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Exploring the mundane: Towards an ethnographic approach to bioenergy

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ABSTRACT

This article introduces the concept of ‘mundane bioenergy’, the largest source of renewable energy utilized by human society. While the term ‘renewable energy’ evokes images of solar panels and wind turbines, most renewable energy is used in a different form. This ‘mundane’ and largely invisible form of energy use takes place when families burn wood, dung, charcoal, and crop residue in cookstoves for their subsistence needs. We call on more energy ethnographers to grapple with mundane energy issues and strengthen this small but growing field of scholarship. Limited ethnographic scholarship on mundane energy issues leads to a partial understanding of emic perspectives and failed development initiatives. By sharing insights from our ongoing ethnographic research on mundane bioenergy, we demonstrate the value of bringing such insights into conversation with research in energy studies.

Introduction: the ethics of remembering the mundane

The term “bioenergy” can mean many things. On the one hand, bioenergy can be understood as ethanol or biodiesel alternatives to liquid fossil fuels used in automobiles or aircraft, or on the other hand, as a source of electricity generated from biomass as an alternative to generating power from coal or oil. Energy researchers think of the former as ‘biofuels’, and of the latter as ‘biomass gasifiers’. Bioenergy can also mean energy in the form of solid biomass produced and consumed everyday by the world’s poor to sustain basic needs of survival. In this article we draw attention to the latter, what we call “mundane bioenergy” because too often, things that are perceived to be old, unchanging, or technologically un-exciting get overlooked despite their relevance to many people.

Bioenergy is the largest source of renewable energy currently utilized by human society [1]. While the term ‘renewable energy’ popularly conjures visions of high technological advancements such as solar panels or wind turbines designed in sophisticated laboratories and deployed in advanced economies to mitigate greenhouse gas emissions, only 22% of the bioenergy currently utilized around the world takes the form of ‘modern bioenergy’ [1]. Thus, a majority of bioenergy is utilized in a form we are calling ‘mundane bioenergy’. We draw on Dove and Kammen’s conceptualization of the ‘mundane’ as being those problems which are pressing but overlooked because they are not considered “cutting edge” theoretically or technologically and usually

affect the poor and less powerful [2].

By focusing deliberately on the mundane aspects of bioenergy, we draw attention to an underserved topic that affects a vast number of marginalized people, highlighting the ethical stakes of household energy transitions. We draw on our ethnographic work in Asia to demonstrate how everyday energy decisions are informed by people’s lived experiences and ethical sensibilities, making ‘mundane’ energy a matter of ‘energy ethics’ as coined by Smith and High in the introduction to this special issue.

The majority of ‘mundane bioenergy’ is used in the form of fuelwood, charcoal, crop residue, and animal dung in so-called ‘traditional’ cookstoves, leading to emissions of and human exposure to woodfuel smoke, particularly among women and children. Exposure to biomass smoke causes a host of respiratory and cardiac diseases [3], contributes to global climate change [4,5], and in some areas places an additional stress on local forest cover creating hotspots of degradation of the local environment, although not necessarily contributing to large scale deforestation [6–8]. These serious environmental and social concerns have drawn the attention of numerous development actors, who have made multiple attempts to transition marginalized households away from ‘mundane’ and ‘traditional’ biomass energy use and towards ‘improved’ biomass technologies; or in some cases the abandonment of bioenergy altogether for ‘modern’ energy sources, with minimal success [9–12]. We use the terms ‘modern’ and ‘traditional’ deliberately in quotes. While anthropologists have long problematized the use of these

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terms, they remain prevalent in the energy and development literatures, and they continue to be used to describe energy technologies and fuels. We engage with and use these terms while problematizing their popular uses.

We will argue that understanding the perspectives and values of the users of mundane bioenergy is a critical step that is often missed. Energy ethnographers can make an important contribution to energy scholarship in this regard. We will illustrate the value of such scholarship to energy studies and reflect on the unique contributions that place-based qualitative studies are poised to make to energy studies.

This article makes three main points. First, we problematize the invisibility of ‘mundane bioenergy’ from the scholarly literature (see for example [13,14]) arguing that this reflects an academic bias against rural poverty [15]. Second, we echo a growing body of scholars who call attention to the need for more ethnographic work and qualitative social science research conducted in the realm of energy studies broadly [16,17], in particular on emic perspectives on energy as used by 40% of the world’s population [18]. Energy studies will benefit from more “thick descriptions” of mundane bioenergy use [19], those that explore and analyze what everyday energy practices are like for the majority of the world’s population, and shed light on the socio-cultural aspects entangled with energy use. A small but emerging body of interdisciplinary scholarly work has been conducted on rural electrification [20–23], but cooking and space-heating energy uses have received only a fraction of the attention they deserve. Third, by sharing insights from our ethnographic research on mundane bioenergy, we demonstrate the value of bringing such insights into conversation with ongoing research in energy studies.

This article is organized into four main sections, each of which problematizes or deconstructs a salient discourse on bioenergy: Section 1 provides a historical framing of current debates on bioenergy, particularly drawing on narratives of ecological degradation linked to fuelwood collection and use. It describes the history of environmentalism as influenced by debates in bioenergy and discusses the dissonance between popular perception and empirical reality. Section 2 describes current debates on bioenergy and shares insights from our ethnographic research on mundane bioenergy. Section 3 examines energy as a commodity and draws attention to fundamental assumptions in economic theory that undergirds much energy scholarship. Section 4 examines the civic discourse of bioenergy as a green alternative to fossil fuels. In the Conclusion to the paper, we reflect on its insights, contributions, and relevance.

1. Mundane bioenergy and development planning: a brief history

The exploitation of biomass fuels, especially fuelwood, has played a central role in the history of the environmental sciences. As Grove [24] notes, deforestation in colonial lands (especially islands) was a driving factor in the early development of the science and politics of environmentalism, and exploitation of fuelwood was identified as one of the principal causes of this deforestation. Beginning in the mid-twentieth century, discussions of fuelwood consumption have been dominated by a perceived unsustainable imbalance between human demand and natural supplies. It was thought that this imbalance would lead to depletion of forest cover and exposure of vulnerable soils, which in turn would lead to a downwards spiral in both environment and society. The contribution to soil erosion of unsustainable human pressure on global supplies of fuelwood was noted at one of the most important organizing moments in the history of modern environmentalism, the first United Nations Conference on the Human Environment in Stockholm in 1972. Eckholm [25] subsequently labeled it the “other energy crisis”, following oil (cf [26]). In time, however, the alarmist claims regarding over-consumption of fuelwood and its ill effects came to be questioned as anthropologists, geographers, and political ecologists developed an important body of critical scholarship that problematized all such degradation discourses [27]. Most notably, the so-called “Himalayan

Dilemma”, a perceived crisis of regional environmental degradation, which was attributed in large part to over-exploitation of fuelwood resources, was closely scrutinized and decisively rebutted: the empirical evidence did not support the simplistic thesis of a downwards spiral linked to deforestation by fuelwood-hungry farmers [28,29]. A generation later, in spite of much higher population densities around the world, claims of a fuelwood crisis continue to be invalidated by empirical research, which shows that any link between fuelwood use and deforestation is complex and dependent on idiosyncratic local factors [30].

One of the principal initial responses to the perceived fuelwood crisis was large-scale tree-planting campaigns. As Eckholm [25] wrote, “The inexorable growth in the demand for firewood calls for tree-planting efforts on a scale more massive than most bureaucrats have ever even contemplated, much less planned for (p. 113).” But large-scale tree-planting projects – although they retain appeal to some donors to this day – have been some of the most failure-prone initiatives ever carried out within conservation and development. One of the problems with such campaigns is a failure to understand that the social niche is as important as the ecological niche for tree growth on rural landscapes. For example, many early tree-planting campaigns targeted what were perceived to be village ‘wastelands’, a misperception that was reflected in the social conflicts – and often destruction of Trees – that ensued. Puzzlement over these outcomes helped to give rise to the study of village ‘commons’, which showed that village common lands were not wastelands at all but vital sources of natural resources for the village poor and landless [31]. Planting such lands with commercial tree crops often tempted elites from the village or beyond to privatize them. Eucalyptus, planted often for pulp, became widely reviled for displacing rural poor from commons all over the subcontinent and was labeled an ‘environmental terrorist’ [32].

A fundamental problem in these early policy responses to the fuelwood problem was a perceived dichotomy between forest and farmer, which had roots in colonial forestry policy as well as post-colonial policies toward protected forests. In both eras, the small farmer was seen as the foremost enemy of the forest. But increasing awareness of the impolitics and impracticality of forester-farmer conflict in post-colonial world helped to stimulate an important shift in policy toward collapsing this dichotomy through the development of social or community forestry. Two centers in the Consultative Group for International Agricultural Research (CGIAR), the International Center for Research on Agroforestry (ICRAF) and the Center for International Forestry Research (CIFOR), were important actors in this development, as also was the Ford Foundation. In Java in the 1980s, Ford developed an extensive program of social forestry, which involved farmers in crop cultivation and tree protection in teak forests [33]. A decade later Ford helped develop a pioneering program in India called ‘joint forest management’, in which the forest department and the local community would agree to cease contesting control of local forest lands in exchange for a sharing of the timber and other forest products [34]. This program demonstrated that a simple cessation of hostilities could produce regeneration of forest cover on what had been perceived as barren lands, although some analysts have suggested that this program has been carried out more on the forest department’s terms than the community’s [35].

Farm forestry was a further development of these programs, involving an effort to integrate tree cultivation directly into systems of annual cropping on farmers’ fields. An example was the “Forestry Planning and Development” project, jointly implemented by the U.S. and Pakistani governments in Pakistan in the 1980s and 1990s [36]. Its goal was to expand tree planting and the production of fuelwood, fodder, and timber on farmlands in the *barani* (rainfed) regions of the North and West of the country, thereby improving rural welfare and sustaining the long-term economic and ecological viability of small farms. This project was challenged by the politics of Pakistan’s countryside, which disposed the forest service to work with elite landlords

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