Fuel Substitution – Poverty Impacts on Biomass Fuel Suppliers

Draft conceptual Livelihoods Framework: using the Sustainable Livelihoods approach to analyse poverty impacts

prepared by

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1. Background

1.1 Sustainable Livelihoods (SL) approach

The DFID Sustainable Livelihoods (SL) approach looks at development in a way that is ***people-centred***. By analysing people's existing assets, it ***builds on strengths***, seeks to understand people's own needs and priorities, and addresses the complex issues and relationships that affect their livelihoods.

The approach is ***dynamic***, analysing change over time so that lessons can be learnt and negative patterns mitigated. At the same time, it recognises that vulnerability to external shocks and trends is an inevitable livelihood issue.

One of the key strengths of the approach is that it emphasises the importance of ***macro-micro*** dynamics, relating macro level policy and institutions to the livelihood options of communities and individuals. In practice, the approach aims to ensure that local level participation feeds into higher level policy development and planning.

By focusing on ***sustainability***, it works towards enabling livelihoods that can cope with and recover from stresses and shocks and maintain or enhance capabilities and assets both now and in the future, while not undermining the natural resource base.

Finally, the ***holistic*** nature of the approach means that it can be applied across all sectors and geographic areas.

1.2 The Sustainable Livelihoods Framework

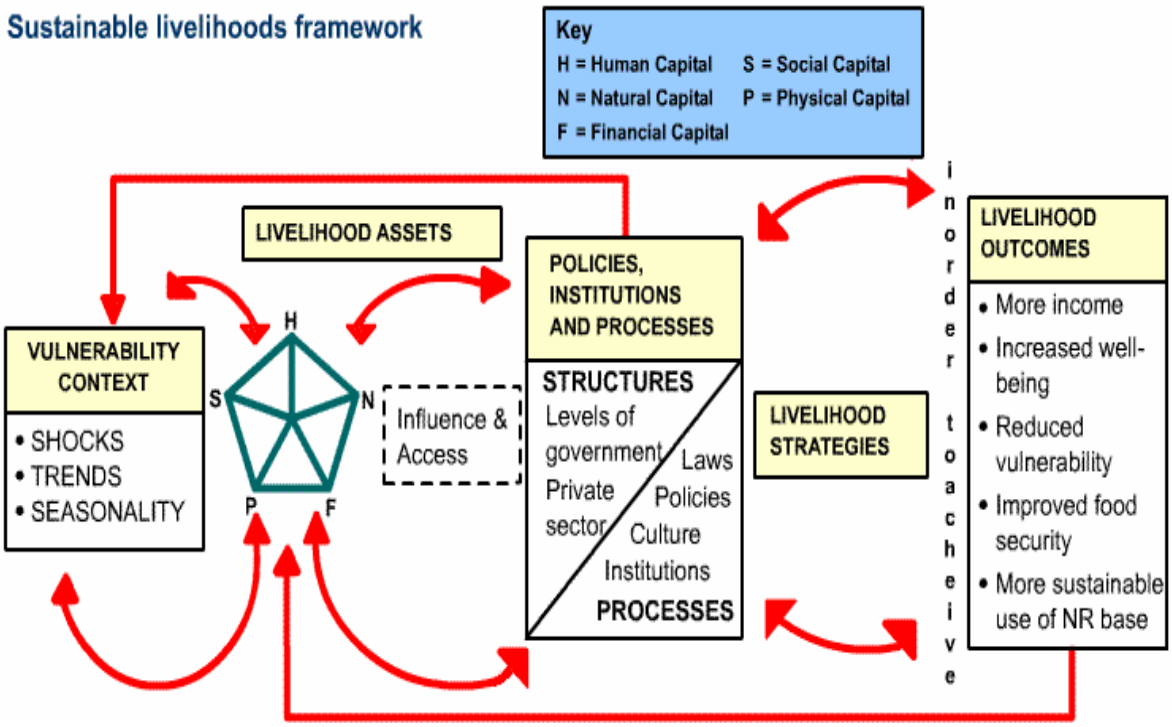
The framework developed within this approach is based on the core principles above, and provides a practical tool for implementing the SL approach. When used in conjunction with a range of other research tools, the SL framework can be used as a roadmap or checklist to ensure that adequate attention is paid to the full range of issues

that should be considered when undertaking development projects, research and programmes in any context.

1.3 Using the SL Framework within the Fuel Substitution project

Within the Fuel Substitution project the SL framework has been adapted to focus on the livelihoods of traditional biomass suppliers in the urban areas of Addis Ababa, Nairobi and Kampala. The framework is represented graphically in Figure 2.

Figure 1: The DFID Sustainable Livelihoods Framework



In order to bring meaning to the SL framework, each component is described below, with examples from each country to represent the reality of traditional fuel supply. This process was a useful exercise in increasing the understanding of the framework within the project team.

1.4 Vulnerability context

Shocks, trends and seasonality represent the conditions that lie furthest from people's control. The fragility of the poor means that they are least able to cope with the negative impacts of these conditions. Although trends may be positive, such as technological change, the poor are often not in a position to benefit.

Linkages within the framework: Despite the unpredictability of certain events, such as natural disasters, the SL framework recognises that negative impacts can be buffered

by an improvement in people's *livelihood assets*. When events *are* predictable, such as seasonality, *institutions and policies* can be put in place to improve people's ability to cope and recover.

Examples of vulnerability context

Kenya

The vulnerability context in Kenya for the traditional fuel suppliers is dictated by the following:

- Traditional fuels (charcoal and firewood) are sold from informal spaces mainly road reserves. In case the space is rented, rents are high. Some do not operate with business permits
- Bribing to stay in business because of the above limitations is the order of the day.
- Storage facilities are always inadequate
- Suppliers are not reliable and meet many police road blocks.
- No credit facilities are available
- Competition is quite stiff
- Prices fluctuates quiet often mostly influenced by the rainy and dry seasons
- There is low consumption during dry season
- Sacks come filled with dust or unburned wood as they have no control over it.
- Charcoal supply is usually low during rainy season
- Occasionally, there is harassment by local authorities or councils

Ethiopia

The vulnerability context in Ethiopia for the traditional fuel suppliers is dictated by the following:

- The extremely informal nature of the sector in Ethiopia (lack of licenses, lack of access to credit facilities, lack of secure business space, etc.) leading to harassment by police, health inspectors and other authorities; the constant threat of dislocation and displacement due to formal private investment and government urban development activities;
- Lack of storage facilities and economies of scale (the small amount of fuel traded) leading to weal bargaining power and acute competitions;
- Price fluctuation mostly influenced by the rainy and dry seasons, low consumption during dry season
- Supply Side Trend (SST): The attempt by government and consumers to climb the energy ladder through demand side management and fuel substitution which however tends to be inconsistent leading to ups and downs (e.g. removal modern fuel subsidies obliging consumers to revert back to traditional fuels);
- SST-Increasing role of motorized transport;
- SST-Increasing appearance of TF depots and poles (poles being concerted into fuel after reaching urban centres);
- SST-Expansion of peri-urban plantations since the mid 1908s leading to the expansion of the supply base of traditional fuels
- Increasing importance of BLT (and of this the leaf part of BLT) probably due to increasing demand by consumers for the baking of enjera with the improved enjera stove-mirte and government discouragement of cutting trees

Uganda
The vulnerability context in Uganda is characterised by:

- Persistently low individual sales/profits that is attributed to the large number of new entrants in the trade. This has led to high competition. Frequent price fluctuations that arise out seasonal scarcity of wood fuels affect consumption. Most fuel wood dealers are sole proprietors therefore they do not have the cushioning effect during adversity. Low sales during the rainy seasons affect the cash flow. The wood fuel business encompasses a large number of loses. The increase in suppliers and access newer and nearer sources of wood fuel has led to a compromise in the quality of charcoal supplied. The higher quality charcoal is sourced further away and therefore it is more expensive. However, most buyers are price sensitive.
- The distance to the sources of wood fuel influences the cost of transport. When this is coupled with the poor state of roads, driver fatigue and mechanical problems raising from the use of old trucks, influences the source of supply and consequently the quality of fuel. The best charcoal now got from far places. Low quality charcoal has a low density and a high proportion of charcoal dust or fines. There is no standard size in charcoal sacs therefore the purchase price varies. Poor quality sacs
- Lack of sufficient vending and storage spaces in the gazetted markets. Road side spaces disposed of for new buildings
- Financial constraints e.g. High overhead costs, bad debts, delayed payments, dishonest suppliers, high taxes and theft of charcoal by the transporters – lowers the returns on investment to the dealers
- Security Confiscation of charcoal by authorities Traffic police Forestry officers Special Revenue Protection Services people
- The fuel wood trade is looked upon as a low class job and the vendors are not respected by society.

Livelihood assets
Categorised in the SL framework as types of human, natural, financial, social and physical capital, they range from social assets, such as relationships of trust, and membership of informal organisations to physical assets such as infrastructure and manufactured goods.

Using the term 'capital', they are defined not only in terms of ownership but also as people's ability to access resources.

Linkages within the framework: Livelihood assets are the resources people employ as part of their *livelihood strategies* in order to achieve their *livelihood outcomes*. Increased assets can empower people to influence the *policies, institutions and processes* that affect their livelihoods.

Examples of livelihood assets

Kenya

Human

- Family members, skills, health, friends.

Natural

- Trees in urban areas.

Financial

- Finances, licences.

Social

- Informal linkages with suppliers/friends and peers (social assets), council employees, local authority guards.

Physical

- Lorries, pick-up vehicles, wheelbarrows and packaging materials (sacks, tins etc, kiosk, Location, Road reserves, residential estates.

Ethiopia

Human

- Family members, labour, Skills, health, friends.

Natural

- Peri-urban public plantations, vital as sources of BLT for poor rural and urban suppliers.

Financial

- Finances, licenses.

Social

- Informal linkages with suppliers/friends and peers (social assets), community based organizations (CBOs, for example iqqub, revolving saving and credit associations), council employees, local authority guards.

Physical

- Lorries, pick-up vehicles, and packaging materials (sacks, tins etc, kiosk, Location, open public spaces, road reserves, residential estates, strategic locations with proximity to demand centers.

Uganda

Human

- Family members, labour, Skills, health, friends.

Natural

- Rural and peri-urban plantations; as well as large tracts of undeveloped farmland as sources of biomass and as collateral. At times land is sold off for the initial investment capital.

Financial

- Finance and collateral; Informal lending groups

Social

- Informal linkages with suppliers/friends and peers (social assets), neighbours, customers/clientele, employees

Physical

- Leaseholds and tracts of land within the city and in the rural areas. Lorries, pick-up vehicles, and packaging materials (sacks, tins etc, kiosk, Location, open public spaces, road reserves, residential estates, strategic locations with proximity to demand centers

Policies, Institutions and Processes (PIP)

PIPs form the social and institutional context within which individuals and households construct and adapt their livelihoods and, as a result, can have a positive or negative impact on people. They are distinct from the events of the vulnerability context because, unlike shocks and seasonality, they are the result of history, politics, decision-making and negotiation and can be influenced by the participation of people.

In the SL framework, they are defined as follows:

Institutions: The rules and constraints within which people and organisations develop and implement specific arrangements. Institutions can be described as the 'rules of the game' or 'the way things are done'. They can be:

- both formal (e.g. laws, markets, government policies) and informal (e.g. social customs and conventions)
- created (e.g by deliberate political decisions) or may evolve over time

Examples of institutions

Kenya

- The practice of paying /seeking for favours to sustain tenancy through the administrative staff in
- Changes in Government policies for biomass fuels, petroleum and electricity
- International policies/conventions /agreements on modern fuels, forests and natural resources
- Informal groupings in lobbying and influencing for competing resources

Ethiopia

- The absence of clear forestry and biomass resource polices resulting in abrupt changes in approaches
- Changing Government policies towards domestic fuels
- International policies/conventions /agreements on modern fuels, forests and natural resources
- Informal groupings in lobbying and influencing for competing resources
- Land tenure policies

Uganda

- Decentralised governance attempting to mobilise or broaden the tax base incorporating the “low return” energy supply service
- International policies/conventions /agreements on modern fuels, forests and natural resources
- Rural electrification programs
- Rent seeking behaviour (extortions)
- Informal groupings in lobbying and influencing for competing resources
- New players at the source of supply i.e. landlords demanding royalties
- Land tenure policies that encourage absentee landlords

Organisations: Whilst institutions determine the opportunities in society, organisations (or structures) are designed to take advantage of those opportunities. The way they come into existence and operate is influenced by the institutional framework. Institutions are the 'rules of the game' whilst organisations are the 'players of the game'. As the rules, institutions can influence whether or not organisations act in the interests of the poor.

Examples of organisations

Kenya

- Councils in licensing and controlling space
- Conservationists in influencing council decisions
- Developers in competing for space and access
- Road builders for space and access
- Local government for control of land use

Ethiopia

- Health authorities
- Local authorities licensing and controlling space
- Conservationists in influencing council decisions
- Developers in competing for space and access
- Road builders for space and access
- Local government for control of land use

Uganda

- Local, municipal and city councils
- Private market space owners e.g. Mailo landlords
- Trade associations
- Conservationists in influencing decisions at the national and grassroots levels e.g. parliament, schools, local councils etc.
- NGO’s, International conservational agencies and development agencies
- Developers in competing for space and access
- Road builders for space and access
- Local government for control of land use

Policies: These include strategies, plans and their implementation. Policies inform legislation and can be described as a vehicle for changing the 'rules of the game'.
In the SL context, policies can affect livelihoods by:

- influencing the role played by existing institutions and organisations, or
- by introducing new institutions and organisations to the local arena.

Examples of policies

Kenya

- Fossil fuels and electricity price and ,market fluctuations
- Governance in cost of bribing and illegal renting and licensing

Ethiopia

Uganda

- The donor influenced and unaffordable tariff rates
- The dominance of electricity in the promotion of the energy sector
- The decentralisation process bringing planning closer to the players in traditional fuels
- The liberalisation of the fossil fuels industry
- Multiple agencies governing/overseeing the trade

Processes: In the SL framework, these refer explicitly to processes of change in policies and institutions. Because of the capacity of policies and institutions to influence livelihoods, the transformation of these is a major focus of attention.

Linkages within the framework: *Institutions* may discriminate against the poor and inhibit their access to *livelihood assets*. Women, children and ethnic minorities are most likely to suffer exclusion as a result of institutional discrimination.

Examples of processes

Kenya

- Increased shift of customers from charcoal to LPG or from firewood charcoal to kerosene because of -: availability of cheaper smaller gas bottles and subsidy (although currently removed) reduced the market share.
- The above exposed the TFS to vulnerabilities from low prices, stiff competition, low savings and, reduced business a recipe for poverty.
- Decrease in the amount of charcoal being produced as a result of Government restrictions has made it more difficulty to get supplies.
- Lack of supplies has lead to high prices and reduced competition from modern fuels such as kerosene and LPG and also lowered profitability.
- Increased adoption of improved charcoal stoves and the informal nature of the business and due to many new entrants into the business competition has increased and has reduced the demand for charcoal.

- The end result is reduced turnover and income exposing the dealers to vulnerabilities. This is highly observed in the informal settlements in Nairobi
- As a result of adoption of improved stoves and switch to modern fuels, selling of firewood has become very slow.
- The Government has constituted more controls in the charcoal transportation and has lead to increased cost of charcoal in the market
- Currently, the Kenyan economy is performing quite poorly and a substantial number of people have gone back to using traditional fuels especially in the poorer sections of the community. Gains have, however, been reduced by increased innovation in marketing of Lpg, high prices of traditional fuels, competitive price for kerosene and adoption of improved stoves.
- Non-recognition of the traditional fuels sector has not helped in the formalization of charcoal and firewood trade.
- The small-scale traders have been left to manage the sector under competition from improved stoves, modern fuels and unfavourable policies. All have exposed the TFVS to relative poverty

Ethiopia

- Increased shift from traditional fuels to kerosene and electricity: shifts to kerosene still hold but in the case of electricity increasing tariffs have obliged consumers to revert back to traditional fuels (which has a positive implication especially for BLT suppliers). Both kerosene and electricity still subsidized although being removed gradually,
- Massive penetration of improved stoves leading to decline in demand for traditional fuels
- Slowing down of business in the last few years in general has meant a decline in demand for traditional fuels
- The fall in agricultural prices in the last couple of years has forced rural households to the extraction and sale of biomass fuels leading to increased supply
- All of the above conditions have meant increasing unemployment, low returns, stiff competition high turn over of people in and out of the traditional fuels sector

Uganda

- The increased shift from electricity and kerosene to traditional fuels: the shifts attributed to the July 2001 threefold hike in the electricity tariffs – some sort of reverse substitution. Electricity was formerly subsidized but now the policy requires that the tariff be in line with the Long Run Marginal Costs of power supply.
- The increase in demand for the traditional fuels opened the industry to new players thereby increasing competition. There has been an increase in the number of smaller and more affordable trucks; these have been incorporated in fuel wood delivery
- The increased competition has resulted in increased vulnerabilities from low prices, stiff competition and low returns on investment and savings.
- Government has recognised the important role wood fuel plays in the national energy scene and therefore is encouraging organisation and formalisation of the trade. This exposes the players to greater regulation and supervision. Consequently the TFS shall be subject to formal taxation structure

- At the Government policy recognising the importance of the wood fuel industry has not yet been translated into concrete action thereby leaving small-scale traders to manage the sector with no institutional support.
- Reduced turnover has lead to the adoption of coping strategies.

Livelihood strategies

The activities and choices people use to achieve livelihood outcomes are described as strategies to capture the fact that they involve a combination of activities to meet people's various needs at different times.

Linkages within the framework: In carrying out their strategies, people draw on the full range of *livelihood assets* available to them. These strategies enable them to try to meet the challenge of existing in a context of *vulnerability*, while also using such strategies to deal with the positive and negative effects of *policies, institutions and processes*.

Examples of livelihood strategies

Kenya

- Transporting, buying and selling charcoal or firewood
- Transporting, buying and selling of charcoal fines (waste) or its products
- Borrowing from families and friends
- Informal relationships with the city authorities e.g. illegal renting of road spaces
- Selling other items besides charcoal/firewood e.g. kerosene in bottles

Ethiopia

- Diversification of income sources
- Free collection, production, transporting of fuels
- Combining fuel collection/production with vending/retail activity in order to squeeze the last pence due to the low returns
- Occupation of open public spaces, using door steps, street corners, etc and hence expand market
- Involving family members in the fuel business chain and raising resources through kinship, friendship and community networks
- changing packaging to smaller units (e.g smaller units for charcoals supply and vending)
- Converting charcoal dust into charcoal cake

Uganda

- The diversification of income sources e.g. becoming non-dedicated
- The truckers and the vendors entering into fixed supply arrangements
- Truckers engaging in door to door selling
- Selling the wood fuel in convenient/flexible quantities to fit the buyer's budget.
- The sale of fuels at stalls within the residential areas or outside retail shops making wood fuel trade a side occupation

- Non-cash trade arrangements are common between the vendors and the supplier. Similarly, non-cash arrangements of trade exist between the vendors and their neighbours

Livelihood outcomes

Achieved as a result of people's livelihood strategies, livelihood outcomes are the 'outputs' of the current configuration of factors within the SL framework. These should be defined through participation rather than assumed, but are likely to include more income; increased well-being; reduced vulnerability; improved food security; more sustainable use of the natural resource base. In measuring the degree to which such livelihood outcomes are being achieved, it is important to negotiate indicators with particular groups and to draw these groups into monitoring processes.

Examples of livelihood outcomes

Kenya
- Availability of adequate formal spaces for traditional fuel operations
- Formal licensing and recognition of role of traditional fuel in urban energy provision
- Would technology/knowledge in better packaging, other products from traditional fuels and support from Government

Ethiopia
- Sustainable employment, income, and food security for traditional fuel suppliers
- Availability of adequate formal spaces for traditional fuel operations
- Formal licensing and recognition of role of traditional fuel in urban energy provision
- Better technology/knowledge in better packaging, other products from traditional fuels and support from Government

Uganda
- Sustainable employment, income, and food security for traditional fuel suppliers
- Formal licensing and recognition of role of traditional fuel in urban energy provision
- Promotion of traditional fuels and support from Government and the development agencies

Appendix (this will be adapted to the Fuel Substitution project requirements – this is a sample)

Checklist for Data needed for Sustainable Livelihoods Analysis

This checklist is intended as a first attempt at the data needed for (a) measuring and monitoring the impact of the energy intervention on the livelihood of the community through the SL framework and (b) planning an energy intervention using the SL framework.

The checklist in the attached document is based on the brainstorm work that we did in Nepal in December. The teams should suggest:

(1) Additional data or expand current data
Suggest the methodology for how this data will be collected (bearing in mind the time allocated for the pre field visit and actual visit). This should be as detailed as possible- i.e. if focus groups then what are initial thoughts on what the focus questions will be. Also the personnel involved in the visit should be included.

(2) The data is given in broad categories- for the first category the information required is data before the energy intervention and data after the intervention (if available) and should relate to the impact of the energy scheme. The second category is also broad and is data needed to plan an energy scheme so that it is sustainable and contributes to the communities livelihoods.

Please expand the data categories and send back a description of the methodology you would use to obtain this data.

Assets	Measuring impact of energy intervention	Planning an energy intervention
Natural	Use of land	• Access to land • Access to biomass resource- quantity used • Access to other resources- sun, wind, hydro
Social	• Family composition • Informal and formal organisations • Working relationships	• Access to end use technology services (milling, ovens, etc) • Access to labour and technical skills • Informal and formal organisations (for information, management, etc) • Access to information networks on alternative energy sources
Human	• Level of education • Level of health care	• Access to skills specifically concerned with energy use, operation, maintenance • Employment in energy services provision
Physical	• Access to infrastructure services • Access to markets • Access to transport services	• Access to electricity and fuels • Access to end use technologies • Access to roads
Financial	• Income levels • Fuel savings • Income gained through energy intervention (on all sub sectors of community) • Tariff effect on savings • Purchases necessary for energy use	• Money already spent on fuel and tariffs needed to fund energy scheme • Access to credit schemes • Access to savings schemes
Vulnerability		
Trends	• Population trends • Economic trends • Employment trends	• Rural Electrification plans • Political manifestos and RE • Load density (?)- household level, village or community level • Technology • Employment trends and effect this could have on the running of the energy scheme
Shocks	• Natural shocks- landslides, floods, etc • Fuel prices	• Natural shocks- landslides, flooding, silting • Fuel prices
Seasonality	• Resource supplies- i.e. competition for other use such	• Resource supplies • Employment patterns- people

	as drinking water or irrigation at certain times • Employment patterns-any effect due to energy scheme • Income levels affected by scheme	available to run scheme • Method of paying • O&M cycle
PIPS		
Policies	• Policies affecting community-local, national	• National Government policies and laws affecting energy supply regulation, subsidies, and ownership • Local district level control and influence on energy supply • Local district control and influence on transport
Institutions	• Institutions- organisations, NGOs, companies, affecting community and extent of influence	• Community level organisations having any role in the planning, implementation, management of energy supply services • Companies involved in the provision of energy services • NGOs involved in the provision of energy services
Processes	• How the effect of the institutions and policies has changed over time • How this has affected various groups (i.e. from a gender perspective) within the community)	• Hierarchies that have an effect on the provision of energy services and how they have evolved • How policies and institutions affecting energy service provision has changed over time • Affect that groups (i.e. gender) could have on scheme
Livelihood Strategies	• People's current and past livelihood strategies • Lighting, pumping, communication services in schools and health centres • Enterprises (formal and informal) • Employment	• Goals with respect to increased access to energy services • Enterprises dependant on energy (?)
Livelihood Outcomes	• Source of incomes • Possible other sources of income • Quality time activities • Access to water and supplies	• Income from supply of energy services • Income from increased productivity due to energy services

	(?) • Food security (Agricultural outputs, processing, storage) • Forest/land degradation	• Income diversity due to energy services • Income from improved communication, lighting • Effect on life quality (health, safety, 'free' time, knowledge) due to energy services • Effect of energy services on the production of food • Effect of energy services on forest and land