Nonhumans in the practice of development: Material agency and friction in a small-scale energy program in Indonesia

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ABSTRACT

We develop the outlines of a new approach to study the role of nonhumans in constituting 'implementation' and calculative–discursive practices in development projects and programs. Developing a framework around the concept of *friction* (material resistance or recalcitrance encountered in processes of transformation), we analyze an Energy Self-sufficient Village program in Indonesia. Focusing on specific projects and episodes within this program, we identify multiple distinctive instances of friction. These were driven by nonhumans' (and humans') resistance, as remolding of development beneficiaries' practices was attempted by project administrators, government officials, entrepreneurs and by the (scientific) calculations embedded in their policies, strategies and models. In concluding, we distill four ways in which nonhumans relationally shape development practices: (a) by resisting representations and calculations produced by human actors, (b) by re-directing planned/expected courses of action, (c) through biophysical change to their weight or textures as they move in space and time, and (d) by mediating competition for resources. Overall, nonhumans play a central role in making and unmaking asymmetric relations of power in practice and by constituting practices that diverge from prior expectations, problematize linear understandings of 'policy implementation'. Their material and discursive agency is multiple, manifesting differently in different relational settings, which highlights the importance of broadening the range of spokespersons who speak on behalf of nonhumans and whose voices can be considered reliable and true. Our study thus provides support to calls for pluralizing and democratizing development 'expertise' beyond the usual suspects in science, government and civil society.

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"Until the lion has his or her own storyteller, the hunter will always have the best part of the story"

[West African proverb]

1. Introduction

In 2006, the Indonesian Presidential Instruction No. 1/2006 mandated thirteen ministries, all provincial governors as well as mayors and district heads to support biofuel development. A year later, this Instruction was followed by the launch of Energy Self-sufficient Village (ESV) program that aimed to cover at least 60% of the energy demand of 3000 remote villages using local resources. The program was undergirded by scientific calculations of biofuel production potentials, which highlighted the promise of new biofuel technology for increasing efficiency of agricultural production and for improving 'poor' people's welfare. Demographic data produced by the statistical bureau pointed to the existence of 37.17 million (or 16.58% of the total population in 2006) poor people in Indonesia who lived in 'underdeveloped' villages. Using these calculations as rationales, a number of ESV projects were initiated between 2007 and 2013. But by 2014, most of these "self-sufficient village" projects based on energy crops such as *Jatropha curcas* and *Calophyllum inophyllum* had been discontinued (Afiff, 2014; Fatimah et al., 2015).

Despite these failures, new biofuel ESV projects using different energy crops continued to be promoted. For example, in March 2015, the provincial government of West Kalimantan issued a call for cultivating an energy crop named *Kemiri Sunan* (Reutealis trisperma) (Kompas, 9/3/15). This call was preceded by the planting of 12,300 *Kemiri* seeds in 5000 ha owned by local farmers. A month later, the Ministry of Energy and Mineral Resources, the state oil company and Bogor Agricultural University held a workshop on

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using *Kemiri* to rehabilitate degraded land. In this workshop, *Kemiri*'s potential of growing on marginal lands, its high oil content, a 100-year lifespan and possible use as a fertilizer were emphasized (Antara, 16/04/15). These great expectations were strikingly similar to claims made by the previous Indonesian president Susilo Yudhoyono when inaugurating a Jatropha-based ESV project in Grobogan in 2007,[1] and by Minister of Forestry when he inaugurated a Calophyllum-based ESV project in Purworejo on 2009.[2] Throughout, biofuel ESV projects were expected to meet local energy demand while creating jobs and alleviating poverty. However, in practice, crops and machines in the projects often did not perform the roles assigned to them, despite the projects' human participants' best efforts to make the projects work as planned. These nonhumans were critical in constituting project practices and outcomes that were far removed from the governments' (and the scientists') expectations.

In this paper, we argue that practices and outcomes of development projects can be better understood by appreciating the role played by nonhumans in transforming idealized expectations of project administrators, their expert advisors and funding bodies. Nonhumans, and humans, do not always play roles that are assigned to them in policies and project plans, by other powerful actors, but rather they may display recalcitrance toward the plans and expectations. While we study projects that were funded not by international development aid, but by the Indonesian government, our analysis of the role of things in development practices has conceptual and methodological implications for studying practices in any development projects that are undergirded by policy models and/or involve technological/ecological elements.

In the last two decades, much literature in development studies has turned its attention to the practice of programs and projects during their 'implementation' (see for example, Pigg, 1995; Li, 1999; Tsing, 1999; Mosse, 2004, 2005; Lewis and Mosse, 2006a; Bebbington et al., 2007; Heeks and Stanforth, 2014). Scholars have studied how, (a) different subjectivities (e.g. as 'indigenous practitioner', 'community elder' or 'subsistence farmer') are reconstituted within development practices (Pigg, 1995; Li, 1999); (b) practices are enacted through activities of convincing and enlisting heterogeneous actors as participants in a project (Tsing, 1999; Mosse, 2004); (c) how different sets of practices ('social, discursive, and political') come to co-exist under different organizational cultures and under top-down and bottom-up strategies for project organization (Lewis and Mosse, 2006a; Bebbington et al., 2007); (d) how a project's evaluation as success or failure depends on the interpretation and representation of actual project events through discursive practices informed by policy models (Mosse, 2004, 2005; Rottenburg, 2009; Heeks and Stanforth, 2014). Surprisingly, however, with the exception of development policies and the models undergirding them, this literature has given little attention to nonhumans as active constituent elements of development practices.

Nonhuman action has been studied more extensively in science and technology studies (e.g. Callon, 1986; de Laet and Mol, 2000; Shepherd and Gibbs, 2006; Law and Mol, 2008), animal geography (e.g. Philo, 1995; Buller, 2014), and archaeology (e.g. Malafouris, 2013; Witmore, 2014). This work has shown that nonhumans are not simply pliant objects, which human actors can willfully control (and measure), but rather they try to resist control by human actors, also because they may be embedded in alternate webs of relations. In order to work in specific projects as humans' allies, nonhumans have to be interested and manipulated.

In this article, we conceptualize action as distributed across a range of associated humans and nonhumans. Such a distributed relational conceptualization of action permits the possibility of nonhumans resisting the roles assigned to them, even after they have been interested and allied, by human actors. It also allows us to extend the repertoire of pragmatist investigations into development, by viewing it as an effect of network of humans (with their dispositions, ideas and bodies) and nonhumans (with their materiality in the form of weights, shapes and textures as well as the visions and knowledges inscribed into them). Introduction of a new entity into a network, in general, requires adjustments in the network's other constituent entities (and the relations between them) and in the new entity. These adjustments are unlikely to be smooth, and some entities may pose resistance. We conceptualize this resistance posed by nonhuman and human entities in a network as *friction*. Friction is emergent and its sources cannot be fully predicted. Such a conceptualization avoids imposing *a priori* coherence on development projects, despite the presence of 'coherent' policy models that ostentatiously govern these projects and their practices.

In the following, we review relevant literature in development studies, focusing on accounts of practices and the role played by nonhumans in these accounts. In a theoretical section we develop our conceptual framework, following which we briefly discuss the methodology of our fieldwork in Indonesia (carried out by the first author between 2010 and 2012). An empirical section then recounts four episodes of friction in the ESV project. Finally, we draw some conclusions about and implications of the inclusion of nonhumans into the analysis of development practices.

2. Practices in development

The earliest studies of practices in development studies were carried out by scholars who argued that development policy was simply a passage for the exercise of disproportionate power (for example Escobar, 1995; Sachs, 1992; Ferguson, 1990). These critical scholars aimed to unmask unequal power relations and domination hidden underneath the rhetoric of rational policy-making and planning. Achieving domination through policy is, however, not a straightforward task: while policy may *attempt* to dominate and constitute subjectivities, its making and implementation entails contestation between heterogeneous actors (Shore and Wright, 1997). Thus, development policy is not a homogeneous or absolute tool of domination, but rather its power is operationalized through a struggle between different interests, identities and interpretations. In fact, the power to dominate over others may be a contingent outcome of actors' relations with others and not a property of actors in and by themselves (Donovan, 2014; Ernston, 2013; cf. Callon and Law, 1995). Viewing power as negotiated in relations allows one to avoid the critical assumption that development is a set of practices that objectify and homogenize the worlds of its 'beneficiaries'.

Arguably the most important critical study of development practices was carried out by Ferguson (1990), who discusses how the national government in Lesotho, by implementing a large international development aid project, expands the scope of its bureaucratic power over its citizens. Ferguson's detailed ethnography shows how the building of the road to connect Thaba-Tseka region with the capital city allowed the national government to exercise stronger administrative control over the region. This outcome was rather removed from the main rationale undergirding the project i.e., the development of a commercial livestock industry in the Thaba-Tseka region. By emphasizing this rationale, the central government of Lesotho was able to represent the project and their administrative apparatus as being situated outside the realm of

[1] Transcript of dialogue between the Sixth President and Grobogan farmers, February 21st, 2007.
[2] Masyhud, Ministry of Forestry's press release, December 4th, 2009.