ELSEVIER
www.elsevier.com/locate/worlddev

World Development Vol. xx, pp. xxx–xxx, 2017

http://dx.doi.org/10.1016/j.worlddev.2017.05.038

Traps and Sustainable Development in Rural Areas: A Review

L. JAMILA HAIDER, WIEBREN J. BOONSTRA, GARRY D. PETERSON and MAJA SCHLÜTER*
Stockholm Resilience Centre, Stockholm University, Sweden

Summary. — The concept of a poverty trap—commonly understood as a self-reinforcing situation beneath an asset threshold—has been very influential in describing the persistence of poverty and the relationship between poverty and sustainability. Although traps, and the dynamics that lead to traps, are defined and used differently in different disciplines, the concept of a poverty trap has been most powerfully shaped by work in development economics. This perspective is often constraining because, as many studies show, poverty arises from complex interactions between social and environmental factors that are rarely considered in development economics. A more integrated understanding of poverty traps can help to understand the interrelations between persistent poverty and key social and ecological factors, facilitating more effective development interventions. The aim of this paper is to provide a critical appraisal of existing trap conceptualizations in different disciplines, and to assess the characteristics and mechanisms that are used to explain poverty traps in rural contexts, thereby broadening the traps concept to better account for social-ecological interactions. Complementarities and tensions among different disciplinary perspectives on traps are identified, and our results demonstrate that different definitions of traps share a set of common characteristics: persistence, undesirability, and self-reinforcement. Yet these minimum conditions are not sufficient to understand how trap dynamics arise from complex social-ecological interactions. To broaden the utility of the concept we propose a more social-ecologically integrated definition of traps that includes four additional considerations: cross-scale interactions, path dependencies, the role of external drivers, and social-ecological diversity. Including these wider dimensions of trap dynamics would help to better account for the diverse social-ecological feedbacks that produce and maintain poverty traps, and could strengthen strategies to alleviate poverty in a more integrated way.

Key words — traps, poverty, social-ecological, development

1. INTRODUCTION

Poverty remains one of the most important global challenges facing humanity. Ending "poverty in all its forms everywhere" (United Nations, 2015) while at the same time not increasing pressure on ecological resources and processes (Raworth, 2017; Steffen *et al.*, 2015) is a long-standing challenge, most recently rearticulated as the first United Nations Sustainable Development Goal. Poverty is caused by complex interactions between social and environmental factors (Nunan, 2015); therefore, integrated conceptualizations of poverty are required to meet this challenge. A synthetic understanding of poverty traps can help to better understand the interrelations between persistent poverty and environmental sustainability.

Conceptualizations of persistent—*versus* transient—poverty (Jalan & Ravallion, 1998; Hulme, 2003), and the resulting alleviation strategies, often rely on the concept of poverty traps (Azariadis & Stachurski, 2004; Barrett & Carter, 2013; Barrett & Swallow, 2006; Bowles, Durlauf, & Hoff, 2006; Carter & Barrett, 2006). The concept originates in development economics, where it is commonly used to describe and explain persistent poverty under a certain threshold, either with one (Cao, Zhong, Yue, Zeng, & Zeng, 2009; Glauben, Herzfeld, Rozelle, & Wang, 2012) or multiple, equilibria (Barrett & Swallow, 2006). In this literature, a poverty trap is characterized by self-reinforcing mechanisms that maintain poverty by keeping people or communities below a certain asset threshold.

The implication of this conceptualization is that escaping a poverty trap requires crossing asset thresholds. When certain asset thresholds are not reached due to lack of opportunities (e.g., access to markets) or capacities (e.g., access to knowledge or capital), a big push in the form of asset inputs is often advocated to move across this threshold (Barrett & Swallow, 2006). The idea of a 'big push' has become a common poverty alleviation strategy, and when coordinated in a multi-faceted way, is evidenced to be effective (Enfors, 2012; Banerjee et al., 2015). Other studies suggest however, that 'big push' strategies can also perpetuate poverty (Green & Hulme, 2005; Easterly, 2006).

Further, the concept of poverty traps neglects important insights from many years of research on poverty. This includes the intergenerational, cultural, and institutional barriers to poverty alleviation (Bowles *et al.*, 2006); the role of inequality in perpetuating poverty (Green & Hulme, 2005; Bétrisey, Mager, & Rist, 2016); and fundamentally that poverty is itself, and is experienced as, multi-dimensional, which means that along with lack of income, poverty can include other factors such as exposure to violence or poor health (Sen, 1999; Alkire & Santos, 2010). Furthermore, cross-scale interactions between multiple low-level equilibria (Barrett & Swallow, 2006), or between social and ecological factors (Maru, Fletcher, & Chewings, 2012), are generally not considered in studies on traps thus far (Barrett & Constas, 2014).

*The authors would like to thank Flora Hajdu, Elin Enfors-Kautsky, Gustav Engström, and Toby Gardner for helpful comments. Jamila Haider and Maja Schlüter's work is supported by the European Research Council under the European Union's (FP/2007-2013)/ERC Grant Agreement 283950 SES-LINK. Jamila Haider and Garry Peterson's work is also supported by the FORMAS project grant "Modelling interactions among multiple ecosystem services in human dominated landscapes" (No. 2008-1283). Wiebren Boonstra's work is supported by the FORMAS Project Grant (No. 2013-1293) "Working knowledge in Swedish coastal fishery—Making cultural capital visible for sustainable use of coastal sea—and landscapes". Mistra supported this research through a core grant to the Stockholm Resilience Centre. Final revision accepted: May 30, 2017.

Please cite this article in press as: Haider, L. J. *et al.* Traps and Sustainable Development in Rural Areas: A Review, *World Development* (2017), http://dx.doi.org/10.1016/j.worlddev.2017.05.038

Poverty traps have however recently received increasing attention beyond development economics. Trap dynamics are for instance frequently analyzed in sustainability research (Gunderson & Holling, 2002; Allison & Hobbs, 2004; Barrett & Constas, 2014; Carpenter & Brock, 2008; Cumming, 2017; Laborde *et al.*, 2016; Maru *et al.*, 2012), where they are considered an emergent outcome of complex social-ecological interactions. A recent special issue on social-ecological traps highlights various new ways of conceptualizing trap dynamics in natural resource management (Boonstra, Björkvik, Haider, & Masterson, 2016; Enqvist, Tengö, & Boonstra, 2016; Tidball, Frantzeskaki, & Elmqvist, 2016). Considerable ambiguity remains around how trap dynamics are conceptualized, interpreted and used in sustainability science and beyond. The widespread use of the trap concept across different research fields, often with different meanings, has led to fragmented understanding.

The overall aim of our paper is to broaden the concept of poverty traps to incorporate key social and ecological factors that can be critical for addressing situations of persistent poverty in rural contexts. We focus on trap dynamics explicitly, rather than on chronic poverty more generally, because the trap concept has been particularly influential and pervasive in many different disciplines, and is often used specifically to link poverty and sustainability challenges (Barrett & Constas, 2014; Brown, 2016; Maru *et al.*, 2012). Moreover, our focus is on traps at the local level, specifically in rural communities, not the national or international levels, since the local level is the focal scale of most literature on sustainable development in rural contexts.

To address the overall aim, we focus on three specific objectives that are addressed with two linked literature reviews and a synthesis. First, we conduct a literature review of how trap dynamics are conceptualized across a broad range of disciplines to identify opportunities for broadening the concept of poverty traps beyond economic development and asset levels (objective 1). Second, we carry out a more in-depth review of the literature of traps in rural contexts to better understand social and ecological drivers and mechanisms of trap dynamics (objective 2). The second review focuses on papers that specifically analyzed trap dynamics in rural contexts located (predominantly) in the Global South. Finally, we integrate insights from these two complementary reviews and the social-ecological literature to synthesize key aspects of trap dynamics that can help underpin a more holistic approach to understanding and applying the concept of poverty traps in both research and development practices (objective 3).

2. METHODOLOGY

This paper extends the scope of existing reviews of poverty traps (e.g., Bowles *et al.*, 2006; Maru *et al.*, 2012; Tidball *et al.*, 2016) in two ways. First, we review a very broad range of literature from psychology to sociology to sustainability science, to uncover different conceptualization of trap dynamics, and second, we provide for the first time a systematic overview of characteristics and mechanisms of traps in rural contexts.

Both the broad and in-depth reviews are structured using a Social-Ecological Systems (SES) framework, which assumes that social and ecological dynamics interact as a complex adaptive system (Folke *et al.*, 2010; Levin *et al.*, 2013). This framing focuses on: (a) the interdependence of social and ecological factors (Folke, Biggs, Norström, Reyers, & Rockström, 2016); (b) interactions across multiple spatial and temporal scales (Gunderson & Holling, 2002); and (c) how multiple local interactions and adaptations over time give rise to traps (Levin *et al.*, 2013).

(a) *Step 1—review of trap dynamics across research fields*

A literature search using the Institute for Scientific Information (ISI) Web of Knowledge was conducted between January 2013 and November 2015 to capture publications that cover trap dynamics in relation to the persistence of poverty, and its interrelation with environmental sustainability. The Web of Knowledge was used because of its broad range of papers across disciplines, large temporal records, and selection of scientific articles appearing in reputable journals (Arezoo *et al.*, 2013). The search term used was: TS = (poverty trap OR rigidity trap OR cognitive trap OR lock-in OR social trap OR chronic poverty) AND TS = ((sustain* OR resilienc* OR environment*) OR (develop* OR social*)), resulting in 6,267 papers (Web of Knowledge Core Collection). The search term was selected to represent a broad spectrum of trap dynamics (i.e., including lock-in, persistence), and to limit papers to sustainability- and development-related problems. Only English language and peer review papers were considered. Given the focus of our study we limited our search further to Web of Knowledge Research Areas (RA) that are relevant for sustainability-related problems. These were business economics, public administration, environmental sciences, ecology, biodiversity conservation, agriculture, fisheries, forestry, history, geography, anthropology, social sciences, psychology, sociology, social sciences, social work. Publications that mentioned traps in the context of physical traps (i.e., animal or insect traps) were excluded, as were any publications clearly beyond the scope of our study (e.g., traps mentioned in medical journals).

This refined search produced 2,345 papers, which we grouped into seven research fields to facilitate comparing representative conceptualizations across different disciplines. These research fields were labeled by the authors as: Development Economics, Rural Development, Environmental Science, Sociology, Psychology, and Social-Ecological. Development economics, for example, combined papers from ISI research areas business economics and public administration; Environmental Science from ISI research areas ecology, biodiversity, environmental sciences, conservation, agriculture, fisheries, and forestry. The rural development category captured papers from business and economics, as well as public administration which included the term "chronic poverty." The social-ecological category was created to represent papers that explicitly considered dynamics of social-ecological relationships and that did not fit into any of the other categories because they combined otherwise divergent research areas.

Two of the most highly cited papers in each category were selected for further analysis. All of the selected papers have been cited more than 50 times, indicative that they are important for their respective research field. In cases where the highest cited papers were not relevant for sustainability science, the next most cited paper was selected. Each of the selected papers was scored with respect to the defining features of the trap dynamics, how they were measured, and typical interventions proposed for overcoming traps (see Table 1, Results).

(b) *Step 2—review of trap dynamics in rural contexts*

Web of Knowledge was also used to select papers for the second review. The search term: TS = (("poverty trap*") OR