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# Framing resource-constrained innovation at the 'bottom of the pyramid': Insights from an ethnographic case study in rural Bangladesh



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#### ABSTRACT

Resource constrained-innovation (RCI) at the so-called 'bottom of the pyramid' (BOP) in developing countries has attracted the attention of a growing number of scholars, who present different and sometimes conflicting narratives within which such innovation is framed. These variously frame innovation as supporting the opening up of new markets in the BOP (the 'poor as consumers') where multi-national companies are key actors, or grassroots, indigenous innovation aimed primarily at social and environmental goals, such as inclusion, empowerment and sustainability. We present the results of an ethnographic study in rural Bangladesh in which we explored the framing and dynamics of RCI. We found that rather than following any one particular narrative presented in the literature, innovation framings merge and co-exist through a process of hybridisation. Our research suggests that further empirical study of such processes of hybridisation in the field could be valuable for understanding RCI and associated social change at the BOP. This may have broader relevance for a world where resource constraint may become an increasingly ubiquitous phenomenon.

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#### 1. Introduction

One billion people live in the least developed countries and four billion people live in developing countries (Collier, 2007) often under conditions of resource scarcity, a situation which particularly affects those living at the so called 'bottom of the pyramid' (BOP). In the face of these challenges, many development theorists have called for an acceleration of the process of inclusion of the 'underdeveloped' into the club of industrialised nations, periodically accompanied by calls to create and support competitive environments in the developing world in which innovation can flourish (Lundvall et al., 2009a, 2009b). These are frequently underpinned by calls for structural reforms at an institutional level, such as the liberalisation of trade, labour markets and public services, improvement of

educational systems, creation of R&D centres and promotion of private sector initiatives (ibid.). These are all elements characteristic of what Escobar (2012) calls the 'discourse of development'. The 'narrative of innovation' plays a central role within this broader discourse. In this sense, innovation is not only framed as a key ingredient of development, but the developing world is seen as a major driver of global innovation in the 21st century (Kaplinsky, 2011a), the future *Eldorado* of innovation itself and its *holy grail* (Prahalad and Mashelkar, 2010).

The 'innovation turn' at the BOP, and in the broader discourse of development, raises significant questions regarding what such innovation involves (and who), its purposes, motivations and beneficiaries. Development – and more recently the notion of development-oriented innovation – are contested, interpretively flexible terms that embody multiple, contested meanings (Cornwall, 2007) and which in turn shelter the interests and political agendas of those who promote and use them. We seek to understand how narratives of innovation in resource-constrained contexts (e.g. at the BOP) are socially-constructed and how these are located within

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<sup>&</sup>lt;sup>1</sup> The notion 'bottom of the pyramid (BOP)' usually indicates those nominally living on less than 2 US dollars a month (Prahalad, 2010).

broader, contested discourses of development. In the following study in rural Bangladesh, we describe the dynamics and framings of RCI from direct observations in the field, and compare these with narratives presented in the literature. The paper is set out as follows: firstly we describe how RCI narratives and framings have emerged from the academic literature i.e. some theoretical foundations. We then empirically explore, through a mix of data collection techniques (i.e., observational ethnography, semi-structured interview, focus groups and document analysis) how RCI framings are embodied in practices observed in a case study in rural Bangladesh. Finally we discuss our empirical findings and its limitations within the context of the extant literature. This leads us to suggest that innovation in resource constrained environments such as Bangladesh is driven by a mix of normative frames: from concerns for social justice and environmental sustainability to opportunities to open up markets and transfer technologies as a means of creating economic and social value. It occurs within a complex network of actors and power relationships where framings overlap, rather than following any one narrative presented in the literature. The themes that emerge from the data suggest that a simplistic, singular narrative is insufficient to understand RCI in the BOP context. Narratives of RCI presented in the literature are, in the real world, not mutually exclusive but rather co-exist and are, at the same time, the subject of tensions and contradictions (Stirling, 2011): they are pluralistic, recombinant and hybrid. Understanding the social and cultural construction of such hybrid narratives we argue may be useful to understand RCI and social change in at least parts of the developing world, while presenting novel innovation and innovation policy opportunities as yet little explored in the Global North.

#### 2. Theoretical foundations

#### 2.1. Resource constrained innovation at the bottom of the pyramid

Innovation has been proposed as a fundamental ingredient for development (Dosi and Freeman, 1988; Fagerberg et al., 2010; Freeman and Soete, 1997) and how innovation emerges and diffuses under conditions of resource constraint within developing countries has become a topic of increasing interest in the academic literature (Lundvall et al., 2009a). This literature presents a series of narratives which frame RCI in various ways: for example, contributing to the process of 'catching-up' e.g. (Fu et al., 2011; Kim, 1980), or the building up of innovation systems e.g. (Arocena and Sutz, 2000; Cassiolato et al., 2003; Lundvall et al., 2009a, 2009b; Muchie and Gammeltoft, 2003) or 'propoor or from the poor' innovation (e.g. Gupta, 2012; Hall et al., 2012). They include intriguing and provocative concepts such as 'frugal innovation' (Bound and Thornton, 2012), 'reverse innovation' (Govindarajan and Trimble, 2012), 'Jugaad innovation' (Radjou et al., 2012), 'BOP innovation' (Prahalad, 2010, 2012), 'Gandhian innovation' (Prahalad and Mashelkar, 2010), 'empathetic innovation' (Gupta, 2010, 2012), 'long tail and long tailoring' innovation (Anderson and Markides, 2007), 'belowthe-radar innovation' (Kaplinsky, 2011) and 'inclusive innovation' (George et al., 2012).

These narratives emerge from differing values, interests, world views, power relationships, and experiences (Demeritt et al., 2011; Leach et al., 2010), which in turn present tensions

and contradictions (Pansera, 2013). A common theme within these innovation narratives is material, financial and human resource scarcity and resource insecurity (Baker and Nelson, 2005; Gibbert et al., 2006; Keupp and Gassmann, 2013) which allows us to consider them under the general umbrella term (Rip and Voß, 2013) of 'RCI'. The focus of these innovation narratives has been in general on emerging and developing countries and, specifically: RCI's role in the global value chain (Kaplinsky, 2000), its potential to open up unexploited markets (Prahalad, 2010) and the emergence of indigenous, grassroots forms of innovation (A. Smith et al., 2014). This heterogeneous literature is focused on the resolution of three major questions: first, does innovation occur (and if so how) in resourceconstrained environments such as those found in many parts of the developing world i.e. a focus on process (Keupp and Gassmann, 2013)? Second, how does innovation contribute to various goals such as social inclusion and poverty alleviation (George et al., 2012; Hall et al., 2012; Halme et al., 2012), and/or the creation of markets for commercial gain? I.e. a focus on the normative basis for innovation, its purposes and underlying motivations. Third, what are the implications for the so-called developed world, i.e. 'innovation blowback' (e.g. South-North transfer) acknowledging the globalisation of resource scarcity as a feature of modernity – and in turn what are the implications for emerging innovation policy? I.e. a focus on implications, policy and even risks.

As regards the first question, there is a broader literature that extends beyond the developing world concerned with organisational capacities for innovation involving 'making do with what is at hand' (e.g. Baker and Nelson, 2005; Garud and Karnøe, 2003). Some of these studies identify within the bounded creativity of teams the inception of RCI (Hoegl et al., 2008) and stress the mutual interaction between science-based Research & Development and experience-based learning (Hendry and Harborne, 2011). Others have focused on popular ingenuity and 'frugal innovativeness' (Gupta et al., 2003; Radjou et al., 2012).

The academic literature concerning the second question suggests a plurality of framings in terms of goals, purposes and motivations. Innovation scholars in both emerging and developing countries have for example advocated the need for functional innovation systems aimed at overcoming problems of underdevelopment and poverty (Arocena and Sutz, 2000; Lundvall et al., 2009a; Martins Lastres and Cassiolato, 2008; Muchie and Gammeltoft, 2003). Others have argued that innovation can in fact be the very cause of inequality and social exclusion (Arocena and Senker, 2003; Arocena and Sutz, 2003; Cozzens and Kaplinsky, 2009; Cozzens, 2007, 2008). Some entrepreneurship and organisation scholars have focussed on the possible opportunities that innovation may present for opening up markets at the BOP through the development of 'good-enough' and affordable products (London, 2009; Prahalad and Mashelkar, 2010). These scholars hypothesise that the BOP could be a source of breakthrough innovations (Prahalad, 2012) and offer a huge potential market for multinational corporations (London and Hart, 2004; London, 2009). In contrast again, others focus on indigenous forms of RCI carried out in informal settings by grassroots movements, often in response to local issues such as social injustice or environmental problems (Smith et al., 2014), with an emphasis on patterns of innovation and development that are appropriate for the poor in the

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