal to the probability percentage). This gives the **total score** for each negative result. Record the scores in Column 4.

Step 6 Discuss the **positive result(s)** that may be associated with each action. Using key words, record these results in Column 5.

Step 7 Give a value to each positive result, from 0 to 10; the +10 score (or objects such as 10 white pebbles) indicates the **best** that could happen. This is **Score C**. Estimate how likely it is that each positive result will happen (the probability in percentage), based on current knowledge of the situation. This percentage is **Score D**. To be more precise, identify **indicators** that define the meaning of numbers and percentages on each scale. Record Score C and Score D for each action in Column 6.

Step 8 Multiply Score C by Score D in each row (if using pebbles for Score C, reduce the number to a proportion equal to the probability percentage). This gives the **total score** for each positive result. Record the scores in Column 7.

Step 9 In Column 8 **total** the scores recorded in Columns 4 and 7. Review the result and decide which course of action is best. The higher the total number is, the more reason there is to take that course of action.



Results and Risks

RESULT AND RISK ASSESSMENT TABLE

Courses of action	NEGATIVE POSSIBILITIES			POSITIVE POSSIBILITIES			Total score
	Negative result	A. Value B. % probability	Negative score A x B	Positive result	C. Value D. % probability	Positive score C x D	
Ignore letter	Tree harmed and dies. Neighbours are enemies.	-10 40%	-4.0	Harmed tree survives.	10 30%	3.0	-1.0
Go to court	Fruit lost and costly battle. Neighbours are enemies.	-8 70%	-5.6	Win battle.	8 50%	4.6	-1.6
Sign agreement	Lose fruit.	-8 100%	-8.0	Neighbors are friends.	10 90%	9.0	+ 1.0



In this example, your family receives a letter from the neighbour. In the letter the neighbour demands the right to have 50 per cent of all the mangoes falling from the tree that your grandmother planted on the edge of your family farm about sixty years ago. You have one week to sign the agreement. If you do not agree, he threatens to cut off all the branches that are hanging on his side of the property, and possibly dig up all the roots on his side as well. You know that if he does this, it would probably kill the tree. You must now decide how to respond to their letter. You are considering three options: sign the letter, ignore it, or go to court in the hope that the judge will reject the neighbour's demands. The analysis suggests that signing the agreement is your best option.

Source: Adapted from Means, K. and Josayma, C. with Nielsen, E. and Viriyasakultorn, K. (2002) *Community-Based Forest Resource Conflict Management: A Training Package*, vol. 1 (section 4.4, www.fao.org/DOCREP/005/Y4300E/Y4300E00.HTM) and vol. 2 (activity 32, www.fao.org/DOCREP/005/Y4301E/Y4301E00.HTM). FAO, Rome.

Contribution and Feasibility

Possible futures

Purpose To assess and potentially adjust one or more proposed courses of action in light of two criteria: the contribution that each action would make to achieving goals, and how feasible each action is.

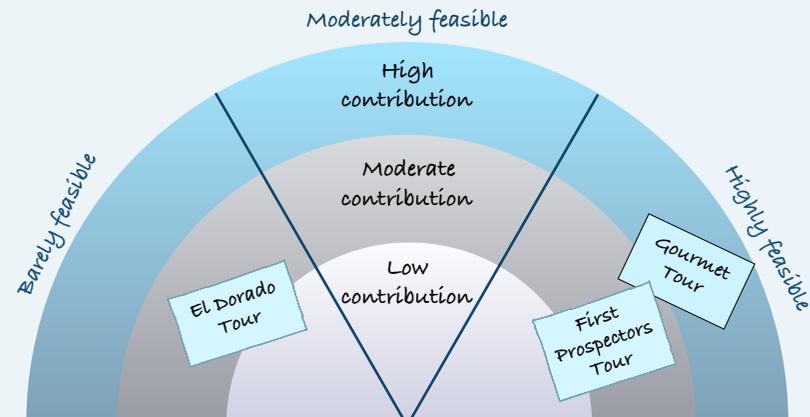
Step 1 Define the **situation** (project, problem) and create a list of current or proposed **actions** to be compared for planning purposes. Each action should be concrete, distinct and clearly described. Draw or write each action on its own card, with some details about the action on the back of the card or on a flip chart.

Step 2 Assess and indicate on each card whether the action will make a high (C–H), moderate (C–M) or low **contribution** (C–L) to resolving the problem or achieving goals. For more precision, use **indicators** to define the meaning of levels on the contribution scale. Record the **reason(s)** given for each potential contribution on the corresponding action card or on a flip chart. If rating is done as a group, discuss each rating until participants agree based on consensus or a majority vote. Alternatively, calculate the average rating for each action. (Review the *Scoring Tips*, pp. 41–42. They are critical to proper application of the *Contribution and Feasibility* tool.)

Step 3 Assess and indicate on each card whether the action is highly (F–H), moderately (F–M) or barely **feasible** (F–L). When discussing feasibility, take into account the favorable conditions (strengths, opportunities) as well as the unfavorable conditions (weaknesses, limitations) associated with the action (see *Force Field*, p. 69). For rating procedures, see Step 2.

Step 4 Create a **rainbow diagram** with three bands on a flip chart or with masking tape on the floor. In the smaller band, insert the cards of low contribution options (C–L). Insert the cards showing actions of moderate contribution (C–M) in the middle band, and those of high contribution (C–H) in the larger band.

Step 5 Divide the rainbow bands into **three equal parts**: one part to the left, one in the middle and one to the right. Move the cards of highly feasible options (F–H) to the right side of the diagram. Move those that are barely feasible (F–L) to the left side. Leave the moderately feasible actions (F–M) in the middle.



Contribution and Feasibility

- Step 6** Discuss the picture that emerges and overall course of action based on the level of contribution and feasibility of each action. Also discuss ways to **improve or combine** the actions so they make a greater contribution to resolving the problem or achieving goals, or become more feasible.

ADAPT

- A large floor version of the Cartesian graph may be used instead of the rainbow diagram. Invite participants to place an object on the spot where their two ratings meet. Consider using a score of 7 as the cut off between weaker and stronger ratings, instead of the mid point. People can quickly see where difficulties with the action lie, whether it be a weak contribution or poor conditions affecting feasibility. One advantage of the floor version of the tool is that it keeps people on their toes, literally, by allowing them to move and 'vote with their feet' after each action is presented.
- Use **visual codes** (colours, numbers, icons, etc.) to add other information on each action, such as the order in which each preferred action should be carried out and dependency relationships between actions. Other information that may be useful is the level of completion for each course of action (indicated by a small pie chart or clock symbol, for instance).
- Use a **nautilus diagram** to represent the assessment of each option against its potential contribution, its feasibility and how complete it is. Steps to this nautilus-shaped assessment of possible options or courses of action are slightly different from those described above. The adjustments are as follows.

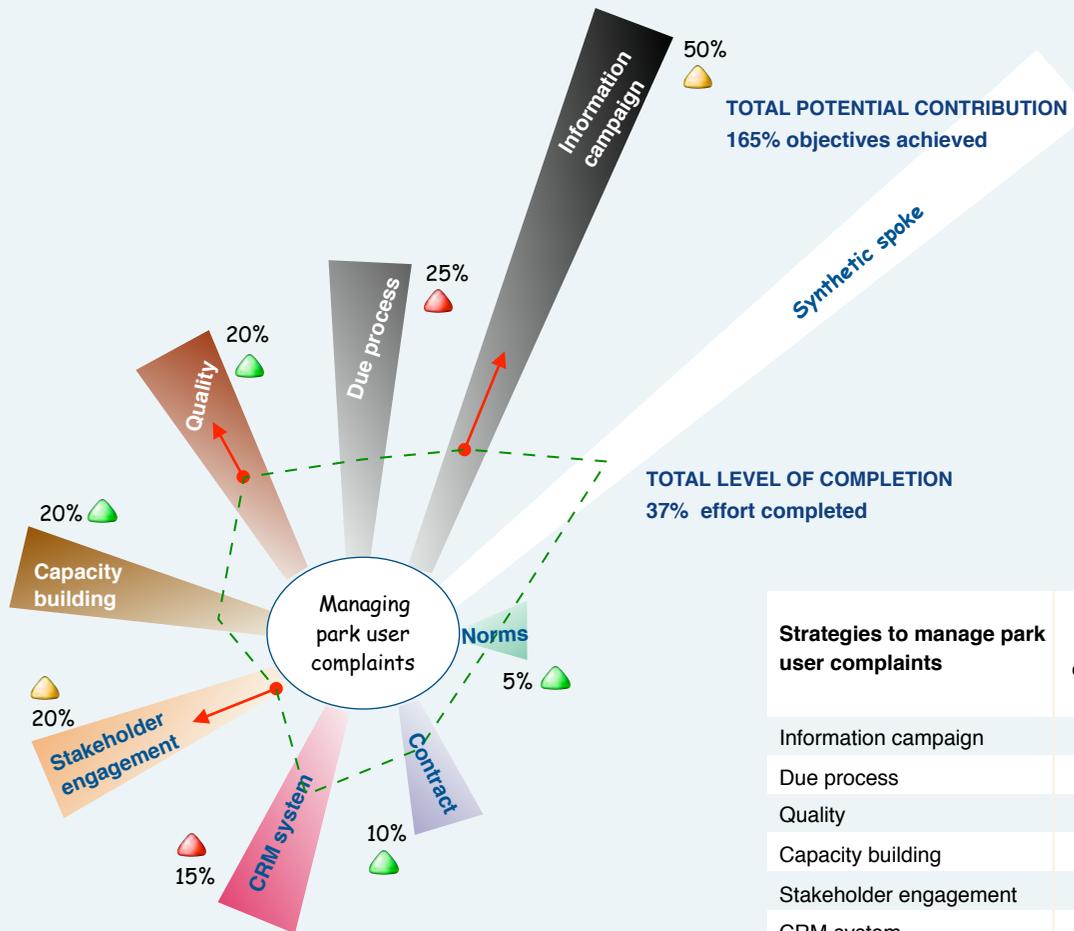
Step 1 Instead of assessing the potential contribution of each option (as in Step 2), from low to high, determine how far each option would go in **resolving the problem** or **achieving project goals**, using a percentage figure (from 0% to 100%). Use a table (see example on p. 113) to record these potential contributions. Place them in Column A, in descending order.

Step 2 Create a **graph** on paper or a flip chart using spokes (or ribbons on the floor) to represent the different options or actions under discussion. Adjust the **length** of each spoke to reflect its potential contribution, and organize the spokes in a clockwise ascending order. **Label** each spoke with a title card, a drawing or an object representing the option or action. A relevant metaphor can also be identified to represent the purpose of the exercise (see the snail in the figure on p. 113).

Step 3 Estimate the actual **level of completion** for each option as part (a percentage) of the total effort needed to realize its full potential. Record each percentage rating in the table, in Column B. **Mark** each rating on the corresponding spoke, between the centre (0% effort level) and the other end of the spoke (representing 100% of the effort needed to realize maximum potential). Draw **straight lines** between the marks to create a shape that defines the actual effort profile for each action.



Contribution and Feasibility



In this example, National Park staff decide to reassess the various strategies they use or could use to handle suggestions and complaints from park users more effectively. Three strategies stand out as priorities (see red arrows in the graph). The team estimates that *engaging stakeholders* in problem solving and establishing *quality standards* to be applied when delivering park services would contribute significantly to reducing complaints. They would resolve the problem by 40%. While the stakeholder engagement process has yet to be designed, the work involved in defining quality standards has already started (by 30%) and is easier to achieve (▲). A public *information campaign* about what the Park has to offer (and services not available) could also make a significant contribution, reducing the problem by another 50%. However, much of this work remains to be done and may be a bit challenging (▲).

Strategies to manage park user complaints	A Potential contribution	B Level of completion	A X B Potential contribution of completed effort	Feasibility
Information campaign	50%	20%	10.0%	▲
Due process	25%	30%	7.5%	▲
Quality	20%	30%	6.0%	▲
Capacity building	20%	10%	2.0%	▲
Stakeholder engagement	20%	0%	0%	▲
CRM system	15%	40%	6.0%	▲
Norms	10%	20%	2.0%	▲
Contract	5%	70%	3.5%	▲
Total	165%		37.0%	

Contribution and Feasibility

- Step 4** **Total** all potential contribution ratings. Add another spoke to the graph, the longest, and record the **total potential contribution** at the end of this **synthetic spoke**. Keep in mind that the total potential contribution can surpass 100% and may be more than what is required.
- Step 5** Multiply Column A by Column B ratings for each row, and record the results in the 'A X B' column. The resulting figures represent the potential contributions of actions already completed. Total these ratings (where the level of completion is weighted by its potential contribution) and record the total at the bottom of the last column. Mark this **total current contribution potential** at the appropriate place on the synthetic spoke.
- Step 6** Discuss the picture that emerges and overall course of action based on the scores. Also discuss ways to **improve** or **combine** the actions so they make a greater contribution to resolving the problem or achieving goals, or reduce the overall level of effort still required.



'Module 5 is an invitation to practise skilful means to collaboratively explore better futures and ways to achieve them, such as building on existing strengths, supporting innovative thinking and addressing disagreements and misunderstandings that might arise. The tools and methodologies we have reviewed and illustrated are flexible and open to using language appropriate to the parties concerned. They are designed to bring a healthy dose of dialogue, pragmatism and deliberative reasoning into situations that may be confused, tense or stuck in inaction. They cannot, however, pretend to remove all elements of uncertainty about possible futures. Where there is genuine innovation and real challenges to overcome, there is always risk of failure . . . This is where risk assessment conducted in a participatory mode can make a difference. It can help strike the balance between audacity and good-old practical wisdom.' In this Module, 'we explore several tools that help people discuss and decide how to balance risks and anticipated futures. The tools allow people to adjust their plans based on what they confidently know about the past and present, the relative value of different possible outcomes, and the likelihood of certain events happening or not. Again, we emphasize the importance of leveraging collective wisdom as an alternative to relying on experts alone to allay any concerns people may have about factors of uncertainty and the unknown.' (Chevalier and Buckles, 2019, p. 330)

Attribution and Contribution

Purpose To assess the extent to which observed changes can be attributed to a specific intervention (action, project, programme) and the implications of this contribution for future action.

Step 1 Describe the **intervention** (action, project, programme), its **timeframe** and its implementing **partners**. Define the **objectives** or expected results, as established at the outset or modified along the way. To be more precise, distinguish between expectations in regards to **immediate** (e.g. building capacities in natural resource management), **intermediate** (e.g. behavioural change in natural management practices) and **ultimate results** (e.g. greater food security or sovereignty).



The immediate objective of a hockey player may be to pass the puck to another teammate hoping he will catch it, score or pass it to another scoring teammate (intermediate objective). The ultimate objective is for the whole team to win the game.

Step 2 First, describe the **observed changes** as they relate to expected results at each level, i.e. immediate, intermediate and ultimate. Determine for each level whether there has been major, moderate, small or no progress or whether the situation has gotten worse. Record your response in the histogram (see example, p. 116). Justify your response and indicate your sources of evidence. If change is unknown, describe a more specific intervention and objectives (Step 1), or make plans to gather evidence before proceeding to the next steps.

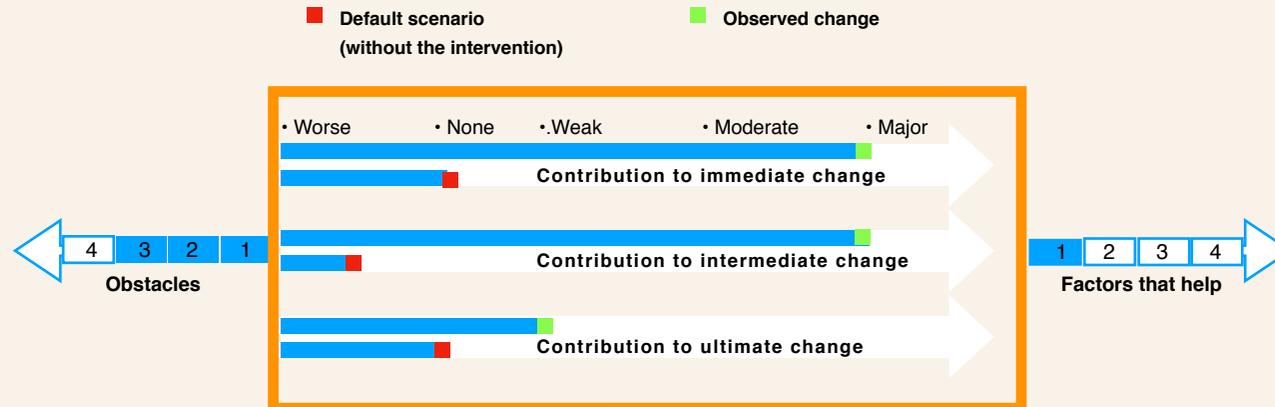
Second, determine the extent to which the change observed at each level would have occurred had the intervention not taken place. This **default scenario** takes into account the other factors and actions that would have contributed, directly or indirectly, to changes in the initial situation, independently from the intervention. Determine at each level whether there would have been major, moderate, small or no progress or whether the situation would have gotten worse. Record your response in the histogram. Justify your response and indicate your sources of evidence.

Discuss the difference or gap between the observed change (green dot) and the default scenario (red dot) at each level. Each gap corresponds to the contribution that the intervention has made to observed change — its **immediate, intermediate and ultimate results**.

Step 3 Discuss the extent to which other factors acted as obstacles or helped bring about the observed change, using a scale of 1 to 4. Justify your response and indicate your sources of evidence. Record your response in the histogram. To evaluate how **efficient the intervention has been**, assess its contribution in light of these factors. For example, an intervention is all the more efficient (and its contribution all the more significant) if major progress has been achieved despite important obstacles and limited means such as time and resources (see example, p. 116).

Step 4 Discuss implications and **recommendations** that follow from the evaluation. Should the expected results be modified, other partners be involved or roles be revised? Should the action or activities be modified in light of unexpected results (unintended consequences), positive or negative? Should the means be scaled up or down or used differently to better cope with unfavourable conditions or existing opportunities? Should plans be made to collect more information on observable changes and factors affecting the intervention?

Attribution and Contribution



1. OBJECTIVES, INTERVENTION, DURATION, PARTNERS

Since the winter of 2010, federal park managers and their partners have established a pilot project involving a multistakeholder roundtable to better address growing tensions between park management and winter trail users, especially local sport clubs. All parties hope this will lead to a meaningful shift in park management culture, towards greater dialogue and values of civic engagement.

2. RESULTS (OBSERVED CHANGES AND DEFAULT SCENARIO)

The immediate objective of this joint initiative has been successfully achieved: the creation of Park Dialogue, a decentralized multistakeholder roundtable that meets three times a year, with the constant and active participation of park managers and user representatives. All indications are that this semi-formal forum, facilitated by a third party, has greatly contributed to achieving its intermediate objectives — reducing the number of complaints from winter park users and the daily stress experienced by staff. Without Park Dialogue (default scenario, red dot), there is good reason to believe that these observed changes (green dot) would not have taken place. Actually, things probably would have gotten worse considering the recent drop in personnel, the increased use of winter trails, easier access to web-based channels of communications (to lodge complaints) and the erratic effects of climate change on park maintenance. The ultimate objective of this initiative, however, is still far from being reached. While some progress has been made, promoting a new culture of civic engagement in park management activities will require more time and effort.

3. EFFICIENCY (OBSTACLES / FACTORS THAT HELP)

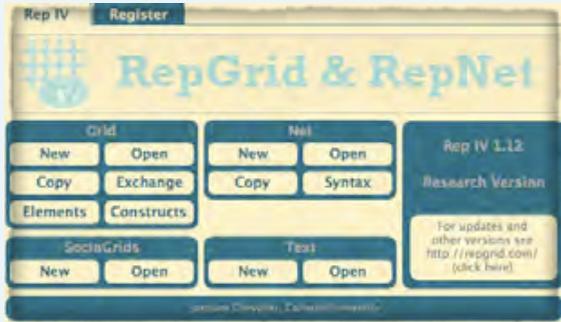
The overall contribution of Park Dialogue is all the more significant as obstacles to improving relations with users were many, including strong feelings of distrust initially expressed by sport club representatives and severe limits on the amount of time and resources available for this initiative.

4. RECOMMENDATIONS

Park Dialogue should become permanent and the experience better documented. It is also worth replicating the process in other areas of park activities and services offered to the public.

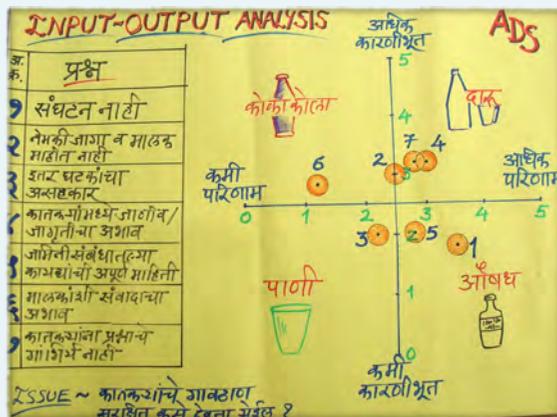
Understanding systems





'Systems thinking would do well to rewrite Smuts's classic formulation of holism to evoke this "fundamental factor operative towards the creation of holes [our deliberate misspelling] in the universe" (Smuts, 1927, p. 88). Human logic must cope with complexity, acknowledge uncertainty, face difficult choices, take risks, put things into perspective, show creativity and struggle to adapt and evolve. In so doing, it has no choice but to design whole systems as systems with holes, with opportunities to challenge and improve the parts, their relationships, and meaning in the system. To some, logic may be unshakeable. But, to paraphrase Kafka (The Trial), it will not withstand others who are determined to go on living and learning.

"Systems with holes" emerge at the edge of chaos. They make room for some manoeuvre in shaping the course of history. Complexity theory, while trendy and generally useful, should nevertheless be used with caution. Emergent systems can also be maladaptive and take their toll on world history. Speculative bubbles in stock markets are an example. Unforeseen crises in economic history suggest that self-organization may contain seeds of self-destruction, social and economic hurricanes that spell ruin for intelligent collective behaviour. The 'laissez-faire' constitution of emergent society (Hayek, 1973) is rife with contradictions and bias for those in power and vested interests in politics, science, industry and the corporate sphere. In the end, evolution that only obeys liberal rules is 'chaos with feedback' at best (Gleick, 1987). It dismisses the historic obligations of collective thinking and principled planning for the good of all. Holding both order and chaos to account is by far a higher wisdom.' (Chevalier and Buckles, 2019, p. 367)



Purpose To identify entry points into a system based on an assessment of how elements in the system interact to create specific behaviours and situations.

System Dynamics helps people explore how they define and understand differences between parts of a system, how parts **interact** with each other, and how they relate to the whole. The method is our adaptation of the **input-output model** used in economics to depict the interaction of sectors in an economy. It invites participants to act based on their analysis of potential entry points into a system that offer opportunities for new learning and meaningful change.

Following are detailed instructions showing how the generic method can be adapted and applied to any topic, including elements in nature (*Ecological Dynamics*, p. 123), problems (*Causal Dynamics*, p. 125), stakeholders (*Social Dynamics*, p. 12) and activities (*Activity Dynamics*, p. 132).

Elements	A	B	C	D	Total contribution
A	x				
B		x			
C			x		
D				x	
Total dependence					

THE GENERIC METHOD

- Step 1** Define the **topic area** and identify the **key elements** or component parts of the system involved (see *Free List and Pile Sort*, p. 35). These should be **concrete**, distinct and clearly described. If the elements are **vague**, ladder down (p. 17) to make them more specific and meaningful. Ask ‘*What do you mean by this?*’ or ‘*Can you give an example of this?*’ Another option is to use **description and storytelling** to explore the topic, and then use this information to identify the elements. Write or draw each element on its own card, with details on the back of the card or on a flip chart. When using a rating matrix, make a copy of each element card.
- Step 2** Create a **table** on the floor or wall. Place one set of element cards in the top row and the other set (showing the same elements in the same order) in the first column.
- Step 3** Decide on a **rating scale** to indicate the level of contribution that each element makes to other elements (for example, from 0 for no contribution to 10 for a maximum contribution). Develop indicators for points on the scale, if need be.
- Step 4** Use the scale created in Step 3 to **rate the level of contribution** that each element currently makes to each other element. Ask ‘*At what level does this (name the row element) contribute to that (name the column element)?*’ Clarify the question and adapt it to the topic (see specific applications of *System Dynamics*). As in all rating exercises, the same score can be given to two or several elements.

Proceed with the rating exercise one **column** after another. Start by rating the extent to which row element B contributes to the element heading the column A. This will ensure that the direction of the contribution is clear and consistent. If participants invert the question and indicate how column A contributes to row B, insert the score in the appropriate cell and return to the questioning by column. Be sure to review in detail the *Scoring Tips* (pp. 41–42). These are critical to proper application of *System Dynamics*.

System Dynamics

Record each score on its own card and write the **reason** given for each score on the reverse side of its card or on a flip chart. Place the **score cards** in the appropriate rows and columns of the table. Leave empty all cells that **combine an element with itself** (A contributes to A), unless the element interacts with itself (as do members within a stakeholder group, for instance).

To focus on the rating discussion rather than the table, use a **flip chart to represent each column element**. On each flip chart place the rating cards that indicate the contributions other elements make to the flip chart element. Once the flip charts are completed, compile the scores in a table and go on directly to the diagram in Step 8. **Another option** is to make only one set of element cards and place these in a column in plain view of all participants. When discussing the elements, move the top card to one side and begin by asking to what extent do the remaining column cards contribute to the isolated element. Continue this line of questioning down the column, always referring to the isolated element card. Once these relationships have been scored and recorded in a table, return the top card to the column and pull out the next element card. All cards remaining in the column can then be discussed as elements contributing to the isolated card. Continue until all interactions have been assessed and recorded. Once the scores are compiled in a table, go on to the diagram in Step 8 and review the results and the process. Both of these options (flip chart and single column) makes it easier to use objects or drawings instead of written cards, and work in a smaller space.

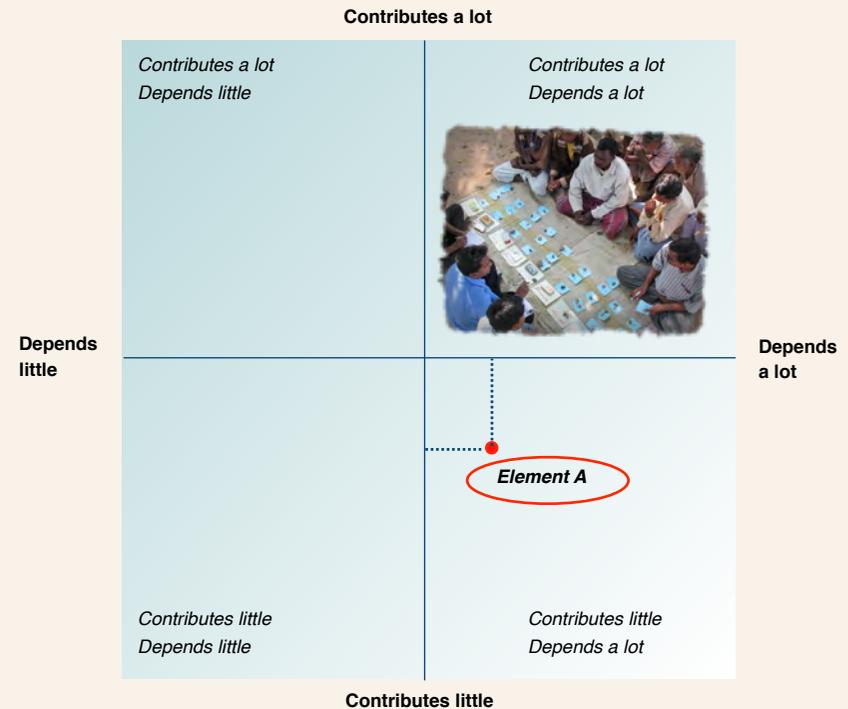
- Step 5** Once the table is complete, total all scores in each row and write **Total contribution** at the top of a new column to the right. Insert the total scores in this new column, in the appropriate rows. The column shows the total contribution of each row element to all other elements. (A different term for this column is used in *Causal Dynamics* and *Social Dynamics*.)
- Step 6** Total all scores in each column and write **Total dependence** at the beginning of a new row below. Insert the total scores in this new row. This indicates the total dependence of the column element on all other elements. (A different term for this sum is used in *Causal Dynamics* and *Social Dynamics*.)
- Step 7** Calculate the **dynamic interaction** between all elements by totalling all contribution scores and dividing the result by the maximum total score that could be obtained if all cells in the row (or the column) received the highest rating in the range. Insert the resulting percentage figure at the bottom of the last column.
- Step 8** Create a **diagram** by drawing a vertical line that crosses a horizontal line of equal length. Write or draw a symbol representing the topic (identified in Step 1) above the diagram. Write at opposite ends of the vertical and horizontal lines the minimum score (usually 0) and the maximum possible score that could be obtained if all cells in a row or column received the highest rating in the range (for instance, the maximum total score that can be obtained with a list of four elements, where each element interacts with three other elements, using a scale of 0 to 10, is 30). Insert the number that represents the middle score (the sum of maximum scores in a row divided by two) where the lines cross. The **vertical line** indicates the total contribution of an element (its row total) and the **horizontal line**, its total dependence (or column total).



Step 9 Label the four corners of the diagram with the scenario obtained by combining the possible outcomes of each axis: elements that contribute and depend more (top right); those that contribute more and depend less (top left); those that contribute less and depend more (bottom right); those that contribute and depend less (bottom left). Note that the bottom-left elements may be important even if they interact little with other elements in the system. To facilitate the analysis, find an idea or a symbol to represent each corner of the diagram.

Step 10 To locate each element in the diagram, mark where the element's total contribution score is located on the vertical line and the element's total dependence score is located on the horizontal line. Draw a line from each location and insert the name of the element where the two lines meet. To save time, prepare an Excel spreadsheet with formulas to calculate totals and create a Cartesian graph automatically.

Step 11 Include in the diagram **other information** that may be useful for the analysis, such as the overall level of control that stakeholders have over each element in the system, the time and level of effort it would take to act on it, or the order in which people plan to act on certain elements. Use a **code** (such as capital letters, numbers, colours or circles) to identify elements with these characteristics (see examples below).

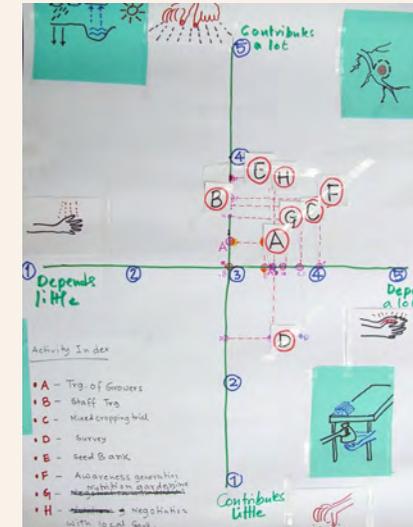


Odd scores that contradict the main tendencies of the diagram may also be important and affect the interpretation of results; one element (e.g. a project activity) that contributes little to other elements may still contribute a lot to one important element. To identify these odd scores, compare each cell score appearing in the rating table with the average row score to see if both scores are on the same lower side or upper side of the middle point of the scale (5 in a scale of 0 to 10, for instance). If a cell score is *not* on the same side as the average row score, compare the score with the average column score to see if both scores are on the same lower side or upper side of the middle point of the scale. If the cell score is *not* on the same side again, use bold font to highlight the cell score. Once these odd scores are identified, draw arrows in the diagram to indicate the relationships that **contradict the main tendencies** of the system. Use **continuous arrows** for scores above the middle point of the scale. These indicate bottom-side elements that contribute significantly to some elements located on the left side of the diagram (see example in *Ecological Dynamics*, p. 124). Use **broken arrows** for scores below the middle point. These indicate upper-side elements that do *not* contribute significantly to some elements located on the right side of the diagram.

INTERPRETING THE RESULTS

Step 12 Discuss the overall level of **dynamic interaction** of the elements calculated in Step 7 and review the location of the elements in the diagram, considering three possible scenarios: integration, hierarchy or dispersion.

- There is **integration** in the system when many elements are located in the top-right section of the diagram. This usually reflects a high score for dynamic interaction (above 60%, as calculated in Step 7). In an integrated system, increasing or decreasing the contribution of one element in the top right section may in turn affect the level of contribution of all other elements located in the same section. The result is a chain effect that influences the dynamic interaction of all elements, including the element that receives initial attention (see example in *Causal Dynamics*, p. 127).
- There is **hierarchy** in the system when the diagram consists mostly of top-left elements and bottom-right elements. This usually reflects a middle score for dynamic interaction (between 40% and 60%, as calculated in Step 7). In a hierarchical system, attention to elements in the top-left section will automatically have an influence on the bottom right elements.
- There is **dispersion** or fragmentation in the system when the diagram consists mostly of elements in the bottom-left section of the diagram. This usually reflects a low score for dynamic interaction (below 40%, as calculated in Step 7). Elements in this section may be important even if they interact little with other elements in the system. In a dispersed system, however, the elements interact little and can only be modified through direct actions (see example in *Activity Dynamics*, p. 132).



Step 13 **Summarize** the scenario or combination of scenarios that best describe the results in the diagram. Discuss the way that participants reached decisions at each step, the elements included and left out of the analysis, the kind of information or knowledge used to rate the elements, the contradictions identified and the other information added in Step 11. If need be, modify one or several elements considering the discussion, and recalculate the overall interaction of all elements (see Step 7). When completed, use this analysis to identify system entry points, rethink priorities, or modify some elements so that they **interact differently** with the other elements. This is the key moment in the analysis, when participants can reflect on the meaning of their assessment and what to do to improve synergy in the system or overcome vicious circles that perpetuate problems in the system.

Ecological Dynamics

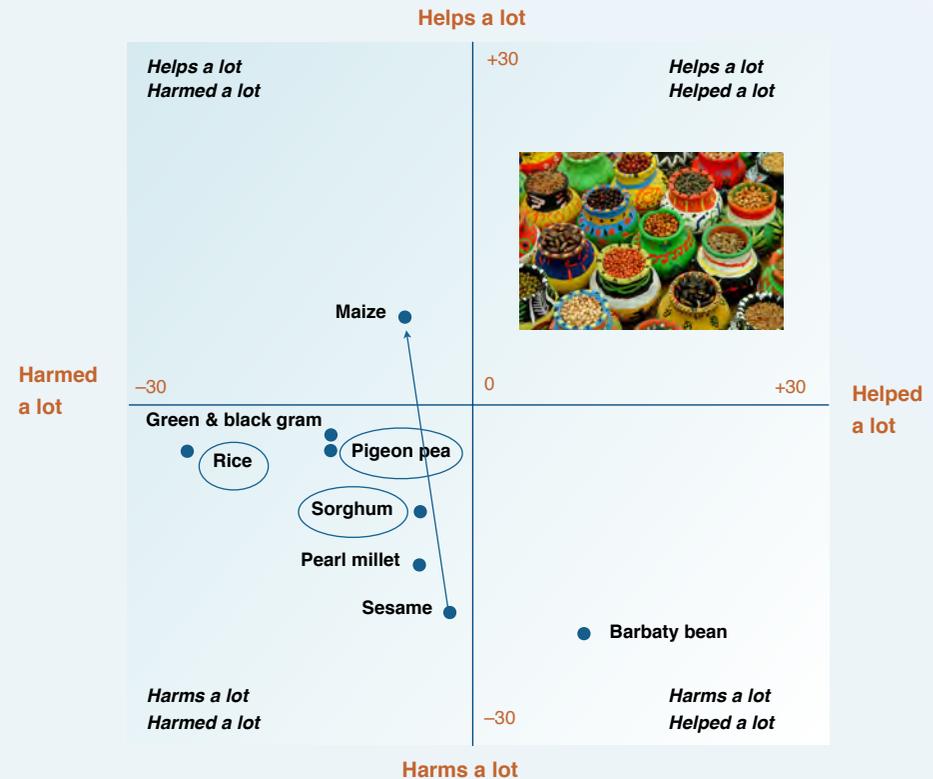
Ecological Dynamics helps describe how the components of an ecological system interact with each other. The tool may be used to support systems thinking concerning things in nature (such as plant species and varieties) or ecological processes (such as soil degradation or the dynamics of pollution). Understanding the system may help people decide where to focus attention and what relationships to change.

Elements	Rice	Maize	Sorghum	Barbaty bean	Pearl millet	Black gram	Sesame	Pigeon pea	Green gram	Total contribution
Rice	x	0	0	0	0	-3	0	0	-3	-6
Maize	-2	x	0	5	2	0	3	0	0	8
Sorghum	-3	0	x	5	0	-4	0	-4	-4	-10
Barbaty bean	-5	-3	0	x	0	-3	-4	-2	-3	-20
Pearl millet	-4	-5	0	5	x	-3	0	-4	-3	-14
Black gram	-3	0	0	0	0	x	0	0	0	-3
Sesame	-5	2	-3	-5	-5	0	x	-1	0	-17
Pigeon pea	-5	0	-2	4	-2	0	0	x	0	-5
Green gram	0	0	0	-3	0	0	0	0	x	-3
Total dependence	-27	-6	-5	11	-5	-13	-1	-11	-13	-70

Ecological Dynamics begins by defining an **ecological system** and listing the **components** of the system. The rating scale can include negative as well as positive values (for example, -10 to + 10). The method focusses on the extent to which one component provides benefits to or harms other components in the system, and the extent to which each is helped by or harmed by other components. These can be seen as relations of cooperation (each component derives a *benefit*) or relations of exploitation or competition (each component benefits *at the expense of* the other). When rating, ask 'To what extent does this component (name the row component) provide benefits to or harm that component (name the column component)?' When both situations apply, estimate the net effect. The resulting matrix produces an index for **helps/harms other components** (vertical axis) and an index for **helped by/harmed by other components** (horizontal axis). See *System Dynamics* for generic instructions (pp. 119–122).



In this example from the drylands of India, farmers assessed the interaction of nine crops in a typical mixed cropping system. Using small samples of seed as a reference point, they rated the extent to which **each crop provides benefits to or harms other crops**, using a scale of +5 to -5. Farmer reasoning for the scores was recorded. For example, maize stalks support climbing crops such green gram and barbaty bean, a relationship reflected in the scores. In turn, maize benefits somewhat from sesame cultivation, a relationship revealed in the table scores and shown in the figure using an arrow. The completed matrix and final figure shows that most crops affect other crops in slightly negative ways, generally by competing for resources (space, water, light, nutrients). This dispersion in the system is tolerated by farmers, and preferred over monocropping, because crop diversity allows them to manage risk. If unpredictable environmental factors such as drought or pests affect some crops, others will survive. When this happens, competition is eliminated, allowing the remaining crops to produce better. If market forces depress prices or household needs change, farmers can also adjust how much of each crop they sow and the planting time to meet specific priorities (sale, home use, feed for livestock, etc.). (Source: Lundy, C., 2006, *Growing Seed Knowledge: Shifting Cultivation and Agricultural Biodiversity among Adivasi Communities in India*, MA Thesis in Anthropology, Carleton University, Ottawa.)



System Dynamics offers 'wide-angle perspective on how the component parts of a system behave and how related events unfold. But the 'whole system' it seeks to understand . . . functions less like a living body and more like a configuration of key elements that happen to connect at a given moment of social history and may change as circumstances evolve. To accomplish this shift in perspective on complex systems, the tool we use departs from Leontief's model in important ways. For one thing, the list of activities, stakeholders or factors that must be considered need not be complete for the analysis to serve its purpose . . . 'Systems thinking' of this kind inevitably cuts out some elements and relationships that might be part of an even broader configuration, to be explored at a later stage, if and when the need arises. While still based on input-output reasoning, the analysis consists in mapping out a field of interaction in context, that is, with a sense of purpose and perspective on what matters the most.' (Chevalier and Buckles, 2019, 365)

Causal Dynamics

Causal Dynamics helps assess how factors related to a key problem interact and guides action by targeting entry points in the system.

Causal Dynamics focusses on a **key problem**, the **factors involved** and the **cause — effect** relationships between these factors.

- Include the key problem in the rating matrix if it is distinct from other factors and interacts with them directly. Leave the key problem out of the rating matrix if the factors are examples of the key problem.
- When rating, ask ‘*To what extent does this (name the row element) cause that (name the column element)?*’ or ‘*At what level does this (name the row element) produce that (name the column element) as a consequence?*’
- The resulting matrix generates a cause index at the end of each row in the table (vertical axis in the diagram) and an effect index at the bottom of each column (horizontal axis in the diagram). Label the four corners of the diagram with the result obtained by combining the possible outcomes of each axis: factors that are **mostly causes** of other factors (top-left corner of the diagram), factors that are **mostly effects** of other factors (bottom-right corner), factors that are both **causes and effects** (top-right corner) and factors that tend to be **independent** of other factors (bottom-left corner). See *System Dynamics* for generic instructions (pp. 119–122).

ADVANCED APPLICATION

Apparent and real weight

- 1 Some factors at the root of a key problem may have to be addressed **directly** even if they interact with other factors. To identify these, distinguish between the apparent and real weight of each factor. The **apparent weight** can be obtained by initially asking *how important each factor is in relation to the key problem* (as defined in Step 1). This reflects initial thinking about the weight of factors in a given context. Estimate the apparent weight using a **rating scale** of 1 to 10 and write the result in the corresponding cell in the top row of the table and the **sum** of all apparent factor weights in the last cell. Factors with very low scores may be left out of the analysis.
- 2 Complete Steps 4 to 7 (assessing interactions among factors) and then revisit the weight of each factor. Estimate how important the factor would be *if all the other factors were eliminated or did not exist*. This is the **real weight** of each factor and reflects thinking informed by the rating exercise regarding the weight of each factor in isolation from other factors under analysis. Use the same rating scale, making sure that the real weight is **less** than or the **same** as the factor’s apparent weight. Write the score next to the apparent weight in the corresponding cell in the top row of the table and the **sum** in the last cell.
- 3 Complete other steps including a diagram with the results (Steps 8 to 11). Review the apparent and real weight for each factor and adjust the **size of the dot** assigned to each factor (see example on p. 127). Use bigger dots when the **real weight of a factor is the same or close to its apparent weight**. This indicates that *the factor will remain significant even when other factors are eliminated*. Give special attention to these factors when interpreting the results. Factors that do not lose much of their real weight when other factors are addressed are **persistent** causes and may require more direct attention than initially thought. They also affect the calculation of the dynamic interaction between all factors in Step 7.

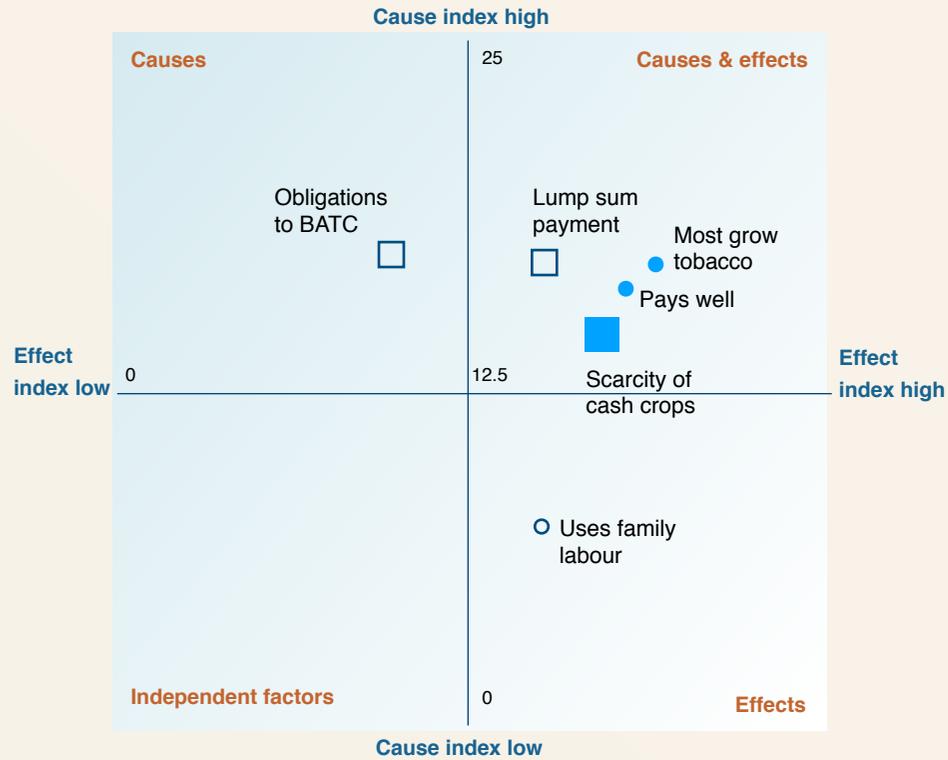
Causal Dynamics

Factors	Pays well	BATC obligations	Lump-sum payment	Scarcity of cash crops	Uses family labour	Most grow tobacco	Cause index
Weight: apparent, real	6, 3	6, 4	7, 4	7, 6	4, 1	5, 3	
Pays well	x	2	4	3	3	4	16/25
BATC obligations	3	x	4	4	3	3	17/25
Lump-sum payment	4	2	x	4	3	4	17/25
Scarcity of cash crops	4	2	3	x	1	5	15/25
Uses family labour	3	0	0	2	x	3	8/25
Most grow tobacco	4	2	3	5	3	x	17/25
Effect index	18/25	8/25	14/25	18/25	13/25	19/25	90/150 (62%)

Why do farmers continue to grow tobacco, despite the many concerns they have about its impacts on their health, environment and land? This question launched a discussion with tobacco farmers in Bangladesh who wanted to find a way out without completely undermining their livelihoods in the short term. They identified six reasons why people continue to grow tobacco and rated the 'apparent weight' of each reason (see Table). Rating of the extent to which each reason created other reasons in the list followed, with detailed discussions of the reasoning that went into each score. Before reviewing the overall result, a final rating focussed on the 'real weight' of each reason, as though it were the only factor at play. A graph of the result showed that most of the reasons for growing tobacco were both causes and effects of each other (top-right quadrant). This pointed to an integrated system of causes and effects, a vicious cycle of reasons for continuing to grow tobacco. Discussion of the entry point for breaking out of the cycle focussed on the scarcity of substitute cash crops, which was the most strongly persistent reason farmers continue to grow tobacco (high real weight shown by the larger cube in the graph) and a factor they felt they could address themselves. This became the challenge for later action and further research. For the full story, see Chevalier and Buckles, 2019, ch. 20.



Causal Dynamics

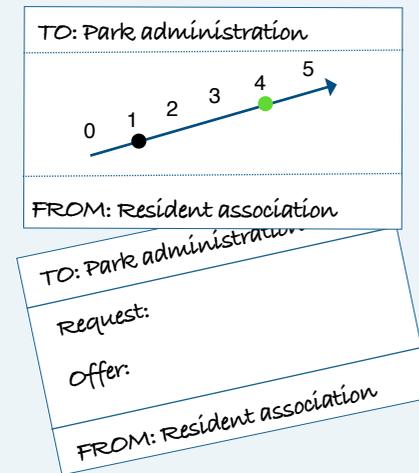


'Moves to relax the rules of hard science, with a focus on things that can be shown to "contribute" to other things, introduce a flexible understanding of causation. Factors that contribute to shaping reality as we know it include human intent and observable actions that follow. But they also include options that are discarded or ignored along the way. This brings up to another dimension of "soft causation", one that makes room for true or false statements about "possible worlds", using counterfactual thinking of the "but for" kind. In the absence of measures to counter greenhouse gases, there is global warming . . . In this approach, known as "modal realism", the first clause is a subjunctive statement in the past, present or future tense expressing something that is real but cannot be observed. Turns of phrase that convey this notion are legion. They include familiar expressions such as "unless and until", "otherwise", "as long as", "hoping that", "counting on" and "in the event of", to name just a few. In the writings of Lewis (1986), modal realism conjures up possible events that are eminently real, on par with the abstract mathematical entities populating what we say about the world. Counterfactual arguments about cause and effect show how the human mind imagines all kinds of worlds that maintain an enduring presence in our day-to-day lives. "We think of a cause as something that makes a difference, and the difference it makes must be a difference from what would have happened without it. Had it been absent, its effects - some of them, at least, and usually all - would have been absent as well" (Lewis, 1973). In a similar vein, Leibniz (1985) and Molina (1988) spoke of an infinite set of logically possible worlds as a way of thinking about necessity and possibility.' (Chevalier and Buckles, 2019, p. 182)



Social Dynamics helps describe and improve the contribution that stakeholders are making to achieving each other's goals. The tool can also be used to assess networks of influence, information or trust between stakeholders involved in a particular situation or project.

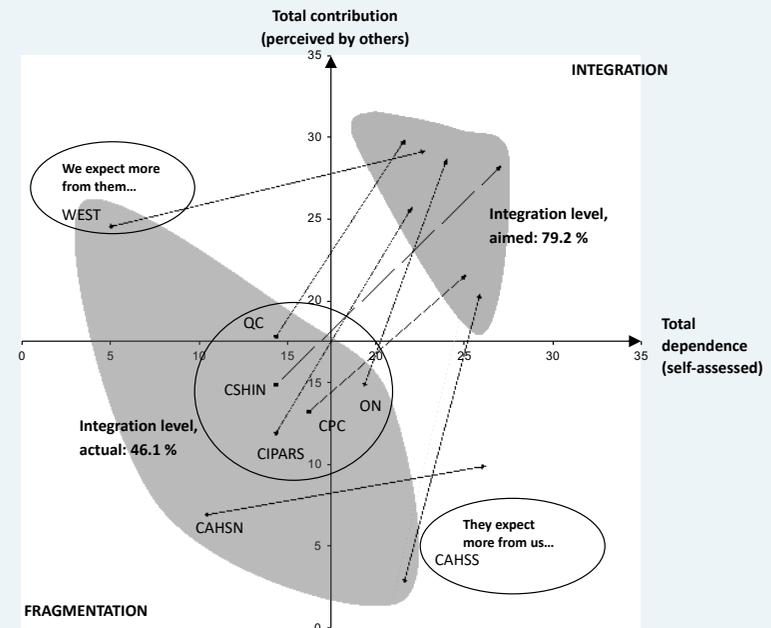
- *Social Dynamics* begins by listing and convening all the key stakeholders (individuals or groups) that wish to work together to achieve common goals (see *Stakeholder Identification*, p. 71). Each party then prepares a series of **postcards** addressed to each party that could help them better achieve their goals. One postcard may be self-addressed (with a view to strengthening collaboration within the group) and another addressed to all parties forming a network or coherent groups of stakeholders, if appropriate. Each postcard should indicate on one side
 - **who** the postcard is from and to whom it is addressed;
 - a diagonal line showing a **rating** scale of 0 to 5;
 - two marks recorded on the diagonal line showing how the party signing the postcard rates the other party's **current contribution** to its work (e.g. 1 out of 5), on the one hand, and the **desired level of contribution** (e.g. 3 out of 5), on the other.
- On the back of each card, the signing party must propose concrete measures to bridge the gap between current and expected levels of contribution: namely, what it is they **request** from the other party, and what they would like to **offer** in return. Make a **copy** of each completed card for later discussions. Create a table and graph from the current and desired levels of contribution and discuss the results (see generic *System Dynamics*, p.119–122).
- Invite each stakeholder to **read the cards** they receive from others and decide which other stakeholder they would like to **meet** immediately to explore mutual expectations and reach agreements. Set a time for a *Negotiation Fair* (p. 103) during which any stakeholder can meet any other stakeholder to discuss offers and requests and specific ways to meet mutual expectations. When two parties reach an agreement, use parchment-like paper to put the agreement in writing, including signatures and notes concerning things that need more discussion or approvals from others. Encourage parties to **announce** agreements or successful conclusions to a discussion by clapping, congratulating each other, launching a balloon or making some other celebratory gesture.
- All stakeholders can present their agreements in a **plenary session**, if they so wish. End the exercise by inviting all stakeholders to discuss their **expectations of the community of all stakeholders** and what they are willing to offer in return.



The problem of working in silos is present not only within organizations but also between organizations or groups of people working toward common goals. *Social Dynamics* substitutes a list of activities with a list of parties that carry out activities, whether they be individuals, teams or organizations. In this example, a Canadian animal health network convened key actors to find better ways to do surveillance related to animal disease prevention. In separate groups, representatives from eight national and provincial bodies including producers, scientists and government regulators, rated the extent to which the other groups contributed to their efforts to advance animal health surveillance. They also rated the level of contribution they wanted from others that would help them better achieve their own goals. The exercise combined the ratings with *Negotiation Fair* (p. 103) to produce 'postcards' addressed to each of the other groups with requests and offers meant to bridge the gap between the current and desired level of contribution. Exchanges of postcards and discussions between the interested parties followed, leading to specific agreements of various kinds.

The table scores and graph describe gaps between current and expected contributions (recorded in each cell and marked by arrows in the graph). The results showed considerable fragmentation of the animal health system and a clear desire for greater integration (a shift from 46% to 79% integration). Interactions among some parties needed to be closer than others. The starting point for five parties was located in the lower left section of the diagram, confirming a tendency for parties to operate in silos. The starting point for the three remaining parties was somewhat different: while CAHSS and CAHSN contribute less to network dynamics, the West contributes more and receives less. The analysis revealed the potential for major improvements in the coordination of animal health surveillance activities across the country. Subsequent meetings focussed on concrete steps to remedy the situation towards a more effective, integrated and responsive approach to animal health surveillance across the country (see the full story in Chevalier and Buckles, 2019, pp. 358–62).

Stakeholders	CAHSS	CSHIN	CPC	CAHSN	WEST	ON	Qc	CIPARS	Total contribution (perceived by others)
CAHSS	x	1, 3	0, 3	0, 3	0, 5	1, 2	0, 2	0, 2	2, 20
CSHIN	4, 5	x	4, 5	3, 4	3, 5	3, 3	4, 4	0, 3	21, 29
CPC	3, 4	1, 4	x	0, 2	1, 2	3, 4	3, 3	2, 2	13, 21
CAHSN	3, 4	2, 4	0, 0	x	0, 0	2, 2	0, 0	0, 0	7, 10
WEST	3, 3	4, 4	3, 4	5, 5	x	3, 4	3, 4	4, 5	25, 29
ON	3, 3	3, 5	2, 4	1, 5	0, 3	x	2, 4	4, 5	15, 29
Qc	3, 3	3, 5	3, 4	1, 5	0, 3	4, 5	x	4, 5	18, 30
CIPARS	2, 3	0, 2	4, 5	0, 3	1, 5	3, 4	2, 4	x	12, 26
Total dependance (self-assessed)	21, 25	14, 27	16, 25	10, 27	5, 23	19, 24	14, 21	14, 22	113, 194



In addition to assessing the interaction between stakeholders, *Social Dynamics* may be used to assess an existing network using one of three criteria: the extent to which each stakeholder **informs**, **influences** or **trusts** other stakeholders.

- **A network of influence** (or power) is a set of connections where people use their prestige, wealth, knowledge or position to affect other people’s decisions. When rating, ask ‘*To what extent does this stakeholder (name the row stakeholder) influence that stakeholder (name the column stakeholder)?*’ The resulting matrix produces an index for ‘**Influences others**’ (vertical axis) and an index for ‘**Influenced by others**’ (horizontal axis).
- **A network of trust** is a set of connections where people show confidence in other parties and rely on them to provide support, to behave in appropriate ways and to do what they are expected to do. When rating, ask ‘*To what extent does this stakeholder (name the row stakeholder) trust that stakeholder (name the column stakeholder)?*’ The resulting matrix produces an index for ‘**Trusting others**’ (vertical axis) and an index for ‘**Trusted by others**’ (horizontal axis). In this example, low levels of trust between agricultural labourers and municipal authorities is a relevant entry point.



Stakeholders	Small farmers	Municipal authorities	Ranchers association	Agricultural labourers	Catholic Church	NGO	Teachers	Trusting
Small farmers	x	2	1	2	7	5	5	22/42
Municipal authorities	3	x	6	1	4	0	2	16/42
Ranchers association	4	7	x	3	2	0	3	19/42
Agricultural labourers	2	0	2	x	6	4	4	18/42
Catholic Church	6	5	5	7	x	5	7	35/42
NGO	5	0	0	3	3	x	2	13/42
Teachers	5	4	4	7	6	5	x	31/42
Trusted	25/42	18/42	18/42	23/42	28/42	19/42	23/42	154/294 (52.4%)

- **A network of information** is a set of connections where people pass on knowledge or views to other people. When rating, ask ‘*To what extent does this stakeholder (name the row stakeholder) transmit knowledge or views to that stakeholder (name the column stakeholder)?*’ The resulting matrix produces an index for ‘**Informs others**’ (vertical axis) and an index for ‘**Informed by others**’ (horizontal axis).

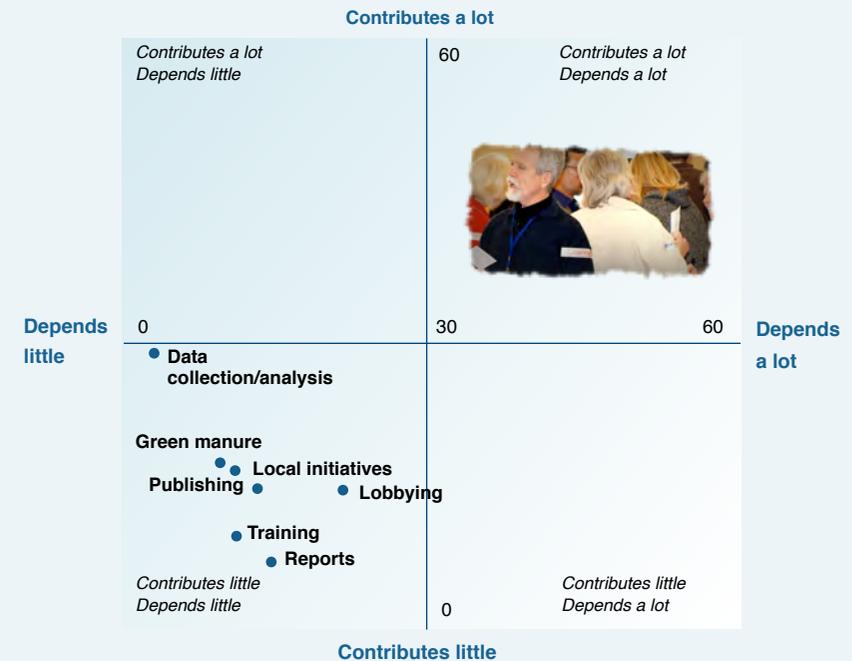
Activity Dynamics

Activity Dynamics helps describe how activities in a project or programme interact with each other. The tool may be used to assess and increase synergy among activities and improve the overall efficiency and effectiveness of the system.

Activity Dynamics begins by defining a set of actions, a project or a programme and listing the **activities involved**, real or proposed. It focusses on the extent to which one activity contributes to or depends on other activities. When rating, ask 'To what extent does this activity (name the row activity) contribute to that activity (name the column activity)?' The resulting matrix produces an index for 'Contributes to other activities' (vertical axis) and an index for 'Depends on other activities' (horizontal axis). To compare **current** levels of interaction between elements with levels people are **aiming for** in the future, insert both scores in each cell of the table (see *Social Dynamics*, p. 130). Write details on how to achieve the ideal contribution on the reverse side of each score card. See *System Dynamics* for generic instructions (pp. 119–122).

In this example, a strategic review of an ongoing project focussed on seven major activities involving research and action mostly, with some training. Rating the extent to which each activity actually contributed to other activities prompted a detailed discussion of the dynamic interaction between them. The graph shows that the interaction between the activities is very weak. Data collection and analysis contributes the most, and lobbying depends the most on other activities. The score for dynamic interaction among activities is only 22.9 per cent (96/420). Discussion among participants acknowledged that while each activity was important in itself, reporting and institutional training in particular operate in relative isolation from other components. By adjusting these and other activities to contribute more to each other, greater synergy in the system as a whole can be achieved.

ACTIVITIES	RESEARCH			ACTION			TRAINING	Total contribution
	Data collection/ analysis	Publishing	Reports	Green manure	Local initiatives	Lobbying		
Data collection/analysis	x	8	6	1	3	8	3	29/60
Publishing	0	x	2	1	1	6	0	10/60
Reports	0	2	x	0	0	2	0	4/60
Green manure	2	3	5	x	2	3	1	16/60
Local initiatives	1	2	4	2	x	4	2	15/60
Lobbying	0	0	0	2	4	x	7	13/60
Training	0	0	0	6	3	0	x	9/60
Total dependence	3/60	15/60	17/60	12/60	13/60	23/60	13/60	96/420



Domain Analysis

Purpose To describe individual or collective views and knowledge systems, and create new learning opportunities based on this understanding.

PRINCIPLES

The principles and steps of *Domain Analysis* are our social adaptation of George Kelly's Personal Construct Psychology. The key assumption of this method from the cognitive sciences is that people understand a domain or topic area by ordering **domain elements** on the basis of degrees of similarity and difference between them, using attributes organized into contrasting pairs (known as **constructs**).

Our use of Kelly's method builds on this perspective and gives it a **social** twist. It can be applied to different domains, with a focus on similarities and differences between:

- **elements in nature**, such as food plants, animals, soils, etc. (*Ecological Domain*, p. 139);
- **activities**, such as areas of livelihood, project or programme interventions (*Activity Domain*, p. 140);
- **problems**, such as situations of fear, stress, conflict, poverty, environmental degradation, etc. (*Problem Domain*, p. 141);
- **options** for action (*Option Domain*, p. 142);
- **individual or groups** in a given social setting (*Social Domain*, p. 143);



Domain Analysis is an advanced tool that may not appeal to PAR practitioners who prefer to keep things simple, or stick to qualitative methods that are intuitive and less daunting to learn. It does, however, have a lot to offer action-oriented research on local knowledge systems. Some conditions for success must be met: facilitators must know the method inside out and be willing to play with it in context. Equally important, they must know where they are going with the analysis, by putting it to practical use for the people involved. See Chevalier and Buckles, 2019, ch. 19.

Key features of the method are:

- Domain elements and their characteristics are described using terms that **participants choose** and negotiate; scientific experts may contribute, but they don't control the process.
- Instead of aiming for completeness, the list of elements and characteristics selected for the analysis is determined pragmatically, in light of a **strategic question** asked in a particular setting and the purpose for which the analysis is conducted.
- Elements form clusters because of the high level of **similarity** observed between them, not because of a standard definition and shared properties that apply to all members of the same class.
- *Domain Analysis* does not simply describe what people know. The tool is designed to help create opportunities for **problem solving** and dynamic learning based on evidence and experience.
- Instead of being fixed by tradition, domain elements and their characteristics may come from different sources (e.g. farmers and agronomists), forming **hybrid systems** that continue to borrow and evolve over time.
- In addition to being descriptive, the method takes the analysis to a systemic level, using the software RepGrid (see pages.cpsc.ucalgary.ca/~gaines/repplus/markdown-4/) and **cluster and principal component statistics** to identify patterns in the relationships between domain elements and characteristics.

THE GENERIC METHOD

Step 1 Define the domain or **topic area** and identify at least **6 elements and no more than 12** that belong to the domain. Write or draw each element on its own card with a brief description on the back of the card.

You can **supply** or **negotiate** some or all the elements or **elicit** them from the participants, depending on the purpose of the exercise and the facilitator's role. Also, the list of elements can include an **ideal** or a **problematic element** that can be compared with other elements. The elements should be **concrete**, distinct and clearly defined. If the elements are abstract or **vague**, ladder down (p. 17) to make them more specific and meaningful. Ask 'What do you mean by this?' or 'Can you give an example of this?' Another option is to use **description and storytelling** to explore the topic, and then use this information to identify the elements.

Step 2 Decide on a rating scale with a range from 1 to 5 or 1 to 7 (see *Scoring Tips*, pp. 41–42). Create a table on the floor or wall with the term '**Characteristics**' at the top of Column 1.

Step 3 (This step and the next two steps are optional.) If necessary, discuss or provide one **key characteristic** participants want to explain in a situation that needs to be addressed (e.g. the extent to which each problem is old or recent). Write the key characteristic (e.g. old) on a card, using one or two key words and give it a score of 1; add details on the back of the card. Then, identify the **opposite** of the key characteristic (e.g. recent) on the same card and give it a score of 5 (or 7). Place the card showing these two opposite characteristics and the corresponding scores in the second row of the first column.

Step 4 **Rate all the elements** using the key characteristic and its opposite and the rating scale (from 1 to 5, for instance). Discuss the score for each element until participants agree. Record each score on its own card and write the reason given for each score on the reverse side of its card or on a flip chart. Place each score card in the row for the key characteristic, below the corresponding element.

Step 5 To facilitate interpretation of the table, **reorganize** all the elements in order based on the ratings given for the key characteristic.

Step 6 To elicit other characteristics from participants, choose **three** element cards from the top row at random. Identify two of them (a pair) that are the same in some important way, and different from the third. Identify what it is these two elements have in common that is also *relevant to the topic*. Write the characteristic on a new card and give it a score of 1. Then, identify the opposition or contrast that makes the **third element different from the pair**. Write this opposite or contrasting characteristic on the same card and give it a score of 5 (or 7). Place the card showing these two opposite or contrasting characteristics (e.g. internal versus external) and the corresponding scores in the third row of the first column.



Domain Analysis

Step 7 Repeat the process described in Step 6 to identify **other sets of opposite or contrasting characteristics** and add a **new row** for each set.

TIPS ON CHARACTERISTICS (CONSTRUCTS)

- Some of the characteristics may involve a **single pole** or reference point against which all the elements are rated. For example, ‘cost’, ‘importance’, ‘priority’ or ‘feasibility’ may go from low to high (see *Option Domain*, p. 142). It is better, however, not to use **negative phrases**, such as ‘not legal’ to describe the opposite of or contrast with a characteristics such as ‘legal’. Negative phrases tend to be vague and meaningless. Opposites or contrasts phrased positively will more precisely and meaningfully describe people’s view on a domain. Examples of opposite characteristics are: good listener – good speaker; short term – long term; physical violence – psychological violence; etc.
- As with elements, characteristics and their opposites can be **negotiated, supplied** or **elicited** from the participants. They should be **relevant** to the topic area, **focussed, concrete** and **clear**. Ladder down (p. 17) if they are not. They should be **accurate**, but only in the sense of truly reflecting how people view and understand reality.
- You can use other elicitation tools to identify characteristics and their opposites, without comparing elements chosen at random. One option is to use **description and storytelling** to explore the topic. Another is the **catchall question**: ‘*Can you think of some new, different characteristic and its opposite?*’ The **full context** procedure can be also be used: review all elements and find two that have a characteristic in common, and then the element that is the most different from these and in what way.
- To compare two different lists and negotiate a **common list**, see *Free List and Pile Sort*, p. 35. Characteristics can be grouped together into appropriate **categories** supplied by the facilitator or created and defined by the participants. They can also be ranked by **order of importance**. This will help with interpretation of the table at the end of the exercise.
- To **save time**, divide all participants into groups of two or three. Ask each group to choose three elements at random and to identify a relevant characteristic and its opposite. Collect these new characteristics and their opposites, discuss and clarify their meaning, and group together those that are the same.

Characteristics	Conflict A	Conflict B	Conflict C	Conflict D	Conflict E	Conflict F
Rarely (1)						
Often (5)	1	1	2	3	5	5
Legal (1)						
Personal (5)	4	5	3	2	1	2
Interests (1)						
Values (5)	1	3	2	4	5	4

Step 8 **Rate all the elements** using each characteristic and its opposite and the rating scale created in Step 2. Discuss the score for each element until participants agree. Record each score on its own card and write the reason given for each score on the reverse side of its card or on a flip chart. Place each score card in its row, below the corresponding element. Be sure to review in detail the *Scoring Tips* (pp. 41–42). These are critical to proper application of *Domain Analysis*.

Domain Analysis

TIPS ON RATING

- If the characteristic and its opposite **do not apply** to an element, don't provide a score. If a characteristic does not apply to many elements, try rewording it or leave it out of the analysis. If the scores for a characteristic and its opposite are **nearly the same** across all elements, redefine the characteristic or leave it out of the analysis.
- The rating of elements can be done **without focussing attention on the table**. To do so, place a card representing a characteristic and some distance from another card representing its opposite or contrast. Then take each element card or an object representing the element and ask participants to locate the element somewhere on the continuum between the two characteristic cards. Convert this location into a rating, and track the scores separately in a table or directly in RepGrid. Repeat this exercise for each characteristic and its opposite.



REVIEWING AND INTERPRETING THE RESULTS

Step 9 Modify, delete or add to the list of elements, characteristics and scores at any time during the process.

Look for an **extra characteristic** and opposite if two elements need to be distinguished from each other more sharply. To do this, find a meaningful difference between the two elements. Use this difference to create a new characteristic and its opposite and rate all the elements on this characteristic. You can also look for an **extra element** if two characteristics that are closely matched need to be distinguished from each other more sharply. To do this, find a new element within the domain that brings together opposites (from each set of characteristics) that are *rarely* matched. Insert the new element in a new column and rate it for each characteristic and its opposite.

Step 10 To **interpret** the results, start with a **review** of the **process**, including the way that participants interacted and reached decisions at each step. Also review the **substance** of the exercise, including the topic that participants selected, the elements and the characteristics identified, and the kind of information or knowledge used to rate the elements. Summarize the main points on a flip chart.

Step 11 Review the **column scores** that describe the elements. Look for obvious features such as whether the scores tend to be in the middle or closer to the poles. Also look for the elements that have **similar scores** for most characteristics, including the key characteristic. Summarize the characteristics they share and draw lines connecting elements with similar column scores to show that they are part of the same **cluster** or family of elements.

Step 12 Review the **row scores** that describe the characteristics. Look for obvious features such as scores that vary little and others a lot, or characteristics that are more meaningful compared to others. Also look for **matching characteristics**. There is a match between two or more characteristics when row scores are **similar** or show an **inverse relationship** to each other. Summarize the matches and draw lines connecting characteristics with similar (or inverse) row scores. Characteristics that match the **key characteristic** (identified in Step 3) can help explain important aspects of the topic area.

Domain Analysis

TIPS ON INTERPRETING

- When comparing elements, focus on those row characteristics and relationships that are more important or interesting. Don't assume that all relationships are meaningful. This would be **over-interpreting** the results. Also, where you find high matches between row scores or sets of characteristics and their opposites, discuss whether one row set is an **example** or the **effect** of the other row set, or if it has the same **meaning** or the same **cause** as the other set.
- To help people participate actively in the analysis, prepare a card for each element showing its ratings and distribute the cards among the participants. Then ask participants to identify **other elements** with row scores that are identical or very similar to theirs. Give special attention to similarities in the key characteristic and other characteristics important to the domain. **Groups formed around similar elements** can then prepare and present a brief description of what their elements have *in common* (see *Social Domain*, p. 144). Following this, all participants can discuss the *main differences* observed **between groups**.
- When using the **software RepGrid**, the Focus command creates a **cluster analysis**. Elements that have the most similar ratings are placed side by side. Characteristics that are closely matched also appear side by side, with inverse relationships converted into positive relationships. A diagram with lines outside the table meeting at various points indicates the levels of similarity between elements and between characteristics. The PrinGrid command creates a graph with calculations based on **principal component analysis**. The graph is a two-dimensional representation of multidimensional relationships among elements and characteristics. Dots show the location of each element in relation to all other elements and to characteristics represented by straight lines. Nearness indicates closer relationships between elements (dots), between characteristics (lines) and between elements and characteristics. The main horizontal line (principal component 1) and vertical line (principal component 2) are summary variables for these multidimensional relationships. The percentages at the end of each line indicate the extent to which each component explains these multidimensional relationships. (See examples.)

Step 13 Review and summarize key comments concerning the domain or topic made during the exercise. Then identify the **learning opportunity** and develop a strategy to act on this understanding. Understanding the nature of these learning opportunities, described below, is key to developing an action strategy.

Convergence. Most characteristics can be regrouped into two categories that are opposite each other, with the elements falling somewhere along the continuum from one set of opposites to another. If convergence in the system is limiting, search for new elements that combine the characteristics in novel ways. Give special attention to novel ways of combining elements with the key characteristic identified in Step 3 (see *Social Domain*, p. 143).

Polarization. Most elements can be regrouped into two categories that are opposite each other. If polarization in the system is limiting, search for new elements that combine the characteristics in novel ways. Give special attention to novel ways of combining elements with the key characteristic identified in Step 3 (see *Ecological Domain*, p. 139).

Dispersion. Few elements or characteristics are closely matched. Each element is entirely different and there is no pattern in the system. If dispersion in the system is limiting, search for other elements or characteristics that may be missing and needed to introduce some meaningful pattern into the system.

Vagueness. The scores for the elements do not vary much. If this is limiting, search for the likely cause. Some possibilities are: participants have very different views of the elements and negotiated the differences by assigning average scores; participants emphasize the connections and similarities between the elements, not the differences; participants have limited knowledge of the domain or topic area; or the elements chosen are too general.

Domain Analysis

Disagreement. People give very different scores to the same elements using the same characteristics. If disagreement is a limitation, identify the key area(s) of disagreement and the likely causes. Continue discussion of the causes until the scores reflect a common assessment of the situation.

To compare many characteristics and tables representing the views of different individuals or groups, reorder the row characteristics in each table from top to bottom, with those at the top matching the ratings of the key characteristic identified in Step 3. These key matching characteristics represent what each individual or group has in mind when thinking about important aspects of the topic. Then, look for key matching characteristics that participants agree or disagree with across the sample. If the tables contain many characteristics, they can be grouped into categories, reordered from top to bottom within each category, and then assessed for key match agreements and disagreements across the sample within each category. The software RepGrid will also compare tables that contain some or all the same elements and characteristics. Levels of agreement may be combined with levels of understanding (below) to produce the six possible scenarios outlined in *Disagreements and Misunderstandings* (p. 101).

Misunderstanding. A party with a particular profile (such as men) fails to predict how a party with a different profile (such as women) will rate certain elements. To assess levels of misunderstanding, each party must try to guess how the other party will rate the same elements using the same characteristic(s). If misunderstanding is a limitation, identify the key area(s) and the likely causes of misunderstanding. Compare and discuss the scores until there is a better understanding of each other's views. Levels of understanding may be combined with levels of agreement (above) to produce the six possible scenarios outlined in *Disagreements and Misunderstandings* (p. 101).

Confusion. The parties use different elements or characteristics to describe the same domain or topic. If confusion is a limitation, search for common elements or shared characteristics to create some basis for mutual understanding and agreement.

Instability. The way people view a domain or topic and characterize its elements changes quickly or frequently over time, without any clear justification. If instability is limiting, identify the factors that may explain this. Look for elements or characteristics that are more meaningful, or take more time to discuss the ratings or to gather the information needed to complete the exercise.

Resistance to change. People become aware of specific learning opportunities, but they prefer to leave the views expressed in their *Domain Analysis* unchanged. If resistance to change is limiting, identify the factors that may explain this or take more time to discuss the topic, the elements and their characteristics. Note that elements and characteristics (which reflect *how* people think) are generally more difficult to change compared with element ratings (which reflect *what* people think about links between the elements and the characteristics).

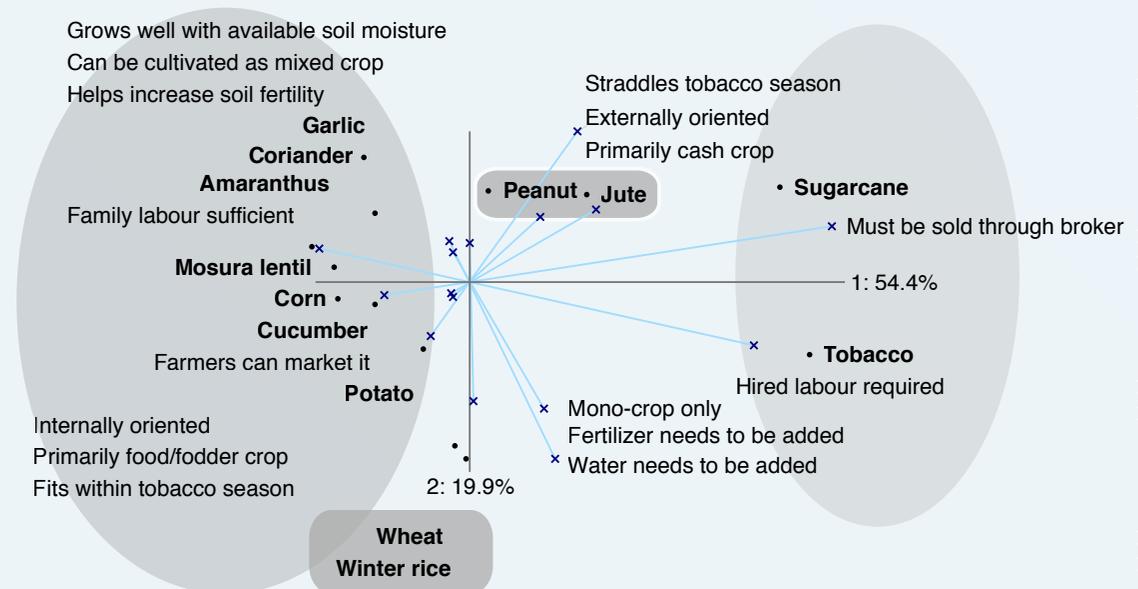
Failure to predict. Experience and real events do not confirm the characteristics and the ratings applied to the elements in the analysis. To assess the predictive value of the analysis, select key characteristics and their opposites, and then identify **indicators** that define the meaning of each number on your rating scale. Collect reliable information on these indicators related to each element to see if the characteristics are relevant and the ratings are confirmed. If the failure to predict is limiting, change the ratings or look for characteristics that have better predictive value.



Ecological Domain

Ecological Domain examines how people view existing elements in nature, using the language and knowledge of the people involved. It can be used to classify things or processes in nature. An understanding of the domain may help people innovate, solve problems or test views against experience and other sources of knowledge.

Research with tobacco farmers in Bangladesh confirmed that many acutely feel the negative impacts on their fields and health, and want to stop growing tobacco. This felt need prompted further research on crop choices, new options and transition strategies. *Ecological Domain* offered an opportunity for farmers to build on their knowledge of a wide range of crops while at the same time exploring novel options beyond what they had considered from within their own knowledge system. Farmers rated crops using a three-point gray scale along a continuum of crop characteristics organized into contrasting pairs (e.g. ‘farmers can market the product directly to consumers’ versus ‘the product must be sold to a broker’). A dependent variable identified earlier – whether a crop ‘helps increase soil fertility’ or ‘fertilizer needs to be added’ – provided a strategic entry point around which to organize discussion and facilitate farmer-led analysis of patterns and relationships between different clusters of crops. For example, participants observed that crops that increase soil fertility also tend to grow well in available soil moisture and can be cultivated as mixed crops.

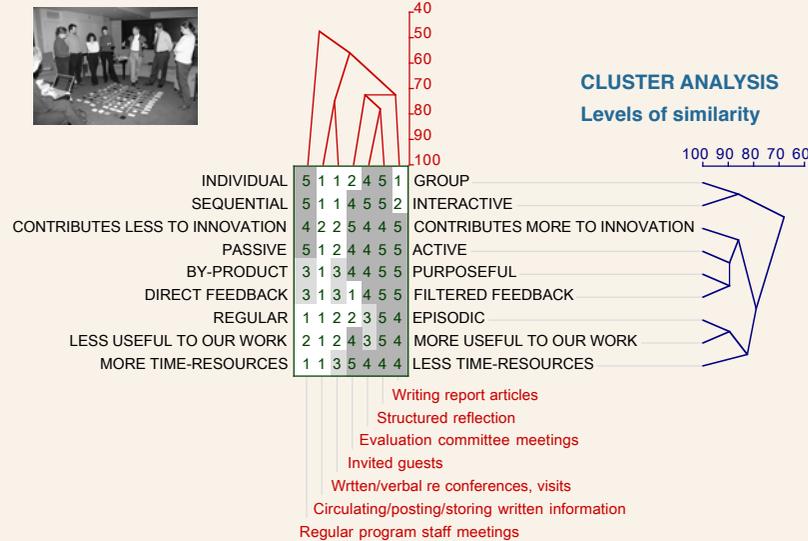


From these observations participants identified two major groups. One group was composed of crops oriented towards local (internal) **food and fodder needs** (left side). Examples of these crops were mosura dal, garlic, coriander, amaranthus and cucumber. The other major group was composed of crops grown in response to **external market** demand (right side). They felt that this **dual strategy** was necessary but also problematic – the two contrasting crop groups are grown in the same season and therefore compete directly with each other for land and other resources. Under these circumstances, the current set of local food and fodder crops, while important to them, cannot be viable substitutes for tobacco. More of the same would not solve their problem. Thinking about alternatives to tobacco then shifted to novel combinations of crops, crop characteristics and cropping seasons, leading to group insights that parallel the psychological process of breakthrough thinking central to Kelly’s Personal Construct Psychology. **Transition strategies**, rather than crop substitution, became the new conceptual model and guiding narrative. For the full story, see Chevalier and Buckles, 2019, ch. 20.

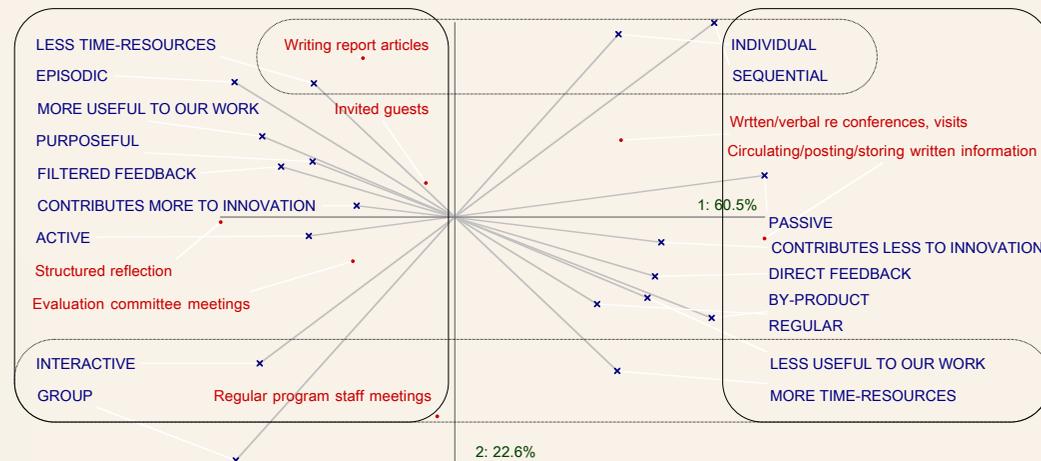
Activity Domain

Activity Domain examines how people view activities or actions, using the language and knowledge of the people involved. It can be used to identify different types of activities and explore associated levels of difficulty, forms of knowledge, benefits, the values or skills involved, etc. An understanding of the domain may help people innovate, solve problems or test views against experience and other sources of knowledge.

Organizational knowledge sharing (KS) practices help ensure that organizations remain relevant and learn from their work. This Canadian organization listed current KS practices and rated each on a scale of 1 to 5 against characteristics elicited using the triadic method and organized into contrasting pairs. Two major groupings emerged. The KS activities participants considered more useful to their work (on the left hand side) also tend to involve interactive and group dynamics. By contrast, individual and sequential practices are less useful, despite the additional time and resources they require. These patterns, represented in the Principal Component graph, account for about 83 per cent of the variance within the observed system (see percentages on the horizontal and vertical axes). Participants concluded that they would find different ways to organize the individual and sequential KS practices to make them less passive, more innovative and ultimately more useful.



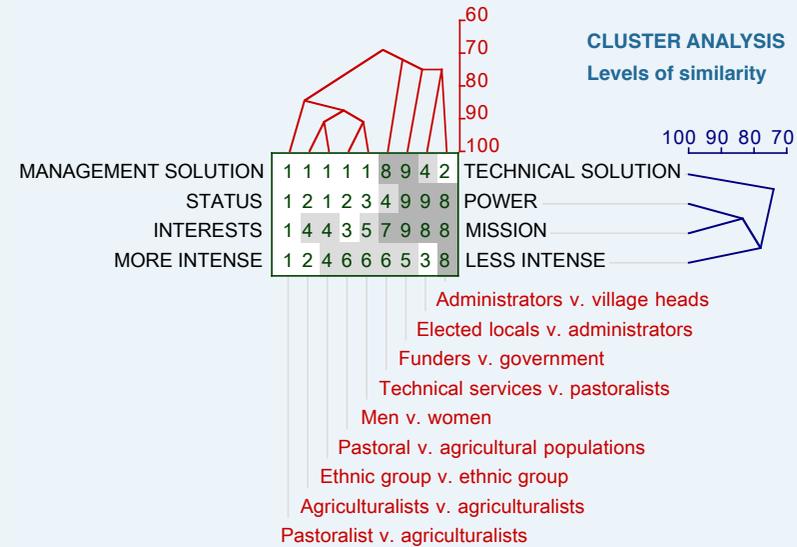
PRINCIPAL COMPONENT ANALYSIS



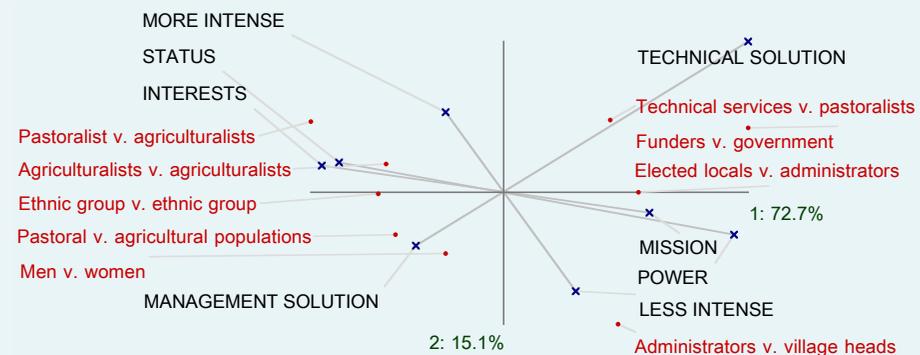
Problem Domain

Problem Domain examines how people view existing problems, using the language and knowledge of the people involved. It can be used to identify different types of problems, levels of difficulty, responses adopted in the past, etc. An understanding of the domain may help people innovate, solve problems or test views against experience and other sources of knowledge

Conflicts over natural resources may pit different groups against each other, and require different solutions. In West Africa, conflict types include tensions between pastoralists and agriculturalists, elected locals and regional administrators, men and women, funders and elected governments, etc. This list, generated by a group of specialists in community development, provided the basis for eliciting characteristics using the triadic method and organizing them into contrasting pairs. The rating exercise that followed, using a scale of 1 to 9, generated a pattern of conflicts with two types of solutions: technically-oriented and management-oriented. These patterns represented in the Principal Component graph account for about 88 per cent of the variance within the observed system (see percentages on the horizontal and vertical axes). Discussion focussed on ways to innovate in response to conflicts by combining technical and management solutions in novel ways, particularly for dealing with more intense conflict problems.



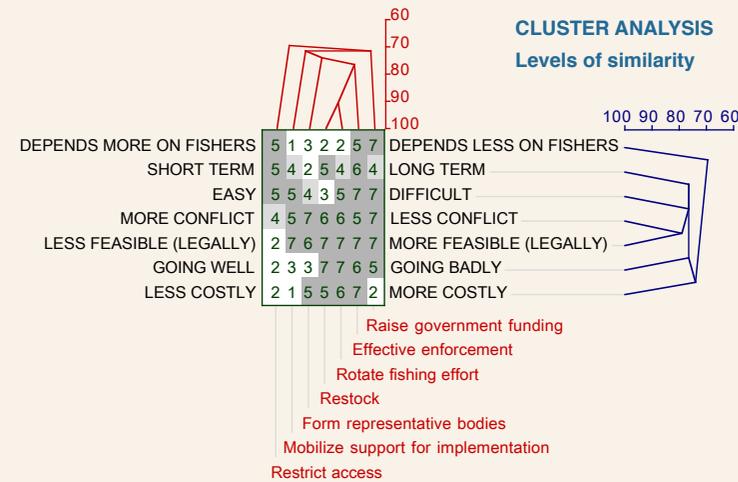
PRINCIPAL COMPONENT ANALYSIS



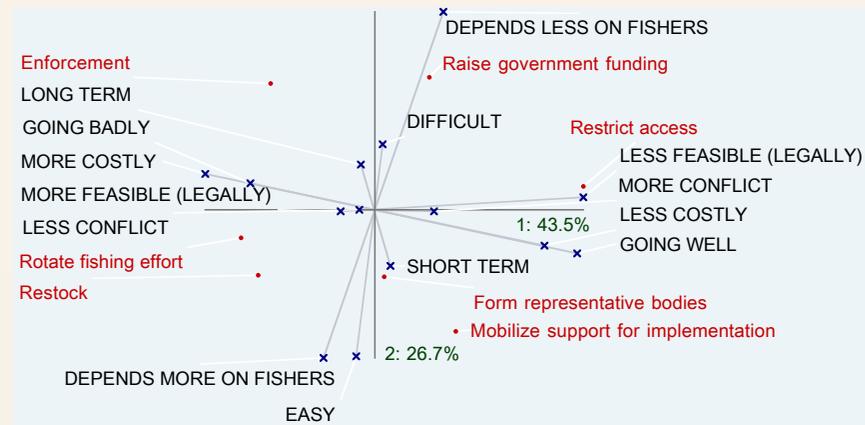
Option Domain

Option Domain examines how people view different proposed options, using the language and knowledge of the people involved. It can be used to identify different types of problems, levels of difficulty, responses adopted in the past, etc. An understanding of the domain may help people innovate, solve problems or test views against experience and other sources of knowledge.

About 2000 artisanal fishers exploit shellfish in the Common Fishery Zone of Ancud in central coastal Chile. Fishers, officials and scientists gathered to identify and review seven current and alternative management strategies. The main task consisted in rating each management strategy using seven criteria organized into contrasting pairs, and a scale of 1 to 7. On the whole, the most favourable ratings lined up behind two options: *mobilizing support for better implementation* of current management practices, and bringing *excluded fishers into representative bodies*. By contrast, *restricting access* to the fishery would not be costly but would take time and be less feasible legally. Also it would likely generate some conflict, at least at the beginning. Enforcement measures were more feasible legally and already going well, but they represented a costly, longer-term approach that depended a great deal on other actors. Raising funds from the government also would create dependence and remained difficult. These observations and related patterns, represented in the Principal Component graph, account for about 70 per cent of the variance within the observed system (see percentages on the horizontal and vertical axes).



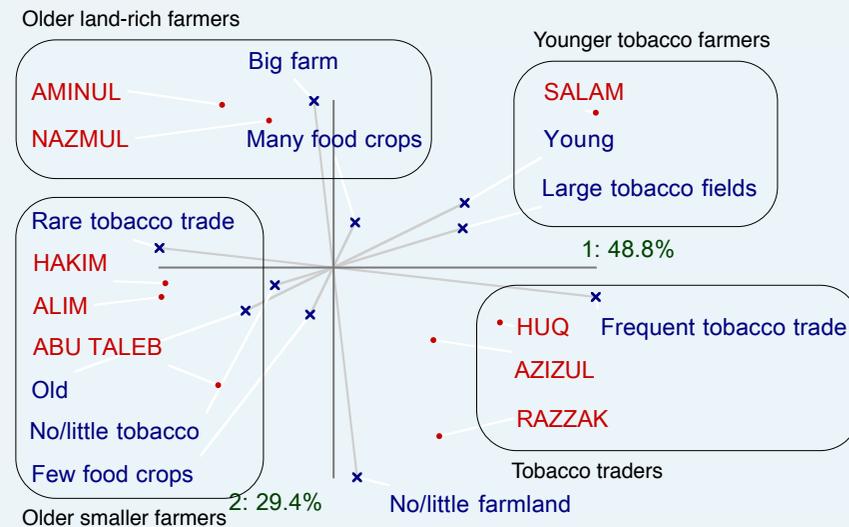
PRINCIPAL COMPONENT ANALYSIS



Social Domain examines how people view themselves and others, using the language and knowledge of the people involved. It can be used to identify different groups or categories of populations based on: the types and levels of interests they have in a proposal; the forms and levels of organization or power they can apply to a situation; the degrees and ways in which they are trusted or viewed as legitimate by others; the actions or positions they take in a conflict; the information, skills, values or leadership styles they might apply in a situation, etc. An understanding of the domain may help people innovate, solve problems or test views against experience and other sources of knowledge.

Research with farmers in Bangladesh used *Social Domain* to form groups with similar characteristics so they could support each other during field experiments and help evaluate strategies for transitioning out of tobacco farming. Working in separate groups of men and women and in separate groups of ethnic and Bengali communities, participants identified relevant household features and major subpopulations within each setting. For example, in the Kushtia area the analysis converged around four household types: (1) younger specialized tobacco farmers; (2) older farmers with mixed crops, including small areas of tobacco; (3) tobacco traders with limited tobacco production of their own; and (4) older, land-rich farmers who no longer engaged in tobacco farming directly. The study suggested that being involved in the tobacco trade is particularly important to land-poor farmers (such as Razzak, Azizul and Huq), giving them a distinct profile that should be taken into account when evaluating tobacco transition strategies. These patterns accounted for about 78 per cent of the variance within the observed system (see percentages on the horizontal and vertical axes). In Bandarban and Cox's Bazaar, wage workers and forest workers represented important groups to consider when assessing the economic performance and social impact of tobacco transition strategies. For the full story, see Chevalier and Buckles, 2019, ch. 20.

Characteristics	Aminul	Hakim	Razzak	Azizul	Nazmul	Alim	Abu Taleb	Huq	Salam
No/little tobacco (1) Large tobacco fields (6)	1	2	2	2	2	2	3	3	6
No/little farmland (1) Big farm (6)	6	4	1	2	6	4	2	3	6
Few food crops (1) Many food crops (6)	5	3	4	4	5	2	2	4	3
Rare tobacco trade (1) Frequent tobacco trade (6)	1	1	5	4	2	1	1	6	6
Young (1) Old (6)	3	6	4	2	4	6	5	4	2



ADAPT

Social Domain can also be facilitated **without the use of a table**, thereby focussing attention on the discussion and the active engagement of participants in describing meaningful similarities and differences between them. There are five steps to this variation on *Social Domain*.

Step 1 Divide all participants into random **groups of three**. Ask each group of three to identify two people in the group (a pair) that are the same in some way relevant to the domain or topic, and different from the third. Find a characteristic that is shared by the pair, and then the characteristic that makes the third person different.

Step 2 Make a list of the distinctions between **characteristics and their opposites** obtained from all the groups. Discuss and clarify the meaning of each distinction. Group together the distinctions that are the same. Reduce the list to 4 to 6 distinctions that matter the most in the domain or topic area. To help interpret the results of the analysis, rank the pairs of characteristics in order of importance (see *Tips on characteristics*, p. 122).

Step 3 Each participant **rates** himself or herself on each characteristic and its opposite, from 1 to 5. Ensure that participants have a common understanding of what the numbers on the scale mean for each characteristic and its opposite, or develop indicators. Each actor can record their ratings on a card showing the same characteristics, in the same order, and with the same format (see example card).

Step 4 Ask each participant to find others that have cards with many row scores that are **identical or similar** (only one point apart in a majority of rows) to theirs. Give special attention to similarities in the rows that describe the most important characteristics. Encourage all participants to compare their cards with others until groups or 'families' with similar profiles are formed.

Step 5 **Groups formed** around similar cards can then prepare and present to the whole group a brief description of the *characteristics group members have in common*. When a group presents their profile, others participants (individuals or groups) can **move closer** if they feel they are similar in significant ways, or **distance** themselves if the differences are more important than the similarities. At the end of the exercise, participants should discuss the main differences observed between groups and plan strategies that draw on different but complementary profiles.

Actor's card: Mary S.

Characteristics	1	2	3	4	5	Characteristics
Good listener				x		Good speaker
Organized			x			Creative
Efficient		x				Committed
Rallying person				x		Visionary
Experienced				x		Adventurous



'At the heart of systems thinking, and the practice of PAR for that matter, lies a formidable riddle: is there a theory of everything where important issues can be viewed from all perspectives? Chaos theory and common sense suggest that a meta-system that rules all the different ways of discovering and bringing order into a complex world is simply not within our reach. Linear reasoning, classificatory logic, rule-based design, part-whole relationships, dynamic modelling and probabilistic framing all lie before us as alternative or nested paths to systems thinking. Yet there is no overarching guidance on how to choose the right path. Given that "an eerie type of chaos can lurk behind a facade of order" (Hofstadter, 1985, p. 299), some guessing and risk taking is inherent to mindfully "navigating the system". That is, whatever organization we encounter or create and whatever science we apply, some looseness in the links we establish is bound to find its way back into how we understand and experience the world. As a result, linear plans keep turning into stories that unfold in unexpected ways. Rules that govern systems become riddled with anomalies and contradictions that complicate our efforts to master them. Functional views of societies also have limits, and the analysis of dynamic interactions between system parts is prone to some margin of error . . . input-output relationships may head in so many directions that all system-wide predictions must be taken with a grain of salt, no matter how rigorous and well-informed they may be.' (Chevalier and Buckles, 2019, p. 369)

'Cross-fertilization rules over all knowledge, culture and even living organisms. Accordingly, Domain Analysis is premised on the idea that the circumstances of social history can bring together elements, characteristics and perceived relationships that are of various origins, mixing them in ways that are completely novel. This calls into question the notion of "tradition", a relatively recent invention that is now becoming something of the past. Knowledge systems that make constant "reference to old situations, or which establish their own past by quasi-obligatory repetition" (Hobsbawm and Ranger, 1983), create a habit of mind, a disposition to mummify things in the hope that they will last forever or be superseded once and for all. When informed by anthropology, the habit includes assigning a distinctive science to every people or class, a move that forces all learning into a tight corner - what people already know, and their current habits of thinking. If social life is to flourish and endure, it must thrive on living knowledge, the kind that feeds on problem solving and ongoing conversations across boundaries. Custom-made thinking may be a habit of mind, but so is new learning outside the box . . .

All forms of knowledge, including well-developed theories and methods, are like living organisms. They come to life by virtue of the distinctive features they possess and display. But their existence also hinges on their ability to adapt and mix characteristics and ideas scavenged from elsewhere. When life thrives on learning, the twain can never fully part. This means that apostles of either pure models or absolute muddles err on the side of simplicity. They ignore the fact that bodies of knowledge can be different from each other at the same time as they are profoundly mixed-up, just like humans.' (Chevalier and Buckles, 2019, p. 382-83)



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