

# Sustainable Energy and Livelihoods Ecosystems for Refugee Communities in Djibouti

**SELCO** FOUNDATION  
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# 1. Summary

The Global Plan of Action for Sustainable Energy Solutions in Situations of Displacement (GPA) and SELCO Foundation have collaborated to identify an ecosystem of stakeholders who can collaborate towards delivering sustainable energy and livelihood solutions to the displaced populations and vulnerable communities of Djibouti. The recommendations target the highest priorities, addressing the most pressing gaps through ecosystem building activities which sustain and strengthen the delivery of effective, lasting solutions.

To date, livelihood programs for displaced communities have focused on consumption-driven businesses. These businesses function primarily as exchange agents for traders - for the large number of refugees receiving monthly cash and ration aid, rather than being producers of commodities. Livelihoods within the host communities are founded on a similar background, with the possible additional advantage of having easier access to capital and employment opportunities.

To develop an ecosystem for the sustained delivery of clean energy and livelihood solutions, two approaches are suggested: Firstly, host communities and refugee populations both require similar solutions, hence both populations should be jointly addressed by the programs constituted. Secondly, a host of ecosystem champions would need to be formalised within a coordination body, helping each of the stakeholders to collaborate efficiently and consistently.

The initial ecosystem building activities and recommendations themselves are three fold: Part A involves the implementation of pilot solutions across a varied set of livelihood value chains, to test both the viability as well as build and gauge favourable conditions needed to support the usage of the solutions. Part B develops ways to incentivise and spur affordable end-user financing models, which would encourage and enable the purchase of technologies and solutions. Part C focuses on skill building for solar energy technical training, entrepreneurship, innovation as well as a supporting incubation program which would mentor and support young, local enterprises to deliver the solutions to the last mile users. This pilot programme is expected to be operationalised over a 2-3 year time frame. The learnings gleaned from the programme would not only be replicable in Djibouti but also other countries in similar contexts.

To initiate this ecosystem building activity, a 2-day workshop will be held in Djibouti in late February 2020 with a host of stakeholders including technology enterprises, international development organisations, local NGO, training institutes and governmental departments and ministries. This workshop will establish the recommendation, seek feedback and suggestions for improvement, as well as identify specific stakeholders, funding agencies, appropriate programme design and implementation approaches to deliver solutions.

## Key Recommendations

- A. **Energy+Livelihood Innovations:** Pilot sustainable-energy-driven interventions that enhance incomes and productivity of local micro, small and medium enterprises and initiatives.
- B. **Unlocking long term, high risk and asset-based Financing** for homes and livelihoods to own Decentralised Energy Systems and access entrepreneurial capital (including home and productive use technologies) - this would directly lead to scaling innovations and stabilising access to finance in the region.
- C. **Incubation and Skill Development:** Enhancing skill sets of local organisations (both for-profit and non-profit) to be able to deliver and scale high-quality technical solutions in the region. Establish training and mentorship programmes to build technical and business skills of entrepreneurs.

## 2. Introduction and Context Setting

Djibouti is a country with a population of 957,000 living in an area of 23,000 km<sup>2</sup>. It hosts nearly 28,000 refugees and displaced individuals originating from its neighbouring countries. Development within the country is mostly concentrated in its capital city of Djibouti Ville, and the port of Tadjourah. The rural parts of the country are occupied by nomadic tribes in underdeveloped villages located on harsh desert terrains with minimal access to resources like water, flora and fauna, coupled with high salinity of soil, hot windy weather and recurring droughts. The capital city has a burgeoning number of restaurants and shopping centres, often highly-priced and hosting commodities for sale which are largely imported by its ports. The economy is driven by a new shipping port, a host of army bases of European and American countries, and the supporting services sector which accounts for nearly 80 percent of growth and a significant share of employment **(1)**. The most basic necessities such as food, electricity are imported, and the water supply connection from Ethiopia helps the low in-country water reserves.

The socio-economic conditions for refugees and displaced populations in Djibouti are not far apart from their host community counterparts. Communities largely depend on livestock - mainly goats and camels for their livelihoods, while a large amount of expenditure is made towards purchasing consumptive goods brought in from the capital city, with little being spent towards asset and livelihood strengthening. Development programs aimed towards both host and refugees have been short-term, with a lower number of positive results and over-reliance on market-driven adaptation to any initial developmental boost **(2)**. This feature can be common to many countries hosting refugees: Out of the 25.9 million refugees worldwide, 80% seek asylum in developing regions. **(3)**

While access to sustainable livelihoods remains a priority for all, this remains a key challenge for those in displaced settings. While host countries in Africa and Asia provide great support to displaced communities, prevalent economic conditions and a lack of supporting structures in the countries themselves limit the impacts of these supports to create and sustain livelihood opportunities, particularly in remote and harsh settings where the forcibly displaced are often located.

In the current context of humanitarian support offered to refugees, there is a strong dependency on continual aid support which often dictate the livelihood strategies leading to inhibiting economic growth of the refugee populace. It is thus imperative to identify newer approaches to assistance towards livelihood and skill-building for refugee communities which would drive them towards greater economic independence. This in conjunction with the host countries national plans for livelihood and economic development of its own poor communities would have an exponential effect on developmental outcomes. UNHCR and ILO's jointly proposed market-based livelihood approaches lay out a similar methodology **(2)**.

In order to enhance the sustainability of livelihoods, access to sustainable energy remains paramount. It has been long proven that access to reliable, safe and clean energy helps create newer opportunities, improve the productivity and reduce drudgery in previously practiced livelihoods, or increase profit of any livelihood previously undertaken by the communities. However, to make available sustainable forms of energy, alongside access to livelihood technologies and skills, an ecosystem of stakeholders, processes and functions are required to not only sufficiently bridge the access gap but also for its continued sustenance.

### **Global Plan of Action for Sustainable Energy Solutions in Situations of Displacement (GPA)**

The GPA is a non-binding framework that will provide concrete actions for accelerated progress towards the vision of "safe access to affordable, reliable, sustainable, and modern energy services for all displaced people by 2030." Its mission is to equip all stakeholders with the capacity to mainstream sustainable energy solutions into programming and implementation, with the goal of delivering improved protection, dignity, and energy-related social, environmental, and economic benefits to displaced people.

The Co-ordination Unit of the Global Plan of Action for Sustainable Energy Solutions in Displacement Settings (GPA), hosted by UNITAR, is facilitating a countrywide assessment of energy needs to support the humanitarian response in Djibouti. The scope of the project aims to increase energy access to target populations and support multiple sectors through the provision of energy to enhance livelihoods, education, health, agriculture etc. It will also support humanitarian agencies working in Djibouti transition their operations to sustainable energy solutions.



The multi-agency project will be developed through consultation and collaboration across several organisations in Djibouti, with specific partners providing specialist input to the assessment and design of sustainable energy solutions, including UNDP's Green Energy Team; NRC/NORCAP; and the SELCO Foundation. SELCO Foundation will be leading the ecosystem building for sustainable energy-driven livelihoods development element of the project.

### **SELCO Foundation**

SELCO Foundation is a 10 year old organisation that engages in field-based R&D and ecosystem building for the deployment of sustainable energy-based solutions that alleviate poverty in tribal, rural and urban poor areas. The organisation works closely with practitioners in the social sector, energy entrepreneurs and partners from various developmental sectors. It is an open-source platform with a network of research and development labs that implement and disseminate sustainable social innovations through an Inclusive Ecosystems Approach.

SELCO Foundation and the GPA Co-ordination Unit undertook an assessment within displacement settings in order to identify gaps in the livelihoods and energy ecosystems and develop solutions to bridge these gaps. The primary aim of the assessment is to develop an enabling ecosystem for micro-enterprises to flourish and increase energy access to enhance income generating activities. Such activities could include food production (solar-powered irrigation and hydroponic installations), food processing, food storage, vaccine storage, mobile charging, tailoring, workshops, haircutting and other services.

## 3. Approach

### i. SDG 7 as a Catalyst to Development

Two issues carry a pressing immediacy in the modern world: starker inequality gaps and the unequal impact of climate change. The two are inextricably linked with the impact of one (climate change) grossly increasing the impact on the other (inequality). Inequality can go beyond an economic lens to other critical areas of development such as education, health, employment, food security, financial inclusion, water resources and so on, the widening gap between the haves and the have nots becomes starker. For those who have been able to move out of poverty, progress is often temporary: climate change, natural disasters, social and political instability, exclusive policies and skewed development threaten to rob them of their hard-won gains and force them back into poverty.

In particular, Africa is susceptible to the effects of climate change in part due to its large agro-based or allied industry-based populations and complex yet understudied weather patterns. Although the continent's contribution to global greenhouse emissions is small- about 4% of the world's total in 2017, African nations are among the countries most vulnerable to and least prepared for climate change (4).

Even with external support, building climate resilience in Africa will take significant resources as well as support from populations to prioritise climate action. Access to energy is among the most important anti-poverty tools which cuts across other development goals. Yet energy access, in a decentralised manner, as a pathway to fight poverty, is often greatly under appreciated. It is typically approached from a technology centric (lights or machines) or a delivery model (mini-grid or PayG) centric lens and often in terms of number of connections rather than how it can effectively be used to meet critical development needs for the poor. No society has modernised without reliable, affordable, accessible energy. Yet its unequal, largely centralised access has also left many behind.

Decentralised sustainable energy solutions offer a way to build on local resources, processes and customisations that are tailored to suit local contexts such that they can appropriately adapt of these adverse changes. Current energy planning and intervention efforts often take on a one size fits all approach that does not take into consideration multidimensional poverty and root causes of inequality. In itself access to energy is not a catch-all solution, it should be built on a detailed understanding of the end-users' needs with an understanding of the opportunities and constraints arising from local socio-economic and cultural contexts.

With the looming deadline of 2030, the SDGs represents international commitment to build a more sustainable, safer future. The collective strength in diversity offers an opportunity to build on analogous contexts across and within countries to arrive at multiple blueprints that can serve as an archive of processes of how poverty can be alleviated through grassroots, inclusive thinking and interventions via decentralised sustainable energy. Rather than focus on targets of poverty reduction, it is a time to challenge this approach and instead focus on processes that can help reach those targets in a manner that create resilience, assets and sustainable pathways for the vulnerable.

## ii. SDG 7 for SDG 8: Livelihoods and Sustainable Energy

Today, 735 million people live under \$2 dollars a day, either in poverty or extreme poverty (5). And many of them lack access to reliable energy, that could have enabled them to explore options of increased incomes. More than 80% of this group lives in sub-Saharan Africa or in the developing economies of Asia. The relationship between the energy gap and livelihood opportunity gap is very visible. There are ways these gaps or problems can be solved.

In recent times, majority of the innovations in livelihood and productivity have been focused on a centralised industrial scale - whose benefits do not trickle down and the ownership does not transfer to the poor. Innovations for the poor have to be decentralised and customised. At the same time, 'innovation' often focuses on technology alone, and not on processes around ownership models, financial models, supply chain and service delivery models; that allow for sustained impact from the design and deployment of the technology.

### **SELCO Approach**

SELCO Foundation's focus and uniqueness lie on scaling up the enabling eco-system factors that lead to the successful delivery of income-generating assets at the doorstep of the end user. This allows for end users and communities to not just move out of poverty but also reach a level of social security, such that if there are sudden shocks or stresses (climate change, financial, health crisis etc) one is not plummeted back into poverty, diluting hard-won gains. These processes have to become the core upon which, society needs to build relevant programs and policies. A typical livelihood solution is often approached as a suite of options for new and existing entrepreneurs, cooperatives or hybrid ownership models; within various contexts which include, un-electrified, under-electrified and electrified scenarios. In each of the scenarios, financial savings, removal of drudgery, enhanced productivity and time efficiency lead to better income opportunities and sustainable growth for rural and tribal livelihoods.

For example, design, development and deployment of a solar-powered highly efficient tailoring machine will help to optimise a particular tailor's level of productivity, however, this alone will not create the desired impact if the tailor does not have the skills to make market ready products or access to the market to sell his/her products. Further, for low-income micro entrepreneurs, it is imperative that the precious profit margins are spent to build assets and cutting down on operational expenses. Thus, business modelling to understand cashflows, and tailor financial products also need to be considered providing a sustainable technology solution.

While using an ecosystems approach towards achieving sustainable energy and livelihood access not only more holistically achieves the intended outcomes, it also has a catalytic effect on other needs. For example, financing once unlocked for a community or individual can be utilised for further upgradation and capital needs in the future, in the same way technology supply chains once built for certain livelihood needs will also be able to provide for other needs at household or institutional levels.

The need of the hour is to catalyse and enhance these missing ecosystem factors in order to demonstrate the linkage between sustainable energy and development: thus, demonstrating the capability of sustainable energy to transform communities.



### iii. Energy Access for Displaced Communities

#### Common Programs Inclusive of both Host Communities and Refugee Communities

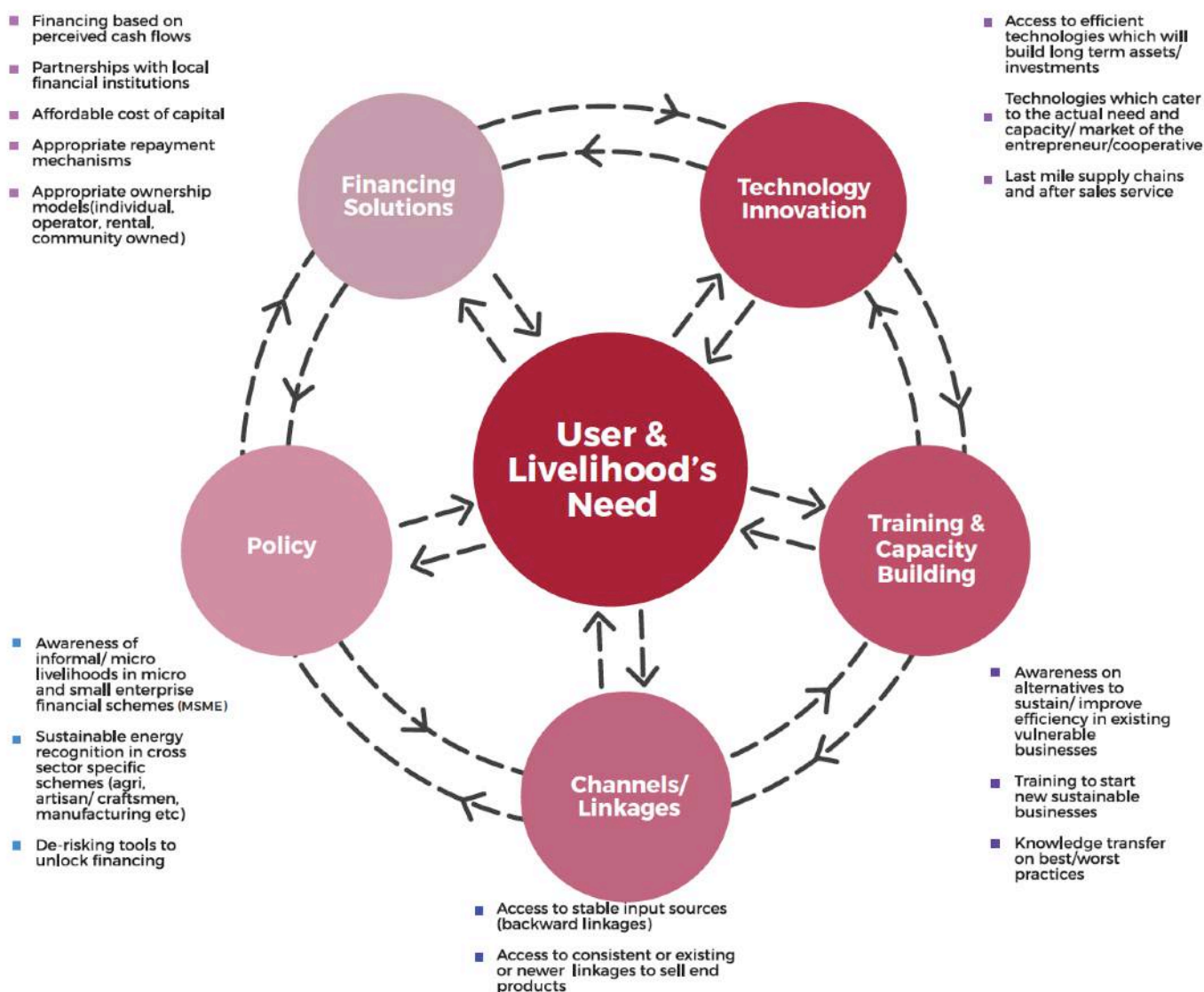
Given the extremely harsh climate, unsuitability of water and a complicated historical context, host communities require services and ecosystems very similar to those that can uplift refugee communities in host countries. It is thus imperative that developmental goals and approaches taken are driven with a mindset to equitably address both population groups. This would not only engage a larger group of individuals to work towards a common goal and ecosystem development activity but also attempt at natural integration of refugee communities in host countries.

### iv. Ecosystems Approach for Sustainable Development

#### Building Of Energy + Livelihood Nexus Ecosystem Champions In Host Countries

To successfully achieve this common goal, there is a need to identify a network of sectoral champions who can fulfil varied ecosystem building needs. Having strong locally present institutions and individuals anchoring this sector and ecosystem building approach would be imperative to ensuring its sustainability and success.

Fig. 1: Livelihood and Sustainable Energy Ecosystem



## 4. Livelihoods in Djibouti - Key Findings

**Livelihoods and Food Security:** Two thirds of Djibouti's population live in urban areas, mostly in the capital. The remaining one third in the rural areas are mainly nomadic and pastoral people. **(6)**

The 23% rural population is described as semi-sedentary pastoralists, small farmers, landless people, and fishermen. Although there is no formal consumption pattern survey in Djibouti to describe average quantities, interviews in the southern pastoral zone describe a typical diet of rice and pasta, indicating access to imported staple foods even in rural areas. The typical diet described was: a wheat flour biscuit and sweet milk tea for breakfast, rice or pasta and sweet milk tea for lunch, and rice, sauce, and sweet milk tea for dinner **(7)**. USAID's Food for Peace program supports the World Food Programme (WFP) to provide food assistance to 75,600 food insecure individuals in Djibouti (focus on refugees and food- insecure rural and urban households). In fiscal year 2016, the total contribution was USD 4.3 million and 3,800 MT of food rations. **(8)**

**Agriculture:** In Djibouti, the agricultural sector contributes just 3% of GDP, and only a few people work in farming. Due to the Djibouti climate (arid to semi-arid) and the scarcity of fresh water resources (~150 mm rainfall/year), only irrigated and seasonal agriculture is possible. Djibouti farmers use diesel engine water pumps, which have significant costs to purchase (~\$2,000) and operate (~\$1,700/hectare). These high costs result in elevated prices for locally produced agriculture products compared to imported fruits and vegetables. Djibouti therefore imports most of its fresh vegetables and fruits from neighbouring countries, including Ethiopia, Yemen, Kenya, and Europe/France. **(9)**. Among the government's priorities are the expansion of agriculture and fishing activities. The contribution of agriculture to the national GDP is expected to increase from 3.7% in 2012 to 4.1% in 2022 and 5% of GDP by 2035, according to government plans stated in the Djibouti Vision 2035 strategy document. **(10)**

Groundwater salinity is widely high: in 2005, more than half of Djibouti's boreholes were recorded as showing salinity of more than 900 mg/l, and sometimes up to 1,200 mg/l. At this time, only groundwater in the northwest of the country was recorded as having ionic levels below the standards of use for irrigation. High levels of boron are the most common. Where groundwater is used for agriculture, high evapotranspiration rates and mineralised irrigation returns have contributed to rising salinity, both in shallow alluvial and deeper volcanic rock aquifers. In coastal zones, salinity is exacerbated by over- abstraction that draws down water levels and induces sea water intrusion. **(11)**

**Animal Husbandry:** Animal husbandry, which has a long history in Djibouti, is a part of the Djibouti Vision 2035. A key plank of the husbandry strategy looks to improve conditions, especially for cattle herding, through better disease control and an increase in average yields, both via genetic improvements, as well as through the improvement of fodder availability. Certainly, Djibouti is well-placed to export livestock, if it can successfully expand its herds. The country is already a centre for cattle exports from nearby Ethiopia and Somalia, and conditions for the sector will improve once a new livestock export terminal currently under construction at Damerjog is completed. According to the WTO, about 2m animals pass through the centre every year. According to the Plan Directeur du developpement du Secteur Primaire (PDDSP), the livestock subsector is the strongest link in agriculture production. However, citizens involved in animal husbandry are mainly nomadic and the current situation is not sufficient in meeting the country's needs. **(12)**

**Import Oriented Markets and Commodities:** Djibouti's economy is dominated by services: goods production is marginal. The manufacturing and agricultural sectors have remained weak, owing inter alia to heavy taxation and the high costs of factors of production (labour and energy). International trade continues to play an important role for Djibouti given its heavy reliance on imports. Trade in goods and services account for an average of 94% of GDP. **(13)**

**State Driven Price Controls:** In 2008, Djibouti adopted a new law on competition and consumer protection, which does not, however, cover State-owned enterprises. Djibouti regulates prices in areas where competition is limited, such as monopolies. Thus, postal and telecommunication, electricity, water and urban transport services are regulated by the State. Price controls are also applied to products that receive State aid, such as bread, flour and kerosene. **(14)**

# 4. Refugee Settlements & Livelihoods in Djibouti

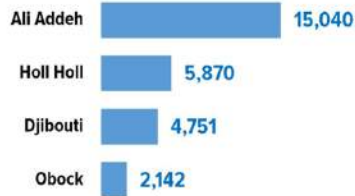
## i. Overview of Livelihoods in Refugee Settlements in Djibouti



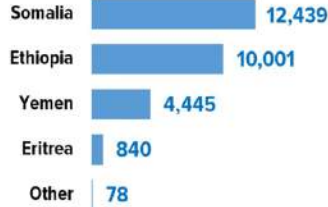
DJIBOUTI  
Refugees and asylum-seekers  
as of 31 October 2018

**27,803**  
REFUGEES AND  
ASYLUM-SEEKERS

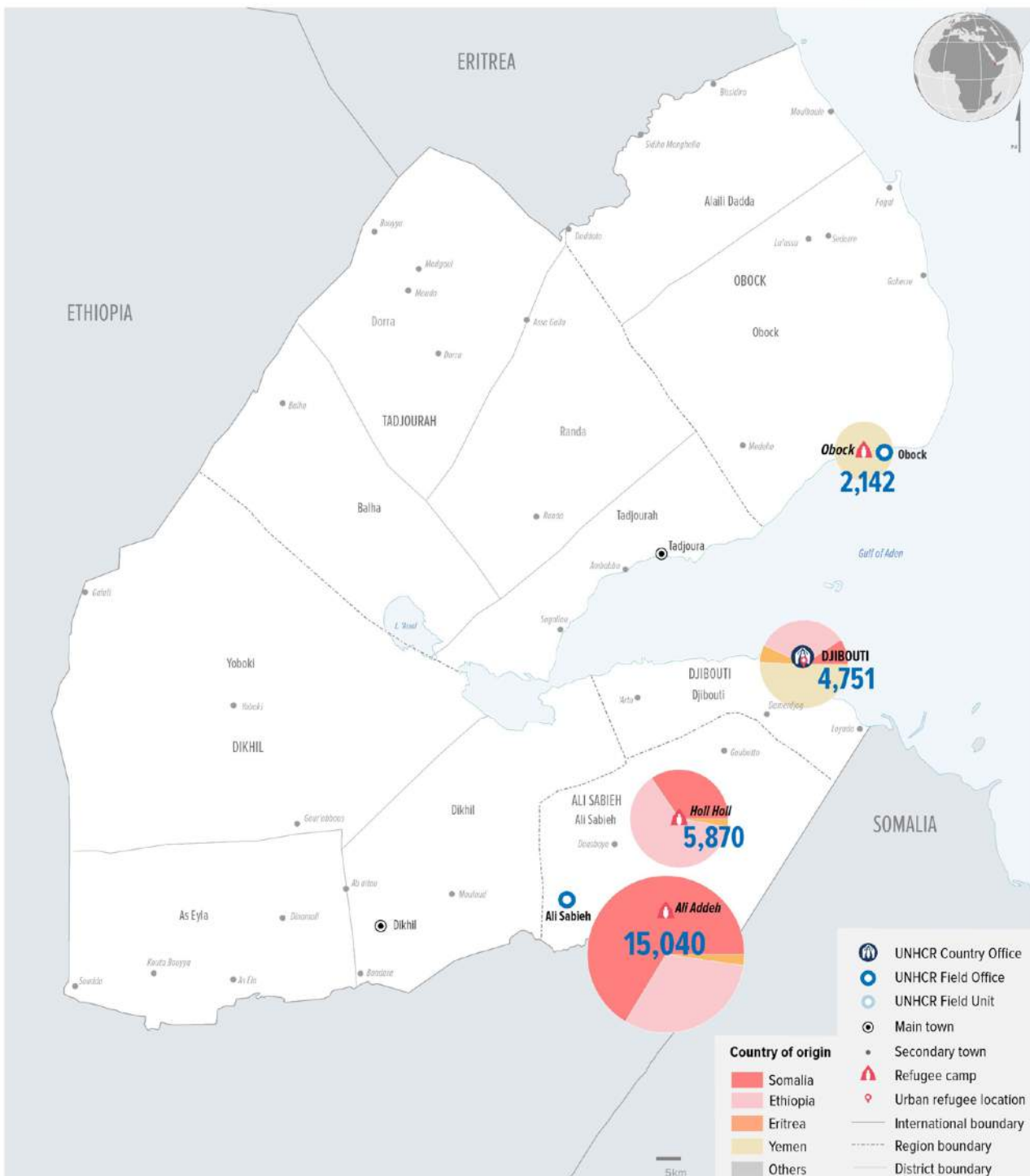
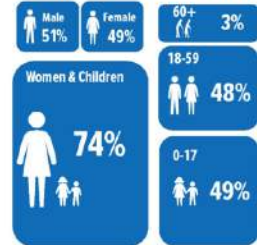
### POPULATION BY REGION OF ASYLUM



### POPULATION BY COUNTRY OF ORIGIN



### AGE AND GENDER COMPOSITION



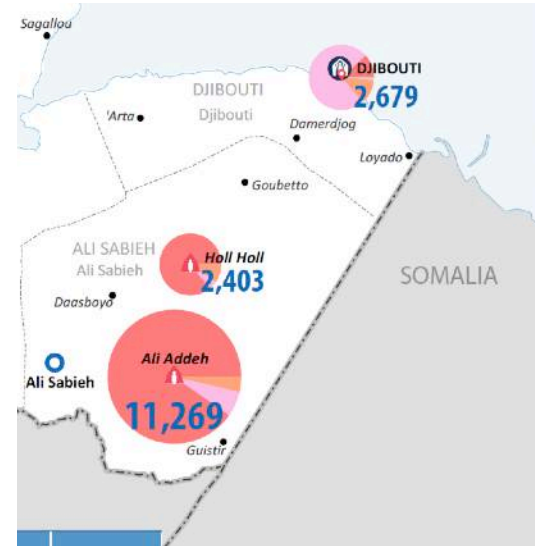
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Printing date: 06 Nov 2018 Sources: UNHCR, UNCS Author: UNHCR Regional Service Centre Nairobi Feedback: UNHCR Representation in Djibouti





Refugee house in Ali Addeh



## Ali Addeh and Holl Holl, Ali Sabieh

### LIVELIHOOD AND INCOMES

Livelihood activities are practiced by many though mainly driven towards satisfying local demands, thus livelihoods practiced are very similar.

Only 20% of individuals work in Ali Addeh and Holl Holl. 50% of these individuals are employed in Trade, Construction or Domestic Work.

Incomes generated is higher during ration distribution periods as most communities rely on consumptive expenditures made by fellow refugees. These are largely dependent on cash inflows during ration distribution.

80% individuals in Ali Addeh and Holl Holl rely solely on 5000 DJF (28.10 USD) cash support from World Food Program distributed every month.

### DEMOGRAPHICS

Women run most businesses in settlements, most men migrate to Djibouti City for work throughout the year.

26% of working women work in trade compared to 11% men - a large amount of trade is within refugees.

35% of men work in the construction sector, largely directed outside the settlements.

A few individuals with higher levels of education work with NGOs, school and health centres in the settlement.

23% of working individuals in Ali Addeh and Holl are employed in Education, Medicine and Social work sectors.

### ACCESS TO ENERGY & BUILDING INFRASTRUCTURE

Access to energy from the solar mini grid is limited to few shops and household mainly owned by host communities. Schools, health centres, army and police stations are connected to the mini-grid.

Only 2% of households in Ali Sabieh report to have regular electricity. 18% of households in Ali Sabieh report to have some electricity.

Many stores own solar refrigerators which have been purchased using money from livelihood generation projects or group savings. These are usually housed in structures made of tin sheets, textile and wood.

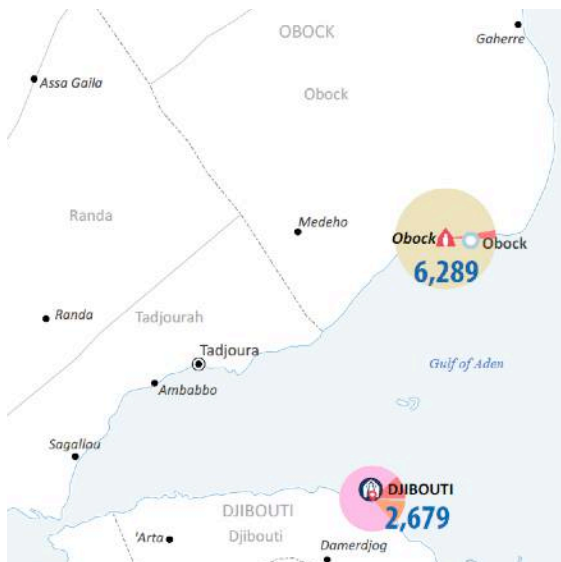
Most households use cheap and low quality solar products purchased locally every few months upon spoilage. Most houses are built within a compound consisting of a few structures made up of mixed materials (timber, stones, mud, textile, tin). UNHCR's habitat division helps build a few homes (<50 homes) every year using hollow bricks.

### SKILLS

Many are skilled in electrical, carpentry and other vocations however cannot access appropriate work for their skills in the city either due to lack of legal security, sufficient paperwork or social stigma.

Livestock management skills are higher in goat keeping than poultry. Both need greater access to supporting animal health services and infrastructure

25% of households in Ali Sabieh own livestock - mainly goats.



Refugee houses at night in Markazi, Obock

## Markazi, Obock

### LIVELIHOOD AND INCOMES

Individuals in Obock have a higher standard of living when compared to other settlements. This could be attributed to largely two reasons - additional flow of aid and assets from the King Salman Humanitarian Aid and Relief Center as well as greater integration of Yemini communities in Obock through over 20+ years of refuge in the region.

51% of households in Obock earn more than 10,000 DJF (56.20 USD) compared to only 20% households in Ali Sabieh.

Livelihoods are connected with the Obock town and Djibouti City offering higher value than purely in-settlement economic activities.

100% households report to own some fishing gear. Most fish is sold to Djibouti City or local markets in Obock via the fishermen co-operative.

### DEMOGRAPHICS

Migration of individuals to and from the refugee settlement is frequent and cyclical owing to high temperatures in Obock.

Avg. Max temperature in Obock between May-September is 38.38°C (14)

Women entrepreneurs are more in number than men who majorly depend on fishing and work in Obock, Tadjourah or along the Yemen-Obock link

### SKILLS

Populations in this settlement showcase higher degrees of skill when compared with other settlements for the same livelihood activity - like tailoring, poultry, business management, etc.

### ACCESS TO ENERGY AND INFRASTRUCTURE

Households receive power from diesel generators which is available twice a day for 8-10 hours.

Households own a larger number assets, when compared to Ali Addeh and Holl Holl, which includes air-conditioners, televisions, refrigerators, and electric cooking stoves with pressure cookers.

100% households in Obock have electricity access, however it is erratic and unreliable. 36% have access to productive assets.

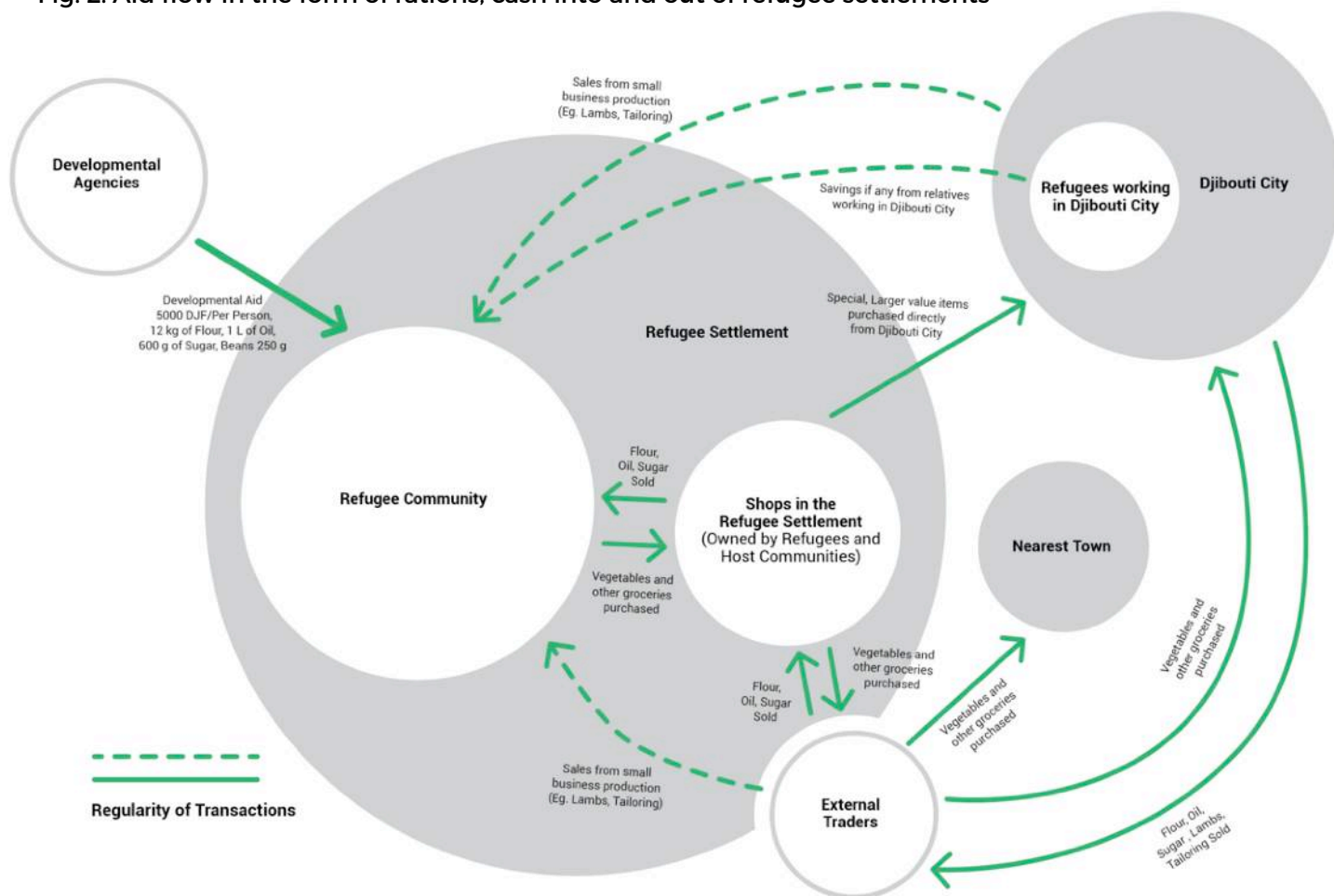
Markazy settlement is well connected to Obock offering higher opportunities for livelihood generation.

Distance from Markazy Camp to Obock town - 4 km (45 minute walk)

Distance from Ali Addeh to Ali Sabieh town - 25 km (5 hour walk)

# Livelihood Systems in Refugee Settlements

Fig. 2: Aid flow in the form of rations, cash into and out of refugee settlements



## Key Components

### Developmental Agencies

Primary source of liquidity into the settlement for refugee community either in the form of cash or ration converted to cash.

Approximately 781,000 USD is distributed in cash every month (5000 DJF/per person/per month) as well as at least 59,000 USD worth of food rations in Ali Addeh, Holl Holl and Obock.

### Livelihood Activities by Host and Refugees

These act as channels for cash and everyday consumption goods transfer between the refugee community and Djibouti City.

### External Traders

These either exchange directly with refugee community or via internal stores and traders to sell goods into the community as well as buy ration in exchange of cash.

These traders would also purchase commodities produced in the settlement like baby goats (kids) reared by the community members. They in turn would then buy and sell in Djibouti City.

## Challenges

- Most economic transactions by refugee communities are consumptive with only city based traders ultimately benefitting.
- Economic transactions are heavily aided and influenced by inflow of food rations and cash into refugee settlements.
- Djibouti's consumption is mainly fulfilled by exported processed commodities. Production and value addition is sparse in Djibouti while supply chains are occupied by a few major players.

## Opportunities

- Increase benefits of livelihood activities and savings in expenditures by providing for commonly needed energy services and amenities.
- Produce commodities for local needs thus reducing external dependencies.
- Increase the diversity of livelihood activities carried out by opening newer markets, providing training and infrastructural support.



# Livelihood Activities in Djibouti's Refugee Settlements

## Settlements

- Ali Addeh
- Holl Holl
- Markazy

## Nearest Town/Village

- Ali Sabieh
- Holl Holl Village
- Obock Town

	<span style="color: blue;">●</span> <span style="color: purple;">●</span> <span style="color: orange;">●</span>	<span style="color: blue;">●</span> <span style="color: purple;">●</span> <span style="color: green;">●</span>
<b>Food &amp; Beverage</b>	<b>Snack and Drink</b>	<b>Meat Selling</b>
OWNERSHIP	Primarily owned by Refugees	Primarily owned by Refugees
INCOME FREQUENCY	Once or Twice a Day	Once a week/ two weeks
PRODUCT RANGE	Fried Snacks, Cookies, Cakes	Camel Meat and Eggs - There is an additional market for chicken meat
BUSINESS TYPES	Street Vendors, Cafe/Store Based, Home Based Retailers	Micro Enterprises
CUSTOMER BASE	Primarily children going to school in the refugee camp	Refugee and host populations
TECHNOLOGIES AVAILABLE	Refrigerators Charcoal Stoves Solar DC Mixers and Grinders	None - Require access to refrigerators & freezers



### Sambusa Seller in Ali Addeh

A home based entrepreneur makes 100 Sambusas twice a day for students from the local school. She says she earlier made 250 but finds it hard to make more due to her age. She has a few competitors offering similar products. She sells each Sambusa for 20 DJF (0.1 USD).



### Bakery in Markazy

A family run enterprise provides baked goods like cookies, cakes and pizza and sells them in local markets of Obock but they don't have enough equipment like ovens and dough mixers to expand their business.

### Camel Meat Sellers in Ali Addeh

A group of butchers by camels from Djibouti City for 9000 DJF (50 USD) and sell it in the camp at 1200 DJF/kg (6.7 USD/kg). Nearly a quarter of the meat(22/100 kg) is spoilt the following day due to lack of cold storage.



**Settlements**

- Ali Addeh
- Holl Holl
- Markazy

**Nearest Town/Village**

- Ali Sabieh
- Holl Holl Village
- Obock Town

**Food & Beverage**

**Grocery Stores**

**OWNERSHIP**

Owned by Refugees & Host Communities

**INCOME FREQUENCY**

**Everyday** - Greater sales during distribution of food rations and cash

**PRODUCT RANGE**

Canned Food, Dairy Products, Cold Drinks and Water, Grains, Basic Vegetables and Ground Spices

**BUSINESS TYPES**

Street Vendors, Stores (Small and Large), Home Based

**CUSTOMER BASE**

Refugee and host populations

**TECHNOLOGIES AVAILABLE**

Solar Refrigerators, Mini-grid Access

**Restaurants**

Primarily owned by Refugees

**Everyday** - Greater sales during distribution of food rations and cash

Spaghetti, Rice, Ethiopian Flatbread, Meat, Potatoes & Vegetables

Small & Medium Restaurant

Refugee and host populations

Firewood and Charcoal Stoves



**Grocery Store in Markazy**

A home based grocery store owned by a family. They mainly rely on customers immediately around their house. There is high competition, some products are imported from Yemen.



**Restaurants in Ali Addeh**

Many restaurants sprawled over the settlement. Each of them have menus appropriate to their customer group and cook using charcoal or firewood spending 2500 DJF (14 USD) including fuel and donkey transport 4-5 times a month.

**Grocery Store in Ali Addeh**

A women collective run grocery store with a solar refrigerator. Most grocery stores have the same goods. Ones owned by host communities are better stocked and have access to the mini-grid.





**Settlements**

- Ali Addeh
- Holl Holl
- Markazy

**Nearest Town/Village**

- Ali Sabieh
- Holl Holl Village
- Obock Town

**Basic Services**

**Fuel, Solar & Electrical**

**Water**

**OWNERSHIP**

Primarily owned by Host Communities

Unknown

**INCOME FREQUENCY**

Once a week/ two weeks

Unknown

**PRODUCT RANGE**

Solar torches, home kits, panels, batteries, small appliances, lights and wiring

Water in cans

**BUSINESS TYPES**

Micro Enterprises

Micro Enterprises

**CUSTOMER BASE**

Refugee and host populations

Refugee and host populations

**TECHNOLOGIES AVAILABLE**

Mini-grid access for some, Donkey transport for firewood

Donkey Carts for water carriage



**Mobile Charging in Ali Addeh**

Mobile Charging facility in grocery store run by a refugee. Each charge costs 10-20 DJF (0.05-0.1 USD)



**Kerosene and Gasoline Fuel store in Holl Holl Village**

Store set up by an entrepreneur utilising the ADDS Grant Fund. A litre of fuel costs 160 DJF(1 USD) in Holl Holl



**Solar Shop in Ali Addeh**

Store set up and run by a member of the host community providing solar equipment. The highest selling solar product is a torch for 500 DJF (2.8 USD) which lasts for a few months.



**Settlements**

- Ali Addeh
- Holl Holl
- Markazy

**Nearest Town/Village**

- Ali Sabieh
- Holl Holl Village
- Obock Town



**Animal Husbandry**

**Goat Keeping and Poultry**

**Fishing**

**OWNERSHIP**

Primarily owned by Refugees

Owned by the host community with refugee employees

**INCOME FREQUENCY**

Once or Twice a Day

Few times a week

**BUSINESS TYPES**

Home based

Co-operative

**CUSTOMER BASE**

Ali Sabieh/ Djibouti City for Lambs

Obock/ Djibouti City

**TECHNOLOGIES AVAILABLE**

None

Boats, Generators for Motor and Lights on Boats



**Goat keeping in Ali Addeh**

Nearly all families in Ali Addeh own a few goats. Kids are sold twice a year for 2000-3000 DJF (11-17 USD) to traders from Ali Sabieh/Djibouti.



**Backyard Poultry in Markazy**

A man experimented by buying two chicks for 3000 DJF(16.8 USD) and now has over 20 chickens and chicks. He requires expansion in infrastructure like chicken rearing pens and vaccination support.

**Fishing in Markazy**

Fisherman fish twice a day using diesel generators for lighting at night incurring 3000 DJF (17 USD) on fuel at an avg. per day.



**Settlements**

- Ali Addeh
- Holl Holl
- Markazy

**Nearest Town/Village**

- Ali Sabieh
- Holl Holl Village
- Obock Town

**Other**



**Tailoring**

**OWNERSHIP**

Owned by Refugees & Host Communities

**INCOME FREQUENCY**

Once/twice a week

**PRODUCT RANGE**

Clothes, Drapery, Tissue Boxes, Wallets

**BUSINESS TYPES**

Stores, Home Based

**CUSTOMER BASE**

Communities within the settlement with some markets in Djibouti City

**TECHNOLOGIES AVAILABLE**

Sewing Machines (Mostly Manual)



**Digital Services**

Primarily owned by Host Communities

Once a week

Photography, TV Viewing, Play Station Centres

Stores

Communities in the settlement

Computers, Cameras, Televisions, Play Stations, Refrigerators



**Television viewing centre in Ali Addeh**

A football match screening centre in Ali Addeh relies on refrigerated product sales over the entry sales. Customer attendance is on a decline due to decreasing populations.



**Tailoring in Ali Addeh**

Tailoring a highly common profession and skill is dependent on local demand which peaks during festival seasons. One tailor uses an electric machine for which he pays 5000 DJF (28 USD) every month towards rent and electricity charges to a member of the host community who has access to the mini-grid.

**Tailoring Entrepreneur in Markazy**

With a market linkage connection in Djibouti City, this lady makes innovative urban market friendly products for between 2000-8000 DJF (11-45 USD). However, the orders are infrequent and she doesn't have her own sewing machine



Fig. 3: Summary of Problems and Solution Avenues of Livelihoods in Djibouti's Refugee Settlements

	Problems	Future Growth Areas	Energy and Technology Solutions
<b>Snacks and Drinks</b>	<ul style="list-style-type: none"> <li>Limited Productivity</li> <li>Limited markets</li> <li>Low product diversity</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturing high consumption food products - Spaghetti</li> <li>Increasing market access</li> </ul>	<ul style="list-style-type: none"> <li>Spaghetti Manufacturing Units</li> <li>Rolling machines for flatbread/sambusa making</li> <li>Access to bakery equipments</li> </ul>
<b>Meat Selling</b>	<ul style="list-style-type: none"> <li>Wastage due to lack of cold storage facility</li> <li>Lack of hygiene</li> </ul>	<ul style="list-style-type: none"> <li>Product diversification to include more meat types</li> <li>Rearing of animal livestock to increase income</li> </ul>	<ul style="list-style-type: none"> <li>Cold Storage and Refrigeration</li> <li>Animal Vaccination</li> <li>Animal Rearing Infrastructure</li> </ul>
<b>Solar (In Settlement Shops)</b>	<ul style="list-style-type: none"> <li>Low, cheap quality products</li> <li>Lack of advanced technical knowledge</li> <li>Lack of service provision</li> </ul>	<ul style="list-style-type: none"> <li>Service provision of livelihood technologies powered by solar</li> <li>Opportunity for local installation and servicing contracts</li> </ul>	<ul style="list-style-type: none"> <li>Access to increased range of better quality lighting products</li> </ul>
<b>Goat Keeping and Poultry</b>	<ul style="list-style-type: none"> <li>Goat losses due to poor rearing practices</li> <li>Lack of sufficient grazing areas/ depleting grazing areas</li> <li>Lack of vaccination</li> <li>Lack of sophisticated poultry rearing knowledge and infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Sophisticated and profitable goat rearing as a major source of livelihoods</li> <li>Poultry rearing for sales of eggs and chicken meat</li> </ul>	<ul style="list-style-type: none"> <li>Hydroponics for fodder growth</li> <li>Vaccine Storage Refrigerators</li> <li>Poultry pens and lights</li> <li>Egg brooders, incubators</li> <li>De-feathering Machines</li> <li>Retail Refrigerators for Meat Storage</li> </ul>
<b>Fishing</b>	<ul style="list-style-type: none"> <li>High diesel usage for lighting</li> <li>Lack of an advanced cold chain system</li> <li>Lack of sufficient start up infrastructure like boats for refugees</li> </ul>	<ul style="list-style-type: none"> <li>Monetary savings on energy expenditure</li> <li>Efficient cold chain with lower wastage</li> </ul>	<ul style="list-style-type: none"> <li>Boat Lighting</li> <li>Cold Chain for storage of fish and transport to cities</li> <li>Fish drying for longer term storage</li> </ul>
<b>Tailoring</b>	<ul style="list-style-type: none"> <li>Low access to markets</li> <li>Low productivity due to drudgery</li> </ul>	<ul style="list-style-type: none"> <li>Textile production centres with fixed markets and upgraded motorised sewing machines</li> </ul>	<ul style="list-style-type: none"> <li>Motorised sewing machines</li> </ul>

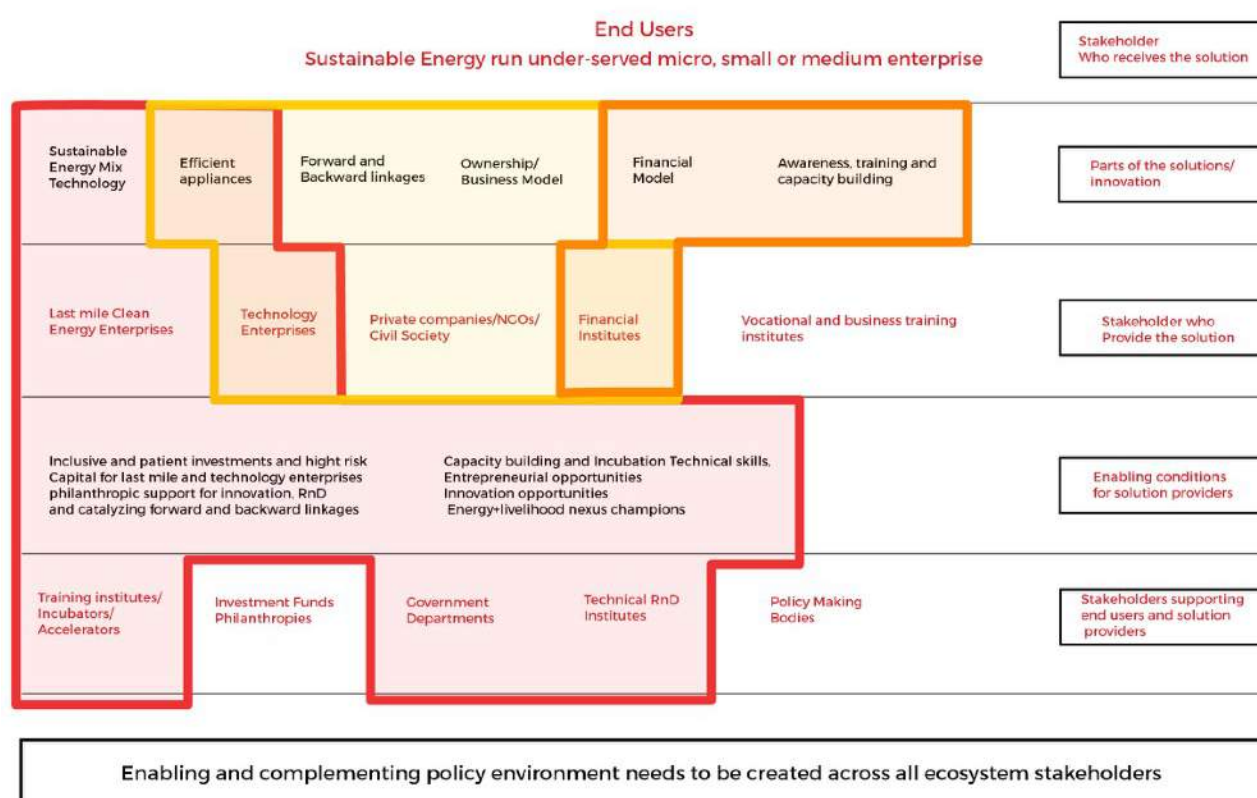


## 7. Recommendations

### i. Overview

Long term sustainable and replicable interventions are only possible if there is a stable underlying foundation that encourages local ownership, entrepreneurship and innovation of sustainable energy-driven solutions to ensure uptake and scale. This underlying foundation can be created by recognising and activating the enabling conditions or ecosystem for sustainable energy-driven solutions. The enabling factors (ref to Fig 4) are demonstrated below as key components that needs to be considered, activated, designed or re-designed in order to develop and scale need-based energy driven livelihood solutions. The typology of stakeholders is also illustrated in the same diagram. In Djibouti and the refugee camps of Djibouti, stakeholders who can activate one of more roles illustrated need to start making sustainable energy as part of their local innovation and deployment strategies.

Fig. 4: Facilitating environment needed for providing Sustainable Energy Services and Solutions



For sustainable energy-driven livelihoods to thrive in Djibouti, specifically within the refugee settlements of Djibouti each part of the ecosystem needs to be developed in an inclusive manner for Djibouti as a whole. Assessments and stakeholder interactions mentioned the major gaps as; a) lack of need-based energy+livelihood interventions that prioritise catalysing spurring of existing and new local incomes, b) little or no access to asset-based financing that can create local ownership and businesses to thrive and c) the issues with regards to local capacities for pipelines of technical, entrepreneurial or innovation expertise in Djibouti. **Hence the three parts as a priority being recommended through this report are:**

- A. **Energy+Livelihood Innovations:** Pilot sustainable-energy-driven interventions that enhance incomes and productivity of local micro, small and medium enterprises and initiatives. **(Highlighted in yellow square in the Fig 4.)**
- B. **Unlocking long term, high risk and asset-based Financing** for homes and livelihoods to own Decentralised Energy Systems and access entrepreneurial capital (including home and productive use technologies) - this would directly lead to scaling innovation and stabilising access to finance in the region. **(Highlighted in orange square in the Fig 4.)**
- C. **Incubation and Skill Development:** Enhancing skill sets of local organisations (both for-profit and non- profit) to be able to deliver and scale high-quality technical solutions in the region. Establish training and mentorship programmes to build technical and business skills of entrepreneurs. **(Highlighted in red square in the Fig 4.)**



Part A (Energy+Livelihood Innovations) is crucial for local initiatives to anchor and to be able to document the nuances, learnings and challenges in a manner that helps future sustainable livelihood innovations in Djibouti. However, the customisation that would happen in Part A can only be replicable if Part B (Asset based finance for sustainable livelihoods) and Part C (Local human resource development) are active. Moreover initiatives and champions that are incubated and up-skilled under Part C cannot cater to the needs of local communities unless Part B (Finance) is designed in a manner that can continually support the uptake of long term livelihoods.

At the current (initial) phase of ecosystem building for sustainable energy other parts of the ecosystem like market linkages, investments, policy etc are not being tackled as those are aspects that would come out of the initial evidence generated through these first three parts of the program. The energy+livelihood innovations would be a mix of technical, social and financial innovations, the incubation will expand to local champions and initiatives beyond enterprises given the current challenges within Djibouti and the financing will be limited to end-users and enterprises using sustainable energy as an input. A coordination body is needed to ensure the above three focus areas are being planned and executed in tandem, supporting each other.

## Considerations

1. Local Sourcing - Horn of Africa
2. Advisors and Capacity building by actual on ground practitioners - Indian, African

Name	<b>PART A: Energy+Livelihoods Innovation</b>	<b>PART B: Financial Inclusion and Risk Funds</b>	<b>PART C: Incubation and Skill Development</b>
<b>About</b>	<p>Deployment of Pilots in Livelihood Value Chains:</p> <ol style="list-style-type: none"> <li>1. Animal Husbandry</li> <li>2. Gardening and Agriculture</li> <li>3. Fishing</li> <li>4. Food Processing</li> <li>5. Textile</li> <li>6. Services</li> </ol> <p>Division of Resources into the following three phases:</p> <ol style="list-style-type: none"> <li>1. Need Assessment, Research and Business Modelling</li> <li>2. Pilot Implementations with trainings for end users</li> <li>3. Documentation, training and workshops for knowledge transfer</li> </ol>	<p>Financial products and incentivisation methods for asset based financing of sustainable energy &amp; livelihood technologies via the following main approaches:</p> <ol style="list-style-type: none"> <li>1. Workshops, training and exposure programs for the financing value chain (i.e. banking correspondents, NGOs, CBOs, bank managers, regional managers, financial product designers etc.).</li> <li>2. Training for energy enterprises to help end users unlock financing</li> <li>3. Access to finance for business development: Lending programs for end users (Deployment of Loan Corpuses or Guarantee Funds)</li> </ol>	<p>Setting up of an skill development &amp; incubation programs for identification, mentoring and growth of local energy initiatives</p> <ol style="list-style-type: none"> <li>1. Setting Up or Improvement of Solar Training Centres and Innovation Centres</li> <li>2. Creating Coursework in Local Languages and Training of Trainers</li> <li>3. Post Training Linkages and Enterprise Incubation</li> </ol>
<b>Budget Considerations*</b> (For capital and project costs only- no HR and admin)	420,000 USD	1,200,000 USD	1,300,000 USD
<b>Proposed Timelines</b>	1+ Year	3+ yrs	3-5 years
<b>Potential Stakeholders</b>	UNHCR, FAO, LWF, IOM	ADDS, CPEC	ISCAE, Ministry of Energy, EPED, University of Djibouti

## Part A: Energy Access & Livelihood Innovations

Pilot sustainable energy driven interventions that's spur incomes and productivity of local micro, small and medium on-farm and off-farm enterprises and initiatives.

### Issues and Opportunities in Djibouti's Livelihood Value Chains:

**Animal Husbandry:** Djibouti has an animal rearing past as well a high fishing potential. Refugee communities in Holl Holl, Al Addeh, and Obock are also part of the these value chains but at best contributing currently at a very low scale. These sectors across Djibouti are not developed with very low access to essentials such as vaccinations, and access to sophisticated techniques and infrastructure.

**Agriculture:** Agriculture is largely absent across the country. However, with new developments in techniques like hydroponic farming, and evidence of small scale gardening in Djibouti, promoted by older programmes, there is evidence to further explore these value chains and develop pilot programs with relevant ecosystem checks.

**Textile and Cottage Industries:** These business are currently being serviced by a large number of refugees, however, access to large markets is very low, limiting earning potentials.

### Proposed Solutions:

The Energy+Livelihood innovations part of the proposed program is primarily anchored around understanding local livelihood value chains and the possibility of augmenting those value chains and nodal points within them by increasing the value capture for the end users that initiate, run and expand the chosen businesses within the value chains. Livelihoods and Value Chains can be chosen either from the ones currently being practiced or new ones which showcase promise in Djibouti, as illustrated below.

#### Livelihoods which exist and can be augmented.

**Eg. Meat Selling** - Meat Sellers in the settlements see a sharp loss of sales on every batch of meat purchased and sold due to the lack of cold storage facilities. This can be easily improved by providing for enough storage capacity which can help keep their produce fresh.

#### Potential Technical Solutions

Solar Deep Freezers  
500 litre capacity | 2 kW

Appx. Cost - 8000 USD

#### Livelihoods which exist and can be scaled up.

**Eg. Tailoring** - Many tailors exist in the settlements although markets are limited. Tailors could be collectivised in a production unit with market linkages to a fixed buyer(s) in Djibouti City with a high volume of finished textile requirement like the port, army, hospitals, etc.

#### Potential Technical Solutions

10 x Solar Powered Industrial Machines  
250 W per machine | 5 kW for 5 hrs/day

Appx. Cost - 17000 USD

#### Livelihoods which don't exist and can be brought in.

**Eg. Spaghetti Making** - Spaghetti is a highly consumed commodity not only within the settlements but also outside in the villages and towns. This commodity can be easily produced at cottage industry scaled to provide for local needs.

#### Potential Technical Solutions

Solar Powered Food Processing Machines  
1.5 HP | 40-50 kgs/hr | 1.5 kW for 3 hrs/day

Appx. Cost - 9,000 USD

The below mentioned value chains will be explored in detail as illustrated in the example in Fig 5. Issues and solutions considered will include those mentioned in Fig 3 on Page 18 of the document, however more intervention avenues can be identified through the course of the program.

**Animal Husbandry**

Interventions for animal rearing infrastructure, vaccination and processing & retail of animal based products

**Agriculture & Gardening**

Interventions for low water use & saline water based gardening, rain water harvesting, processing and retail.

**Fishing**

Interventions for lights for fishing, fish drying and cold storage/cold chains for supply.

**Food Processing**

Food processing centres for high volume food commodities which can be locally made - Eg. Spaghetti

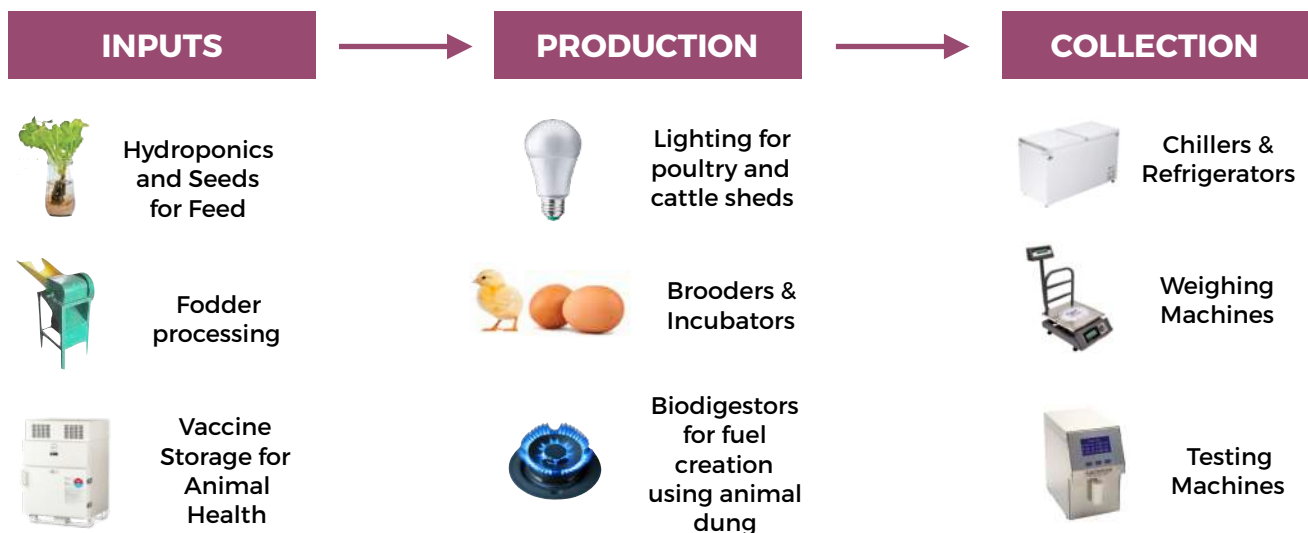
**Textile**

Tailoring units for mass tailor employment along with fixed market linkages - Eg. Ports, Army, Govt. Purchases etc.

**Services**

Commonly needed services like rental lighting, mobile charging, etc.

Fig. 5 Value Chains Example - Solar Energy and Technologies in Animal Husbandry



**Models of Implementation**

The model of implementation will be designed on a need base which may include:

- individually owned systems - illustrated in Fig. 6
- pay per use central processing centres / common service centres / mini grids with local ownership - illustrated in Fig. 7

A mix of the above mentioned models is suggested depending on the suitability of the usage in the particular value chain. For example, in the case of Animal Husbandry Infrastructure and lighting for poultry pens could be owned at an individual level, however vaccination support may be needed to be provided at a centralised level benefitting multiple animal rearers. Figures 5 and 6 illustrate the working of the above mentioned models of implementation.

Fig. 6 Working of the individual ownership model

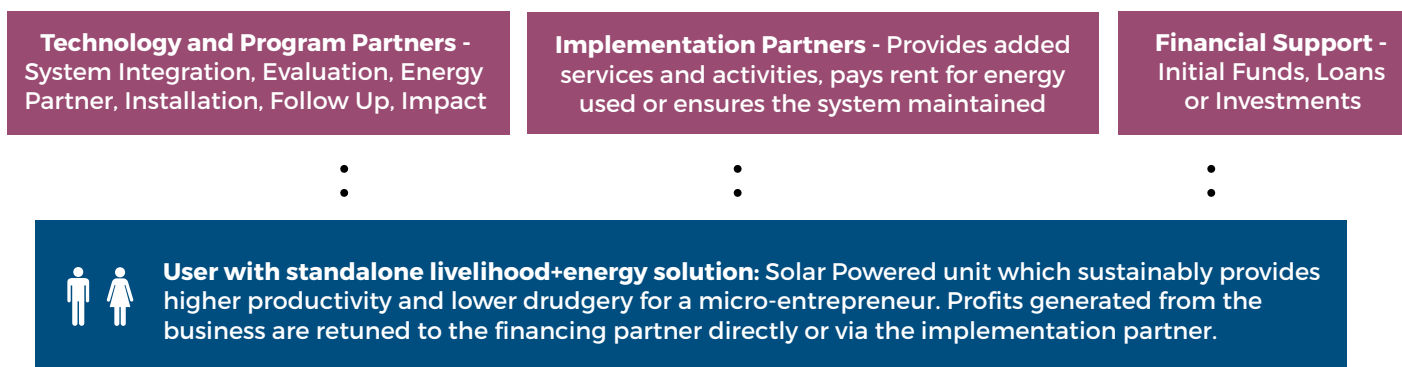
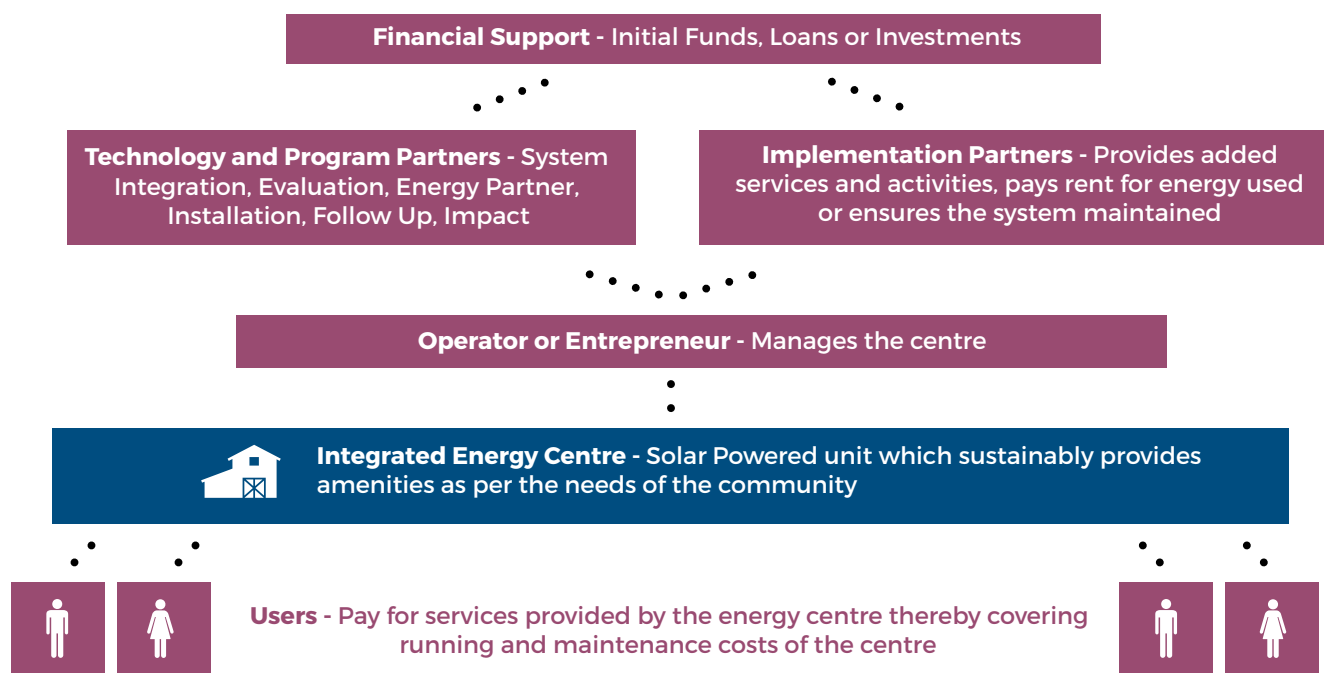


Fig. 7 Working of the common service centre model



### Phases of Implementation and Budgetary Considerations

	Details of exercise	Resources required	Timeline	Cost Requirements
<b>Need Assessment, Research and Business Modelling</b>	Detailed study of chosen 6 value chains with current practices requirements, identification of users	2-3 researchers, implementation bodies for identification of end users	2-3 months	20000 USD
<b>Pilots</b>	20 - 25 pilots across the 6 value chains across 2 or more typologies each	Cost of technology purchase, installation and servicing. Training for end users, Implementation bodies for facilitation	6-9 months	14000 USD per pilot implementation - 350,000 USD
<b>Replication and Scale</b>	Documentation, Advocacy, Knowledge sharing platforms	Facilitation by co-ordination bodies and implementors	2-3 months	50000 USD



## Part B: Financing of Energy and Livelihoods

For the proposed livelihoods programs, financial linkages are key to enable asset ownership.

### Issues and Opportunities in Financing for Livelihoods in Djibouti:

Over the last two decades there have been a spurt of micro-finance institutions, pay as you go solutions in India, South-East Asia, Latin America and some countries in Africa. But many of them, in the effort to scale, could not create the appropriate financial products that could lead to asset ownership or appropriate livelihoods for the poor. There are still vast areas of the world where financial services of any form have not yet reached, also resulting in one of the biggest barriers in scaling of asset-based ownership of Decentralised Renewable Energy (DRE) solutions. A similar feature is seen in Djibouti, where the lack of appropriate financial products inclusive of refugees are absent. This coupled with the lack of confidence showcased by lending agencies in refugees prevents them from gaining access to affordable capital.

### Proposed Solutions

- Capacity building of local financial institutions to introduce Decentralised Renewable Energy (DRE) lending portfolios:** Training stakeholders across the financing value chain - i.e. financing policymakers, financing skilling institutes, leadership of financial institutes and financial institute associations, financial product designers, banking correspondents or business correspondents, NGOs and CBOs, last-mile service delivery enterprises, etc. to make financing accessible and affordable for the remote or marginalised end user. The training of Financial Institutes should also be across national banks, rural regional banks, small finance banks, micro-finance institutes, cooperative banks, banking correspondent institutes, etc.
- Deploying a Risk/ Revolving Funds (RF) to spur local financing of home and livelihood enterprises powered by DRE interventions:** This part of the program will experiment with multiple financial instruments, like risk funds, revolving funds, interest subsidies, margin money subsidies, transaction cost support, etc. that will be used to catalyse financing to households and businesses at very affordable interest rates for extended loan periods. By showcasing this program, local financial institutions in Djibouti will be encouraged to extend financing to underserved and/or unserved end users, thus, establishing the critical ecosystem of appropriate technology and financial support for those end users.

### Phases of Implementation and Budgetary Considerations

	Details of exercise and potential impact	Key Metrics	Timeline	Cost Requirements
<b>Workshops / training programs / exposure programs</b>	10 workshops / training programs / exposure programs conducted for stakeholders across the financing value chain	<ul style="list-style-type: none"> <li>Number of Financial Institutes trained</li> <li>Number of NGOs and/or CBOs trained</li> <li>Number of banking correspondent trained</li> </ul>	3 - 6 months	100,000 USD
<b>Energy Enterprise capacity building</b>	Capacity built in 10 last mile DRE powered enterprises or initiatives to unlock end user financing.	Number of enterprises or grassroots initiatives trained and linked to financial institutes	3 - 6 months	100,000 USD
<b>Lending to end users</b>	Directly lend to financing of asset-based energy driven solutions for over 5000 families or households and small businesses (25,000 people) within Djibouti.	<ul style="list-style-type: none"> <li>Mapping of financial products</li> <li>Number of financial products unlocked</li> <li>Number of end user DRE loans provided</li> </ul>	3 years	1,000,000 USD

## Part C: Incubation and Skill Development

Incubating local initiatives (both enterprises and NGOs) in Djibouti to deploy high quality asset-based Decentralised Renewable Energy (DRE) systems for rural end users.

### Issues and Opportunities for Enterprise Incubation and Skill Development in Djibouti:

Local energy initiatives in Africa are focused on small and portable lighting solutions to gain credit understanding or ensure that the transactional costs are met for the survival and sustainability of enterprises. However, this does not drive the energy transition of the end-user to the next phase. When it comes to larger systems there is a need for LOCAL capacity for the following aspects in local renewable energy not only for the effective deployment and installation of system but also for timely servicing support offered at the last mile. This would require both enterprises ready to offer servicing alongside system installation, but also a host of skilled individuals who can carry out work at the last mile, at the doorstep of the end-user.

### Proposed Solutions

#### 1. Skill Development Centres, Curriculums and Employment/Entrepreneurship Linkages

Creating a human workforce which can either be employed into the sustainable energy sector or serve as a channel for entrepreneur incubation. These individuals would need to be identified from across Djibouti and trained in 2-3 centralised training centres. Once the individual has received training, he or she can pursue one of the four exits listed below either directly or with additional training and mentorship.



Solar Technician or Designer



Sales, Marketing, Operations & Management roles in an organisation or as a freelancer



Entrepreneur



Innovator

#### 2. Incubation program for Energy Enterprises and Initiatives

An incubation program can be constituted to identify and incubate a host of energy enterprises and initiatives. The incubation will consist of extensive training programs, mentorship and hand-holding, on field experience and practical learning, access to demonstrations and practice installations to evaluate learnings, access and introduction to suppliers and manufacturers, certifications and networking. Two levels of local initiatives will have access to this incubation programme (As illustrated in Fig. 7) - 1) small-scale initiatives, and 2) medium-scale initiatives, each of which defined by their reach and annual turnovers/ budgets. As the programme aims to identify and build up grassroots level champion energy initiatives that are mission-driven, many other criteria related to capacity, intention, mission and passion will also be part of the selection process.

	Small	Medium
<b>Annual Turnover or Budget</b>	20,000 - 50,000 Euros	50,000 - 200,000 Euros
<b>Avg no of Beneficiary Households per year</b>	500-2000 families	2000 - 6000 / families
<b>Geographical Spread</b>	Few Towns and Villages	Few Provinces/Country
<b>Formal Business Training</b>	Little - Moderate	Moderate

## Phases of Implementation and Budgetary Considerations

	Details of exercise and potential impact	Timeline	Cost Requirements
<b>Setting Up or Improvement of Solar Training Centres and Innovation Centres</b>	<ul style="list-style-type: none"> <li>• Setting up or improvement of solar labs and demonstrations of applications</li> <li>• Trainer/Resource persons for training</li> <li>• Awareness and mobilisation of students</li> <li>• Conduct trainings and activities as field visits, interactive sessions, etc.</li> <li>• Support in post training linkages</li> </ul>	6 months	150,000 USD
<b>Creating Coursework in Local Languages and Training of Trainers</b>	<ul style="list-style-type: none"> <li>• Develop practitioner centric training courses in all local languages</li> <li>• Develop training materials such as manuals, presentations and videos</li> <li>• Training of trainers for up-skilling</li> </ul>	6 months	150,000 USD
<b>Post Training Linkages and Enterprise Incubation</b>	<ul style="list-style-type: none"> <li>• Apprenticeship in enterprises or institutions</li> <li>• Employment in enterprises</li> <li>• Entrepreneurs linked to Incubators</li> <li>• Innovation Hubs</li> <li>• Seed Investments</li> <li>• Small and Medium Scale Enterprise Incubation and Mentorship - Local micro entrepreneurs or Electrical Shops, NGOs, Public Institutions, For Profit Enterprises</li> </ul>	3-5 years	1,000,000 USD

## 8. Energy Access and Livelihoods Ecosystem Mapping of Djibouti

### SKILLS AND TRAINING

#### EPED, IOM, ISCAE

##### EPED

The training and social service centre of the Protestant Evangelical Church of Djibouti provides in-house training for various courses like, electrical technician training, tailoring, computer software (Microsoft Office, Photoshop etc). They have their own solar system and equipment for an energy training centre though lack access to adequate trainers and training materials.

##### IOM-FabLabs

IOM in partnership with the University of Djibouti has set up a FabLab which hopes to encourage students to conceptualise and work on their own product and business ideas.

##### ISCAE

ISCAE is a private institution providing entrepreneurship and business management training for the Djiboutian youth. They have previously partnered with the government to further this goal for rural youth communities.

### FINANCIAL INCLUSION

#### CPEC, ADDS

##### ADDS:

Has started a Self Help Group building program with Djibouti's women. SHGs form the backbone to a grassroots financial inclusion system. It also releases livelihood start up funds in association with CPEC of 400,000 DJF per grantee. This 100% granting system has shown varying results, primarily due to the variable physical and social capital available to the grantee.

##### CPEC:

Has showcased an interest in financial loan provision for refugee and poor communities however has showcased a need for guarantees for the same.

### ENERGY ENTERPRISES

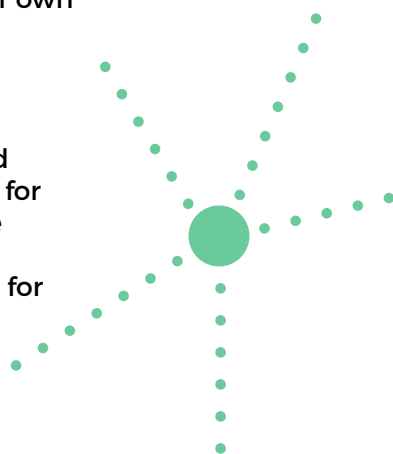
#### Energy for Africa, SELECT, Synergy, Micro-entrepreneurs in settlements

##### Medium/Large Enterprises:

Energy Enterprises in Djibouti (Energy for Africa, SELECT, Synergy) each with one off installation projects in the refugee settlements. Solar modules, batteries and other materials associated with the solar system are imported from Middle East and Europe.

##### Micro-Entrepreneurs:

Micro-enterprises and entrepreneurs in serve most of the daily solar and electrical needs of the camp. Supply chains of such enterprises are linked to Djibouti City.



### NGOS AND INTERNATIONAL ORGANISATIONS

#### UNDP, UNHCR, IOM, FAO, LWF, LIFE, DRC, NRC, WFP

##### LWF, NRC, DRC and LIFE:

Have carried out many programs associated with Livelihoods in the past, all running for very short periods. However, many of these programs have resulted in increased livelihood activities and local innovation.

##### UNHCR

Primary stakeholder when working in refugee settlements. It is the entry point for many livelihood programs as well as in many cases a co-ordinator. It is currently looking at increasing its focus on livelihood development and thus a limited future aid provision period. WFP is a key stakeholder for distributions of ration and cash aid within the camp.

##### FAO and IOM:

Innovating towards improved agriculture, food security and livelihoods in Djibouti. Their work includes host, refugee and migrating communities and they both work closely with the Djiboutian government.

### GOVERNMENT AND POLICY

#### ADDS, Ministry of Energy, Ministry of Agriculture, ONARS

##### Ministry of Energy

The Ministry of Energy has developed a roadmap for energy access in Djibouti and focusses on last mile access.



## 9. Role of SELCO Foundation and UNITAR

### SELCO Foundation

**SELCO brings 25 years of experience in implementation of energy solutions for a range of under-served populations across various contexts and role of SELCO Foundation across the program will be on the following aspects:**

- Orientation workshops and identification of champions
- Program design and strategic direction
- Sharing of knowledge and learnings from similar contexts and programs
- Capacity building (in technology, finance and delivery models), exposure and mentorship of local stakeholders
- Hand on support of local stakeholders on aspects of system design, guidelines for procurement, financial modeling etc
- Sharing existing templates and formats that the local partners can customise

### GPA Coordination Unit, UNITAR

**The GPA serves as the humanitarian sectors mechanism for systemic action on sustainable energy. The Coordination Unit executes the day-to-day coordination of activities associated to the GPA Framework. Its core functions are promoting change, convening multi-stakeholder processes and improving coordination and capacity. The GPA Coordination Unit will:**

- Facilitate workshops and use its convening power to bring relevant parties to the discussions
- Facilitate and coordinate ongoing assessment activities and identifying appropriate project partners
- Facilitate and coordinate in-country training with appropriate content leads
- Support the fundraising process to roll out relevant programmes
- Sharing knowledge and learnings from the programmes to the wider GPA community

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### Training and Cross Learning Initiatives

#### **For Energy+ Livelihoods Ecosystem Building**

- Local Energy Ecosystem Champions Training
- Trainings for incorporating energy access in developmental programs by international agencies

#### **For Energy+ Livelihoods Financing**

- Trainings for designing end user financing strategies for energy solutions
- Trainings for building and developing financing chains, SHGs and other financing mechanisms

#### **For Energy Enterprises and HR Development**

- Trainings for effective functioning of energy enterprises for rural communities
- Training of trainers for energy technical skills transfer with trainers
- Trainings for technological innovation development with a special focus on energy efficiency and sustainable energy access

## 10. Implications on On-going Energy Access and Livelihoods Refugee Programs

### **Djiboutian Workforce Development Project (WFD):**

<https://www.edc.org/djiboutian-workforce-development-project-wfd>

**The Lutheran World Federation (LWF):** Sustainable livelihoods, education and training programs

LWF Kenya-Djibouti assists in the refugee camps Ali Addeh/ Hol Hol. They assist with Education, Child Protection, Community Service, Sustainability Livelihoods and management and Community Peace and Self Management. A special focus lies on our work with the elderly, people with disabilities and children.

<https://kenyadjibouti.lutheranworld.org/content/what-we-do-kenyadjibouti>

**WFP programs:** Resilience building through asset creation activities.

<https://www.wfp.org/countries/djibouti>

**NRC - Norwegian Refugee Council:** Vocational training for livelihood skills + micro-enterprise training + built environment + education

<https://www.nrc.no/countries/africa/djibouti/>

**DRC - Danish Refugee Council:** Capacity building programs + Agriculture livelihood training programs

<https://drc.ngo/where-we-work/east-africa/djibouti>

**Islamic Development Bank: Health System Strengthening with Emphasis on Maternal, Newborn and Child Health (MNCH) Project**

The objectives of the Health System Strengthening with Emphasis on Maternal, Newborn and Child Health (MNCH) Project is to contribute towards strengthening the health system to meet the health care needs of the population, and improve access to quality health care services. It will also contribute towards achieving the National Health Development Plan (NHDP 2018-2022) of Djibouti which aims at enhancing access to quality preventive and curative health care services.

<https://www.isdb.org/news/isdb-and-djibouti-sign-us-65-million-agreement-for-health-and-communication-projects>

**The OPEC Fund for International Development - OFID - Improvement of Dryland Livelihoods in Djibouti and Somalia through Productivity Enhancing Technologies**

(i) deliver technological packages to increase and stabilize the productivity of sorghum/maize-based rainfed production systems and of fruits/vegetables irrigated based agriculture farming systems; (ii) deliver technological packages to increase and stabilize the productivity of rangelands and small ruminants; (iii) demonstrate and promote efficient watershed management technologies; and (iv) improve the capacities of national research and extension staff to provide support services to pastoralists, agro-pastoralists, and irrigation farmers

<https://opecfund.org/operations/list/improvement-of-dryland-livelihoods-in-djibouti-and-somalia-through-productivity-enhancing-technologies>

**Julia Taft Fund for Refugees :** Livelihood improvement + Capacity building

Past grant recipients have implemented projects focused on increasing livelihood opportunities; renovating education facilities for the children and adolescent refugees in Djibouti City; developing youth empowerment program

<https://dj.usembassy.gov/call-for-proposals-julia-taft-refugee-fund-for-fy-2019/>

**Aid to Artisans:** Artisanal capacity building and market development

<http://ata.creativelearning.org/2017/05/15/artisan-women-initiatives-in-djibouti/>

## 11. Conclusion

The report summarises some of the immediate challenges of the residents of the refugee camps in Djibouti. These challenges have been addressed with appropriate solutions in a manner that is closely linked to an ecosystem approach, leading to long term sustainability.

Settlements like the ones described in the report bring to the forefront some of the stark challenges of people residing with little foresight about long-term plans: from a physical residence point of view. Numerous insecurities arise because of the temporary nature of such camps, resulting in barriers to even designing long term interventions, thus leading to a vicious cycle of short-term projects. These short terms projects benefit no one in the long run, nor the residents or the funders. The interventions proposed to take into consideration the lack of existence of long-term plan and have been made fluid for any changes in policies or physical displacement.

Innovating sustainable energy solutions for camps in Djibouti pushes all boundaries (in terms of lack of resources) and thus any new intervention developed can be replicated in any other areas with similar challenges: e.g. other refugee camps, disaster relief camps and in some of the new slums of large cities across the world. Insecurity in terms of long-term future can be a deterrent in the holistic and secure development of children in these areas and thus it is critical for other stakeholders to step in and come up with sustainable solutions which then can increase chances of livelihoods, better education and reliable health services: fulfilling the basic needs to build up dignified and contributing citizens of the future. Positive contributions from such communities will also enforce ownership of host countries or societies leading to a more permanent solution for all.



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