

PhD Dissertation
Department of Environmental Science and Policy
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Title: Informal Innovation and Climate Change: The Role of Kenyan Jua Kali Metal Workers in Developing and Distributing Fuel-Efficient Cookstoves

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ABSTRACT

This dissertation examines the production and distribution of full-efficient cookstoves by *jua kali* artisanal manufacturers in Kenya's informal economy to assess whether informal activities and innovations represent an opportunity to pursue local-level sustainable development and climate change mitigation and adaptation. At a deeper level, this dissertation explores whether the presence of an innovative informal manufacturing sector increases the ability of communities that rely on informal goods and services to adapt to climate change. The findings suggest participants in Kenya's informal sector played a significant role in the success of the Kenya Ceramic Jiko (KCJ), a locally innovated and manufactured fuel-efficient cookstove, through sharing manufacturing knowledge and stiff competition that expanded the stove's availability while keeping it at a price point accessible to most Kenyans. Informal activities may be a viable avenue for distributing technologies that can help address sustainable development issues, mitigate climate change, and possibly enhance the adaptive capacity of communities with large informal economies. However, the challenges and constraints faced by *jua kali* manufacturers suggest participants in Kenya's informal sector may be limited in their capacity to innovate and disseminate appropriate technologies without interventions from formal players that can help upgrade the *jua kali* manufacturing industry.