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Sustainable Energy for All, or Sustainable Energy for Men? Gender and the construction of identity within climate technology entrepreneurship in Kenya

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Abstract

As international climate and development policy and funding efforts accelerate, this paper articulates an urgent new research agenda to redress the existing failure of policy and research to attend to gender in relation to climate mitigation (as opposed to adaptation). Focussing on the transfer and uptake of low carbon energy technologies, including a review of the literature on women and entrepreneurship and an examination of the treatment of climate technology entrepreneurs by infoDev in Kenya, the prevalence of private sector entrepreneurial approaches to climate and development policy and practice in this field is demonstrated to be reinforcing gendered power imbalances.

1. Introduction

Whilst a wide and rapidly expanding literature exists on gender and climate change *adaptation* in developing countries, little attention has been paid to gender in the context of *mitigation*. Three examples exist of policy briefings and NGO reports that attempt to highlight the relevance of gender in relation to mitigation (UNDP, 2012; UNFCCC, 2012; Eddy et al., 2014). A literature search revealed only fourteen peer-reviewed papers mentioning gender and mitigation (Alston, 2013; Brown, 2011; Buechs and Schnepf, 2013; Casillas and Kammen, 2012; Dankelman, 2002; Denton, 2004; Heyward, 2012; Jerneck and Olsson, 2013; Magombeyi and Taigbenu, 2008; Nagel, 2012; Schalatek, 2012; Seck et al., 2005; Stephens et al., 2008; Watt and Chamberlain, 2011; Xu et al., 2012). Aside from some notable exceptions (e.g. Schalatek 2012; Casillas and Kammen 2012; Dankelman 2002), these papers discuss gender and mitigation in passing, only where it might be relevant to their primary focus of gender and adaptation.

Nevertheless, policy and academic narratives increasingly use terms such as “low carbon development”, “green growth” and “climate compatible development”, all of which imply mitigation of greenhouse gas emissions (GHGs) within broader development strategies. As efforts accelerate around GHG-mitigation and related finance streams in developing countries, the lack of understanding of the role of gender in these contexts is highly concerning. Therefore, our aims in this paper are twofold. First, we seek to highlight the relevance of gender to mitigation efforts under climate and development policy. Second, we seek to illustrate how climate and development policy framings and narratives can reinforce gender power relations with material consequences for access to resources.

We focus on the transfer and uptake of low carbon energy technologies, which has expected benefits for both human development (via clean energy access) and industrialisation (via technological capacity-building and economic growth). As a core aspect of international

development-related mitigation efforts, the issue is receiving increasingly high-profile attention and leveraging increasing funding commitments under international initiatives. These include the UN's Sustainable Energy for All (SE4All) initiative and the UN Framework Convention on Climate Change (UNFCCC), as well as a raft of other bi- and multi-lateral initiatives. However, the rapid development and deployment of technologies can have unanticipated social ramifications, as can the policy approaches that promote those technologies. For example, the widespread use of ultrasound has allegedly contributed to radically-reduced girl-boy ratios in India by enabling sex-selection during pregnancy (AWID, 2004). Low carbon energy technologies will also likely have profound impacts upon society but little is understood about the nature and distribution of these impacts: who might benefit, who might lose, and in what ways. As feminists writing on technology have asserted, beyond an inability to claim the potential benefits of a technology, its impact will also differ depending on one's relation to it, with gender constituting a definitive factor in shaping such relations (Kabeer, 1994; Wajcman, 2009). For example, Jacobson's (2007) analysis of solar home systems in Kenya found that the distribution of household-level benefits is contingent upon intra-household, intergenerational and gender relations.

There is, then, an urgent need for research on the gender implications of GHG-mitigation and development efforts. In this paper we contribute to such research by analysing a characteristic of the dominant narrative in current international efforts that sees low carbon technology transfer as best achieved by promoting private sector growth and private sector led development (Urban and Nordensvärd, 2013). We focus on the Climate Innovation Centre (CIC) initiative, which is one particular approach (of many) that exemplifies this narrative of private sector led development. Funded by the UK Department for International Development (DFID), Danida and infoDev, and coordinated by infoDev alongside a number of local partner organisations (infoDev, 2010), CICs are intended to work on a business incubation model to "accelerat[e] the development, deployment and transfer of locally relevant climate technologies" (infoDev, 2010 p.7). One CIC has been operational in Kenya since September 2012, aiming to "provide an integrated set of services, activities and programs that leverage and expand existing innovation capacity and support the development and scale of climate technology enterprises" (infoDev, 2010 p.8); one has opened in Trinidad (January 2014); another launched in Ethiopia (March 2014); and there are plans to set up similar centres in other countries including India, Vietnam and South Africa (infoDev, 2013a). The CICs focus broadly on "climate technologies" (CTs), with a remit that includes water and sanitation and agribusiness alongside renewable energy and energy efficiency. Nevertheless, the CICs approach typifies other international mitigation and development efforts via low carbon technology transfer such as the Climate Technology Centre and Network under the UNFCCC.

Within the narrative of private sector based approaches to technology transfer, the identity of the innovative 'CT entrepreneur' is dominant. The entrepreneur is thought to play a central role in innovation processes, catalysing others to act upon and develop new ideas (Caniëls and Romjin, 2008). Technology innovation initiatives such as the Kenyan CIC revolve around the idea of the entrepreneur as the driver of change, the visionary local person, able to develop and distribute the best possible locally appropriate technologies (Sagar et al., 2009). Indeed, infoDev, the World Bank programme responsible for coordinating the CICs, appears to equate innovation and entrepreneurship as almost interchangeable concepts. On their website home page, under "Growing Innovation", they state that "Local needs can drive world-changing innovation. We help entrepreneurs make a difference by bringing them hands-on business coaching, access to early-stage financing, and better entrepreneurship environments" (infoDev, 2013b).

There is an implicit understanding within the entrepreneur-as-innovator narrative that the entrepreneur represents a neutral, meritocratic identity. Anyone can become an entrepreneur. All they need is the right opportunity and the right idea. Support such as funding and training can help disadvantaged people overcome the obstacles they may face but, essentially, the success of an entrepreneur is down to the individual's own capabilities (Caniëls and Romjin, 2008; Ahl and Marlow, 2012). If anyone can become a successful entrepreneur, then this narrative of market-

based, entrepreneur-focussed CT innovation would have the potential to incorporate the identities of a wide variety of actors. All that needs to be done is to provide structural support, such as the training and finance provided by infoDev and the Kenyan CIC.

However, existing analysis of the identity 'entrepreneur' within the literature suggests it is not a neutral category, but rather a masculine one. This is to say that the entrepreneur is associated with social constructions of the male gender (Gupta et al, 2009). Entrepreneurial ability is frequently associated with particular characteristics such as leadership, autonomy, persuasiveness, risk taking, readiness for change, endurance, lack of emotionalism, low need for support and low conformity (e.g. Buttner and Rosen, 1988). Whilst the evidence that women and men exhibit these qualities and values differently within entrepreneurial ventures is refuted (Ahl, 2002), there remains a common perception that many of these characteristics are associated with men more than with women (Ahl, 2002; Ahl and Marlow, 2012; Gupta et al., 2009; Buttner and Rosen, 1988; Bruni et al., 2004; Marlow and Patton, 2005; Marlow and McAdam, 2011). Men in particular tend not to associate entrepreneurship with 'feminine' characteristics (Gupta et al., 2009).

This perception of entrepreneurship as a masculine identity has two implications. First, there is empirical evidence that those who do not self-identify with masculine characteristics are less likely to express entrepreneurial intentions (Gupta et al., 2009). This does not necessarily equate to a reduction in entrepreneurial intentions amongst women; they may self-identify with supposedly masculine traits (Gupta et al., 2009). However, if those who self-identify as feminine do not see themselves as potential entrepreneurs, and if CT innovation is promoted through entrepreneurship, they may be excluded from influencing the development of climate technologies. Second, if women are assumed to be feminine then they may be perceived as less entrepreneurial than men, regardless of the reality of their business acumen. Such a perception would likely reduce women's access to resources and support for entrepreneurial ventures (Ahl and Marlow, 2012; Buttner and Rosen, 1988). Indeed, women's property rights and access to collateral are seen as a key material constraint in gaining access to business finance in Kenya and more generally within many developing (and, indeed, developed) country contexts (IFC, 2006). Research shows that, when applying for finance, women may be required to have more capital, be charged higher interest rates, and have more loans refused than men (Hertz, 2011). The association of entrepreneurial ability with masculine traits therefore contributes towards continued discrimination against women entrepreneurs (Gupta et al., 2009).

Understanding the characteristics and behaviours implicit within the identity 'CT entrepreneur' therefore represents an important first step in analysing whom the winners and losers may be within this narrative. The central positioning of the entrepreneur within discourse on CT innovation places those who fit this identity in a privileged position. By attaching positive values to masculine, individualist characteristics and behaviours, discourse on entrepreneurs gives legitimacy to certain ways of being (Ahl and Marlow, 2012). Those who do not appear to fit the identity of CT entrepreneur may find it harder to gain support in their efforts to advance CT solutions, despite their actual potential for innovation and the valuable insights their experiences may provide. If some find themselves persistently discriminated against as a result of a socially-constructed entrepreneurial identity, this will have significant ramifications, not only for the development of locally appropriate technologies, but also for wider concerns of social equity within adaptation and mitigation efforts.

These issues of legitimacy, power and access have been widely discussed in feminist literature (Kabeer, 1994; Gaventa, 2003; Cornwall et al., 2011; Connell and Messerschmidt, 2005). Focussing on the case study of the Kenyan CIC, this paper unpacks the narrative of CT entrepreneurship to explore its gender implications. It does so by analysing how the construction of the entrepreneurial identity in CT innovation is framed in ways that reinforce certain power relations, legitimising the gendered roles of certain actors whilst excluding others. We begin by outlining our conceptual framework before detailing the methodology. The paper then proceeds with a critical discourse analysis of the construction of CT entrepreneurship in Kenya before drawing some conclusions.

2. Conceptual framework

We adopt the STEPS Pathways Approach (Leach et al., 2007) as the theoretical framework and normative starting point for our analysis (building on its operationalization in Byrne et al., 2012). In simple terms, this approach casts aside the idea of a single, accurate and normatively “good” pathway of development, and emphasises the need to remain open to multiple alternative development pathways that might be pursued. This is vital in the context of the complex, interrelated challenges resulting from the need to address poverty whilst simultaneously dealing with other (often competing) priorities such as addressing climate change, environmental integrity, job creation, economic growth and social justice. Fundamentally, the Pathways Approach recognises that who you are shapes how you ‘frame’ – or understand – a problem or opportunity, and that this understanding tends to focus on a specific development pathway to the neglect of alternative perspectives. Or it might simply represent the received wisdom of donors or government agencies, or other powerful groups, who fail to appreciate the realities of a problem from different perspectives, such as a farmer, policy maker or mother.

These alternative and often conflicting framings translate into particular “narratives”, each viewing the world in a certain way, justifying particular actions, strategies and interventions in order to achieve certain goals. As narratives orientate actors and resources towards particular goals, through particular strategies, so a “pathway” of development evolves. All actors are operating with incomplete knowledge. The Pathways Approach therefore proposes that it is vital to create opportunities for multiple pathways to evolve in order to meet the priorities and needs of different groups. However, narratives that resonate with powerful perspectives, and that are able to mobilise sufficient resources to support their strategies, may become institutionalised, whereas others, often the narratives of those already marginalised, may fail to materialise, thereby perpetuating unequal distributions of power. Furthermore, once certain narratives begin to dominate policy, the framings of issues therein can serve to further exclude alternative framings, further serving to marginalise those actors who adhere to these alternatives. In this way, policy narratives can have material consequences, defining the extent to which certain identities and power relations are either reinforced or redressed. This paper therefore seeks to understand these dynamics with respect to gendered identities in relation to the framing of CT entrepreneurs within dominant climate change and development policy narratives.

3. Methodology

We focus our analysis on the Kenyan CIC as this is the most developed example of the CIC approach to date and typifies the dominant policy narratives around private sector delivery of technology transfer and CT entrepreneurs as drivers of change. To operationalize our conceptual framework, we borrow from principles of critical discourse analysis. This asserts that as the world is articulated through discourse, so this articulation can serve to ascribe characteristics and behaviours to particular identities. The ways that identities are positioned in relation to each other, reflect, recreate and restructure social orders, or hegemonies of power (Gaventa, 2003; Foucault, 1976), with perhaps the most ubiquitous of these hegemonies being that of hegemonic masculinities within the construction of gender identity. Within discourses on gender, ‘man’ is consistently related to such signs as ‘strong’, ‘brave’, ‘unemotional’, ‘aggressive’, ‘in charge’, ‘bread winner’; whereas ‘woman’, being that which is *not* man, is related to signs such as ‘weak’, ‘timid’, ‘emotional’, ‘caring’, ‘submissive’, ‘domestic’. These signs are articulated alongside each other so frequently as to appear natural, fixing their meaning and outlining normative sets of characteristics and behaviours that men and women must adhere to in order to be seen legitimately as men and women (Jorgensen and Phillips, 2002). The persistent positioning of ‘masculine’ men as dominant over ‘feminine’ women manifests itself in the subordination of women, and others perceived as feminine, throughout patriarchal societies (Connel and Messerschmidt, 2005).

As with gender identity, those who take up the identity of the CT entrepreneur must adhere to the attributes associated with it in order to gain legitimacy. Many theories exist to explain when and how people may take up and express identities. However, crucial to the analysis in this paper

is the concept of antagonism within the uptake of identity (Laclau and Mouffe, 1985). This refers to the idea that one can comfortably take up multiple identities, but only so long as they do not conflict with one another by “make[ing] contrasting demands in relation to the same actions within a common terrain” (Jorgensen and Phillips, 2002 p.47). This is of particular relevance, as the CT entrepreneur may be associated with attributes that would leave it in conflict with particular cultural, racial, gender or class identities. In the case of such an antagonism, one identity would block the other (ibid. p.47), leaving one of three potential outcomes. First, the antagonism may remain, and the subject whose identity conflicts with that of the entrepreneur may simply not perceive the entrepreneur as a potential identity for them to take up. This would seem to explain the findings of Gupta et al. (2009) that those who do not self-identify with masculine characteristics are less likely to express entrepreneurial intentions. Second, where an individual is viewed by society as different from normative constructions of the entrepreneur their ‘legitimacy’ may be questioned, and so their access to resources such as finance could be blocked, unlike those perceived as legitimate entrepreneurs. This would partly explain the widely observed discrimination faced by women entrepreneurs (Ahl and Marlow, 2012; Buttner and Rosen, 1988; Hertz, 2011). Third, the antagonism may be forcibly dissolved, as one discourse rearticulates the signs within the other, thus resolving the conflict. This hegemonic dissolution of one discourse in favour of another is successful when one comes to dominate completely, enforcing particular normative constructions of the world (Jorgensen and Phillips, 2002). However, partial dissolution may also occur. For example, Ahl and Marlow (2012 p.546) note that those women who do become entrepreneurs are expected by others to exhibit the masculinities associated with their entrepreneurial identity, and, in so far as they do not, are judged to be deficient. However, these masculinities have “to be attenuated so as not to fundamentally challenge the prevailing order and thus, present a gender threat” (Ahl and Marlow, 2012 p.546). In this way, the patriarchal discourses of hegemonic masculinity and masculinised business leave women unable to take up fully the identity of ‘woman’ alongside that of ‘successful business person’ (Eriksson-Zetterqvist, 2002). At the same time, within capitalist societies, success in business has become a legitimating identifier of personhood. These antagonistic discourses therefore leave women stranded, unable to take up legitimate spaces within society, compounding their subordination.

Our analysis therefore explores the way the identity of ‘CT entrepreneur’ acquires certain attributes, the ways these attributes contribute to positioning entrepreneurs in relation to other actors, and how antagonisms between identities serve to maintain and create gender power relations. As these power relations are uncovered, particular attention is paid to their material implications as they serve to define different actors’ legitimacy in seeking and receiving support for entrepreneurial climate innovation ventures. In order to examine these constructions of CT entrepreneurial identity in Kenya, a dataset of 29 texts was compiled via an online search of grey and published literature (summarised in the online Annex to this paper) and analysed qualitatively with attention to the discursive dynamics of identity-construction and legitimisation articulated above. Particular attention was given to texts by infoDev, as a key institution influencing the development of the Kenyan CIC, and CT innovation more widely (including other developing country contexts where the CIC approach is being developed). Our approach builds on conventions around discourse analysis within the published literature as demonstrated, for example, in Ockwell and Rydin (2006) and Scrase and Ockwell (2010).

4. Results and discussion

In this section we highlight some of the key characteristics identified within our dataset of texts, by using the principles of critical discourse analysis articulated above. Specific examples and quotes are used to illustrate some of the broader trends that the analysis reveals with regard to the creation of CT entrepreneurial identities and their framings from a gender perspective.

4.1 Demographics of representations

Overall the texts contain almost 2.5 times more representations of men (32) than women (13) entrepreneurs. 37 of these representations are of entrepreneurs working in Kenya, of which 24 are Kenyan (7 women), 8 from the US (all men), 4 from Canada (1 man, 3 representations of the

same woman), and one Dutch (man). There is no mention of other potentially marginalised groups such as openly transgender persons, the disabled, and very few examples of elderly persons, either as participants in entrepreneurial CT ventures, or as beneficiaries of CT.

4.2 CT entrepreneurs and social entrepreneurship

Entrepreneurs operating within socially responsible contexts, often referred to as social entrepreneurs, are commonly associated with more 'feminine' qualities than their 'non-social' business counterparts. As women are supposedly the carers within society, Pines et al. (2012) suggest that social entrepreneurship may appeal more to feminine-identifying persons, with women proving marginally more successful in this field.

Many of the texts analysed here highlight the importance of CT entrepreneurs seeing challenges as opportunities, solving social problems through business. CT entrepreneurs are also often portrayed in the texts as passionate, altruistic and caring characters, suggesting that CT entrepreneurship would attract more feminine-identifying persons into starting businesses. However, profitable business opportunities clearly abound within CT innovation contexts, and so there is likely plenty of space too for the masculine-identifying opportunistic business entrepreneur. For example, one interview with two young North American men describes their venture into the Kenyan agriculture sector with a solar irrigation business. Rather than being driven by any social goals, it explains how they were "drawn to Kenya by the number of technology success stories and the great market opportunity for clean energy solutions like solar power due to the high costs of grid electricity" (Mulupi, 2013).

Any feminisation of social entrepreneurship does not necessarily equate to the empowerment of women as social entrepreneurs. According to Ahl and Marlow (2012), despite often playing vital roles in the setting up and running of businesses, women's positive contributions are commonly written off as wifely duty, or not written about at all. It is their husbands who are considered the entrepreneurs. This perception of the woman as a wife undertaking domestic duties is not limited to those whose husbands have taken a prominent role in starting up a business, it is also extended to women entrepreneurs in their own right. As is exemplified in the portrayal of Lorna Rutto, a Kenyan entrepreneur working in recycled plastics manufacture:

"Waste not, want not

Lorna has been troubled by this plastic litter ever since she was a schoolgirl. At the time she used to collect bits left lying around and turn them into earrings, 'though it wasn't really the earrings I was interested in—I just wanted to find a way to get rid of all that plastic!' [...] Two years ago, she took the entrepreneurial plunge.

Her love of the environment found an echo with a young biochemical engineer she met at her first job, now her business partner, who brings his technical expertise to her financial and managerial know-how. After researching potential avenues for their cause they found that plastic was the best place to start, much to Lorna's delight!" (Cartier and the Women's Forum, 2011)

While Rutto likely sees herself as a fervent environmentalist and businesswoman, the text portrays her in a more domestic light. The old adage "waste not, want not" and talk of troubling litter conjures more an image of frugal and tidy housekeeping than industrial waste disposal and plastics manufacture. Not only is Rutto painted as the model industrious housewife, happily cleaning up Kenya's plastic litter, but also, as her "love" finds "an echo with a young biochemical engineer", even her business partnership is depicted in the form of a romantic, domestic relationship.

Still, women are sometimes portrayed as revolutionary, innovative technology entrepreneurs. Where they are, however, their revolutionary qualities and innovative capabilities are qualified within the text, by association with men and the adoption of masculinities. Eden Full, a US-based

Canadian solar engineer, provides one such example. Represented in three separate texts, she gained a great deal of attention for dropping out of Princeton University to develop a super-efficient solar panel mounting system. Full is portrayed as a young, ambitious, slightly androgynous looking woman; sporty, bulky digital watch, suit jacket and t-shirt, sleeves rolled up. She is masculine enough to fit in, but not enough to be threatening. However, Full is not ever given complete credit for her decisions or achievements. In one article, Henn (2012) qualifies Full's decision to drop out of Princeton University with the trusted opinion of entrepreneur Peter Thiel, who "is perhaps best known for his insistence that higher education is overvalued in America". And in an interview with Robbins (2013) Full gives great credit to her male Princeton professor, who supported her even though she was "young and naïve". It is worth noting also that in the previous example, Rutto's male partner is the one who provides technical expertise. Whilst this may simply reflect the reality of their business, when women display technical understanding, there appears to be a need for explanation. Warner (2012) for example, justifies Kenyan IT entrepreneur Susan Oguya's technical expertise with an anecdote about her uncle. Within the texts studied, these qualifiers are never reversed; women are never shown as validating the business achievements or technical abilities of men. Towards the end of the previous article, under "Muscling in on the Market!", Rutto explains how she has had to take on a more powerful, masculine persona, even becoming physically stronger, in order to gain respect within regulatory and administrative institutions:

" 'It can certainly be challenging to get people in administrative and regulatory bureaux to listen to me,' she confides, 'but I have acquired powerful negotiating skills! It's also a manual activity that requires strength and muscle; I'm very hands-on, so it's keeping me fit! ' " (Cartier and the Women's Forum, 2011)

4.3. Competing for Legitimacy

Entrepreneurship competitions have become a common way in which CT entrepreneurship is encouraged and funding channelled in developing countries. Competition has been central to infoDev's approach to CT innovation in Kenya, therefore providing us with a lens into the framings of the institutional structures that exist to support CT entrepreneurs in the country. These high-profile events make public the judgements that each entrepreneur faces when seeking financial and structural support for their business. Coverage of these events is often provided by the institutions running them, explicitly or implicitly telling us what attributes constitute a successful entrepreneur in their eyes. As one of the central actors in the development and operation of the CICs, the attitude of infoDev holds particular relevance for CT innovation in Kenya. As the entrepreneurship and innovation programme of the World Bank, infoDev is also in a strong position to influence wider discourse on these issues.

"Meet the Lions", reads the headline for infoDev and GEW's (Global Entrepreneurship Week) 2012 competition designed to encourage social entrepreneurship in Africa (infoDev, 2012a). In this case, the title tells the story. Those three words conjure a vivid image of these entrepreneurs as strong, powerful, violent and predatory. They will destroy the competition with their teeth and claws. Despite the matriarchal connotations of a lion's pride, one is directed to picture lone males in this vision. First, the title is not 'Meet the Lionesses'. But we may also justifiably assume that the World Bank does not intend for us to imagine a pack of women, who exile the men upon sexual maturity and band together to beat their opponents. Such an image of women's collective action would stand at odds with mainstream discourse on entrepreneurship and empowerment, which is clearly focussed on individual agency (Kabeer, 2008). And so, there he is, king of the savannah: impressive, competitive, strong, the archetypal predatory male.

The image of the aggressive entrepreneur is repeated in infoDev's (2013c) showcase of the fifty most innovative technology entrepreneurs from developing and emerging markets. This time the headline invites the reader to "Meet the Dragon Slayers". Another masculine figure, the 'dragon slayer' evokes an image of the courageous hero, who is expert at using violence to save others, or themselves. However, as the dragons themselves represent the competition judges – the elite of the entrepreneurial world – the ultimate goal is to become a dragon oneself.

The opening paragraph conjures a second image of the entrepreneur:

“Entrepreneurs are a rare breed. Creative, ambitious, and versatile, they are outgoing, comfortable with change, and see opportunities where many others only see challenges. These characteristics and more are why entrepreneurs are able to create innovative business models that drive economic growth, and why finding new and better ways of supporting them was a primary focus of infoDev’s 5th Global Forum on Innovation and Technology Entrepreneurship” (infoDev, 2013c).

Like the lions from the previous text, entrepreneurs are metaphorically animalistic. But this time the beasts are domesticated, bred to exhibit a set of characteristics that infoDev is privileged to dictate, and stated in such a way as to seem irrefutable, natural. The text makes it clear that exhibition of these characteristics, and presumably also those associated with the dragon slayer, make entrepreneurs deserving of infoDev’s support. It is, apparently, the qualities of the individual that lead to innovation and economic success. This is reaffirmed by de Mel et al. (2009), in a World Bank working paper, stating that “owner ability, personality traits, and ethnicity have a significant and substantial impact on the likelihood of a firm innovating, confirming the importance of the entrepreneur in the innovation process”.

The infoDev (2013c) text concludes: “Drawn from pools of winners of previous business competitions globally, the companies profiled represent some of the most innovative startups in their respective industries”. Here the reader comes to understand that winning competitions, by exhibiting the personal qualities and meeting the entrepreneurial standards expected by infoDev and other global actors, is not only how one gains legitimacy as an entrepreneur, but also as an innovator. For entrepreneurs *are* the technology innovators. By extension then, technology innovators must be competitive, brave, aggressive, outgoing, opportunistic, ambitious, creative, versatile and comfortable with change. Innovation becomes a dangerous pursuit, suitable only for Lions, Dragons and Dragon Slayers.

4.4. *Legitimacy and Access: Comparing two texts*

To see how this may translate into attitudes towards entrepreneurs and access to support, we compare the portrayal of two entrepreneurs who have been given assistance by infoDev. The first is Jamila Abass, an interview with whom was published in the “Women’s Entrepreneurship” section of infoDev’s website. The interview begins by describing the nature and origins of the company that Jamila Abass started with her colleague Susan Oguya in 2010:

“How can technology be leveraged to help farmers buy and sell goods competitively? The Kenyan agribusiness company M-Farm provides a unique solution to this problem that lets farmers receive crop prices and market information via SMS on their mobile phones. Although it now reaches over 2,000 farmers, the company sparked from humble beginnings in late 2010, when Jamila Abass and Susan Oguya of Akirachix were reading newspapers at Nairobi’s iHub...” (infoDev, 2012b)

Deconstructing this text, “humble” seems an interesting and revealing choice of word. According to the online Oxford English Dictionary (2013) “humble beginnings” refers to having come from “modest pretensions or dimensions”. But it is not clear what the humble beginnings are in this case. It makes no reference to a lack of material wealth or assets, which might justify some surprise at these two women’s ability to start such a successful enterprise. Instead it describes two women reading newspapers in a technology centre. Not just any two women either, these are two of the founding members of Akirachix, a successful women’s technology collective, started specifically to overcome prejudice against women in the IT industry (Warner, 2012). However, the article fails to highlight this, ignoring the historical achievements of Akirachix that led these two women to occupy space within Nairobi’s iHub. The text implies that Abbas, Oguya and their activities prior to setting up M-Farm, were humble. In this sense, humble would be more appropriately read as “having or showing a modest or low estimate of one’s importance”, or

being “of low social, administrative, or political rank” (Oxford English Dictionary, 2013). Perhaps the author’s intention was to tell a heroic story of two women overcoming prejudice and structural obstacles in a patriarchal environment, to start a highly successful enterprise. However, these structural challenges are not mentioned, and arguably much of their work in overcoming prejudice had already been achieved by the time they were “reading newspapers in Nairobi’s iHub”. And so, infoDev’s text implies these two women were inferior, unimportant, until they proved themselves otherwise through success in business.

The text continues:

“The newspapers always had sad stories of farmers getting exploited by middlemen,’ explains Ms. Abbas. She cites an article about farmers who were forced to depend on corrupt intermediaries who routinely squeezed money out of their customers. ‘I remember getting emotional and sick to our stomachs that some people could ride on other people’s sweat like parasites.’

‘Little did we know,’ Ms. Abbas goes on, ‘that sympathizing with the farmers will change our lives forever.’

Abbas and Oguya, both IT professionals in Kenya, set out to think of ways to empower farmers. Their brainstorming yielded M-Farm, which provides a digital marketplace for subscribing farmers using mobile phones...” (infoDev, 2012b)

Here, the first paragraph paints a very different picture from that of the ruthless lions and dragon slayers of the previous texts, one that fits much more closely with ideas of the caring social entrepreneur. Being a text designed to “inspire girls” into entrepreneurship (infoDev 2013d), this may be intended as an effort to encourage passion and social purpose within entrepreneurial ventures, making entrepreneurship more appealing to those who self-identify as feminine. Sympathy, for example, can lead to success – success, of course, meaning acceptance within the otherwise masculine world of business.

However, the text struggles to achieve this, perhaps because it is conflicted over the antagonism between the feminine identity of the caring and emotional woman, and existing notions of the credible entrepreneur as masculine, unemotional and somewhat ruthless. Having already described Abbas and Oguya as humble, the third quote gives prominence to four words – “Little did we know” – that further serve to undermine their credibility as knowledgeable and competent entrepreneurs. This is of course a quote from Abbas herself. One could then relinquish the author of responsibility, and claim that they are simply reporting the views of the entrepreneur. This expression of self-doubt may well reveal internalised power relations, showing that perhaps even Abbas herself felt unsure about her legitimacy within this narrative (Scott, 1990). However, it was the decision of the author to include and highlight this phrase, reinforcing the image of two, humble, emotional and, now, clueless women, their lives about to be transformed, almost through happenstance, into important, business-savvy professionals.

It is only once this transformation has occurred, in the fourth paragraph of the interview, that the reader finds out Abbas and Oguya are IT professionals. Even then, the language of the text detaches them from their achievements. As the two “set out”, like characters in a fictional adventure, to think of ways to empower farmers, there is an element of chance. Will they think of something or won’t they? In the end the text does not accredit the entrepreneurs directly, as it was “their brainstorming” that came up with the idea for M-farm. This uncertainty continues when the text comes to talk about infoDev’s support of M-Farm:

“...Ms. Abbas hopes to turn to infoDev for support in scaling M-Farm globally. She has a ‘vision of replicating the same model to other emerging countries,’ forging relationships with entrepreneurs at events like the Global Forum, where M-Farm was featured as an infoDev Top-20 SME Access to Markets and Finance Selectee.

Being involved in the iDisc incubator network also plays a role in M-Farm's growth. 'We were voiceless before,' says Ms. Abbas, 'but now the voice of entrepreneurs is heard through the incubator networks...' (infoDev, 2012b)

These two paragraphs set up a powerful dynamic in which infoDev, as the gatekeeper of resources and support, maintains power over Abbas and the success of M-Farm. Here, the first sentence positions Abbas as vulnerable and dependent. She "hopes to turn to infoDev for support", which despite M-Farm being a top-20 selectee in one of their own entrepreneurial events, infoDev do not commit to providing. At the same time, infoDev are obviously keen to play up their role in the success of M-Farm through the iDisc network, which is provided as an explanation for the company's growth. As the author quotes Abbas as being "voiceless" without the iDisc network, again she is portrayed as powerless without their support.

For comparison, we see a striking difference in the way infoDev portray Kenneth Ndua, an entrepreneur receiving support from the Kenya CIC. Although the following text is from an article about the achievements of the Kenya CIC, Ndua's profile has been used repeatedly in Kenya CIC press releases:

"Since its launch in September 2012, the center has accepted over 25 entrepreneurs into its program. One of the successful applicants is Kenneth Ndua, who has designed and developed an energy efficient cookstove that simultaneously boils water.

Kenneth has been working with women's groups in Kibera, Kawangware and Ruiru since 2002. Through this work, he observed that many local residents were suffering from illnesses related to smoke inhalation and contaminated water, 'poor families [were] suffering from common water borne diseases such as diarrhea just because they could not afford to boil water for drinking or were not in a position to afford the water purification chemicals. Many women would also speak of a lack of time to boil water.'

In response to this challenge, Kenneth designed a multipurpose fuel efficient cookstove..." (infoDev 2013e)

Again, the text reveals clear power relations. The Kenya CIC is in a position of ultimate authority over the entrepreneur, who has been "accepted" into its program and given the stamp of approval. However, as someone who has been working with women's groups, Ndua is then legitimised as a professional authority on issues faced by women. Thus a hierarchy is created that places women as poor and powerless, suffering, beneficiaries, beneath both the entrepreneur and the innovation institution. The technology might well be useful for the women mentioned: one could argue that, as someone who has worked closely with women, Ndua is able to translate their problem-framings into practical cookstove-innovation. However, analysis of the texts in this study found no women mentioned publicly as successful applicants to the Kenya CIC. As with this text, where women are referenced, they are depicted as the vulnerable beneficiaries of technology, and almost always spoken for by men. One wonders whether this is how these women would frame themselves, and whether these are the technical or social solutions that they feel would be most suitable.

Unlike the text on Abbas, Ndua is directly accredited twice in the first paragraph with designing a cookstove that will meet women's needs. The wording describes a sequence of events that does not doubt his abilities. The text mirrors the language of 'seeing challenge as opportunity', that was previously provided as one of the characteristics deserving of infoDev's support. Whilst he is shown exhibiting the purpose that characterises a social entrepreneur, it is through his professional experience that Ndua designed the cookstove solution, not through an emotional response. Thus, unlike the previous text, there is no conflict to resolve between antagonistic identities. And, when the text comes to talk about the CIC's support, there is no apprehension:

“In September 2012 Kenneth applied for support from the CIC to address these challenges. GVEP International, as the lead partner for advisory services to the CIC, has been working closely with Kenneth since then to identify and evaluate manufacturing options (e.g. evaluating the pros and cons of manufacturing stove components like lining and cladding separately vs. together), evaluate potential manufacturing partners, review stove transportation options, and prepare applications for financing. I was attracted to the CIC due to its goal of assisting innovators... So far I would say the technical advice and support in visiting and identifying credible fabrication facilities have been of great benefit.’

Going forward, the CIC will further assist Kenneth to quantify the company’s financial needs, and to identify sources of working capital and other forms of financing.” (infoDev 2013e)

Although this text highlights the importance of the Kenya CIC, there is no portrayal of Ndua as powerless without them. Instead, it depicts a collaborative relationship in which Ndua’s opinion enhances the CIC’s credibility. And, unlike Abbas and Oguya, for whom infoDev were non-committal, Ndua receives unqualified backing.

Despite infoDev’s attempts to report the entrepreneurial successes of women, the expression is uncertain of their legitimacy as entrepreneurs, when compared to representations of men. The analysis of the texts in the database suggests that infoDev express less commitment towards supporting women-owned ventures than those run by men. When it comes to gaining support for entrepreneurial ventures, the differences between the aggressive business entrepreneur and the caring social entrepreneur seem superficial, and women may still find more difficulty in accessing entrepreneurial support.

5. Conclusions

Our analysis clearly highlights what Laclau and Mouffe (1985) refer to as an “antagonism” between the entrepreneur and hegemonic constructions of femininity. This is affirmed by masculine representations of the idealised entrepreneur found in texts by infoDev, and the apparent conflict between infoDev’s desire to demonstrate support for women in entrepreneurship whilst expecting these entrepreneurs to conform to masculine ideals. As in the case of Lorna Rutto, women may adopt masculinities in order to gain further legitimacy within entrepreneurship. However, the question arises as to how this masculine gender performance may shape the framings and narratives of women CT entrepreneurs. Further, as feminist scholars on entrepreneurship have asserted (Ahl and Marlow, 2012; Eriksson-Zetterqvist, 2002), the expected femininity of women is likely to lead to discrimination of any female-bodied person within this masculine terrain. Indeed, infoDev’s more feminine representation of Abbas and Oguya exemplifies how these masculinities have “to be attenuated so as not to fundamentally challenge the prevailing order and thus, present a gender threat” (Ahl and Marlow, 2012 p.546).

The realities of what is playing out in this forum are secondary to the aims of this paper. Our analysis clearly demonstrates how the identities of male and female entrepreneurs are positioned in relation to each other within the texts analysed. Of course, our analysis relates only to a single initiative by a single organisation (infoDev) and therefore does not necessarily generalise across other contexts. Nevertheless, the implications of this analysis at the very least provide a strong case for urgent further research in this field to explore the extent to which these finds are reflected elsewhere, in relation to CT entrepreneurship and to sustainable energy access initiatives more broadly. As Gaventa (2003) and Foucault (1976) suggest, this identity-positioning of male and female entrepreneurs is likely to reflect and recreate social orders and hegemonies of power, in this case in seeking legitimacy as CT entrepreneurs and accessing attendant funding streams. Nevertheless, as Gaventa and Foucault both observe, such positioning also has the potential to restructure social orders and redress power dynamics. This provides a hopeful point of intervention. Significant (powerful) actors within the field of CT innovation and development, such as infoDev, might act to reframe, and hence reposition, gendered accounts of CT

entrepreneurs with potentially material implications in terms of who can and cannot access resources for CT innovation.

It is clear then, both from this paper's discussion of the ways in which gender might be definitive in relation to entrepreneurship and the examples of the treatment of CT entrepreneurs by resource-controlling actors such as infoDev, that the current lack of attention to gender in the context of climate mitigation and development is of priority concern. We do, however, wish to note our recognition of the commitment and efforts of the staff of infoDev involved with the CICs initiative and to emphasise the fact that we do not view the gendered positionality that the analysis in this paper has revealed as undermining the extent and value of those efforts. Indeed, we have, and continue, to engage positively with the staff at infoDev who we know take the issue of gender seriously – just as we expect they will respond proactively to the implications of the analysis within this paper. Just as there is a need for innovation in technical solutions to climate change, there is a need for innovation in the ways that we conceive of innovation processes and what it means to be an innovator. Whilst entrepreneurs may have a valuable part to play in CT innovation, involvement in the development of climate technologies must not be contingent upon adoption of capitalist, individualist values, or masculine identities. Although other actors may be able to influence entrepreneurs into pursuing ventures that lead to technological innovation in directions that meet their needs, those who fit the identity of the CT entrepreneur remain in a privileged position. Entrepreneurs are able to seek support for technologies that they deem important. Those who do not fit the entrepreneurial identity, and whose technological needs prove unpersuasive to potential entrepreneurs, perhaps due to lack of 'market potential', may find themselves unable to gain support in developing the climate technologies they require.

Further research is needed into the way that this negotiation of identity may affect which framings gain influence and, concomitantly, the types of technologies and socio-technical systems that arise. Further research is also needed into the framings and narratives of other groups who appear to be excluded from the entrepreneurial identity, such as the disabled and elderly, or poor people more generally. The capacity for CT entrepreneurship to incorporate their framings must be assessed and, where entrepreneurship will fail to meet their needs, support must be provided for appropriate alternative processes of technology innovation. Private sector, entrepreneurial policy narratives continue to gain traction in defining how donors and national and international policy efforts seek to engage in key mitigation efforts in developing countries, most obviously in the transfer and uptake of lower carbon energy technologies. There is clearly need, therefore, for a new research and policy agenda that directly engages the issue of gender with the aim of seeking to deliberately redress (rather than reinforce) existing, gendered power relations. Until such a time, if the findings of the analysis within this paper were indeed found to reflect efforts around sustainable energy access elsewhere, well-meaning policy initiatives such as SE4All might well be renamed "Sustainable Energy for Men".

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Sustainable Energy for All, or Sustainable Energy for Men? Gender and the construction of identity within climate technology entrepreneurship in Kenya

Mipsie Marshall, David Ockwell and Rob Byrne

Appendix

The following table provides the data used for the analysis of discursive identity construction within texts on climate technology innovation undertaken in ‘Sustainable Energy for All, or Sustainable Energy for Men? Gender and the construction of identity within climate technology entrepreneurship in Kenya’. Within the paper, these data are also supplemented with an analysis of gendered language within the full texts, inclusion of which is too extensive for this appendix. ‘Text position’ denotes the position of the text in relation to the entrepreneur or subject of entrepreneurship. It indicates the extent to which the characteristics and behaviours are represented by the text as self-identified qualities of the entrepreneur (i.e. a personal statement), or with distance, placed by the text upon the entrepreneur or entrepreneurs in general (e.g. an article about an entrepreneur’s activity). ‘Entrepreneur sig. in text’ denotes the level to which other actors are credited with the success of the innovation or business. This was used to analyse the importance given by the text to entrepreneurs within the climate technology innovation processes, and is thus important in validating any conclusions about the material significance of entrepreneurial identity within climate technology innovation (level of significance ranges from low to very high). ‘Characteristics and behaviours’ gives the qualities ascribed to entrepreneurs within the texts. This was then compared to gender stereotypes and cross-referenced with analysis of gendered language within the text in order to understand the gendered construction of entrepreneurial identities. ‘Gender’, ‘Nationality’, ‘Class’ and ‘Entrepreneur type’ were all used to analyse the demographics of entrepreneurs represented. Where the nationality is not disclosed within the text, the nationality in parentheses was ascertained through further research. In addition it was noted that disabled persons and the elderly were not visible amongst the representations analysed. ‘Institution actor’ and ‘Text motivation’ were used to assess the significance of the texts with respect to their influence over wider discourse.

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
infoDev (2012c) <i>Revolutionizing ICT and Agribusiness: A Conversation with M-Farm's Jamila Abass</i> [online]	http://www.infodev.org/highlights/revolutionizing-ict-and-agribusiness-conversation-m-farms-jamila-abass	Distance (close/involved) use of quotes, institutional actor also subject of article	High	Revolutionary, emotional, caring, sympathetic, trustworthy, visionary, exciting	Woman	Kenyan	Middle class IT prof in Kenya	infoDev	Promoting women entrepreneurs	High growth IT, Agriculture Innovator Company "Founder"
infoDev (2013e) <i>Innovative cookstove business secures support from the Climate Innovation Center</i> [online]	http://www.infodev.org/highlights/innovative-cookstove-business-secures-support-climate-innovation-center	Distance (close/involved) use of quotes, institutional actor also subject of article	High	Rises to challenge	Man	Undisclosed (Kenyan)	Middle class, professional	infodev	Promote success of the Kenya CIC	Growing Cookstove Innovator
Bayrasli, E. (2011)	http://www.forbes.co	Distance	High/med	Rebellious, altruistic,	Men x2	Undisclosed	Upper	Business media -	News article	High growth

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
Who Gives A Crap? Sanitation, Energy and Entrepreneurship in Kenya. <i>Forbes</i> [online]	m/sites/elmirabayrasli/2011/05/23/who-gives-a-crap-sanitation-energy-and-entrepreneurship-in-kenya/			aggressively competitive, impressive		(USA)	middle / privileged	Forbes	promote work of author's former colleague "(and my former colleague at Endeavor)"	Sanitation and energy Sanitation Innovators (not sole designers)
Mulupi, D. (2013) Two entrepreneurs looking to transform agriculture through solar-powered irrigation. <i>How we made it in Africa</i> [online]	http://www.howwema.deitinafrica.com/two-entrepreneurs-looking-to-transform-agriculture-through-solar-powered-irrigation/25674/	Semi - Personal (interview)	High	Opportunistic	Men x2	USA / Canada	Middle class	Business media - How we made it in Africa	Advice for entrepreneurs	Climate Smart Agriculture
Robbins, S. J. (2013) Bright Idea: Startup Aims to Advance Solar Energy in Developing Countries. <i>Entrepreneur</i> [online]	http://www.entrepreneur.com/article/226451	Semi - Personal (interview)	High	Disruptive, networker, enterprising, not seeking profit, independent, brave	Woman	USA Based Undisclosed (Canada)	Middle class	Business media - Entrepreneur	Encourage woman entrepreneurship	High growth Solar PV
Douglas, K. (2012) Entrepreneur watch: Powering Kenya's tea factories with wind energy. <i>How we made it in Africa</i> [online]	http://www.howwema.deitinafrica.com/entrepreneur-watch-powering-kenyas-tea-factories-with-wind-energy/20617/	Semi - Personal (Interview)	High	Opportunistic, ambitious	Man	Dutch	Middle class	Business media - How we made it in Africa	Advice for entrepreneurs	High Growth Wind power Small hydro

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
World Bank (2012) <i>Climate Innovation Center Opens in Nairobi to Unleash Kenya's Green Business Potential</i> [online]	http://www.worldbank.org/en/news/press-release/2012/09/26/climate-innovation-center-opens-nairobi-unleash-kenya-green-business-potential	Distance (close/involved) use of quotes, institutional actor also subject of article (not central)	Med	None given	Man	Undisclosed (Kenyan)	N/A	World Bank	Promote Kenya CIC	Innovator Cookstove Growing
Achia, G. (2013) The real ground breakers: innovation in Kenya. <i>Sci Dev</i> [online]	http://www.scidev.net/en/science-and-innovation-policy/features/the-real-ground-breakers-innovation-in-kenya-1.html	Distance	Med	ground breaking, assertive, creative, learning, motivated, passionate, problem solving, respected, competitive	Men x3	Kenyan	Middle class	Development and tech media - Sci Dev	Influence decision-making	Innovator High tech Wind power, military, security, robotics, telecoms
Davies, G. (2013) <i>Building an African Market: Solar Energy Entrepreneurs on the Rise</i> [online]	http://www.renewableenergyworld.com/rea/news/article/2013/03/building-an-african-market-solar-entrepreneurs-on-the-rise	Distance	High	Only commercially minded people who already have the means to purchase their initial consignment up front are recruited directly.	N/A	Kenyan - use of social networks for sales	Not poor (must have access to capital for initial purchase)	Climate tech media - Renewable Energy World.com	influence decision-makers	Franchise - selling solar products, building the market. Incremental innovation
GVEP (2012) <i>Climate Innovation Center Opens in Nairobi to Unleash Kenya's Green Business Potential</i> [online]	http://www.gvepinternational.org/en/business/news/climate-innovation-center-opens-nairobi-unleash-kenya%E2%80%99s-green-business-potential	Distance (close/involved) use of quotes, institutional actor also subject of article (not central)	Med	None given	Man	Undisclosed (Kenyan)	Not ascertainable	GVEP international	Promote Kenya CIC	Innovator Cookstove Growing

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
Cartier and the Women's Forum (2011) Laureate 2011 of Sub-Saharan Africa - Lorna Rutto, EcoPost, Kenya [online]	http://www.cartierwomensinitiative.com/candidate/lorna-rutto	Distance (close/involved) use of quotes, Subject and institution connected (award winner)	High business partner is important but not central in article	Brave, passionate, strong (physically), powerful (negotiating skills)	Woman	Kenyan	Middle class	Business and institutions supporting and promoting entrepreneurship - Cartier, McKinsey & Company, INSEAD business school	Promote entrepreneurship amongst women	Business manager (not technical) High growth Recycling Conservation
Homer, A. (2013) <i>Innovative enterprises boosted Kenya climate innovation centre</i> [online]	http://www.gvepinternational.org/en/business/news/innovative-enterprises-boosted-kenya-climate-innovation-centre	Distance (close/involved) use of quotes, institutional actor also subject of article	Med/high	Rational/realistic, altruistic, initiative, in control	Men x2	Kenyan	Middle class	GVEP international	Promote work of GVEP and CIC	Med/large organisations Radical tech innovator, new to market (clean tech cookers) Incremental energy, new to organisation (wind turbine at hospital) Fossil fuel alternative for industrial process
Kenya CIC (2013) <i>Keekonyoike Slaughterhouse</i> [online]	http://kenyacic.org/devs/content/keekonyoike-slaughterhouse	Distance (close/involved) use of quotes, institutional actor also subject of article	Med/low	Bold, visionary, community focussed, brave, explorer	Men (group)	Kenyan, Maasai	Middle class, rural, Maasai cattle herders	Kenya CIC	Promote work of CIC	Biogas energy Radical innovation Med enterprise, with shareholders

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
Kenya CIC (2013) <i>Takamoto Biogas</i> [online]	http://kenyacic.org/devs/content/takamoto-biogas	Distance (close/involved) use of quotes, institutional actor also subject of article	Med	Revolutionary, tough, risk takers, predatory	Man	Undisclosed (USA)	Not ascertainable	Kenya CIC	Promote work of CIC	Energy biogas high growth Novel distribution potentially large business, compared to utilities
Kenya CIC (2013) <i>Chebich coffee factory</i> [online]	http://kenyacic.org/devs/content/chebich-coffee-factory	Distance (close/involved) use of quotes, institutional actor also subject of article	Med	Visionary	Charity	International charity	Not ascertainable	Kenya CIC	Promote work of CIC	Charity
Kenya CIC (2013) <i>Sustainable Energy Systems Limited</i> [online]	http://kenyacic.org/devs/content/sustainable-energy-systems-limited	Distance (close/involved) use of quotes, institutional actor also subject of article	Med	Visionary, revolutionary, exciting	Man	Kenyan - 'a local company'	Elite	Kenya CIC	Promote work of CIC	Innovator Biogas, fertiliser
GVEP International (2013) <i>Developing Energy Enterprises in East Africa</i> . London: GVEP International	http://www.gvepinternational.org/sites/default/files/deep_booklet_2013_0.pdf	Distance (close/involved) use of quotes, institutional actor also subject of article	Med/high	vigorous, focused, ambitious, visionary, opportunistic, serious, passionate, persuasive, trustworthy, timely, decisive, opportunistic, flexible, uncompromising on core values, distinction between business and personal, self-confidence,	Men x6 Women x4	Ugandan(3 men, 1 woman), Tanzanian (1 man, 2 women), Kenyan (2 men, 1 woman)	Working class	GVEP international	Promote work of GVEP	Climate tech Solar PV, cookstove, briquettes smallscale and micro enterprises

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
				encourage constructive criticism, strong work ethic, leadership, competitive						
Byrne, R. (2011) <i>Learning drivers Rural electrification regime building in Kenya and Tanzania</i> . DPhil Thesis. Brighton: University of Sussex	http://sro.sussex.ac.uk/6963/	Distance (objective)	High	Social conscience, politically radical and fiercely independent, rebellious, networker, opportunistic, persistent, struggling, serious (once successful), visionary	Men x2	USA	Middle class	Published Academic literature	PhD thesis	Technology innovator Radical Solar PV High growth
TechnoServe (2013) <i>About TechnoServe</i> [online]	http://www.technoserve.co.ke/login.php	Personal	Med/high	Visionary, revolutionary, social conscience	Man	USA	Middle class	Website - Technoserve	Promote Technoserve	Support entrepreneurs through technology
infoDev (2012b) <i>Meet the Lions - Global Entrepreneurship Week</i> [online].	http://www.infodev.org/highlights/meet-lions-global-entrepreneurship-week	Distance (close/involved) institutional actor also subject of article	High innovators mentioned separately from entrepreneurs (but focus on new startups and entrepreneurs)	Aggressive, competitive, strong, networked, purposeful, pioneering, outgoing, revolutionary, exhibitionist, ambitious, talented, spirited, motivated, champion, driven/forceful	N/A	Working in Africa	N/A	InfoDev and GEW	Competition to highlight the entrepreneurial talent	Social enterprise

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
infoDev (2013c) <i>Meet the Dragon Slayers: Profile booklet of Top 50 entrepreneurs available online</i> [online]	http://www.infodev.org/articles/meet-dragon-slayers	Distance (involved) institutional actor also subject of article	Very high	Brave, violent, heroic, animalistic, creative, ambitious, versatile, outgoing, comfortable with change, opportunistic, competitive, desire to learn, exciting, focussed, social impact	N/A	Global	N/A	InfoDev	News from competition and learning event to support entrepreneurs	Technology innovator
Right Light (2013) <i>Entrepreneurs</i> [online]	http://www.rightlight.org.uk/entrepreneurs	Distance (involved) institutional actor also subject of article	Med/high	Requiring help, wanting to support community	Men x3 Woman x1	Kenyan	Working class/poor	Right light	Promote work of Right Light Encourage support of entrepreneurs	Franchise solar light marketing
Wasserman, H (2012) <i>Total Badass: Young Entrepreneur Brings Solar Energy to Kenya</i> [online]	http://www.good.is/posts/total-badass-young-entrepreneur-brings-solar-energy-to-kenya	Distance	High	'Total Badass'	Woman	USA Based Undisclosed (Canada)	Middle class	Micro blog	Link to news article	Solar PV
Onsare, R. O. (2011) <i>Alternative Energy Entrepreneur Kyle Schutter '10 Brings Biogas to Kenya from US</i> [online]	http://www.brown.edu/about/brown-is-green/news/%5Bfield_news_date-yyyy%5D-%5Bfield_news_date-mm%5D/articles/alternative-energy-entrepreneur-kyle-schut	Distance	Very high	Opportunistic, passionate, explorer	Man	USA	Middle class	Blog - Brown University	Promote work of alumni	Biogas

Reference	Available from:	Text position	Entrepreneur sig. in text	Characteristics and behaviours	Gender	Nationality	Class	Institution actor	Text motivation	Entrepreneur type
Warner, G. (2012) Kenyan Women Create Their Own 'Geek Culture'. <i>NPR All Tech Considered</i> [online]	http://www.npr.org/blogs/alltechconsidered/2012/12/24/167961947/kenyan-women-create-their-own-geek-culture	Distance	High	Energetic, intelligent	Women x 3	Kenyan	Middle class	Tech media - NRP All tech considered	Promote women entrepreneurship	IT
Henn, S. (2012) Who Needs College? Young Entrepreneur Bets On Bright Idea For Solar Energy. <i>NPR All Tech Considered</i> [online]	http://www.npr.org/blogs/alltechconsidered/2012/12/12/167062995/who-needs-college-young-entrepreneur-bets-on-bright-idea-for-solar-energy?cc=share&sc=tw	Distance (with personal quotes)	High	Risk taker, athletic, educated, in charge, 'glowingly successful', rebellious, rational	Woman	USA Based Undisclosed (Canada)	Middle class	Tech media - NRP All tech considered	Encourage entrepreneurship	Solar PV energy High growth
CNN (2010) CNN Heroes: 'Saving lives' with solar-powered lights. <i>CNN</i> [online]	http://edition.cnn.com/2010/LIVING/02/11/cnnheroes.wadongo/index.html	Distance (with personal quotes)	Very high	Heroic, visionary, caring	Man	Kenyan	Working class	USA Mainstream media - CNN	Advertise CNN awards	Solar lights
Craig, J. (2012) Kenya Climate Innovation Center Helps Address Climate Change. <i>Voice of America</i> [online]	http://www.voanews.com/content/kenyas-climate-innovation-center-helps-address-climate-change/1528784.html	Distance	Med/High	Energetic, creative, survivors	Man	Kenyan	Not ascertainable	USA Government media - Voice of America	Promote Kenya CIC	Biofuel
NTV Kenya (2011) <i>Green energy solutions</i> [online]	http://www.youtube.com/watch?v=tjGJyb3VoHg	Semi - Personal (Interview)	High	Passionate, entrepreneurship skills, problem as opportunity, determined, focussed,	Man	Kenyan	Not ascertainable	Kenya mainstream media - NTV	Promote biogas	Biogas