

# Supporting Information

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## SI Text

### Knowledge Systems and the Wider Knowledge-to-Action Literature.

The knowledge-systems framework that we have applied here offers a different approach to understanding the role of knowledge than what is typically presented in the health context. The health sector has, for more than a decade, drawn heavily on the notion of evidence as the key knowledge driver in health-care progress and reform. This extends from evidence-based health care at the clinical level (drawing on research and other formal knowledge sources to inform desirable clinical practice) to evidence-based or evidence-informed health policies. Recent work by the World Health Organization (WHO) to emphasize the need for greater attention to be paid to knowledge, including their 2004 *World Report on Knowledge for Better Health: Strengthening Health Systems*. This publication was followed in 2008 by an international conference of health ministers to discuss the role of research and to emphasize the need for evidence-based approaches in health-policy development.

The evidence-based concept has, however, been challenged by researchers who see it as representing health-policy development as a one-way, linear, rational decision-making process, which is not the norm. For a recent review of the conventional trickle-down and translation and transfer literatures of research use in sustainable development and the critiques of those approaches, see van Kerkhoff and Lebel (1). Lomas (2) proposed a linkage-and-exchange model, whereby the primary concern of researchers and policy makers should be to connect, or link, with each other and exchange information and ideas, recognizing that both groups hold relevant expertise and can learn effectively from each other. This model is closer to the knowledge-systems framework that we have applied here, because it places the emphasis on the actors rather than the knowledge per se. However, it is intended to apply primarily to a single event, project, or relationship rather than to serve as a way of understanding wider systems of interactions and relationships.

The knowledge-systems framework, however, draws on the environment or sustainable-development literature. There is widespread recognition of the importance of learning, adaptation, and flexibility in this literature, and researchers play a key role but are not the only important actors. The view expressed by Folke et al. (3) that "Facing complex adaptive systems and periods of rapid change gives the scientist a new role in decision-making from being an objective and detached specialist expected to deliver knowledge to managers to

becoming one of several actors in the learning and knowledge generation process" is not widely evident in the health sector, although it resonates with the linkage-and-exchange model. Significantly, it represents a perspective in the sustainable-development literature that highlights a concern for wider networks and multiple processes of learning and governance where diverse stakeholders are engaged in decision- and policy-making processes surrounding a particular issue or phenomenon (4, 5). It also draws on management theory, particularly concepts of organizational learning, to emphasize processes and institutional arrangements that support learning and adaptation (6).

### Previous Studies of The Global Fund to Fight AIDS, Tuberculosis, and Malaria.

A significant body of work exists on The Global Fund, some of which has been commissioned by The Global Fund itself and others that have been conducted independently. These works predominantly focus on the challenges of operational for their ambitious agenda, often with specific attention to the impact that The Global Fund and other global initiatives are having on particular diseases. Case studies of Country Coordinating Mechanisms were conducted early in the life of The Global Fund (7). Country case studies have addressed a wide range of issues relating to the effects of funding on health systems and human resources (8). A recent study of the effects of The Global Fund in Nicaragua found that The Global Fund's narrow monitoring and evaluation requirements may hinder sustainable-capacity development (9). Few of these studies pay specific attention to knowledge or learning. One recent exception is the work by Biesma et al. (10) that reviewed papers reporting on the country-level impact of three global health initiatives, including The Global Fund. This work noted similar instances of pressure from international actors to divert countries away from their preferred courses of action, which was noted in the case of China in the text. It also suggests that The Global Fund has learned from earlier criticism and now takes a more flexible approach to integrating their programs into national priorities and policies. However, it was also noted that although improvements in coordination with recipients have been observed, coordination among the different global institutions has remained more challenging, suggesting that the need to build learning processes across those organizations is likely to confront persistent obstacles.

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