

Annex 5: Systems analysis tools that can be used in complexity-responsive evaluations

Application		Uses
Systems dynamics	Dealing with interconnectedness and dynamic relationships	<ul style="list-style-type: none"> • Mapping program context • Test assumptions underlying a causal chain
Critical systems heuristics	Dealing with boundaries, norms, beliefs and values	<ul style="list-style-type: none"> • Understanding motivations and values of different stakeholders
Systems mapping	Dealing with complex theories of change and identifying organizational and contextual factors that affect program outcomes	<ul style="list-style-type: none"> • Mapping complexity dimensions of an intervention
Social network analysis	Dealing with large numbers of stakeholders and their relationships	<ul style="list-style-type: none"> • Analysis of complex and changing relationships among stakeholders • Assess how network structures affect program implementation and outcomes
Agent-based modelling	Modelling how different assumptions about the motivations of different agents (actors) affect program outcomes	<ul style="list-style-type: none"> • Anticipate outcomes based on the interactions, preferences and characteristics of different individual agents
Causal loop diagrams	Understanding dynamic, interconnected situations	<ul style="list-style-type: none"> • Understanding patterns of interaction among stakeholders
Geospatial analysis frameworks	Combining a wide range of geospatial data-collection and analysis methods to understand relationships between projects and the broad contexts in which they operate	<ul style="list-style-type: none"> • Combines satellite and remote-sensor images with contextual analysis, integration of administrative data, and propensity score matching to integrate project project-level analysis with local/regional/national/global contexts
Source: Adapted from Bamberger, Vaessen and Raimondo (2016) Dealing with complexity in development evaluation chapter 7; and Williams and Hummelbrunner (2011) Systems concepts in action		