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# Environmental Sustainability, Climate Change and Resilience Pillar

**Stories from  
the field**

# 2017



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# FOREWORD

Tanzania is a country of immense beauty, rich in natural and human resources. From the hustle and bustle of Dar Es Salaam to the vast plains of the Serengeti to the highest peak in Africa, Mount Kilimanjaro, Tanzania is undoubtedly blessed with unique endowments and opportunities. With a youthful population, Tanzania has a promising future. With continued strong economic growth, the country is on-track to finally leave behind its low-income status and will become a middle-income country by 2025.

However, this progress is under threat as the impacts of climate change are becoming more evident. Prolonged droughts, extensive flooding and more intensive storms are becoming frequent, and on a scale not seen before in different regions of the country. The risks to the economy are compounded with the human threat posed to wildlife and forestry, with elephant numbers seeing rapid decline in recent years, and with deforestation at an alarming rate.

In 2010, Tanzania set forth its vision to address these challenges in order to “co-ordinate and direct the people’s efforts, minds and our national resources towards those core sectors that will enable us attain our development goals and withstand the expected intensive economic competition ahead of us.” This is called for in Tanzania Vision 2025. UNDP, through the

UN Development Assistance Plan I (2011-2016) and II (2016-2021), and its Country Programme Document (2016-2021), is proud to support the Government’s endeavors in achieving this Vision.

Through its “Environmental Sustainability, Climate Change and Resilience Pillar”, UNDP is helping to address the issues of poaching, climate change, deforestation and energy poverty, among other things. All our interventions in these areas are geared toward supporting the country to achieve its national plans and meet the Sustainable Development Goals (SDGs).

The short stories contained in this book serve to highlight some of our achievements and lessons learned over the past year. We are proud of the impacts achieved on the ground through engaging local communities, local governments and civil society organizations in the implementation of projects. Having visited many of the projects, I have seen first-hand the benefits of these projects, especially in ensuring gender mainstreaming and empowerment of women and other disadvantaged groups such as the poor and the unemployed. Noting there is still a long way to go, UNDP Tanzania looks forward to sustain the positive partnership with the Government of and people of the United Republic of Tanzania and our development partners in supporting the country to achieve its ambitious development objectives and vision.



Alvaro Rodriguez  
UNDP Resident Representative



# UNDP INTERVENTION IN RELATION TO SDGs



Ensure healthy lives and promote wellbeing for all at all ages.



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

## UNDP-Pillar II



Take urgent action to combat climate change and its impacts.



Ensure access to affordable, reliable, sustainable and modern energy for all.



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.



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# ACRONYMS

<b>APCCC</b>	Africa Partnership on Climate Change Coalition
<b>AWS</b>	Automatic Weather Stations
<b>CADESE</b>	Capacity Development in the Energy Sector and Extractive Industries
<b>CTC</b>	Care Treatment and Counseling
<b>FDI</b>	Foreign Direct Investment
<b>FYDP</b>	The National Five Year Development Plan
<b>GDP</b>	Gross Domestic Product
<b>GEF</b>	Global Environmental Facility
<b>GPS</b>	Global Positioning System
<b>HIMARU</b>	Hifadhi ya Mazingira na Utalii Rungwe
<b>IGAS</b>	Income-Generating Activities
<b>JKU</b>	Jeshi la Kujenga Uchumi
<b>LGAs</b>	Local Government Authorities
<b>MEM</b>	Ministry of Energy and Minerals
<b>MoWI</b>	Ministry of Water and Irrigation
<b>NGO</b>	Non Governmental Organization
<b>RUNAPA</b>	Ruaha National Park
<b>SDGS</b>	Sustainable Development Goals
<b>SPANEST</b>	Strengthening the Protected Area Network of Southern Tanzania
<b>TADELO</b>	Tanzania Development Light Organization
<b>TANAPA</b>	The Tanzania National Parks Authority
<b>TANESCO</b>	Tanzania Electric Supply Limited
<b>TMA</b>	Tanzania Meteorological Agency
<b>ToT</b>	Training of Trainers
<b>TPDF</b>	Tanzania People's Defense Force
<b>TVL</b>	Tanzania Vulnerable Lighter
<b>UAE</b>	United Arab Emirates
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	The United Nations Environment Programme
<b>VEO</b>	Village Executive Officer
<b>WEC</b>	World Elephant Centre
<b>VPO</b>	Vice Presidents Office
<b>PO</b>	President's Office
<b>TZS</b>	Tanzania Shilling

# WHERE WE WORK

## Environmental sustainability, climate change and resilience



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### CAPACITY DEVELOPMENT

Capacity development in the energy sector and Extractive industries (Kagera, Chemba, Ikungi & Bukoba rural)

### CAPACITY DEVELOPMENT

Strengthening Climate Information and Early Warning systems (Sikonge, Chato, Kigoma MET College, Muleba, Bahi & Kigoma Marine)

### NATURAL RESOURCE MANAGEMENT

Strengthening Protected areas Networking in Southern Tanzania (Iringa, Mbeya, Katavi, Dodoma & Njombe)

### CAPACITY DEVELOPMENT

Renewable Energy (Biogas) Construction Programme for Rungwe District



### CAPACITY DEVELOPMENT

Strengthening Climate Information and Early Warning systems (Lyamungo, Arumeru, Mombo Airstrip, Lushoto, Arusha National Park, Babati, Simanjiro, Ngorongoro & Tarime)

### CAPACITY DEVELOPMENT

Strengthening Environment and Climate Change Governance for Zanzibar

### NATURAL RESOURCE MANAGEMENT

Securing watershed through Sustainable Land Management in Zigi and Ruvu catchments

### CAPACITY DEVELOPMENT

Strengthening Climate Information and Early Warning systems (Ifakara, Newala, Liwale, Ruangwa, Lindi Airport, Nachingwea & Mafia Airport)

### CAPACITY DEVELOPMENT

Strengthening Climate Information and Early Warning systems (Namtumbo, Muhuwezi Seminary, Mbamba Bay, Mufindi-Kibengu & Sadan, Tukuyu, Mbeya Old Airport & Kyela)





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**BEEKEEPING:**  
One of the beneficiaries of the UNDP's intervention in Zanzibar displays honeycomb after harvesting. The intervention aimed at helping communities generate alternative income while conserving forests.



# Supporting Environmental Conservation



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# 30 'BIG BROTHER' ELEPHANTS OF GREAT RUAHA LANDSCAPE COLLARED

## Ruaha, IRINGA

Have you ever come across an elephant with a necklace—one protecting hundreds of other elephants? In the Great Ruaha landscape of Tanzania, one of the wildlife sanctuaries with the highest concentration of elephants in East Africa, the United Nations Development Programme (UNDP) supports an anti poaching campaign through a project titled 'Strengthening Protected Areas Networks in Southern Tanzania (SPANEST)'.  
As part of this campaign, in November 2015, thirty big brother elephants were fitted with vertex GPS satellite collars linked to a control centre located in the Ruaha National Park (RUNAPA) Headquarters. The collars enable real-time monitoring of elephant group – their location, movement, feeding range etc, thereby providing an innovative and cost-effective way of monitoring elephants. One can imagine the task rangers would have to encounter to monitor all these elephants physically on 24/7 basis for a vast park as RUNAPA. The basis of UNDP intervention in RUNAPA is the alarming rate of dwindling number of elephants. The assessment of elephant population in Tanzania indicated that elephants decreased from 109,051 to 43,330 between 2009 and 2014—equivalent to 60% decrease nationally in a space of six years. In RUNAPA alone, the number of elephants dropped from 34,000 to 15,836 between 2009 and 2016 (being over 50% decrease in just 7 years). These statistics are alarming and underlines the biggest challenge facing the country calls for concerted efforts to arrest the situation.

Being one of the big five, Elephants are one of the major tourist attractions in Tanzania. Tourism contributes significantly to national revenues. Thus, ensuring that national parks are sustainably managed including sustained growth and increase in number of wildlife is of paramount importance for the present and future generations. Basing on its goal, objectives and impacts UNDP initiative is in consonance with national and international frameworks particularly the Tanzania's Development Vision 2025, Agenda 2063—the Africa We Want as well as the SDGs. The initiative also contributes to the achievement of SDG 15 – Life on Land.

## Telemetry and collar technology

The concept 'Telemetry' means the science or process of collecting information about objects that is located far away and sending the information elsewhere electronically. This artificial intelligence in the war against wildlife crime is designed to facilitate telemetry studies of elephants to determine local, regional and seasonal movements, habitat use and corridors. The collar or "necklace" technology uses a GPS receiver to calculate and record the respective animals' location, time and date at programmed intervals, based on signals received from a special set of satellites.

Elaborating on the collaring process, SPANEST National Coordinator Mr. Godwell Ole Meing'ataki said: "Care was taken to ensure that collaring involved various herds and locations. During the actual collaring process, the elephants were darted by spotter plane from the Tanzania National Parks (TANAPA) with ground teams." He added that once an elephant had been darted down, a collaring expert would fit a vertex GPS satellite collar around its neck.

Apart from collaring, other physical measurements and blood samples were collected for future genetic studies. Information to be generated by telemetry studies through elephant monitoring system will facilitate the development of a comprehensive Management Plan for Elephants in the Great Ruaha Landscape.

The SPANEST Coordinator said the World Elephant Centre (WEC) was contracted to establish and

*"Care was taken to ensure that collaring involved various herds and locations. During the actual collaring process, the elephants were darted by spotter plane from the Tanzania National Parks (TANAPA) with ground teams"*

run the monitoring system in collaboration with Tanzania National Parks (TANAPA). The WEC provided technical training to selected RUNAPA staff and researchers in the landscape as part of the effort to build local capacity on this innovate and modern technology to management of wildlife.

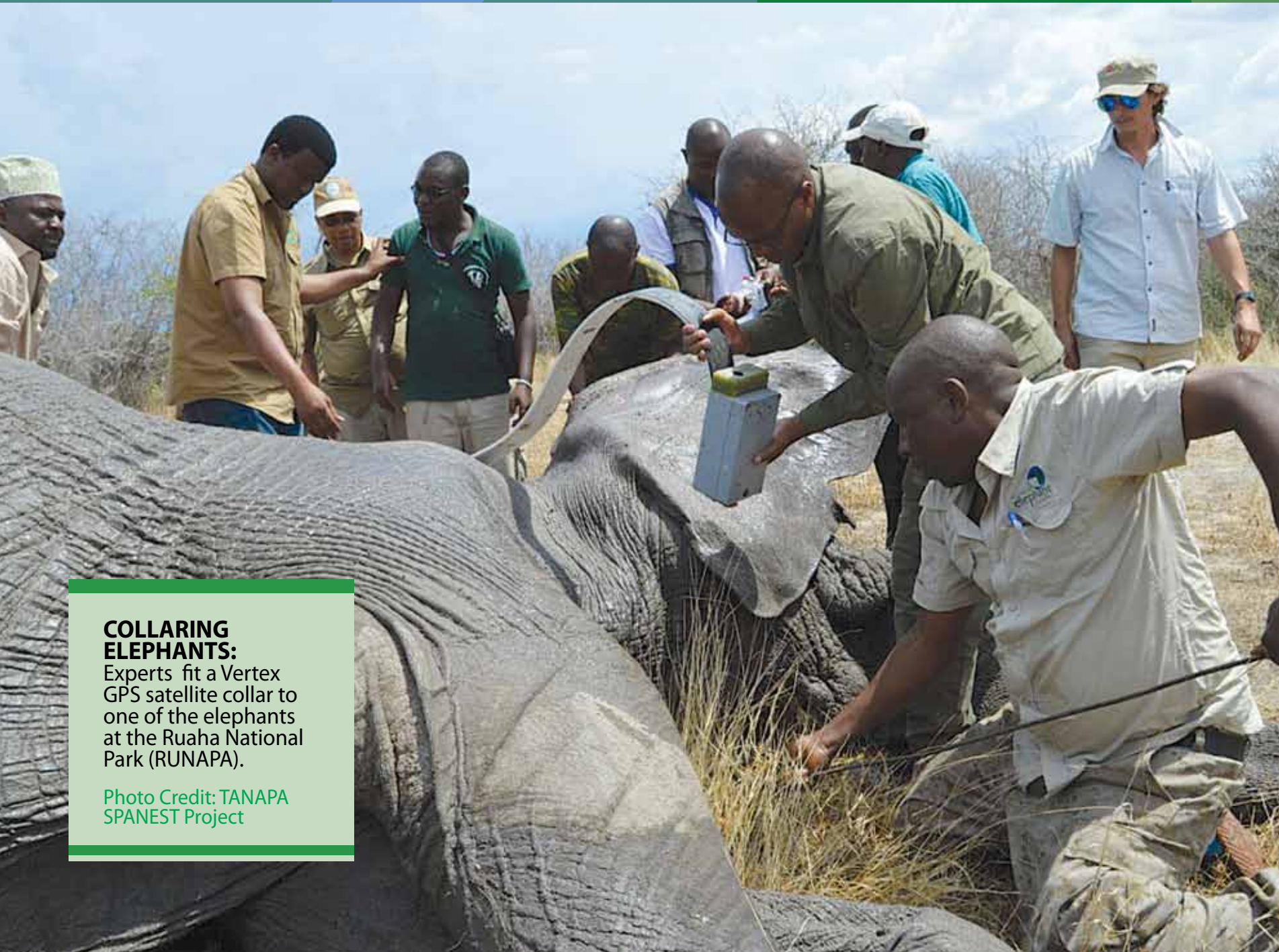
Dr. Ezekiel Demba – acting Executive Director for TANAPA, at a time, applauded UNDP noting that: "UNDP has recognised the dire need of the Tanzania national reserves. This is because we care not only for our national interests but also for the interests of the whole of humankind."

## Need for More efforts

Documented testimonies and experience in the Great Ruaha attests to the dire need for scaling up and out this anti-poaching system, particularly in the face of the daunting challenges facing elephants in such large landscape, with marauding poachers who are hunting them down for their tusks.

The project officers said if many more elephants were collared, the poaching incidences would decrease sharply, and there would be improvement in the management of wildlife not only in RUNAPA but nationally. This is particularly so given the fact that the number of patrol staff currently deployed in the park lack vital facilities such as motor vehicles for doing what is required to arrest the mushrooming poaching incidences. "Thanks to the UNDP support, the park now had recourse to a motor grader and cars, but more support is needed", concluded the park's project officer.

Year	Number of Elephants
2009-	109,051
2014-	43,330



**COLLARING ELEPHANTS:**

Experts fit a Vertex GPS satellite collar to one of the elephants at the Ruaha National Park (RUNAPA).

Photo Credit: TANAPA SPANEST Project



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# CONSERVING CATCHMENTS TO ENHANCE WATER AVAILABILITY

## Ruvu, MOROGORO

Six million people live in the area served by Ruvu Catchment, which covers Dar es Salaam, Morogoro, Dodoma, Tanga and Coast Regions of Tanzania.

Ruvu Catchment supplies water for livestock, irrigation, industries, domestic use, and wildlife in the Selous Game Reserve, Mikumi National Park and Saadani National Park. The river covers an area of 17,789 square kilometres.

## Basin Management

Prior to the adoption of the National Water Policy of 2002, Catchment areas were managed by the regional administrations under the local government authorities. This management approach did not produce the expected results in conservation of water catchments mainly because rivers bodies and their catchments extend beyond administrative boundaries. Consequently, a new National Water Policy of 2002 adopted and introduced the Water Basins Management Approach to address the transboundary problem encountered before.

The 2002 Water Policy was complemented by the 2009, Water Resources Management Act which established the river basin authorities for the management of catchment areas. Despite these developments, the institutional capacity and co-ordination mechanism amongst water

basin authorities remained weak, unable to achieve the required performance and sustainability in catchment conservation.

Besides institutional and co-ordination challenges, the growing rate of deforestation, uncontrolled bush fires, land degradation and unsustainable practices in the basin (e.g. livestock keeping) further threatened functioning and sustainability of the Ruvu catchment. Pollution from illegal gold mining aggravated the water quality status due to increased activities of small-scale miners (alluvial gold) in the upper catchment of the Ruvu River.

## UNDP intervention

Responding to the above conservation challenges UNDP, the Global Environmental Facility (GEF) and the Tanzanian government introduced a five-year programme (2015-2020) aimed at addressing the challenges facing Ruvu catchment by implementing sustainable land management interventions against land degradation in forests, rangelands and farmlands.

The programme titled 'Securing Watershed Services through Sustainable Land Management in the Ruvu and Zigi catchments (Eastern Arc Region Tanzania)' was developed by UNDP and is

being implemented by the Ministry of Water and Irrigation (MOWI) with a target to increase water quantity and quality by 10% by the year 2020.

As part of its strategy to address threats driven by socio-economic factors such as poverty, the project has since its inception in mid-2016, installed more than 150 beehives to provide communities with alternative source of livelihood for the surrounding communities. As a result, by mid 2017, a total of 350 beehives were projected to have been installed.

Commenting on progress, the Project Co-ordinator, Mr. Maximillian Sereka, noted

**Since its inception in mid-2016, the project installed more than 150 beehives to provide communities with alternative source of livelihood for the surrounding communities.**

that most of the stakeholders were involved in the project implementation. "Stakeholders from key sectors are being involved in the project implementation to bring about positive changes to the communities and ecosystem".

The UNDP Catchment Conservation Support include the Zigi river commonly known as the water tank of Tanga City, and the main source of livelihood for surrounding local communities in over 79 villages but faces critical threats similar to the Ruvu catchment from surrounding communities. It is therefore expected that UNDP interventions will help address



## READING WATER FLOW:

One of the community members trained as a water gauge reader reads water flow in Upper Ruvu Catchment in Morogoro.

“Estimates suggest that by 2025, the total population (rural and urban) dependent on the Ruvu sub-basin will total 8,317,622, which represents a 44.71% population increase by 2025” GLOWS-FIU (2013).



# BIOGAS ENERGY REDUCES PRESSURE ON Mt. RUNGWE NATURE FOREST RESERVE

## Rungwe, MBEYA

Mount Rungwe is the third highest peak in Tanzania (2,960m), after Mt. Meru (4,565m) and Mt. Kilimanjaro (5,895m). The mountain is famous for its ecosystem where most of the world's rare species are found including the Kipunji *Rungwecebus Kipunji* which is one of the species of world's old monkey. This makes Mt. Rungwe one of the only 12 Nature Forest Reserves in Tanzania.

Mt. Rungwe is characterised by thick forest rich with various plant species but is vulnerable to deforestation threats, from the surrounding communities that have over the years relied on biomass (charcoal and firewood) from those forests as the primary source of energy for cooking and heating at both household and institutional levels.

The growing pressure from energy demand has been the main trigger of the UNDP Renewable energy project in the area. The project involves the construction of biogas energy plants for 60 households selected from eight villages in six wards surrounding Mt. Rungwe. According to Mr. Wilbert Mtafya, Project Co-ordinator from Rungwe Environmental Conservation and Tourism (HIMARU), the project had already constructed 40 plants, which started operating by January 2017.

The benefiting wards were Kiwira, Bulyaga, Msasani, Iponjola, Kyimo and Syukula. These wards are all close to Mt. Rungwe where most residents fetch firewood and engage in charcoal

burning.

By providing alternative to this important source of energy, the project has grabbed the attention of many villagers as almost everyone in the village wants to own a biogas plant at his/her home. Ms. Aida Lamsi, one of the beneficiaries from Kiwira Village said; "Many people wish to have a biogas plant. They keep on telling me, you are very lucky to have a biogas plant".

Mr. Nico Mwandile from Ilolo village, Kiwira ward added that the project came as a blessing because the cost of living has been significantly reduced. "I do not have any plan of buying charcoal or gas for cooking. The project was a miracle to us. Nobody expected this. I feel blessed," Mr. Mwandile added. His decision and commitment not to use charcoal and firewood would save hundreds of trees.

Due to inadequate technology and information on carbon inventory around Rungwe, it is hard to measure the impact of biogas technology on reduced concentration of greenhouse gasses. However, there are reasons to believe that biogas technology is contributing in lowering greenhouse gas emission particularly methane gas, therefore playing a vital role on climate change mitigation.

The UNDP initiative is in line with the Sustainable Development Goals 7, which focuses on access to affordable, reliable, sustainable and modern energy for all, and SDG 13, which underscores carbon absorption through forest conservation.

**"I do not have any plan of buying charcoal or gas for cooking. The project was a miracle to us. Nobody expected this. I feel blessed"**



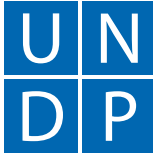
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**60 HOUSEHOLDS,  
MORE THAN  
240 PEOPLE  
HAVE BENEFITTED  
FROM BIOGAS  
ENERGY PLANTS**



“ Between 1990 and 2010, the total loss [of forest in Tanzania] was estimated to be 19.4% (about 8,067,000 ha) of the forest cover. Recent report indicates that the country has already lost about 38% of its forest cover. According to the report, the rate of loss is 400,000 ha per annum and, the risk is high as the country's entire forests can be depleted within the next 50 to 80 years if the current trend remains unabated ” Kideghesho, R. (2015).



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## TOWARDS DIVERSIFYING TOURISM IN RUNAPA

### Ruaha, IRINGA

Traditionally, in Ruaha National Park (RUNAPA), which covers more than 20,000 square kilometres (sq kms), and is the eleventh largest National Park in Africa, tourists' experienced game viewing by driving in the park. However, because of development in the tourism industry globally, there has recently been an increase in the demand for tour operators and camps for walking safari' a new way of experiencing game viewing in the RUNAPA in the park.

As sensitive entrepreneurs tour operators and camps in the area responded positive by engaging in walking safaris experience only to be curtailed by increased incidences of deaths and injuries caused by attacks by dangerous animals partly due to lack of training and experience by most guides and rangers who accompanied the tourists.

To address this challenge, TANAPA with support from UNDP and GEF in 2013 trained 42 guides comprising of 21 guides from RUNAPA and 12 from Katavi and 9 from other national parks. This intervention has been a game changer by eliminating risks of attacks and injuries thereby attracting more tourists interested in walking safari in the area.

Appreciating the change RUNAPA's Senior Park Warden Mr. John Nyamuhanga declared that walking safaris have increased revenue collection and boosted businesses since tourists now stay longer in the park enjoying this

new experience of game viewing.

Another RUNAPA Officer, Ms. Tutindaga Mdoe, commented that "It has been a good service that is now marketing our park" she said.

Because of this innovation, RUNAPA is currently referred to as the birthplace of walking safaris in the Southern Circuit, a place where one finds best on-foot experiences with highly trained walking guides.

### Close to nature

Walking safaris are different from game drives. Walking on foot brings about a new way of understanding the nature. It gives more pleasure than driving because with a trained guide, a tourist walks through the Ruaha landscape, while identifying tracks, learning about different plants, animals and much more. This walking experience brings someone closer to nature than anything else.

Since the introduction of walking safari in 2015, the park has benefited tremendously from increased days of stay by tourists. The park has managed to collect revenues amounting to more than TZS 46 million (equivalent to USD 20,000) from 1,091 visitors. The statistics also show that more than 900 non-residents, 90 from East African countries and 14 residents participated in the walking safaris by December 2016.

In a bid to promote tourism in the area, the project has supported innovative and specific training to tour

guides, developed guidebooks and animated signposts about the beauty of walking safari and other tourism packages in the area. A plan is now underway to construct a state-of-the-art campsite. Moreover, a Southern Circuit tourism forum and tourism fair dubbed 'Karibu Kusini'—welcome to the Southern Highland Regions—has been established. This forum provides an avenue for tourism stakeholders in the Southern Highland regions to meet and discuss matters related to tourism.

Commenting on these developments, RUNAPA Senior Park Warden Mr. Nyamuhanga revealed that: "There has never been such a forum before for stakeholders from Iringa, Njombe, Mbeya, Katavi and Rukwa regions from the government, private sector, politicians and academia to meet and deliberate on issues related to tourism development in the area. The project has brought this circuit into spotlight".

The Park Warden, Ms. Mdoe, added, "Improving structures and diversifying tourism activities are among the key strategies of the park aimed at attracting more tourists. Increasing the number of tourists guarantees an increase in the number of individuals wishing to embark on walking safaris".

This intervention by UNDP responds to the Tanzania's Five-Year Development Plan's (FYDP II) call for action to address low level of diversified tourism products which is a critical constraint to the development of tourism sector in the

country.

In this regard, the project contributes to the achievement of the SDG number 15 (Life on Land).

**The park has benefited tremendously from increased days of stay for tourists. The park has managed to collect more revenues amounting to more than TZS 46M.**

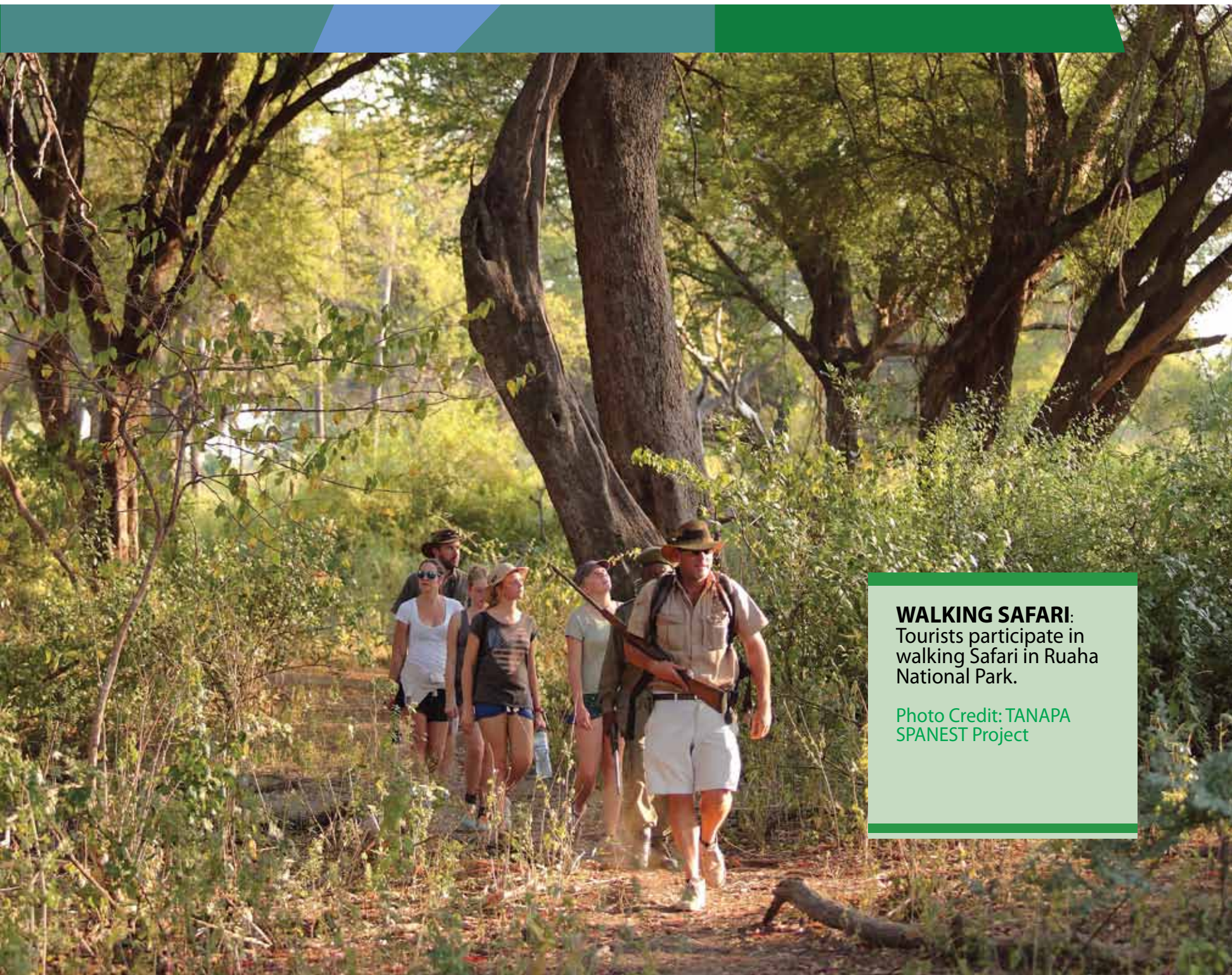


### WALKING SAFARIS VISITORS

2013/14	2015/16
0	1091
981	- Non residents
96	- East Africa
14	- Residents

“At an average of USD 2 billion (25% of annual foreign currency earnings) a year, tourism has brought Tanzania the largest amount of foreign currency in the past 3 years. In 2015, Tanzania received a total of 1.1 million tourists who visited various tourist attractions found across the country” Deloitte (2016).





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**WALKING SAFARI:**  
Tourists participate in  
walking Safari in Ruaha  
National Park.

Photo Credit: TANAPA  
SPANEST Project





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# FOOTBALL RALLIES RUAHA COMMUNITIES AGAINST ELEPHANT POACHING

## Ruaha, IRINGA

The number of elephants in Tanzania has been decreasing for years now. Statistics show that the number decreased from 109,051 in 2009 to 43,330 in 2014, which is equivalent to a decrease of 60% of the elephant population in the space of six years.

The RUNAPA, Rungwe, Malagarasi, Selous and Mikumi ecosystems all lost more than two-thirds of their elephants. In these reserves, 'the carcass ratio', a number used to assess death rates within population, indicated that elephants were dying at four times the natural rate.

In view of this alarming trend of decreasing elephant trends and considering the importance of the tourism industry to the country and the wellbeing of wildlife in Ruaha National Park, there is a need for concerted efforts to address this problem including awareness raising and the localisation of SDGs in a bid to combat elephants poaching. In response to this call, the UNDP is supporting an innovative campaign initiated by TANAPA in 2014 of using soccer competitions to raise awareness and fight poaching.

The campaign under the theme "Fight Poaching, Play Football, Protect Elephants" is a timely intervention as many of the community members adjacent to RUNAPA, especially youth, were suspected of being involved in poaching. Another positive indication in this drive is that most members of these communities were ardent soccer fans.

To this end, the campaign named 'SPANEST Cup' was used to gather intelligence information regarding poachers and illegal activities conducted by some community members inside the park. Over 120 matches involving teams from

**"This activity has proven to be very useful in winning over people's mind toward conservation. It was very difficult to convene a meeting, and get all the groups to come. However, soccer has been powerful tool to bring together all social groups"**

the 21 villages, with a total of 150,000 community members from two divisions (Pawaga and Idodi) participated. Other soccer teams comprised Iringa regional government officers and local media. The number of women who participated in these games accounted for almost 40% of the total participants.

Moreover the campaign had an incentive side to it. Apart from promoting youth physical fitness through soccer, the winners of the competition also received cash prizes and other presents to motivate them support the campaign. The first winners from two divisions got trophies, a free visit to the park, a gold medal, TZS.300, 000 (equivalent to USD 130) and certificates.

The second winner from two divisions received two balls, silver medals, TZS. 200,000 (equivalent to 90 USD) and certificates, third winners from two divisions received bronze medals, TZS. 100,000 (equivalent to 45 USD) and certificates while the fourth winner get TZS. 50,000 (Equivalent to 23 USD). The top scorer from two division got TZS.

100,000 (equivalent to 45USD) and the best goalkeepers from two division received TZS. 100,000 (equivalent to 45USD).

The SPANEST Cup has been successful in improving relationship among 21 villages bordering the park, which have increased youth participation and involvement in the war against wildlife crime in RUNAPA. The soccer competition has created a forum on which 21 villages discussed the park wildlife conservation issues. Moreover, SPANEST Cup played an entertainment role to the whole community and nourished youth talents in Iringa.

There has been great motive of scaling up such activities in other areas such as Kitulo, Chamwino, Madibira and Chunya, where the Southern Landscape extends its wings.

"This activity has proven to be very useful in winning over people's mind toward conservation. It was very difficult to convene a meeting, and get all the groups to come. However, soccer has been powerful tool to bring together all social groups" said Senior Park Warden Mr.Nyamuhanga.

"Members of the respective communities co-operated very well with us and were able to identify key themes for awareness and areas to strengthen collaboration among the communities and the Park" he added.

The UNDP-supported SPANEST Cup is in line with the National Tourism Strategies and the National Development Vision of 2025, the Sustainable Development Goals mainly SDGs 3, which advocates for good health and wellbeing as well as SDG 17 that calls for partnership.

**"Education and raising awareness along with taking disciplinary action against those failing to comply with ethical leadership may help to pre-empt unacceptable behavior that frustrates conservation e efforts"** Kideghesho (2016).







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**FOOTBALL RALLIES:**  
Football Team from  
RUNAPA adjacent  
communities ready to  
participate in  
anti-poaching campaign

Photo Credit: TANAPA  
SPANEST Project





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# MILITARY ADOPTS COOKING STOVES TO SAVE TREES

**The camp now saves about TZS 1,500,000 (Equivalent to 680 USD) a month, funds that are now spent on other matters including administrative and managerial aspects (e.g. assisting needy soldiers).**

## Unguja, ZANZIBAR

Unsustainable use of natural resources is one of the major challenges impeding conservation of natural resources in Zanzibar. Extensive poverty and lack of alternatives livelihoods are among key factors leading to unsustainable use of natural resources.

Because of high poverty levels, many people from Zanzibar continue to use inferior energy sources such as biomass energy with significant ramifications including indoor air pollution, deforestation, land degradation and climate change. According to the Intergovernmental Panel on Climate Change (IPCC), deforestation accounts for 25 percent of the global greenhouse gas emissions.

In a bid to overcome these challenges, the UNDP in collaboration with the Zanzibar Government, implemented a project titled "Strengthening the Environment and Climate Change for Zanzibar. Implemented from 2011-2015, one of the objectives of this project was to scale up the use of sustainable low carbon energy efficient technologies. As such, output 6 of the project sought to bring about "strengthened capacity for increased use of sustainable low carbon energy efficient technologies in Zanzibar".

Mr. Tamrini Ali, senior project officer in the Forest Department and a focal person of the above-mentioned project said that the study conducted at the beginning of the project revealed that, although many potential energy sources existed (including kerosene, electricity, LPGs) the vast majority of community members continued to use firewood despite its negative consequences on people and environment primarily because of their low income status.

According to Mr. Tamrini, the study revealed a list

of institutions using the biggest amount of biomass energy, which included the armed forces, schools, hospitals and colleges. Based on this report and through UNDP project, the Forest Department prepared a plan to address the problem of firewood use in army barracks in Zanzibar.

"We started with the armed forces because we knew they are the leading users of biomass energy especially in areas where they train their soldiers" said Mr. Tamrini.

## The Plan

The project facilitated the Training of Trainers (ToTs) for the construction of efficient cooking stoves for large users of biomass energy in Pemba and Zanzibar. These ToTs were expected to help build capacity for armed forces and other institutions towards constructing energy efficient stoves in their camps and to ensure sustainability of the project. The project also facilitated the construction of energy efficient stoves in military camps.

One of the key features of these stoves is high efficiency. A well-built energy efficient stove costing about TZS. 3,000,000 (equivalent to 1,300 USD) can use one-fourth of biomass energy used by traditional stoves. Energy efficient stoves also save money, improve health of cooks and have a positive environmental impact through reduced demand for biomass and consequently reduce

## Jeshi la Kujenga Uchumi (JKU)

Our military cares for climate with a big move to energy saving stoves. Jeshi la Kujenga Uchumi (JKU) is one of the beneficiaries of the energy-saving stove initiative under the Forest Department Plan. Captain Ramadhan Mohammed Abdallah, the second-in-command at the Unit, said that it had been over three years since the energy-efficient cooking stoves were introduced in the barracks, adding that the demand for biomass energy (firewood) had been cut down by more than 40 percent as a result.

According to Captain Abdallah, before the introduction of energy-efficient stoves, his camp needed 1,200 bunches of firewood per month but now the camp needs only between 300 and 400 bunches of the same. As opposed to the past when the camp used up to 25 bundles of firewood a day, nowadays the camp uses as little as seven (7) bundles per day, he added. Through this initiative the camp now saves about TZS 1,500,000 (Equivalent to 680 USD) a month, funds that are now spent on other matters including administrative and managerial aspects (e.g. assisting needy soldiers).

The Cook-in-charge, Mr Abdallah Saidi, who has served in that capacity for over 15 years, and his assistant Mr Makame Ali Hassan, who has worked at the camp for ten years, revealed that the new stove technology has been of great help to them. "The traditional three-stone stoves were not only laborious but also harmful to the health of cooks because of elevated and direct exposure to heat and smoke from the stove. In addition, the cook needs to be around all the time to add firewood, and keep the fire lighting. Sometimes, one could even get burnt". said the kitchen-in-charge, Mr. Saidi.

Apart from JKU, other security forces that have benefited from the energy-efficient stoves include the Zanzibar Prisons at Kiinua Miguu, Hanyegwa Mchana in Unguja as well as Pemba Prison Headquarters. Energy-efficient cook stoves were also constructed at the Tanzania People's Defence Forces (TPDF) barracks at Chukwani, Ubago, and Bavuai.

The use of energy-saving stoves are in line with the Zanzibar Vision 2020, which calls for sustained provision of energy to ensure adequate, environmentally-sound, alternative and sustained energy supplies to facilitate sustainable development. Therefore, this project addresses SDGs 7 (Energy Access) and 15 (Life on Land).



BENEFITS ACCRUED	
Past saving	<b>TZS. 0</b>
Current saving	<b>TZS. 1,500,000</b>
Annual saving	<b>TZS. 18,000,000</b>







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**USE OF IMPROVED  
COOK STOVES:**  
A cook prepares a meal  
at JKU camp in Unguja  
Zanzibar by using  
improved cook stove.



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# Transforming Community Livelihoods Through Solar Power



# EMPOWERING YOUTH TO ADAPT TO CLIMATE CHANGE

## Bukoba Rural, KAGERA

Tanzania is vulnerable to the impacts of climate change. Notable impacts have been evident in water resources, energy generation, food security, ecosystems/biodiversity and human health. Agriculture, which is the country's main economic activity, is one of the sectors, which is highly vulnerable to the impacts of climate change.

Because of limited alternative income opportunities, youths constitute a big portion of the agricultural workforce in rural areas. Like in other rural areas, youths in Bukoba Rural have traditionally been involved in the whole agriculture value chain, ranging from cultivation, growing of crops to livestock keeping and fishing.

Consequently, changes in agricultural systems due to climate change have had profound impacts on youths and their societies. Some of the direct adverse impacts of climate change on the agriculture sectors include reduced crop yield due to drought and floods; increased crop diseases and pests; reduced grazing area due to extreme droughts; and reduced fish catches due degradation of fisheries' breeding sites owing to increased tides and storms.

To cope with the situation, youths in Bushasha Village opt to migrate to urban areas seeking for formal employment, which is difficult to get due to limited opportunities in town and also their lack of specialised skills for such jobs. Now an intervention in the form of a solar power project

is helping to make a difference for the youths in the area.

## Solar power for climate change resilience

Now an intervention in the form of a project is helping to make a difference for the youths in the area. Indeed, working with the Uvumilivu Youth Group in Bushasha Village, the UNDP Solar PV project through CADESE (Capacity Development in the Energy Sector and Extractive Industries) initiative has increased the resilience of youths

in their communities. The project has created an enabling environment, which provides alternative income generating opportunities and diversified the youths' revenue streams.

Specific project intervention included the installation of a solar PV system that is used commercially for charging cell-phones, in barber shops and powering of other electrical appliances such as TV for learning (e.g. news) and entertainment (e.g. watching/showing football matches). Availability of charging points has also attracted



**“We have electricity, and internet banking services (through mobile banking system). What should I go to town for? I can get there digitally”**

related services such as the mobile phone money transfer outlets thereby addressing the challenge of lack of banking services in the village. In addition, some youths and other visitors including researchers in the village are able to use computers and access Internet services in the area.

Although still in the early stages of the project, members of the Uvumilivu Youths Group expressed their excitement and hope for a successful future through this project. Some of the youths revealed that they had since given up their plans for moving to urban areas to seek for formal employments. As one of the members commented, “We have electricity, and internet banking services (through mobile banking system). What should I go to town for? I can get there digitally”.

## Spill-over Effects

Besides the direct benefits to members of the Uvumilivu Youths Group, the project has had other significant spill-over effects to the entire community. With clean and reliable lighting, the area around the youth business has turned into a business centre that allows other villagers to go and sell their products. At this spot, youths and elders gather in the evening to socialise and exchange information. Some members of the village revealed that it had been difficult and expensive to do similar business before since it involved use of candles and wick lamps, which have insufficient and polluting lights. This project contributes to SDG 1 (no poverty) and SDG 7 (Affordable and Clean Energy).



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“Youth (15-35 years) constitute 31.3% of Rural population in Tanzania Mainland” NBS (2014).



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# SOLAR PUMPS BRING LIFE TO LIVESTOCK

## Kurio, DODOMA

One of the critical challenges facing pastoralists at Kurio Village is lack of access to water and pasture for their livestock. For years, livestock keepers in the village were forced to wake up as early as 4 am to search for water for both their domestic use and livestock from distant sources. This lifestyle was both unfriendly and risky especially to women who are primarily responsible for water collection as it exposed them to dangers including water borne diseases and other infections.

To address this problem, the UNDP in collaboration with Dodoma regional administration and the local NGO called Tanzania Development Light Organisation (TADELO), provided financial support that was used for drilling of two boreholes, procuring solar-pumps and construction of a livestock trough. Among other things, the improvement sought to ensure sustainable access to clean and safe water for human and livestock use in the village. A visit to Kurio Village after project completion reveals nothing less than a dream come true.

Mr. Daniel Kaula, one of the project beneficiaries noted “the project has proved useful especially during the dry season. When most of water sources dry out, all livestock-keepers bring their livestock here (to the livestock trough)”. Another beneficiary Ms. Anna Pagama added that, “The livestock trough provides safe and clean water for about 550 cows, 420 goats and 20 sheep per day from Kurio and neighbouring villages”.

According to Mr. Serafine Alois –a livestock keeper in the area, livestock keepers in the area, previously had no option but to walk

**The project has brought prosperity to the Kurio pastoral community by helping them find solutions to seemingly intractable challenges relating to water scarcity.**

over a couple of miles in search of water for their livestock. Using his own experience he revealed “I used to take my livestock about six to eight kilometres away for water from shallow wells. However, when these wells dried up I was forced to hire a well for TZS 60,000 (equivalent to 27 USD) or pay one goat in lieu of cash per season”.

Also commenting on the project, the Village Chairperson, Mr. Michael Sixmund and Hamlet Chairperson, Mr. Jumanne Peter Beka, noted that the project has brought prosperity to the Kurio pastoral community by helping them find solutions to seemingly intractable challenges relating to water scarcity. Although it is less than six months since the project ended, livestock-keepers have already benefited by improving their lives through increased income from selling milk stemming from flourishing cattle’s.

In view of its impacts, this project is in line with several SDGs particularly goal 1 (No Poverty), goal

2 (Zero Hunger), goal 13 (Combating Climate Change) and as well as the Tanzania’s FYDP II (2016/17-2020/21).

### Livestock benefiting from water trough daily

**550** Cows  
**420** Goats  
**20** Sheep

“ Three fifths of rural households [in Tanzania] earn income from livestock husbandry”  
Covarrubias, K, Nsiima, L and Zezza, A (2012).





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# ACCESS TO WATER PROMOTES CONSTRUCTION OF MODERN BUILDINGS IN VILLAGES

**“Having our own village dispensary will bring health services closer to us and, therefore, improving our well-being”**

## Kurio, DODOMA

Members of the Kurio community live in poor houses and have limited access to healthcare facilities and services. The nearest healthcare centre is a ward dispensary located 3km from the village centre.

To address this challenge, the UNDP in collaboration with Dodoma regional administration and TADELO financed a multipurpose solar pump, which has been used to pump water for various uses by community members. One of such uses has been production of bricks, which in turn has been used for construction of various buildings including village dispensary, offices and individual houses.

## Construction of dispensary and village office

Commenting on the project, Ms. Aurelia Peter Mkina-the Village

Executive Officer (VEO) applauded the UNDP for the support, noting, “the intervention will serve both the present and future generations”. She further noted that construction of the dispensary has brought health services closer to the community thereby reducing long walking distances they had to endure previously. Many community members are excited about the dispensary as one of the members noted; “Having our own village dispensary will bring health services closer to us and, therefore, improving our well-being”.

Commenting on the village office building the village Chairman Mr. Michael Sixmund revealed that they intended to erect an office

using the money accrued from selling bricks, among other sources.

## Better housing

As in the case of village office and dispensary, availability of water has also enabled community members to produce bricks for the construction of their own houses.

Ms. Rozy Michael Beda, a villager who has benefitted from the project, explains how access to water has facilitated the construction of her house. “I used to hire a car for TZS 10,000 (equivalent to 5 USD) per day to fetch water from five kilometres away for brick-making. However the situation has now changed. I use water from the project to make

more bricks for construction of my house. Even our son has started making some bricks for his own house,” she said. Water from the project is provided at an affordable cost of TZS 50 (equivalent to 0.03USD) per bucket compared to the before-the-project price of TZS 500 (Equivalent to 0.3 USD).

## Youth employment and project sustainability

In addition to construction of modern building as noted above, the project has created employment opportunities for youths through production of bricks, which are sold to community members for construction of houses. The VEO explained that the process of brick making was done with great care and consideration to environmental conservation and management requirements set by National Management Act (EMA 2004) and other laws and regulations. Given its focus and impacts, this project has helped to promote progress towards the achievement of SGD 3, which seeks to ensure a higher level of health and well being.

**The project has created employment opportunities for youths through production of bricks, which are sold to community members for construction of houses.**

“Distance is an important factor for patients in deciding whether or at what stage of illness to seek treatment. In extreme cases, this becomes a matter of life and death. Many patients in both rural and urban areas take up to 30 minutes to get to a health facility. However, journey times can be much longer: in rural areas 27% [of the respondents] need an hour and 10% [respondents] need two hours to get to health facilities” Twaweza (2013)



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# SOLAR IRRIGATION IMPROVES HORTICULTURE FARMING

“Previously, we were sharing small shallow wells with livestock. But now we have access to safe and clean water for household and non-household uses such as irrigation of our vegetable gardens thereby expanding our revenue base through sale of vegetable to our people and nearby villages”

## Ulyampiti, SINGIDA

Ulyampiti Village has been experiencing significant impacts of climate change for quite sometime. The overdependence on rain-fed agriculture by farmers and livestock keepers have made them particularly vulnerable to increased frequency and duration of droughts as well as changes in the rain pattern.

It is on this basis that in 2015/2016, the UNDP in collaboration with the Singida Regional Administration and the Tanzania Vulnerable Lighter (TVL) implemented a solar pump project in Ulyampiti village. This project aimed at facilitating access to underground water for various community uses including horticulture irrigation farming for producing vegetables like tomatoes, carrots, cabbage, spinach, ‘chinese’ cabbage, onions and sweet pepper.

The project facilitated the drilling of a borehole at Songoraji hamlet with a capacity of producing 18,000 L/hr and rehabilitation of another one at Kiruma hamlet.

## Beneficiaries’ testimonies

Evidence from the field revealed that a total of 23 (11 females and 12 males) villagers from the *Kwendi Song’e* (meaning let’s go together) group, which was registered in 2016, benefitted directly from this project. Benefits included training on climate-smart agriculture, value addition and the establishment of horticulture pilot plots. In addition 4,000 other people also benefitted indirectly as consumers of the vegetables produced by the project. Ms.TatuYusuph, a project beneficiary noted gratefully “Previously, we were sharing small shallow wells

with livestock. But now we have access to safe and clean water for household and non-household uses such as irrigation of our vegetable gardens thereby expanding our revenue base through sale of vegetable to our people and nearby villages”.

Revealing further evidence, another beneficiary, Ms. Immaculata Ndele, remarked; “getting vegetables in this village was a nightmare. We had to travel to the district headquarters paying TZS 2000 (equivalent to 0.9USD) for a bus fare alone to buy vegetables at a higher price. We used to buy five tomatoes for TZS 500 (equivalent to 0.2 USD), but from our own garden, we get fresh and enough vegetables to satisfy entire households and at a lower price”.

Based on the focus and impacts this project compliments SDG 2 (Zero hunger) and FYDP 2016/17-2020/21.

## Project beneficiaries

■ Direct beneficiaries  
48% females, 52% males

■ Indirect beneficiaries,  
more than 4000 people



“ Horticulture is an important sub-sector that can exploit the potential of the country particularly the underutilized arable land of 44.0 million ha and the irrigatable land of 29.0m hathat horticulture tapes”  
HODECT 2010





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**1 BIOGAS RESIDUAL:**  
The residual from the biogas plant called slurry is used as manure in banana farming in Rungwe District, Mbeya Region



**2 SUPPORTING CONSERVATION:**  
The SPANEST project support conservation activities in the Great Ruaha National Park



**3 FISH FARMING:** One of the project beneficiaries in Pemba, Zanzibar throws out fish feeds into the fish pond.



4



5



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- 4 **SMILE OF SUCCESS:** One of the beneficiaries of the Solar Pump Project from Ulyampiti Village, Ikungi District, Singida, proud of the fresh vegetables harvested from the group horticulture demonstration plot .
- 5 **IMPROVED STOVES:** One of the beneficiaries of the improved cook stove in Bukoba Rural enjoy cooking in a more conducive environment compared to the traditional 'three stones' stove.
- 6 **IMPROVED HEALTH SERVICES:** Medical personnel from Bushasha Dispensary able to use computer facilities due to the Solar power facilities installed by the project.





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# IMPROVING WATER ACCESSIBILITY THROUGH SOLAR-POWERED PUMPS

**“We used to travel more than 5km to fetch water, which took up to five morning hours daily,” said Ms. Rozy Michael Beda from Kurio village, adding, “this project has helped us so much, now I can spend morning hours working in my vegetable garden, and looking after my family”**

## Chemba, DODOMA

A small community of less than 2,000 people in Kurio village located three-hour drive from Dodoma Municipality in central Tanzania has struggled for decades to access portable water supply for domestic use. In recent years, villagers used to travel up to 10km distance in search of water from unreliable and unsafe sources, which led to the eruption of waterborne diseases resulting from the use of contaminated water.

Women and young girls, who are mostly responsible for fetching water in the household, were unable to engage in other income generating activities or attend school, as they spent most of their time walking over miles to collect water for their household. Walking over a very long distance and spending hours searching for water was also one of the reasons that contributed to risks of sexual abuse and domestic violence’s.

In 2015-16, the UNDP in collaboration with the Dodoma regional administration and the Tanzania Development Light Organization (TADELO) established a project for improving water accessibility in the village. In this endeavour two solar boreholes were constructed with the capacity of 7,000 litres and 10,000 L/hr. Two storage tanks (10,000litres) were installed

as part of the project at the project sites at Mleba and Dodoma sub-villages. One of the project aims was to address the problem of the severe scarcity of water in the rural communities.

Less than a year after the implementation of this project, the villagers registered several achievements. The biggest achievement related to the vast improvement in beneficiaries’ standard of living. More than 3,000 people from these villages and neighbourhood access clean and safe water from near their households.

Having been relieved from spending much time on searching for water, women and girls are now better able to participate in other socio-economic activities including attending schools (especially girls) much more frequently.

Kwamtoro Ward Councillor, Mr. John Adolph, described the project as the only community and environmental friendly project in the ward. He said, “Apart from being cost-effective in terms of operation and maintenance, it also contributes in environmental conservation”.

“We used to travel more than 5km to fetch water, which took up to five morning hours daily” said Ms. Rozy Michael Beda from Kurio village, adding, “this project has helped us so much, now I can spend morning hours working in my vegetable garden, and looking after my family”.

Mr. Baltazary Degera, a disabled man spotted fetching water while on his tricycle and said the following, “I am no longer seeing myself as burden to the family. This is because I can help them with fetching water using my bicycle”.

Moreover, most of the parents and teachers interviewed reported that accessibility of water contributed to improvement in performance of pupil as all the 11 pupils (girls only) passed their primary school national examinations in 2016 (one year after project implementation). This is the great achievement compared to last year (2015 prior to the project) when only 10 (6 girls and 4 boys) out of 35 pupils (20 girls and 15 boys) passed the standard VII leaving examinations.

This intervention is in line with SDG 6, which focuses on ensuring the availability and sustainable management of water and sanitation. Other SDGs contributed to intervention are SDG 7 (on the use of affordable and clean energy sources) and SDG 13 (on combating climate change and its impacts).

The project is also consistent with Tanzania’s FYDP, National Water Policy (2002) and Vision 2025.

**7000- 10,000 Ltr / hr**  
Borehole water discharge capacity

More than **3,000**  
Project beneficiaries

**10,000 Ltr**  
Capacity storage tanks installed at project sites

“Levels of access to water supply in Tanzania are: 72% in rural areas against a target of 85% by 2020; 86% in large cities against a target of 95% by 2020; 60% in small cities against a target of 90% by 2020; and 72% in Dar es Salaam against a target of 95% by 2020” MOWI Budget Speech (2016).





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**THANKS TO UNDP:**  
A disabled man  
fetching water using  
his bicycle.





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**HEALTH:**

A mother carries her baby as she waits to see a health attendant in a dispensary supported by UNDP at Mkia wa Ngo'mbe in Pemba, Zanzibar.



# Improving health and education services



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# SOLAR LIGHTING TRANSFORMS PROVISION OF HEALTH SERVICES IN RURAL COMMUNITIES

## Bushasha, KAGERA

Access to safe, clean and reliable energy is a critical requirement for the provision of improved, reliable and equitable healthcare services for people of all kinds. Sadly, hundreds of health facilities across Tanzania lack even the most basic energy services, including lighting during child delivery and emergency night-time care services, refrigeration of vaccines and electricity for simple medical diagnostic equipment. Although the situation is more or less similar across the country, things are a lot worse in rural areas, where more than 75% of the country's population lives—only 6% of this population has access to reliable energy services.

This situation has seriously constrained efforts by the government and development partners to provide improved socio-economic services, including modern healthcare.

## Intervention

In collaboration with the Bukoba District Council and a local NGO called APCCC, the UNDP through its CADESE programme, provided a grant that was used to install solar PV systems at three dispensaries (Bushasha, Kikomelo and Kibirizi) and to renovate the buildings at Bushasha dispensary. The lessons presented here were gathered from Bushasha dispensary.

Bushasha dispensary is located in Kishanje Ward, about 55km from

the District headquarters in Bukoba Municipality. The nearest functioning health service facility is at the Kishanje ward headquarters, some 15km away. The other healthcare is found in Misenyi District. The shortest route to reach Misenyi district is a three-hour ride by boat across Lake Victoria. Largely owing to the poor state of transport services in these areas, it has always been a daunting task for Bushasha villagers, especially pregnant women and the elderly to access health services from either Kishanje or Misenyi.

Alongside being off-grid, Bushasha dispensary faces another challenge is that of insufficient and dilapidated buildings and other infrastructure. The facility was built in the early 1980s as a village shop before being transformed into a village dispensary in the late 1980s. Before the intervention, lack of power hampered the provision of reliable basic services owing to the dispensary's inability to use modern equipment and tools for diagnosis and testing as well as owing to its inability to keep medicines requiring regulated temperature, including vaccines for children.

In addition, poor working conditions including insufficient and ramshackle residences deterred medical staff posted to these dispensaries from staying there, hence resulting into a critical shortage of staff needed for the provision

**The project's intervention included improvement on provision of health services on a 24/7 scale, Reproductive and Child Health (RCH) and clinic services.**

of vital services. Because of these circumstances, night-time services were critically limited, which raised grave concerns among community members, particularly children and pregnant women.

The project's intervention included improvement on provision of health services on a 24/7 scale, Reproductive and Child Health (RCH) and clinic services, such as vaccination and night-time delivery as well as the ability to carry out laboratory tests for thorough investigations.

Other significant improvements include the introduction of health services such as Care, Treatment and Counselling (CTC) and Family Planning, all prompted by a renovation of the dispensary that brought some rooms back into use. Partitioning some of those already in place created more rooms.

Improvement in the working

conditions for staff at the dispensary has also boosted their morale, leading to enhance provision of health care services. Dr. Flora Katabaro – Medical in charge at Bushasha dispensary noted that with lighting services, staff at Bushasha dispensary no longer had trouble attending to patients at night. Moreover, the general security has been enhanced.

Mr. Charles Burchard who is a member of the medical staff team, reported increased flexibility in their work schedules due to enhanced lighting which has enabled them to complete some of their obligations (e.g. report writing) at night, thereby freeing up more time for attending to patients during the day.

At the personal level, staff reported improvement in their lives because, with electricity, they could use modern electrical devices and IT facilities such as mobile phones, computers, TVs and radio (sub-woofer). They described the facilities as essential incentives for staff to work effectively.

Based on these improvements, the dispensary has set new records. The number of patients attended increased by 58% - from 1,658 in 2015 to 2,624 in 2016, and no death was reported in 2016. In the case of RCH, the number of babies delivered at the Bushasha dispensary rose by 21% from 81 in 2015 to 98 in 2016.

The improvement in healthcare services through UNDP project is expected to foster progress not only in terms of SDGs (especially, SDG 3 – Health; 5 – Gender, & SDG 7 – Modern Energy) among the beneficiaries in Bukoba Rural District but also in terms of registering progress in line with the Five-Year Development Plan and Tanzania's Vision 2025.

“Over two-thirds of Tanzanians reside in rural areas and rely on local health facilities (such as Dispensaries and Health Centers) run by Local Government Authorities (LGAs) to provide them with basic health services” Boex, J, Fuller, L& Malik, A (2015).



**HEALTH SERVICES:**  
Mothers in Bushasha Village in Kagera Region wait to be attended by nurses during a clinic day.







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# SOLAR POWER IMPROVES LEARNING AND PERFORMANCE IN SCHOOLS

**Meanwhile, about 85% of the school energy needs are met through the solar PV system, including powering of the computer laboratory and refrigerators. According to the rector at the seminary, solar energy has cut operational cost significantly and enabled the school to allocate those resources to other areas.**



## Bukoba and Muleba Districts, KAGERA

Electrification of schools offers many advantages, including extended studying time, access to computers and the mass media, higher staff retention rate, enhanced school academic performance, and related community benefits such as health and gender empowerment. Given all these benefits, one would be excused to wondering as to why so many schools remain without power.

Records show that the key barriers to electrification of schools (both primary and secondary) include high up-front costs and difficulty in acquiring finances. The fact is that electrification of schools—whether through the grid or through off-grid systems—is costly. Many schools find themselves unable to pay for the initial high connection fees.

To address this problem, the United Nations Development Programme (UNDP), through its CADESE programme provided a grant that has had a profound positive impact on both teaching and learning in Bukoba and Muleba districts.

## Kamukole Primary School, Bukoba District

In Bukoba district, the UNDP, through the Bukoba District Council and the African Partnership on Climate Change Coalition (APCCC), a Tanzanian NGO, provided a grant to Kamukole Primary School; one of the remotest and most isolated schools in the District. In addition to its remoteness and isolation, the school lacks basic infrastructure such as roads, water, health facilities and shops. Lack of electricity was an additional factor that made it difficult for many teachers to stay and teach at the school.

Chiefly owing to lack of teachers, pupils could only be taught a few subjects out of the entire curriculum. This was contrary to the requirements of the school curriculum and contributed to the pupils' poor academic performance. According to the school's head-teacher, Mr. Emmanuel Laurian, these circumstances made the teaching and learning environment highly hostile for both teachers and pupils. In fact, the school witnessed its worst ever performance in the Standard VII national examinations in 2015, as it emerged the last - 145th out of 145th schools in the district.

However, the UNDP grant changed all this. The grant was used to buy a solar PV system for the school and to construct two classrooms, two bedrooms for teachers, as well as to complete two other classrooms. The intervention has dramatically improved the teaching

**In 2015, all but one out of 28 Form IV students emerged with a Division I – the exception scoring a strong Division II.**

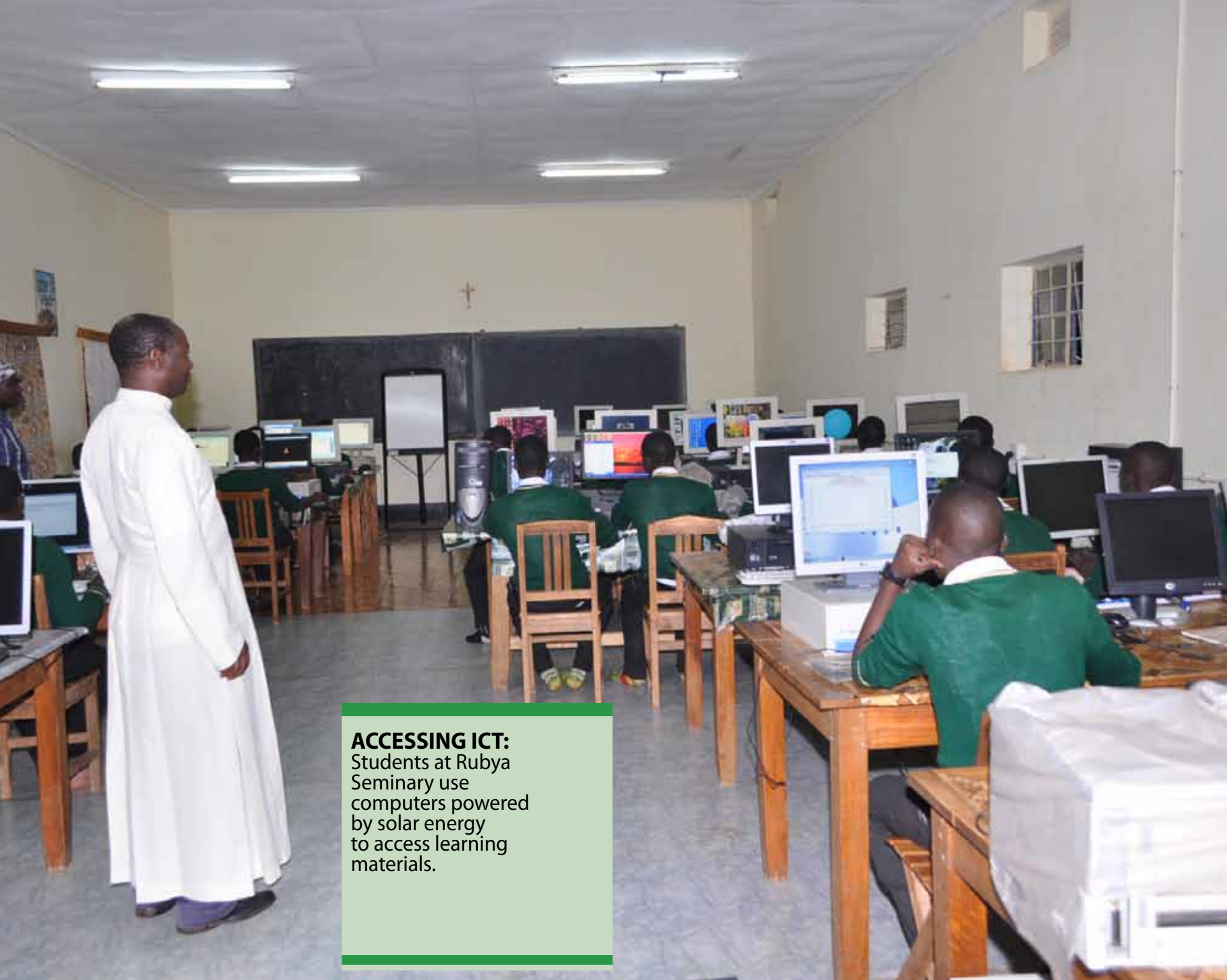
and learning atmosphere at the school and in the community, including the living conditions, through housing, lighting and related services such as the possibility of charging mobile phones and using TVs/ radio and computers.

For the first time, the school has managed to retain six badly needed teachers. Lighting has similarly increased the learning spirit of pupils, leading to better results in examinations. In 2016—just one year after the UNDP intervention—the school was 120th out of 145 schools in Bukoba District. The head teacher aptly describes the situation; “Previously pupils were so ashamed of their school such that they would not dare mention its name when introducing themselves to pupils’ from other schools. But now, they are confident of their school and are comfortable mentioning it in public”.

The impact of the renovation undertaken at the school, including electrification, has spilled over to the community as the school now also serves as community centre for Kamukole sub-village. Similarly, during weekends or public holidays, the school serves as a venue for most major village meetings requiring large space and lighting. This applies to events relating to national elections such as the 2015 election where the school served as the centre for election.

The school also serves as a health-training centre, especially for reproductive and child health sensitisation and other services. The training is conducted once a month. Members of the community also benefit from mobile phone charging services from the solar project at the school. Ability to charge their phones helped communities to enhance their communication and enjoy other phone services such as mobile money transfers within their communities and beyond.

“Solar power is the dominant electricity source in rural areas as 64.8 percent of the rural households were using electricity generated from solar power” NBS (2016).



**ACCESSING ICT:**  
Students at Rubya Seminary use computers powered by solar energy to access learning materials.



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## Rubya Seminary, Muleba District

The UNDP also provided a grant to Rubya Seminary, an intervention that has resulted into a similarly positive impact. The grant supported the installation of a 50kV solar system, which has made the seminary a regional solar centre of excellence with significantly tangible academic, economic and environment benefits.

On the academic front, the solar system helped the seminary to address challenges related to regular power cuts. This enabled students to maximise their night-time studies and preparations,

especially during the examination period. Fr. Fulgence Rutatekururwa, a senior rector and the project manager of the solar project, said that the availability of solar power has enhanced teaching, especially science practical's by reducing the frequency of interruptions or outages during practical's and enabling demonstrations—with the system itself serving as a 'teaching aid'.

According to Fr. Rutatekururwa, examination results recorded just a year after the completion of the project were better than in the previous years. In 2015, all but one out of 28 Form IV students emerged

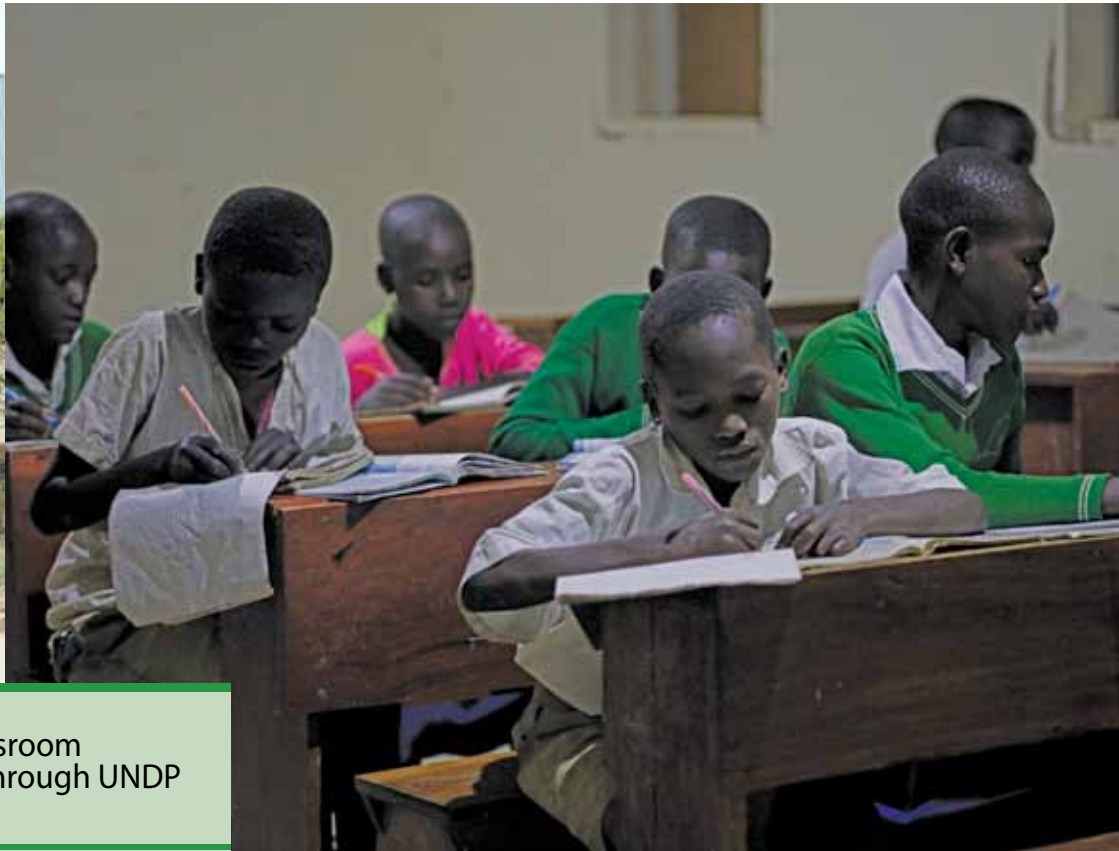
with a Division I – the exception scoring a strong Division II.

Similarly, Form VI academic performance improved significantly in 2016 compared to 2014. In 2016, a total of 12 out of 17 students (70.5%) scored a Distinction and five scored a Merit whereas in 2014 only three out of eight students (35.5%) had scored a Distinction.

Meanwhile, about 85% of the school energy needs are met through the solar PV system, including powering of the computer laboratory and refrigerators. According to the rectors at the seminary, solar energy has cut operational cost significantly and enabled the school to allocate

those resources to other areas.

Fr. Marinus, the rector at Rubya seminary said power-related costs such as TANESCO bills as well as costs for running diesel generators during power cuts have dropped from about TZS 400,000 (equivalent to 180 USD) to about TZS 100,000 (equivalent to 45 USD) per month. On the whole, the use of solar PV has also enhanced Rubya Seminary's efforts to safeguard the environment. Dropping the use of diesel generators has also reduced the amount of green house gas emissions previously spawned day and night directly through the use of diesel generators.



**EDUCATION:**  
A modern classroom  
constructed through UNDP  
support.

# Enhancing Innovative use of Technology



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# LESSONS ON VALUE ADDITION FROM ZANZIBAR

**The process of making dried mango chips begins with the slashing of mangoes into chips. The next step is to mix the chips with garlic, vanilla fruit and salt. The chips are then put onto the platters and kept out to dry in the sun.**

## Pemba, ZANZIBAR

Haturudi Nyuma (*Never Go Back*) Co-operative group is one of the success stories proving that a community affected by climate change can still bounce back through adaptation by making best use of resources at their disposal to earn a living. This group is based at Kibubunzi Village, Mihogoni Ward in Micheweni, Pemba.

The group's Deputy Secretary, Mr. Juma Hamad Abdallah, said they chose this name because it reflects their commitments and determination that no matter how many difficulties they are faced with, they would fight endlessly and they get through.

This group, which has been in existence for the past five years, started out with farming activities before moving into food processing later on. Currently, one of the group's best products from food processing is dried mango crisp. The interests and motivation towards food processing was galvanized by the Juakali exhibition in Kenya that group members attended for networking and learning. During the exhibition representatives from supermarkets that sampled their mango chips were so impressed by mango chips from Haturudi Nyuma and placed orders right away amounting to a 1,360 cubic foot (39m<sup>3</sup>) container.

Part of the secret for success of this product is

an impressive and neat packaging. It provides an impression of a product processed and packaged by a high tech factory prepared in one of the modern cities and town a high-tech factory in one of the cities or towns has been used to package. Drawing from this success, the group has moved on to doing business effectively and with innovation.

The group's secretary, Mr. Dadi Hamad Dadi, shared the history behind success of their group dating - five years ago when it was formed and started growing eggplants, onions, watermelons, tomatoes and amaranth greens.

He explained, "We tried all these to determine our capacity to grow each, considering their requirements. We also wanted to find out their marketability," he added, "We realised that tomatoes, eggplants and watermelons are more marketable. Onions are also marketable, but difficult to grow".

Back then, the group-practised irrigation but it was tedious because they had to carry water buckets from a nearby river. However, in April 2015, the group became one of the beneficiaries of irrigation scheme under the UNDP-funded project. The project supported the irrigation scheme as part of the strategy to help communities adapt to the drought condition, which is one of the effects of climate change. The group received irrigation infrastructure including solar panels, a pump and pipes. The project also facilitated the drilling of a well and provided supporting facilities including four solar panels and two tanks each with a capacity of 3,000 litres. It also financed four water taps that were installed at different locations for connection with pipes.

## The making of dried mango chips

The process of making dried mango chips begins with the slashing of mangoes into chips. The next step is to mix the chips with garlic, vanilla fruit and salt. No sugar is added

because mangoes contain natural sugar of their own. Based on one's preference, cardamom, pepper and some colouring could be added. The chips are then put onto the platters and kept out to dry in the sun, which takes 5-7 days. Finally, the chips are packaged into packets ready for sale.

After production, each packet weighing 100gms is sold at TZS 2000 (equivalent to 0.9 USD), thereby earning a profit of TZS 1,200 (equivalent to 0.5) per package after deducting production cost which amount to TZS 800 (equivalent to 0.4 USD). The group's secretary, Mr. Dadi, said each empty packet is bought at TZS 170 (equivalent to 0.07), and one packet of dried mango chips can be used to make 3-5 litres of juice.

Besides the above progress and commitment, the group is still faced with one challenge: cannot make the chips on large-scale because of lack of a machine to dry mangoes within the shortest time possible. However, drawing from its spirit of *Never Go Back*, the group is now working to secure a food-drying machine to improve their business. The group also intends to buy a mango-slicing and processing machine, which would enable them to produce mango chips at a larger scale.

Based on its innovation in preparation and packaging, the group's product has a big market both internally and externally. Popular internal markets are found in Dar es Salaam and Arusha while external/foreign are found in Kenya and the United Arab Emirates (UAE).

Based on its focus and impacts, this intervention is in line with SDG 1, which focuses on poverty; SDG 7 (on the use of affordable and clean energy sources) and SDG 13 (on combating climate change and its impacts).





**VALUE ADDITION:**  
Beneficiaries of the UNDP's intervention in Zanzibar displays the process of drying mango chips on the sun.



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## STRENGTHENING CLIMATE INFORMATION SYSTEM IN TANZANIA

### DAR ES SALAAM

In most of Africa countries including Tanzania, the observation and monitoring of weather and climate is still to a large extent done manually. The observed weather and climate data is then sent to the National Meteorological Centre on Hourly, Daily and Monthly basis. The data and information sent on hourly and daily timeframes are very critical for daily operational forecasting activities and early warning services, while monthly data are mainly used for climate analysis and are archived as historical climate records.

Most of the weather and climate observation and monitoring stations networks from Tanzania Meteorological Agency and other Institutions such as Ministry of Water and Irrigation are still operated manually: they are manned stations. The challenges with manned stations are that because costs associated with having human stay at the station, these stations are few and they cannot be installed in remote areas, where weather and climate data is critically needed. Therefore the provision of weather and climate services is somewhat undermined by the scarcity of observation networks.

The introduction and use of automatic weather stations contribute to enhanced observation coverage, and in improving efficiency in services provision including enhanced early warning and significantly contributing to effectiveness in socio-economic planning.

Over the recent years, Tanzania Meteorological Agency and other Institutions have enhanced efforts in automation of its observation and monitoring. This has contributed to enhancing accuracy and reliability of the forecast in the country.

The UNDP 2013 program aimed at strengthening the dissemination of quality climate information and early warning systems in Tanzania for climate resilient development and adaptation to climate change is one of the good examples of recent initiatives that have

**“Normally, our manned weather stations which operate 24 hours have 5 attendants. You can imagine how much we have saved by using these automatic ones”**

contributed to enhancement of TMA services.

The programme has contributed to increasing the number of whether stations from 28-manned weather observation stations to 64 weather stations whereby 36 weather observation stations are automatic weather stations (AWS) have been installed by the program. These automatic weather stations have been installed in various regions of Tanzania Mainland and Zanzibar. For the water basins, 15 automatic rain gauges have been installed, 10 of which were installed in Pangani Water Basin with a single automatic synoptic weather station with agrometeorological sensors and autonomous transmission capacity costing 34,500 USD (equivalent to TZS 77,155,800)

The TMA Director of Forecasting Services, Dr. Hamza Kabelwa, underscored the value of the programme, saying that it has provided valuable contribution in enhancing climate services provision through enhanced observation and monitoring. “We are very happy and glad that we have this initiative it came at the right time” he said.

UNDP Project Coordinator, Mr. Alfei Daniel, said UNDP is funding the programme as part of its efforts to support the Tanzania Government in strengthening the weather, climate and hydrological monitoring capabilities, which is very important for enhancing early warning systems and climate-based information particularly for climate change planning and adaptation.

Mr. Daniel explained further that the programme is being implemented in pilot areas, which include Arumeru District, Liwale District and surrounding water basins of Pangani and Ruvuma in order to demonstrate the potential of such systems for present and future climate adaptation

Mr. Wilberforce Kikwasi from TMA acknowledged the UNDP support by saying that, “for us to enhance forecasting accuracy and reliability we need to increase observation stations. And that’s what UNDP has done. This has improved our weather forecasting, which is now more accurate, timely and beneficial to a wide range of users including farmers, pastoralists, civil contractors and the public at large.” He added that automatic weather stations had also reduced the costs of operations. “Normally, our manned weather stations which operate 24 hours have five attendants. You can imagine how much we have saved by using these automatic ones” he said.

The project has helped to boost collaboration with other sectors including health, agriculture, environment, tourism and energy. The Prime Minister’s Office (PMO)’s Department of Disaster Management has been coordinating the implementation of this project. The department has plans for more activities including the training of local farmers, establishing clear inter-sectoral working modalities and establishing a disaster management centre.

Climate information and early warning systems are helpful to the government and community for planning adaptation and mitigation measures against the effects of climate change such as droughts, floods and diseases.

Thus, the UNDP initiative to support enhancement of weather and climate services by corresponds well with the international efforts and responds to the call for action against disaster as called for by the Sendai Framework for Disaster Reduction. The initiative also responds to the national efforts and commitments to provision of more accurate and reliable weather and climate forecasts including early warning weather information. Further more, initiative contributes to progress towards the goals of the Tanzania’s Five-Year Development Plan but also the SDG 13, which encourage action against climate change.

“Agriculture is the key sector of Tanzania’s economy and is vital for our food security. It provides livelihoods to over 80% of the population, generates about 24% of GDP, contributes 30 % of export earnings and employs 75% of the total labour force. Over 90% of active women in Tanzania are engaged in agricultural activities, producing about 70% of the country’s food requirements” URT (2013).





**IMPROVED WEATHER FORECAST:**

An Automatic Weather Station (AWS) installed at Ruangwa District, Lindi Region.

Picture courtesy of the Tanzania Meteorological Agency (TMA)



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**HORTICULTURE:**  
Beneficiaries of the UNDP's  
intervention in Zanzibar use  
water powered pump to  
irrigate their farm.

# Transforming Gender Roles



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# BIOGAS IMPROVES GENDER EQUALITY IN RUNGWE

## Rungwe, MBEYA

The Ilolo ward in Rungwe District is historically one of the greenest areas in Mbeya Region. However, the area is currently threatened by environmental degradation particularly soil and land degradation which is primarily driven by deforestation.

To address this challenge, UNDP in collaboration with the local NGO called HIMARU introduced a biogas project with aim of addressing the underlying driver of deforestation which primarily energy for cooking in the form of charcoal and firewood. The project is implemented in six ward namely Kiwira, Bulyaga, Msasani, Iponjola, Kyimo and Syukula wards. This project has brought a lot of positive changes among community members in Rungwe district particularly in wards where the project is being implemented. It had reduced the burden on women who used to walk up to five hours every morning in search of firewood for cooking, thereby exposing them to risks including physical and sexual abuse.

## Testimonies

A visit to Ilolo ward witnessed not only happy faces but also excited and proud faces of Ilolo communities appreciating the joy the UNDP project has brought

**“There has been a big change in roles, especially during milking cows in the morning. I no longer disturb my wife by waking her up too early to boil water for milking. I now do it myself”**

in the area. It has changed household energy equation within a short period. Introduced in August 2016, the project had by the end of 2016 installed 40 operational biogas plants that were being used as alternative to charcoal and firewood in 40 households. The project’s target is to install 60 biogas plants by the end of 2017.

The different beneficiaries consulted all made positive comments about the project, urging for a scale up of the same. Ms. Matilda who’s one of the beneficiaries in Ilolo Village made the following remarks, “This project has played a laudable role in our lives. Previously, you would not have found me at home this time as I would be out there collecting firewood”. Matilda lives with her husband, Mr. Paul Mwasomola, who also admitted that the introduction of biogas technology in the area has vastly improved their lives.

Another beneficiary Mr. Julius Mwansasu of

Kiwira could not resist to express his excitement and appreciation over the project noting the following; “Biogas stove help me to cook food for my children when other members of the family are engaged in other livelihood activities”.

Mr. Paulo Mwasomola, another project beneficiary, confessed to having undergone a behavioural change after his biogas energy system started to operate. “There has been a big change in roles, especially during milking cows in the morning. I no longer disturb my wife by waking her up too early to boil water for milking. I now do it myself” he said.

One of the advantages the Rungwe communities have with regards to the biogas project is that all the crucial materials needed for making biogas are readily available at the household level. Being cleaner and safer energy source, biogas has reduced the workload for women by allowing other members at the household to join the cooking especially men and youth male. This has enhanced co-operation among family members in doing household chores, especially cooking.

Based on its objectives and impacts this project is well in line with SDG 5 and Tanzania’s National Development Vision 2025.



“Tanzania realizes that the continued marginalization and under-utilization of women is a major obstacle to rapid socio-economic development of the country” National Strategy for Gender Development (2005).



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**GENDER EMPOWERMENT:**  
A husband, one of the beneficiaries of the UNDP's intervention in Rungwe District, Mbeya Region, aids his wife in the kitchen.





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# SOLAR POWER CHANGES GENDER ROLES

**“I fetch water, and I cook my own lunch because water is easily accessible. I don’t have to wait for my wife to fetch water and come back to cook”**

## DODOMA & SINGIDA

In many traditional and rural-based African societies, women assume on daily basis number chores that are critical to nourishment and flourishing in their families. Such chores include fetching water, collecting firewood, cooking for the family and taking care of the children as well as looking after elderly and sick members in the family. These chores are in addition to the number one role which is reproductive.

The diverse and significant roles of women span a wide range of the socio-economic spectrum from farmers and business women in smallholder agricultural production to educators and household nutrition managers. Being multiple and repetitive, these roles tend to be associated with drudgery and time consuming, a fact which limit the women’s advancement socially, economically and also academically.

To address this problem and improve the wellbeing of women, the UNDP funded a solar-powered project in Kurio Village in Chemba District. This project installed a solar powered pump to the village which brought water closer to everyone thus creating incentives that has enabled even men to fetch water on bicycles or by hand.

Contacted for comments, most of the community members in the village acknowledged that project have significantly positive impacts in the area on changing some of the traditional behaviour in the area. As one of the beneficiaries revealed; “It is not a norm anymore. Anyone—a man or woman—can go to the tap water,” says Mr. Joseph Mwandu at Ulyampiti Village. Another beneficiary, Ms. Agnes Lonjini added,



## NO LONGER A WOMAN AFFAIR:

One of the project’s beneficiaries tap water in one of the solar powered pumps supplied by UNDP in Chemba District, Dodoma Region.

“Thanks to this project, my husband can now cook his lunch when I am away because he can easily fetch water”.

Similarly, Mr. Emmanuel Mathias, a father of three added “I really thank the UNDP for this project. It has transformed our lives in a unique way. These days, I fetch water, and I cook my own lunch because water is easily accessible. I don’t have to wait for my wife to fetch water and come back to cook. Previously we had to skip lunch because water was being fetched from far away”.

With improved water accessibility and reduced drudgery, women are now better able to actively participate in income-generating activities such as vegetable farming and small businesses as well social events and education for girl child.

Thanks to the solar-powered irrigation projects in Kurio and Ulyampiti villages now more women have become economically empowered, with this empowerment helping to reduce not only stereotyping of gender roles but also gender inequality in these communities.

Basing on its activities, goals and outputs, this project contributes to SDG 5, which aim to empower women and girls to reach their full potential through the elimination of all forms of discrimination and harmful practices that undermine women’s economic and advancement prospects. The project is also in line with a number of national frameworks including Vision 2020, Five Year Development Plans and national Gender Strategy 2000.



# ENVIRONMENT SUSTAINABILITY, CLIMATE CHANGE AND RESILIENCE: POLICY LEVEL INTERVENTIONS IN TANZANIA

## Upstream interventions

United Nations Development Programme (UNDP) has had a long standing partnership with the Government of Tanzania (GoT) and its people, at all levels of society, to help achieve their developmental goals. One of the key areas of partnership and support lies in the areas of Environmental Sustainability, Climate Change and Resilience. As a strategic partner to the Tanzanian Government, UNDP has supported the mainstreaming of environmental, natural resources and climate change issues into development plans and strategies.

These documents have in turn been instrumental in developing and enhancing the capacities and response of our national partners at national and sub-national levels including our civil partners and the communities that we serve. All these helped the GoT to achieve the majority of the targets and goals set forth in the Millennium Development Goals (MDGs) and set promising grounds for the newer Sustainable Development Goals (SDGs). Examples of the recent past and on-going or planned upstream supports in these regards are summarized below.

**Climate change:** Like most poor countries Tanzania has already experienced significant impacts of climate change due to its dependency on climate change sensitive sectors as well as low adaptive capacity in terms of technical, technological financial and institutional arrangements. Floods and droughts are two of the major climate extremes events whose single occurrence cost 1% of the countries' GDP. Other observed impacts that are highly connected to climate change include reduced ice cap of Mt. Kilimanjaro, increased sea level, inundation of coastal areas, emergence of Malaria cases in traditionally Malaria free areas, increased

resource use conflicts-particularly between farmers and pastoralists-due to shortage of water and grazing areas as well as increased seasonality of most rivers with significantly negative impacts on hydropower and wildlife. Conservative estimates from future projections show that future climate change could cost between 1 to 2% of the country's GDP by 2030.

In efforts to combat these challenges, the UNDP is supporting the Government of Tanzania to build the necessary and robust capacity-both technical and institutional for responding proactively to the observed and anticipated Climate Change threats. One of recent exemplary supports in this regard is the flagship project named Mainstreaming Environment and Climate Change Adaptation in the Implementation of National Policies and Development Plans.

Implemented from July 2011 through to June 2016 in the mainland under the leadership of Division of Environment in the Vice President's Office, National environmental and Management Council (NEMC) and the Ministry of Finance and Planning (MoFP), this project supported development of the critical capacity in three main areas: (i) finalization of the national Climate Change Strategy (2012) with particular emphasis on strengthening institutional structure for climate change governance as well coordination of climate change initiatives in Tanzania with stronger involvement of relevant Ministries, Departments and Agencies (MDAs); (ii) Establishment of the National Climate Financing Mechanism (NCFM) targeted at accessing various sources of financing for climate change solutions and (iii) integration of climate change adaptation and mitigation in MDA and selected Local Government Authorities (LGAs) development plans and strategies

**The UNDP is supporting the Government of Tanzania to build the necessary and robust capacity both technical and institutional for responding proactively, to the observed and anticipated Environment and Climate Change threats.**

including National Strategy for Growth and Reduction of Poverty (famously known in Kiswahili Mkakati wa Kukuza Uchumi na Kupunguza Umaskini (MKUKUTA-II). In addition, through a separate initiative under the UNREDD arrangement; UNDP supported the GoT in development of the National REDD+ Strategy (2013) as well as building capacity of MDAs to implement REDD+ activities.

Furthermore, through its Low Emission Capacity Building initiative (LECB), UNDP is supporting the GoT to implement part of her nationally determined Contribution (NDC) targets for low carbon sustainable development through implementation of Nationally Appropriate Mitigation Action (NAMAs) in the energy and transport sectors as well development of the National Green House Gas Emission System. For NAMAs, support entails development of concept notes and full NAMA proposals for the energy and transport sectors with a view to enabling the Government of Tanzania to access climate funding from

global sources such as Green Climate Funds (GCF), Global Environmental Facility (GEF) and other sources within and outside the United Nations Framework Convention on Climate Change (UNFCCC). For the Green House Gas Emission System, support involves development of robust-real-time system for monitoring Green house gases.

**Energy:** Energy poverty remains a critical challenge among Tanzanians with about 80 per cent of the population having no access to energy while almost 95 per cent of the population still use biomass fuel for cooking – particularly charcoal and firewood. In efforts to address this challenge UNDP has implemented sustainable energy projects, representing a portfolio of thousands of dollars in grant financing and leveraging millions in co-financing.

This portfolio focuses on promoting access to clean and affordable energy services including renewable energy, and promoting low emission and climate resilient urban and transport infrastructure. One of such initiatives which is in line with global frameworks that Tanzania is committed to is the development of a comprehensive framework for implementation of Sustainable Energy for All (SE4ALL) initiative by 2030. This framework comprised of SE4ALL Action Agenda and Investment Prospectus as well the SE4ALL Secretariat for coordination of SE4ALL activities in the country hosted by Ministry of Energy and Minerals. The Action Agenda is an umbrella energy sector development document that constitutes a national response to the Sustainable Development Goal (SDG) number 7 on energy adopted in September 2015 by the UN General Assembly that strives to "ensure access to affordable, reliable, sustainable and modern and energy for all.



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# UNDP

## 2016-2021

### STRATEGY

#### Reflecting Pillar II

# PILLAR II: ENVIRONMENT SUSTAINABILITY, CLIMATE CHANGE AND RESILIENCE

## Preamble

In the period of 2016-2021 the UNDP Pillar II Strategic Plan indicate that, UNDP will support poor women and communities in 28 targeted districts that constitute highly degraded areas, aiming to reduce poverty through environmental conservation, employment creation and sustainable livelihoods. Priorities include support to articulation of a strong national response to threats to natural resources such as deforestation, land degradation, loss of biodiversity and illegal wildlife trade. Support will include strengthening the capacity of relevant ministries and selected districts to formulate and implement environmental and natural resource management policies, strategies and regulations.

This will be done in partnership with UNEP, key national institutions dealing with national parks

and forestry and the wildlife and tourism sectors. UNDP will deploy its global and regional knowledge network and South-South cooperation to achieve the planned results. UNDP will strengthen the capacities of communities and local government authorities (LGAs) in climate change adaptation, mitigation and governance, taking into account men and women's different vulnerabilities to climate change.

Support will also be provided to the relevant ministries to implement key outputs of the National Adaptation Plans (for the mainland and Zanzibar) and National Climate Change Strategy. UNDP will continue strengthening the provision of accurate climate information and early warning systems for disaster preparedness, response and recovery. This on-going upstream capacity building and two pilot projects

will be scaled up in 28 districts in partnership with the Tanzania Meteorological Agency. UNDP will help to ensure that poor communities have better access to clean energy by partnering with the private sector and assisting the Government in the promotion of renewable energy sources, improved energy standards, energy efficient technologies and clean energy practices.

Downstream interventions for income generation and scaling up new energy-saving technologies will contribute to reducing the burden of women's unpaid care work and draw lessons from the previous programme cycle to inform planning and policy making. Table 1 below present the UNDP Pillar II (Environment Sustainability, Climate Change and Resilience) 2016-2021 Strategic Plan



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Table 1: UNDP Pillar II (Environment Sustainability, Climate Change and Resilience) 2016-2021 Strategic Plan

UNDP outcome indicators, Baselines and targets	Data source and frequency of data collection, and responsibilities	Indicative country programme outputs (including indicators, baselines and targets)	Major partners and Partnership frameworks	Indicative resources by outcome in dollars
<b>NATIONAL PRIORITY OR GOAL:</b> Effectively reverse current adverse trends in the loss and degradation of environmental resources				
<b>UNDP OUTCOME:</b> Improved environment, natural resources, climate change governance, energy access and disaster risk management.				
<b>STRATEGIC PLAN OUTCOME:</b> Countries are able to reduce the likelihood of conflict and lower risk of natural disasters, including from climate change				
<p><b>Indicator:</b> Number of ministries, departments and agencies (MDAs) and LGAs with improved capacities in environmental and natural resource management, climate change governance, energy access and disaster risk management in the mainland and Zanzibar</p> <p><b>Baseline:</b> Weak capacity of MDAs and LGAs in environmental and natural resources management, climate change governance, energy access and disaster risk management in the mainland and Zanzibar</p>	<p><b>Data source:</b> UNDAP reports, ministry reports, outcome and project evaluation reports</p> <p><b>Frequency:</b> Biannual and annually</p> <p><b>Responsibility:</b> UNDP/ United Nations, Government</p>	<p><b>Output 1:</b> Relevant ministries and districts are able to formulate, implement and enforce environmental and natural resources management policies, strategies and regulations</p> <p><b>Indicator 1.1:</b> Number of ministries with functioning sustainable environmental and natural resources plans and strategies <b>Baseline:</b> 3 <b>Target:</b> 13</p> <p><b>Indicator 1.2:</b> Number of districts with financial and sustainable environmental/ natural resources plans and strategies <b>Baseline:</b> 6 <b>Target:</b> 28</p> <p><b>Indicator 1.3:</b> Extent to which national monitoring system, surveys and census are in place to monitor progress on poaching reduction and wildlife crime <b>Baseline:</b> No system in place</p>	<p>Vice President's Office (VPO) Ministry of Natural Resource and Tourism (MNRT) Ministry of water and Irrigation (MOWI) 28 Districts USAID European Union (EU) DfID Prime Minister's Office Regional Administration and Local Government (PMORALG) UNODC UNESCO</p>	<p><b>Regular: 8,900,000</b> <b>Other: 23,000,000</b> <b>Total: 31,900,000</b></p>





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<p><b>Target:</b> Improved capacity of MDAs and LGAs in environmental and natural resources management, climate change governance, energy access and disaster risk management in the mainland and Zanzibar</p>		<p><b>Target:</b> National system in place <b>Indicator 1.4:</b> % of land covered by forests in 28 targeted districts <b>Baseline:</b> TBD <b>Target:</b> 5% annually over the baseline</p>	
	<p><b>Data source:</b> UNDAP reports, government reports, third party reports,</p> <p><b>Frequency:</b> Annually Responsibility: UNDP- Government</p>	<p><b>Output 2:</b> Select districts and communities have their capacities strengthened in climate change governance and sustainable energy access <b>Indicator 2.1:</b> Number of districts with plans and strategies for enhanced resilience to climate change impacts <b>Baseline:</b> 5 <b>Target:</b> 28 <b>Indicator 2.2:</b> Number of women in the targeted districts benefiting from climate change initiatives <b>Baseline:</b> TBD <b>Target:</b> TBD <b>Indicator 2.3:</b> Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting the underserved</p>	<p>Vice President's Office (VPO) Tanzania Meteorological Agency (TMA) PMORALG Ministry of Water and Irrigation (MOWI) Ministry of Finance (MOF) Ministry of Energy and Minerals (MEM) Rural Energy Agency (REA) Civil Society Organization (CSOs)</p>

# PARTNERS

The Government of Tanzania and Zanzibar through implementing partners are the main UNDP partners in implementation of its activities. These include

- President's Office Regional Administration and Local Government- Mainland
- Vice President's Office (VPO) - Mainland
- President's Office Finance, Economy and Development Planning - Zanzibar
- 1st Vice President's Office - Zanzibar
- Prime Minister's Office (PMO) - Office of Disaster Management Department
- Ministry of Finance (MOF)
- Ministry of Natural Resources and Tourism (MNRT)
- Ministry of Energy & Minerals
- Ministry of Water and Irrigation (MOWI)
- Zanzibar Environmental Management Programme
- Tanzania Meteorological Agency (TMA)
- Tanzania National Parks (TANAPA)
- National Environmental Management Council (NEMC)
- Academic and Research Institutions
- Tanzania Forest Services Agency (TFS)
- Regional Administrative Secretaries (RAS)
- Private Sector
- Non Governmental Organizations (NGOs)



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