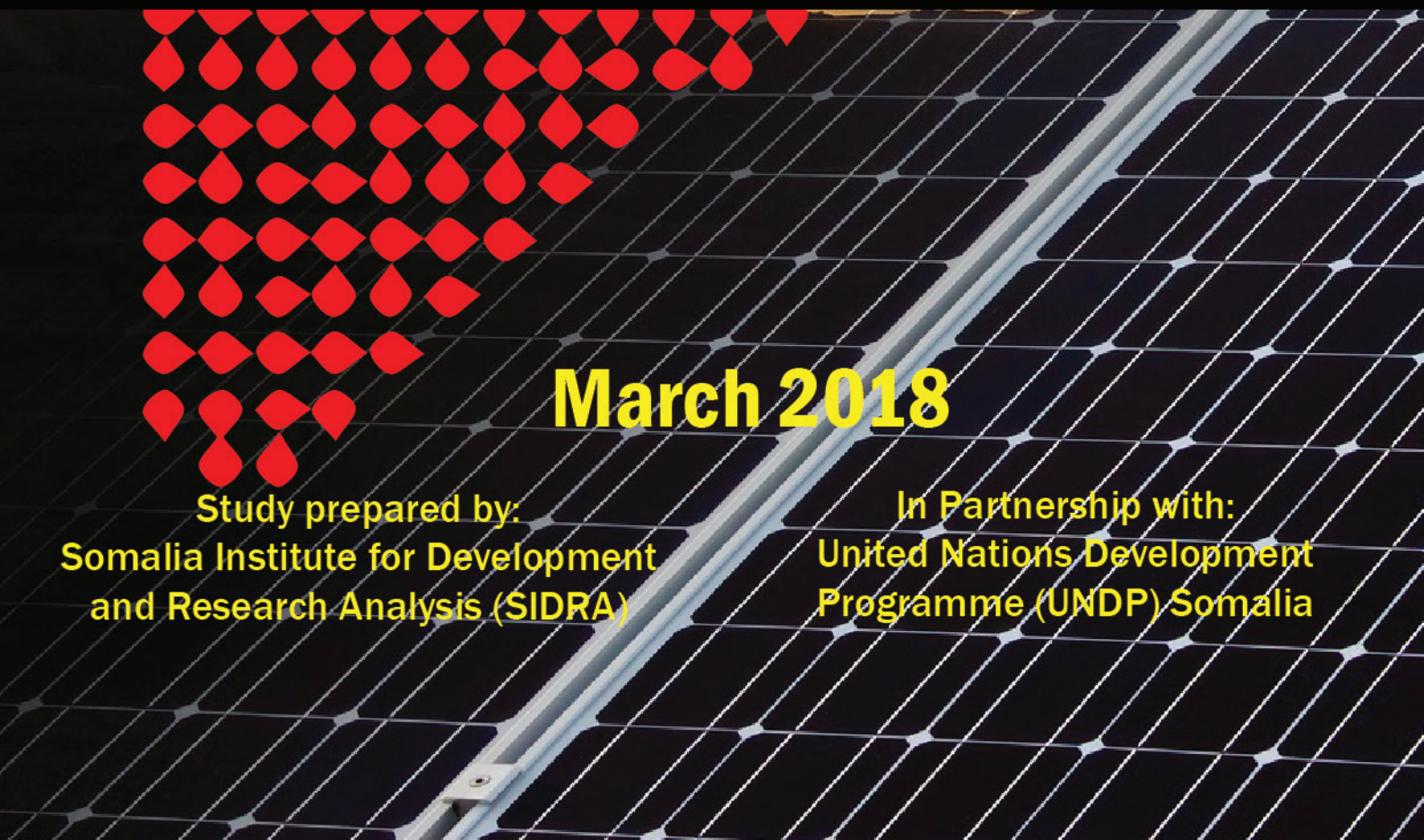
Localizing the Sustainable Development Goals (SDGs) & SDG7 in Puntland



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Study prepared by:
Somalia Institute for Development and Research Analysis (SIDRA)

In Partnership with:
United Nations Development Programme (UNDP) Somalia

The Somali Institute for Development and Research Analysis (SIDRA) Garowe,
Puntland State of Somalia
Tell: +252-5-846044

Email:

info@sidrainstitute.org

Website:

http://www.sidrainstitute.org

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List of Acronyms.

AfDB – African Development Bank

ESAIP – Energy Sector Action and Investment Plan

FGD – Focus Group Discussion

FGS – Federal Government of Somalia

GIS - Geographic Information System

ICT – Information and communication technology

INDC - Intended Nationally Determined Contributions

IPP – Independent Power Producers

KII – Key Informant Interviews

MDG - Millennium Development Goals

MoPIC - Ministry of Planning and International Cooperation

NSO - National Statistics Offices

PDF – Puntland Development Forum

SDG - Sustainable Development Goals

SWG – Sectorial Working Group

SIDRA – Somali Institute of Development and Research Analysis

SNDP – Somali National Development Plan

UNDG - United Nations Development Group

UNDP - United Nations Development Programme

USAID - United States Agency for International Development

Executive Summary

The global development scene continues to experience huge challenges among them extreme poverty; inequality and injustice; and a changing climate that threatens all humanity whether in developed or less developed countries. Faced with this reality, the world came together in September 2015 and adopted 17 Sustainable Development Goals (SDGs) crafted through the most consultative process ever to address the enormous global development challenges for the next 15 years.

The design of SDGs clearly stipulated that success will depend on strong and well-coordinated local actions with active engagement of all stakeholders including government, development agencies, civil society, community based organizations, academia and private sector; a process referred to localization of SDGS. Localizing SDGs requires clear understanding of the country technical, organizational and governance environment and adaptation of the SDGs to changing country contexts. Since the SDGs came into effect in January 2016, the Somalia Institute for Development and Research Analysis (SIDRA) has taken a key role in generating data, information and knowledge to facilitating localization of SDGS in Somalia.

A policy brief prepared by SIDRA in 2016 highlighted the many challenges of localizing SDGs in Somalia. At the national level, localizing SDGS requires an environment that ensures peace, security and good governance and a government structure where citizens are empowerment to actively participate in development. At the community level, localizing SDGs requires high level of development awareness and ownership among community members and a good appreciation of local needs, resource availability and limitation and opportunities. Institutionally, localizing SDGs requires strong local institutions to provide leadership and facilitate the process including collecting, analyzing and using information to make informed decision; formulating relevant and locally effective policies; and effectively designing, implementing, monitoring and evaluating development initiatives that respond to local needs. In Somalia, most of these structures are weak or are completely missing and there is a big concern on availability and accuracy of Monitoring and Evaluation (M&E) systems.

Building on SIDRA's work on Sustainable Development Goals (SDGs), the United Nations Development Programme (UNDP) provided support to the institute in September 2017 to undertake a study on "Localizing SDGs in Somalia" with the aim of generating information and knowledge that would contributing to efficient process of localizing SDGs in Somalia. For this study, emphasis was placed on SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all). SDG 7 was selected as the pilot goal because of the big challenges that Puntland and Somali faces in terms of access to energy on one hand and the big potential the country must develop renewable energy sources, particularly solar and wind power.

The study was carried out between September 2017 and January 2018 and was organized in three work areas: (i) Explore the environment, challenges and opportunities for localizing SDGs in Puntland; (ii) Generate data and information on the status of SDG 7 and provide the baseline for monitoring future progress on SDG7 in Puntland; and (iii) Based on the results of i and ii, localize SDG goal 7 with the aim of increasing use of solar power in Puntland. Public Surveys, Focus Group Discussions and Key Informant Interviews were conducted at two urban areas (Bosaaso and Garowe) and two rural areas (Ely and Galdogob). A total of 800 participants were engaged at the four locations. Although the study focused on Puntland, considering the similarity between Puntland and the rest of the country in terms of level of institutional and human capacity, evolving governance structure, and social, economic and environment development constrains, it was expected that the results and experience gain would be applicable to the rest of the country within defined scope of application.

The study reached concrete findings in the three work areas which allowed it to make solid conclusions and recommendations. On the first work area, the study found out that organizations were aware about SDGs and had aligned their works with SDGs. However, at community level, awareness about localization of SDGs was low and confined to development agencies. Priority SDGs include those in the areas of health, education, gender equality and economic development. Localization and attainment of SDGs was faced many challenges including lack of localized development plans, weak partnership and collaboration between organizations, limited development resources, cultural and traditional practises that limit development and natural disasters such as droughts that kept reversing the progress made. The study found out that monitoring and evaluation of development effort was critical but was limited by lack of up to date data and limited skills in monitoring, evaluation and reporting.

Looking forward, organizations can take advantage of the good governance, community involvement, collaboration and partnership between organization working in the same local area and progress made in gender equality and education among others to localize and make progress in prioritized SDGs.

On the second component, the study found out that although community use different source of energy, electricity remained the main source of energy. Cooking energy need was still largely met from biomass sources, mainly charcoal in the urban areas and firewood in the rural areas. Awareness about solar and its potential was low but growing steadily. For those using solar energy, it was preferred because it was cheaper, cleaner, available all the times, important in bridging electricity blackouts especially for critical energy needs in hospitals, businesses and for public security lighting. In some area, solar power the only source of energy. Solar power products price ranged widely from few dollars to over a thousand dollars. Solar power was used for wide range of uses, the most common ones being charging of phones, lighting, powering of electronic devices and powering business equipment. Technical capacity in solar power was low and mainly consists of local technicians trained and employed by power companies and solar power businesses.

On the third component, the study developed a guideline for localizing SDGs and used that guideline to localize SDG7. Localization of SDG 7 resulted in a framework for increasing the use of solar power in Puntland. The framework developed covered four strategic areas: (a) Increase awareness on solar power and renewable energy; (b) Increase access to affordable, reliable, sustainable and modern energy; (c) Develop regulation and policy to support growth of solar power and renewable energy; and (d) Development technical capacity to support growth and use of solar power and renewable energy. This framework is applicable for the rest of the country.

To move the process of further localizing SDGs in Somalia, a structure framework referred to as "SDGs Design, Monitoring and Evaluation System (SDGDMES)" that will complement existing tool and process of localizing SDGs.

The study made 14 recommendations to groups of organizations as summarized below:

i. The government, through the leadership of Ministry of Planning and International Cooperation (MoPIC) should develop a policy to guide development of solar power by reducing cost of solar power products, ensuring availability of quality solar power products and creating conducive environment for investing in solar power. Government will see support from development agencies to support development and implementation of the policy.

ii. MoPIC should ensure development projects focus on local priorities; are align to SDGs; have locally adapted indicators, baselines and targets; are monitored, evaluated and progress reported to local stakeholders. To facilitate this process, MoPIC in collaboration with United Nations Development Programme (UNDP) and development partners should setup a common updatable and public accessible reporting platform with disaggregated and georeferenced data.

iii. MoPIC in collaboration with UNDP, SIDRA and other development and government agencies should support the recently established Puntland Development Forum (PDF) to make it functional and establish effective Sectoral Working Groups (SWG) with representation of government institutions, development agencies, civil society, academic institution and relevant private sector organization. The PDF and the SWG should collaborate to elaborate and implement the frameworks proposed by this study to address factors that limit the use of solar power in Puntland.

iv. MoPIC should organize SDGs needs assessment at district levels to provide the information required to integrate SDGs in local development plans including district, regional and state development plans. These assessments would also provide localized baseline for future monitoring and evaluation.

v. MOPIC in collaboration with other partners should set up an institutional capacity for information generation, its utilization, policy formulation, its implementation and evaluation (SDGs Design, Monitoring and Evaluation System (SDGDMES)).

vi. UNDP and other development agencies should support a training programme targeting government institutions, development agencies, civil society organizations and academic institutions to build the capacity to deal with all aspects of localizing SDGs. The training program will be implemented in collaboration with academic institutions and specialized training centres and

selected resources persons.

vii. All development agencies should commit to adapt their development projects to local development priorities through active and open engagements of all stakeholders, through timely monitoring and evaluation of every project and by reporting progress made transparently to all stakeholders and on public accessible data and information platform.

viii. UNDP and other development agencies should support development of common library of easy to use SDG localization tools and resource that will be used by all organization working in the local areas to allow organization to partner, collaborate and share experiences. To start the process, available SDG localization toolkits and resources should be adapted to the local context.

ix. Civil Society Organizations (CSOs) should create a national wide SDG awareness and advocacy program through radio, tv and social media and other community avenues such as prayer gatherings with two components: (a) Awareness creation and advocacy on SDGs, localization of SDGS, renewable energy and solar power at all levels; and (b) Promoting participation of all stakeholders especially women, girls and marginalized groups in development planning and implementation. The program should have a lead CSO and coordinated through the Sectoral working group.

x. CSOs should promote communication, partnership, collaboration and sharing of experiences between organizations working in the same local area to avoid duplication of efforts and to ensure that all accessible areas are well covered.

xi. Academic institutions should work together to elaborate and implement the strategic objective of developing technical capacity to support growth and use of solar power and renewable energy proposed in the general framework for increasing use of solar power in Puntland. To manage the process, the academic institutions should form a platform for training and research on SDGs, renewable energy and solar power. Additionally, Technical Vocational Education and Training (TVET) should play a key role by aligning ongoing vocational training with the market industry needs for labour.

xii. Academic institutions should design training programs and courses on renewable energy and solar power and introduce these in the academic programs. This process should be coordinated through a platform for training and research to take advantage of the different competences, expertise and resources and to avoid duplication of effort. The training program should be supported by UNDP and key development agencies undertaking SDG7 related activities.

xiii. Academic institutions should undertake research studies and build databases, tools and methodologies on SDG localization, renewable energy and solar power with the support of government, development agencies and the private sector.

xiv. Academic institutions should develop short structured course to build the capacity of government and development organization on all aspects of localizing SDGs. The course should be coordinated through the SDG training and research platform and supported by UNDP and other development agencies.

xv. The private sector should take advantage of the big growth potential for renewable energy and solar power by increasing their investment on solar power and taking advantage of the strategic solar power development programs of the government and development agencies.

Chapter 1. Introduction

1.1 Background

The Global Development Agenda 2030 adopted by UN member states in September 2015 defines the global development challenges and objectives for the period 2016 to 20130 (UN, 2015). This agenda builds on the Millennium Development Goals (MDGs) and includes 17 Sustainable Development Goals (SDGs) covering a total of 169 development targets.

Agenda 2030 seek to address current global development challenges among them extreme poverty, inequality and injustice and climate change. It provides a framework that calls for a political commitment by all UN member states to sustainable development. Building on the lessons learnt from the MDGs, the new framework aims to balance economic development against environmental protection and the wellbeing of all people.

The experience gained from the MDGs (2000 to 2015) shaped the design of the new development agenda and while it still defines development goals, target and indicators, it focuses on implementing development initiatives at the local level, involving all stakeholders and giving local needs and priorities high importance, a process referred to as "localization" of the global development agenda.

Localizing is important because the 2030 agenda is very wide in scope and ambitious and cannot be achieved by the action of governments alone. The success of 2030 agenda largely depend on strong and well-coordinated local actions with active engagement of all stakeholders including government, civil society and community based organizations, academia, private sector and local leaders (ACSC, 2016).

The United Nations Development Group (UNDG) has elaborated the process of localizing the SDGs (UNDG, 2015) and two web tools (UNDG, 2017; Global Taskforce, 2017) identifies two groups of distinct tasks: (a) Lobbying and advocacy to create awareness on SDGs at the local level; promote accountability of government and other stakeholders to the local population; and created ownership and community buy-in and (b) setting up mechanisms (processes, tools, instruments) for effective implementation of SDGs at local level. More specifically, the process involves the following tasks:

i. Lobbying and advocating at the local level to create awareness on the SDGs, engage stakeholders and promote local ownership and buy-in of development plans.

ii. Setting up of a transparent environment that allows inclusion of all local stakeholders (government, civil society organization, private sector, academia, traditional and religious leaders and local communities)

iii. Identifying the roles of the different stakeholders, their capacities and assessing the critical capacity gaps that are not covered by the participating stakeholders.

iv. Selecting relevant SDGs targets and indicators and adaptation them to the local realities and contexts and setting up simple but efficient system for monitoring, evaluating and reporting progress including procedures for updating primary and secondary data sources.

v. Actively participating in the identification of development needs, development of integrated development plans and implementation of these plans.

How this process is organized will be different from one country to another depending on the local context but will results mainly in the development of strategies (mechanisms, tools and processes) that will facilitate implementation of integrated development plans that specifically address local needs and priorities so that efforts made to achieve global and national development goals follow a process that involves all stakeholders and directly addresses the development needs and priorities of the local people.

1.2 Study rationale

The concept of localizing SDGs is highly relevant to Somalia and the country realization of its development goals articulated by the Federal Government of Somalia (FGS) in the Somalia Compact (FGS, 2013a), the Somalia National Development Plan (Federal Government of Somalia, 2016) as well as the regional development plans such as those of Puntland (Puntland State of Somalia, 2016) and Somaliland (Republic of Somaliland, 2017). Localizing SDGs in Somalia means that the regional, district and local communities will have a central role in defining their needs and aspirations and that all stakeholders will be involved in the process. It also provides the opportunity of integrating into development planning innovative development models that have proved successive at the local level, for example, making use

of Public Private Partnership model in development planning in Puntland.

Localizing SDGs in Somalia however presents a unique challenge. According to a policy brief prepared by the Somali Institute for Development Research and Analysis (SIDRA, 2016), localizing SDGs in Somalia presents many technical, organizational and governance challenges. The brief identified 17 constrains that need to be addresses to effectively localizing SDGs in Somalia. A few of these are highlighted here:

i. At the national level, localizing SDGS requires an environment that ensures peace, security, good governance and a government structure where citizen are empowerment to actively participate in development.

ii. At the community level, localizing SDGs requires high level of development awareness and ownership by community members and a good appreciation of local needs and opportunities as well as resource availability and limitation.

iii. Institutionally, localizing SDGs requires strong local institutions to provide leadership and facilitate the process including collecting, analysing and using information to make informed decision; formulating relevant and locally effective policies; and effectively designing, implementing, monitoring and evaluating local development initiatives.

In Somalia, most of these conditions and structures are weak or are missing. To effectively localize SDGs, it is necessary to understand the existing environment and the prerequisites for localization. This study will therefore contribute to the process of localizing SDGs in Somalia by undertaking a comprehensive study in Puntland covering three study components: (a) Exploring the environment and prerequisites of localizing SDGs in Somalia; (b) Generate baseline data and information for one pilot SDG; and (c) Using the results of the first two components to localize the pilot SDG. This study assumes that Puntland provides a unique opportunity for a pilot regional SDG localization study whose results can be extended to the rest of the country.

1.3 Selection of a pilot SDG

The goal of providing access to affordable, reliable, sustainable and modern energy (SDG goal 7) is selected as the pilot development goal for this study. Somali faces huge energy challenge on one hand and big potential of developing its abundant renewable energy potential on the other hand. For this reason, SDG 7 is selected as the pilot localization SDG for this study.

United States Agency for International Development (USAID) Somali economic growth strategic assessment highlights availability, reliability and cost of energy as a major development constrain. 87% of the energy comes from firewood and charcoal and is used for cooking, 11% comes from imported petroleum products and is used for transport and running of engines and machines while 2% comes from electricity produced by diesel powered generators and is used for lighting and other house and office energy use (USAID, 2014).

Energy cost is very high, with electricity estimated at around 1 USD for 1 KW/h compared to an average of 0.2 USD for the same in neighbouring Kenya and Ethiopia (USAID, 2014). Less than 25% of Somali have access to electricity, which is supplied by private companies who control distribution and price. The fossil fuel electricity generation system is highly inefficient with diesel cost reaching 60 to 65% of the revenue generated and power loss during transmission reaching 40% of the total power generated (Jami Nelson, 2015). On the other hand, firewood and charcoal energy have led to extensive land degradation and causes health problems. Somalia energy sector therefore requires urgent attention.

Renewable energy presents a great opportunity to improve Somali energy situation. On one hand, Somali has unique renewable energy resources with very high solar radiation potential and many sites suitable for on and off shore wind power (Jami Nelson, 2015). On the other hand, as research and development bring better technology and global investment in renewable energy, the cost of developing renewable energy in developing countries is reducing.

United Nations Development Programme (UNDP) support to the Somali development initiatives have contributed to creating an environment for improved access to energy. For example, Somali has formulated a climate change National Adaptation Plan of Action (FGS, 2013b) and gained access to the Global Environment Facility Least Developed Countries Climate Fund. Further, Somalia is now part of the global initiatives on energy including 'Sustainable Energy for All' and a member of the International Renewable Energy Agency.

Furthermore, recent developments have prepared the ground to accelerated uptake of renewable energy. For example, Somalia Intended Nationally Determined Contribution (INDC) prepared by the government (FGS, 2015) in line with UN Framework Convention on Climate Change emphasis the potential and value of renewable energy in Somalia. Somalia INDC associates extensive cutting of trees for firewood and charcoal with widespread land degradation and increase in climate related hazards such as droughts and floods emphasizing the need to embrace renewable energy in solving the current energy problems. Adoption of sustainable energy strategy will eventually ensure environment systems with stable water and land ecological process that will contribute significantly to a durable drought and flood solutions in Somalia. This potential and opportunity has been demonstrated by investments in over 20 renewable energy projects in recent years, especially in the Northern part of the country as demonstrated in the Somali Renewable Energy Forum (Shuraako, 2016) organized at Hargeisa Somaliland in February 2016. See also online: http://shuraako.org/forums/sref.

However, despite the positive prospects, development of renewable energy is Somalia still faces many challenges as summarized below:

i. The legal framework for energy development is weak and its implementation is constrained by weak institutional capacity at national, regional and local levels.

ii. The technical skills to design, develop, and maintain energy systems are weak and there is a severe shortage of skilled professionals in the energy field, especially in the renewable energy sector.

iii. Somali women are largely underrepresented in the energy sector, creating a large gender disparity. Participation and active involvement of women is required for improvement and progress in the sector.

iv. The use of charcoal and firewood is causing widespread land degradation across the country thereby contributing to climate change and associated climate hazards. At the same time, the pollutants produced by fire wood and charcoal are causing health problems.

v. Access to capital and emerging renewable energy technologies is limited. This is more so among women. Concerted efforts must be made to increase access to renewable energy capital and technology.

vi. There is a disparity in energy access between urban and rural areas with the people in the rural areas having less access to energy. Energy solutions for the rural areas will require addressing the unique lifestyle of the Somali rural population especially pastoralists that move frequent in search of water and grazing land.

Despite the highlighted challenges for developing renewable energy in Somalia, there are many opportunities to address these constrain and challenges:

i. Somalia is going through a development transition from emergency and humanitarian state to recovery and development thereby the change to address highlight constrains and challenges in this process.

ii. There is a growing partnership and collaboration between government, private sector and development agencies working together to deliver more durable development solutions

iii. Due to recent environmental challenges, droughts and climate change threats and risks, all stakeholders have a high interest and commitments to environmental protection, clean energy and more inclusive development.

The goal of providing access to affordable, reliable, sustainable and modern energy (SDG 7) is therefore selected for this study.

1.4 Study goal, objectives and research questions

The overall goal of this study was to contribute to an efficient process of localizing SDGs in Somalia. The study was carried out in Puntland with the expectation that the results and lessons learnt from the study will be applicable to the rest of the country. To realize its goal; the study had three objectives as follows:

i. Explore the environment, challenges and opportunities for localizing SDGs in Puntland.

ii. Generate data and information on the status of SDG 7 to provide a basis for localizing this goal and provide baseline data for monitoring future progress on this development goal.

iii. Based on the results of i and ii, localize SDG goal 7 with the aim of increasing use of solar power in Puntland.

Based on these objectives, the study defined the following research questions:

a) What is the prevailing environment under

which SDGs are implemented in Puntland?

b) What constrains and challenges limit efficient implementation of SDGs in Puntland?

c) What are the opportunities for efficient implementation of SDGs in Puntland?

d) What is the state of SDG 7 (Access to affordable, reliable, sustainable and modern energy for all) in Puntland?

e) What local actions can contribute to increased use of solar power use in Puntland.

1.5 Study Components

Working with Puntland Ministry of Planning and Internal Cooperation (MoPIC), this study was organized along three components in line with the three study objectives. It is important to observe that the study provides the opportunity to build capacity on SDG processes within MoPIC.

Component 1:Explore existing environment, challenges and prerequisites for localizing SDGs in Puntland

This component explored the process of localizing SDGs in Puntland. The results of this component included data, analysis and recommendations to effectively address SDGs localization constrains and challenges in Puntland. The insight obtained from this component will help in policy recommendation to improve the process of localizing SDGs in Puntland and Somalia in general. This component covered the following tasks, in line with the relevant study research questions:

a) Evaluated the environment under which SDGs are localized in Puntland and the mechanisms, tools and process required to effectively localize different SDGs to the context of the local development priorities with involvement of all stakeholders.

b) Evaluated the constrains and challenges that limited the efficient localization of SDGs in Puntland including the role that different organizations in Puntland play.

c) Evaluated the opportunities for efficient localization of SDGs in Puntland including the role that different organizations in Puntland play.

Component 2:Generate data and information on SDG 7 to provide a baseline for monitoring future progress on this development goal

This component aimed to generate data and information on SDG 7 to provide a basis for localizing this goal which was selected as a pilot SDG for this study. The component also aimed to provide a baseline for monitoring future progress on this development goal. The component particularly focused on the use of solar power in Puntland and explored issues such as level of awareness, the financial, market and technical factors that promote or hinder its uptake and the benefits of using solar power. This component covered the following task in line with the study research questions:

a) Explored existing data and information on SDG 7 in Puntland including existing legal framework for the development of renewable energy sector in Puntland and Somalia.

b) Assessed community awareness on solar power and identified existing channels for solar power promotion and marketing.

c) Identified the technical, operational and maintenance support needed for successful development and up scaling of solar power in Puntland.

d) Assessed the benefits realized by using solar power (social, health, education and environmental) and draw lesson for up scaling solar power in Puntland and Somalia.

Component 3:Localize SDG goal 7 with the aim of increasing use of solar energy in Puntland and Somalia as a whole

Building on the results of component 1 and 2, this component localized SDG goal 7 with the aim of developing a strategy for increasing use of solar power in Puntland. This component covered the following tasks in line with the study research questions:

a) Developed a protocol for localizing SDG 7 in Puntland in collaboration with MoPIC and in line with the local reality based on the results of component 1 and 2.

b) Undertook localization of SDG7 at selected locations and captured the result of the localization process in a framework that would contribute to increased use of solar power in Puntland.

c) Developed a framework for monitoring progress made in attaining SDG 7 in Puntland collaboration with MoPIC.

Chapter 2. Literature Review

2.1 The 2030 Agenda for sustainable development

United Nations Sustainable Development Summit in September 2015 adopted the 2030 Agenda for Sustainable Development (UN, 2015). The agenda is a set of 17 Sustainable Development Goals (SDGs) with a total of 169 targets to end poverty, fight inequality and injustice, and tackle climate change and other natural disasters by 2030. The SDGs build on the Rio+20 outcomes (UN, 2012) and the Millennium Development Goals (UN, 2000) which covered eight anti-poverty targets that the world had committed to achieving by 2015.

Unlike the previous commitments, the SDGs are ambitious and very comprehensive in scope and have been developed through unprecedented dialogue among UN Member States, local authorities, civil society, the private sector, and other stakeholders. Although the SDGs are universal and apply to all countries in the world, in each country, they are implemented at the local level with local and regional governments working together with local stakeholders.

2.2 Localizing and mainstreaming SDGs

It is estimated that two thirds of the 169 SGDs targets require substantial action at the local level. As such, SDGs cannot be achieved without turning the focus to local level (Franziska Schreiber, 2016). The presents a challenge in Somalia where security condition determines what can be done at the local level. The SDGs Global Task Force (2016) observes that although SDGs are global, there realization will depend on what happens at the local level. The task force observes that taking SDGs to the local level is important for the following reasons:

i. Achieving SDGs depends on ability to make them relevant to the local realities. Although SDGs are global, they are achieved at the local level;

ii. Achieving SDGs targets are directly or indirectly the responsibilities of local and regional governments as well as local institutions and stakeholders;

iii. Delivery of SDGs takes place at the local spaces. Taking the SDGs to the local level is the only way to ensure that the marginalized groups are fully involved. Those who are likely to be left behind are mostly at the local level.

The process of localizing SDGs involves a wide range of activities. Various literature enumerates the key steps. They include:

i. Awareness creation and advocacy among stakeholders to create understanding of SDGs and their relevance in the local area;

ii. Aligning SDGs to existing local development plans and strategies;

iii. Creating an enabling environment to facilitate active engagement and participation of all stakeholders'; and

iv. Monitoring and evaluating the progress being made in realizing SDGs at the local level.

Schreiber highlights some of the challenges faced in localizing SDGs. These include limited collaboration between stakeholders; lack of relevant local data to monitor progress; difficulties in aligning local plans and strategies to SDGs; and limited local resources to facilitate the process of localizing SDGs. Schreiber notes that there is no one right way of localizing SDGs and observes that this is a new process for government and local institutions that demands trial and error with continuous improvement.

2.3 Toolkits for localizing SDGs

The United Nations Development Group (UNDG) have elaborated tools for localizing "mainstreaming" SDGs. Among other tasks, localizing SDGs requires lobbying and advocacy to create awareness on SDGs at the local level; promote accountability of government and other stakeholders to the local population; create ownership and community buy-in; and set up mechanisms (processes, tools, instruments) for effective implementation of SDGs at local level.

Localizing SDGs (UNDG, 2017) involves a range of tasks:

i. Lobbying and advocating at the local level to create awareness on the SDGs, engage stakeholders and promote local ownership and buy-in by all stakeholders;

ii. Setting up of transparent environment that allows active inclusion of all stakeholders (government, civil society organization, private sector, academia, traditional and religious leaders and local communities);

iii. Identifying the roles of the different stakeholders, their capacities and critical capacity gaps that are not covered by the participating stakeholders;

iv. Selecting relevant SDGs indicators and adaptation them to the local realities and contexts;

v. Setting up simple but efficient system for monitoring, evaluation and reporting progress (including procedures for updating primary and secondary data sources);

vi. Participating in the identification of development needs and integrated development plans and implementing these plans together with all stakeholders; and

vii. Setting up of data collection system and monitoring and evaluation framework to allow timely assessment of progress made against set SDG targets.

Building on the efforts made and experiences gained by different organizations and stakeholders in mainstreaming SDGs, the Global Task Force, UNDP and UN Habitat have setup a tool box for localizing SDGs (Global Task Force, 2016). The initiative allows users to search for the most appropriate tools and strategies for 'localizing' the SDGs. This comprehensive toolkit has a wide range of resources and tools for localizing SDGs, many of which have been contributed by organization and institutions engaged with the implementation of SDGs at local levels in different countries and context.

One elaborate tool for localizing SDGs is the roadmap for localizing the SDGs in cities prepared to support cities, local government and regions to deliver the 2030 Agenda (Add Ref). Although the roadmap specifically targets cities and local governments, interesting insights can be drawn on the wide range of SDG localization actions as summarized on Table 1 below.

Table 1: Range of SDG localization actions

Localization Area	**Potential actions and activities**
Raising awareness on SDGs	• Reach out to all sectors of society through traditional and social media, • Identify and work with existing engagement platforms. Initiate new platforms, • Utilize formal and informal education platforms (schools, colleges, universities, polytechnics, adult education, etc.), • Utilize local cultural heritage platforms, • Ensure all gender, especially women and girls are involvement, • Nominate community popular leaders as campions for SDGs.
Advocating for SDGs	• Involve local actors in the process of defining national development strategies, • Advocate for national strategy to reflect local needs and priorities, • Push the central government to create the necessary enabling environment by decentralizing governance and financing to the local levels, • Gather facts and evidence to support SDG advocacy work, and • Promote partnership (multi-level and multi sector)
Implementing local SDG realization plans	• Select priority SDGs based on the local contexts through two step processes: (a) Identifying local needs as articulated in existing development plans and strategies, and (b) Prioritizing local needs

	these through multi-stakeholder participatory forums, • Build synergies between stakeholders by identifying key players, their areas of focus and roles, • Mobilize resources by linking ongoing initiatives to locally identified SDGs targets, • Identify action and resources needed for prioritized local SDGs and drawing local SDG plan or aligning with existing local development plan, • Setup institutional arrangements and framework for implementing SDGs at the local level, • Mobilize resources by encouraging participation of wide range of stakeholders – local universities can provide technical support, private business can provide services, partners can re-allocate budget to SDG actions, etc, • Develop capacity of the local stakeholders and facilitating skills sharing between stakeholders e.g. of best practices, and • Identify policy that needs to be changed to facilitate SDGs implementations.
Monitoring and Evaluating progress on SDGs	• Develop a set of local indicators to monitor the prioritized local SDG targets, with the opportunity of MOPIC and statistics and M&E departments using CSO mapping and reporting templates that include SDG indicators for different sectors. • Ensure baseline data is gathered from all stakeholders, collect data, monitor and evaluate progress, and • Engage all stakeholders in processing, analysing and assessing progress made in achieving SDG.

Guidelines and resources to implement potential SDG localization actions suggested in Table 1 above can be found in the SDG localization toolkit (UNDG, 2017).

2.4 Localizing SDGs in Somalia

Early 2016, SIDRA analyzed the imperatives of localizing SDGs in Somalia through a comprehensive assessment of the SDGs in relation to various Somalia development strategies. From that assessment, SIDRA prepared a policy brief (SIDRA Policy Brief No. 3) that explored the imperatives of localizing SDGs in Somalia. The policy brief called for mechanism to formulate, implement and monitor strategies at the local level to ensure that global, national and sub national targets are realized. The brief proposed a process that involves all stakeholders including government, development agencies, civil society and local communities in awareness creation to develop ownership and institutional capacity development to enable implementation of the SDGs and monitoring and evaluation of progress.

The brief further highlights some of the challenges expected in localizing SDGS in Somalia. These included:

i. Low level of human, institutional and legislative capacity across the country thereby constraining progress in achieving SDGs.

ii. Lack of disaggregated statistics (expect for a few sectors) constraining monitoring and evaluation of progress made towards SDGs.

iii. Lack of clear macro-economic framework and development strategies in the regional and sector development plans. Most plans are not based on

explicit quantitative economic framework and do not provided a basis for evaluating and monitoring their performance.

iv. Widespread degradation of land, water and other natural resources due to lack of relevant environmental legislation. This compromises long term development by greatly increasing vulnerability of people, livelihood systems and whole ecosystems to natural hazards.

v. Access constrains by development agencies due to insecurity in parts of the country leading to very low human development in the affected communities.

The new Somalia National Development Plan (NDP) launched in late 2016 is different from the previous development plans in that it is closely aligned to the SDGs. The plan highlights the commitment of the government to poverty reduction and to progress towards meeting the SDGs. It recognizes that making progress on the Sustainable Development Goals (SDGs) will assist Somalia integrate into the increasingly globalized economy. During the process of developing the SNDP, efforts were made to align it with the SDGs.

In line with this commitment, the SNDP mainstreams SDGs into each sector and aligns its goals, targets, and indicators to SDGs as prioritized for the Somalia situation. The plan proposes an annual progress report on the SDGs that will measure the localized goals, targets and indicators along four thematic groups:

i. Economic growth and related sectors (SDGs 1, 2, 5, 7, 8, 9 and 10);

ii. Social services (SDGs 3, 4 and 6; 3);

iii. Climate change and environment (SDGs 11, 12, 13, 14 and 15); and

iv. Enablers to sustainable development (SDGs 16, and 17)

2.5 Revised Puntland development plan and the SDGs

In mid-2016, Puntland revised its development plan to align the states development planning to two newly launched development instruments: (a) The Somali National Development Plan (SNDP) and (b) The Sustainable Development Goals (SDGs). The planning process followed a consultative and participatory approach that was led by the Ministry of Planning and International Cooperation (MoPIC) with technical and financial supported by Capacity Development Strengthening Institutions project of UNDP.

Through active consultation and participation, the new plan was fully owned by the people of Puntland and reflected their needs and aspirations (Puntland State of Somalia, 2016). The plan, which was designed to have the same time frame as the SNDP (2017 to 2019), has continued to be implemented through close collaboration of the Puntland Government and its development partners.

The assessments of previous development plans by MoPIC as an input to the planning process revealed that they only attained 30 to 45% of their projected targets. Based on this assessment, the new plan included two important elements: (a) Detailed and thorough Monitoring and Evaluation Framework, and (b) Strategies for effective implementation of the plan. The revised plan identifies six thematic pillars including Governance, Security, Justice, Livelihoods, Social development, and Infrastructure. To realize the plan, a thorough and rigorous monitoring and evaluation framework was defined with clear indicators, baselines, targets and milestones for each sector. Clear means of verifying performance were also identified. This rigorous monitoring and evaluation framework aimed to ensures that activities led to realization of the set outputs and outcomes.

The long standing assurance of peace and stability in Puntland means that state can make development strides towards growth and prosperity especially building on many existing opportunities including being in an ideal geographic location with access to international sea routes; extensive coastline and rich marine resources; significant livestock economy and potential for mineral resources; stability and security; democratization and decentralization; free trade; vibrant private sector; and population known for its entrepreneurship and trade skills.

Throughout the process of developing the revised development plan, the SDGs and their localization was given a central role and importance. Each sector took due consideration of the SDGs and their relevance in line to the strategic actions proposed for the sector. Further, the revised plan was not designed as a standalone plan but as a contributor to the Somali Federal Government National Development Plan and the commitments of the SDGs under the individual goals. Extensive effort was put in the development of the revised plan to align each sector with the relevant SDGs to ensure that the proposed plans contributes to the attainment of the 17 SDGs as show below:

- Governance – SDGs 1, 2, 10, 11, and 16;

- Justice - SDGs 2 and 16;
- Security – SDGs 16 and 2;
- Social - SDG 2, 3, 4, and 5;
- Livelihood – SDGs 1, 2, 6, 7, 8, 9, 12, 13, 14, 15, and 17; and
- Infrastructure – SDGs 2 and 17.

All six sectors of the revised plan are aligned to SDG 2 (End hunger, achieve food security and improved nutrition, and promote sustainable agriculture) with SDG 16 (Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels) aligned to 3 sectors, SDG 1 (End poverty in all its forms everywhere) aligned to 2 sectors and SDG 17 (Strengthen the means of implementation and revitalize the global partnership for sustainable development) aligned to 2 sectors also. It is important to note that all 17 SDGs are aligned to one or more of the six thematic pillars of the revised development plan.

The main challenges that face the implementation of the development plans is the scarce financial resources which to creates delays and time-gaps in implementing development agendas and limited institutional capability in terms of technical expertise and work capacity. The coordination of the implementation of the development plan is through the Sectorial Working Groups and the plan attempts to incorporate lessons learned from former coordination structures such as the Puntland Aid Coordination (PAC) which focused on performing thematic coordination support to the New Deal Somali Compact and Peace and State Building Goals (PSGs). An important aspect of the revised development plan is its strong monitoring and evaluation aspects. Under the leadership of MOPIC and in collaboration with relevant authorities, development partners and stakeholders, the performance of the revised development plan is continuously monitored using a number of tools including annual development plans and monthly, quarterly and annual progress reports. All development projects carried out by government institutions and development agencies prepare specific project monitoring reports.

As mentioned, integration, coordination, monitoring and evaluation are expected to be carried out by Sectorial Working Group (SWG) and the Puntland Development Forum (PDF). Functional SWD and PDF would: (a) Coordinate at state level; and (b) Provide engagement with municipalities, federal government, development agencies and donors; (c) Set priorities and allocate resources; and (c) Manage relations with development partners. This function of the two structures has not been systematic due to weak operational capacity. However, the importance of SWG and the PDF has been emphasised and proposals made to strengthen them.

2.6 Monitoring and evaluating SDGs

The UN Sustainable Development Solution Network (2015) has prepared a report on Indicators and a monitoring framework for the SDGs. The report, a product of almost 2 years of consultation with nearly 500 organizations and thousands of individuals, provides the framework for monitoring the SDGs. The report emphasis that quality, accessible, timely and reliable disaggregated data is needed to measure progress made by countries in implementing SDGs. It is important to ensure no one is left behind. This cannot be achieved without good quality data, hence the importance of gathering local level data. The report notes that the importance of monitoring has come to the front following the experience with MDGs. The lesson learnt from the MDGs is that monitoring of only useful if it's timely, accurate and disaggregated. The other important lessons from the MDGs is that there so many knowledge gaps when it comes to assessing progress and that new and innovative monitoring approaches are required to fill these gaps.

From this report, effective monitoring and evaluating SDGs requires three components: (a) Set of well-crafted indicators, (b) Data collection and management capacity, and (c) Utilization of emerging technologies and new sources of data. The report argues that with the on-going data and information revolution, in the future, a change is required where the statistical offices acquires more of a coordination role that aggregates data from a wide range of sources including from development agencies, private sector, educational institutions and individual citizens. Ministries of planning and National Statistics Offices (NSO) then take the role of coordination including setting data quality standards, launch of surveys, ensuring comparability and harmonization of the data coming from the different sources, and M&E oversight.

Good indicator framework helps develop implementation framework and allocate resources equitably, help measure progress towards sustainable development, ensures accountability of all stakeholders, and helps understand what works and what does not work. Good indicators should be

aligned to local needs and priorities; build on existing monitoring systems; and aligned with set of indicators suggested at the global level.

The monitoring of SDG at national level should start early to allow reviews within country and align and compare with global expectations. This also requires that national SDG monitoring baselines are established early enough. Indicators for monitoring SDGs should have the following qualities:

i. Be as few as possible and based on existing monitoring systems available (since data collection is expensive).

ii. Aligned to global suggested indicators and complemented by local indicators as necessary.

iii. Simple and single variable. Simple to compute or compile, with direct policy implication and easy to communicate. Composite variable based on other variables should be avoided where possible. Such complexity may require estimations and will be difficult to translate into policy or to communicate to stakeholders and lay persons.

iv. Easy to collect and process in a high frequency (annual) rate and coming in in a timely manner.

v. Be based on agree international measurements methods, best practices and standards.

The source of SDG monitoring data includes: (a) Census data, (b) Household surveys, (c) Agricultural Surveys, (d) Economic Surveys, (e) GIS, (f) Civil registration, (g) Administrative data and (h) Environmental data. SDG monitoring process should evaluate these sources to identify where different data can be sourced from. Such assessment should include recording frequency and disaggregation of data. Unlike in many other countries, as the SIDRA policy on localizing SDGs highlighted, these sources are largely lacking or weak in Somalia and therefore there is a need to find new approaches for availing the data needed to assess progress on SDGs in Somalia. One opportunity that Somalia can tap is the ongoing data revolution including use of smart phones to collect georeferenced data, decreasing cost of satellite data, increasing free open source data. Additionally, the decreasing cost collecting, hosting and processing data should contribute to changing how SDGs can be monitored and evaluated in Somalia.

2.7 Somalia and SDG 7

Africa population is growing rapidly and it is estimated to reach 2 billion people by 2040, of which 60% will be living in urban areas. At the same time, the continent economy is rapidly diversifying and transforming. This population growth and economic transformation are demanding large investment in energy supply systems, which are currently lagging the global average. Currently, Africa energy consumption stands at one-third of the global average and is largely based on traditional non-renewable energy including fossil fuel and wood. Despite this situation, Africa has one of the best renewable energy potential in the world, including wind, solar, hydro and geo-thermal.

Sustainable Development Goal 7 seeks to ensure access to affordable, reliable, sustainable and modern energy for all. Energy is important to all sectors, from health, to security, to education to name just but a few. There is almost no aspect of human life that does not depend on energy. Even environmental sustainability and the health of the earth depend on access to energy directly or indirectly. Equally so, lack of access to energy is a major constrain to social and economic development. It is estimated that in Sub-Sahara Africa and South Asia, 1 in 5 people do not have access to electricity. For these people, they will not be able to unlock development potential until they get access to energy.

Somali belong to this group of countries that have a high energy deficit and there is a big interest by development partners to help Somali improve access to energy by finding clean, efficient, and affordable alternatives to traditional energy. Fortunately, Somali has a very big potential for renewable energy.

2.8 Situational analysis of Somali energy sector

Availability, reliability and cost of energy are major development constrains in Somalia. 87% of the energy comes from firewood and charcoal and is used for cooking, 11% comes from imported petroleum products and is used for transport and running of engines and machines while 2% comes from electricity produced by diesel powered generators and used for lighting and other house and office energy use (USAID, 2014).

Electricity is very expensive, with cost estimated at around 1 USD for 1 KW/h compared to 0.2 USD for the same in neighbouring Kenya and Ethiopia (USAID, 2014). Electricity is supplied by private companies who control its' distribution and price and less than 25% of Somali have access to electricity. The fossil fuel electricity generation system is highly inefficient with diesel cost reaching 60 to 65% of the revenue generated and power loss during transmission reaching 40% of the total power generated (Jami Nelson, 2015). On the other hand, firewood and charcoal energy is in crises due to the extensive land degradation problem that it causes and the health problems associated with its use. Therefore, the current state of the energy sector in Somalia calls for an urgent need to find and develop alternative sources.

Renewable energy presents a great opportunity to improve Somali energy situation. On one hand, Somali has a unique environment for renewable energy with one of the highest solar radiation in the world and many sites suitable for on and off shore wind power generation (Jami Nelson, 2015). On the other hand, as research and development provide better technology and global investment in renewable energy increase, the cost of developing renewable energy is drastically reducing. This potential and opportunity has been demonstrated by investments in over 20 renewable energy projects in recent years, especially in the Northern part of the country (Shuraako, 2016).

Despite the positive prospects, development of renewable energy is Somalia still faces many challenges:

i. The legal framework for energy development is weak and its implementation is constrained by limited government and community institutional capacity.

ii. The technical skills to design, develop, and maintain energy systems are weak and there is a severe shortage of skilled professionals in the energy field, especially so in the renewable energy sector.

iii. Somali women, despite being primary stakeholders in the energy sector because of their role in household energy needs, are largely underrepresented in the sector creating a large gender disparity. Participation and active involvement of women in the sector will be imperative for improvement and progress in renewable energy in the country.

iv. The use of charcoal and firewood is causing widespread land degradation across the country thereby contributing to climate change and associated climate hazards. At the same time, the pollutants produced by fire wood and charcoal are causing health problems and straining the already stressed health facilities in the country.

v. Access to capital and emerging renewable energy technologies is limited. This is even more the case among women as compared to men. Concerted efforts must be put to increase access to renewable energy capital and technology, and especially by Somali women.

vi. There is a disparity in energy access between urban and rural areas with the people in the rural areas having much less energy access. Energy solutions for the rural areas will require addressing the unique lifestyle of the rural population especially pastoralists that must move frequent in response to seasonal changes in availability of water and pasture for their livestock.

The challenges highlight the urgent need to fast track the development of renewable energy in the country. However, recent developments have prepared the ground to accelerated uptake of renewable energy. For example, Somalia Intended Nationally Determined Contribution (FGS, 2015) prepared in line with UN Framework Convention on Climate Change (UN, 1992) highlight the potential and value of renewable energy in Somalia. Somali INDC links extensive cutting of trees for firewood and charcoal with widespread land degradation and increase in climate related hazards such as droughts and floods and emphasis the big potential for renewable energy in solving the current energy problems.

United Nations Development Programme (UNDP) support to the Somali new deal (FGS, 2013a) and other development initiatives has contributed to creating an environment for improved access to energy. For example, Somali has formulated a climate change National Adaptation Plan of Action (FGS, 2013b) and gained access to the Global Environment Facility Least Developed Countries Climate Fund. Further, Somalia is now part of the global initiatives on energy including 'Sustainable Energy for All' and a member of the International Renewable Energy Agency.

2.9 Energy sector as a national priority

The Somali National Development Plan (FGS, 2016) identifies the limited availability, reliability and the high cost of energy as major constraints for economic growth. The Somali energy sector faces major

challenges among them inadequate qualified and skilled personnel, very high cost of electricity which is also poorly generated, transmitted and distributed and which reaches only about 15% of the population, deletion of biomass to supply cooking energy and low penetration of modern and environmentally friendly energy, especially in the rural areas. Further, development of energy requires functioning transport and logistics sector and fiscal regimes which promote private sector investments, all of which are weak.

Currently, the Somalia energy mix consists of biomass, petroleum products, and a small amount of renewable energy which though small is growing. Biomass energy (charcoal and firewood) constitutes 80 to 90% of the energy needs of the whole country and is mainly used for cooking. Petroleum products constitutes 10% of the country energy need and are used for transport, electricity generation, cooking and lighting. In addition to gravely degrading the Somalia environment, firewood and charcoal have negative health impact on women and girls. This can be mitigated by introduction of cheaper, cleaner and more efficient modern and environmentally friendly energy sources such as solar power.

Electric power generation (almost entirely diesel-fuelled) accounts for about 2% of the country energy need. Several cities (Garowe, Hargeisa, Bossaso, Berbera, and Qardo) have small power grids with many challenges including power loss of up to 50% over the distribution network, low voltage that affects operation of appliances and limited supply with some have power for only 6 hours per day.

The Somalia National Development Plan (SNDP) has therefore identified the development of renewable energy (wind and solar power) as a key strategy to address the energy challenge in the country (FGS, 2016). Renewable energy potential is abundant with solar energy potential ranging from 5 to 7 kWh/m2/day with over 310 sunny days in a year. Somalia is also characterized by strong wind regimes with annual average speeds of between 1.5 to 11.4 m/s. Solar and wind power therefore present substantive opportunities to diversify and expand the energy infrastructure in Somalia. The level of investments on the two so far is low mainly due to lack of conducive policy framework, funding constrains and insecurity. Despite these constrains, the government has identified renewable energy as a key contributor to the county energy mix and a key driver for business and employment. The government aims to equip all government building with solar power.

According to the SNDP, some investments have been made in solar energy by international donors and aid agencies and in the water and health sectors. For almost a decade, there are successful solar powered water pumping systems and vaccine refrigeration units in hospitals and health centres working sustainably across the country.

As part of the SNDP infrastructure development, Somali government aims to expand access to clean energy (solar, wind, biogas) and reduce biomass based energy sources like fuel wood and charcoal. Across all interventions of the national development plan, solar and other renewable energy sources have been prioritized.

Assessment carried out of the energy sector in Puntland as part of the revised Puntland Development Plan (Puntland State of Somalia, 2016) indicates that most of the population used charcoal and firewood as their primary source of energy implying great dependence on biomass as a main source of energy and resulting in environmental degradation. Petrol and petroleum products come second and electrical power generators come third.

In residential, commercial and industrial sectors, electric power is mainly used, while diesel generators for various power needs such as pumping water domestic and livestock use in the rural areas. Electricity is supplied to the public by private power generators who depend on diesel generators, while organizations and business have their own private generators. Puntland has a large untapped oil reserve in its regions mainly in Nugaal, Sool and Dharoor areas in Bari region. If the ongoing oil exploration in Puntland turns positive, this will fundamentally change the economic structure and the livelihoods in Puntland.

The revised development plan aims to introduce solar and wind energy in all Puntland to reduce the reliability of diesel engines. In this regard, HirShabelle Development Plan is targeting solar power for irrigation purposes. The development plan aims to tap on the country huge renewable energy potential, mostly solar and wind power. To develop renewable energy, the plan should establish and strengthen economic foundation to accelerated sustainable growth. So far, some efforts have been done to installation solar energy systems in hospitals and clinics, solar power pump for irrigation, solar energy systems for schools and street solar lighting systems.

2.10 Somali energy sector investment plan

African Development Bank (AfDB) has prepared a Somalia Energy Sector Needs Assessment and Investment Programme (AfDB, 2015) which observes the importance of energy as one of the infrastructure required for productive and social development. The needs assessment and investment programme and based on government prioritization of the energy sector. At the same time, AfDB 10-year strategy five priority areas, referred to as the "High 5s" include light up and powering Africa, feeding Africa, industrializing Africa, integrating Africa, and improving the quality of life for the people of Africa. As such, investments in energy is one of the bank's high 5. Through this assessment and investment plan, the bank aims to play a central role in delivering light and power to all Somali people.

Although Somali requires infrastructure in all areas, energy is important because it related to social development (lighting, appliances, education, security) and economic development by driving industries. With low public revenue, Somali faces many development challenges including unemployment especially for youth, poor environment for private sector investment, weak institutions and weak infrastructure.

Since Somalia government is only starting to organize service delivery, ADfB energy assessment and investment plan proposes formation of a parastatal to oversee electrification in the country. The programme urges that with the current process where Somali Federation process is taking shape, it would be preferable to start electrification process at the states level and gradually consolidate into the central government level.

Except for few cities, Somali electricity supply is provided by the private sector. The private sector is organizing itself to improve and modernise the otherwise poor (unreliable, weak, poorly managed, technically deficient) energy system.

The Energy Sector Action and Investment Plan (ESAIP) has three objectives i.e.:

i. Sustainability in fuel supply (especially household fuels) to reduce pressure on the biomass resources (vegetative cover);
ii. Expand access to grid-supplied electricity in cities (based on hybrid power generation, i.e. conventional fuels and renewables, mainly solar photovoltaic) and promote non-grid modern energy services and products to poor rural and nomadic people to improve welfare, productivity and security; and
iii. Build human and institutional capacities.

Renewable energy and solar power would have a key role in the expansion of electrification proposed by the AfDB ESAIP. For example, over 10 years period, renewable (mainly solar power) would contribute 25% of the 200MW installation. This off-grid electricity will improve the living standards of over 1.8 million people through provision of modern energy (lighting, charging, appliances, etc), capacity building and creation of new jobs.

Energy sector investment directly contributes to SDG 7 but also several other SDGs, particularly SDG 15, 1 and 2. One big problem is that 80-90% of Somali household depend on biomass (firewood and charcoal) for their household cooking energy needs, putting the environment at a high risk of degradation and compromising the health of women and girls who are involved in household cooking. Initial assessment indicates good potential for solar and wind power but large-scale development is yet to take place due to number of constrains key among these being financing and regulatory environment. More detailed assessment is required to explore the viability of large scale renewable energy development.

In summary, the investment plan emphasis several critical issues: Need for policy and regulatory framework; Private sector investment arrangement and available financing arrangement; Development of human resource and the capacity of the key institutional capacity; Political environment and governance in an environment of transition and federation process, and Availability of information and data to monitor progress. The plan further emphasis the need for Somali capacity to own and negotiate the process. In relation to implementation of the plan, given the situation in Somali, it will be necessary to undertake continuous monitoring and evaluation to allow changes in the plan as necessary.

2.11 Potential of renewable energy is Somalia

Somali country brief by the Oversees Development Institute (ODI) on accelerating access to electricity in Africa with off-grid solar (ODI, 2016) observes that power in Somalia is provided by few Independent Power Producers (IPPs) who mainly focus in cities. The IPP use generators to produce electricity which is amongst the most expensive in the world, giving it the phrase of "one dollar per light per night". The assessment carried out

for this briefing note that electricity system losses reach 25% to 40% and that electricity reach on average about 15% for the population, with the reach being higher in urban areas (33%) than in the rural areas (4%). Likewise, electricity is most expensive in the rural areas.

The great potential for small off-grid solar power is fuelled by the huge lack and therefore demand of energy in the country and where centralized networks are difficulties of implement. Further, growth of off-grid solar power in Somalia is favoured by the emerging private sector and local capacity for entrepreneurship. The brief observes that the state government has an important role in the development of regional energy policies and since the different states are at different points in terms of policy and regulation, any changes in the energy sector trade regulation made by federal government may affect the state governments and therefore require adequate consultation between the federal government and the states.

State and federal development plans all highlight provision of energy and development of solar power and other renewable energy as a priority. The plans also appreciate the many challenges that face the energy sectors as highlighted elsewhere. These include policy and regulation, financing, limited technical capacity and institutional capacity development. The other challenges highlighted includes poor quality of the solar power products, lack of customer care and after sale service, and lack of awareness on renewable energy outside the cites. Assessments of the sector by AfDB and others indicated that policy and regulation will play a key role in minimizing the perceived risk and therefore raise the level of investments.

The potential of solar power was further elaborated in an assessment of renewable energy in Somalia (Jami Nelson, 2015). The assessment observed that one of the most important factors for economic growth and stability in Somalia is affordable access to electricity. Electricity is however a major challenge in Somalia, being one of the most expensive globally. The assessment revealed that Somali people (entrepreneurs, investors, civil society, and governments) are making concerted efforts to introduce renewable energy solutions to the country to help Somalis achieve affordable, reliable, and efficient energy from renewable sources.

According to this assessment, only 25% population have access to electricity, which also is one of the most expensive in the world, being 4 to 7 times the cost in the neighbouring countries. The assessment found that the private suppliers using old generators are highly inefficient (40% loss during distribution), dangerous (due to lack of quality standard), and unreliable. The assessment estimated that 60% of profit go to purchase of diesel with limited profit to invest in improvements.

Lack of sustainable electricity in Somali has many negative impacts including low economic performance of industries and other energy dependent sectors, destruction of the environment (rapid loss of vegetation cover as 90% cooking and heating depends on biomass), poor essential services like health and education and poor quality of life for the population. Affordable, reliable electricity in Somalia would therefore have multiple direct and indirect benefits.

Renewable energy, especially wind and solar power provide unique opportunity for Somalia due to high amount of these resources, reducing price of the technology, and increasing global investment and interest on these resources for environmental conservation. The growth of renewable energy sector in Somalia is further back up by the following:

i. Vibrant private sector in Somalia with increasing interest by Somali diaspora
ii. Growing demand of renewable energy products by the population and demonstrated success,
iii. Dynamic local partners
iv. Development in the energy sector in the country with effort by key players to come together to tap into the economy of scale
v. Support by the government with clear evidence that the government aims to develop renewable energy and with most of its development plans and strategies highlighting renewable energy as a key contributor to the Somali energy sector.

From assessment of the documents highlighted above, rapid growth in renewable energy sector in Somalia will required the following:

vi. Strong energy governance to create conducive environment for investment (a) Law, acts and regulation for investment, safety and efficiency; and (b) Coordination, collaboration and synergy among the players
vii. Capacity development (institutional and human) in all aspects of the sector,
viii. Bottom up approach that start small and grows – (a) Standalone off grid for homes, buildings and business present unique opportunity –credit arrangement needed to cover upfront cost of unit; (b) micro grids operating either in isolation or connected to other grids – financing instruments required to enable private sector to invest in this area.
ix. Prepare for bigger infrastructure in the future through getting the governance working, building the necessary institutional and human capacity and demonstrating viability through off grid and micro grids.

Chapter 3. Materials and Methods

The study used a set of research materials and methods to accomplish the tasks identified in each of the three components. These included desk review of relevant document and datasets, research surveys to collect relevant data, Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) to address specific SDG localization and solar power growth issues, standard data processing, analysis and presentation, and application of SDGs localization tools and methods.

The specific materials and methods that were used for the three components of the study are summarized on Table 2 below.

Table 2:Study materials and methods

Methods	Task	Materials	Location (and source of Information)
Desk review	-Detailed review of literature on SDGs in Somalia. -Detailed review of databases on SDGs in Somalia	-Ms Excel / MS Word templates (structured documentation and cataloguing of the available resources).	SIDRA's office (published information with emphasis on online resources)
Research studies	-Research survey on localization of SDGs in Puntland including the role of different organizations. -Research survey on growth of Solar power in Puntland.	-2 Mobile phone based research questionnaires (one for each study) -Free online data aggregation platform -SPSS for data analysis -Ms Excel for summarizing research results.	Four cities of Puntland cities of Puntland
Focus Group Discussions (FGDs), Key Informants Interviews (KIIs)	-FGDs on localizing SDG in Puntland, including integrating gender equality and women empowerment. -Interviews with selected solar power operators on technical, operation and maintenance.	-FGDs focus questions (environment, challenges and prerequisites for localizing SDGs in Puntland) -KII focus questions (Solar power technical, operation and maintenance issues)	Four cities of Puntland (FGD and KII participants, Solar power operators)
Workshops	-Adapt SDGs localization toolkit to local context. -SDG localization meetings at four representative locations in Puntland (2 urban and 2 rural locations). -Design and implement framework for monitoring relevant SDG 7 targets (with locally adapted indicators)	-Design and implement framework for monitoring relevant SDG 7 targets (with locally adapted indicators) SDG localization toolkit and guidelines -Puntland adapted localization guideline -Puntland adapted SDG 7 monitoring framework	MoPIC office - adaptation of SDG localization toolkit (MoPIC, SIDRA, UNDP experts) 2 urban and 2 rural location organized by MoPIC with support by SIDRA Expert

Chapter 4. Results

4.1 Data collection structure

To realize the objectives of the study, several data collection activities were organized. These included three public surveys, one Focus Group Discussion (FGDs) and Key Informant Interviews (KII) with informants in the solar power sector. The study engaged a total of 580 public survey respondents, 160 focus group participants, and 80 key informants. The study also engaged with SDGs and solar power experts from Puntland Ministry of Planning and Internal Cooperation (MoPIC) and United Nation Development Programme (UNDP) Garowe office. Table 3 below summarizes the characteristics of the respondents involved in the three public surveys.

Table 3: Characteristics of public survey participants

SDG localization public survey	
Number	260 (Bosaso, Ely, Galdogob, Garowe)
Gender	62% Male, 38% Female
Age	83% less than 50 years
Education	36.6% Primary and Secondary; 60% College, University
Engagement	61.6% with 1 and 5 years; 25.0% with more than 5 years
Sectors represented and	Education and gender; Health; Training and capacity development; Environment; Water and sanitation; business Food security
Solar products users survey	
Number	240 (Bosaso, Ely, Galdogob, Garowe)
Gender	66% Male, 34% Female
Age	Average of 37 years
Education	53% with Primary and Secondary, 33% with College and University, 14% not literate
Sectors represented	Trade and commerce; Development; Education, Agriculture and Livestock; Other sectors
Solar business owners and managers survey	
Number	60
Gender	All male
Role 53.9%	Business owners; 42.3% Manager; 3.8% Staff
Business type	88.5% Wholesale, 11.5% Resellers
Engagement	50.0% in the business for 3 to 5 years; 23.1% in business more than 5 years; 19.2% in the business for less than 1 year

The focus group discussions were held at four cities and focused on the environment under which SDGs are localized and associated challenges and opportunities. The 4 FGDs brought together 160 participants while 80 key informants were interviewed on solar power and its growth in Puntland. The complete list of study participants is presented in Annex 5 and 6.

4.2 SDGs localization environment

The first component of the study explored the process of localizing SDGs in Puntland by evaluating: (i) The environment under which SDGs are localized in Puntland; (ii) The constrains and challenges that limited the efficient localization of SDGs in Puntland; and (iii) The opportunities for efficient localization of SDGs in Puntland and the role that different organizations can play. The results of the analysis of the data collected in respect to these three SDG

localization aspects, which correspond to the first three study questions are presented below.

4.2.1. Environment under which SDGs are localized

Alignment with SDGs: In the four cities, a wide range of organization are involved in development activities including government, development agencies, civil society organizations and community based organization mainly youth and women groups. Almost all organizations (93.3%) reported to had taken some action to align their work with SDGs. Participants identified priority SDGs in Puntland to include goals related to health, education and economic growth.

SDG localization actions: Almost all organizations (90%) had identified specific SDGs to focus on. The process used to align organizations work to SDGs varied but included partnership and collaboration with other organizations (31.7%), internal analysis (25%), and consultation with their target beneficiaries and communities (13.3%) among other processes. More than two thirds of the organizations (66.7%) had mechanisms for engaging marginalized people in SDGs related processes while one third (33.3%) did not have such mechanisms. Involvement of women and girls in localization of SDGs and development project was reported to be in a rudimentary stage although some progress was being made. The participants noted that this is work in progress. In localization of SDGs, most of the organization were involved in awareness creation and some level of advocacy while very few organization are involved in monitoring and evaluating progress in attainment of SDGs. The FGDs observed that although organization were involved in implementing SGDs at local level, the process was not well coordinated.

SDG prioritization tools: To prioritize their work, organization used Puntland National Development plan (51.7%), Internal analysis (30.0%), and the Somali National Development Plan (8.3%). Ely area has a localized strategic development plan which defines the district's development priorities. The FGDs participants noted that the government needs to play the important role of leading, coordinating and facilitating localization and attainment of SDGs.

Partnership for SDGs: More than half of the organizations (60%) reported being aware of organization working together for attainment of SDGs in their areas of operation but one third (33.3%) reported that institutions in their area of work were not working together or collaborating for attainment of SDGs. A few organizations (6.7%) were not sure of the situation.

Policy: Participants of the FGDs were not aware of government policies or process facilitating localization and attainment of SDGs. The government ministries derived they work from the revised Puntland Development Plan which has SDGs integrated in all five sectors. Over half of the organization reported that there was no need of special policies dedicated to support attainment of SDGs while over one third (35%) reported the need for such policies. A substantial number of organizations (10%) were not sure if such policies were needed.

4.2.2. Constrains and challenges limiting implementation of SDGs

Low awareness: The study revealed that there was low level of awareness about SDGs and their knowledge was confined to international organizations and NGOs and almost not existing in other organizations and among community members. FGD participants did not find concrete evidence of organizations working on localization of SDGs in a substantial structure programme. However, some efforts were reported by participants in Bosasso.

Host of challenges: Organization reported the key challenges limiting attainment of SDGs, in order of importance, to included: (a) Limited awareness on SDGs; lack of SDG information and weak alignment of organization work to SDGs; (b) Lack of localized development plans, poor implementation of development plans; limited monitoring and evaluation of development projects and lack of supporting policy framework; (c) Weak collaboration, partnership and communication between organization working in an area; (d) Poor commitment, corruption, misappropriation of resources and lack of accountability; (e) Lack of resources needed for implementation of development projects, (f) Negative cultural and traditional practises that restrict development progress; and (g) Natural disasters such as droughts that affect progress of development projects.

Limited scope: Participants observe that most of the work and actions carried out by organization in relation to localizing SDGs revolved around awareness creation, advocacy, training on SDGs and alignment of organization work to SDGs. Organization were not doing much in other aspects of SDGs and there was a huge gap in other aspects of localizing SDGs such as implementation of SDGs; collecting local level data and monitoring and evaluation.

Monitoring and evaluation difficulties: The participants stressed the need for accountability

and monitoring and evaluating progress made by organizations towards attainment of SDGs. However, participants indicated that at the local level, there was very little effort in monitoring and evaluating progress towards attainment of SDGs. This was attributed to lack of local data and limited skills and experience in data collection, monitoring, evaluation and reporting. FGDs participants however reported that organizations undertook monitoring and evaluation of their own programmes against set targets.

4.2.3. Opportunities for implementation of SDGs

Opportunities: Organization highlighted the opportunities that exists to support attainment of SDGs, in order of importance, to include: (a) Presence of a good environment for development - strong government, continued peace and security, ongoing economic growth and development of service infrastructure; (b) Active engagement of the local communities in development activities; (c) Taking advantage of the progress made in education, gender equality and women empowerment; (d) Investing in training and capacity development; and (e) Collaboration between institutions.

Recommendation: Participants recommended actions to facilitate efficient implementations of SDGs and related actions in a given local area to include: (a) Creating awareness and educating the communities on SDGs; (b) Train relevant government institutions to develop their capacity to lead and coordinate SDG actions taken by different organizations; (c) Growing the economy so that there is adequate resources to invest in development projects; (d) Ensuring that all development projects are monitored and evaluated; (e) Ensuring development projects in all sectors are aligned to relevant SDGs; and (f) Undertaking training on the process of localizing SGDs at the local level. Organizations also indicated areas were need support to facilitate their contribution to attainment of SDGs include: (a) General training in SDGs; (b) Provision of guidelines and tools to support organization in aligning their work to SDGs; and (c) Support in monitoring and evaluation of progress made towards attainment of SDGs.

Figure 1a
Level of Eduction

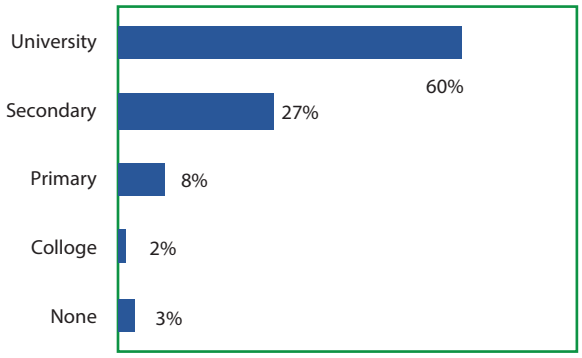


Figure 1b
Which tool does your organization or institution use to prioritize your activities

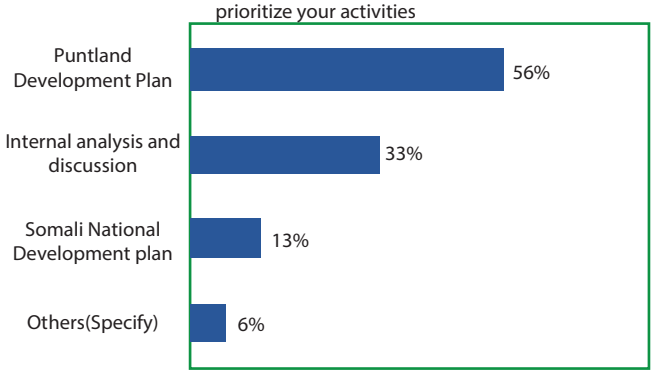


Figure 1c
Is your organization undertaking specific activities to support attainment of the SDGs

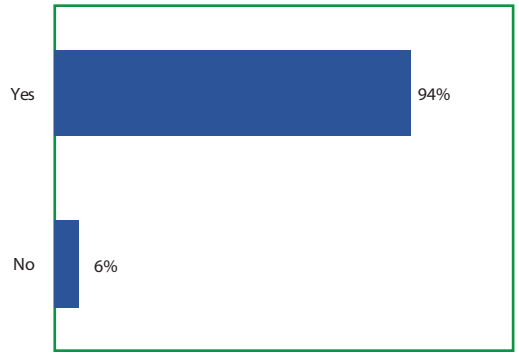
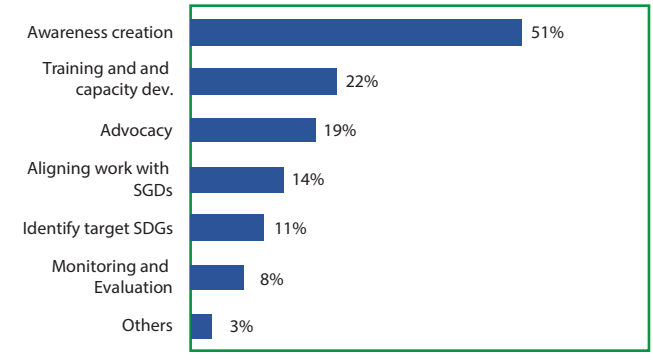
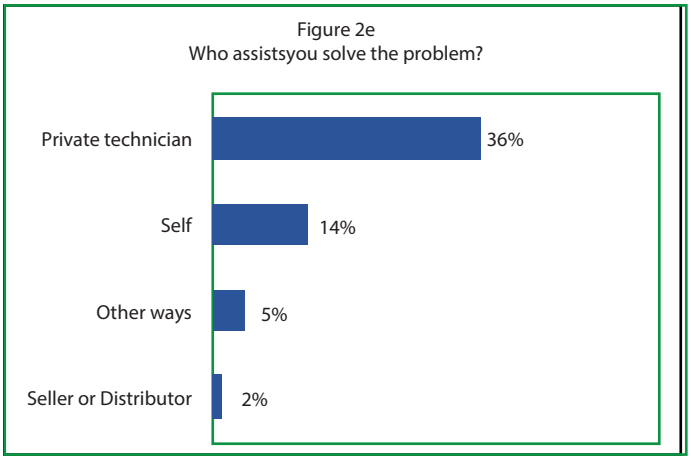


Figure 1d
Is your organization undertaking specific activitiesto support attainment of the SDGs





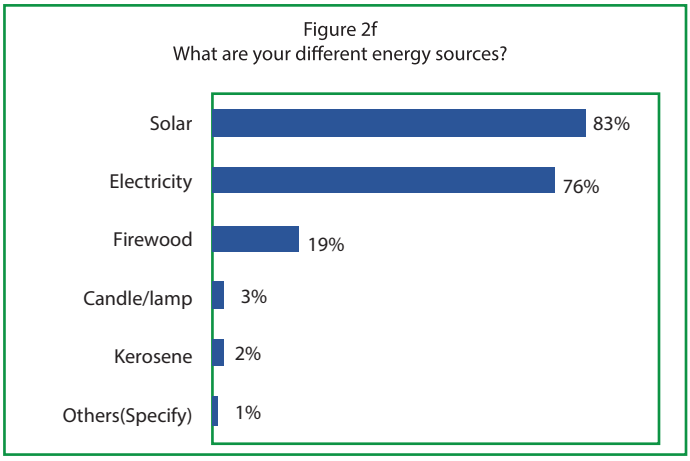


Figure 1: Selected results of SDG localization public survey- (a) Respondents level of education, (b) Tools used to prioritize development activities, (c) If organization is undertaking specific activities to support attainment of SDGs; (d) Activities undertaken by organizations to support attainment of SDGs, e) Top 5 SDGs that organizations are working on, and (f) If organization has identified SDG targets and indicators

4.3: SDG 7 status in Puntland

The second component of the study looked at various aspects of SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all) to provide insight on the fourth study questions on the state of SDG 7 in Puntland. The analysis was required to facilitate the process of localizing SDG 7 and provide baseline information for future progress monitoring. The analysis focused on existing data and information on SDG 7, assessment of community awareness on renewable energy and solar power, and use and benefits of solar power.

4.3.1. Source of lighting and cooking energy

The Puntland Population Estimate Survey (PPES) carried out in 2014 included assessment of access to energy in Puntland. A selection of the energy access data captured by the survey is summarized on Table 4 below.

Table 4: Source of energy for lighting and cooking in Puntland

	A. Source of energy for lighting (% of Respondents)					
	Electricity	Solar	Torch	Firewood	Kerosene	Others
Rural	35.3	2.9	41.4	9.8	9.4	1.3
Urban	81.4	3.0	7.4	3.1	4.4	0.7
Sool	78.9	2.9	5.7	6.6	5.7	0.2
Sanaag	65.4	4.9	5.3	4.8	19.8	0.2
Bari	68.4	2.6	17.8	6.2	3.4	1.7
Nugal	72.6	1.9	19.0	2.0	3.8	0.7
Mudug	67.4	3.2	20.8	4.0	2.3	0.2

	B. Source of energy for cooking (% of Respondents)					
	Electricity	LP Gas	Kerosene	Charcoal	Firewood	Others
Rural	1.9	0.9	2.0	39.5	55.6	0.1
Urban	6.8	3.0	2.3	76.4	11.2	0.4
Sool	4.6	0.8	0.8	78.9	14.8	0.1
Sanaag	5.2	4.1	4.8	72.0	13.6	0.3
Bari	6.5	4.0	2.4	62.1	24.5	0.5
Nugal	3.5	1.3	2.1	63.4	29.2	0.4
Mudug	5.7	1.2	1.4	67.4	24.1	0.1

The data presents big differences in the sources of energy for lighting and cooking between urban and rural areas and from one region to the other. For lighting, electricity is the main source of energy especially in the urban areas. Other sources of energy for lighting include torch, firewood, kerosene and solar. Despite the very high potential for solar power for lighting, its usage is very low. This present a big potential for development of solar power for lighting purpose. For cooking, the main source of energy is charcoal in the urban areas and firewood in the rural areas. Other sources include electricity and Liquid Petroleum Gas (LPG). As with lighting, use of solar for cooking is low, presenting potential for development.

4.3.2. General status of solar power in Puntland

Growth of solar power: Solar power is growing steadily in Puntland but there is big room for growth since the sector is in its infancy stage. The growth picked around 2014 with increase of availability of solar products. This growth is taking place both in urban and rural areas. Solar power is popular because it is available all the time compared to electricity which is rationed sometimes. Puntland has a very high solar power potential because of a very high solar radiation output through the year. Key informers observed that solar power has contributed to growth of businesses in Puntland. Many organization have contributed to the growth of solar power in Puntland. Among these, the key one includes solar power business and power companies, development agencies including local and international NGOs, utility companies such as water and telecommunication companies, government agencies and community organizations among others.

Awareness on solar power: Awareness on solar power is growing especially in the urban areas where most of the solar companies are concentrating their work. Of solar power users surveyed, 29% learnt about solar power from family members or friends while 20% learnt about solar either from development projects or media. 14% got the information from the market while 8% got the information from community groups where they are members.

Use and reason for use: Solar products are used in many ways. Going by the number of times cited, these uses include lighting, charging phones, powering radio and TVs, powering business, refrigeration and doing school work. Use of solar for cooking is cited very few times. 64.1% of respondents opted for solar because of the high cost of electricity, 16.3% took solar as they had no other options while 13.6% opted for solar because it is clean and friendly to the environment. 6.8% selected "other" as the reasons for opting for solar. These other reasons included unreliability of electricity and introduction of solar by development agencies working in their areas.

Cost of solar power products: Cost of solar products varies significantly. Respondents reported costs below 100USD (12.3%), between 100 and 199 USD (29.2%), between 200 and 499USD (31.4%), between 500 and 999 USD (3.3%) and more than 1000 USD (23.6%). 13.5 % of the respondents did not report the cost of their solar products. Slightly more than half (59.2%) of the respondents paid for their solar products in cash while a small number of the respondents got their solar using loans (14.6%) or through support from development organization or as gifts (12.6 %). Financing of solar power products is purely made by the business owners and by the customers. The government is not involved in any financing arrangements. Development agencies contribute in

financing of solar power products in some cases where they may have development project that involve use of solar power.

Benefits: Respondents identified different benefits of solar power. These included lower cost compared to electricity (37.7%), continuity and reliability of solar power (27.5%), providing an alternative source of power (16.9%), being an important lighting solution (12.4%), providing energy for business (9.0%) and security (2.2%). Majority of the respondents (82.5%) who use solar products would recommend them to other users compared to a small number (3.8%) who would not recommend solar power products.

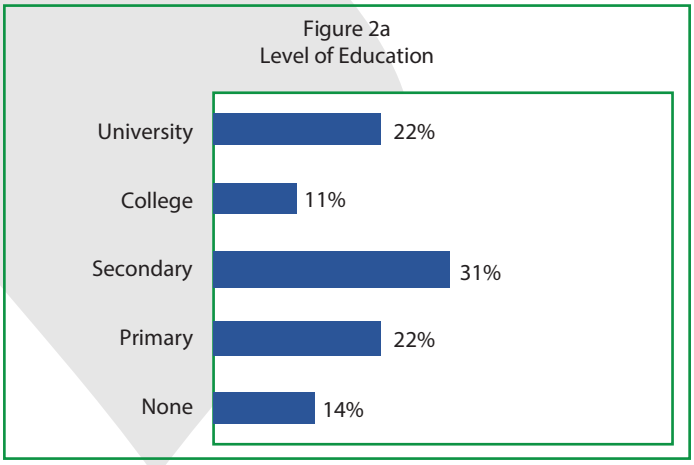
Power mix and electricity cost: Respondents used a combination of power sources with the sources most used being solar (used by 82,5% of respondents), electricity (used by 75.7% of respondents) and fire wood (used by 19.4% of respondents). Of the respondents that were interviewed, 76.6% are connected to electricity while 23.3 % do not connected. Cost of electricity vary widely from one respondent to the other with the average cost for all respondents being 78 USD per month. 46.1% pay between 1 and 50 USD per month, 42.1 % pay between 51 and 100 USD per month while 11.8% pay more than 100 USD per month.

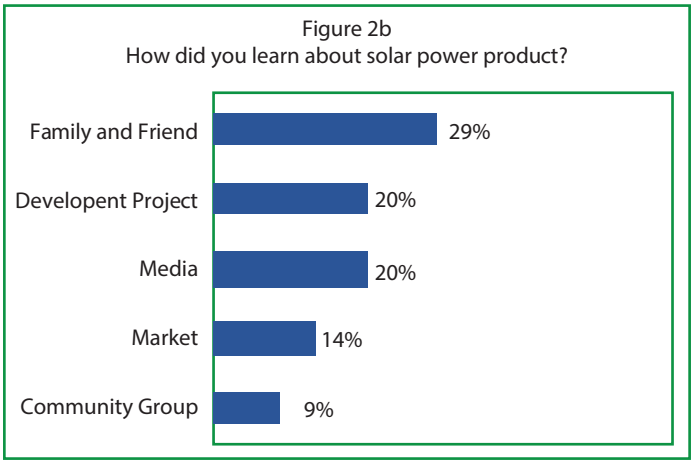
Solar products: Solar businesses sold a mix of solar products with the most common being solar home systems (sold by 92.3% of business); solar batteries (sold by 69.2% of business); solar panels (sold by 61.5% of business); inverters (sold by 57.7% of business); and charge controllers (sold by 53.9% of business). In the rural areas, customers can only purchase simple solar products. For bigger products, the customers must purchase from the bigger cities such as Garowe and Bosasso.

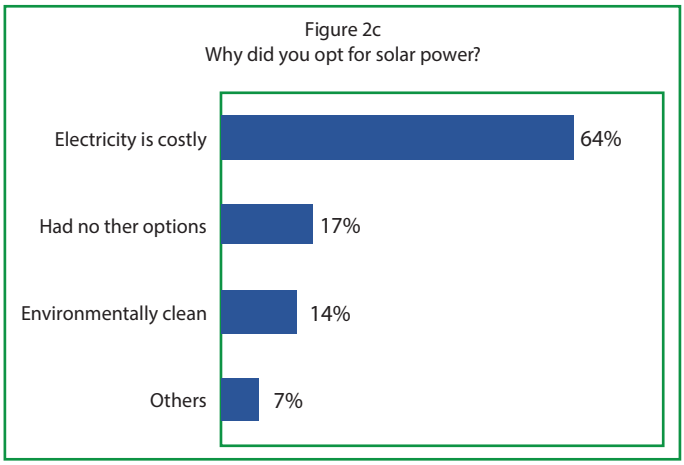
Solar product customers: Solar business sold their products to a mix of customers who included, in order of frequency, individuals, businesses owners, development and community organizations, hospitals, solar product resellers and schools. Customers are both rural and urban with most businesses serving more rural customers compared to urban and peri urban customers. 53.9% of the business served more than 5 customers per month while 42.3% of the business served between 2 and 5 customers per month. Few business (3.6%) served less than 2 customers per month. Majority of the businesses (80.8%) provided training and information to their customers. For those business that did not provide training and information, reasons cited included lack of necessity (either because business are wholesalers or distributors or because technicians are availability to install products) on one hand and lack of capacity on the other.

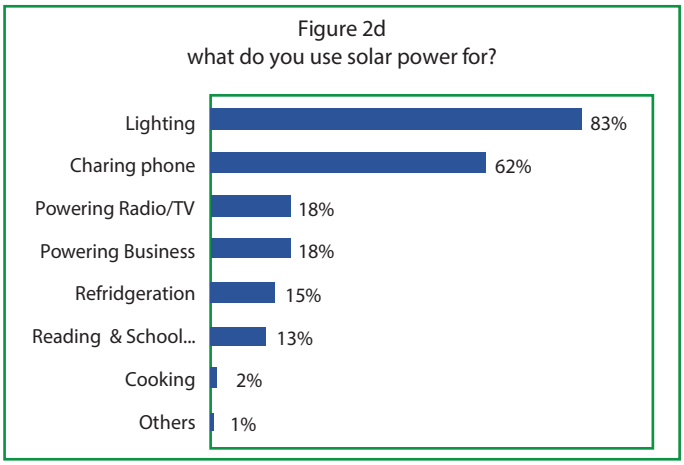
Product quality, life span and warranty: The quality of the product depends on the supplier and at times cannot be assured because the suppliers are outside of Somalia. Solar product users reported a wide range of duration over which their solar products have been in operation, including less 1 year (17.5%), between 1 and 3 years (35.9%), between 3 and 5 years (28.1%) and more than 5 years (4.9%). On the other hand, solar businesses owners estimated a wide range of life span for their solar panels and Solar Home Units - from 5 to 30 years with the average life span estimated being 17 years. More than half of the businesses (53.8%) estimated a life span of between 10 and 20 years while close to one third of the business (30.8%) estimated a life span of more than 20 years. A small number (15.4%) estimated a life span of less than 10 years. Slightly more than half of the business (53.8%) provide warranty for their product while a significant proportion of business (46.2%) did not provide warranty for their products. The business that do not provide warranty cite several reasons including their suppliers being out of Somalia, having not received warranty from suppliers, people not asking for the warranty and warranty being risky to offer.

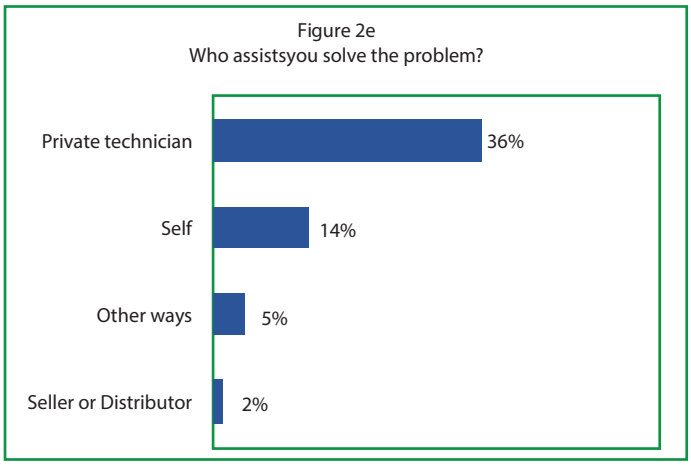
Problems encountered: More than half of the solar product users (56.3%) reported having experience some problems with their solar products as compared slightly less than one third of the respondents (30.1%) who reported having not experienced any problem. Several the respondents (13.6%) did not answer this question. Of those reporting having experienced problems, 50.9% had problem with battery, 19.3% with charger controller; 14.0% with inverter and 10.5% with weather and weak power output. Solar power problems are solved mostly by private technicians (63.8%) or by the owners of the products (24.1%) and rarely by the distributor (3.4%). 8.6% of the respondents indicated other sources of solutions behold these three. From the business owners' perspective, the main problems reported by customers related to battery, inverter and charge controller (61.5%); installation problem (11.5%); poor skills of local technicians (7.7%) and wrong use of the solar products (7.7%) among others. Business solved most of the problems encountered by customers by sending technicians (45.8%), by undertaking repairs or replacing items (33.4%), and by training customers and providing them with information on solar products to avoid problems (12.5%).











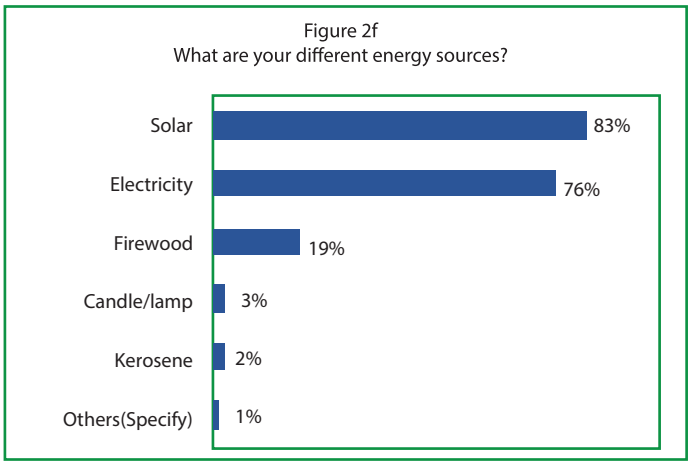
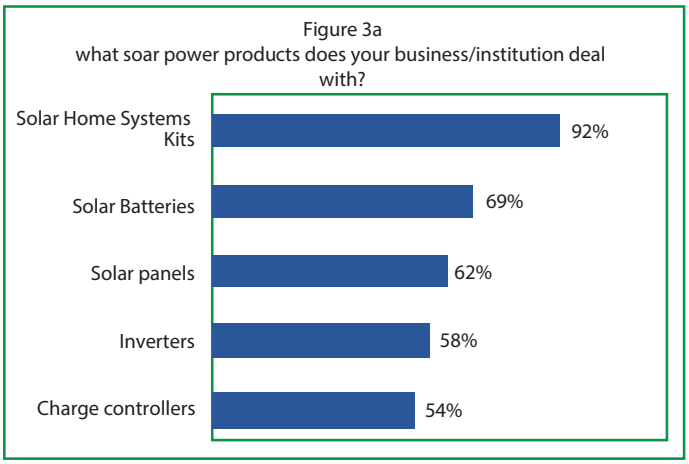
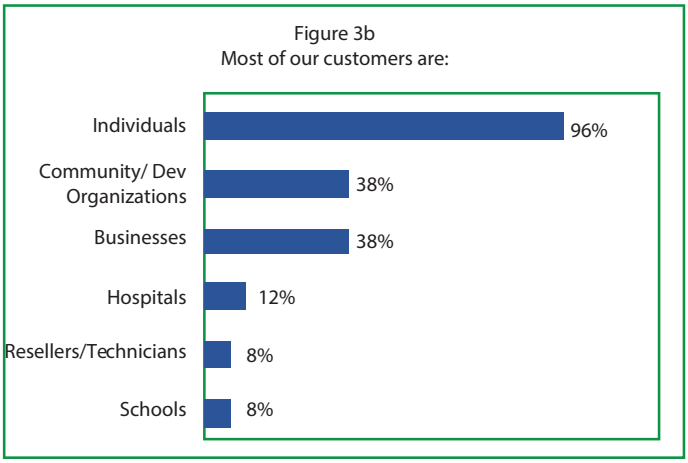
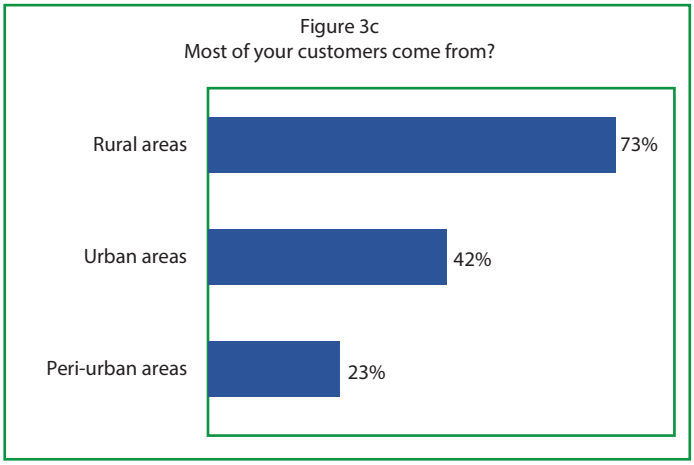
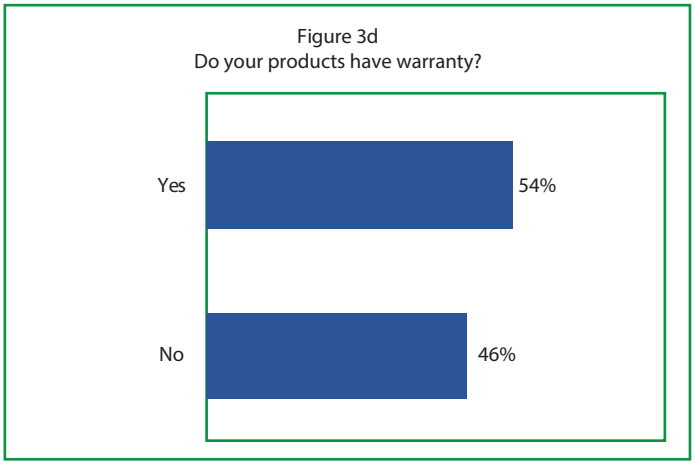


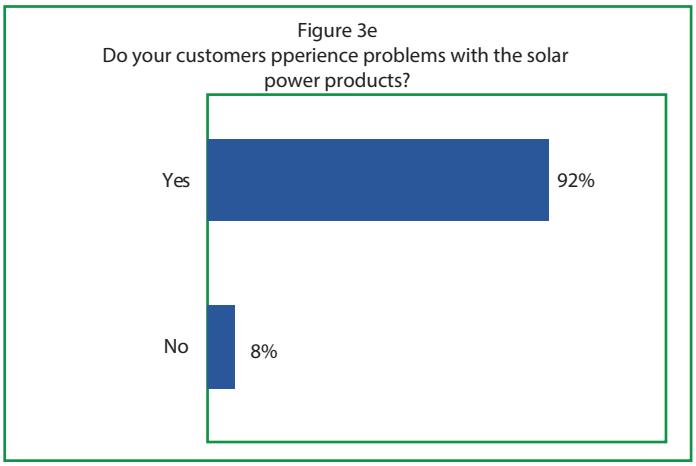
Figure 2: Selected results of Solar products user public survey- (a) Respondents level of education, (b) How respondents learnt about solar power, (c) Why respondents opted for solar power; (d) What respondents use solar power for, e) Who assists solve solar power problems, and (f) Respondents different energy sources.











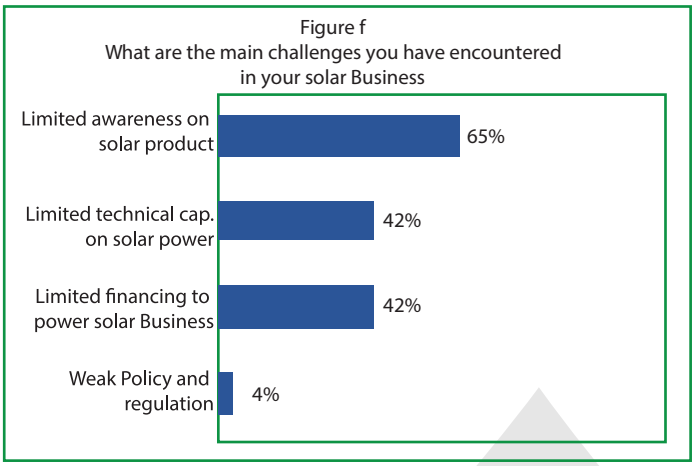


Figure 3: Selected results of Solar business owners public survey- (a) Solar products sold by the business, (b) Types of customers, (c) Location of customers; (d) If products have warranty, e) If customers experiences problems with their solar products, and (f) Main challenges encountered by solar business owners.

4.3.3 Technical capacity for solar power

Setup and repair: The solar products are setup and installed mostly by local technicians (58.3%), by distributor and business owners (13.6%), by the owners (8.7%) or by staff of the development organization (2.9%). The simple solar products do not need any setup and installation.

Technical capacity: Technical capacity of solar power in Puntland is limited but it is growing. Solar power technical capacity is much less in the rural areas where technicians are few. There is some solar power training but more training programs are needed. Available courses are few and geared towards technical skills and not academic content. Most of the large solar power companies have trained technicians and most of the training is carried out by these companies (e.g. Golis) to train their own technicians. New training centres are coming up.

4.3.4. Challenges limiting growth of solar power

Solar power key informants identified the key challenges limiting the growth of solar power. These include: (i) Lack of dedicated government policy to promote, support and regulate the sector including policies relating to incentives, cost reduction, quality control and financial among others; (ii) Limited awareness of solar power and its benefits, range of products available and suppliers especially in the rural areas; (iii) High cost of solar products and especially the high upfront cost for bigger solar power products which is also increased by the high cost of shipping products from abroad; (iv) Limited technical skills on solar power especially in the rural areas.

The solar power business owners and managers reported encountering different challenges including, in order of the number of times cited, limited awareness on solar power, limited capacity of technicians, limited financing for solar power business and weak policy and regulation.

4.3.5. Opportunities for growth of solar power

The major opportunities that can accelerate the growth of solar power in Puntland include: (i) The growing demand for solar power in many sectors (agriculture, fisheries, health, education, etc) that continues to improve the sector and subsequently reduce the costs; (ii) Solar power as the only source of power in many rural areas where the conventional electricity supply grid does not exist and will remain expensive to construct; (iii) Solar power costs that is less than electricity for a unit of power; and (iv) Clean and environmentally friendly nature of solar power and therefore attractive to development organizations and customers.

4.3.6. Recommendation for growth of solar power

Solar products users made recommendations to improve access to affordable and reliable energy in Puntland. Among these, the ones most cited included raising awareness on renewable energy (30.9%); investing in renewable energy (22.1%); developing technical skills to support the development of renewable energy (15.4%); reducing the cost of renewable energy (9.4%); facilitating availability of quality renewable energy products (8.1%) and developing policy to guide the development of the energy sector (5.4%).

Solar business owners and manager provided a range of recommendation that can accelerate the growth of solar power in Puntland. The recommendation made, in order of the number of times cites, included undertaking extensive awareness creation campaigns at all levels (32.7%), developing policies and strategies to provide an environment that will accelerate the growth of solar power (28.6%), increasing investments in solar power (14.3%), developing technical skills on solar power (14.3%), manufacturing solar power products locally (8.2%) and undertaking research on solar power and renewable energy (2.0%).

The key informants also made several recommendations to accelerate the growth of solar power in Puntland. These included: (i) Increasing investment in solar power through development of specific develop plans and strategies; (ii) Increasing awareness on renewable energy and solar power at all levels including among community members in the rural areas; (iii) Developing capacity among institutions involved in the development of solar powers and undertake trainings programs to improve solar power technical skills; (iv) Developing government policies to promote, support and regulate the growth of solar power; and (v) Encouraging development of capacity to manufacture solar products locally.

4.4 Localizing SDGs in Puntland

Based on the results of component 1 and 2, and analysis of the revised Puntland Development Plan (Puntland State of Somalia, 2017), the third component of the study focused on localized SDG goal 7 to develop a strategy for increasing use of solar power in Puntland. Working together with Puntland Ministry of Planning and Internal Cooperation (MoPIC), a guideline for localizing SDG 7 was developed and used to localize

SDG7 at selected locations. Localization of SDG7 lead to the development of a framework that can be adopted to increase use of solar power in Puntland under the leadership of MoPIC and other government ministries and agencies such as Puntland State Agency for Water and Energy (PSAWEN) and the Ministry of Environment Wildlife and Tourism (MoEWT).

4.4.1. SDG localization guideline

SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all) was selected as a pilot goal for localizing SDGs in Puntland. The localization process provided a guideline and framework for localizing other SDGs at local levels by government, development agencies, community organizations and other stakeholders. The pilot process was simplified as much as practically possible to take consideration of technical and resources constrains at local level. The implementation strategy for the revised Puntland Development Plan highlights the need for accommodating short training on Result Based Management, Logical Framework, SDGs and Monitoring and Evaluation as a requirement for effective implementation of the development plan. This need also applies for efficient localization of the SDGs.

Based on the literature review on SDG localization process, the results of component 1 and 2 presented above and assessment of the revised Puntland Development Plan, Table 5 presents the localization guideline developed.

Table 5: SDG localization guideline

Step	Localization Guideline Steps	Lead Agency	Tools and resources
Part A: Preparation	1. Identify and bring together of all stakeholder involved in the sector and identify local development priorities for the SDG in question (SDG 7 in this case)	MoPIC	-Stakeholder contacts Stakeholder analysis tools
	2. Organize advocacy and sensitization workshop for selected stakeholders identified in 1 above. Share available data and information (in this case results of the SDGs / solar power studies) 3. Based on revised Puntland Development plan, identify relevant sector, outcome, output, indicator, baseline and targets. 4. Review baseline and target based on progress made / achieved by ongoing projects 5. Identify source for up to date monitoring data (In this case, indicators and data from MoPIC)	MoPIC	-Revised Puntland Development Plan (2017 – 2019) -Any available Local dev. plans -Prioritized local dev. issues -SDGS Indicator book -Result of available studies
Part B: SDG localization workshop	6. Organize localization workshop: (a) Involve all stakeholders including community and marginalized groups; (b) Based on the relevant sector priority and results matrix presented on the revised Puntland development plan, elaborate a strategy to realize desired local development priorities for the SDG in question. (In this case the revised Puntland development plan and the results of the SDG localization and Solar power growth surveys, FGDs and KIIs	MoPIC and Different stakeholders	-Localization toolkits (http://localizingthesdgs.org/) – select relevant tools depending on the local context -SDG strategy implementation framework /

Step	Localization Guideline Steps	Lead Agency	Tools and resources
	were used to define and support elaboration of the strategy). 7. Align strategy with ongoing projects and available resources that within the controls of the participating stakeholders. 8. Identify implementation arrangement to reach the set targets including roles and responsibilities of key the partners. 9. Identify the required resources and seek resource commitment from the key players who can support the implementation of the proposed strategy financially or in kind. 10. Based on the implementation strategy proposed in the revised Puntland Development plan (), prepare implementation framework for the strategy including roles, responsibilities, resources, work plan, monitoring and evaluation. MoPIC and Different stakeholders		General logical framework
Part C: Implement, Monitoring and Evaluation	1. Coordinate implementation of strategy through a Sectorial working group that meets frequently to review progress 12. Identify sources of data and collect data for monitoring and evaluation. Assess progress made in implementing the strategy and report to the Sectoral working group. Document progress, lessons learnt and make corrective adjustment to the strategy.	MoPIC and Different stakeholders	-SDG strategy monitoring and evaluation report -SDG strategy implementation repo

4.4.2. Results of SDG7 localization in Puntland

SDG 7 localization process was carried out in Puntland through SDG localization workshops organized by MoPIC at 4 locations. The localization workshops were guided by the localization guidelines developed by the study and were supported by the finding of the SDG localization and solar power growth surveys that defined the key local issues relating to SDG 7 in Puntland. Further, the revised Puntland Development Plan was a key input to the process. Focus was put specifically on development of Solar Power in Puntland based on the key development issues brought out by the solar power users and business growth surveys. The results of the localizations workshops were presented as a general strategy for increasing use of solar power in Puntland as show on Table 6 below.

Table 6: General strategy for increasing use of solar power in Puntland

Aligned revised Puntland Development Plan	Sector:	Infrastructure
	Outcome:	Promotion of Alternative Energy
	Output:	Introduction of solar and wind energy throughout Puntland to reduce the reliability of fossil fuel power generation

Objective	Strategic Actions	Target	Indicator
(A) Increase awareness on solar power and renewable energy.	(A1) Develop and organize awareness and advocacy campaigns. (A2) Document and dissemination success stories through media (conventional and social) and exhibitions.	By 2024, increase by 60% awareness on solar power and renewable energy.	Proportion of population aware about solar power and renewable energy (Baseline: 3% - PESS).
B) Increase access to affordable, reliable, sustainable and modern energy.	(B1) Prioritize renewable energy, especially solar power, as a primary source of energy for Puntland. (B2) Support growth of renewable energy through subsidiary and tax exemption. (B3) Increase investment in solar power and other renewable energy by encouraging financing by banks to local business. (B4) Create bilateral relations with supplying countries to ensure adequate supply of quality and affordable solar products. (B5) Develop Public Private Partnership to reduce cost of solar power and renewable energy.	By 2024, increase by 20% access to affordable and reliable clean energy, specifically solar energy	Proportion of households using solar energy (Baseline: 3% -MoPIC)
(C) Develop regulation and policy to support growth of solar power and renewable energy.	(C1) Develop policies to support and promote growth of solar power and renewable including providing conducive investment environment, regulation, and quality control. (C2) Create a Sectoral inter-agency working group.	-By Dec 2018, 3 solar power guidelines, regulations or policies developed and approved for implementation. -By June 2018, initiate active inter-agency Sectoral working group.	-Number of regulations and policies developed. -Functional SDG 7 working group.

Objective	Strategic Actions	Target	Indicator
(D) Development technical capacity to support growth and use of solar power and renewable energy	(D1) Introduce solar power training in vocational centers and polytechnics and prepare training materials in Somali language. (D2) Adapt school and university curriculum to include renewable energy and support creation of job creation for solar power technicians. (D3) Create electrical engineering specialization in universities and undertake systematic training and capacity building on solar power and renewable energy. (D4) Undertake high quality research in solar power and renewable energy through support by development agencies, government and private sector.	-By 2024, increase by 15% technical know-how of solar power and renewable energy. -By Dec 2018, Solar energy and renewable energy trust established. -2 high quality solar power and renewable energy studies published annually in referred journals.	- Proportion of technicians available in the community (Baseline: Not Available) -Number of vocational centers, polytechnics, colleges and universities training in solar power and renewable energy (Baseline: Not Available). -Number of solar power and renewable energy studies published.

Implementation of the proposed strategy require several partners to work and collaboration closely. This can be facilitated through a Sectoral working group under the leadership of Puntland Ministry of Planning and Internal Cooperation (MoPIC). The working group would have members representing groups of different organizations. The roles of the different groups of organizations are highlighted below:

- **Government:** (i) Initiate policies and regulations to promoting access to affordable solar power including providing a conducive environment for investment, encouraging subsidies and tax reduction or exemption and quality control; (ii) Establish Sectoral working group under the leadership of MoPIC; (iii) Seeking bilateral agreement with solar power and renewable energy companies for large-scale investments in the sector; (iv) Ensure renewable energy availability and affordability; (v) Support capacity building and mainstreaming of solar power and renewable energy trainings in to the education system.
- Private Sector: (i) Increase investments in solar power and renewable energy; (ii) Sponsor training programs and research studies on solar power and renewable energy; and (iii) Support capacity building programs and create internship and job opening for solar energy and renewable energy graduate and technicians.
- **Civil Society Organizations:** Create awareness and advocacy including participation of marginalized groups in the dialogues and programs on solar power and renewable energy at all levels including in rural communities
- **Academic institution:** (i) Undertake research and studies on solar power and renewable energy, (ii) Introduce courses on solar power and renewable energy in vocational training centers, polytechnics and the universities; (iii) Support data collection for monitoring and evaluation, processing of data and reporting.
- **Development agencies:** (i) Support institutional and human capacity development to support growth of solar power and renewable energy; (ii) Support academic institutions and government conduct studies and research on solar energy and renewable energy; (iii) Facilitate government to develop policy and regulation required to support growth of solar power and renewable energy; (iv) Guide strategic initiative geared towards improving and regulating private sector investment in solar power and renewable energy.

Chapter 5. Conclusion and Recommendations

5.1 Study conclusions

From the analysis made and presented in chapter 4, the following conclusion are made:

i. Many organizations are involved in development work in Puntland and all are aware of the Sustainable Development Goals (SDG) and have taken steps to align their work with SDGs. Overall, the SDGs that have been given highest priority in Puntland as those that relate to health, education and economic development.

ii. A substantial number of organizations do not have mechanisms to engage marginalized members of the community in their development work. Likewise, involvement of women and girls in development work is at a rudimentary stage and stated to be "work in progress" although progress has been observed.

iii. The level of awareness on SDGs is low among community organization and members and mostly limited to international organizations and NGO. There is no structure programme for localizing SDGs and actions are limited mostly to awareness creation, advocacy and alignment of organization work to the SDGS.

iv. Attainment of SDGs at the local level is constrained by many challenges. These include: (a) Lack of localized development plans and limited monitoring and evaluation of development progress being made at the local level; (b) Weak partnership and collaboration among organization working in the same local area; (c) Lack of financial and technical resources to implement local development projects; (d) Negative cultural and traditional practises that restrict progress; (e) Natural disasters that undo development progress.

v. Monitoring and evaluation of progress being made by local development project is critical for assessing attainment of SDGs. However, this does not always happen because of lack of local data and limited skills in monitoring, evaluation and reporting.

vi. A range of opportunities exists for localization and attainment of SDGs. These include: (a) Existence of a good environment for development including good governance, peace and security, economic growth and development of service infrastructure; (b) Involvement of local communities in defining development priorities; (c) Partnership and collaboration among organizations working in the same area; and (d) Capitalizing on the progress made in education, gender equality and women empowerments and health.

vii. Different sources of energy are used for lighting and cooking. Electricity is the dominant source of energy for lighting in the urban areas while in rural areas, other simple sources such as torch are important although electricity comes second. For cooking, the main source of energy is charcoal in the urban areas while firewood is the main source in the rural areas. Despite the big potential of solar power, especially for lighting, its level of use is very low, indicating a big potential for growth.

viii. Although solar power is in an infancy stage in terms of awareness among the populations in Puntland, its use is growing steadily both in urban and rural areas. Key drivers of solar power growth include solar power business, power companies and development agencies.

ix. Solar power is preferred over electricity because it is cheaper, because it's the only source or because its clean. It is mostly used for lighting, charging of phone and for powering of radio and TV among other few uses like powering business equipment such as fridges. It is rarely used for cooking.

x. The cost of solar products varies widely depending on the type of products from a few dollars to over thousand dollars. Most of the solar users purchase products in the low range of price (below 500 dollars) but a substantial number of customers / organizations purchase high cost (over 1000 dollars) products.

xi. Compared to electricity, the benefits of solar power include lower cost (average cost of electricity is 75 USD/month), continuity (electricity is rationed) and availability to power critical services such as in business, hospitals and public areas. In some areas, solar is the only power available.

xii. Average life span for Solar Homes Systems and Solar panels is estimated at nearly two decades. Almost half of the business does not provide warranty for the products for different reasons including lack of warranty from the original suppliers.

xiii. Although growth of solar power is prioritized in the regional and national development plans, there is no government policy guiding, promoting or regulating solar power development.

xiv. Solar power technical capacity is limited

especially in the rural areas. Training is mostly organized by power companies and solar businesses for their technicians. New solar training centres are coming up and solar power technical training is growing but needs to be increased and structured.

xv. Based on the results of the study, SDG7 was successfully localized using a guideline developed by the study. Localization of SDG 7 resulted in definition of a general framework for increasing use of solar power in Puntland that covers four strategic areas – awareness creation, access to solar power products, development of solar power policy and technical capacity.

5.2 Development of a SDGDMES

Based on the conclusion made and the pilot process for localizing SDG 7, a framework for monitoring and evaluating SDGs is proposed below.

5.2.1 SDGs Design, Monitoring and Evaluation System (SDGDMES)

Defining and formulating an explicit set of SDGs with a local perspective would call for effective citizen participation at different levels and in different forms. Mainstreaming the SDGs into the Development Plan presupposes a well-defined planning framework and strategy. It needs a hierarchic bureaucratic structure to address issues at successive stages of policy formulation like defining the local needs and aspirations, identifying the corresponding local goals and formulating appropriate pragmatic strategies subject to local constraints. Such a proposition would not be feasible without comprehensive statistical information base. For instance, formulation of quantitative macroeconomic development and poverty reduction strategies without any statistical information base like the National Accounts Statistics, population census and disaggregate distributional data on socio-economic welfare indicators is not possible. There is also a need for an institutional arrangement to monitor plan policy formulation and their implementations. This in turn would call for information base, institutional mechanism and resource. In other words, there is an urgent need to develop a capacity for defining 'SDGs designing policies/programmes for realizing such goals, effective monitoring and evaluation of their implementation'.

Successful localization of SDGs would depend upon:

i. Peace and stability, security and good governance;

ii. The form of governance, citizen empowerment and extent of their participation;

iii. General awareness about the local needs, resource constraints and opportunities, and an integrated perspective on local-national–international agenda on development;

iv. Institutional arrangement for good governance;

v. Institutional capacity for information generation, its utilization, policy formulation, its implementation and evaluation (SDGs Design, Monitoring and Evaluation System (SDGDMES))

vi. Refined SDGs – what is a priority and creates capability to work on other strategic goals

Localizing the SDGs calls for an effective institutional mechanism for defining local needs, identifying corresponding goals and formulating strategies appropriate to the resource endowment. An institutional mechanism like the parliament/ legislature would address the first two issues. As regards strategy-formulation, its implementation and evaluation, one would need a SDGDMES.

The basic objective behind SDGDMES is to set up an institution to formulate and articulate people's aspirations in terms of feasible alternative options. It also needs to ascertain how far policies have affected the living conditions of the poor, which is a major concern of the Somali government today. Comprehensive answers to such questions are required for policy monitoring as well as evaluation, which would involve tracking the progress of projects and programmes right from the inception with reference to resource outlay, cost-effectiveness of implementation, timely realization of targets and final impact.

Such a monitoring and evaluation exercise would not be possible unless there is a sound institutional capacity for identification and estimation of magnitude of poverty, characterization of the poor/ poverty profiles, analysis of causes and determinants, constraints and opportunities, design poverty oriented development strategies and programs, monitoring progress in terms of indicators with reference to goals and targets.

Regular estimates of poverty and human development are required for (i) setting plan targets and identifying policy strategies; (ii) resource allocation and plan programmes across sectors/regions; (iii) assessing progress towards the targets; and (iv) preparing periodic Human Development Reports and SDGs need assessment.

In other words, creation of capacity for 'SDGs monitoring and analysis system' would be a multi-dimensional process involving (a) an institutional framework with legal provision; (b) setting up of information base for the entire spectrum of indicators ranging from input to final impact; (c) capacity building in terms of appropriate administrative and technical skills to the personnel involved; (d) co-ordination (between line ministries at national and state levels, district level agencies and sectoral divisions of the Ministry of Planning and International Cooperation; and (e) involving national and international stakeholders in designing programmes and policies at different levels.

It is also important to provide for institutional arrangements for (i) regular and periodic information flows on programmes and projects at state, regional and district levels; (ii) research on growth and poverty alleviation programmes and their impact; and (iii) dissemination of findings and advocacy of programmes.

Puntland may consider institutionalizing a framework for SDGDMES. It may consider setting it up in the Ministry of Planning; the SDGDMES may consist of two sections to monitor (i) programmes and projects; and (ii) final impact on poverty respectively. The latter, called SDGs Monitoring Section (SDGMS), may monitor and analyze trends in poverty, document progress in terms of human development and success in ensuring inclusion in the mainstream, and carry out policy reviews. It may undertake these tasks by (i) monitoring implementation; (ii) monitoring outcome; (iii) analyzing impacts; (iv) managing poverty information system; and (v) communication and advocacy. The set of monitoring and evaluation tasks of (i) implementation monitoring; (ii) outcome monitoring and (iii) impact evaluation address the much-needed mechanism for effective implementation of programmes. It may also be entrusted with the task of dissemination of results based on studies on monitoring, evaluation and assessment.

An efficient functioning of the SDGDMES would not be possible without smooth information flows among different stakeholders in general and different institutions of the government in particular.

5.2.2 SDGDMES: Framework and Implementation Strategy

The SDGDMES framework would provide for a Statistical Act, Development Council/Forum, and Central Statistical Office/Department and list the different stakeholders in the system.

A strategy for setting up the SDGDMES may be conceived in stages. The short-term phase provides for the Statistical Act, Development Council/Forum, setting up institutional and human capacity and an awareness campaign. The medium-term phase lays emphasis on consolidation and augmentation by providing for harmonization and consolidation of existing surveys and data collection activities, setting up population census, household Levels of Living survey and generating data on poverty indicators. The long-term strategy seeks to eradicate absolute poverty and achieve sustainable inclusive growth.

The framework would also provide for Specific, Measurable, Attainable, Relevant and Time-bound (SMART) indicators. To begin with, one simple measure could be sample family expenditure and health survey based estimates of consumption/ income, its distribution, health statistics based on anthropometric/body mass index estimates.

Empirical convention calls for estimation of per capita income, which is not a robust measure of average for skewed distributions. One option could be to generate median income as a measure of average income and measure inclusion with reference to a threshold defined in terms of fraction of the median. Since median is the 50th percentile, one may measure inclusion with reference to the proportion of the bottom half with income above the threshold. This measure would also capture if the poorest of the poor have benefited by the growth process since any improvement in inclusion would get reflected in an increase in the median and a sustained increase in both would provide a SMART and convincing measure of inclusion. Similar measures of inclusion could be defined for years of schooling to measure educational attainment by gender.

5.3 Study recommendations

The study drew recommendations on SDG localization and growth of solar power targeted to different key players including government, development agencies, civil society, academic and private sectors. The results and conclusions of this study identified many issues that require many recommendations, but for practical purpose, 12 feasible and achievable recommendations are prioritized for each group of organization. The recommendations are listed below under different organizations.

5.3.1. Recommendations to government institutions

xvi. The government, through the leadership

of Ministry of Planning and International Cooperation (MoPIC) should develop a policy to guide development of solar power by reducing cost of solar power products, ensuring availability of quality solar power products and creating conducive environment for investing in solar power. Government will see support from development agencies to support development and implementation of the policy.

xvii. MoPIC should ensure development projects focus on local priorities; are align to SDGs; have locally adapted indicators, baselines and targets; are monitored, evaluated and progress reported to local stakeholders. To facilitate this process, MoPIC in collaboration with United Nations Development Programme (UNDP) and development partners should setup a common updatable and public accessible reporting platform with disaggregated and georeferenced data.

xviii. MoPIC in collaboration with UNDP, SIDRA and other development and government agencies should support the recently established Puntland Development Forum (PDF) to make it functional and establish effective Sectoral Working Groups (SWG) with representation of government institutions, development agencies, civil society, academic institution and relevant private sector organization. The PDF and the SWG should collaborate to elaborate and implement the frameworks proposed by this study to address factors that limit the use of solar power in Puntland.

xix. MoPIC should organize SDGs needs assessment at district levels to provide the information required to integrate SDGs in local development plans including district, regional and state development plans. These assessments would also provide localized baseline for future monitoring and evaluation.

xx. MOPIC in collaboration with UNDP and other partners should set up an institutional capacity for information generation, its utilization, policy formulation, its implementation and evaluation (SDGs Design, Monitoring and Evaluation System (SDGDMES))

5.3.2. Recommendation to development agencies

xxi. UNDP and other development agencies should support a training programme targeting government institutions, development agencies, civil society organizations and academic institutions to build the capacity to deal with all aspects of localizing SDGs. The training program will be implemented in collaboration with academic institutions and specialized training centres and selected resources persons.

xxii. All development agencies should commit to adapt their development projects to local development priorities through active and open engagements of all stakeholders, through timely monitoring and evaluation of every project and by reporting progress made transparently to all stakeholders and on public accessible data and information platform.

xxiii. UNDP and other development agencies should support development of common library of easy to use SDG localization tools and resource that will be used by all organization working in the local areas to allow organization to partner, collaborate and share experiences. To start the process, available SDG localization toolkits and resources should be adapted to the local context.

5.3.3. Recommendation to civil society organizations

xxiv. Civil Society Organizations (CSOs) should create a national wide SDG awareness and advocacy program through radio, tv and social media and other community avenues such as prayer gatherings with two components: (a) Awareness creation and advocacy on SDGs, localization of SDGS, renewable energy and solar power at all levels; and (b) Promoting participation of all stakeholders especially women, girls and marginalized groups in development planning and implementation. The program should have a lead CSO and coordinated through the Sectoral working group.

xxv. CSOs should promote communication, partnership, collaboration and sharing of experiences between organizations working in the same local area to avoid duplication of efforts and to ensure that all accessible areas are well covered.

5.3.4. Recommendation to academic institutions

xxvi. Academic institutions should work together to elaborate and implement the strategic objective of developing technical capacity to support growth and use of solar power and renewable energy proposed in the general framework for increasing use of solar power in Puntland. To manage the process, the academic institutions should form a platform for training and research on SDGs, renewable energy and

solar power. Additionally, Technical Vocational Education and Training (TVET) should play a key role by aligning ongoing vocational training with the market industry needs for labour.

xxvii. Academic institutions should design training programs and courses on renewable energy and solar power and introduce these in the academic programs. This process should be coordinated through a platform for training and research to take advantage of the different competences, expertise and resources and to avoid duplication of effort. The training program should be supported by UNDP and key development agencies undertaking SDG7 related activities.

xxviii. Academic institutions should undertake research studies and build databases, tools and methodologies on SDG localization, renewable energy and solar power with the support of government, development agencies and the private sector.

xxix. Academic institutions should develop short structured course to build the capacity of government and development organization on all aspects of localizing SDGs. The course should be coordinated through the SDG training and research platform and supported by UNDP and other development agencies.

5.3.5. Recommendation to the private sector

xxx. The private sector should take advantage of the big growth potential for renewable energy and solar power by increasing their investment on solar power and taking advantage of the strategic solar power development programs of the government and development agencies.

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Annexes

Annex 1 – Focus Group Discussions Results

Location: Galdogob, Tawakal Conference Hall, 4th of November 2017

QUESTIONS	RESPONSES
1. What is the level of awareness of Sustainable Development Goals (SDGs) among the organizations and institutions working in the area?	• The level of awareness is low in general; there is a need for more awareness programs, training and teachings in schools and universities. • International Organizations and local NGOs there are more aware of the SDGs but the common people have no idea.
2. Are they initiatives undertaken collectively by the organizations and institutions working in the area to promote and planning SDGs actions?	• In Galdogob the respondents haven't seen any initiatives concerning SDGS though they opine that there is a probability of organizations working on localizing SDGs or adding the goals in their programs.
3. If such initiatives have been organized: a. Who organized them?	• CSOs, Business Owners, Youth and Women Organizations, and Government Institutions
b. Who took part in the initiatives?	• It depends on the target group, but mostly: youth or women, CSOs, and relevant line ministries.
c. How were women and girls (or other potentially marginalized groups) represented?	• Still rudimentary though it is work in progress
d. How have they worked?	• There is poor coordination
4. Among the organizations and institutions represented, how many have been involved in the following activities to promote and plan SDG actions: a. SDG awareness creations	• Most of the organizations
b. SDG advocacy campaigns	• Not many
c. Alignment of local needs and priorities to SDG	• A few
d. Common implementation of local SDG actions	• Not well coordinated
e. Data gathering and monitoring and evaluation of local SDG actions	• Almost none.

5. How have government policy, laws and regulations facilitated efficient implementations of SDGs and related actions in the local area?	• There isn't any specific government policies related to SDGs that we are aware of. • Ministries conduct their operations derived from the Puntland Development Plan (PDP) which includes SDGs as in build components but very few ministries follow it. - - Business organisations, Local NGOs have their own agenda but still, at some point, they are aligned with the SDGs. • The government should implement and control the activities that come under SDGs in all sectors.
6. In your organization/institutions what has been your experience working with SDGs and taking actions related to SDGs?	• Most of the actions are geared towards research, awareness creation within the institutions and setting our goals to be aligned with the SDGs
7. Can you give us some examples of your organization/institutions experience working with others (Government, CSO, Community, Private sector, Academic, etc.) on SDGs and taking actions related to SDGs?	More of the activities we do together are related to awareness creation: • Water disinfection, especially during breakout of diseases • Sanitation in the city • Animal health and quality control since livestock and fisheries are important sectors • Fighting corruption • Waste disposal • We also organize, plan and train on particular SDG goals
8. Can you give us some examples of your organization/institutions experience monitoring and evaluating SDGs? What are the challenges?	There is no monitoring or evaluation within our institutions so far.
9. What are your experiences what do you think are the major challenges affecting efficient implementations of SDGs and related actions in the local area?	Lack of awareness • Lack of knowledge • Corruption and misappropriation of funds: money intended for these programs is spent elsewhere • Lack of proper communication within and between institutions • Transportation challenges and difficulties • Lack of commitment to completing projects
10. If you had the responsibility and resources, what actions would you take to facilitate efficient implementations of SDGs and related actions in the local area?	• Educate the society about SDGs and especially on how to work together in order to localize them; • Train governmental institutions whether local or federal on how to take action, implement and monitor the different institutions working on SDGs; • nvest in the economy in order to reach these goals • Implement and align all the SDG goals in every sector. • Continuous education and awareness on the progress of localizing SDGs, addressing challenges and lessons learnt.

Location: Bossasso, Gacayte Conference Hall, Location: Bossasso, Gacayte Conference Hall, 11th of November 2017

QUESTIONS	RESPONSES
1. What is the level of awareness of Sustainable Development Goals (SDGs) among the organizations and institutions working in the area?	•The level of awareness is low in general; there is a need for more awareness programs.
2. Are they initiatives undertaken collectively by the organizations and institutions working in the area to promote and planning SDGs actions?	• There were some initiatives in 2015
3. If such initiatives have been organized: a. Who organized them?	• UN Agencies and Government ministries
b. Who took part in the initiatives?	• UN partners, Government, Community elders, Women, Youth and Local NGOs
c. How were women and girls (or other potentially marginalized groups) represented?	• Gender-based groups and women associations are included in the process of awareness creation
d. How have they worked?	• The initiatives were largely successful
4. Among the organizations and institutions represented, how many have been involved in the following activities to promote and plan SDG actions: a. SDG awareness creations	• Most of them
b. SDG advocacy campaigns	• INGO and UN Agencies
c. Alignment of local needs and priorities to SDG	• Government
d. Common implementation of local SDG actions	• None
e. Data gathering and monitoring and evaluation of local SDG actions	• UN Agencies
5. How have government policy, laws and regulations facilitated efficient implementations of SDGs and related actions in the local area?	• There is clear lack of policies coming from governmental institutions, they should be the ones facilitating and implementing SDGs at a local level. • There is also a lack of accountability
6. In your organization/institutions what has been your experience working with SDGs and taking actions related to SDGs?	• Community awareness has been increased • There needs to be promotion of accountability and evaluation

7. Can you give us some examples of your organization/institutions experience working with others (Government, CSO, Community, Private sector, Academic, etc.) on SDGs and taking actions related to SDGs?	• We work together with either ministries, CSOs, UN agencies or INGOs. • They support the implementation of our projects by either- partnering with us, or by providing technical or financial support. • Our projects are focused on Poverty reduction, Humanitarian Aid, Economic Growth, Quality Education, Gender Equality
8. Can you give us some examples of your organization/ institutions experience monitoring and evaluating SDGs? What are the challenges?	• Monitoring internal progress through indicators against the set goals and targets; • The challenges are: inadequate skills in data collection and report writing
9. What are your experiences what do you think are the major challenges affecting efficient implementations of SDGs and related actions in the local area?	• Lack of awareness • Inadequate resources • Limited monitoring and evaluation • Little or no awareness • Lack of policy formulation • Limited capacity enhancement
10. If you had the responsibility and resources, what actions would you take to facilitate efficient implementations of SDGs and related actions in the local area?	• Create a policy on monitoring and evaluation of projects; • Design monitoring and evaluation systems to ensure progress of implementation • Enhance institutional and organizational capacity through training and development • Improve community awareness in order for everyone to participate in the implementation and progress of the SDGs • Ensuring cost effectiveness for a good impact, through evaluation and good data collectio

Location: Eyl, Hotel Libin, 17th of November 2017

QUESTIONS	RESPONSES
1. What is the level of awareness of Sustainable Development Goals (SDGs) among the organizations and institutions working in the area?	• The level of awareness is low in general; there is a need for more awareness programs.
2. Are they initiatives undertaken collectively by the organizations and institutions working in the area to promote and planning SDGs actions?	• Joint discussions between everyone, decide on the needs of Eyl. • The biggest needs are: goal 3: Good health and well-being, Health, goal 4: Quality education, goal 9: Industry, innovation and infrastructure.
3. If such initiatives have been organized: a. SDG awareness creations	In Eyl, there are 4 neighborhoods, with five people who are the focal points. They are the link between the leaders and community. They talk directly to the community.
b. Who took part in the initiatives?	• The leaders • focal points persons • community
c. Alignment of local needs and priorities to SDG	• Always when taking a decision, there is a meeting with everyone involved, we make sure that our decisions reflect the local needs.
d. Common implementation of local SDG actions	
5. How have government policy, laws and regulations facilitated efficient implementations of SDGs and related actions in the local area?	• We have Eyl District Development Framework (DDF) which is the strategic development plan of Eyl and some elements come under SDGs.
6. In your organization/institutions what has been your experience working with SDGs and taking actions related to SDGs?	• We work on hygiene, climate action and life on land. • We put together recycling strategy, planting trees and protecting the environment. • Prior to this we did a 2 days awareness program so that the community understands why these actions need to be taken.
7. Can you give us some examples of your organization/institutions experience working with others (Government, CSO, Community, Private sector, Academic, etc.) on SDGs and taking actions related to SDGs?	• Some decisions are taken in a governmental setting and implemented in Eyl. • Most decisions though are taken here in Eyl, in consult with the CSOs, local leaders, traditional elders etc.

8. Can you give us some examples of your organization/ institutions experience monitoring and evaluating SDGs? What are the challenges?	• None
9. What are your experiences what do you think are the major challenges affecting efficient implementations of SDGs and related actions in the local area?	• Economy • Roads • Too many Institutions/organizations who are not aligned
10. If you had the responsibility and resources, what actions would you take to facilitate efficient implementations of SDGs and related actions in the local area?	• Belief that responsibility and decision making should be theirs • Want to prove that they have the capacity to implement on real local needs.

Location: Garoowe, Same Conference Hall, 23rd of November 2017
QUESTIONS &RESPONSES

QUESTIONS	RESPONSES
1. What is the level of awareness of Sustainable Development Goals (SDGs) among the organizations and institutions working in the area?	• Low • Belief we are still in MDGs • Awareness in International organizations, NGOs etc • Maybe also inside ministries
2. Are they initiatives undertaken collectively by the organizations and institutions working in the area to promote and planning SDGs actions?	• Invest in Knowledge and localization • Review of all curriculum, exams, centralized courses to improve quality of education • Reduce fossil fuels • The energy produced, 50% should come from Renewable energy • Work on peace and strong institutions with international organizations. Areas: accountability, good governance, anti corruption campaigns
3. If such initiatives have been organized: a. SDG awareness creations	• Universities • IOs, NGOs and CSOs • Governmental Institutions • Energy companies
b. Who took part in the initiatives?	Students • Elders • CSOs, NGOs • Students
c. Alignment of local needs and priorities to SDG	• The purpose of SDGs localization is to be aligned with local needs. The institutions try to be closer to the needs in order to have real impact
d. Common implementation of local SDG actions	• Involve as many institutions and people as possible
e. Data gathering and monitoring and evaluation of local SDG actions	• Only within certain institutions and ministries
5. How have government policy, laws and regulations facilitated efficient implementations of SDGs and related actions in the local area?	• The government put in place regulations aligned with different institutions + the needs of the society. They also make sure the SDGs are in it. • The regulations and plans are only put in place to get funds, no real work in intended to be don
6. In your organization/institutions what has been your experience working with SDGs and taking actions related to SDGs?	• It is difficult because of lack of awareness and corruption

7. Can you give us some examples of your organization/institutions experience working with others (Government, CSO, Community, Private sector, Academic, etc.) on SDGs and taking actions related to SDGs?	• Work together with ministries, CSOs, UN agencies or INGOs. • They support the implementation of our projects by either- partnering with us, or by providing technical or financial support.
8. Can you give us some examples of your organization/institutions experience monitoring and evaluating SDGs? What are the challenges?	• None
9. What are your experiences what do you think are the major challenges affecting efficient implementations of SDGs and related actions in the local area?	• Weak governmental institutions • Not many regulations, laws, policies • Only few big companies that decide themselves and think more of their profit • Weak economy
10. If you had the responsibility and resources, what actions would you take to facilitate efficient implementations of SDGs and related actions in the local area?	• Create a policy on monitoring and evaluation of projects; • Design monitoring and evaluation systems to ensure progress of implementation • Enhance institutional and organizational capacity through training and development • Improve community awareness in order for everyone to participate in the implementation and progress of the SDGs • Ensuring cost effectiveness for a good impact, through evaluation and good data collection

Annex 2 – Key Informants Interviews Results
Location: Galdogob
Participants: Trade union, Women organization, Youth organization, Somtel

QUESTIONS	RESPONSES
1. What is the KI's role in the organization and for how long?	• Business Owner for twenty years • Director • Deputy Director for a few years • Program Manager a few years
2. What is your experience with the growth of solar power in Puntland?	• Growth has been steady over the years but its use has isn't much
3. Who in your experience are the key players in the growth of solar power in Puntland?	• Businesses/Owners • NGOs (CSOs) • Energy Companies • Government • Development Agencies
4. What can you say about the following? a. Awareness of solar power in urban areas	• There's more awareness of solar power lately
b. Awareness of solar power in rural areas	• There is limited awareness • The level of awareness isn't the same; some areas are reached while others aren't.
c. Technical capacity for solar power in urban areas	• Limited capacity • A lot is needed to bridge the gap
d. Technical capacity for solar power in rural areas	• Very limited • Just a handful of technicians
e. Education and training on solar power	• Limited training to a few people • In some cases none at all
f. Availability and quality of solar power products	• Products are available • Quality is debatable
g. Financing for solar power business.	• Done mostly by private business people and owners • Government not doing much
h. Government policy and regulation for solar power	• It seems there isn't any at the moment.
5. What are the major challenges limiting the growth of solar power? • Economical Constraints • Lack of awareness or knowledge about solar • Limited resources put into renewable energy • The market isn't well exploited	• Economical Constraints • Lack of awareness or knowledge about solar • Limited resources put into renewable energy • The market isn't well exploited

6. What are the major opportunities that can accelerate the growth of solar power?	• Availability of more than enough sunlight • Solar is cheaper and safer
7. What recommendations would you give to accelerate the growth of solar power?	• Increase investments in solar • Increase in awareness campaigns • Provide avenues for training on Solar power • Reduction in the use of firewood for energy and charcoal • A government policy that encourages the use of Solar

Location: Bossasso
Participants: Qoraxmaal, Rajab Energy, SECCO, SURAD Energy, HORYAD Electronic

QUESTIONS	RESPONSES
1. What is the KI's role in the organization and for how long?	• Data Entry- Solar power distributor - 4 years • General Manager- Solar distributors- 6 years • Manager- Solar distributor- 3 years • Managing Director and Engineer -6 years • Sales Manager- 7 years
2. What is your experience with the growth of solar power in Puntland?	• The increase of solar products has contributed to this growth since 2014 • An increase in both rural and urban areas
3. Who in your experience are the key players in the growth of solar power in Puntland?	• Solar power Distributors • Business Owners • Engineers
4. What can you say about the following? a. Awareness of solar power in urban areas	• It was very low in the past but has increased lately • There is a lot of awareness
b. Awareness of solar power in rural areas	• Much more aware as they mostly use it • Aware but mostly of small solar products
c. Technical capacity for solar power in urban areas	• There are some pieces of training but more are needed • Readily available as there has been a remarkable increase

d. Technical capacity for solar power in rural areas	• Very limited • Some distributors send their own technicians
e. Education and training on solar power	• There aren't any academic courses or training places in general • There's an increase in training as new centres are opened • Available 6 months training
f. Availability and quality of solar power products	• Available yes but quality depends on the source and experience of the distributor • Products are imported thus affecting the quality
g. Financing for solar power business.	• Through import companies • Individuals
h. Government policy and regulation for solar power	• Lack of clear policy • No policy especially on quality control • Companies set their own policies
5. What are the major challenges limiting the growth of solar power?	• Very High Taxation on Solar products- Yet no policy • Quality • Lack of technical skills • High Shipping Costs • Lack of awareness
6. What are the major opportunities that can accelerate the growth of solar power?	• The climate in Somalia • It is easily available • There is a high demand • Inadequate electricity coverage in rural areas
7. What recommendations would you give to accelerate the growth of solar power?	• Decrease tax from government • Improve community awareness for solar products • Provide incentives to make shipping easier and cheaper • Create or open many training centres • Establish a manufacturing plant or assembly firm in Somalia • Improve the quality of products sold • Create awareness of renewable energy

Location: Eyl
Participants: Golis, Eyl Hospital, UGBAD, Hotels, Business owners

QUESTIONS	RESPONSES
1. What is the KI's role in the organization and for how long?	• Business man, 8 years • Telecommunications Manager, 10 years • Doctor, 8 years • Director, 7 years • Business owner, 6 years
2. What is your experience with the growth of solar power in Puntland?	• It is a new source of energy that we are trying to exploit to the fullest. If we look at the money side of things, this is an opportunity that one needs to take advantage of. We have been installing more and more solar products in the regions this past year. This shows the will of the people to find a durable solution and the will of NGOs and IOs to invest is this durable solution. • Solar is clearly an added value to the energy sector in Eyl. Before we used to use gas and motor, the problem being we only have access to electricity for +/- 5 hours a day. With Solar, we pushed those hours to almost 24/7 since when there is no electricity, those who have the solar use the energy from it. It reduced money spent on electricity. All these changes have been happening the last three years. • It is always available, the motor for example stops often, and we can't count on it in the hospitals. We need the lights, air conditioner and refrigeration systems to be functional 24/7. Solar has helped us be functional since it replaces the generator when it is off.
	• Positive growth of business thanks to solar energy. Spend so much money on electricity that it was hard to see any profit. • We can't deny that it is environmentally friendly also. We are using a God given tool to advance in life. • Some business owners also saved a lot of money since they started using solar.
3. Who in your experience are the key players in the growth of solar power in Puntland?	• Water, Electricity , and telecommunication companies • Community • NGOs, Ios, Puntland government • We need to put in place solar companies that produce solar materials that fit the needs of the population, companies that can set up these materials properly, and companies that can help the people of Eyl with the first investment. • The community if they get proper awareness programs can come together and put in money to

	invest in solar and change when something is wrong. The community itself investing is better than counting on international donors. It will be better for them since they can handle their development themselves and feel a sense of contribution in their society.
4. What can you say about the following? a. Awareness of solar power in urban areas • Definitely more aware since the big solar businesses are in urban settings	• Definitely more aware since the big solar businesses are in urban settings
b. Awareness of solar power in rural areas	• No awareness programs in Eyl, most people got to know because an NGO brought solar panels or fridges and they discussed it between them. • Word to mouth. People are starting to hear about in from the market and slowly becoming interested in this new form of getting energy. • Not enough, at all. This is something that can easily be done; still we don't have the knowledge.
c. Technical capacity for solar power in urban areas	
d. Technical capacity for solar power in rural areas	• Not many, Golis helps with the setting up of the panels and when problems arise they also intervene. They are the only available local technicians. • Most of the problems with solar comes from the technical part, whether it is the installation or choosing the right products. • After awareness programs, the biggest need is of technicians and engineers that can help them choose the most relevant product for their needs and help them set it up.
e. Education and training on solar power	• Golis, again, helps with some trainings but still the man power and knowledge is not enough. There is still a long way to go. • There aren't specific trainings for the technicians. Even less so for the solar users. • The CSOs, NGOs or IOs focus more on big cities. Our people also focus on big cities; we have been neglected while we are the ones who actually need the trainings. • It is only when the community is aware that the growth of solar will be felt everywhere.
f. Availability and quality of solar power products	• There are no shops for solar panels or solar fridges in Eyl. • Have to buy them from cities like Garowe or Bossasso. • Only smalls types available, like solar batteries/power banks • Most of the people in Eyl do not have the

g. Financing for solar power business.	money to invest in solar or solar business. This is the only reason they are very hesitant. • Investment and financing should come from somewhere else at least for the poorest families to have access to solar. Others will follow in due time. • Some donor organizations have offered solar panels and fridges to the fishery sector and hospitals • Only the small shops put money in solar.
h. Government policy and regulation for solar power.	• In the regional level, Puntland has its plan with the regulations and policies regarding solar. In Eyl we have the Eyl District Development Framework. It does not really specify solar though. • I don't know about the government policies but in the Eyl District Development Framework, there is mention of solar.
5. What are the major challenges limiting the growth of solar power?	• Economical Constraints • Lack of awareness or knowledge about solar • Limited resources put into renewable energy • Weak government
6. What are the major opportunities that can accelerate the growth of solar power?	• So many sectors that can benefit from solar and push towards the development of Eyl: Fishery, construction, livestock, education sector… • Readiness for Renewable Energy, if a plan is put in place. • The environment in Somalia.
7. What recommendations would you give to accelerate the growth of solar power?	• We have to be careful though not to create too much competition so it is preferable to use the already existing companies and enhance their knowledge and capacity of solar. • The level of awareness is very low. The donors do not believe in our capacity to make things happen. All we need is trainings and proper education and we will be able to handle everything that is thrown to us. • Invest in solar panels for the city • Trainings for users and technicians • Educating the community itself and putting the change that needs to be done in their hands.

Location: Garowe
Participants: University of Bossasso – Garowe Campus, Golis /Section of Power System, NECSOM, Puntland State University, East Africa University.

QUESTIONS	RESPONSES
1. What is the KI's role in the organization and for how long?	• Public Relations Director, 6 years • Engineering of electrical power system/ Installation of Solar System, 1 year • Operation officer, 2 years • Senior staff, admin and finance, 5 years • Coordinator between EAU and other institutions, 3 years
2. What is your experience with the growth of solar power in Puntland?	•
3. Who in your experience are the key players in the growth of solar power in Puntland?	• Academia • Experts of the field that can help put in place laws and regulations concerning solar and Renewable Energy • Government, particularly Ministry of Energy • Businesses
4. What can you say about the following? a. Awareness of solar power in urban areas	4. What can you say about the following? a. Awareness of solar power in urban areas • Growing awareness thanks to business owners. • The more people use solar, the more others see and are interested
b. Awareness of solar power in rural areas	b. Awareness of solar power in rural areas • Nomads are more and more aware because of their need for lightning and chargers. Some invest in solar and actually charge the phones of everyone around. More and more have been coming to cities just to buy small solar devices.
c. Technical capacity for solar power in urban areas	• In Garowe, there are private technicians that have been trained on solar. • Businesses also have their own technicians that help install or fix the panels. • NECSOM also have technicians.
d. Technical capacity for solar power in rural areas	• Very limited
e. Education and training on solar power	• Universities are the first, they have a responsibility to educate and train the society. Everything is connected to the courses they give.
f. Availability and quality of solar power products	• Solar is available in many businesses in Garowe, you can get any product you need • There is no quality control in place. Some of the products are thus very low quality. It creates problems and need for constant change of battery or inverter

g. Financing for solar power business.	• Government should do the financing and provide it to the population • Only businesses are investing so far
h. Government policy and regulation for solar power.	• Not many, but with the different development plans they are trying to align themselves with international organizations. Mostly just to get funds
5. What are the major challenges limiting the growth of solar?	• Lack of awareness • Lack of policies • Lack of an effective government • Lack of finance • Lack of knowledge in that sector • Corruption • No industry
6. What are the major opportunities that can accelerate the growth of solar power?	• Somali Environment with over 310 days of sun, 3000 hours a year, and windy regions • Youth that are more and more educated and want to make a change • Companies that are interested in supplying energy cheaper • Common goal
7. What recommendations would you give to accelerate the growth of solar power?	• Public-private partnerships • Invest first • Create awareness • Government should create plans and strategies

Annex 3 – Case studies of solar power growth in Puntland

Case Study - National Energy Corporation in Somalia (NECSOM)

National Energy Corporation in Somalia (NECSOM) was established in May 2003. NECSOM has focused on building long term value for its shareholders by investing in energy technologies that are designed to provide affordable, clean and reliable power to its client base. With its operational headquarters in Garowe, NEC provides energy to over 10,500 households in the city; at the same time it has expanded to Kismayo and Mogadishu.

The total energy produced by the company comes from three sources, with 55 % from fuel, 25% wind and 20 % solar. It is important to note that these percentages depend on the seasons and the demand. When the company depended only on fuel generators, the price of electricity was $0.925/kW. With the installation of solar, the price of electricity per kilowatt has gone down by 17% to retail at $0.79/kW.

As a move towards embracing renewable energy NESCOM invested $ 7 million in a new power plant that focuses on solar and wind. This investment especially in the Solar System has enabled the company to reduce its expenses by 30%. The essence of investment in renewable energy is to make energy affordable and reliable to its clients. It is anticipated that the price of electricity will in the short term reduce by 15-17% as per the analysis of the energy provided by wind power. Nevertheless, NECSOM's long term goal is to be the cheapest energy provider in Somalia by supplying electricity at $ 0.25-0.3/kW, and reduce the percentage of energy that comes from fuel generator to 35%, and finally to increase the percentage of energy produced by wind.

Regarding the maintenance and operation, most Somalis technicians have basic knowledge of generators since it is the source that has being used for the longest period. They have good experience in dealing with generators. Solar needs little maintenance but since it is a new source, the local technicians barely have knowledge or training in solar power. Wind system needs more maintenance than solar systems so the company had to send technicians abroad for training.

Information from NEC shows many advantages in investing in renewable energy. Prices have reduced by 17%, the company now provides environmentally friendly energy source, it has taken advantage of naturally available resource and most importantly, the company has taken Somali a step forward by investing in renewable energy.

Despite these advantages, there are few drawbacks. The energy output from these renewable sources depends on seasons and humidity. There is a serious lack of technical knowledge since there is not institution that provides training on renewable energy. Lack of skills make it expensive for the company to operate as it has to sign partnerships with companies and organizations for technical support.

Case Study – Garowe General Hospital

Garowe General Hospital is a regional referral hospital in the Puntland capital city. With about 10,000 patients accessing Garowe General Hospital every year, the health facility is the main referral public hospital in the region. Built in the 1970s, Garowe hospital has a medical, surgical, paediatric and maternity ward that works 24 hour every day. The hospital has 84 beds, 24 individual rooms, A&E, lab services, X-ray, and a dispensary.

Before 2014, the hospital depended fully on electricity and motor simultaneously for its power. That energy was provided by the only energy company in Puntland, the National Energy Corporation of Somalia (NECSOM) and the hospital used to spend between 4,000 to 5,000 dollars per month. The motor was used as a back-up plan when there is a cut of electricity during the day or night.

In 2014, an environmentally friendly endeavour co-sponsored by the United Nations Development Program (UNDP) brought a practical solution to the hospital that addressed its unpredictable and expensive power supply. UNDP hired foreign technicians who helped in installing two solar power systems. They also created an online repairing system that allowed them to monitor and support the power system from abroad. The solar power system has helped the Hospital reduce its monthly electricity bill while at the same time supply power continuously and in a predictable way.

After the system was installed, a few problems were observed but were resolved through the collaboration with NECSOM. Since then the hospital has collaboration with NECSOM for the maintenance and operation of the system. The hospital has made and arrangement with NECSOM where the hospital connects the energy created via the hospital solar system to NECSOM energy grid for the city and NECSOM the supplies the hospital with the exact power its needs at no extra cost. Since the hospital does not have its own control and monitoring system, NECSOM provide the maintenance and control of the hospital solar system.

Annex 4 – Study photo gallery

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Picture 1: Bossasso FGD participants discussing on SDGs localization

Picture 2: SIDRA researcher during a KII in Bossasso

Picture 3: A member of Eyl's Council point of view on SDG localization

Picture 4: Women from different sectors in Eyl participating in a FGD

Picture 5: FDGs meeting in Galdogob

Picture 6: Discussion on growth of solar in Galdogob

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Picture 7: MoPIC and SIDRA opening SDG 7 localization workshop

Picture 8: Discussion among youth on SDGs

Picture 9: Stakeholders participating in the SDG 7 localization workshop in Garowe

Annex 5 – List of FGDs participants
Location: Garowe
Conference Hall, 23rd Nov 2017

No.	Name	Organization
2.	Abdiwahab Abshir	NECSOM
3.	Abdullahi Shire Said	GOLIS
4.	Abdirizaq Ahmed Faarah	University of Bossasso (Garowe HQ)
5.	Abdulqadir Abdikhadar Nuur	East Africa University
6.	Ahmed Bashir Jama	Puntland State University
7.	Abdirahman Sheikhdoon Ali	Garowe Teacher Education College
8.	Mohamed Hassan	Salaam Bank
9.	Fadumo Dirie Nuur	SAMOFAL
10.	Naima Muse Elmi	PUNSAA
11.	Diini Abdirizaaq Jama	Amaano Construction Co.
12.	Mohamed Hassan	Takaful Insurance
13.	Farhan Mohamed Jamac	Dahabshiil Bank
14.	Khadra Rashiid	WAWA
15.	Ibrahim Mohamed Hassan	Scansom
16.	Liban Jama	TIS-Plus
17.	Cali Farah Cali	PDRC
18.	Mohamed Hassan Burci	PSU
19.	Mariam Said Mohamud	Ministry of Health
20.	Sulimah Said Nor	MOICCH
21.	Abdinasir Cali	MOPIC
22.	Abdifatah Maxamed	Al Naciim
23.	Eng. Ismail Mohamud	PSAWEN
24.	Mohamed Isse	MOEWT
25.	Najma Abdiqani Ahmed	Student
26.	Samsam Ali Mohamed	Student
27.	Ahmed Ali Abdi	Somali Multimedia
28.	Mustafe Mohamed	DAI

Location: Bossasso
Gacayte Conference Hall, 11th Nov 2017

No	Name	Organization
1.	Ismacil Ibrahim Hassan	Rajab Energy
2.	Ismaciil Mohamed Muse	Ministry of Justice
3.	Omar Adan Abdi	Fishery
4.	Mohamed Abdirahman Abdi	EAU
5.	Aadam Shiikh Mohamoud	Nahda NGO
6.	Ahmed Fahiye Mohamed	Daryel Hospital
7.	Fadumo Ali Hassa	ASAL
8.	Mohamed Salad Abdi	Gurico Water Co.

9.	Assad Ciise	Local Government
10.	Maryam Osman	Sudi Laywer
11.	Abshik Yusuf	MOE
12.	Ali Faarah	Freelancer
13.	Hassan Ibrahim	Engineer
14.	Ahmed Muuse	Takaful Insurance
15.	Bushro Siciid	Telecom
16.	Mohamed Abdillahi	MOEHE
17.	Cabdinasir Yusuf	Jubba
18.	Fatima Mohamed	Pharmacy
19.	Abdallah Jamac	EAU
20.	Abdiwaduud Ali Faarah	EAU
21.	Fatima Abdillahi Noor	Bossasso University
22.	Ayaan Warsame	Hubaal
23.	Abdiqadir Abubakar	Gumco
24.	Faarah Dayib	Somtel
25.	Dahir Mohamed	Traditional Elder
26.	Zeanab Ismail Mohamed	Daryeel Women Organization
27.	Faiza Abdinour Jama	__Women Activist

Location: Eyl
Hotel Libin, 17th Nov 2017

No	Name	Organization
1.	Faysal Khaliif Waceys	Deputy Mayor
2.	Caasho C/Kariin Xisri	Women Groups
3.	C/Rashid Ali Mire	Business man
4.	Amina Xasan Ceegaag	Council Member
5.	Mohamed Khaliif Cisman	Council Member
6.	Mahamud Musa Ciisa	Pharmacist
7.	Abdiqadir aden cade	Finance Officer for local government
8.	Cali Muuse Yuusuf	Neighborhood Commission
9.	Mohamed Abshir Yusuf	Neighborhood Commission
10.	Abdi Muuse Mohamed	Council Member
11.	Said Macalin Axmed	Electrical Engineering
12.	Koronto Hassan Ade	Golis
13.	Jaamac Ducaale	Teacher
14.	Ayaan Nuur Xirsi	Business owner
15.	Maxamud Barre Yusuf	Business owner
16.	A/rahman Muuse Abdi	Religious leader
17.	Abdillahi Saciid Nuux	Teacher
18.	Faarax Cabdi Ceegaag	Traditional elder
19.	Abdiqadir M. Guuleed	Police
20.	A/Fataah Osman Sheekh	Youth Group
21.	A/rizaaq a/rahman saciid	Police

22.	C/rashiid c/qadir yanyare	Youth Group
23.	Saalah Mohamud Xaashi	Police
24.	Colaad Axmed Ciise	Youth Group
25.	Faarah Abdinasir Yaasin	Student
26.	Ismaciil Ow Maxamed	Council
27.	Shukri Macalin Axmed	Mid-wife
28.	Barre Jaamac Cawad Raage	Business man
29.	Axmed Mohamed Cali	MCH worker
30.	Maryam C/naasir Xaashi	Student

Location: Galdogob
Tawakal Conference Hall, 4th Nov 2017

No.	Name	Organization
1.	Hawa Ahmed Cilmi	Shafii Health Center
2.	Abdihakiim H. Ahmed	Salaam Bank
3.	Abdirizaq Ali Ugaas	Rayaan Construction
4.	Mohamed Abshir Jama	Bretco Company
5.	Dahabo Abdullahi Egal	Women Organization
6.	Ahmed M. Roorshe	Dev. Organization
7.	Cumar C/llahi Xaashi	Salaam Bank
8.	C/rizaaq Axmed Toxyare	Local government
9.	Khaalid Bashir Cismaan	Kaafi Electronics
10.	Axmed c/lle dhubac	Hiddig Electronics
11.	Caasho Ibraahim Cagmadhige	Women Organization
12.	Xasan C/llahi Xaashi	Polyclinic Center
13.	Dr Khalid Abdullahi Axmed	Galdogob Polyclinic Center
14.	Cabdinur Cismaan Aadan	Dev Organization
15.	Mohamed Abdullahi Aden	Galdogob General Hospital
16.	Habiib Oday	Nabaad Maal
17.	Xaawo Mohamed Faarah	Save the Children
18.	C/nuur Mohamud Xasan	Nepco
19.	Xusein Cali Warsame	Youth Organization
20.	Saciid Jaamac Calafoge	Health Center
21.	Ali Adan Khayre	School Head teacher
22.	Hawo Mohamed	GG Hospital
23.	Abdirizak Ciise Hirsi	Business Man
24.	Abdinur Faarah	Iqra School
25.	Abdinour Mohamed	GOLIS
26.	Mohamed Yaasin	Save the Children
27.	Naima Nuur Jaamac	Nurse
28.	Saadik Mohamed	Wadani Company
29.	Abdullahi Adan	Rayaan Pharmacy
30.	Mohamed Mowliid Haybe	Al Bayaan Institute

Annex 6 – List of key informants

Location	Organization	Name	Position
Bosaaso	Qoraxmaal	Mohamed Ahmed	Data Entry
	Rajab Energy	Ismail Ibrahim Hassan	General Manager
	SECCO	Mohamed Said,	Manager
	Surad Energy	Mohamed Ali Badwi	Managing Director
	EAU	Mohamed Mohamud Isse	Deputy Chancellor
	Vision College	Mohamed Hassan	Management
	Takaful Insurance	Ahmed Muuse	Manager
	Traditional Elder	Dahir Mohamed	
	Daryeel Women	Zeynab Ismail Mohamed	
	Organization		
	Women Activist	Faiza Abdinour Jama	
	Fisherman	Omar Adan Abdi	
	EAU	Mohamed Abdirahman Abdi	Lecturer
	Nahda NGO	Aadam Shiikh Mohamoud	
	Daryel Hospital	Ahmed Fahiye Mohamed	
	Horyad Electronic	Abshir Yasin	Sales Manager
Eyl	Bajureeri	Abduqadiir Salim Ahmed	
	Golis	Abdirahman Hassan Abdi	Manager
	Eyl Hospital	Ahmed Daahir	Doctor
	Business	Ruqiyo Warsame Farah	Owner
	Said Macalin	Axmed Electrical Engineering	
	Police	Abdiqadir M. Guuleed	
	GOLIS Koronto	Hassan Ade	
	Business owner	Maxamud Barre Yusuf	
	Eyl Secondary School	Jaamac Ducaale	Teacher
	Religious leader	A/rahman Muuse Abdi	
	Eyl Secondary School	Abdillahi Saciid Nuux Teacher	
	Business owner	Ayaan Nuur Xirsi	
	Traditional elder	Faarax Cabdi Ceegaag	
	Ugbaad	Abdiqadir Adan Mohamed	Director
Garowe	University of Bosaso	Abdirizaak Ahmed Farah	Public Relations Director
	East Africa University	Abdulkadir Abdikhadar Nuur	International Relations Director
	Puntland State University	Ahmed Abshir Jama	DVC- Admin and Finance
	NECSOM	Abdiwahab Abshir	Chief Operating Officer
	SECCO	Omar Mohamoud	Owner
	NECSOM	Abdifatah Mohamed	Chairman
	MOPIC	Abdinasir Ali Dahir	Director of Statistics
	HEG	Abdelmalik Jama Mohamed	Founder
	Puntland Petroleum Co.	Mohamed Abdinur	Member
		Abdirashid Mohamud Diriye	
	PUNSAA	Feisal Ahmed Warsame	Chairman
	SAMAFOL	Fadumo Diriye Nur	Director

	FAWESOM	Zahra Said Nur	Director
	WIRESSagal	Omar Mohamoud	Director
	Golis	Abdullahi Shire Said	Electrical Engineer
Galdogob	Trade Union	Xabiibo Cali Subayr	
	Women's Organization	Kiin Gafaa	Director
	Somtel	Muuse Maxamud	Director
	Youth Organization	Abdiqadir Muuse	Member
	Women Organization	Caasho Ibraahim Cagmadhige	Member
	Polyclinic Center	Xasan C/llahi Xaashi	Trainer
	Galdogob Polyclinic Center	Dr Khalid Abdullahi Axmed	Director
	Gal. Dev Organization	Cabdinur Cismaan Aadan	Director
	Galdogobn General Hospital	Mohamed Abdullahi Aden	
	Nabaad Maal	Habiib Oday	Manager
	Save the Children	Xaawo Mohamed Faarah	
	Nepco C/nuur Mohamud	Xasan	Manager
	Youth Organization	Xusein Cali Warsame	Member

Annex 7 – Data collection questionnaires

a) Public survey on localizing SDGs in Puntland

No	Question	Expected Response
1	Name of respondent:	Text
2	Respondent location:	-Garowe, -Bosaso, -Galdogob, -Ely
3	Respondent gender:	-Male -Female
4	Respondent age:	-Years
5	Respondent education level:	-None, -Primary -Secondary, -College, -University
6	Respondent area of work:	-Development -Trade and commerce -Agriculture -Education -Others
7	Name of organization or institution:	-Text
8	Type of organization or institution:	-Government -Youth or Women Group -NGO (International or Local -Academic Organization -Private Sector Organization -UN Agency -Donor Agency
9	Respondents title / role in the organization or institution:	-Manager/ Head of Office -Programme / Projects staff -Technical staff -HR / Admin / Finance staff -Other (specify)
9.1	If you selected “others” for the respondent title/ / role. Please specify;	-Less than 1 year -Between 1 and 2 years -Between 3 and 5 years -More than 5 years
10	How long have you been with the organization / institution?	- Text
11	Which activities is your organization or institution undertaking in the areas it works in? (Separate multiple activities with semi colon):	-Text

12	Which tools does your organization or institution use to prioritize your activities:	-Somali National Development Plan -Puntland Development Plan -Internal analysis and discussion -Sector strategy (Specify) -Not sure -Others (Specify)
12.1	You selected "Sector strategy" as a tool for prioritizing activities. Please specify.	-Text
12.2.	You answered "Others" as a tool for prioritizing activities. Please specify.	-Text
13	Is your organization or institution undertaking specific activities to support attainment of the Sustainable Development Goals (SDGs) in the areas where your organization or institution works? [If yes, ask Q14, otherwise go to question 15]	-Yes -No
14	Select the activities your organization or institution has undertaken to support attainment of SDGs at the area where you work:	-Awareness creation on SDGs -Advocacy campaign for SDGs -Advocacy campaign for SDGs -Alignment of organization / institution work with the SDGs -Monitoring and Evaluation of activities against SDGs -Identification of SDGS targets and indicators -Training and capacity development on SDGs -Others (Specify)
14.1	You selected "Others" for activities undertaken to support attachment of SDGs. Please specify:	-Text
15	Have you identified specific SGDs to focus on in your organization or institution work? (If yes, ask Q16 and 17, otherwise go question 18)	-Yes -No
16	Select the goals your organization or institution is focusing on. Please select only your main goals:	GOAL 1: No Poverty; GOAL 2: Zero Hunger; GOAL 3: Good Health and Well-being; GOAL 4: Quality Education; GOAL 5: Gender Equality GOAL 6: Clean Water and Sanitation; GOAL 7: Affordable and Clean Energy; GOAL 8: Decent Work and Economic Growth; GOAL 9: Industry, Innovation and Infrastructure; GOAL 10: Reduced Inequality; GOAL 11: Sustainable Cities and Communities; GOAL 12: Responsible Consumption and Production; GOAL 13: Climate Action; GOAL 14: Life Below Water GOAL 15: Life on Land; GOAL 16: Peace and Justice Strong Institutions GOAL 17: Partnerships to achieve the SDGs

17	Have you identified targets and indicators for the goals that your organization or institution has selected to focus on?	-Yes -No
17.1	If you have identified targets and indicators for the goals that your organization or institution is focusing on, how did you undertake the process:	-Through internal analysis -With support of external consultant(s) -In collaboration with partner organization and institution -Through community consultation -Using available SDG guidelines and tools
17.2	Is your organization or institution collecting data or information to monitor and evaluate progress made against the targets that you have set for your focus goals?	-Yes -No
18	Are there organizations and institutions that are working together to support attainment of SDGs in the areas where you work?	-Yes -No
18.1	If Yes to Q18, Which are the organizations working together to support attainment of SDGs in the area you are working: (separate answers with semi colons).	-Text
18.2	If Yes to Q18, Which activities are they undertaking together to support attainment of SDGs: (separate answers with semi colons).	-Text
19	Does your organization or institution have specific initiatives to ensure participation of marginalized groups (women, girls, youth, etc) in development initiatives?	-Yes -No
19.1	If Yes to Q19, which activities are you taking to involve marginalized groups: (separate answers with semi colons).	-Text
20	Are the existing development policy and strategies supporting the attainment of SDGs?	-Yes -No
21	Are there other policy and strategies that should be put in place to support attainment of SDGs?	-Yes -No
21.1	If yes to Q21, Which issues should the new policy and strategy address. (separate answers with semi colons)	-Text
22	In your opinion, what challenges limit attainment of SDGs in the area where you work:	-Text
23	In your opinion, what opportunities exists for the attainment of SDGs in the area where you work:	-Text

24	Which support would your organization or institution like to receive to contribute effectively on the attainment of SDGs in the areas where you work?	-General training on SDGs -Tools and methods to align SDGs to organization or institution work -Tools and methods to support attainment of SDGs in the areas where the organization works -Monitoring and evaluation for assessing progress in SDGs -None -Others (Specify)
24.1	You selected "Others" for support needed to contribute effectively in the attainment of SDGs. Please specify:]	-Text

b) Research survey on solar power use in Puntland

No	Question	Expected Response
1	Respondent name:	-Text
2	Respondent location:	-Garowe, -Bosaso, -Galdogob, -Ely
3	Respondent gender: Male, Female	-Male - Female
4 5	Respondent age: Year Respondent education level:	Year -None -Primary -Secondary -College -University
6	Respondent area of work:	-Development, -Trade and commerce, -Agriculture/Livestock, -Education, -Others
7	Do you currently use any kind solar power product: (If response is No, skip to Que. No. 17)	-Yes -No
8	How did you learn about solar power product?	-From Family / children / Friend; -Through a community group; -Through a development project; -Through the media; -From the market

9	What do you use your solar product for:	-Lighting; -Charging phone; Powering Radio / TV; -Reading and School work; -Cooking; -Water heating; -Refrigeration; -Powering business; -Others (Specify)
9.1	You selected "Others" for use of solar power. Please specify:	Text
10	Why did you opt for solar power?	-Had few other options, -It is environmentally friendly and clean, -Electricity is expensive, -Others (Specify)
10.1	You selected "Others" for opting for solar power. Please specify:	Text
11	How did you finance the solar product?	-Paid in cash; -Through a loan; -My given as a gift; -Others (specify)
11.1	If you selected others for how you financed your solar product. Please specify:	-Text
12	How much was the cost (in USD) of your solar product:	-USD
13	Who installed your solar product?	-My Self; Development project staff; Business Owner / Distributor; Local Technician; Others (Specify)
13.1	You selected others on how you installed your solar product. Please specify	-Text
14	How long have you used this solar product:	-Less than 1 year; -1 to 2 years; -3 to 5 years; -More than 5 years
15	Do you experience problems with your solar product:	-Yes -No
15.1	If yes, what kind of problems:	Text
15.2	If yes, Who assists you solve the problem:	-Myself; -Seller / Distributor; -Community project staff; -Private technician; -Other (specify)
15.3	You selected "Others" for assistance in solving solar power problems. Please specify: Text	-Text
16 Text	How has solar power help you and your family:	-Text

17	Would you recommend solar products to others:	-Yes -No
17.1	What are your reason for recommending solar power:	-Text
17.2	What are your reason for not recommending solar power:	-Text
18	Would you like to own a solar power product:	-Yes -No
18.1	If yes, Do you have constrains that would limit you to own solar products:	-None; Not aware about solar; Do not have finance; It difficult to accessing solar products; Others (specify)
18.1.1	You have selected "Others" for constrains in owning solar products. Please specify:	-Text
19	Are you connected to electricity:	-Yes -No
19.1	If yes, What is your monthly electricity cost (in USD) estimate:	-USD
20	What are your different energy sources:	-Electricity, -Solar, -Firewood; -Candle; -Kerosene; -Lamp; -Others (Specify)
20.1	You selected "Others" for your source of energy. Please specify.	-Text
21	What recommendation can you make to improve access to affordable and reliable energy in Puntland:	-Text

c) Research survey on solar power business in Puntland

No	Question	Expected Response
1	Respondent name: Text	Text
2	Respondent gender:	-Male; -Female
3	Business name or institutions: Text	Text
4	Respondents title / role in the business or institution:	-Owner or co-owner; -Finance / Sales / Marketing; -Technical staff; -Employee; -Other (specify)

4.1	If you selected "Others" in the respondents role. Please specify:	-Text
5	How long has your business / institution been involved with solar products:	-Less than 1 year; -Between 1 and 2 years; -Between 3 and 5 years; -More than 5 years
6	How can you describe your business model:	-Manufacture; -Distributer; -Whole seller / Reseller; -Retail; -Development Organization; -Financing organization; -Others (specify)
6.1	You selected "Others" for your business model: Please specify:	-Text
7	What solar power products does your business / institution deal with:	-Solar panels; -Solar batteries; -Charge controllers; -Inverters; -Solar Home Systems kits; -Others (specify)
7.1	You selected "Others" for solar products. Please specify:	-Text
8	Most of your customers are:	-Individual; -Schools; -Hospitals; -Businesses; -Resellers / Technicians; -Community / Development organizations; -Others (specify)
8.1	You have selected "Others" in your customer type.	-Text
9	Most of your customers are in:	-Rural areas; -Urban areas; -Peri-urban areas
10	How many customers did you serve in the last three months:	-None; -Less than 5; -5 to 10; -More than 10
11	How do your customers pay for the solar products:	-Cash; -Credit; -Part cash and part credit; -Others (specify)
11.1	You selected "Others" for the way customers pay for solar products. Please specify:	-Text

11.2	If by credit, Who provides the credit?	-Text
13	Do you provide information or training to your customers?	-Yes -No
13.2	If no, why:	-Text
14	What is the expected life span of your solar products?	-Years
15	Does your product have warranty? No If no, why?	-Yes -No -Text
16	Do your customers experience problems with the solar power products:	-Yes -No
16.1	If yes, what are the problems reported by the customers:	-Text
16.2	How do your address these problems? Text	-Text
17	What are the main challenges you have encountered in your solar business?	-Limited awareness on solar power product; -High cost of organizing marketing campaigns; -Limited technical capacity on solar power; -Limited financing to solar power business; -Weak policy and regulation, -Others)
17.1	You have selected "Others" in the challenges you face in your solar business. Please specify:	-Text
18	What are your recommendation to accelerate growth of solar power in Puntland:	-Text

Annex 8 – FDGs on localizing SDGs in Puntland

FGD Guiding Questions

1. What is the level of awareness on Sustainable Development Goals (SDGs) among the organizations and institutions working in the area?

2. Are they initiatives undertaken collectively by the organizations and institutions working in the area to promote and planning SDGs actions?

3. If such initiatives have been organized,:
   a. Who organized then?
   b. Who took part in the initiatives?
   c. How were women and girls (or other potentially marginalized groups) represented?
   d. How have they worked?

4. Among the organizations and institutions represented, how many have been involved in the following activities to promote and plan SDG actions:
   a. SDG awareness creations,
   b. SDG advocacy campaigns,
   c. Alignment of local needs and priorities to SDG,
   d. Common implementation of local SDG actions, and
   e. Data gathering and monitoring and evaluation of local SDG actions.

5. How have government policy, laws and regulations facilitated efficient implementations of SDGs and related actions in the local area?

6. In your organization / institutions what has been your experience working with SDGs and taking actions related to SDGs?

7. Can you give us some examples of your organization / institutions experience working with others (Government, CSO, Community, Private sector, Academic, etc) on SDGs and taking actions related to SDGs?

8. Can you give us some examples of your organization / institutions experience monitoring and evaluating SDGs? What are the challenges?

9. What are your experiences What do you think are the major challenges affecting efficient implementations of SDGs and related actions in the local area?

10. If you had the responsibility and resources, what actions would you take to facilitate efficient implementations of SDGs and related actions in the local area?

Annex 9 – KII on solar power growth in Puntland

Guiding Questions

1. Record KI Name, Organization and Title
2. What is the KI role in the organization and for how long?
3. What is your experience with the growth of solar power in Puntland?
4. Who in your experience are the key players in the growth of solar power in Puntland?
5. What can you say about the following:

a. Awareness on solar power in urban areas

b. Awareness on solar power in rural areas.

c. Technical capacity for solar power in urban areas

d. Technical capacity for solar power in rural areas.

e. Education and training on solar power.

f. Availability and quality of solar power products.

g. Financing for solar power business.

h. Government policy and regulation for solar power.

6. What are the major challenges limiting the growth of solar power?
7. What are the major opportunities that can accelerate the growth of solar power?
8. What recommendations would you give to accelerate the growth of solar power?

ABOUT SIDRA

SIDRA is a registered independent, not-for-profit Research and Policy Analysis Think Tank based in Garowe, Puntland, Somalia

OUR MISSION

A centre of development and research that generates relevant and original knowledge for dynamic policy environment support, institutional capacity developmet and alliance

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The Somali Institute for Development & Research Analysis (SIDRA)

info@sidrainstitute.org

www.sidrainstitute.org