

## 100% RENEWABLE ENERGY AND POVERTY REDUCTION IN TANZANIA

### MINUTES OF A CONSULTATION WORKSHOP

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### TANZANIA'S ENERGY VISION

**Tanzania has the political goal to be a middle income country by 2025. What does it mean for you? What are the indicators that define Tanzania to have reached this goal?**

- Potential of the country = Tanzania is currently wasting a lot of primary products (fruits, vegetables, grains and so on) and could use the natural resources available on the territory to come up with an efficient and strong market with different kind of products. Tanzania is ranked among the three African countries with high population of livestock/cattle
- Process and industries should be developed to guarantee the development and evolution of the Republic of Tanzania
- Reconnect and establish a good transportation system (building roads and improving the current axis)
- Good and connected infrastructures (transportation, research, main social and economic services)
- Technology: communication security
- Diversification but interconnectedness of technologies and economic sectors
- Build and diversify industry, not only production but also processing and manufacturing
- Revive industries, develop and strengthen Public-Private Partnerships (PPP) in order to attract and convince local and foreign investors to invest in Tanzania
- Reduced imports and build up local production (this also means local jobs instead of imported labor and technology)
- Solar industry in Tanzania, trained people who can assemble the technology etc.
- Well-being of the population, especially the improvement of the quality of life, the access to facilities, the capacity to go to school and to get a good education
- Availability of social services
- Moving out from the poverty means to at least fulfill the basic needs (education, nutrition and access to telecommunications). In other words, it refers to improving the economy, the social, health systems and the quality and access to education
- To get a better education system: preparing workforce and educating people to be thinkers and critical
- Well-coordinated and harmonized institutions and policies
- Maternal mortality rate is reduced and literate rate goes up across the country
- Political will to improve things (like the president shows at the moment)
- Improved and strengthen institutions
- RE well reflected in the constitution and policies. Evaluation to other development plans should be conducted and disseminated to the public before embarking on other interventions including RE in order to avoid repeated mistakes

- Move from rainfall agriculture to irrigation agriculture to increase production and employment. For this, we need reliable energy
- 80% of Tanzanians invest and work in the agriculture which means that investment should be highly directed towards irrigation and energy skills as well as technologies development. Energy as a way to reach the goal
- Energy access to all is key. Energy is transversal to the development of any sector and key to impulse economic activities. Most people in Tanzania are farmers. Production relies mainly on subsistence. If we can improve our agriculture (i.e. we could use RE to mechanize it, for irrigation), it would make a big change. If you embrace RE, you also contribute to preserve forests
- Collective guidelines are to be in a place to avoid misunderstanding between sectors. For instance if we need to ensure forests are conserved, then land, forestry, habitat, energy and agriculture sectors/ministries have to plan and decide together (sectoral common ground)
- Facilitate energy access (nearly 70% of Tanzanians should be able to get affordable electricity or be able to use RE systems)
- Increase RE substantially
- As we move to a middle income country, the government has budgeted 53% of its development budget to energy (40 billion TZS to verify). This is a good indicator
- Balanced energy flexibility
- Tanzania needs to achieve a GDP of \$1036 per capita
- Localization of ownership. Feasibility has to be assessed between common, public and private ownership on resources valuable to embrace RE
- All these indicators would need to be wrapped up in a concept called “respectable lifestyle”

**How does the energy system look like when Tanzania is a middle income country?**

**Official strategy for energy**

Source	2015	Between 2015-2025	2025
Hydro	561MW		2090MW
Natural Gas	527MW		4469MW
Diesel	496MW		
Solar			100MW
Coal		2900MW	

- Becoming a middle income country is only an intermediate step in the development of the country. The energy system should facilitate also further steps
- Important to see the potential for RE and to disseminate this information among the stakeholders. The following question has been stressed: How those sources are going to be linked?
- Decentralization is not the current path taken by the government. The government is more committed to taking control of a centralized system grid. However, with the many troubles faced by the country with the bad quality of the power lines, decentralized systems could help isolated areas to access RE energy

- The energy system in a middle income country is based on interconnectedness
- A mix of centralized and decentralized systems is needed
- Energy mix mentioned in the energy policy but the government is currently investing more in fossil energies and only one wind project has been accepted but has not started yet
- Access to energy for the marginalized people
- Large-scale project should be connection to the national grid
- Access should depend on demand & production
- One national grid, which can distribute from more affluent areas to the neediest ones
- A system with energy mix:
  - RE sources: hydro, solar, wind, biogas
  - Non-RE sources: coal, gas (lots of gas), charcoal, biomass
- Key role of solar PV energy as PV is more affordable, especially for rural and poor people
- Irrigation system alimented with solar energy, which can be of help to farmers
- Natural gas: need to think and consume locally
- Being a middle income country also mean moving to natural gas, electrify the cooking sector and stopping burning and using wood and charcoal. At this moment, electricity will be still too expensive. Need to change cooking habits. Energy service should be subsidized and termed as a service like what is being done on health and education.
- An energy system of the middle income country is reliable (swahili: uhakika). That means energy is there for private households, public buildings, industries and irrigation
- An energy system in a middle income country must be affordable also for low-income households (not only for rich but for all)
- Energy system in the middle income country must be well equipped in both human and reliable financial resources
- Availability of community energy sources
- Energy system must also be efficient and it is consumed close to where it is produced (not exported while local people suffer poverty)
- It has stable institutional regulations and a framework, so it is built on political commitment
- It offers employment opportunities
- Very improved energy infrastructure, with a growing number of mini-grids and individual producers. Many more producers. Every producer should feed in it. And Tanesco would distribute the energy and would take care of the infrastructure. If we don't make Tanesco capable of dealing with it, we need to capacitate others for the production, distribution and collection of fees
- Access to the different energy sources would depend on the location and income:
  - Low-income people would get access to RE
  - High-income people would use RE as a back-up. They have industries and therefore higher energy needs. They resort to diesel generators when there's a cut-off. Now they're jumping to RE to replace the generators

### **What stands in the way for Tanzania to be a middle income country?**

- Lack of political will on implementing energy projects and individual motivation. Today there are more efforts put into coal and gas than into RE. And some policies are biased towards fossil fuels. It would be important to separate between politicians and technocrats
- Additionally, the policy and decision-makers are sometimes not aware and/or knowledgeable on what they are implementing
- Lack of long-term strategy to follow up and to avoid starting from scratch every time

- Government and people are not looking to the long-term strategy in energy (only looking to hydro and Natural Gas and not solar): lack of a comprehensive vision and path dependency
- High reliance on hydro-power: we need to invest more on other RE sources. Tanzania has the potential in wind and solar. The challenge is to mobilize the sources in the good way
- Lack of energy accessibility and affordability: if you go to rural areas, they don't care about the origin of energy sources. They just want to have energy access and being able to pay for it. Currently, RE systems have high up-front costs
- Political perception: donor-based projects and dependence on developed countries
- Lack of coordination and connectivity between sectors and stakeholders: the engagement of the private sector is not very well organized
- Budget allocation: not much expenditure on development
- Bureaucracy and corruption are slowing down the development of RE
- Taxes are discouraging private investors to come and invest in Tanzania
- Existence of an information gap between leaders and citizens. Normal citizens are not knowledgeable about what is happening and not really understanding the 2025 goal
- Need to point out benefits of RE: Even if people are using RE technologies, they don't know what they are doing
- Lack of availability of data and difficulty to reach the information. No specific platform to know the prices and the decisions in the energy sector
- Lack of stable institutional regulations and a framework
- High expectations when an energy project is implemented/ misconception about energy projects
- Lack of local expertise from the community (not enough specialists, manufacturers but also controversies about the political officers taking decisions when they are not experts)
- Problem with technical and legal expertise (experts are coming from outside)
- Expertise: there's less investment on RE because there are less experts on the field
- Lack of trust to academia: the government needs to listen to the reports produced from the academia
- Illiteracy: lack of energy education and awareness
- At the moment, benefits are not shared with community, this needs to change
- Population growth
- Lack of power connectivity
- Current infrastructure system
- Lack of technology
- Lack of local ownership

### **Proposals to overcome barriers**

- Need to promote a clear coordination between stakeholders and avoid the competition for the same sources
- Manage and establish a database in energy projects and resource potential
- Clear coordination of stakeholders/institutions/one-stop center for more efficiency
- Promote integration of all sectors
- Political and social capital
- Reliable sources of energy
- Improved sciences & humanity
- Investment & promotion of self-motivation
- Promote locally developed technology
- Promote maintenance culture
- Promote international collaboration
- Research & data management

- Harmonized policy
- Promote community energy projects

## IMMERSING IN ENERGY POLITICS IN TANZANIA

### Who are the change agents to implement our vision?

- Private sector
- Government (Ministries, RE desks)
- Climate MPs
- CSOs
- TPDC (Tanzania Petroleum Development Corporation): National Oil Company of Tanzania owned by the government and under the Ministry of Energy and Minerals
- Regulation/monitoring agencies
- Media (main media: TBC, Tanzania Broadcasting Corporation, IPP Media, Radio Free Africa, Press Services Tanzania, The Guardian, the Citizen, Daily News (government owned))
- Zanzibar Electricity Corporation
- Department of Energy and Minerals
- Development partners
- FBOs (especially interfaith community organizations. The Interreligious Council for Peace, the Zanzibar Interfaith Center)
- Academic and research institutions: University of Dar es Salaam, University of Dodoma, Sokoine University of Agriculture, COSTESH, Tanzania Industrial Research and Development Organization (TIRDO)
- Vocational training students
- Investor centers
- Political parties
- People, community, students

#### *Harmonization entities*

- VDC (Village Development Committees): inter-branch & inter-level
- Local governments authorities
- District energy officer to place at the local level
- Ministry of Energy and Minerals (custodian?)
- Climate MPs / TAPAFE (Tanzania Parliamentarians Friends of the Environment)
- Best-practice examples from Gender mainstreaming
- Multi-stakeholder forum

### What policies/ laws exist to facilitate the implementation of our vision?

- 2015 Energy Policy
- National Climate Change Action Plan
- Petroleum Act 2015

- Extractive Industries Act Transparency & Accountability
- Rural Energy Act / Rural Electrification Master Plans
- EWURA Act
- Forest Act
- Environment Policy – Environmental Management Act
- Electricity Supply Industry Reform Strategy 2014
- Power Sector Master Plan
- Biofuels Policy
- Guidelines for Sustainable Biofuels Development
- FiTs
- Subsidy Policy
- Natural Gas Policy
- Local Content Policy (Oil & Gas)
- Environment Trustee Fund
- Sea4All
- Scaling RE program
- RED Strategy
- Climate Smart Agriculture Program
- Atomic Energy Act
- Fair Competition Act
- Climate Change Resilience Plan
- The Five year development Plan (2016/17-2021)

**Notes from the conversation about this question**

- If there were a district energy responsible person at the local level, it would make a change.
- Harmonization of policies: call every sector to feed in the draft of a RE policy
- Currently everything report to the Ministry of Energy. The rest of institutions complement the Ministry. The Ministry of Energy is the “custodian”
- TANRIC (Tanzania Institute of Natural Resource) can also be the key player in harmonizing policies because it’s where permanent secretaries meet
- Proposal: mainstreaming gender policies that can be replicated: i.e. a forum was created inviting the different ministries and NGOs (including faith-based organizations) to look into how gender could be mainstreamed in the different sectors. Something similar could done with RE
- When the Climate Change Resilient Plan was drafted, the Ministry of Agriculture had difficulties. If you don’t involve end-users, they might not have the knowledge to draft the policies. The result was a plan that did not change anything
- We need a forum getting a good representation and integrating every stakeholder. Placing everything on the Ministry of Energy might create conflicts
- Mention of the absence of district energy officer when you have district environment officer

**What governmental institutions have a mandate to work on RE and energy access?**

- MEM (Ministry of Energy and Minerals) = is the custodian for energy policies and strategies
- REA
- EWURA (Energy and Water Utilities Regulatory Authority)
- NEMC (National Environmental Management of Council)

- TANESCO (Tanzania Electric Supply Company Limited)
- Research & Education (see COSTECH - Tanzania Commission for Science and Technology)
- Ministry of Water (MW)
- Ministry of Finance (MF)
- PURA (Petroleum Upstream Regulatory Authority)
- MNRT (Ministry of Natural Resources and Tourism)
- ZESCO (Zanzibar Electricity Supplies Company)
- Department of Energy and Minerals in Zanzibar
- TBS (Tanzania Bureau of Standards) established under the Ministry of Industry and Trade in 1975
- Climate Parliament (worldwide)/TAPAFE (Tanzania Parliamentarians Friends of the Environment)
- VPO – PORL (Vice-President Office – President’s office Regional Administration and Local government)
- POPC (President’s office Planning Commission)
- Ministry of Investment (MI)
- Tanzania Investment Center
- NETF (National Entrepreneurship Training Framework)
- Ministry of Land (MoL)
- Ministry of Industry
- TAFORI (Tanzania Forestry Research Institute)
- Local Governments

## INSIGHTS FROM GOVERNMENT INSTITUTIONS

**What is the scope of the mandate of each institution working on RE and energy access?**

### MEM

- Formulation of policies and regulations (not adoptions) for power and cooking, any energy issue
- Propose and manage, spent budget
- Create investment environment for RE
- Report to parliament about budget spending (quarter, half year, full year)

### Parliament

- Approve budget
- Monitor & evaluate of budget spending
- Ensure accountability of funds

### REA

- Fund RE projects
- Project developer (currently focus on solar and biogas)
- Provide money for TANESCO in the past
- Cooking sector

- Gets funding from “rural electrification tax” on petroleum (1 Schilling per Liter) – infrastructure development
- Electrify public buildings in rural areas
- Developing mini-grids in rural areas
- Provide electricity as social service

#### TANESCO

- Project developer
- Utility
- Owner: production, distribution and transmission
- Electrify public buildings in cities

#### TGDC

- Geothermal and Wind Energy project development
- Run projects and sell electricity to TANESCO

#### COSTECH

- Supports research and development, innovation, tech transfer, infrastructure
- Link between community, parliament and research
- Inform about scientific facts to policy makers
- Review policies (work with planning position)
- Get funding from government
- RE is cross-cutting research issues (main sections: physical, life, social, innovation and commercialization)

**How are current RE initiatives financed/ What is the mechanism for infrastructure investments, specifically in the energy sector?**

- No mechanism for household
- No mechanism for a community to invest
- Funding/ access funding is very difficult
- Pilot company to show the finance model is needed
- Rural lighting competition for NGO (funding comes from REA) – 100.000 US
- 177.000 TZ Schilling to connect to the grid, in rural areas households pay only 27.000 TZ Schilling (subsidies from REA through government fund)
- REA makes grid extension plan
- Solar Energy Projects on public buildings from REA, maintenance done by locals (not necessarily trained)
- TAREA supports communities by provide advice (education)
- Banks provide credits (Tanzanian Investment Banks) but no scheme for RE
- TIB provides grants for small minerals (WB financed) but no RE
- Serving and Credit Community Society (SACCOS) /AMCOS like SACCOS for agriculture
- Major projects in Mwadui Kahama in Shinyanga Region and in Karagwe in Kagera Region financed by PPP
- Mobisol and other private initiatives exist
- EU projects, CAMCO (British company) to provide solar PV
- Main mechanism is PPP = private investment in production and sell it to TANESCO

- Private investment incentives: tax incentives, reduce bureaucracy
- Big interest in mini-grids (via PPP)
- General: negotiable interest rate between 9 and 24% (most average 18%)
- Many people need money, so banking system cannot provide special credits for RE (Chinese banks have good conditions)
- “You cannot mess with government plans”: currently, government has developed Grid Plan and Energy Plan. “Don’t do something else now”
- REA department should adopt IDCOL system
- REA phase 3: build on REA to provide access for households, don’t set up new system
- REA has off-grid department
- Irrigation: Ministry of Water, parliamentary committee for water
- One key problem: tasks are very divided among different responsibilities (e.g. irrigation)
- TANESCO does not manage well (buy high 0,50 and sell cheap 0,9/0,12\$, because they sell service not business → high subsidies are needed but they don’t come)
- Government dues are not coming
- Local government does not have any mandate on energy but they are users of energy
- National Security Act says that no one else can distribute electricity, that’s why it’s only central government (as a necessary services)
- Energy cooperatives is possible for production
- Local government can invest in RE but not distributing it without TANESCO
- Mini-grids are still too expensive
- MEM is first point to discuss new finance streams (oversee everything)
- System of handling and finance can be different to assure accountability

**Where do you see the need for policy amendments to scale up RE to reduce poverty in Tanzania?**

- National Energy Policy is sufficient but sector policy for RE can be developed now
- Meaning of access rate is defined which provides a valuable starting point
- 53% of 60% of development budget (1.13 trillion TZ Schilling) of national budget is for energy: 15% of this goes to RE
- Creating energy infrastructure, 2. Creating industry (we are now, creating the investment environment, plans for specific industry to be set up across certain areas), transmission lines, mainly government money (5% donors) 3. Realizing exports
- 98% of MEM budget is for development
- REA is in charge of electrifying villages (two approaches: grid connection or off-grid)
- System is there
- Need reliable mechanisms for financing RE, especially in rural
- Key issue still: implementation and make sure to collect the money to realize the plans (through tax, revenue authority)
- 9% tax between 170.000 -720.000 TZ Schilling per month, above 30% tax (all same for profession)
- 0.3% service levy paid by business to local government, tax goes central government, sometimes you need to do the CSR to local government (like building schools, maintenance)
- Corporate, income, Social Development Levy (5%) tax go to central government
- Before policies are amended, a review of existing policies is necessary. Many existing policies are outdated and yet ineffective. Improved data collection would be key
- Private investment in RE generation needs to be simplified

- Production of energy is still monopolized, that is, everyone can produce but must sell it to TANESCO, which must change. The energy market must be liberalized
- Policies to strengthen cooking solutions are needed. Here cultural sensitivity is key (“charcoal food is really nice”)
- Energy policy amendments need to take into account climate adaptation

## INSIGHTS FROM CIVIL SOCIETY AND FAITH GROUPS

### What are the necessary steps to ensure domestication of RE in Tanzania?

- Solar shops popping up, but PV new technology for the country. Need to raise awareness about this among all
- RE: not on right track, import panels & technology, no spare parts, no maintenance
- Singida wind park financed by World Bank, not necessarily bad, question of setting up contracts
- Wind + solar PV: government gives it to companies. But biomass by design is left to hands of the peoples
- Need for mini-grids
- People only have about 200 shilling per day, can’t afford to connect to grids
- Create an Innovation Lab to ensure the diversification of products + promotion of low-tech (solar arrays, wind generator, rainwater harvesting system, insulation materials, solar water heater, solar lamps)
- Fund and raise subsidies for assembling industries in the country to avoid the utilization of products coming from China or South Africa + Subsidies for RE products
- Improve housing and living conditions (electricity is related to modernity)
- Decentralize energy system and create a map for energy resources and capacities but also guarantee the dissemination of information (ex: potential for wind systems in Mtwara and Singida)
- Promote the entrepreneurial mindset and leadership skills to avoid the collapse of projects (Dependence among people and nothing is done when the project is finished. The mentalities should be changed to help people take action)
- Need to overcome challenges of very low level of adoption from communities, not enough commitment from them. Participatory approaches should be developed
- Bylaws could set up the right example
- Promotion of technology is needed (e.g. energy hubs, fairs, etc.)
- Key is to improve houses of people
- Work strongly with young people as they have a different mindset, more entrepreneurial
- Strengthen local governmental authorities
- Entrepreneurial spirit needs to be strengthened

### Are there platforms (formal or informal) to work on RE/ energy access across institutions and/or sectors (e.g. different ministries/ authorities, government and parliament, government and private sector, government and civil society)?

- For most of the participants (CSOs) there is no platform to work on RE
- Tanzania Renewable Energy Association (TAREA) was founded in 2000 but still lack of communication and lack of participation of CSOs and researchers who are not integrated

- Gap in communication and information dissemination
- Have private sector & CSOs involved in RE investments, currently no involvement in decision-making process (need to have policy to encourage this)
- Participation as a matter of implementation, level of participation is low
- Need to debunk myths among policy makers and population
- Push government to set up facilities to utilize and finance RE
- Parliament needs to pressure government and parliament needs to be pressured by citizens
- IDEA: platform to advise/pressure parliament, develop projects proving the case for RE and use them as best-practice examples, highlight the possibilities
- Bring in good examples: pottery groups in rural areas using kerosene. Have them use PV instead!
- Necessary: bring in finance and private sector
- Best-practice in TZ: tax exemption for PV
- CSOs to promote RE as a means of production
- Participants thought that there is no formal platform on RE or energy in general

**Where do you see the need for policy amendments to scale up RE to reduce poverty in Tanzania?**

- Missing renewable energy policy, aspects scattered into other legislations, but no stand alone, no agenda
- Need to mainstream issues into policy, climate change and adaptation strategy, but not a standalone strategy
- Need to strengthen and increase RE targets
- When formulating the energy policy of 2015, no narrative around energy democracy, rhetoric of energy mix is tricky
- Need for evidence-based benchmarks
- Need to develop an implementation strategy for RE targets/ policies
- Need for RE incentives to prioritize sustainable sources
- Align pricing policy for energy sources with overall vision
- To bring energy to rural areas, national grid is expensive for government. Need for off-grid solutions. For this, we need a coherent policy framework
- Mix is good for energy security, diversify in an appropriate way
- Address question of equity in energy policy
- Learn from others, e.g. in Egypt industry is required to use 10% RE
- Barrier: initial investment capital. Government should provide incentives and subsidies
- Missing a master plan/ comprehensive vision
- Importance to review policies (M&E tools and to fix indicators). They are underlying the importance to see and evaluate the local needs for energy (biomass? Hydro?)
- Ensure that everyone can own and invest in RE
- Current regulation for private investments: to produce and sell electricity you need permission from TANESCO (the only DNO connected to the grid)
- Monopolistic situation with TANESCO at the moment: distributing and producing electricity. It would be better to have at least a few companies competing (oligopoly).
- TANESCO is not interested in RE and electricity is too expensive as people are using biomass and could use natural gas because it is not too expensive
- No existence of RE policy but RE are addressed in the Energy Policy

- Different perception of what is RE and which one should be used. For example, solar seems cheaper than wind
- Strong cultural aspects involved in cooking habits. Most of the women are cooking with charcoal because it is giving taste, it is easy to get it and it is not too expensive. Some efforts are done in some regions with the transformation of waste into energy
- Some say briquettes are better than charcoal
- Need to think about how to upscale the use of better technology for cooking stoves
- Need to develop a link between energy and climate change and integrate it into policies and strategies
- Mobisol (solar energy + micropayment system through mobile phones) and similar companies are providing good examples and starting points
- Energy should be both centralized and decentralized. Existence of decentralized systems in some areas to lower the price of electricity
- Important to use and link irrigation system and energy (using solar panels) in order to improve farmers' income. Rainwater harvest systems
- Idea: Creation of a task force (with different stakeholders) able to produce recommendations and advices
- Need for reviewing policies and strategies, integration and participation of the different stakeholders and not only government officials
- Need to implement a RE policy
- Need to harmonize policies and strategies and also merge energy and CC. Before producing energy or CC policies, the 2 topics should be merged
- Creation of a database led by the National Bureau of Statistics (NBS) for RE data
- Creation of a working group which is considered as the same as the task force?
- Creation of a dedicated trust fund within the Ministry of Finance on RE
- Important to monitor and track financial flows and to ensure the transparency of funded and selected projects
- Identify strategic areas, where investments should of flow, some places national grid will have to play a role
- REA entitled to distribute RE to rural areas

## INSIGHTS FROM ACADEMICS AND RESEARCHERS

### How to ensure that policy making is based in sciences?

- One problem is that very few people would address public directly. Findings are not being published
- It's academicians' role to communicate with the public. "Scholar activism": going beyond publishing in a journal and writing a 3-page policy paper for MPs. Academicians need to go to public TV and talk about it.
- Challenging to raise science findings or ideas to MPs: If you have a very good idea and you want to raise it and get MPs to appreciate it you need to pay them allowances to attend the roundtable you're organizing. It's very challenging to attract government attention if you don't have budget to pay them allowances
- Great divide between politicians and science. The new government has appointed "scholars"/technocrats. Maybe now there could be a room for the academicians to influence the policy-making process

- Currently, when there's a national stakeholder gathering, academicians are invited. But when they draft the final version of the report, academicians' recommendations are never there. There is not respect for academicians in this country. They're afraid of us. For instance, with the Petroleum national law: scholars were out saying we needed time to evaluate the law. But they didn't listen to us. In Uganda it took them 2 years to debate this same law. In TZ only 2 days. Another example: In TZ for setting RE technology standards, they don't rely on scientists
- Academicians' priorities have to match the government's one: The big problem is that the government itself set the themes and priorities. If you, as university, have a very good idea on something different, they will not consider it if it doesn't fit their agenda

### What is the situation with research on RE in Tanzania?

- Budget allocation for research is much limited
- Majority of the research is based on donor support and is scattered. Furthermore, RE is not one of the government priority
- Donor-based and not coordinated to overall strategy: Research only matches donor agendas. And even donor agendas might be extremely different on RE and it's not coordinated. Would be helpful to put all this funding in one basket
- The only report with visibility on the feasibility of RE is the one being conducted by the World Bank. But not many academicians from Tanzania have been involved in that. And if academicians are consulted, it's only the ones known to them
- Financial support to do research and influence the government's agenda is needed
- Academicians are not comfortable to go and speak about the new energy narrative because of the risks involved to their career promotion. For senior scholars is easier
- If you look at science, there are no solid associations focused on different aspects of science. And we never heard about them. We don't have solid institutions representing science. Scientists are fragmented
- Collaborative thinking between academics: there should be a national portal profiling academicians, to help create synergies and collaboration: "A renewable energy national science portal" where people are invited to contribute with their work and research. The only organization that can help us bring us together and have more influence is the Commission for Science and Technology. It's a government organization, it was created to become an umbrella guiding university, but it's become a publicity tool. So, if the Commission for Science and Technology cannot lead us and help us with the portal, and inform the government about its existence, there is no way we can influence the government
- Academics/ researchers need
  - More support from the government, absence of budget for research in RE
  - Coordination between researchers to raise the narrative on RE
  - Improve the academia-industry interface
  - Develop engineering trainings and schools (the education curriculum is not in line with the job market. Scholarships in engineering?)
  - Embrace scholar activism and publish articles to advocate and point out the issues and dysfunctions (despite not being safe to blame the government and companies.
  - Creation of an online portal on RE (what is done, the opportunities, all the researches) - TAREA proposes to use TAREA for this.

### How to foster the RE narrative in the country?

- Politicians keep being interested in fossil fuels because they can get much more benefit than from RE sector. Corruption. Lobby from fossil fuels
- An area where researchers can come in is in highlighting that the energy mix is not happening
- Connecting RE with development: mentally, are we ready to accept RE as the main source? If we're not ready, we might think it's too difficult
- Telling stories about the benefits of RE. Because people in rural areas do not care about the origin of energy, they just want access
- There are risks about strengthening links between civil society and academicians. On one hand, in civil society there is competition to get the credit for. One way is to use religion. You can reach to people with different age, education level. And this is also the best way of reaching the government. Because even member of MPs are believers. So religious people have authority
- Civil society (instead of media) could also play an important role in disseminating science information
- Dialogue and collaboration with the private sector: With the private sector there is no collaboration. We're producing a high number of graduates who can't go anywhere because the private sector can't accommodate them
- There is not a job creation program just focused on RE
- The Ministry of Energy has an agenda, so there are scholarships (i.e. to go to Norway) to train more people in the fossil fuel industry. There are no scholarships for scientists nor for RE. Moreover, most of the scholarships are also donor-funded. Not by the Ministry of Energy
- Academicians should change the way they are communicating and diversify the mediums. For the moment, they are using journal articles but those are not read. Propositions: Producing policy briefs, blogging. The idea is to move away from the traditional mediums used by the researchers and inform the public on potential contribution of RE on poverty reduction

### How relevant are international initiatives like UNFCCC, AREI, SDGs, SE4All?

- Some projects from initiatives started but there is no coherence among initiatives. This a lot of room for efficiency gains
- The initiatives are generally very important since they channel donor money from which the country is very dependent. But this creates transparency problems since most donor money is channeled through the government.
- Development partners working on such initiatives are perceived as well coordinated while TZ organizations are not
- Political will created from global agreements is felt in TZ

## LIST OF PARTICIPANTS

	LAST NAME	FIRST NAME	ORGANIZATION
1	AYOUB	JUMA	SUA
2	SAGARA	JAMAL	PAKAYA-RUFIJI
3	UDDI	AMINA	BAKWATA
4	MAJULA	TUMAINI	CCCS
5	KINYONGA	NYENDO	CCCS
6	JAMES	PHILLIP	MEM
7	SARIA	JOSEPH	OUT
8	MKOMA	STELYUS	MARUCO
9	JACOB	THABIT	UDOM
10	BARAN	SILLO	OUT
11	LUWUGE	BETTIE	TFCG
12	ALFRED	EMANOEL	TAEES
13	TEMU	SISTI	TEFA
14	DANIEL	DICKSON	EVERGREEN
15	JONSTON	WESTON	TAYEN
16	MAGESSE	NGASSANI	CCT
17	MSUYA	SHAFII	MJUMITA
18	KALOKOLA	FRIDAY	TCCAR
19	DR N.J	JIWAJI	OUT
20	MRISHO	RAJABU	IEDS
21	TUMAINIEL	IBRAHIM	HOFOSE
22	RUSULE	DUNCAN	REA
23	MUGARULA	LYDIA	TAREA
24	KAMEMELA	BARAKA	GNRC
25	MWANAHAMISI	MUNKUNDA	BUNGE
26	BITEKO	DOTO	BUNGE
27	MATEMBA	ESTHER	ESRF
28	LUSHINGE	CASSIAN	TIC
29	MUSHO	LEAH	TBC
30	LIWA	MARY	TAWLAE
31	BINTO	ZEPHANIA	ECOLIO
32	ENKAMA	KALUMANGA	UDSM-IRA
33	KIWASILA	HILDEGARDA	WRDP
34	KAFUKU	GERALD	COSTECH
35	FULANO	MUSSA	UDSM-IRA
36	SWAI	MARY	TATEDO
37	MWANGA	SIXBERT	CAN-TZ
38	PAUL	PATRICIA	CAN-TZ
39	ONDITI	MSOLOLO	CAN-TZ
41	LACHAISE	AGNES	CAN-TZ
41	GARCIA	IRENE	WFC
42	LEIDREITER	ANNA	BFDW
43	FUNFGELT	JOACHIM	BFDW

44	EL ALAOUI	ALEXANDER	BFDW
45	MOGENDI	JACOB	YOUNG LAWYERS FOUNDATION
46	KAMULI	REGINA	GREEN VOICES TANZANIA