



Background Note

March 2013

A guide for planning and strategy development in the face of complexity

By Richard Hummelbrunner
and Harry Jones

The challenges to economic, social and political development are complex and, therefore, unpredictable (Ramalingam and Jones, 2008). As many commentators have argued, effective programming by governments, non-governmental organisations and international agencies requires a shift in emphasis – moving away from a heavy reliance on planning and ex-ante analysis towards monitoring, learning and adaptation (Jones, 2011). How, then, can policy makers, managers and practitioners best plan in the face of complexity? Does complexity make planning an irrelevant exercise?

This background note is a guide, elaborating how planning and strategy development can be carried out despite complexity. While it is true that complex situations require a greater focus on learning and adaptation, this does not render planning irrelevant. In fact, there are ways in which the processes and products of planning can respect the realities of the situation and set up interventions (policies, programmes and projects) to give them the best chance of success. The guide builds on academic, policy and programmatic literature related to themes around systems and complexity (such as an in-depth study by Jones, 2011, which synthesises much of the material), and draws on the authors' experience of advising development agencies and governments in both developed and developing countries.

First, this guide describes the features of complex situations, and explains why they pose a challenge for traditional planning approaches. This should give the reader the necessary tools

to assess whether and in what way they are facing a complex problem (and, therefore, whether the guide is relevant for them). Second, it outlines key principles for planning in the face of complexity. This should give the reader an understanding of how planning and strategy development need to differ from more traditional approaches when confronted by complex problems. Third, the guide provides examples of approaches that have been used for planning in situations of complexity. This should give the reader a deeper understanding of the principles involved, and some ideas about how they can be applied in practice.

Identifying the level, nature and threats of complexity

How can we determine whether an intervention will face complexity and, therefore, what is the most suitable planning approach? There are various ways to define 'complexity' in economic, social and political development. We use a problem-focused definition, grouping the characteristics of complexity according to the type of the challenges they pose for the design and implementation of development interventions.

In this section, we describe three types of challenge:

- the level of uncertainty involved
- the extent of agreement about project goals or ways to achieve them, and
- the extent to which knowledge and capacities are distributed.

We suggest ways in which the reader can decide to what degree they face each challenge, and outline the implications for planning. It is important to note that situations will hardly ever be complex in

The Overseas Development Institute is the UK's leading independent think tank on international development and humanitarian issues. **ODI Background Notes** provide a summary or snapshot of an issue or of an area of ODI work in progress. This and other ODI Background Notes are available from www.odi.org.uk

their entirety, with all three issues being clear-cut. In reality, there will be a mix of situations and the challenge is to focus on the respective combination and importance of the three challenges. There are other ways to categorise the degree of a situation's complexity that do not define complexity according to the specific parameters mentioned above, but these three dimensions mark out common dimensions and issues covered by other definitions (see box 1 for a comparison of this categorisation with other popular definitions).

Task 1: Assess the level of uncertainty

First, we must decide **whether there is clear advance knowledge on how to achieve the desired outcomes in the given context** or not. For example, if the goal is to build another school or road, the ingredients and methods required are already well-known, and we can rely on standards and best practices. It is worthwhile, therefore, to elaborate a detailed plan from the very beginning in order to reach the outcome. For other interventions, such as improving the situation of human rights or combating poverty, the means to achieve these goals are not well established, and experience and 'good practice' from other contexts may not be appropriate and will need to be 're-learned'. If the best ways to address a problem are not yet well-understood, and if alternative routes are available or innovative solutions should be developed, it can be difficult to make a detailed plan to guide implementation from the outset. But it is possible to have a vision about the future and identify useful activities, important influential factors or intermediary outcomes, as well as making use of existing knowledge to guide the intervention.

Second, we should assess **whether the intervention's success depends on forces or trends about which there is little advance knowledge** and whether it is possible to manage or control all the key ingredients for success. A successful vaccination programme, for example, depends on selecting the most appropriate target demographic, the right type of medicine and managing its delivery and application correctly.

For other interventions, however, key factors are beyond the control of the project/programme/organisation; many options may be equally plausible in advance and uncertainty prevails. For example, the implementation of strategies to mitigate and adapt to the future impacts of climate change must work with several levels of uncertainty – uncertainty about the physical impacts that is inherent in climate data, but also uncertainty about the likely reaction to changing ecosystems from, for example,

Box 1: Simple-complicated-complex?

There are a number of approaches to classify complexity. For example, Rogers (2008) and Kurtz and Snowden (2003) each have useful conceptions. However, many definitions rely on similar issues and dimensions. One common way to classify situations is to say that a situation is 'simple' when there is agreement on goals and ways to achieve them, and certainty about the outcome (relying on recipes or 'best practice' as the main ingredient for success). At the other extreme, a 'complex' situation is characterised by high levels of uncertainty and disagreement. For the purposes of this paper, we separate the two parameters of certainty and agreement, as they pose different types of challenge for programming. We also add a third parameter, distributed capacities, which is distinct from certainty and agreement, and outline the challenges for planning posed by each of the three.

farmers or other groups. Even if these uncertainties can be influenced, success relies in part on actions elsewhere. This is particularly true for interventions that require a combination of factors or resources and, therefore, the collaboration of various actors.

Why does uncertainty matter?

Interventions that face uncertain environments, or problems on which there is not a well-established understanding of cause and effects, can not rely only on traditional tools for planning and strategy development. Some approaches for planning interventions and their corresponding attitudes or behaviour patterns are not well-suited to cope with the challenges outlined above and might even be counter-productive.

Many planning and strategy development approaches **rely heavily on ex-ante analysis and pay little attention to ongoing learning**. 'Front-loading' process and emphasising assessment or decision-making before interventions begin assumes that the way to achieve goals can be based on existing knowledge and is sufficiently understood in advance. Indeed, the interest in careful planning and ex-ante assessment often increases with the degree of uncertainty, with planning seen as a means to curb it. This is a paradoxical attitude, as the powers of foresight are very limited under some conditions and much of the knowledge required to inform action will only emerge during implementation.

This means that plans can quickly become irrelevant. Extensive efforts at the planning stage can prove to be a false guarantor if parts of an intervention work in ways that differ from initial expectations, or if implementation throws up a series of new challenges. Plans might be 'left on the shelf', providing little help to those implementing the interven-

tion and are perhaps only revisited when it is time to fulfil reporting requirements.

Some approaches **demand detailed planning from the outset and try to fix as much as possible during the planning process**. Implementation is assumed to follow these initial plans rigidly and monitoring is used to control compliance with planned activities or outputs. However, a clearer picture of how intervention modalities will work is only possible once they have been tried in the specific context, and sometimes the correct path can only be chosen in the aftermath of major unforeseen developments or events.

This means that an intervention misses key opportunities, ignores lessons emerging from the ground or becomes irrelevant altogether. Inhibiting learning can degrade performance, deter individuals from trying alternative methods and stifle creativity or flexibility in implementation.

It also means that interventions can be hampered by perverse incentives and behaviour when there is a discrepancy between forced implementation and the realities faced by concerned actors who want to be adaptive. This can include a pretence that implementation is going according to plan, a dissonance between what actors actually do and what they report, and the need to spend as much time managing a system of representation and interpretation of information as managing the projects themselves.

Task 2: Assess the level of agreement

Next we need to assess **the extent to which there is agreement or divergence about the problem, about what to do (goals as well as the strategy to reach them) – or about both**. When it comes to multi-dimensional issues faced in development, in particular, there can be different plausible interpretations of a situation and its causes, as well as what constitutes success or progress, what are appropriate performance targets and how to go about achieving them. Different actors may have their own motives, values or interests and do not necessarily share the same views on a joint undertaking, and there can be barriers to the development of a joint understanding when the various perspectives overlap or even conflict.

Second, we must assess whether **our goals or understanding of an issue may change over time**, as we learn from implementation and experience gained elsewhere – or have to adapt to changes in context conditions. Are such revisions limited to activities or outputs (deliverables), or do they extend to intermediary outcomes (e.g. when they are considered inappropriate or have negative effects that could not have been foreseen) or even top-level

goals? Especially where top-line project goals are not realistically achievable within the prescribed timeframe, programmes must target intermediate changes on the path to a longer term goal. However we may find along the way that this intermediate outcome is not feasible or appropriate for achieving the intended long-term improvement – or that the negative side-effects of working on one element of a complex whole are not foreseeable in advance.

For example, while the aim of building a healthy population has intermediate outcomes that represent unambiguous progress towards the greater goal, an aim such as promoting domestic accountability requires a number of intermediate outcomes that may or may not lead to better accountability. For example, building the capacity of civil society to make demands on government has, in some contexts, led to less accountability where it has resulted in state ‘crack downs’ on dissent, or led to civil society organisations being less responsive to grassroots concerns.

It is important to bear in mind that the source of complexity can be in the situation or in the way the intervention is structured and implemented. There may, for example, be agreement about a problem and what to do about it, as well as considerable certainty that this will solve the problem. But this situation will only remain simple if there is similar agreement within the organisational set-up for implementation. A situation might be simple, but the reality of implementation will be complex if partners cannot commit themselves to tackling this problem, cannot agree on what to do and how, and are uncertain that this will achieve the desired results. In other words, the degree of complexity at play in a given situation has an objective (degree of uncertainty about causal relations) and a subjective dimension (degree of agreement about the challenge and what to do about it).

Why does divergence matter?

Many planning tools attempt to simplify the aims of an intervention in terms of a single ‘bottom line’, or a simple set of indicators and targets that are presumed to provide objective guidance on the progress and success of the initiative. The idea is that setting specific, challenging targets against which implementation can be measured unambiguously will be the best way to lead and motivate action. Also, by focusing on negotiations with partners and interest groups before action, there is an assumption that objectives can be clarified, and an optimum trade-off can be selected.

In the face of complexity, planning processes structured in this way *create a culture of reduced collaboration and relationship building*, as well as inhibiting learning and acting as a deterrent to

creativity and flexibility. Power differentials between actors can lead to imposition. As a result, key processes of collaboration to shape intervention values and set goals are not carried out sufficiently before an intervention begins. There is then no space left for the joint interpretation of information on progress throughout the life of the intervention. Again, this is liable to reduce any sense of ownership of the intervention by project teams as well as partners.

Task 3: Assess the distribution of knowledge and capacities

Finally, we need to **assess whether the capacities to tackle an issue are distributed across a range of interacting players** and whether the success of our project/programme depends to a greater or lesser extent on the actions of others. Some international development interventions often involve a range of actions implemented by a network of partners who possess or control the relevant skills and resources. For example, the management of natural resources and the maintenance of common assets such as fisheries, forests or freshwater drainage require action at a number of different levels from communities through local government to national policy and international agreements, and the outcomes at many of these levels are influenced by a range of loosely-connected stakeholders. In many contexts, actions that disregard the agency of any one level have proven ineffective. For example, fish stocks have often become severely depleted when local communities have lost their rights to fish in local waters (Ostrom, 1990).

No single action or actor can achieve the intended change alone – that requires ongoing negotiation, collaboration, or confrontation with a variety of actors. Success in aiming to promote policy change is a prime example, relying as it does on forming coalitions and interacting with broad networks of actors. Planning and the corresponding decision-making during implementation should take into account the relevant knowledge, where it can be found, and how it should be connected to the intervention for effective action.

Why do distributed capacities matter?

Some planning tools are not entirely well-suited to situations that are characterised by distributed capacities and knowledge. Top down planning approaches **assume that a single intervention or organisation has the capacity to tackle an issue alone, or that planning can be done in isolation from others** working on an issue. The idea is that leadership operates best through a ‘command

and control’ style most appropriate for hierarchical organisations, with the perspectives of partners and implementers having little impact during the planning stage, particularly in determining the goals or the strategy to achieve them.

This often leads plans to disempower actors at lower geographic or organisational scales. Where interventions attempt to work in these contexts by passing on detailed orders to others (e.g. implementing partners) who are seen merely as executive agents, this can often constrain their work or force them to work to corporate targets at the expense of the potentially greater impact gained by working in collaboration with others.

Tailoring approaches to complex situations: Core principles

The Planning, Monitoring and Evaluation tools used most widely in international development (Logical Framework, Project Cycle Management) often display a combination of the assumptions discussed above that make them less appropriate for complex situations, especially when they are used in a mechanistic manner. Therefore, if we have found that our project, programme or policy is facing a complex problem according to the criteria set out above, there may well be a need to approach planning processes differently.

Planning does not become obsolete in the face of complexity, but it does require different approaches and formats. The key function of plans is not to elaborate details of a situation expected in the future, but to provide a basis and guide for decision-making throughout the course of the intervention. Plans should not, therefore, lay tracks towards a desired future that must be rigidly followed. They should, instead, be sufficiently adaptive to incorporate new developments, challenges and opportunities. The task for a team responsible for planning is to provide the necessary guidance and leadership, communicating a vision of change around which responses can emerge.

In general terms, planning should be participatory, involving the key partners of the respective cooperation system and taking into account the main perspectives from which the intervention can be framed. It should be based on an initial analysis of the main influencing factors and contextual conditions. But a large part of the information needed for implementation is generated along the way, making it essential that plans are more adaptive to unfolding realities.

The following three principles form the basis of planning approaches that are more appropriate

when the three planning challenges outlined above indicate situations of increased complexity:

- move from static to dynamic planning
- move from prescriptive to flexible planning modes, and
- move from comprehensive to diversified planning.

The relevance of these principles can be seen in connection with any or all of **the three planning challenges**.

- Interventions facing **high uncertainty** are likely to find all three sets of principles useful, but particularly flexible planning modes. Experiments and short feedback cycles might be an appropriate way forward where there is agreement about the problem, what to do and how, but uncertainty about the success of an intervention. Planning should then be rather focused, with short time horizons.
- Interventions facing **divergence** are likely to find dynamic planning approaches useful. A focus on what is actually unfolding and testing initial assumptions in an open learning attitude can help to clarify divergent opinions. But reducing disagreement about what to do may mean looking more intensely for expert knowledge or relevant experience gained elsewhere.
- Interventions facing **distributed capacities** can probably make good use of diversified planning approaches. Ownership and responsibility can be strengthened by distributing planning tasks throughout a cooperation system, if the planning domain matches the boundaries for accountability. Where there is disagreement among partners (or uncertainties about what to do) testing a range of options, carrying out experiments in a variety of settings and reflecting openly about the experience gained might be an appropriate way forward.

Move from static to dynamic planning

Insights from adaptive management about how change happens tell us that many of the tasks associated with planning become ongoing and iterative, as understanding of what might make an effective intervention is necessarily incomplete.

Plans should be regarded as hypotheses about programme effects and future developments, not as blueprints. They should help those formulating and implementing policy to improve and develop their understanding of how the world works through ongoing cycles of evaluation, assessment and adjustment of change models and activities.

An idea of how change will happen (a ‘theory of change’) and a vision of the intended final outcome are both crucial for initial planning. But, given the inherent uncertainties, these plans should not only provide answers to problems, but also express assumptions and pose key questions. They should be made explicit and their relevance assessed so that they can be explored later on through monitoring or research.

For effective programming in complex situations, **setting learning objectives may be as important as performance objectives, and interventions should be designed to actively test hypotheses.** Plans need to be clear on how elements of the intervention will test and confirm, disconfirm, or refine key hypotheses; for example Snowden advocates plans to include ‘safe-fail experiments’ (2010): small interventions designed to test ideas for dealing with a problem where it is acceptable for these interventions to fail.

The usefulness of these hypotheses needs to be reviewed regularly in the light of experience and/or changes in context. This requires an ‘iterative’ planning model, which foresees the revision and adaptation of plans through successive implementation cycles or learning loops. Many PME methods used in international aid already incorporate the principle of iterative planning and use of monitoring and evaluation (M&E), but there are serious shortcomings in practice. Several pre-conditions must be met for iterative planning to become effective.

- **Appropriate timing:** reviews should feed into the next planning cycle. M&E activities should be aligned with delivery milestones and decision-making periods – and be flexible enough for revisions beyond this time-frame if need be.
- **Streamlined requirements:** rules and (decision-making) procedures should facilitate the adaptation of plans in the light of review findings. The type and volume of information has to be limited, and should be adapted to the handling capacity of involved actors.
- **Simple formats:** plans should be light and imaginative, as they are primarily communication tools between involved actors. The formats should allow rapid up-dating, visualise complex situations and suit a broad, heterogeneous range of actors.

Move from prescriptive to flexible planning modes

It may be appropriate to **use forms of planning that do not specify a single route but identify options and cater for different possible outcomes.** Plans or strategies that prescribe one single and detailed path to be followed demand considerable effort

and are difficult to elaborate with many (and heterogeneous) partners. In addition, they are not useful if contexts are likely to change or if the influence of external players and factors is overwhelming (e.g. in the case of smaller projects). And they are inappropriate if the desired results in the future are not yet known (as is the case in many social change processes) or if several routes could be taken to reach these results.

One way to resolve this is to **formulate clear principles for action (using ‘if, then’ statements), which guide implementation and provide a benchmark for future performance.** In this way, decision-makers can be clear about the principles (‘simple rules’) for future decision-making, while having a positive effect on cognitive efforts and encouraging adaptive responses. In practice, this could mean holding units accountable for precise functional descriptions, with ‘role clarity and task ambiguity’ achieved by defining roles sharply while giving teams latitude on the approach to follow. Alternatively, implementing partners could receive funding on the basis of, and evaluated against, key principles or missions.

Another option is **an ‘evolutionary’ approach, whereby a plan is not seen as single ‘big bet’ but rather as a portfolio of experiments,** by setting an over-riding goal and then pursuing a diverse sets of plans simultaneously, each of which has the potential to evolve. We could also adopt a ‘breadth first’ approach with ‘trial and error’ as the central aim of the initial stage of implementation, to encourage parallel testing of a variety of small-scale interventions

Another approach sees **plans and strategies as elaborated only partially up-front and ‘grown’ gradually, pivoting around elements of a desired future or promising leverage points for change.** This consists of a sequence of intermediary outcomes linked by causal relationships, within which potential pathways to change can be found. This ensures flexibility and helps to keep plans and strategies operational even if the final objectives are unclear. This is advantageous when dealing with many actors or situations at once, because several alternatives can be pursued while keeping a focus on joint objectives.

As a consequence, the actual strategy pursued is a mixture of pre-defined intentions and new orientations that emerge gradually as new facts or learning are revealed during implementation. It is important, therefore, to be conscious about what should be planned at the beginning – and what can be left open. Even though the final route remains open, such plans can provide sufficient orientation

along the way, allowing actors to understand the developments that take place during implementation and to reflect on the potential consequences of their own actions.

Move from comprehensive to diversified planning

Comprehensive planning leads to voluminous conglomerates of information, which can be very demanding in terms of time and resources as well as difficult to revise. But planning cannot encompass everything and should be selective about purpose and content. And if initial plans should be light and serve primarily as communication tools, they cannot simultaneously respond to all of the different needs of the various actors involved.

First and foremost, a distinction should be made between two planning categories.

- **Strategic planning:** this deals with the middle or long-term and usually encompasses the whole organisation or intervention. It is based on normative statements about the desired future (the mission or vision), specifies the means to reach it and aims to balance competing demands of the present and the future.
- **Operational planning:** this deals with short-term issues and might only encompass units responsible for the creation of specific value-added (e.g. deliverables). It is based on provisions made through strategic planning, specifies timing and resource allocation, and aims to ensure coordination and synergies.

In situations where multiple actors located at various levels are expected to collaborate, this distinction can also help to divide planning tasks. **In a multi-level planning structure each level should carry out its own operational planning and, at the same time, provide a strategic frame for the level beneath.** A clear separation of responsibilities is crucial to make ‘embedded’ plans work: higher levels limit themselves to specifying the framework conditions, but refrain from interfering in micro-management, leaving the details to the lower levels.

There are different approaches to **what aspects the higher levels need to fix for the lower levels.** It may be, for example, that the higher levels focus on framing an issue and expounding a view on its causes and effects, or it may be that high level planning would best focus on setting boundaries and permissions or minimum standards. But, if done correctly, working with such a ‘hierarchy of plans’ stimulates the self-organisation capacities

of each level and improves ownership for development activities. It should also lead to more effective and timely adaptation of plans, with responsibility transferred to those best placed to identify the challenges and opportunities that can be associated with changes in circumstance. Promoting buy-in and ownership throughout the implementation chain or network is of central importance here, as is striking a balance between direction and self-organisation.

Last but not least, it is recommended that **formats should be diversified** to make them more user-friendly and appropriate for different target groups. Visual formats, such as logic models, are at the core as they can be updated periodically without great effort and serve as communication tools between the various actors or planning hierarchies. If the programme theory contains complicated and/or complex aspects, the form of representation should allow their capture (e.g. interrelations between multiple components or causal strands, and intended linkages with other interventions or with important contextual factors).

These graphic representations are then specified for different audiences, in line with their respective information needs. For example, an administrative document for the contractual partners can specify the requirements to be met by them (e.g. achievement of milestones, fulfilment of donor requirements, data to be supplied). A guidance document for the actors involved in implementation can explain the strategy and the operations envisaged. Key messages will often have to be conveyed to political decision-makers or the public at large, and while this might not require a ‘document’, it should be part of the communication strategy that should accompany any programme.

Appropriate approaches

This section outlines specific methods that have been used for planning in the face of complexity. Most of these approaches were developed originally in corporate business, where the shortcomings of static and deterministic planning were first noted, but have since spread into public sector strategy and planning. Each is in line with the principles outlined earlier in this paper, but has a specific focus and is tailored for particular circumstances or purposes.

Scenario technique

The scenario technique is the classic and most widespread approach. Scenarios are images of the future that help to prepare for the most probable

path and to avoid the risks arising from possible but undesirable developments. Against these scenarios, informed judgements can be made to produce decisions and policies that are robust under a variety of circumstances. Scenario development can proceed as follows.

1. Define the boundaries of the situation (scenario field) and identify the key factors that will influence success.
2. Describe trends and possible development paths for each key factor.
3. Analyse their plausibility and cluster them to build coherent scenarios that often encompass three alternatives (e.g. best, worst and probable case).
4. Assess the consequences and risks of each and elaborate a strategy that is robust to the plausible scenarios as well as being adaptive to likely opportunities.

Scenario technique is useful for long-term planning in situations where there is significant uncertainty about the future developments for some key variables. It is a reflective (not a predictive) tool that allows the incorporation of multiple perspectives about the future in order to help improve understanding of the dynamics of change, to give clues and signposts about key moments of change and to enable the perception of a wider range of strategic opportunities than might otherwise emerge. Comprehensive scenarios may require substantial time and resources, but there are lighter and highly participatory versions like Future Images or Future Stories.

Conditional planning

In planning we identify individual actions that seem appropriate to achieve objectives and assemble them to form activity chains. But fitting actions together often requires specific conditions, which tend to be neglected in the planning process, as well as during implementation. Planning alternatives or identifying assumptions for an entire intervention (as required in a logical framework) is either too cumbersome or not specific enough to guide decision-making. Conditional Planning links the assumptions and conditions for implementation directly to the actions of a plan. In this approach every activity (chain) consists of three parts:

- activity (what should be done?)
- outcome (what should the activity achieve or contribute to?)
- conditions (which factors should exist to implement the activity successfully?).

Conditions can refer to the outcome of previous activities or contextual factors. They can also express logical connections ('if, then') and, therefore, outline options for future decisions. When these conditions are documented during planning, this information is available in the event of changes or unforeseen situations. This also improves transparency and facilitates the transfer of information to actors who were not involved in the planning stage. In general, it is sufficient to specify the conditions only for a few activities that are particularly sensitive or important (e.g. milestones). By planning in this way it is possible to outline the intended pathway to reach objectives, while specifying crucial conditions and retaining possible options.

Conditional planning is best applied when faced with uncertain or dynamic environments. Detailed plans can be made to achieve objectives, but precautions are taken against their mechanistic implementation. This facilitates the review of plans, supports swift decision-making during implementation and finding alternative routes, if necessary. For example, a regional development programme would first identify some key measures, such as establishing a development agency or setting up a development fund. It would then define for each measure the conditions that should be in place in the context (e.g. political support, co-financing, capable project owners) as well as activities that need to be undertaken beforehand (e.g. awareness raising, information campaigns, training).

Milestone planning

An approach related to both the scenario technique and conditional planning is 'milestone planning', where plans and strategies are elaborated only partially up-front and develop gradually, pivoting around elements of a desired future. Intermediary targets (milestones) are identified that should lead to the desired final state or objective. These milestones are the focus of attention, because they are closer to the present and easier to identify and monitor. Different options to reach a certain milestone can be kept open, and the actual path is determined as late as possible. As with conditional planning, assumptions (and activities) can be associated with each milestone and, therefore, integrated in the plan, which helps to avoid 'automatic' implementation of plans without regard for circumstance or the actors involved.

Milestone planning ensures flexibility and, similarly to conditional planning, helps programmes to move ahead even if the final objectives are unclear. This openness is particularly advantageous when dealing with several actors or situations at once,

because various alternatives can be pursued while still focussing on joint objectives. This approach uses a sequence of intermediary steps between the present and the future (sometimes labelled a 'theory of change'). However, in multi-actor settings like a cooperation system, it is best to avoid classifying these elements according to pre-defined categories (e.g. outputs, results and impacts) and to use, instead, a more generic label (e.g. outcomes).

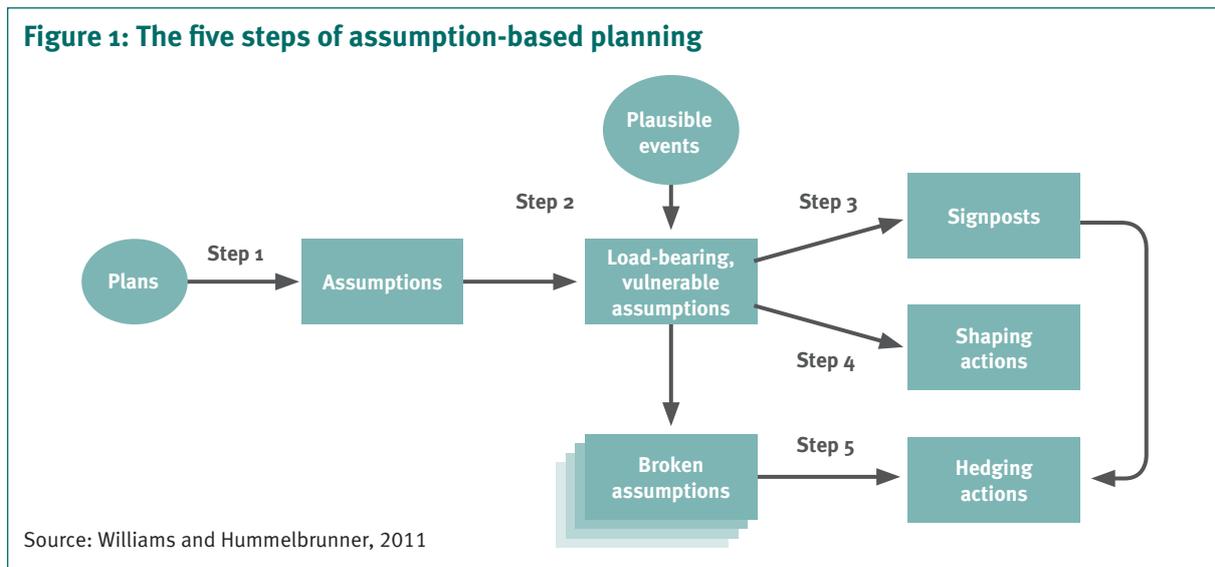
Instead of using linear models, e.g. a result chain, it is more appropriate to use an 'outcomes hierarchy' that displays a programme theory as a series of outcomes from beginning to end. This type of representation makes it easier to show how different causal strands are understood to combine (or conflict) in producing the intended outcomes. Activities are not only foreseen at the start (as in a chain), but can be inserted at any stage, integrated in a graph or shown separately (e.g. as a matrix or narrative description). For example, the German Agency for International Cooperation (GIZ) uses such a form of representation in its new impact model.

Assumption-based planning

Assumption-based planning (ABP) can be applied if a plan already exists, but is largely incomplete because there are many options and uncertainties. It is based on the experience that plans often fail because inadequate attention is paid to their underlying assumptions about, for example, characteristics of the past, present or future. The emphasis, therefore, is on identifying key assumptions and monitoring them over time to protect the plan from assumption failures. Figure 1 (overleaf) illustrates the five steps of ABP.

An assumption is load-bearing if its negation would lead to significant changes in the plan and vulnerable assumptions will be invalid if plausible events occur in the environment. Signposts are mechanisms to monitor the uncertainties associated with assumptions and indicate that their status is changing. It is, in other words, becoming vulnerable. A shaping action is designed to take control of the uncertainty and a hedging action helps to cope with the failure of an assumption by, for example, preserving important options by rethinking the plan (e.g. via scenarios).

ABP is effective for mid- and long-range planning in very uncertain times and environments. It generates relevant scenarios systematically and ties actions ('shaping' or 'hedging') to specific assumptions. Therefore, if the assumption changes, the implications for action are obvious. For example, a long-term programme to mitigate the consequences of climate change could identify as vulnerable all

Figure 1: The five steps of assumption-based planning

those assumptions that might be affected by a change that might occur within the programme's time horizon (e.g. flood relief would be affected by severe droughts). A signpost, such as less rainfall, would alert actors that an assumption is going wrong. A shaping action could be to investigate the likely impact of this change on floods and a hedging action would be to reallocate resources to water management instead of building dams.

Boundary planning

The coordination of plans between several partners requires a joint frame of reference, usually consisting of (higher level) objectives. However, there are times when it is neither useful nor possible to define joint objectives – or when they become so vague that they can hardly be operationalised. In this case, boundary planning can be used to provide adequate guidance.

It defines the conditions for successful implementation in negative terms: what needs to be avoided by the partners to achieve objectives (instead of specifying what should be done). This makes it possible to outline the boundaries of (un)desired behaviour or actions, which provides coherence but leaves room for creativity, adaptation and autonomous action.

In order to be effective, the boundary conditions of relevance should consist of a few rules. The specific behaviour or actions will then be decided by the various actors, who apply these rules in a flexible manner within their particular context. Simple rules that are understood by the relevant actors should make it clear when an actor is in or out of bounds. This approach is particularly useful in situations where actors have or need a large degree of autonomy in implementing joint plans. For example, a national

programme to combat poverty that takes place in several outlying regions that have little contact with each other would specify situations to be avoided in order to achieve the programme's aim, such as activities that should not be considered, social groups to be excluded, and political interference. These then serve as guidelines for the disbursement of the programme funds by the largely autonomous partners.

Adaptive strategy development

In contexts that are changing rapidly and that are unpredictable, success often depends on the ability to detect unanticipated events and make swift use of 'windows of opportunities'. Adaptive strategy development postulates that strategies should not be designed beforehand but should emerge gradually from individual and loosely connected actions. The starting point is the present (not the future), beginning with an assessment of the effectiveness of current activities and strategies, increasing the sensitivity for change and improving synergies. In addition, past experience should be incorporated to retain elements of past success, such as strengths and skills.

With this approach, not much time is invested in planning. On the basis of a clear vision – a global objective – and some promising leverage points, a series of options is outlined and tested through a variety of actions. Their implementation is observed and the most successful are retained and strengthened. This can include so-called 'safe-fail experiments', small actions designed to test ideas to deal with a problem where it is acceptable for them to fail critically, in the interests of the valuable learning gained from a series of low-risk failures. Rapid feedback not only sheds light on how to address a problem, but also captures the unplanned and detects new facts or changes in the environment. In this manner, strate-

gies are grown continually from the change processes initiated simultaneously in several areas.

This form of strategy development is particularly suitable when strategies are uncertain as a result of lack of information or a dynamic environment. Several strategic options can be probed deliberately at the same time and rapid lessons can be learned. The strategic direction unfolds gradually and is in line with the real experience gained as well contextual changes, rather than making large commitments based on insufficient evidence.

Outcome mapping

Outcome mapping is another approach designed for complex problems (Earl et al., 2001). Anchoring planning in an understanding that development interventions have a limited sphere of influence means focusing planning efforts on behaviour changes among the partners with whom the intervention works directly – the ‘boundary partners’. This makes outcome mapping particularly suitable for situations with a higher level of distributed capacities.

Outcome mapping is also designed for situations where change processes involve a high level of uncertainty, providing ways to ensure planning is dynamic and iterative and laying the foundations for continuous learning and flexibility to be built into project management approaches and systems. In addition, the approach rests on ideas similar to our ‘diversified planning’, with exercises designed to be carried out in participation with boundary partners. These partners help to define key behaviour milestones such as ‘outcome challenges’ (ideal behaviour changes in a particular stakeholder group) and ‘progress markers’ (sequential steps of behaviour change leading towards the outcome challenge).

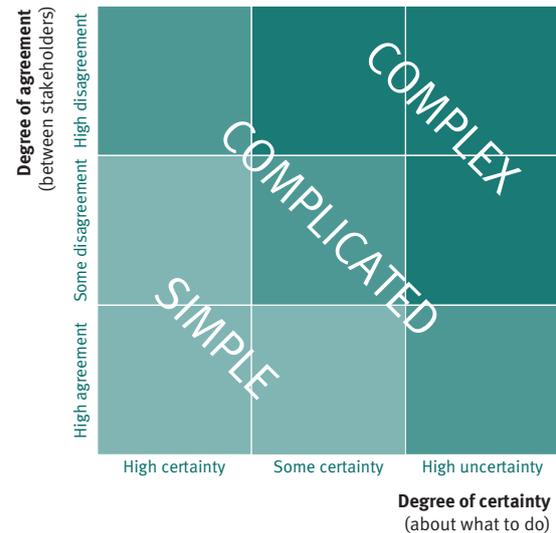
Examples of complex planning with logical frameworks

Given their format (a matrix with narrative descriptions) **logical frameworks**, or logframes, assume a linear and quasi-automatic progression of effects. The assumption is that if activities are carried out as planned, this will guarantee the achievement of expected outputs or purposes. Some of the underlying assumptions, such as perfect advance knowledge and full control of implementation, are not valid in complex situations. To mitigate these limitations, adjustments can be made to logframe content and use.

The following framework was developed recently for the United Nations Industrial Development Organization (UNIDO) to make logframes a more flexible and adaptive planning tool. The starting point is situational recognition. Outputs are categorised into three types of domains

(simple, complicated, complex), by using the (dis)agreement/(un)certainty parameters (see Box 1) and clustering them with the portfolio technique (Figure 2).

Figure 2: Portfolio for categorising outputs



Source: Richard Hummelbrunner, previously unpublished.

This output portfolio then has two key implications for the completion of other elements of the logframe:

- if outputs lie predominantly in the ‘complicated’ domain, indicators and assumptions should be identified carefully to enable monitoring (and evaluation) of effective practice, relevant factors and context conditions
- if many (or even the majority of) outputs are considered to be ‘complex’, the indicators should allow the documentation of initial conditions and – in combination with assumptions – capture emerging phenomena.

This framework places specific emphasis on the ‘Assumptions & Risks’ column of a logframe. The assumptions are used explicitly to connect the various levels in a logframe. They address, therefore, the processes that are expected to transform the achievements of one level (e.g. outputs) into the next level of effects (e.g. outcomes). They should, in particular, describe expected changes, behaviour or communication patterns of specific actors (e.g. beneficiaries, recipients or partners) and articulate intended combinations (e.g. of outputs).

For interventions that achieve their objectives through the contributions by specific actors or by ensuring that expected effects reach specific target groups, the logframe should capture the actor dimension. This can be done in several ways.

- A complementary ‘influence matrix’ can be used to show the intended linkages between effects (e.g. outputs) and actors (either as contributors or beneficiaries), which also allows the capture of multiple relationships.
- Each level of a logframe can be associated with various actors, who are expected to collaborate for their achievement. Their relationships can be shown at each level and also across levels (e.g. by using social network analysis). The various time stages are, therefore, complemented by a sequence of actors (‘social framework’). The intended pathways for information, resources or material objects between these actors can be defined at the planning stage, which then also clarifies the division of responsibilities across a range of actors.
- For interventions that involve social change processes or where capacity building plays a major role, a fusion of logframe and outcome mapping can be applied. This combines the results-oriented focus of logframes with the process-oriented learning pathways of outcome mapping. Elements of outcome mapping (e.g. outcome challenges or progress markers) can be inserted in the logframe structure to highlight the expected changes in the behaviour of relationships, actions or activities of the people, groups, and organisations with whom an external agent is working directly and seeking to influence.

Conclusions

This paper set out to help practitioners become aware about when they are facing complex situations, to point out which precautions to take, outline some principles to consider when undertaking the task of planning in the face of complexity, and to show that a variety of approaches could be applied in international development. It has highlighted only a few approaches, and in little depth, but interested readers can use it as a spur to explore new planning tools, drawing on the sources for further information given at the end of the paper. We also recommend that the successful application of such tools should be shared more widely and be publicised.

However, improved planning and strategy development in the face of complexity relies on more than awareness and knowledge of tools. There are at least three other barriers and enablers to more appropriate planning practices.

First, there **needs to be a shift in the mindset of key decision-makers** (e.g. donors, programme directors) to cope with uncertainty. Rather than attempting to project an image of certainty and control through detailed planning, they should openly acknowledge

emergence, which is still too often considered a ‘taboo’ in international development. If not everything can be foreseen, the reluctance to invest in detailed up-front planning is not a failure or a lack of professionalism (‘not knowing what to do’) but a prudent – and efficient – attitude when faced with limited insights. Decision-makers should instead be more open to adaptive planning approaches that acknowledge limited foresight and that are responsive to contextual changes and adaptive to lessons learned from implementation. This does not necessarily mean a complete break with current practices – many of the approaches or techniques outlined above can be integrated easily into existing programming systems (including logframes).

Second, **measures are needed to alter prevailing incentives and resource allocation**. Less time and resources should be spent on upfront planning and more on processes to monitor and feed back learning from implementation. Deviations from plans should not be seen necessarily as negative as they can provide important information about the implementation reality of an intervention. Unforeseen effects, as well as contradictions or puzzles, can provide useful clues about relevant changes, new challenges or innovative ways to handle a situation, which can help to improve implementation. Forces pushing agency staff towards risk-aversion needs to be tackled, as ‘failure’ can also be an important trigger for learning. Therefore, integrating a limited and well-calculated amount of risk taking in a plan can, in the end, prove more effective.

Finally, **agency systems and procedures need alteration**, most notably those on financial planning and accountability. As a rule of thumb, a more flexible approach in planning should also be complemented by more flexibility in financial planning and budgeting. This is also in line with a core lesson from experience on performance-based management: those who are expected to manage for outcomes must be given the autonomy to do so, including flexibility on activities, resources and outcomes. Without this autonomy, they can only be expected to manage for activities or outputs. In terms of quality control, this means that decision-makers should clarify where they want to place more emphasis: on ‘quality at entry’, via detailed ‘logical’ planning, or on ‘quality at exit’ by providing tools and incentives that allow effective management for development results.

Written by Harry Jones, ODI Research Fellow (h.jones@odi.org.uk) and Richard Hummelbrunner, (Senior Associate of OEAR Regionalberatung (hummelbrunner@oear.at)). The authors are grateful to Ricardo Wilson-Grau for his invaluable peer review, and to John Young and Bob Williams for their useful comments and suggestions.

References and useful resources

References

- Earl, S., Carden, F. and Smutylo, T. (2001) *Outcome Mapping: Building Learning and Reflection into Development Programs*. Ottawa: International Development Research Centre.
- Jones, H. (2011) 'Taking responsibility for complexity: How implementation can achieve results in the face of complex problems'. ODI Working Paper 330, June. London: Overseas Development Institute. Available at: <http://bit.ly/WkeNnL>
- Kurtz, C.F. and Snowden, D. (2003) 'The New Dynamics of Strategy: Sense-making in a Complex and Complicated World.' *IBM Systems Journal* 42(3): 462-483.
- Ramalingam, B. and Jones, H., with Reba, T. and Young, J. (2008) 'Exploring the science of complexity: Ideas and implications for development and humanitarian work'. Working Paper 285. London: Overseas Development Institute. Available at: <http://bit.ly/10ZeLRn>
- Rogers, P. (2008) 'Using Programme Theory to Evaluate Complicated and Complex Aspects of Interventions.' *Evaluation* 14(1): 29-48.
- Snowden, D. (2010) 'Safe-fail Probes'. Available at: <http://bit.ly/112d1wn>
- Stacey, Ralph D. (1993) *Strategic Management and Organisational Dynamics*. London: Pitman.
- Williams, R. and Hummelbrunner, R. (2011) *Systems Concepts in Action : A practitioners toolkit*. Stanford, CA: Stanford University Press.

Additional useful resources relating to planning and strategy in the face of complexity

- Beinhocker, E. (2006) *The Origin of Wealth: Evolution, Complexity, and the Radical Remaking of Economics*. Cambridge, MA: Harvard Business Press.
- Chapman, J. (2004) *System Failure: Why Governments Must Learn to Think Differently*. London: DEMOS.
- Ellerman, D. (2004) 'Parallel Experimentation: A Basic Scheme for Dynamic Efficiency.' Riverside, CA: University of California.
- Funnell, Sue C. and Patricia J. Rogers (2011) *Purposeful Program Theory: Effective Use of Theories of Change and Logic Models*. Chichester: John Wiley/Jossey-Bass.
- Mintzberg, H., Ahlstrand B., Lampel J. (1999) *Strategy Safari: a guided tour through the wilds of strategic management*. New York: The Free Press.
- Rogers, P. and Hummelbrunner, R. (2012) *Methodological challenges in using program theory to evaluate pro-poor and equity-focused programs*, in 'Evaluation for equity'. New York: UNICEF. Available at: <http://bit.ly/V1736Q>
- See also the accompanying ODI background note: 'Providing practical guidance for in-country programming: the value of analysing knowledge, policy and power', which outlines how to use this framework to guide in-country programming. Available at: <http://bit.ly/T8O4Me>

Additional useful resources on planning approaches

- Brown, S. and Eisenhardt K. (1998) *Competing on the Edge – Strategy as structured chaos*. Cambridge: Cambridge University Press.
- Dewar, J. (2002) *Assumption Based Planning: A tool for reducing avoidable surprises*, Cambridge University Press, Cambridge
- Hummelbrunner, R. (2010) *Beyond Logframe: Critique, Variations and Alternatives*, in 'Beyond Logframe; Using Systems Concepts in Evaluation'. Tokyo: Federation for Advanced Studies on International Development.
- Ringland, G. (1998) *Scenario planning: Managing for the future*. New York: John Wiley and Sons.

Useful websites

- <http://mande.co.uk>, with a special section on logframes and several papers by Rick Davies on social frameworks, including case examples.
- <http://outcomesmodels.org>, with a series of papers on outcome theory by Paul Duignan and examples of outcome models for various fields.
- <http://www.giz.de/en>, which contains material on GIZ's impact model and other planning-related tools.
- <http://www.outcomemapping.ca>, with articles on the outcome mapping (OM) approach to planning (intentional design) and examples for the fusion on OM and logframe.
- http://www.gbn.com/about/scenario_planning.php, which contains material and case examples on scenario planning from the corporate sector.



This Background Note has been funded by IDRC and UK Aid from the UK Government, however the views expressed do not necessarily reflect those of IDRC or the UK Government's official policies.



Overseas Development Institute, 203 Blackfriars Road, London SE1 8NJ, Tel: +44 (0)20 7922 0300, Email: publications@odi.org.uk. This and other ODI Background Notes are available from www.odi.org.uk.

Readers are encouraged to reproduce material from ODI Background Notes for their own publications, as long as they are not being sold commercially. As copyright holder, ODI requests due acknowledgement and a copy of the publication. For online use, we ask readers to link to the original resource on the ODI website. The views presented in this paper are those of the authors and do not necessarily represent the views of ODI. © Overseas Development Institute 2013. ISSN 1756-7610.