

# DevNet 2016 Aotearoa New Zealand Development Studies Network 9th Biennial Conference "Pacific currents, global tides"

The relationship between access to electricity and capability and its role in the achievement of wellbeing

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- Access to affordable energy now recognised as a driver of development:
- Sustainable Development Goal (SGD) 7 which seeks to "Ensure access to affordable, reliable, sustainable, and modern energy for all "(United Nations, 2015, p. 19).
- One outcome is the enthusiasm of international development agencies to fund energy programmes and in particular, where involving renewable energy.

- Typically, the priorities of development agencies and governments are for projects to show:
- 1. A positive economic return or NPV over the project life:
- 2. Any adverse environmental and social impacts are outweighed by beneficial impacts.
- ► The process is essentially *utilitarian* in that it seeks to identify and satisfy people's preferences in the form of needs and the achievement of happiness (Alexander, 2008, p. 14).

- Amartya Sen and Martha Nussbaum are generally acknowledged as the pioneers of the *capability approach* in the 1980s.
- ► The approach arose out of a concern that utilitarianism fails to take into account embedded inequalities or deprivation in a society and lacks sustainability.
- ► Conceptually, the approach was developed on the premise that assessments of well-being need to focus on the effective opportunities or freedom that people have to lead the lives they value (Robeyns, 2006, p. 351).

- ► The principal components of the capability approach are functionings and capability.
- A functioning is an achievement of a person, or collectively a person's "beings or doings". Functionings can be many and diverse with differing perceptions of value.
- ► Capability is the opportunity or freedom to realise those functionings. Capability can be termed "potential functionings" and whether these become "achieved capabilities" is the personal choice or freedom.

Examples of functionings (how people actually live):

- Good health
- Paid work
- Friendship.

(Oosterlaken, 2009, p. 92)

Examples of capabilities (how people are able and free to live):

- To be healthy
- Able to use senses, imagination and thought.
- To affiliate with others

etc

(Nussbaum, 2011, p. 33)

- ► Central to the concept of capability is *agency*: "what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important" (Sen, 1999, p. 18).
- Access to energy can be described as facilitating agency.
- The concept of secondary capabilities and basic capabilities is useful when understanding the role of energy in the context of capability.
- In the context of energy supply, Day et al (2016, p. 259) define secondary capabilities as precursors of basic capabilities:
- A simple example is that energy supply enables food to be cooked (a secondary capability) which enables good health (a basic capability).

Energy poverty:

Day et al (2016, p. 260) defines energy poverty as:

An inability to realise essential capabilities as a direct or indirect result of insufficient access to affordable, reliable and safe energy services, and taking into account alternative means of realising these capabilities.

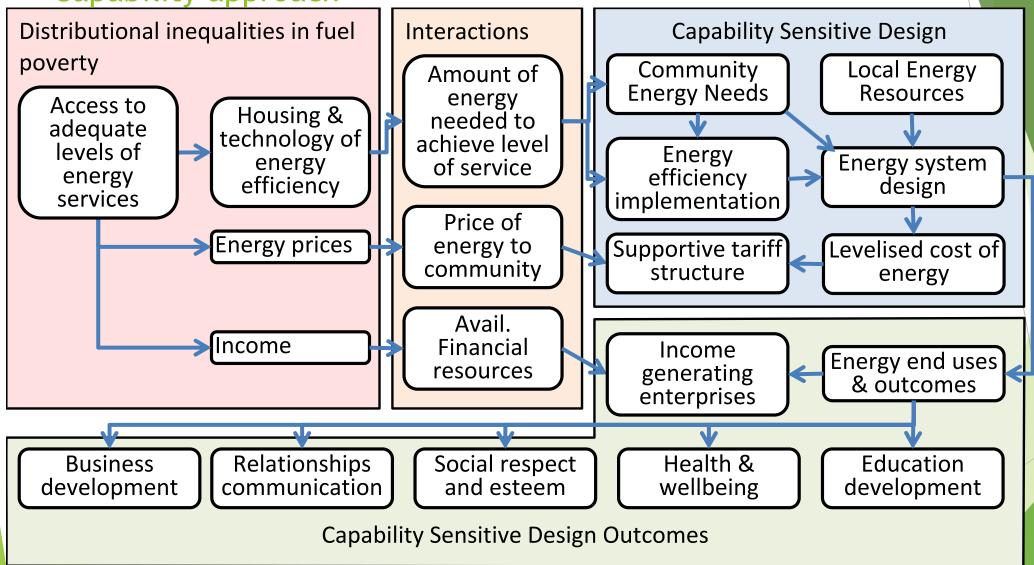


Figure 1: Interacting distributional inequalities in fuel poverty and remedying actions in renewable energy system design within a capabilities context (Adapted from (Pelenc et al., 2013); Walker and Day (2012) and Day, Walker, and Simcock (2016).)

Fuel / Energy
Source: Biomass
&/or biogas; LPG;
Liquid fossil fuels;
Renewable energy
technologies.

Domestic energy or power supply: Electricity; Energy from burned biomass or gas.

Domestic energy services: Lighting; Space heating / cooling; Water heating; Refrigeration; ICTs; Mechanical power.

Secondary capabilities:
Washing clothes; Storing & preparing food; Accessing info; Machinery use; Water pumping & sanitation; Developing businesses.

Basic capabilities: Maintaining good health; Having social respect; Maintaining relationships; Being educated.

Interventions related to:

improving fuel / energy access; improving affordability; enhancing acceptability or usability of alternative fuels / energy supplies.

**Interventions related** 

**to:** improving efficiency of infrastructure, buildings and appliances

Interventions related to: providing for particular needs; alternative non-domestic provision of energy services; supporting alternatives to energy services.

Interventions related to: shaping or shifting expectations, customs & practices

Implications related to RE system design:

- Levelised cost of energy affordable;
- Tariff structure to support system sustainability;
- Scaffolded technical training in system management (at local / national level);
- Adoption of Capability Sensitive Design (Oosterlaken, 2009);
- Community engagement in monitoring design process.

Implications related to RE system design:

- Infrastructure needs to be able to support RE system;
- Houses are low-energy design;
- Energy efficient practices are supported by community engagement & training.

Implications related to RE system design:

- Energy systems with designed flexibility & energy surpluses to meet future needs;
- Assessing and designing for the collective agency as well as individual agency (Pelenc, Bazile, & Ceruti, 2015; Pelenc, Lompo, Ballet, & Dubois, 2013)

Implications related to RE system design:

Needs
 assessment
 based on close
 and continuous
 community
 engagement.

Figure 2. Concepts of relationships between energy, services and outcomes; and the positioning of interventions related to energy poverty alleviation within a capability approach (Adapted from Day et al. (2016)). Below these are the remedying actions in renewable energy system design within a capabilities sensitive design context (Oosterlaken, 2009).

#### Conclusion

- ► The capability approach offers a new way of thinking of how energy services and well-being are connected we know that access to energy is a "good thing" but exactly why is not always well understood.
- ► The challenge is to operationalise the capability approach to provide a coherent and practical framework that will lure development agencies away from the constraints of utilitarianism.

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