Article

The Actor-Based Change Framework: A Pragmatic Approach to Developing Program Theory for Interventions in Complex Systems

Andrew Koleros[1], Sean Mulkerne[1], Mark Oldenbeuving[1], and Danielle Stein[1]

Abstract

Despite a wide body of literature on the importance of program theory and the need to tackle complexity to improve international development programming, the use of program theory to underpin interventions aimed at facilitating change in complex systems remains a challenge for many program practitioners. The actor-based change framework offers a pragmatic approach to address these challenges, integrating concepts and frameworks drawn from complexity science and behavioral change literature to develop robust program theory for complex interventions. This article presents the conceptual framework for the approach and describes how it has been applied in practice on an evaluation of a security and justice program in Nepal. It concludes with a discussion of the strengths and weaknesses of the approach in practice and how it can be applied more widely to improve program theory for interventions in complex systems.

Program Theory in the Age of Complexity

In the context of declining foreign aid budgets and growing demands for accountability around aid effectiveness from an increasingly skeptical polity, the "results agenda" has now arrived at the forefront of development agendas for many donor and recipient countries. This has spawned new efforts to show the measurable results of development interventions and a proliferation of various

[1] Palladium, London, UK

Corresponding Author:
Andrew Koleros, MPH, Director, Research, Monitoring and Evaluation Practice, Palladium, 2nd Floor, Turnberry House, 100 Bunhill Row, London EC1Y 8ND, UK.
Email: andrew.koleros@thepalladiumgroup.com

tools, methodologies, and approaches to support these efforts (Organisation of Economic Cooperation in Development [OECD], 2008; Rao & Woolcock, 2003; Valters & Whittey, 2017).

Development theorists and practitioners have written extensively on how program theory can improve development interventions in response to these pressures[1] (Funnell & Rogers, 2011; Stein & Valters, 2012). From its origins in the field of evaluation, program theory has come to be widely used in international development across different purposes (Patton, 2008). In addition to its use in evaluation design, program theory is now a standard part of the design process for most international development programs. As the emphasis on accountability has grown as part of the "results agenda," program theory has also come to be viewed as an important tool for monitoring program performance (Jones, 2011).

The predominant models currently used to depict program theory, particularly the commonly used logical framework (or logframe), present change as a linear process which can be modeled through a straightforward causal pathway of inputs, outputs, outcomes, and impact. As these models are now used as the basis of accountability measures, as well as for planning purposes, development programs tend to be designed to focus exclusively on this immediate program causal logic, with less emphasis on the forward and backward linkages, the identification of feedback loops (both positive and negative), a comprehensive recognition of the program context, and the multiple factors that influence the change process outside of exposure to a particular program.

However, there is a growing recognition that simplistic causal models can limit the effectiveness of planning, monitoring, and evaluation and that, as a result, international development programs should be framed in terms of "complex systems" in order to improve their effectiveness (Ramalingam, 2013; Ramalingam, Laric, & Primrose, 2014; Rogers, 2008). Leading theorists and practitioners have begun to address this, particularly in the field of theory-driven evaluation where a number of frameworks exist that consider complexity concepts in the design of evaluations (Centers for Disease Control and Prevention, 1999; Chen, 2015; Donaldson, 2007; Funnell & Rogers, 2011; Williams & Hummelbrunner, 2010). Funnell and Rogers (2011) have also conducted a wide survey of current approaches to using and representing program theory for interventions with significant complex aspects, including fixed ultimate outcome and emergent program theory, structured processes for developing emergent program theory, and diagrams and concepts from systems approaches.

Despite this wide body of literature arguing that the success of programs depends in large part on their ability to understand and engage with complexity, the development of useful program theory for programs intervening in complex systems still remains a challenge. Practitioners have to date not been able to effectively translate concepts from complexity science in a way which is coherent and consistent with the predominant frameworks used within international development practice. Program theory, though often citing a recognition of complexity, continues to be largely articulated in the form of linear logic models (Valters, 2014).

Through our work designing and evaluating development programs, we have developed the actor-based change (ABC) framework as an attempt to address this gap. What is unique about our approach is that we focus on the actors within a system as a pragmatic way of modeling how change happens in situations of complexity. Based on theoretical understandings of behavior change derived from behavioral science (Michie, van Stralen, & West, 2011) and new models of causal inference (Funnell & Rogers, 2011; Ling, 2012; Mayne, 2011), the ABC framework allows practitioners to effectively develop an evaluable program theory for interventions aimed at facilitating change in complex systems.

In this article, we first present the conceptual underpinnings of the framework before demonstrating how the approach can be applied in practice, through the use of an example of a security sector strengthening program in Nepal. We conclude with a discussion of the strengths and weaknesses of the approach. Although this article presents the framework in an international development context, it is equally applicable to any social intervention, including those in the domestic context.

The ABC Framework in Theory

The ABC framework draws from three main bodies of literature to ensure that a program theory is developed that better reflects how change happens in a complex system. We will examine each in the following, illustrating their relevance to program theory through the use of an international development example (an HIV prevention intervention promoting correct and consistent use of condoms among women).

Complexity and Systems Change

First, integrating core concepts from complexity science, program theory in complex systems should position changes in practices and relationships among actors in a defined system as the central mechanism for describing how change happens. Although there are many different definitions for complexity and complex systems, we adopt the definition proposed by the Santa Fe Institute:

> Complexity arises in any system in which many agents interact and adapt to one another and their environments. These interactions and adaptations result in evolutionary processes and often surprising "emergent" behaviors at the macro level. Complexity science attempts to find common mechanisms that lead to complexity in nominally distinct physical, biological, social, and technological systems. (Santa Fe Institute, 2017)

In the context of international development programs, we can thus understand a "development problem" as the outcome at the macro-level that results from the interactions and adaptations of the many agents, or actors, within this system. This implies that addressing a development problem from a systems lens requires first identifying the actors in the system and then understanding how those actors behave with respect to one another and in response to their environment. In addition to providing a pragmatic understanding of how change is likely to happen within a complex system, the adoption of an actor-based approach allows the intervening program to recognize their own role as a new actor in the system, thereby helping to more explicitly address both the intended and unintended consequences of intervention.

For example, this perspective would conceptualize the HIV prevalence rate in a particular community as the outcome resulting from the sexual practices (e.g., numbers of partners, use of condoms or other prophylaxes) of different actor groups in the system (e.g., couples in union, sex workers, injecting drug users) interacting with each other and adapting their practices over time in response to the changing HIV epidemic and context (i.e., changes in poverty, access to medication, culture, social norms around gender, sexuality and acceptability of sexual practice, etc.). Such a conceptualization is useful for a development program attempting to articulate a program theory, as it helps to identify which actors are most closely associated with the outcome of interest (e.g., women in union associated with high HIV prevalence rates in a particular community). It also allows for any agency interested in intervening to understand how their actions are likely to impact this target population, as well as other relevant actors in the system.

Behavioral Change and Its Determinants

A focus on the behaviors and interactions of actors in a system leads us to the next body of literature, which considers what causes or drives human behavior. Across the social sciences, the determinants of behavioral change have been thoroughly explored and documented. Susan Michie and colleagues have summarized this literature through a systematic search of 19 existing frameworks and consultations with numerous behavior change experts and have subsequently proposed a framework which defines a "behavior system" as involving three essential conditions:

- Capability—psychological or physical ability to enact a behavior;
- Opportunity—physical and social environment that enables the behavior; and
- Motivation—reflective and automatic mechanisms that activate or inhibit the behavior (Michie et al., 2011).

This framework, which has recently gained some traction in the context of theories of change (Mayne, 2016; Rogers, 2016), is referred to as "COM-B," or "Capability, Opportunity and Motivation for Behavior Change." Michie et al. argue that three conditions must be met in order to sustain a particular behavior or practice. According to the framework, no priority is assigned to individual, group, or environmental perspectives; a given behavior in a given context will require different behavioral conditions or combinations of behavioral conditions. Within the three behavioral conditions, a number of subdivisions are also proposed. One which is particularly relevant to program theory in complex systems is within the "opportunity" behavioral condition, where a distinction is made between physical opportunity, afforded by the environment, and social opportunity, afforded by the cultural milieu. Thus, in applying this framework comprehensively, an individual's agency and relational power dynamics within the broader social structure are taken into account, as well as the institutional arrangements which define the formal and informal "rules of the game" within the system. Identifying the determinants of behaviors and interactions among actors in the system in this manner helps to more specifically articulate an actor-based program theory as it serves to identify opportunities and entry points for interventions to target these determinants as a mechanism for shifting behaviors among those actors, thereby ultimately addressing the development problem at the systems level.

Extending our example from above, to effectively change behaviors concerning correct and consistent condom use among women in union, at the individual level, they must have the knowledge that condoms are an effective means of preventing HIV and the skills to correctly use them (capabilities) and possess the desire and willingness to use condoms as a means of protection as well as have positive attitudes and beliefs around the social acceptability of condom use (motivation). At the opportunity level, they must also not only be able to procure condoms when needed (physical opportunity) but also have the ability to negotiate condom use with their sexual partner, taking into account unequal power dynamics when issues such as economic dependence or gender-based violence (GBV) are involved (social opportunity).

Each of these factors is important independently, but the combination of these factors provides the necessary and sufficient conditions for the sustained behavior change of "correct and consistent condom use" to occur. Thus, all conditions must be met to sustain this behavior and contribute to a systemic change in HIV prevalence over time.

Measuring and Attributing Change in Complex Systems

Finally, the literature on generative and mechanism-based models of causal inference provides key insights into how best to articulate both a "theory of action," that is, the expected pathways from the specifics of an intervention to changes in targeted actor groups, and a "theory of change," that is, the potential pathways to system changes that actor-level changes might bring about (Ling, 2012; Mayne, 2011). This literature argues that these causal impact pathways should be flexible and adaptable in response to evidence and changing contexts over time. As a result, measurement systems should be organized around testing hypotheses within the pathway which generate data to demonstrate accountability and support program adaptation and learning.

The key point for an actor-based approach to program theory is that this literature suggests that it is not possible to fully predict exactly how actors will respond to changes over time. Too many variables (in and out of the control of a program) are in play that will influence how different actors will react to the intervention at different times and what other changes might emerge within the system as a result. Thus, program theory should not attempt to predict every variable in advance and

set up rigid measurement frameworks to measure these over time. Rather, program theory should be used to structure monitoring and evaluation systems that focus on measuring actionable data aimed at incremental learning and adaptation.

The implication of this is that a program theory from an actor-based approach must accommodate a flexible approach to gathering data on how behavioral determinants shift over time, how behaviors and interactions change among different actors because of these shifts (as intended or otherwise), what outcomes emerge as a result of these shifts, and how a program responds in reaction to these emergent changes. This is consistent with the literature advocating for the need for program design and delivery to accommodate uncertainty to achieve results. This literature puts an emphasis on the importance of promoting program learning and driving evidence-based adaptation based on program implementation experience (Ladner, 2015; Valters, Cummings, & Nixon, 2016).

Continuing with our example from above, the program theory for a condom promotion program attempting to address "correct and consistent condom use" among women in union might begin by capturing shifts in a woman's skills to use condoms (capability) and her desire for and acceptability of condom use in marriage (motivation). This would then lead to a series of hypotheses focused on what changes one would expect to see over time which would be testable in a measurement system.

Tracking shifts in these conditions over time might then lead the program to begin to target a new actor group (e.g., men in union, who may prove to be a key actor group necessary for shifting the "social opportunity" of women in union to adopt the healthy behavior). Effectively tracking changes in the motivations and practices of these actors might then lead to the identification of particular "change agents" (e.g., some men who are motivated to educate other men about the importance of condom use). This could then lead to a series of new hypotheses focused on how messages targeting these change agents are delivered at the community level.

It would also be important to capture how changes in men's attitudes might lead to changes in their sexual practices outside of union, for instance, with sex workers, and how these changes might lead to changes in HIV prevalence. In addition, the program theory would want to capture how the overall economic and political context changes over time and how these key actor populations respond to these changes.

As these new hypotheses were developed, the program would need to alter their monitoring plans to incorporate the collection of new data related to these new populations. Furthermore, the very nature of the intervention may need to be redesigned as program staff learn what is working and under what conditions.

The ABC Framework in Practice

In this section, we describe how to apply the ABC framework in practice using the case of an evaluation of a complex security and justice program in Nepal. We first present a brief overview of the program. We then describe how the ABC framework was used to (i) articulate a program theory, (ii) develop an evaluation framework, and (iii) drive program learning and improvement.

Introduction to the Nepal Integrated Program for Strengthening Security and Justice (IP-SSJ)

IP-SSJ operates within a complex security and justice system in Nepal, encompassing many actors at different geographic and administrative levels, characterized by interdependent, nonlinear relationships, and governed by both formal and informal rules. This is complicated by IP-SSJ's diverse implementation context, including areas in Nepal's Hills with little exposure to formal security services and strong memories of conflict, as well as densely populated villages in the southern Terai, characterized by ethnic divisions and a tense relationship with the Nepali state.

In this context, this program funded by the UK Department for International Development seeks to contribute to the improved rule of law in Nepal through a range of interventions targeting the Nepal police, alternative dispute resolution and legal aid, community groups, media, and the general public. These interventions are implemented by six organizations, including multilateral organizations, international nongovernmental organizations, and consortia of local and international organizations.

We implement the monitoring, evaluation, and learning (MEL) component of the program and are thus responsible for delivering the independent impact evaluation of the program as well as providing evidence to support program learning and improvement. IP-SSJ's variable interventions and contexts have resulted in many different combinations of interventions implemented in many different locations across the country, posing a number of challenges to evaluators. The ABC framework has proven to be instrumental in dealing with this complexity.

Using the ABC Framework to Articulate Program Theory

Articulating program theory using the ABC framework entails three key components:

- An actor-based system map, describing the current system dynamics in terms of the development problem to be addressed, the main actors associated with the problem, and the behavioral conditions that define the practices and relationships among them;
- A change agenda, identifying which conditions would need to shift over time to lead to sustainable changes in practices and relationships that would likely address the development problem in a sustainable manner; and
- Causal impact pathways, articulating the theories of action (i.e., the expected pathways by which interventions lead to actor-level changes) and the theory of change (i.e., the possible flexible pathways by which these actor-level changes lead to systems change and contribute to any macro-level socioeconomic changes which emerge).

Although presented sequentially here, these three components comprise an iterative process. They can be performed at any point in a program process, from design, to delivery, monitoring and evaluation, and learning and adaptation. For IP-SSJ, we began applying this framework early in the second year of the program, once all components had begun their initial design but few interventions had begun at the community level.

Actor-based system map. Developing program theory through the ABC framework begins with developing an actor-based system map. The system map depicts the current practices and relationships among the relevant actors in the system and macro-level dynamics that result from the interactions of these actors vis-à-vis the development problem to be addressed by the program.

This map is constructed by understanding the "current state" of the system through an actor lens. To achieve this, the primary actor group most affected by the development problem is first identified. As IP-SSJ primarily seeks to address high rates of unreported crime, particularly physical violence among women and girls, survivors of these forms of crime who are not using formal services were identified as the primary actor group. The fact that these individuals are not using formal services is thus their "current state practice."

The "current state practice" of the primary actor is broken down using the COM-B approach into its behavioral conditions: the capabilities, opportunities, and motivations that allow this behavior to persist. In the IP-SSJ example, the behavioral conditions among survivors of GBV driving low use of formal security and justice services included some of the following:

- Capability: Low knowledge of their rights when victim of a crime, especially related to GBV;
- Opportunity: Limited availability of specialized police and shelter services to cater to survivors; strong social norms that detract from women reporting abuse; and
- Motivation: Perceptions that police do not provide effective and efficient services to survivors of GBV, and thus survivors have little to gain for seeking their help.

Based on this understanding, additional actor groups to include in the system map are then identified based on their relationship with or influence on the primary actor group. For instance, the behavioral condition "perceptions that formal police services were ineffective" identified local police as a relevant actor group to include in the system map. The behavioral condition of "strong social norms which detract from women reporting abuse" also identified actor groups that influence this social norm, including friends, family members, and community and religious leaders, as additional actors to include in the system map.

Developing an accurate understanding of the "current state" required us to use a number of approaches, including a literature review, political economy analysis, and primary qualitative data collection. This began with joint and one-on-one consultations with IP-SSJ implementing partners, to ensure a common understanding of the goals of the program, existing evidence, and their views of the "current state." Following that, we conducted a review of the literature, including the program's design documents, draft work plans from each program component, and other relevant available literature around the security and justice situation in Nepal. Over 100 documents were consulted to begin to construct the behavioral conditions for each actor group and identify linkages and relationships between them.

We also conducted stakeholder interviews with some of the key actor groups in the program, including the Nepal police, the Ministry of Law and Justice, and the Ministry of Women, Children, and Social Welfare. To support our understanding of each actor's behavioral conditions, we applied a political economy analysis approach to identify incentives as well as the power dynamics which define relationships between them.

Finally, we conducted a qualitative research study in four communities identified to be representative of IP-SSJ's primary target population. This immersion-based research provided insight into the drivers of current behaviors and priorities and also helped to identify additional actors relevant to the system map, particularly those most important to current social norms around the use of formal services. This element of the exercise was the lengthiest, spanning about 5 months, but ensured that the system map was grounded from the start in the realities of the people the program sought to benefit.

As with all system mapping approaches, boundaries are inherently arbitrary but also necessary, as the identification of additional actors could conceivably continue endlessly. We have found that focusing on actors involved in the primary causes of the problem can limit the number of actors included in the system map to a more manageable number. For instance, in the IP-SSJ actor-based system map, we included the actors with direct relationships with survivors of GBV at the local level (e.g., local police) as well as the actors which most directly related to the behavioral conditions of each local-level actor group (e.g., district police and national police).

These activities were conducted over a 9-month period, during which we used regular stakeholder meetings to validate findings. This included one-on-one interviews with program implementers as well a number of participatory workshops. This allowed us to develop an actor-based system map to situate current program interventions based on current system dynamics. The actor-based system map is presented in Figure 1.

The change agenda. The change agenda uses each actor's current state behavior as a basis for visioning each actor's ideal "future state practice," defining how behavioral conditions would need to shift over time to achieve this future state sustainably. The change agenda also takes into account
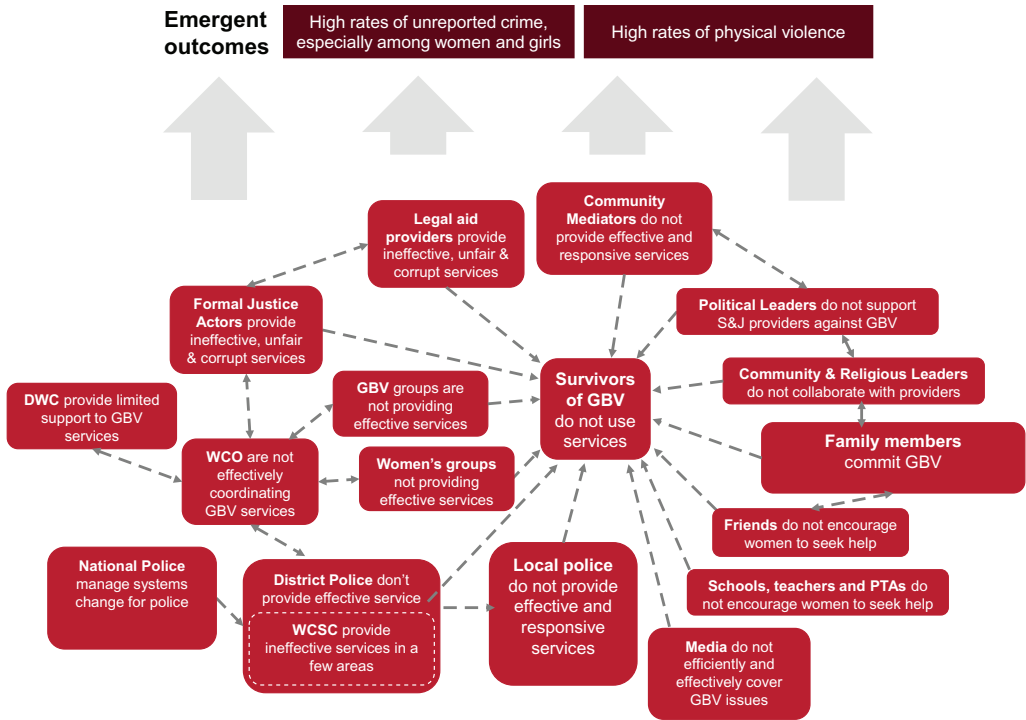
Figure 1. IP-SSJ actor-based system map. IP-SSJ = Integrated Program for Strengthening Security and Justice.

the fact that actors influence each other: A change in one actor's practice will inevitably affect the practices and relationships of other actors in the system. Such insight can provide the basis for planning more comprehensive interventions and stimulating more honest and realistic discussions of the types of impacts a program can expect (and in what time horizon).

In the case of IP-SSJ, we used the change agenda to identify which behavioral conditions were addressed by current interventions as well as to identify new interventions targeting behavioral conditions that the program had not originally planned to address. For instance, although the program was designed to address a number of behavioral conditions among the local police, including technical skills-building, infrastructure support, and performance management system improvements, the change agenda identified the need for support to referral processes for the variety of local security and justice providers working in the same community. An example of the change agenda developed for the local police is provided in Figure 2.

Causal impact pathways. After developing the system map and the change agenda, the unifying program theory is then depicted using causal impact pathways that articulate the expected changes from intervention to actor-level practice changes (theory of action) and the possible pathways to system-level changes and emergent outcomes brought about by multiple actor-level changes (theory of change).

The theory of action for each actor group describes the expected pathway from program intervention to changes in behavior for each actor, as well as the causal link assumptions at each step of the pathway. Using the change agenda developed for each actor, the pathway is constructed by first identifying which behavioral conditions are being addressed by the intervention. Here, we have found John Mayne's "useful theory of change" model as an effective tool for comprehensively

CURRENT STATE	Local Police	FUTURE STATE
Police do not provide effective and efficient services to population	**CHANGE IN BEHAVIOUR**	**Police provide effective and efficient service to the population**
• Limited knowledge of guidelines for dealing with GBV cases, including referral mechanisms • Poor technical skills	**CAPABILITY** *Psychological or physical ability to enact change*	• Police have improved knowledge of policies for dealing with SGBV cases, including how to effectively transfer cases • Improved technical skills
• Infrastructure, equipment, facilities lacking/poor	**OPPORTUNITY** *Physical and social environment that enables change*	• Improved infrastructure, equipment and facilities • Improved organisation/systems
• Police reluctant to respond to crimes deemed as "social" issues • Poor performance management systems	**MOTIVATION** *Reflective and automatic mechanisms that influence change*	• Police see importance of dealing with all crimes • Strong performance management system

Figure 2. Change agenda for local police.

articulating these pathways (Mayne, 2015). The Mayne model outlines a general change pathway by which activities deliver goods and services to a defined actor group. When this actor group is reached with this new good or service and has a positive reaction to it, it will then lead to changes in their capacity, which ultimately lead to changes in behavior. Funnel and Rogers (2011) also describe a number of program archetypes, including information, community capacity building, and direct service delivery programs, which can be used to guide these processes.

Behavioral conditions identified in the change agenda, which are not addressed by the intervention, are then considered causal link assumptions, as all behavioral conditions in the "future state" must hold true for the behavior to sustainably change. Causal link assumptions from intervention to change in behavioral conditions are also articulated at this stage. Mayne's model also provides guidance on identifying the salient assumptions behind each change pathway based on the different types of interventions being implemented.

In the case of IP-SSJ, we worked with the program implementers through a series of working sessions and consultative meetings to develop each actor-level theory of action. We first identified the behavioral conditions their interventions were targeting. All other behavioral conditions not being addressed by the program were included as causal link assumptions. We then used Mayne's model to outline how the program intended to change this behavioral condition: the specific impact pathway from delivery of each intervention to reaching the actor groups with program activities to a change in that actor's behavioral condition(s) (and the causal link assumptions at each step in the pathway). The theory of action for the local police as part of the IP-SSJ program theory is depicted in Figure 3.

Once the actor-level theories of action have been developed for each actor group that the program intends to target, we use the actor-based system map to articulate the theory of change. We first define a number of possible pathways by which the actor-level behavioral changes (activated in the theory of action) might cascade through the system and contribute to macro-level changes to address the development problem. Specifically, in a similar manner to how we used the behavioral conditions identified in the "current state practice" to identify additional actors to include in the system map (e.g., including local police because of their influence on survivors of GBV using formal services), we use the system map to trace the possible pathways by which a behavioral change in one actor might work to shift the behavioral conditions of other actors they are related to, thus leading to behavioral changes in these groups, which might then work to shift behavioral conditions in other actors they are related to, and so on. We then describe how the collection of these actor-level changes over time would change the macro-level socioeconomic problems and thus address the development problem.

As all actors in the system map are interconnected, this approach allows program teams to posit multiple possible pathways by which change might cascade through the system, allowing for flexibility. This process also can help in identifying other possible interventions the program might
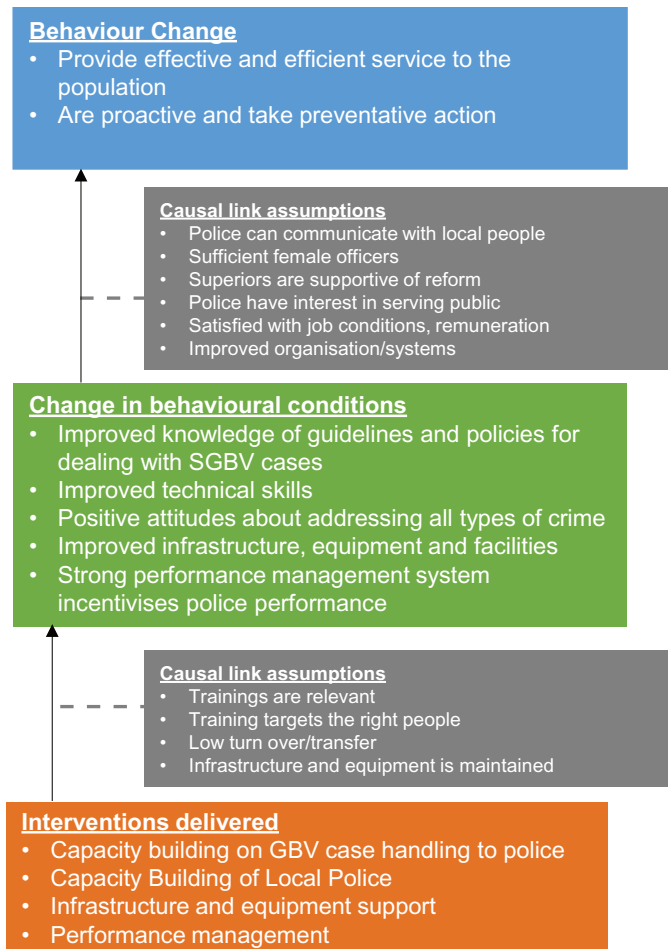
Figure 3. Theory of action for local police.

implement to improve the likelihood of a particular pathway holding true. For instance, a possible causal impact pathway might require a change in a new system actor not previously targeted by the program, but necessary for this particular causal impact pathway to hold true.

In the case of IP-SSJ, the process of developing possible impact pathways was done through a number of consultative workshops with program implementers using the graphic of the "current state" system map to talk through likely and possible pathways of change. These pathways were recorded and then subsequently depicted on the system map. In total, 10 separate possible causal impact pathways were developed for the program with program implementers.

One of these pathways is depicted in Figure 4. Here, discussions with the program components working with the police identified a possible pathway by which local police providing more effective services might result in more cases being referred to legal service providers and subsequently formal justice actors. This shift in demand for GBV-related legal services among GBV survivors might lead to more effective handling of GBV-related services. Effectively handling more GBV cases in turn might lead to shifts in other survivors reporting crimes as well as shift in family members committing GBV, for fear of retribution through the legal system. This would contribute
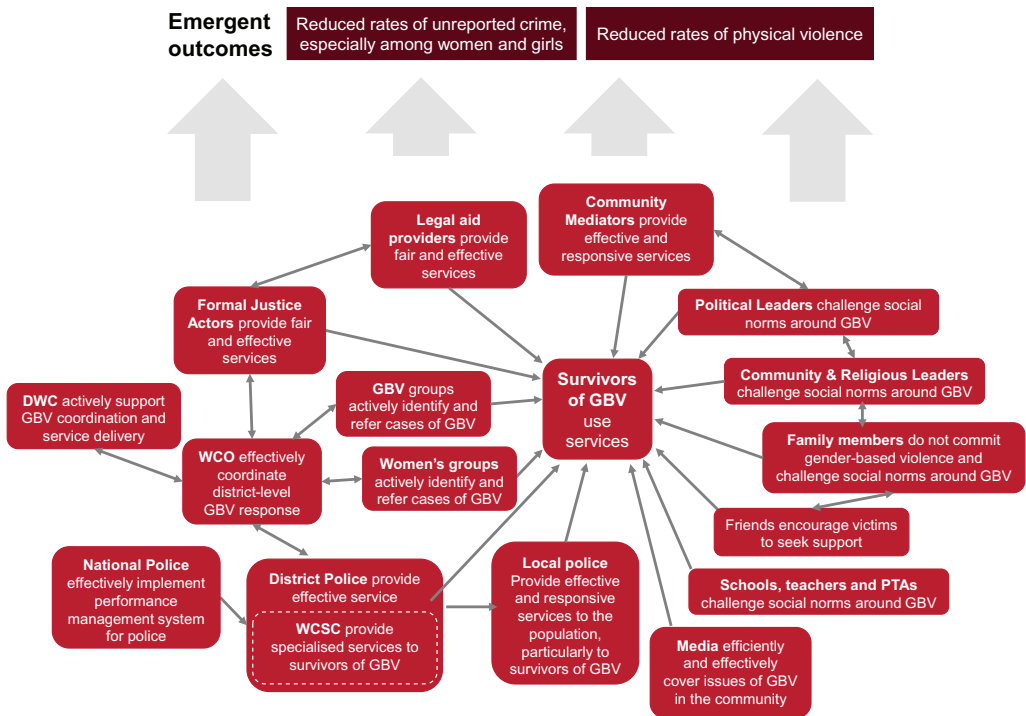
Figure 4. Possible causal impact pathway from police practice change to contribution to changes in emergent outcomes at the system level.

Figure 5. IP-SSJ theory of change depicted as an actor-based system map. IP-SSJ = Integrated Program for Strengthening Security and Justice.

to emergent outcomes in the system around reduced rates of unreported crime and reduced rates of physical violence.

Causal link assumptions are also identified between each step of the possible pathways. Similar to the process used to identify assumptions in the theory of action, the behavioral conditions not addressed in the "future state practice" of each actor group comprise the causal link assumptions for this step in the pathway. This process can also help in identifying new interventions, as depicted in Figure 4, where Box 5 indicates that this change in practice among formal justice actors might require additional program intervention, thus an additional program activity to be added.

As data emerge over time either supporting or refuting the steps in the pathway (or the assumptions being met), the causal impact pathways can then be adapted and new hypotheses developed. This allows for a flexible approach which can capture emergent changes and ensure that the possible pathways are both based on evidence and continually updated.

The possible causal impact pathways are then combined in order to depict the theory of change, as they collectively identify the main actor-level changes that the program intends to affect (either directly through the theory of action or through influencing shifts in the behavioral conditions of other actors) and how the collection of these changes leads to macro-level changes within the system.

Although this can be visually depicted in a number of ways, we have found two approaches useful.[2] The first is to depict the multiple possible actor-based changes on the actor-based system map and relate this to changes in the macro-level outcomes (which address the development problem). Figure 5 depicts the theory of change for IP-SSJ as an actor-based system map, showing how all system actors identified in the 10 possible causal impact pathways might change over time, either directly through program intervention (as articulated in the theory of action) or through other
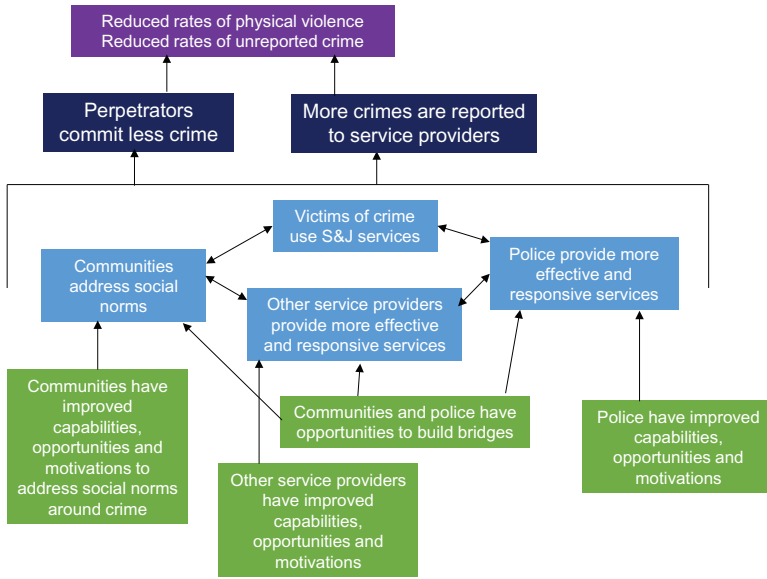
Figure 6. IP-SSJ theory of change depicted as a linear format. IP-SSJ: Integrated Program for Strengthening Security and Justice.

behavioral changes cascading through the system, leading to contributions to emergent outcomes within the system. In addition to this overall theory of change, we have developed specific theories of change at the district level for each of the program sites, depicting the specific actors within each local system and the possible pathways at a site level.

The second approach to depicting the theory of change uses a more conventional logic model format, depicting the major pathways of change from an actor lens. The 10 possible pathways developed could be condensed into the general logic model format presented in Figure 6. As with the system map depiction of program theory, we developed district-level depictions of this theory of change as well.

It is important to note that for representation purposes, we have not included the causal link assumptions at each level of the theories of change in the graphics in Figure 5 or 6, as they tend to overly clutter the visuals and detract from the utility of the program implementers engaging with it. However, these were used to develop the monitoring and evaluation framework for the program, as described in the next section.

Using the ABC Framework to Design a Monitoring and Evaluation System

The causal impact pathways developed in the theory of action and theory of change are then used to develop the monitoring and evaluation framework. Indicators are identified along each step of the causal impact pathways to determine whether the "future state" has been achieved and whether causal link assumptions have been met. For the IP-SSJ evaluation, for instance, the indicator selected to measure the local police behavior change of "providing effective and efficient services" was "percentage of victims of crime who sought help from local police and reported being satisfied with the service." This was done for all causal impact pathways.

We then identify relevant data sources to report against these indicators and the frequency with which data are generated. Methods used to inform these indicators form the core of a system for MEL. In the IP-SSJ case, we identified a large set of possible relevant data sources for each indicator and prioritized these based on importance to the system or evaluation, cost of collection, and interval

of availability. This led us to focus on three core data gathering methods for the evaluation: repeat household surveys, qualitative data collection with representative groups of service providers, and monitoring data and other assessments from program implementers. Table 1 illustrates the monitoring and evaluation framework developed to track changes in the police actor group along the theory of action. A combination of secondary data and household survey results allowed us to report on changes to emergent outcomes in the system over time.

Using the ABC Framework to Drive Program Learning and Adaptation

The theories of action and possible causal impact pathways included in the theory of change can also be used on a regular basis to drive program learning and adaptation. This can be done in a number of ways, including holding regular review and reflection sessions where program stakeholders gather together to reflect on progress, based on the evidence gathered to date, and to identify the need for any program adaptations or improvements. For instance, on the IP-SSJ evaluation, annual strategic reviews are used to review the theories of action and causal impact pathways in the theory of change to reflect on key questions such as the following:

- Has there been any progress within each actor group in shifting from the "current state" to "future state practice"?
- Should the change agendas for each actor be revised or updated, that is, by incorporating any new capabilities, opportunities, or motivations which have been identified as necessary for shifting from the "current state" to "future state practice"?
- Have new actors entered the system that needs to be included in the actor-based system map?
- Are the causal link assumptions holding true? Can any of the assumptions be addressed through program intervention?
- Are additional program activities/theories of action needed to facilitate behavioral changes in other system actors?

The outcome of these sessions can be the identification of lessons learned or case studies, or actions for how program implementers can adapt delivery based on the changing system dynamics, as captured in updated actor-based system maps and causal impact pathways.

To help IP-SSJ implementers engage with evaluation-generated data, we also used the actor-based system map as a way to visually depict mixed methods results from the evaluation in order to drive program integration and adaptation. Figure 7 depicts the results from our mixed method baseline mapped to the actor-based system map. This approach to presenting findings from our data gathering activities also encouraged program implementers to adopt a more systems perspective in their work by clearly highlighting the relationships between each actor and their current states.

Conclusion

Our use of the ABC framework in multiple development programs, including IP-SSJ, has highlighted a number of advantages that the framework provides, in contrast to other approaches to developing program theory. It has also exposed some challenges. We discuss both of these in this final section.

We have found that the main advantage of the framework is its ability to capture complexity while strengthening causal logic; this occurs at several levels. Taking a broad, system-oriented lens helps to situate a program or intervention within the larger system of actors, identifying the number of actors involved in complex change processes and helping program teams be more honest about what changes they can likely expect to achieve (and in what timeframe). Understanding how the actors within the system are related and how change would need to cascade through the system also assists in identifying the necessary causal linkages within the program theory in order to avoid

Table 1. Measurement Framework for Local Police.

Causal Impact Pathway Level	Result	Indicators	Data Source
Change in behavior	Provide effective and efficient service to the population	Percentage of community members reporting strongly agree or agree to the statements: • I am satisfied with the quality of police services • It is easy to talk to the police as they are friendly with the community	Household survey
		Percentage of victims of crime who sought help from Nepal police and reported being satisfied (very satisfied or somewhat satisfied) with the service, by provider type	Household survey
Assumptions from change in behavioral conditions (COM) to change in behavior	Police see importance of dealing with all crimes	Nepal police expressing positive attitudes toward crime prevention	Qualitative data collection
	Police can communicate with local people	Percentage of community members reporting strongly agree or agree to the statements: • Police treat men and women equally • Police respect all ethnic communities equally	Household survey
	Sufficient female officers	Nepal police staff by sex and ethnic group, by district	Police statistics; program data
	Superiors are supportive of reform	Nepal police expressing positive attitudes toward crime prevention	Qualitative data collection
	Police have interest in serving public	Percentage of community members reporting strongly agree or agree to the statements: • The police treat me with respect	Household survey
		Percentage of community members reporting strongly agree or agree to the statements: • Police have good intentions to support the community • Police are absent or don't visit the communities they serve • Police come but they don't help us	Household survey
	Satisfied with job conditions, remuneration	Nepal police expressing job satisfaction	Qualitative data collection; program data
	Improved organizations/systems	New polices, regulations, and so on supportive of process	Program data

(continued)

Table 1. (continued)

Causal Impact Pathway Level	Result	Indicators	Data Source
Change to behavioral conditions	Police have improved knowledge of guidelines and policies for dealing with GBV cases	Police capacity score	Program data
	Improved technical skills	Police capacity score	Program data
	Improved infrastructure, equipment, and facilities	Percentage of community members reporting strongly agree or agree to the statements: • The police have good quality buildings	Household survey
	Strong performance management system incentivizes police performance	Nepal police staff satisfied with performance management system	Qualitative data collection
Assumptions from reached with intervention to change in behavioral condition (COM)	Training is relevant	Nepal police staff who are satisfied with training	Qualitative data collection
	Training targets the right people	Numbers of people trained	Program data
	Low turnover/transfer	Percentage of trained staff still in place after 12 months	Program data
	Infrastructure and equipment are maintained	Infrastructure an equipment still functional after 12 months	Program data
Reached with goods & services by IP-SSJ	Infrastructure and equipment support	Number of police buildings constructed and/or renovated	Program data
	District level training in GBV and communication skills to frontline police and other service providers	Equipment provided to police Number of trainings held	

Note. IP-SSJ = Integrated Program for Strengthening Security and Justice; COM = capability, opportunity, and motivation; GBV = gender-based violence.
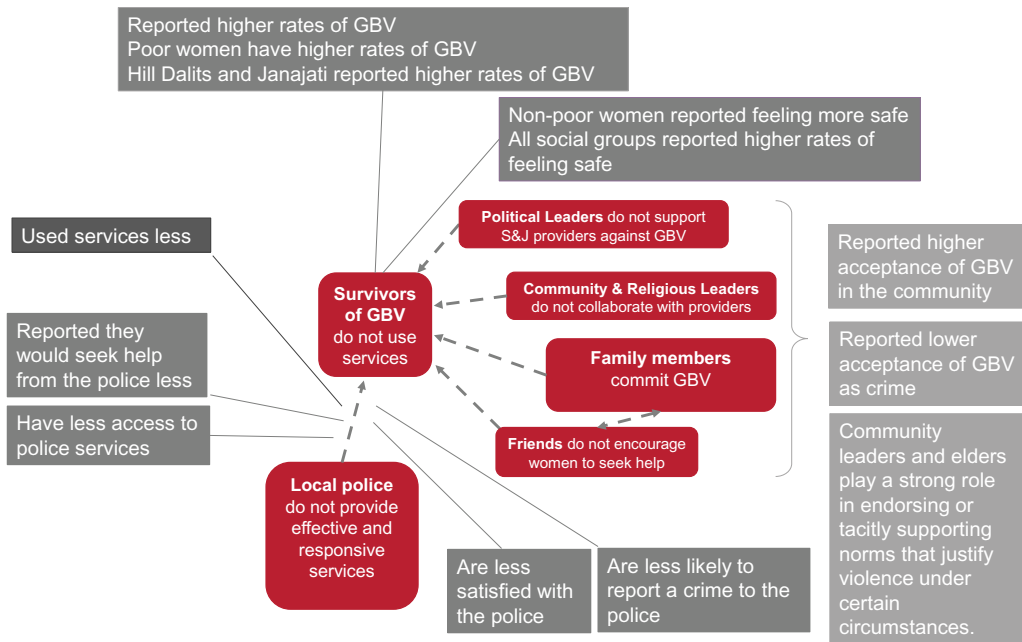
Figure 7. Evaluation baseline data mapped to the actor-based system map.

making large causal leaps or omitting key steps in the pathway to change. The change agendas are also useful in robustly identifying underlying assumptions in the causal impact pathways, strengthening understanding of complex change processes. On the IP-SSJ evaluation, understanding the multiple actors at the community level involved in addressing the development problem drove some difficult but important conversations, for instance, around what could realistically be achieved within each program component in the life of the program and how different interventions would need to be integrated to effectively affect change.

In addition, the framework offers the possibility of flexible application. The framework can be applied at any point in a program, by either the evaluator or the program implementer. Although ideally developed at the beginning of a program, it can be applied retrospectively as an evaluation tool, as well as midway through a program to drive changes or improvements to program delivery and monitoring. It can also be developed from an existing program theory. The application of regular reviews and reflection sessions linked to the framework also drives adaptation and flexibility within the life of a program. At all of these points, it can also be used to add analytical rigor to program outputs, such as system maps, stakeholder analysis, research products, and contextual analysis. Using the ABC framework ensures these products draw from a richer understanding of a given development problem and the contributing factors.

Third, the framework encourages local participation in program theory design processes. By avoiding some of the jargon commonly used to develop program theory, which can often relegate program theory to the monitoring and evaluation (M&E) team of a program, it presents difficult concepts in ways that can be easily described and understood by different stakeholder groups, while building a greater understanding of complexity concepts. This fosters the participation of local project teams and stakeholders in program strategy development, thereby helping to mitigate problems caused by the fact that program funders and designers often have views about how change happens that differ from those of the people the program seeks to benefit (Eyben, Kidder, Rowlands,

& Bronstein, 2008). On the IP-SSJ evaluation, the development of the program theory through a series of consultations and workshops played a significant role in building a coherent vision among a diverse set of implementers, as well as a common understanding of the program's various components. Establishing this understanding is particularly valuable for large, multicomponent programs like IP-SSJ, whose success depends on joint working but who often struggles to establish a coherent approach. The system map, for instance, which was largely developed by program stakeholders, proved very useful for stimulating conversations around integrated delivery.

Although a key advantage, the participatory component of the framework is also a challenge, as it requires an upfront investment in time and staff resources. On IP-SSJ, for example, this process took nearly 9 months from the beginning of the exercise to the completion of our baseline data set. However, an initial application of the framework can be completed in a relatively short time frame. For instance, we have used this approach to develop initial program theories in week-long participatory workshops with stakeholders. It also requires skilled facilitation to ensure the skills and knowledge of various stakeholders are used effectively at each stage. These expectations need to be managed from the outset in order to ensure sufficient buy-in throughout the process.

Finally, the fact that the framework is inherently "method neutral," or "methodologically pluralistic," allows it to be used as an organizing framework to help analyze and interpret a wealth of data coming from multiple and diverse data sets. Although the program theory is best defined with a rich set of primary and secondary quantitative and qualitative data, it does not require a specific type of method for its application to be effective. Methods can be flexibly used and added based on resources and timing, in the understanding that there is value in combining different approaches. This is in line with good practice in evaluation and consistent with prevailing theory-based evaluation approaches (Funnell & Rogers, 2011), including those of realistic evaluation and analytical causal inference, such as contribution analysis and process tracing.

The use of a wide variety of data sources is also challenging, as it can create a burden for M&E systems if not adequately resourced, thereby reducing the full benefits of using the ABC framework. On the IP-SSJ evaluation, we are currently seeking to mitigate some of these difficulties by identifying ways to better integrate it into routine program reporting mechanisms more methodically, given both the diverse data sources that can be drawn upon and the limited resources available for such work.

Although some of the challenges of using the ABC framework will pose difficulties for some evaluators, specifically around the availability of time and resources, we are convinced that, overall, the benefits of the approach far outweigh the limitations. By presenting our approach through this article, we hope that others working in international development (as well as those implementing social interventions in other contexts) can gain insight into how to use the framework to better address complexity within their own programs. For example, in cases where it is not feasible to use the framework to develop a full program theory, evaluators may benefit from using some aspects of it to improve their work, for instance, in surfacing key research and/or learning questions. We also hope that this article can contribute in some small way toward closing the gap between development theory and practice, by promoting the design and delivery of more efficient and effective development programs and assisting donor and recipient countries to better achieve their development goals.

Declaration of Conflicting Interests

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Notes

1. Although the term "theory of change" is the most commonly used in international development, in this article, we adopt Funnel and Rogers' definition of "program theory" as a more comprehensive term. They define this as "an explicit theory or model of how an intervention contributes to a set of specific outcomes through a series of intermediate results which needs to include an explanation of how the program's activities contribute to the results" (Funnell & Rogers, 2011, p. xix). It is comprised of two components: a "theory of change," "the central mechanism by which change comes about for individuals, groups and communities," and a "theory of action," which "explains how programs or other interventions are constructed to activate their theory of change" (Funnell & Rogers, 2011, p. xix).
2. Of course, if only one possible causal impact pathway is identified, or one pathway is identified as the most likely and predominant pathway, this can simply be used to depict the theory of change, such as the possible pathway depicted in Figure 4.

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