DEMOCRACY WORKS FOUNDATION.

SOUTHERN AFRICAN POLITICAL PARTIES AND DIALOGUE PROGRAMME.

USAID FROM THE AMERICAN PEOPLE

Southern African Political Parties and Dialogue (SAPP&D) Programme

Training curricula on energy and water for political parties and Civil Society Organisations

Lesotho

Modules With Facilitator's Notes

February 2022

Disclaimer

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Background

Democracy Works Foundation (DWF) is a southern African non-profit organization focused on democracy development in the region. It provides tools to build resilient democracies. DWF works through 5 programmatic areas namely: monitoring democracy, strengthening institutions and systems, training democrats and leaders and strengthening democratic culture. Currently, DWF is implementing a five-year (2017 to 2022) programme called Southern Africa Political Parties and Dialogue Programme (SAPP&D) with funding from the United States Agency for International Development (USAID). The programme seeks to strengthen the democratic structures and institutions of political parties in Angola, Botswana, Malawi, Lesotho and Zambia as well as facilitate multi-stakeholder dialogue in Eswatini to better respond to and represent the needs of the citizenry, particularly in the areas of water and energy resources management.

Specifically, the Programme aims to achieve the following objectives:

1. To strengthen participatory policy and platform development that accurately reflects citizen-identified needs to explicitly include access to clean water and energy management of these resources;
2. To develop sustainable approaches to building the capacity of internal party structures and institutions that emphasize democracy, transparency, accountability and inclusiveness;
3. To enhance a democratic political culture within parties that supports meaningful participation of women, youth and marginalized individuals in policy-making and policy implementation processes;
4. To establish a regional network of political parties to share and support best practices, lessons learned and knowledge on strengthening Democratic Party structures.

In an effort to achieve the objectives of the programme, DWF engaged a team of consultants to develop a curriculum that targets the political parties and civil society organisations on management of clean sustainable water and renewable energy resources.

This set of modules is, therefore, part of a curriculum package that was submitted to DWF. This set of modules is meant to guide for the Expert Facilitators as their facilitate training. The modules also present instructions that guide the facilitators during delivery (Notes to the Facilitators). The Facilitators Notes give instructions on the pertinent issues that have to be taken into consideration during training. In addition to this set of modules, the curriculum package also consists of the Participants Handbook that has to be given to the Political and Civil Society Actors.

Delivery of these modules should ideally be done over 5days; however, a 3-day course-outline has additionally been provided in the Appendix section and may be followed in cases where there is limited available time for delivery.

Contents

List of figures

Note to the Facilitator: *Remember that this curriculum, much as it is generic for the SAPP&D countries, it should be presented in a way that is relevant for the national setting so that the participants can focus on the national policy related challenges. So, as much as possible, try to refer to the situation of the trainee's country such as culture, legal, environment, institutions, traditional local authorities, etc. This also includes consideration of the relevant binational institutions and agreements that the country recognises.*

Note to the Facilitator: *Start the capacity building with an ice breaker by asking questions on the basic knowledge.*

- *Something like, examples of stories from the public about their knowledge of water, myths, beliefs, etc.*
- *Such simple discussions catch the attention of your trainees and create a good mood so start your training on. It also creates a good atmosphere among the trainees.*
- *You can use such stories because they display the indigenous way of thinking of the locals. They define "basic" knowledge*

Make this exercise to be as fun as possible*.*

Note to the Facilitator: *After that, while you shift into the course content, you want them to start thinking about water and its management in their communities. So, you can ask them these questions:*

- *What is your source of domestic water? [is it from a spring, borehole, river, etc.?]*
- *Is the water clean? If it is not clean, do you think its quality is affected by the environment and natural activities around the source of water?*

MODULE 1

1. WATER AS A NATURAL RESOURCE AND ACCESS TO CLEAN WATER

Learning Outcomes

- Understand the basic science behind water as a natural resource
- Develop an awareness of the resources in your community and the basic understanding of their interdependence/connectedness
- Understand the existing global and regional goals towards access to water
- Develop an awareness of challenges in their management at the national and Southern African Region.
- Understand the institutional framework that is responsible in water management

Note to the Facilitator: *While the focus of this curriculum is on development of policies related to clean water, it is important to understand that water is a natural resource that is found within the natural environment and, that the quality of water depends on the environment. So, it is important to give the trainees a basic understanding of the relationship between water quality and environmental health.*

In this section, try to take the mind of each participant back to his/her own community so that he/she begins to think about the natural resources in his/her community. Make them think about the valleys and slopes, which slopes are facing the sun? where are the sources of water? what are the types of water sources? Which streams are found in the communities and which streams do they discharge into? are water sources communal?

Apart from giving the trainees a sense of understanding of water as a natural resource, it is important to conclude by linking the subject with policy, bearing in mind that the core of the training is policy influence. Perhaps to address that, after focusing on understanding the nature of water, begin to ask them about the policies they think can be developed in order to protect these water and energy sources? What management practices can be developed to improve/protect these sources?

1.1 Introduction to water as a natural resource

1.1.1 Facts and figures on water

Note to the Facilitator: *The purpose of this section is to present the value of water, in particular the value of clean water, based on its scarcity. This is meant to change the mindset of the trainees to ascribe value to water as a natural resource. We want the trainee to be sentimental about water so that they can advocate for its proper management and protection at all levels of advocacy.*

People invest their energy, resources, advocacy, etc. in things they find value in.

The United Nations Development Programme (UNDP, 2021) states that water scarcity affects more than 40% of people around the world and this figure is projected to increase with the rise in global temperatures due to climate change. Although 2.6 billion people have received access to improved drinking water sources since 1990, about 663 million still do not have access. These figures indicate a water stress that is facing the world.

You can be surprised to learn that more than half (About 71%) of the earth's surface area is covered by water (USGS, 2021), yet people live under dire water stress.

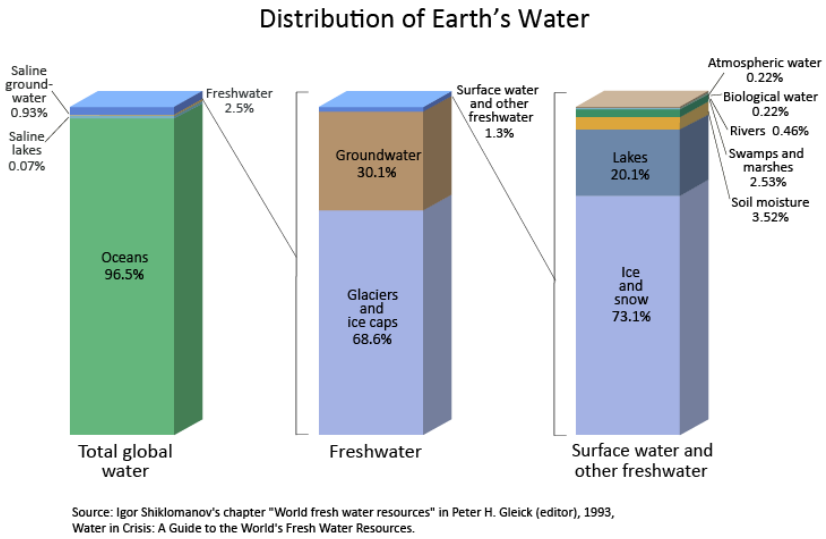


Figure *1-1*: The distribution of earth's water

Key points: Facts and Figures about water

Water is a finite resource.

Despite the fact that 71% of the earth surface area is covered by water, there is a dire water stress globally, with about 663 million people having no access to clean water.

96% of global water is found in oceans, it is salty.

A large proportion of the remaining 2.5% is found in glaciers and ice caps.

The remaining portion that is available for human use is affected by mismanagement, including pollution.

Clean water is under a huge stress

Clean water that is suitable for human uses is very scarce. It is, therefore, important to improve its management and protection.

Although more than half of the land surface area is covered with water, most of it (96.5%), however, is ocean water (USGS, 2021). It is well known that ocean water is salty and it is not suitable for domestic purposes, not even for agriculture and some industrial activities. This means that only a small fraction of the world's water is freshwater. Freshwater is any naturally occurring water that contains low concentrations of dissolved salts and other total dissolved solids. Freshwater specifically excludes seawater.

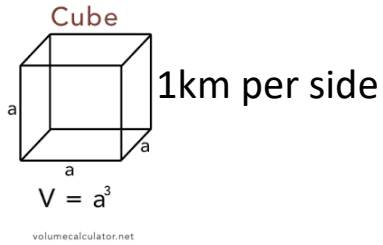
Figure 1-1 shows the distribution of earth water. It shows that freshwater constitutes only 2.5% of global waters. Out of the 2.5% that is freshwater, the majority of it is locked-up in glaciers and ice caps, at the north and south poles. This means only a

small fraction is available to be used for domestic purposes. Clean water is scarce and human beings cannot survive without clean water.

Figure 1-2 shows the proportional volumes of *earth*, *all global waters* and *all freshwater* and of *water that is available for consumption* by the whole world. Note that there are 4 spheres on this diagram. The total amount of water available on earth is 1,386,000,000km^3, all freshwater constitutes 10, 633, 450km^3 while freshwater that is

Note to the Facilitator:
It can be challenging to visualise the amount of water that is referred to here: to make it simpler for you, remember that cube is an object with all sides equal. Then think of a distance of 1km and imagine a cube with all sides equal to 1km, that is a 1km^3. Now imagine that volume multiplied by 1, 386, 000. That is a large volume of water.

Remember that 1km = 1000m.



in lakes and rivers is 93,113km^3.This remaining proportion of fresh water that is involved in circulation is unfortunately threatened by pollution, mismanagement, over-abstraction, etc.

Clean water that is suitable for human use is very scarce. It is, therefore, important to improve its management and protection.

So, apart from the ocean, water also exists in the air as water vapour, in rivers, in lakes, in icecaps towards the north and south pole as glaciers, in the ground as soil moisture and deep underground inside units called aquifers, and obviously in human beings, plants and animals. Water is connected by what is called a *water cycle*.

Note to the Facilitator: *Remember that the purpose of this section is to make the participant aware of the dangers and the scarcity that is facing water so that they can begin to value clean water and understand the importance of protecting it. So, when you conclude this section, emphasise these dangers.*

You can even ask the trainees to give some of the dangers that clean water is facing or some of the causes that lead to people not having access to clean water.

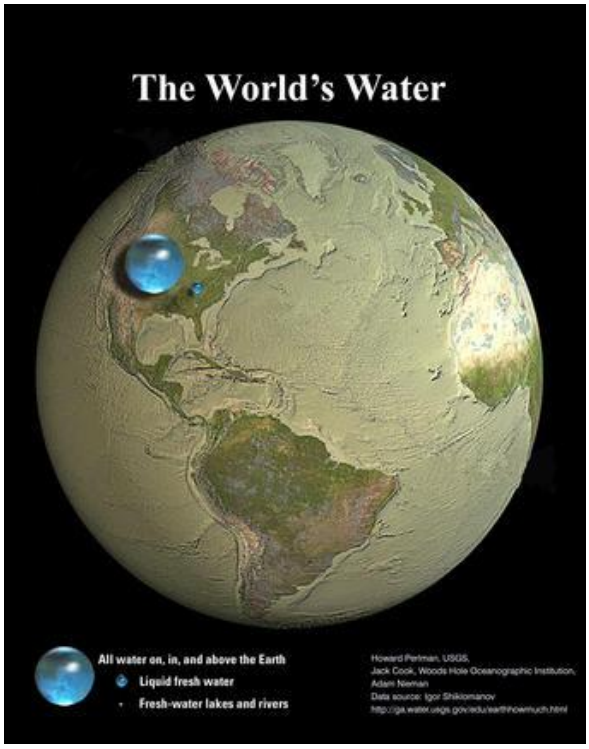


Figure *1-2*: The proportion of the volume of fresh water in lakes and rivers.

1.1.2 Water cycle

A water cycle, also called a *hydrological cycle*, (Figure 1-3) is an endless circulation of water between the surface water, atmosphere and land (Freeze and Cherry, 1979). It describes how water flows between the atmosphere, surface water, groundwater, oceans, ice caps, plants, etc. As far as water is concerned, the earth is a closed system, meaning, water is not added or removed from earth and its atmosphere; it is simply transformed, transported, and recycled. This means that there is no "new" water that is being added into the earth or its atmosphere or that is being removed from earth and its atmosphere to anywhere outside. So, this is the only water we have on earth circulating across the world. Since the water is able to flow from one area to another in the underground, on the land surface and in the atmosphere, our water is connected globally. The same water that is used by plants, animals, humans, engine cooling systems, etc., from all over the world is all taking part in this one and only cycle of water.

Key points: Water cycle

Water is flowing in an endless circulation called a **water cycle** (also called a *Hydrological cycle).*

We all share water through this cycle globally because the water cycle allows water to flow in rivers, to ocean and back as rainfall that can happen anywhere.

Note that underground water is connected to surface water.

Overuse of one affects the other, and pollution of water, affects the other.

Meaning we are using the same water that is being transformed into liquid, solid and gas, and that is being transported all over the world through rivers, ocean currents,

underground pores and through the atmosphere; and is being recycled and purified through evaporation back to the atmosphere where rainfall will deliver the water in a

Note to the Facilitator: *this concept of how water circulates across the globe may be challenging to understand. You can go further to explain that the rainfall that you just had, is probably mixed with some water that evaporated from any other place that you can think of, perhaps Angola, Botswana, Eswatini, Malawi, Zambia, Nigeria, Australia, China…. You can mention any country.*

Even the water that you are drinking was probably used by someone in another country.

purer form. So, basically, a hydrological cycle gives us an opportunity to use the same water once again. You should now start to see the tremendous importance of this endless circulation of water, the water cycle, to life.

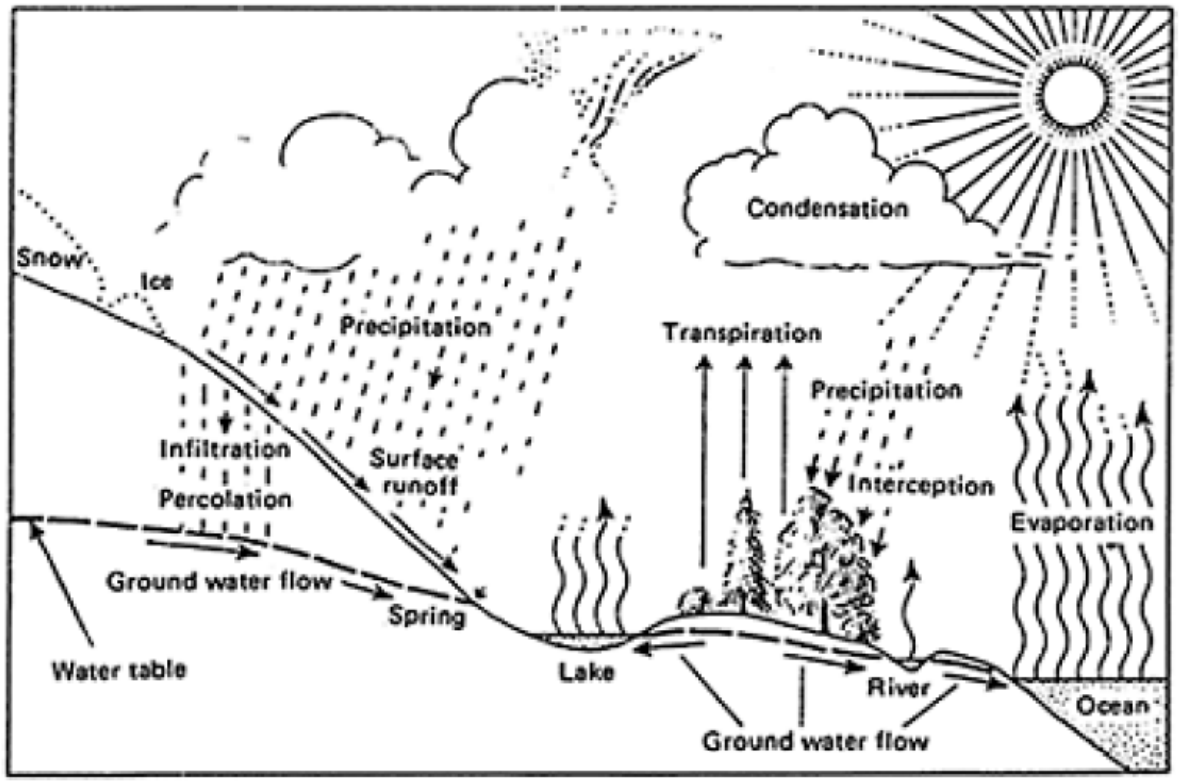


Figure *1-3*: A simplified water Cycle (Shaw, 1994)

The water cycle is connected by the following processes:

- Evaporation: the transfer of water from the liquid to the gaseous state, to form part of the atmosphere

- Condensation: Conversion of vapour back to the liquid state.

- Precipitation: The moisture that falls from the atmosphere as rain, snow, sleet or hail.
- Interception: The capture of precipitation on vegetation to eventually undergo evaporation back to the atmosphere
- Surface runoff: The water that flows on the land surface directly after precipitation following the direction of slope.
- Infiltration: The entry of water from the land surface into the soil or unsaturated zone.
- Percolation: Also called recharge: Is the further downward flow of water through the unsaturated zone into the saturated zone.
- Transpiration: The extraction of water from the subsurface by vegetation and transmission back to the atmosphere.
- Interflow: Lateral flow of water in the unsaturated zone above the water table to discharge in surface water. It refers to water that does not percolate or is not stored but flows laterally before reaching water table.
- Baseflow: The discharge of water from the saturated zone/groundwater into surface water reservoirs.

It is important, however, to note that water does not only circulate in the global water cycle which ends in the ocean. Evaporation also occurs around us from our rivers, lakes, dams, soil even a bath of water that you placed outside in the sun or steam from your kettle. After the water has evaporated, it joins the atmospheric moisture and moves to the upper atmosphere. Once the conditions are suitable, they form rainfall.

Key points: Water cycle

Water does not only circulate in the Global Water Cycle which involves oceans
Can also circulate locally such as in a small catchment
Or terrestrial setting without reaching the ocean.
Water does not have to reach the ocean.

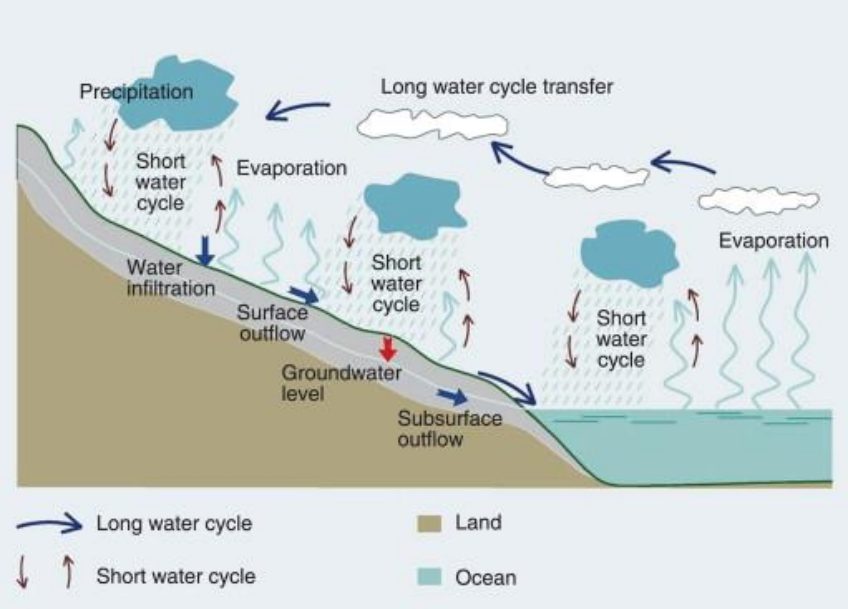


Figure *1-4*:A short local water cycle and a long water cycle

It is obvious that rain supplies water into stream, rivers and dams. What about the water that we see flowing during rainless periods? Where does it come from?

The water that sustains stream in dry periods is groundwater discharge. It shows that groundwater and surface water are connected. Mismanagement of one is mismanagement of the other.

> ***Note to the Facilitator:*** *Remember that the main objective of this training is to capacitate the participants with skills for policy development. So, while you are facilitating the training, make sure that you centre around the importance of the topic to policy influence in water resource management.*
>
> *You can actually ask them if they think it is important to have this knowledge in order for them to develop policies in water.*

1.1.3 Water as a transboundary resource

We now understand that water is involved in an endless circulation called a water cycle. It is now important to note that as water flows from upstream to downstream, it does not obey the political boundaries, meaning water can flow from one community to another, from one city to another, and from one country to another, in what is called a *transboundary watercourse*. A simplified definition of transboundary water is as thus a "surface water or underground water storage units that are located beyond the borders of one country". If a river flows from your country to another country, or it flows from another country into your country, then that river is a transboundary river. Figure 1-5 shows a schematic of a transboundary river. These rivers are very important and are very common in many regions of the world. They require careful diplomatic approaches

among states in order to manage them and to sustainably harness maximum benefits from them. In some cases, management of transboundary water has led to conflicts between countries. A well-known transboundary water related conflict in Africa is the Conflict of the Nile River (Future Directions International; 2013).

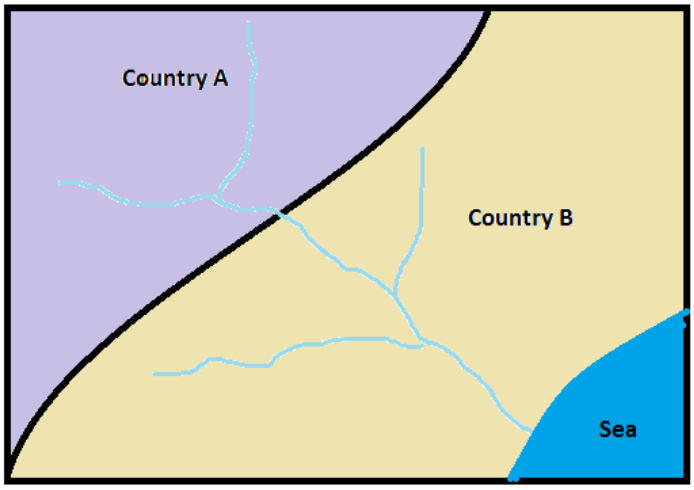
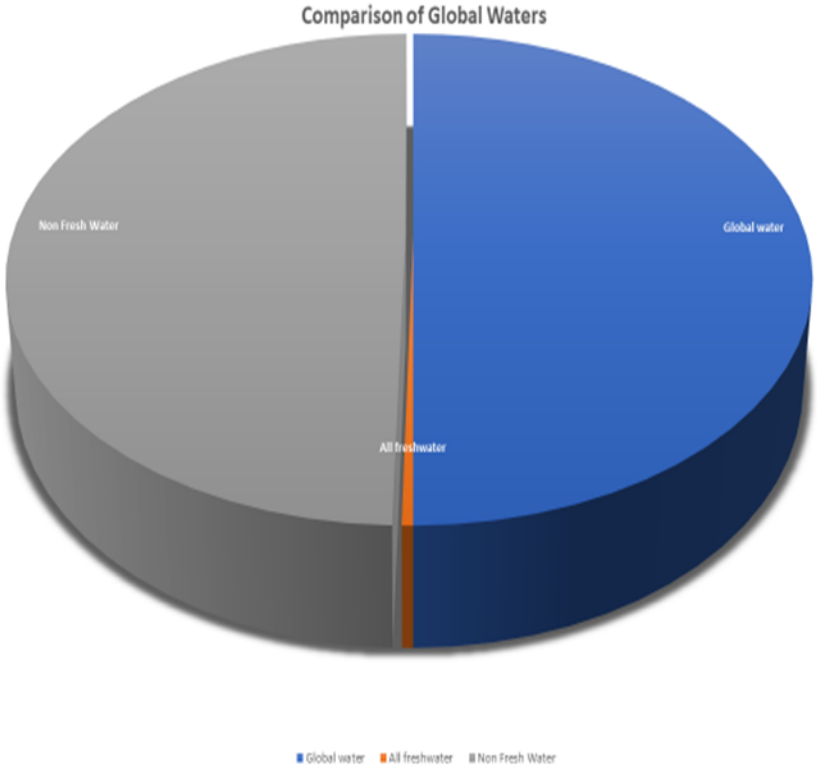


Figure *1-5*: A schematic of a typical transboundary river

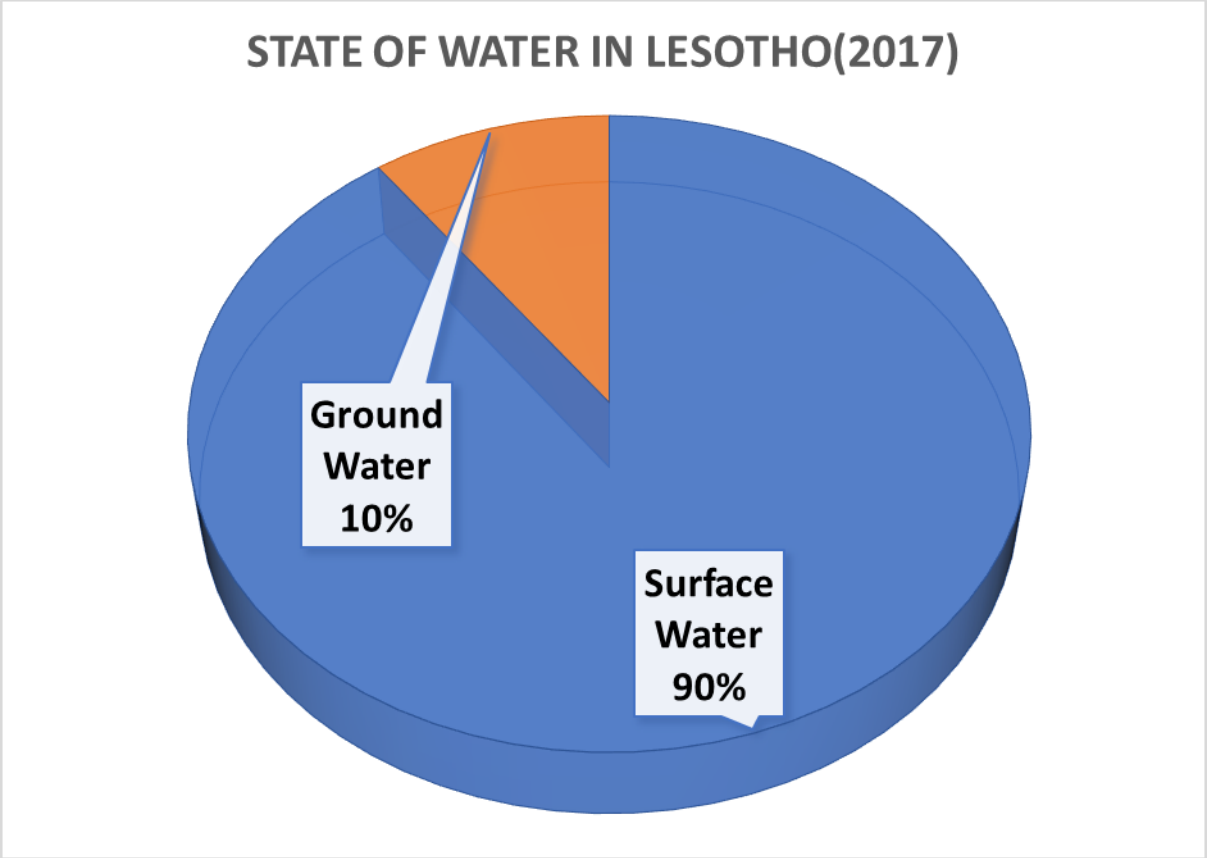
Note to the Facilitator: *At this point, as a way to take your trainees back to their communities, have an exercise: Ask the trainees to think about the river systems from their homes. Ask them to think about the rain that falls on their yard. Ask them to tell a story of the journey taken by water as it flows through various streams and rivers, including the dams, lakes etc. ask them to tell that story until the water reaches the ocean. And then ask them to locate the point at which the water joins a transboundary system.*

Ask them, who owns the water in each stage? Then ask them which management practices do they think would be applied at each stage, as in, Which legal instruments, local council bi-laws, provincial laws, national laws, international water law? Who is responsible for transboundary waters? By this, you want to them to start thinking about the institutions that are responsible for water management at an international or river basin level.



Water Resources Lesotho

- Relatively abundant surface water resources, which are a key resource for water supply and hydroelectricity.
- Groundwater makes up a relatively small proportion of total water use in the country, but is relied upon for rural water supplies, from springs and boreholes or hand-dug wells.
- Surface water resources of Lesotho are estimated at over 3026 Million Cubic Metres per annum. Renewable groundwater resources are estimated at 341 Million Cubic Metres per annum (TAMS, 1996).
- To maintain required levels of water quality, it is critical to continuously monitor water quality parameters for policy setting and drawing of upstream community programs for environmental management.



- The monitoring of surface water resources is undertaken by the Department of Water Affairs.
- Water levels at the Katse, Mohale and 'Muela Dams, as well as releases from these dams are monitored by LHDA.
- A total of 93 active gauging stations country-wide, although only 53 stations are operational.
- Of the 53 operational gauging stations, there are stations which are abandoned and vandalized.
- Some of these stations can still work but are not maintained, the Hydrometric Observers are no more on the ground while some stay very far from the stations thus deterring them from taking regular timely readings as expected and data is either not available or its integrity is affected as a result.
- Almost all the 40 stations that are not operational fall within Senqu Catchment which houses the Senqu-Orange Basin

Ecosystem services for water quality

- The grasslands and open woodlands regulate local climate
- Wetlands ameliorate potential impacts of flood events by absorbing flood peaks and lengthening the flood period.
- Water supply and regulation as the land covered with forests and vegetation is a hub for river catchments with increased quantity and quality of water.
- The prevention of soil erosion by vegetation cover and its capture in wetlands is a cost-saving service that is provided by conservation of these ecosystems.
- Soil losses that might otherwise occur due to ecosystem degradation, such as through excessive grazing, would incur costs associated with increased turbidity of aquatic systems, siltation of aquatic habitats and siltation of water supply infrastructure and monitoring weirs.
- Higher silt loads in rivers and estuaries decrease light penetration and thus primary productivity, which in turn affects fisheries.
- Silt deposition within rivers, wetlands and estuaries decreases habitat and hence biodiversity in these systems.
- Siltation of dams and weirs reduces their capacity and lifespan, incurring costs through increased maintenance and/or augmentation and replacement schemes.
- Soil formation processes and nutrient cycling maintains the productivity of the land, which may benefit biodiversity or other land users such as farmers and pastoralists.
- Aquatic systems can play an important role in the absorption and breakdown of organic and inorganic pollutants. Organic pollutants, such as nitrates and phosphates, and inorganic pollutants, such as heavy metals, are diluted, taken up by plants, trapped along with sediments or broken down within aquatic systems.
- Some ecosystems provide pollinators that are of tremendous value to commercial farmers.
- The high-altitude grasslands have been recognized as being among the richest in the world with the endemism including mammals and birds.
- The ecosystems provide a number of wild foods, medicines, fuel and construction materials which are used by rural communities living in the area.
- Water recreation that can contribute to tourists attraction and accommodate thousands of people per night thereby creating sustainable jobs in the sector.

Figure *1-6*: Transboundary river basins of Southern Africa (Hartfield, 2010)

Lack of cooperation in infrastructural developments is one of the biggest sources of disputes in transboundary watersheds. The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) was adopted in Helsinki in 1992 and entered into force in 1996. The purpose of this convention was to promote sustainable management of shared water courses, the implementation of the Sustainable Development Goals, the prevention of conflicts, and the promotion of peace and regional integration. It is important that management of water resources that are in transboundary watershed be done in cognizant of this convention.

The SADC Protocol on Shared Watercourses was ratified in 2000 by the member states. Among others, the protocol advocated for the formation of River Basin Organisations (RBO) whose purpose was to enhance cooperation among states that share a watercourse. A number of RBOs were formed in the SADC region

Key points:

Transboundary water resources

Since we all share water through a water cycle globally, we see that water flow does not respect political boundaries.

Transboundary watercourses connect water across states,

In SADC, there are 15 transboundary water sheds.

It is important for states to cooperate in managing the transboundary resource

Cooperation among states is required in order to manage transboundary watercourse

The 1992/1996 Helsinki Convention on International waters set a platform for cooperation among states regarding formation of River Basin Organisations

This was localised by the 2000 SADC Revised Protocol

as a result of this guideline. In essence, the role of the RBOs is to "manage" or guide the management of water resources within the transboundary watershed. The SADC Region has 15 transboundary river basins as shown on Figure 1-6. The SAPP&D countries are also member of some of these RBOs depending upon their geographical locations. For example, LIMCOM member states are Botswana, Mozambique, RSA and Zimbabwe, ORASECOM member states are Botswana, Lesotho, Namibia and RSA, ZAMCOM member states are Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe, OKACOM member are Angola, Botswana and Namibia, CICOS member states are Angola and others while INKOMATI member states are Eswatini, RSA and Mozambique.

Key points:
Transboundary water resources

In the SADC Region, there are 15 transboundary rivers

The SADC Region has various established River Basin Organisation of which Angola, Botswana, Eswatini, Lesotho, Malawi and Zambia are members.

Note to the Facilitator: *At this stage, make sure that you delve deeper on the article that constitutes the agreement that was signed by the state on which you are doing the training. This is to make sure that the PAs and CSOs understand their own transboundary context and the legal framework to which they must abide.*

For example, if you are doing training in Botswana, discuss the agreement that formed the LIMCOM and ORASECOM. You can find more about the agreements in Modules 3 (Water Policy and Law) and Module 4 (Energy Policy and Law).

1.2Access to clean water

It is at the heart of developmental agenda to improve access to clean water at all levels, which can be achieved through appropriate management systems. This section focuses on identifying the global and regional goals that aim at improving access to clean water.

Factors Affecting Access to Clean Water in Lesotho

- Rural population (% of total population) in Lesotho was 70.97 % in 2020 World Bank report.
- Lack of access to clean water and improved sanitation facilities plague families in Lesotho, especially those in rural areas.
- 80% of the rural population in Lesotho still collects their drinking water from unprotected sources. And the majority of them must travel more than 30 minutes to collect this unsafe water.
- 66.2% of the rural population lack access to improved sanitation facilities.
- 33.8% of rural families continue to rely on open defecation. (World Vision)

- Unaffordable water tariffs
- Poor land-use planning and land administration (Building Permits)
- Cultural beliefs and social perceptions

Note to the Facilitator: *Note that at this stage, the trainees are aware of the nature of water and the institutions that govern its management. They are aware that there are institutions that deal with "management and protections" of water and its sources, and that there are those that deal with "supply" of water. The statistics on the management of water including how much water is there? And what affects its distribution has been covered in the preceding sections. So, in this section, the aim is to bring an awareness of where global and regional goals are leading to. It is important as you do your in-country trainings to further trickle this awareness of goals to the country level in which you are training, e.g., the national development plans.*

NB: *It is important for you to not just focus on the targets, but to pay attention to the processes that led to setting of the goals. In particular, emphasise the role that the country of your trainees played in the ratification when dealing with international goals. Emphasise that these goals were not just imposed on their country but their country actually contributed in setting them up. This will create ownership and acceptance of the goals. This approach will make it clear that the goals were not set by the Developed Countries. The same goes for the rest of the topics in the module.*

Remember, one of the overall goals of this course is to equip the political and civil society actors to be able to formulate policies which have to be in line with developmental agenda.

1.2.1 The human right to water and sanitation

In November 2002, the Committee on Economic, Social and Cultural Rights adopted General Comment No.15 on the right to water where they defined the right to water as "the right of everyone to sufficient, safe, acceptable and physically accessible and affordable water for personal and domestic uses". On 28 July 2010, through Resolution 64/292, the United Nations General Assembly recognised the human right to water and sanitation. The resolution acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights and, therefore, a prerequisite for their realisation (UN, 2010).

Principles: Affordable; Accessible; Acceptable; Sufficient; Safe; Dignity.

What does the human right to water entail?

- Sufficient. The water supply for each person must be sufficient and continuous for personal and domestic uses. These uses ordinarily include drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene. According to the World Health Organization (WHO), between 50 and 100 litres of water

per person per day are needed to ensure that most basic needs are met and few health concerns arise.

- Safe. The water required for each personal or domestic use must be safe, therefore free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health. Measures of drinking-water safety are usually defined by national and/or local standards for drinking-water quality. The World Health Organization (WHO) Guidelines for drinking-water quality provide a basis for the development of national standards that, if properly implemented, will ensure the safety of drinking-water.
- Acceptable. Water should be of an acceptable colour, odour and taste for each personal or domestic use. [...] All water facilities and services must be culturally appropriate and sensitive to gender, lifecycle and privacy requirements.
- Physically accessible. Everyone has the right to a water and sanitation service that is physically accessible within, or in the immediate vicinity of the household, educational institution, workplace or health institution. According to WHO, the water source has to be within 1,000 meters of the home and collection time should not exceed 30 minutes.
- Affordable. Water, and water facilities and services, must be affordable for all. The United Nations Development Programme (UNDP) suggests that water costs should not exceed 3 per cent of household income.
- (Source: UN, 2010)

Note to the Facilitator: *At this point as you conclude the section on human rights to water, you can ask your trainees questions that try to guide them to localise the human rights.*

You can ask them the following questions:

- *Are you aware of a country that has adopted the human right to water and sanitation? How is it implemented or translated?*
- *Do you know if your country has adopted the human rights to water and sanitation?*
- *Do you think your country has honoured these human rights?*
- *What do you think your country can do to show improvement to adoption of human rights to water and sanitation?*

1.2.2 The Global goals towards access to water

Note to the Facilitator: *At this state, trainees know about the nature of water, they now know statistics on the amount of available water and sources of renewable and clean energy and the extent to which the world lacks access to clean water and renewable clean energy. So, here the purpose is to bring an awareness of the global and regional goals in as far as access to clean water and energy are concerned.*

In September 2000, leaders of the 189 countries (including heads of states and governments of Botswana, Eswatini, Lesotho, Malawi and Zambia) met at the United Nations headquarters where they devised and committed to achieving a set of eight measurable Millennium Development Goals (MDGs) by 2015. It is important to note that at the time, all the countries that are taking part the SAPP&D programme took part in this commitment as they were already members of the UN by then. Among the eight goals, the one with most relevance to energy and water was goal 7 (Note: goal of the MDGs not SDGs), which aimed to ensure environmental sustainability. Towards the end of the MDGs tenure, in 2012, efforts to develop a successor that will be more people-centred, were already underway. A global consultation involving civil society organisations, citizens, scientists, academics, and the private sector from all over the world were involved. This consultation led to documentation of the 17 Sustainable Development Goals (Figure 1-7), which would cover a period from 2015 to 2030.

Figure *1-7*: The sustainable Development Goals

Key Points: Global Goals

Botswana, Eswatini (*then Swaziland*), Lesotho, Malawi and Zambia among the other 189 UN Member states, set the global goals referred to as Millennium Development Goals whose tenue ended in 2015.

The successor to the MDGs, the Sustainable Development Goals (SDGs) were established to cover 2015 to 2030.

The SDG relevant to water is **SDG 6**

Goal 6

Target 6.1 aims at "universal and equitable access to safe and affordable drinking water for all by 2030".

Target 6.7 aims at "International cooperation and capacity building support to developing countries in water management".

Target 6.8 aims to "support and strengthen the participation of local communities in improving water management".

Among the 17 SGDs, the one most related to water is goal 6. Goal 6 of the SGDs advocates for access to water and sanitation for all. Target 6.1, in particular, aims to achieve universal and equitable access to safe and affordable drinking water for all by 2030, while targets 6.7 and 6.8 emphasise the need for

international cooperation and capacity building support to developing countries in water management, and, to *support and strengthen the participation of local communities in improving water management*.

It is important to note that since the establishment of these goals, countries have committed to, and have been reporting on progress towards achieving these goals. This has been done through the in-country based UN offices, which obtain data from the relevant national institution. The global indicator selected by UN Member States for monitoring SDG target 6.1 is "proportion of population using safely managed drinking water services" Safely managed drinking water is defined as the use of an improved drinking water source, which is located in premises, available when needed, and free of faecal and chemical contamination (WHO, 2017). It is important as well to note that this reporting is not a move by the developed countries to "control or manage" the developing and under-developed countries, but it is actually a means to achieve the set goals.

In reporting progress toward achieving SDG 6, the UN Water (2021) states that the global proportion of population that uses safely managed drinking water service is 74%. Compared to 62% in 2000, this shows that progress has been made. In fact, generally, all regions of the world have seen growth in drinking water services. The report shows that Europe and Northern America have the highest proportion at 96% followed by Northern Africa and Western Asia at 79%, then the Latin America and the Caribbean at 75%, which is followed by Central and Southern Asia at 62%. Finally, the least coverage is in Sub-Saharan African region at 30%. This shows that, although the Sub-Saharan Region has shown improvement as compared to 17% in 2000, it still lags far behind in access to clean drinking water services.

It is evident from the above that there remains a need, in the Sub-Saharan African in particular, to employ efforts to improve access to water, and improve its management and protection as well. It means that it is imperative that all arms of government and institutions, inclusive of state and non-state, political actors, both in government and in opposition, those

Key Points:

Progress towards SGDs

Countries provide perioding reports on progress to SDGs.

2020 data shows that global proportion of populations that use safely managed drinking services is at 74%.

All world regions have had some increase in access to safely managed drinking services since 2000.

The region with highest proportion of access to clean drinking water is currently Europe and Northern America at 96%.

Although Sub-Saharan Africa has had an increased in clean drinking water as compared to 17% in 2000, it still has the least coverage at 30%.

This emphasises the tremendous need for all parties to engage to in assisting their states to achieve the set SDGs.

with representation in parliament and those outside of parliament must contribute towards achieving these goals.

It is important for each party to identify the role that they can play given their positions and to commit to doing so.

The United Nations Water Development Report 2021 (United Nations Water, 2021b) states that, *recognising, measuring and expressing the value of water, and incorporating it into decision -making, are fundamental to achieving sustainable and equitable water resources management and the sustainable Development Goals of the United Nations' 2030 Agenda for sustainable Development.*

1.2.3 Continental goals

In May 2013, during the Golden Jubilee celebration of the formation of the Organisation of African Unity (OAU), the African Union (AU) passed a 50th Anniversary Solemn declaration which marked the re-dedication of Africa towards the attainment of the Pan African Vision of "An integrated, prosperous and peaceful Africa, driven by its own citizens, representing a dynamic force in the international arena" (AU; 2021). It was in this event that the heads of states of African countries committed to attaining the Agenda 2063, The Africa we want, which is a manifestation of how the continent intends to achieve this vision within a 50-year period from 2013 to 2063. Among others, the agenda identified a number of Africa's Aspirations, goals and priority areas. The aspiration that covers the area of Energy and water management is Aspiration 1 *"A prosperous Africa, based on Inclusive Growth and Sustainable Development"*, specifically, Goal 7 of the same aspiration targets *"Environmentally sustainable and climate resilient economies and communities"*. Under this Goal, The Agenda lists, among others, *water security, Climate resilience and natural disaster preparedness and prevention, Renewable Energy*, etc.

This shows that it is at the heart of the African Agenda to strive towards improving water security and access to renewable sources of energy. It goes without saying that the Agenda, additionally focuses on improving clean sources of energy, which drive towards climate resilience and natural disaster preparedness.

Key Points: Continental and Regional Access to Water and Energy

The Heads of African States committed their countries to strive towards "The Agenda 2063: The Africa We Want", which aims at improving water security and Renewable Clean Energy for the African Continent

This shows that African Countries have a long-term ambition to improve the lives of their citizens in access to clean water, and clean and renewable energy sources.

Countries provide perioding reports on progress towards these goals SDGs.

Reports indicated that the Southern African Region lags behind in terms of access to water and energy

It shows the tremendous need for all persons in different levels of authority, in different countries, to advocate for policies that enhance long-term access to clean water and renewable clean energy for all citizens of Africa.

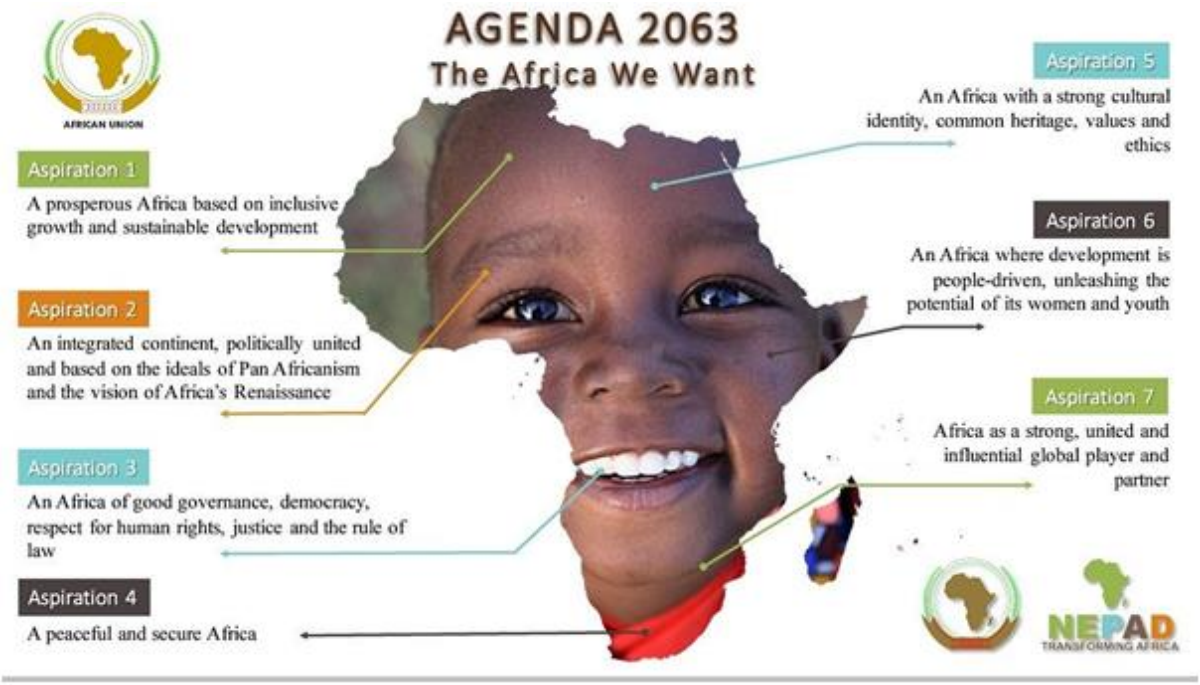


Figure *1-8*: The Aspirations of The African Agenda 2063: The Africa We Want.

Prior to the African Agenda 2063, the continent had The Africa Water Vision for 2015, which aimed at "An Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socio-economic development, regional cooperation, and the environment. This vision is designed to avoid the disastrous consequences of threats such as; multiplicity and complex management of transboundary basins, climate change, growing water scarcity, desertification, pollution, inappropriate governance, unsustainable financing, etc., and to lead to a future where the full potential of Africa's water resources can be readily unleashed to stimulate and sustain growth in the region's economic development and social well-being.

1.3SADC goals

It has already been emphasised in section 2.2 that the Sub-Saharan Africa lags behind all other regions of the world when it comes to proportions of populations that use managed drinking water services (UN Water, 2021a). Despite this report, SADC (2012) indicates that the SADC region has an abundance of renewable water and further indicates that infrastructure huddles currently prevent these abundant water resources from reaching their maximum potential.

As a result of lack of infrastructure, only 61% of the region's population have access to safe drinking water. The 2012 SADC Regional Infrastructure Master Plan outlines the regional plans for infrastructure development over 25-year period. From 2013 to 2021, the region aimed at increasing access to safe clean drinking water from 61% of the population to 75%.

1.4 National goals and coverage

Note to the Facilitator: *In this section, make a highlight of the national plans for the country where you are facilitating training. Similar to the global setting above, emphasise the level of engagement and representation that gave rise to the goals. This is to trigger an ownership of your trainees, the politicians and civil society actors, to buy into participating fairly in development of policies related to water.*

NB: in order for the trainees to have this information in their Handbooks, fill the national information in the section provided Under "National goals and Coverage"

The objectives of the Lesotho Water and Sanitation Policy (LWSP) are to promote:

1) The proper management of the country's water resources and its sustainable utilization;

2) Adequate and sustainable supply of potable water and sanitation services to all of the population of Lesotho;

3) Co-ordination and coherence in the management and development of water and other related natural resources, in order to maximise the resultant socio-economic benefits without compromising the sustainability of vital ecosystems; and

4) Harmonisation of processes and procedures followed by different development partners and other stakeholders in order to optimise available internal and external resources as well as ensure timely implementation of sector programmes.

The main challenges in implementation of the LWSP and the Water Act are related to:

1.Inadequate capacity for water resources management and the non-involvement of Local Councils in management of water resources and local communities in catchment management to ensure benefits for the population of Lesotho;

2.Inadequate access to water and sanitation services for all Basotho and lack of effective and integrated manner when addressing water, sanitation and hygiene; inadequate access to basic services for vulnerable households;

3.Inadequate decentralisation of rural water services to the Local Councils

4.Inadequate enforcement of regulations for water quality and pollution control

5.Inadequate sector coordination with wider stakeholder participation

6.Limited introduction of wider private sector participation in water and sanitation services

7.Weak M&E and weak sector communication/ information dissemination

Strategic Priority Areas for 2020-2030 In line with the strategic direction outlined above until 2020, the vision for how the water sector would look like in 2030 could be expressed as:

1. Implementation of catchment management and development plans has resulted positively in improved livelihood in rural areas, improved food security and improved water resources and environmental management;

2. Lesotho will be internationally recognised for its capacity for integrated monitoring and assessment of climate and water resources and will be adapting positively to climate change with evidence based programmes with links to catchment management activities;

3. All Basotho will have access to appropriate and affordable water and sanitation services according to desired service levels. The water services will be provided by a variety of Water Service Providers (WSPs) with WASCO recognised as an efficient Water Utility providing services in the major urban areas as well as bulk water services. Water and hygiene related diseases have been minimised;

4. Full cost recovery for regulated water and sewerage services with Government subsidies specifically targeted to: i) ensure the provision of services to the poor, and ii) ensure compliance with environmental regulations;

5. The water resource development activities in Lesotho will be implemented in an integrated and sustainable manner. The catchment management and development activities will have resulted in a sustainable path for water availability in Lesotho taking account of various climate change scenarios;

6. Water sector planning and coordination will be well functioning with an increasing level of cost recovery. Government modalities will be fully used for all planning and implementation modalities.

The Water Sector Programme (WS Programme) provides the guidance for implementation of the Long-Term Strategy. The following sub-chapters outline the Strategy within the six Key Focus Areas;

Key Focus Area I: Establishment of Catchment Management

Key Focus Area II: Climate Change, Water Resources and Environmental Management

Key Focus Area III: Water, Sanitation and Hygiene

Key Focus Area IV: Regulated Water and Sewerage Services

Key Focus Area V: Water Resource Development

1.5Institutional arrangement in water/ Levels of water governance

Note to the Facilitator: *by now, the trainees understand the existing access to water and energy and the goals towards improving access on a global, regional and, most especially, on a national level. Now, it is important for them to have an appreciation of the institutions within the water and energy sectors and the roles that they play towards achieving access to water and energy for all.*

Therefore, in this section, you want to bring an awareness of the existence of water management institutions in your country. Most politicians and the general public are aware of the water supply institutions,but most are not aware of other institutions within the water sector and sometimes if they know about such institutions, they are often not aware of their functions. So, to bring this awareness, you can start this by asking these questions.

- *Which institution is responsible for water supply in your country?*
- *Which institution is responsible for water resources management, protection, measurement of the amount of water in the rivers, quality of water, etc. and keeps a record of all this information?*
- *Let's say you were going to make a budget allocation, which of these two types of institutions would you prioritise?*

The system of water governance operates at different levels within two types of boundaries: administrative and hydrological. Administrative boundaries rarely follow hydrological ones, which often provides challenges in the system of water governance. Figure 1-9 demonstrates the different levels of water governance.

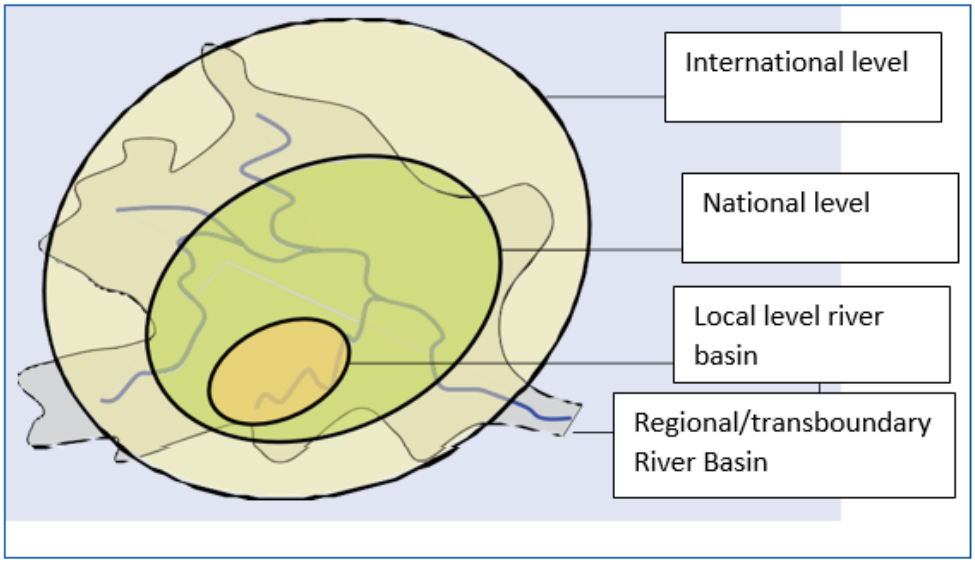


Figure *1-9*: Different levels of water governance

1.5.1 Administrative levels of governance

International level

In most countries, supra-national institutions such as SADC play an important role in the development of water resources frameworks through agreements between member states. Such agreements can, for example, stipulate water quality standards, initiate large scale flood management programmes and prevent the development of infrastructure that would negatively affect downstream users. The SADC revised Protocol on Shared Watercourse Systems (SADC 2001), for example, has been signed by each member of SADC and applied to national legislation. A smaller scale example is the establishment of a Tripartite Permanent Technical Committee between South Africa, Mozambique and Swaziland to deal with the protection and sustainable utilization of the water resources of the Inkomati and Maputo watercourses (Johannesburg, 29 August 2002).

International institutions can encourage the application of IWRM principles, particularly the principles of ecological sustainability and economic efficiency. This is possible through multinational agreements to protect biodiversity and partake in benefit sharing of water resource development schemes. Local Governments are rarely directly involved in decisions and agreements taken at the international level since this is the task of National Governments. However, the results can substantially impact upon their everyday operations.

National level

Note to the Facilitator: *As you begin this section, you can ask your participants to give you the names of national institutions in the water sector and their roles. You may find that sometimes they already have that information then you don't have to go deep into it. However, you must be ready with that information. Such national information can be found in the national ministry or department responsible for water.*

NB: in order for the trainees to have this information in their Handbooks, fill the national information in the section provided Under "National level"

Note to the Facilitator: *It is important in this section to emphasise that, apart from the institutions that are responsible for supply of water, which most political actors are familiar with, there are also institutions that are responsible for management of those resources. Make special emphasis that the management institutions are equally important, if not more important, because they deal with protection of the resources among other roles. If management of water is improved, access becomes less of a challenge.*

In recent years, many countries in the SADC region have made improvements in water governance at the national level, thus making it easier to put IWRM into practice. This has been achieved by adopting wide ranging new policies, the revision of water laws and the establishment of new institutions for water resources management.

The South African National Water Act 36 of 1998 was drafted with the aim of reforming the law relating to water resources. The Act sets out the National Government's overall responsibility for the management of the nation's water resources. This includes the definition of the national water resource strategy which provides the framework for the management of water resources for the nation as a whole and the framework within which water will be managed at regional or catchment level, in defined water management areas.[4]

For Local Government, the rules set at the national level are the most relevant. Legislation and policies set by National Government form the national frameworks and shape the way in which Local Government can engage in IWRM through the definition of:

- Mandates of Local Government;
- Mandates of water resources authorities such as Catchment Management Agencies (CMAs);
- Mechanisms through which different levels of government can interact in water resources management.

Local level

This level refers to a Local Government's area of jurisdiction. National authorities usually have the overall responsibility for the management of a country's water resources and large-scale infrastructure, such as dams and water transfer schemes. However, Local Government still plays a crucial role as several of their regular mandates, including water supply, wastewater treatment, land use planning, etc., are related directly and indirectly to water resources.

The local governance system operates within the frameworks set at national and sub-national levels. Depending on the degree of decentralization, Local Governments have a certain flexibility within these frameworks to create bylaws and policies. They can also use their competence at local level to extend participation in decision making to a wider range of stakeholders representing local water users and other water related actors, such as farmers, factory owners, fishermen, business people, representatives of community-based organizations, NGOs, etc.

Note to the Facilitator: NB: *in order for the trainees to have this information in their Handbooks, fill the national information in the section provided Under "National level"*

1.5.2 Hydrological levels of governance

River basin level

Many of Southern Africa's large river basins cover multiple nations and numerous local administrations. The river basin boundaries rarely follow the administrative boundaries observed by National and Local Governments and the management of the

basin as a whole must therefore function across borders. Transboundary river basin commissions have been established to manage international basins in Southern Africa, such as the Zambezi, Orange-Senqu and Limpopo. The interests of each National Government within the basin are represented within these commissions, which deal with high-level river basin development issues aimed at improving the management of natural resources that are relevant for the entire basin context.

The Zambezi River Basin Commission is an example of a transboundary institution that involves multinational participation. The development of the Zambezi Action Plan[5] and the setting up of the Zambezi Commission has been accomplished to advise National Governments on the development of the basin. The Commission responsible for the Action Plan is made up of national organizations, institutions and agencies. Local Governments have a limited input although certain mechanisms for participation have been established.

In general, these river basin commissions limit their activities to setting out the overall development goals, but may also be engaged in negotiating water allocations between countries. In that respect, they set important boundaries within which national and local actors need to maneuver.

Note to the Facilitator: *You need to know the river basin organization that the country of training is a member of. This information can be obtained from the department or ministry responsible for water management. Similarly, you will need to know the institutions at the sub-catchment level.*

The (sub)-catchment level

The planning, allocation and management of water resources is best coordinated at the catchment level. A catchment or sub-catchment refers to part of a larger river basin and is the level to which more and more important competencies in water resources management are being transferred in an increasing number of Southern African countries.

Examples of institutions in charge of water resources management at catchment level are the Catchment Management Agencies (CMAs) in South Africa and Catchment Councils in Zimbabwe. Typical responsibilities include the setting of regulations that specify how different local actors can participate in the deliberations and decision-making on water resources management at this level.

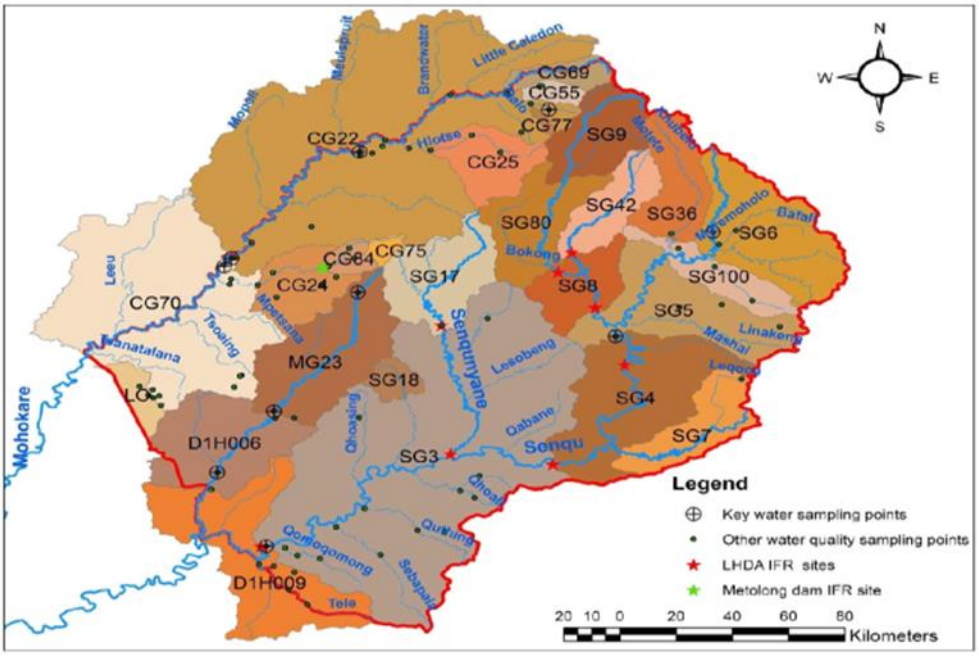
In South Africa the passing of the Water Act has resulted in the development of a national water resources strategy. This includes the establishment of Catchment Management Agencies (CMAs) which have the responsibility of designing individual catchment strategies for the protection, use, development, conservation, management and control of water resources within their water management area. The involvement

of Local Governments is expected within the CMA framework.

To date, Local Government involvement in catchment level institutions is not mainstreamed although examples do exist, such as in the Inkomati CMA in South Africa which has a Local Government representative as one of its board members.

Lesotho is located entirely within the Senqu-Orange River basin

- The Senqu catchment drains an area of approximately two thirds of Lesotho (i.e. 24,485 km2) Makhaleng catchment included.
- This catchment has the total area of 21 689 km2 in both Lesotho and South Africa excluding the Makhaleng Catchment area.
- The Senqu River originates in the extreme north of the country and leaves Lesotho at its confluence with the Makhaleng River at the Morifi village in Mohale's Hoek District near Moyeni in Quthing District.
- The Makhaleng, with a catchment area of 2 988 km2 (upstream of its confluence with the Senqu River), originates in the vicinity of Mount Machache and leaves the country near Mohale's Hoek.
- The Mohokare marks the border of Lesotho with South Africa and has a catchment area of 13 370 km2 (both in Lesotho and South Africa), as it leaves the border of Lesotho.
- It springs from Mount Aux Sources, and leaves Lesotho near the Bolikela village in Mafeteng.



Source: State of Water Resources Report 2017

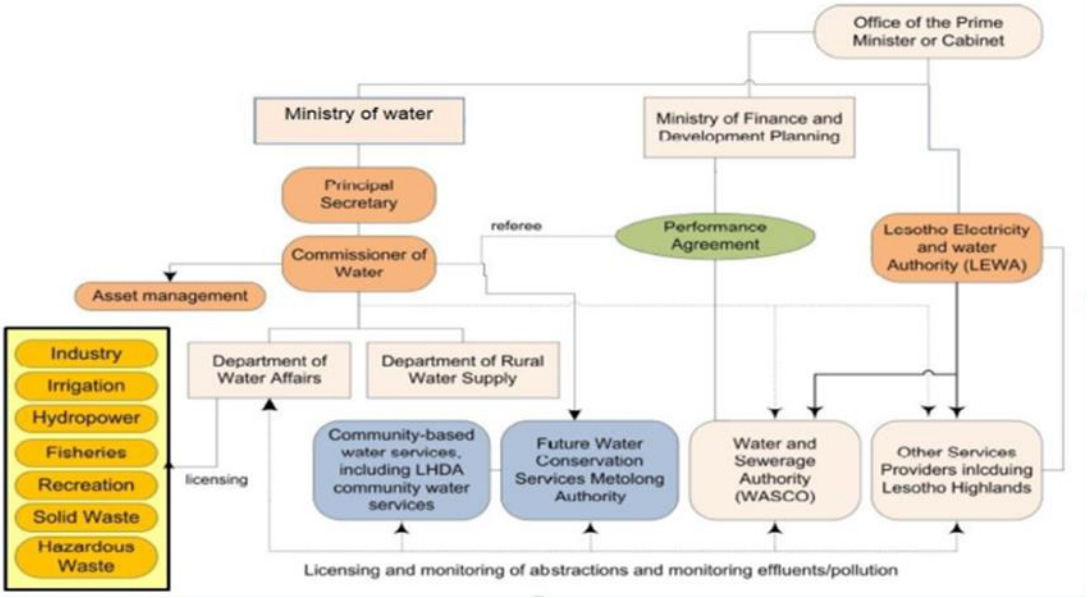
Mokhotlong River tributary of Senqu River (viewed from 29°18'41.49"S, 29°6'49.16"E)

ORASECOM Build up

- The Mountain Kingdom of Lesotho is the source of the Orange-Senqu River. From the cold blue peaks of Thabana Ntlenyana, the highest mountain in Southern Africa standing at an elevation of over 3 000 metres above sea level, where the Senqu River begins its journey; Lesotho is the water tower of Southern Africa.
- As the most important river in Southern Africa, shared between four countries(Lesotho, South Africa, Botswana and Namibia), protecting the source of the Orange-Senqu River in the Mountain Kingdom of Lesotho is critical.
- Lesotho contributes 40% of the total volume of water within the Orange-Senqu River Basin from a land base of just 3% of the total area.

Political Authorities usually focus on Water supply institutions

It is important to note that the Water Management Institutions are equally important, if not more important.



Critical Institutions in the management of water

- LHDA, WASCO and Rural Water Supply manage water systems.
- Department of Water Affairs is responsible for Water resources management
- The institution responsible for water resources management, protection and monitoring should enjoy budgetary allocation priority because it requires resources to be effective and sustain water quantity and quality. Example: RWS has a problem of non functional water systems.
- Community councils

Role of water resources institutions

- Importance of Water Management Institutions
- Long term data storage:
    - These help us in climate models to learn about the past in order to develop future projections.
    - These help us to ensure access to water for the future.
- Develop a baseline water quality and quantity in order to identify trends, to observe climate shifts
- Data is useful for construction of dams, roads, bridges…data helps us make informed decisions
- Protection & law enforcement against polluters that threaten water security….

Role of water resources management institutions

- Collate data on water quantity and quality periodically
- Store and update water resources data
- Analyze data and map trends in quantity and quality changes
- Identify climate change effects on water quantity and quality
- Provide support to potential water users on information relating to abundance of water resources
- Sensitize water users on sustainable water harvesting and utilization

The Lesotho Lowlands Water Development

Project Objectives Include:

1. To increase water availability and access to improved water supply services in Maputsoe-Hlotse zone and Mafeteng-Mohales Hoek zone.

2. To improve the technical and financial performance of WASCO

The project entails construction of bulk water supply infrastructure that will abstract water from the Hlotse and Makhaleng rivers. The Mafeteng-Mohales Hoek will entail construction and rehabilitation of distribution water mains in Mohales Hoek and Mafeteng towns and surrounding settlements.

1.6 Further reading

- Important Tools on Human right to water

https://www.un.org/waterforlifedecade/human_right_to_water.shtml

https://www.endwaterpoverty.org/Claim-Your-Water-Rights-FAQ

- Transboundary conflicts

Future Directions International (2013). *Conflict on the Nile: The future of Transboundary water disputes over the world's longest river*. Available: https://www.futuredirections.org.au/publication/conflict-on-the-nile-the-future-of-transboundary-water-disputes-over-the-world-s-longest-river/ (Accessed: 19th November 2021).

Aylward, B., Bandyopadhyay, J. and Belausteguigotia, J.C. 2005. Freshwater ecosystem services. Ch 7 in: Ecosystems and Human Well-Being: Policy Responses, Vol 3. Millennium Ecosystem Assessment, Island Press, Washington DC, USA.

Blignaut, B.J. (2007) Estimate of finances available for the purchase of activities to improve the delivery of water related ecosystem services In Maloti Drakensberg Transfrontier Project (2007) Payment for Ecosystem Services: Developing an Ecosystem Services Trading Model for the Mnweni/Cathedral Peak and Eastern Cape Drakensberg Areas. Mander (Ed) INR Report IR281. Development Bank of Southern Africa, Department of Water Affairs and Forestry, Department of Environment Affairs and Tourism, Ezemvelo KZN Wildlife, South Africa.

Lesotho Long-term Water and Sanitation Strategy

Lesotho Environment Act 2008

Lesotho Water Act 2008

Lesotho Water and Sanitation Policy 2007

Lesotho Energy Policy 2015

MODULE 2

2. ENERGY AS A NATURAL RESOURCE AND ACCESS TO CLEAN RENEWABLE ENERGY SOURCES

Learning Outcomes

- Understanding of basic energy concepts and their use on a day-to-day basis within the energy space.
- Have an awareness of different sources of energy, potential benefits of renewable clean energy and challenges that come along with energy emissions
- Build knowledge on energy value chain and the role it plays in the socio-economic development.
- Understand the dynamics of energy in the Southern Africa Region together with its commitments and progress in access to clean renewable energy as per the International agreements.

Note to the Facilitator: *It is important to make the trainees aware of the energy sources in their community. The trainees should understand that energy is a natural resource and that the energy sources around us are responsible for the environment that we live in. In this section, therefore, try to take the mind of each participant back to his/her own community so that he/she begins to think about the sources of energy in his or her own community. Make them think about the valleys and slopes -, which slopes are facing the sun? where are the sources of water? what are the types of water and energy sources?*

Apart from giving the trainees a sense of understanding of the nature of energy, it is important to conclude by linking the subject with policy, bearing in mind that the overall goal of the training has a bearing on policy influence. Perhaps to address that, you can end by asking them about the policies they think can be developed in order to protect the sources of energy in their community?

2.1 Definition of Basic Energy Concepts

Energy: The ability to perform work, it cannot be created, consumed or destroyed, it can just be transferred or converted from one form into another

Energy Sources: Are energy carriers which can be divided into renewable and non-renewable energy forms. All energy forms are created directly or indirectly from the sun except for geothermal which comes from the Earth's mantle.

Clean energy: energy that comes from renewable, zero emission sources that do not pollute the atmosphere when used, as well as energy saved by energy efficiency measures: Examples of clean energy are:

- Solar Energy
- Wind Energy

- Bioenergy
- Geothermal Energy
- Hydropower
- Nuclear Energy (while it produces zero emissions, there is the challenge of storing and disposing of extremely hazardous nuclear waste).
- Natural Gas

Clean energy is at the heart of global development agenda. SDG Goal 7.a dictates that; by 2030, enhance international cooperation to facilitate **access to clean energy research and technology**, including **renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology** and promote investment in energy infrastructure and **clean energy technology**.

Clean energy includes **renewable energy sources that have minimal impact on the environment** such as solar and wind power which do not emit greenhouse gases (GHGs). They also are referred to as green energy because they do not deplete fossil fuels and other natural resources.

Renewable Energies: come from natural sources and they are replenished at a higher rate than they are consumed. Examples include;

- Solar
- Wind
- Geothermal
- Hydro
- Biomass

Non-Renewable Energies: Energy forms that cannot be replenished such as fossil fuels and radioactive heavy metals;

- Peat
- Coal
- Oil
- Gas
- Nuclear Fuels

What is Renewable Energy and Energy Efficiency?

Renewable Energy (RE) is energy collected from sources which are naturally replenished on a human timescale, such as solar, wind, geothermal, hydro, ocean and biomass.

What is an example of clean energy?
Out of all energy resources, we consider **green power (solar, wind, biomass and geothermal)** as the cleanest form of energy. So, if we were looking at clean energy on a spectrum, these would be farthest from "dirty" or emissions-heavy energy.

Energy Reserves: Are quantities of resources that are known and are legally and economically extractable with current technology.

Transmission: Transportation of electricity by means of high voltage lines and electric plant from generation station to substation

Distribution: Transport of electricity by means of electric lines, electric plant, transformers and switchgear to the final consumers

Electricity Grid: An integrated electricity transmission and distribution system

Electricity Generation Facility: electric power production plant.

Isolated Grid: Mini grid not connected to the main grid.

Mini-Grid: Electricity supply system providing electricity to more than one customer through a distribution network.

Small Power Distributor: an entity that distributes electricity generated to end users

Small Power Producer: an entity that enters into a power purchase or feed-in tariff arrangement with main grid operator.

Modern Energy Access: When a household has access to reliable and affordable clean cooking facilities, a first connection to electricity and then an increasing level of electricity consumption over time to reach the regional average.

Energy Efficiency: using less energy to get the same job done. Energy Efficiency (EE) is the goal to reduce the amount of energy required to provide products and services. For example, insulating a home or allowing natural ventilation allows a building to use less cooling and heating energy to achieve and maintain a comfortable temperature. Installing energy-efficient lights also reduces the amount of energy required to attain the same level of illumination compared with using traditional incandescent light bulbs.

Sustainable Energy: meeting the needs of the present without compromising the ability of future generations to meet their own needs.

2.2 Electricity Access

Note to the Facilitator: *Note that at this stage, the trainees are aware of the types of energy sources, definitions of key terms, including what clean energy is, what renewable energy is. They are also clear on the electricity production versus demand in the SADC Region and in the individual countries. They are aware of the Southern African Power Pool (SAPP) and how it assists member states to deal with energy gaps and excess across the region, in particular, of the importance of cooperation of states in energy management. The statistics on energy including how much electricity is being produced? And which sources are clean and which are not, thereby contributing to global warming.*

So, in this section, the aim is to bring an awareness of where global and regional goals are leading to. It is important as you do your in-country trainings to further trickle this awareness of goals to the country level in which you are training, e.g., what are the national development plans goals towards access to energy?

NB: *It is important for you to not just focus on the targets, but to pay attention to the processes that led to setting of those goals and plans. In particular, emphasise the role that the country of your trainee played in the ratification when dealing with international goals. Emphasise that these goals were not just imposed on their country but their country actually contributed in setting them up. This will create ownership and acceptance of the goals. It makes it clear that the goals were not set by the Developed Countries. The same goes for the rest of the topics in the module.*

Remember, one of the overall goals of this course is to equip the political and civil society actors to be able to formulate policies which have to be in line with developmental agenda, i.e., the already existing higher-level structures.

2.2.1 Global goals towards access to clean energy

Target 7.1 of the SDG 7 advocates for access to affordable and j clean energy by 2030. Additionally, target 7.4 focuses on improving international cooperation towards facilitating access to clean renewable energy research.

Note to the Facilitator: *At this point when discussing the goals towards access to energy, make mention of clean energy sources, not just renewable sources. This is because the SDG 7 emphasises on access to clean energy. This section tries to bring an awareness to the PAs to develop/influence policies, and CSOs to advocate for initiatives and policies, that target the use of clean energy sources.*

Key Points: Global Goals

The SDG relevant to energy is **SDG 7**

Target 7.1 aims to achieve "access to affordable and clean energy by 2030".

Target 7.4 focuses on improving international cooperation towards facilitating access to clean renewable energy research.

According to the Energy Progress Report (Tracking SDG 7) that was released by the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), the UN Department of Economic and Social Affairs (UN DESA), the World Bank, and the World Health Organisation (WHO) in 2021, states that during

the last decade, a greater share of the global population gained access to electricity than ever before, but the number of people without electricity in Sub-Saharan Africa actually increased. The report also stresses the importance of significantly scaling up efforts in countries with the largest deficits in order to ensure universal access to affordable, reliable, sustainable, and modern energy by 2030. The recent Covid-19 pandemic has contributed to challenges related to access to achieving the SDGs by 2030. This is despite the fact that the number of people without access to electricity has declined from 1.2 billion in 2010 to 759 million in 2019, the decentralised renewable-based solutions gained momentum, the number of people connected to mini grids more than doubled between 2010 and 2019. Currently, an estimated 660 million people, most of which are in Sub-Saharan Africa would still lack access in 2030.

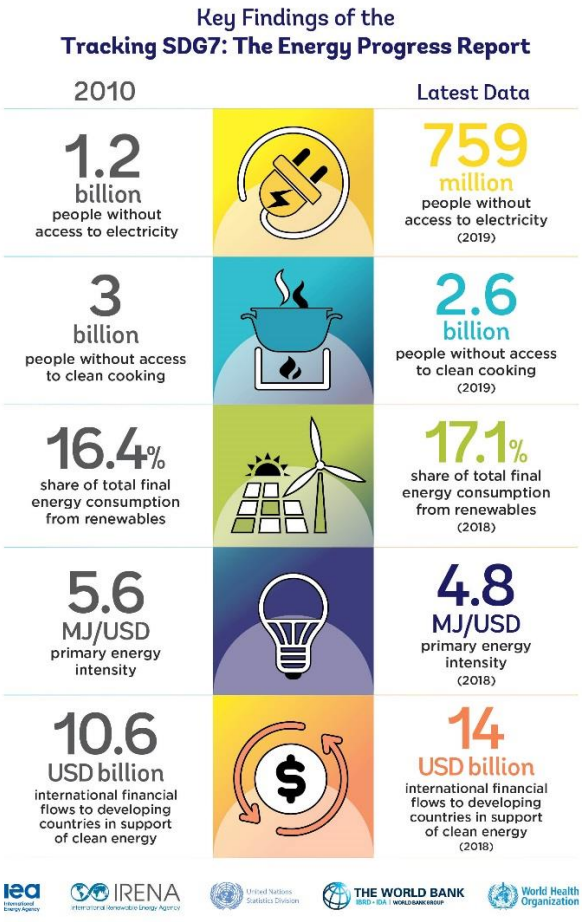


Figure *2-1*: Progress towards achieving SDG7

Key Points:

Progress towards SGDs

Globally, the number of people without electricity declined from 1.2 billion in 2010 to 759 million in 2019

Number of people without access to electricity increased in Sub Saharan Africa

An estimated 660 million people, most of which are in Sub Saharan Africa would still lack access in 2030

It is important for countries to scale up efforts to ensure universal access to affordable, reliable, sustainable, and modern energy by 2030

A third of the world population remained without access to clean cooking in 2019

910 million lack clean cooking in Sub Saharan Africa

Cooking smoke causes millions of deaths per year. Hence a need to develop clean energy sources.

This emphasises the tremendous need for all parties to engage to in assisting their states to achieve the set SDGs.

It is particularly important to note that it is the strategic goal of the SDG to improve access to "clean" energy. Some energy sources present health hazards, which additionally contribute to global warming that the world is taking a stand against. There still is a significant lack in access to clean energy. 2.6 billion people, which is one third of the global population, remained without access to clean cooking in 2019. Largely stagnant progress since 2010 leads to millions of deaths each year from breathing cooking smoke, and without rapid action to scale up clean cooking the world will fall short of its target by 30 percent come 2030. The state of access in the Sub-Saharan African region is characterized by population growth outpacing gains in the number of people with access, so that 910 million in the region lack access to clean cooking.

Key points

50% of the residents in the SADC region have access to electricity

Figure 2-2 shows that in rural areas, only 32% has access to electricity

It shows that electricity is skewed towards urban settlements and there is very low access in rural areas.

2.2.2 Continental goals and access to energy

The continental goals towards access to energy have been well presented in section 1.2.3 (in Module 1) as adapted from The African Agenda 2063: The Africa We Want.

Among others, the agenda identified a number of Africa's Aspirations, goals and priority areas. The aspiration (Figure 1-8) that covers the area of water management also covered Energy, which is Aspiration 1 "*A prosperous Africa, based on Inclusive Growth and Sustainable Development*", specifically, Goal 7 of the same aspiration targets "*Environmentally sustainable and climate resilient economies and communities*". Under this Goal, The Agenda lists, among others, *water security, Climate resilience and natural disaster preparedness and prevention, Renewable Energy*, etc.

Key Points: Continental Access to Energy

"The Agenda 2063: The Africa We Want", aims at improving Renewable Clean Energy for the African Continent

Already we saw that SDG reports indicated that the Southern African Region lags behind in terms of access to clean energy

It shows the tremendous need for all persons in different levels of authority, in different countries, to advocate for policies that enhance long-term access to renewable clean energy for all citizens of Africa

This shows that it is at the heart of the African Agenda to strive towards improving access to renewable sources of energy. It goes without saying that the Agenda, additionally focuses on improving clean sources of energy, which drive towards climate resilience and natural disaster preparedness.

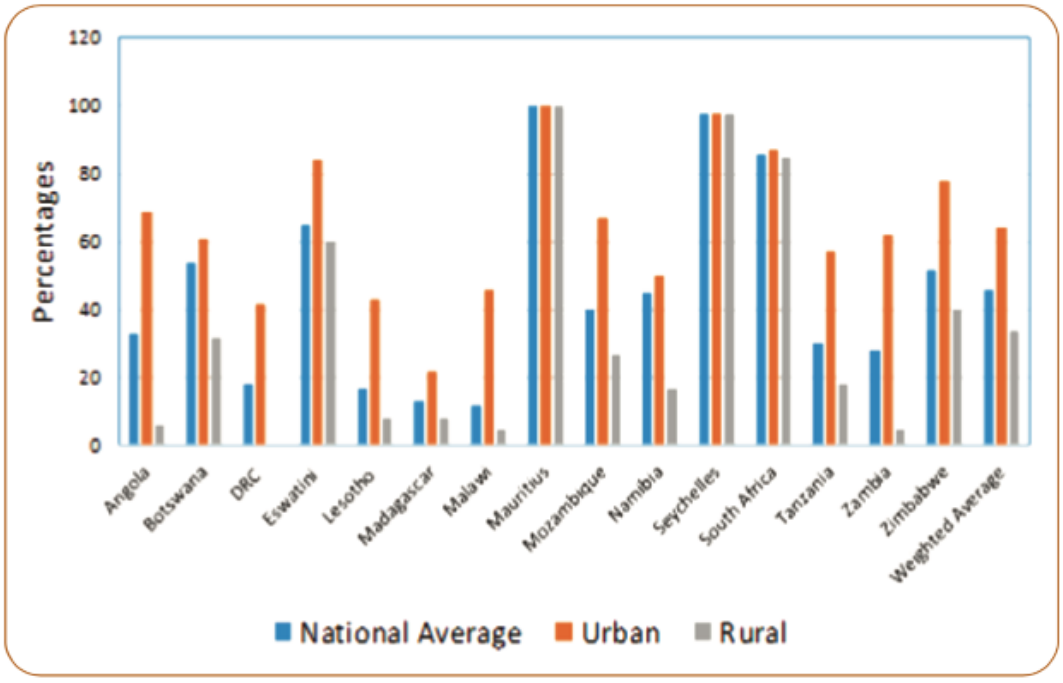
2.2.3 SADC Goals and access to energy

It has already been emphasised in section 2.2.1 that the Sub-Saharan Africa lags behind all other regions of the world when it comes to proportions of populations has

access to clean energy sources (Tracking SDG 7: The Energy Progress Report). Despite this report, SADC (2012) indicates that the SADC region is blessed with long hours of sunshine that should be harnessed to support decentralised energy supply, particularly in the rural areas where most people use smoke inducing cooking methods that cause diseases. The Revised Regional Indicative Strategic Development Plan (RISDP) (2015) acknowledges the roles that both energy and water play in addressing regional challenges and achieving sustainable and inclusive socio-economic development.

- Among the SADC member states, Mauritius, Seychelles and South Africa have higher connection rates and Madagascar has the lowest
- Lesotho, Malawi and Zambia have national averages well below the regional average

While analyzing access to energy in the Southern African Development Community (SADC) region, the Regional Infrastructure Development Master Plan Assessment Report of 2019, highlighted that approximately 50% of the region's residents have access to electricity. However, In the SADC region, only 32% of rural areas in the Region have access to electricity. This shows that electricity is skewed towards urban settlements and there is very low access in rural areas.



Source RERA 2018

Figure *2-2*: Electricity Access (May 2018)

2.2.4 National goals

Note to the Facilitator: *In this section, make a highlight of the national plans for the country where you are facilitating training. Similar to the global setting above, emphasise the level of engagement and representation that gave rise to the goals. This is to trigger an ownership of your trainees. In the case where you are training the politician emphasise the role that political parties played in setting those goals. Similarly, in the case where you are training civil society actors, emphasise the role that the citizens as well as the civil society organisations played in setting them. This makes it easy for them to buy into participating fairly in development of policies related to energy.*

Note to the Facilitator: NB: *in order for the trainees to have this information in their Handbooks, fill the national information in the section provided Under "National goals".*

Note to the Facilitator: NB: *in order for the trainees to have this information in their Handbooks, fill the national information in the section provided Under "National level".*

2.3 Current state of energy production in the SADC

2.3.1 Electricity (power production)

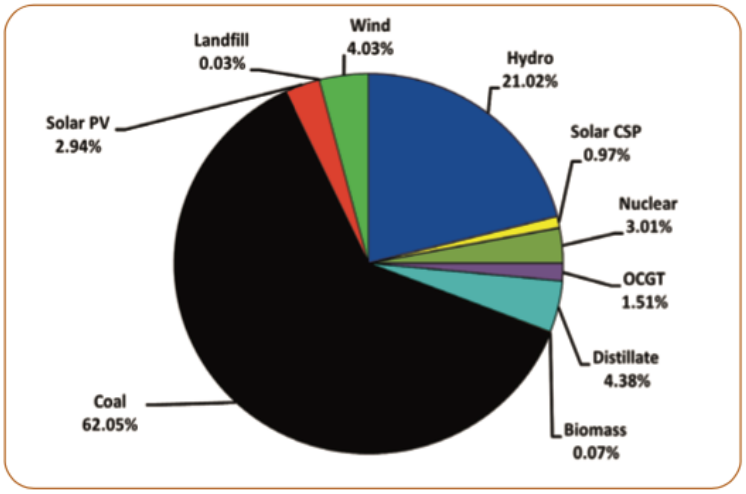
- The SADC aims to promote least cost power generation and trading
- SADC has established a Southern African Power Pool (SAPP) Platform to promote power trading among Member States
- The region is in the process of building power lines that link Member States (interconnectors and transmission systems) to support the SAPP platform
- Member States that enjoy some form of connection include Botswana, DRC, Eswatini, Lesotho, Malawi, Mozambique, RSA, Zambia and Zimbabwe
- Key challenges in the electricity sector include; electricity tariffs that are not cost-reflective, limited private investment, and striking a balance between profitability and affordability

Country	Utility	Installed Capacity MW	Operating Capacity MW	Current Peak Demand MW	Peak Demand plus Reserves	Capacity Excess/ Shortfall including Reserves
Angola	RNT	3129	2 500	1 869	2 149	350
Botswana	BPC	927	459	610	702	(243)
DRC	SNEL	2457	1 076	1 359	1 563	(487)
Eswatini	LEC	70	55	232	267	(212)
Lesotho	SEC	74	70	156	129	(109)
Malawi	ESCOM	352	351	326	375	(24)
Mozambique	EDM/ACB MOTORAC	2724	2 279	1 780	2 047	232
Namibia	Nampower	538	354	652	750	(396)
South Africa	Eskom	50 774	48 463	38 897	44 732	3,731
Tanzania	Tanesco	1 375	1 078	1 051	1 209	(131)
Zambia	ZESCO/CEC/LHPC	2 734	2 734	2 194	2 523	211
Zimbabwe	Zesa	2 048	1 555	1 615	1 857	(302)
Total All		**67 200**	**60 923**	**50 241**	**58 016**	**2 957**
Total Operating Members Only		62 343	**57 045**	**47 495**	**56 283**	**2 762**

Source SAPP presentation to the April 2018 SADC Energy Thematic Group meeting in Gaborone, Botswana

Figure *2-3*: Electricity demand and supply in 2017

- SADC has made significant progress in terms of power production since 2007
- Between 2007 and 2017 the region managed to commission 22,596 MW
- It recorded 2,957 MW power excess in 2017
- However, power generation in the region is still dominated by coal, which is a non-renewable and not a clean energy source.



Source SAPP

Figure *2-4*: SADC Power Generation Mix (2017)

Key points

Figure 2-4 shows the percentages of energy sources in the power generation mix

Despite the successes by SADC to increase renewable sources of energy, such as achieving 21% from Hydropower, the unfortunate part is that power generation in the SADC is still dominated by coal, which is a no-renewable source and which is not a clean source of energy, thereby contributing to global warming

- Power generation is still dominated by non-renewable energy especially coal
- The region is making significant progress in the use of renewable energies to generate power
- As shown on Figure 2-4, the total installed electric power in Southern African Power Pool (SAPP) operating members is 62 343 MW which is predominantly generated from coal and hydropower. Coal supplies 62% of power generation in Southern Africa, but is considered a contributing factor to global warming, therefore, though it helps to address socio-economic issues, it contributes other environmental threats.
- On the other hand, hydro supplies about 21% of energy in the Southern Africa.
- Out of the power generating stations that were commissioned by SADC between 2015 and 2017, 43% was hydro, 24% is gas, 11% was solar 10% was wind and just 10% from coal to meet its power requirements
- The tariff caters for costs incurred when building, financing, maintaining and operating power plants and electricity grid
- SADC Member State are using the SAPP platform to trade power

ELECTRICITY GENERATION IN LESOTHO

- Renewable Electricity licences is driven mainly as part of implementing Government's Energy Policy 2015-2025 initiatives of increasing electricity access.
- Diversifying sources, promoting renewable energy and attracting private sector participation in the energy sector.
- Lesotho Electricity Co. invited expressions of interest from consultants to perform a pre-feasibility study of the 1,000-MW Monontsa Pumped-Storage project. in July 2009.

- The African Development Bank approved a loan and a grant in 2009 for the Lesotho electricity supply project that focuses on renewable energy including mini-hydropower as well as pre-feasibility study of a 1,000-MW pumped-storage project. (HydroWorld 2/9/09)
- The Lesotho Highlands Water Project (LHWP) is a multi-billion Maloti/Rand bi-national project between the Governments of the Kingdom of Lesotho and the Republic of South Africa, established by the Treaty of 1986 and the 2011 Agreement signed between the governments of the Kingdom of Lesotho and the Republic of South Africa.
- The Project harnesses the water resources of the Lesotho highlands through the construction of a series of dams and tunnels for the mutual benefit of Lesotho and South Africa, supplying water to the Gauteng region of South Africa and hydropower to Lesotho.
- The first phase (Phase I) of the multi-phased project was completed in 2004 and the second phase (Phase II) is currently underway.
- Article 8 of the Phase II Agreement determined that the hydropower generation component of Phase II would comprise a pumped storage scheme utilizing the existing Katse Reservoir as the lower reservoir and a new upper reservoir in the Kobong valley, or any other scheme to generate hydropower.
- This determination was made following the initial hydropower feasibility studies which were conducted in 2008 and 2011.

- The Agreement further stipulated that the implementation of the Kobong pumped storage scheme was subject to the outcome of further detailed feasibility studies. These further studies would include:
- A market survey
- A transmission line integration study
- Geotechnical investigations
- A study of legal and commercial arrangements

- At the same time, these studies were to explore alternative viable hydropower generation schemes that will increase the electricity generation capacity in Lesotho to meet the country's electricity requirements.

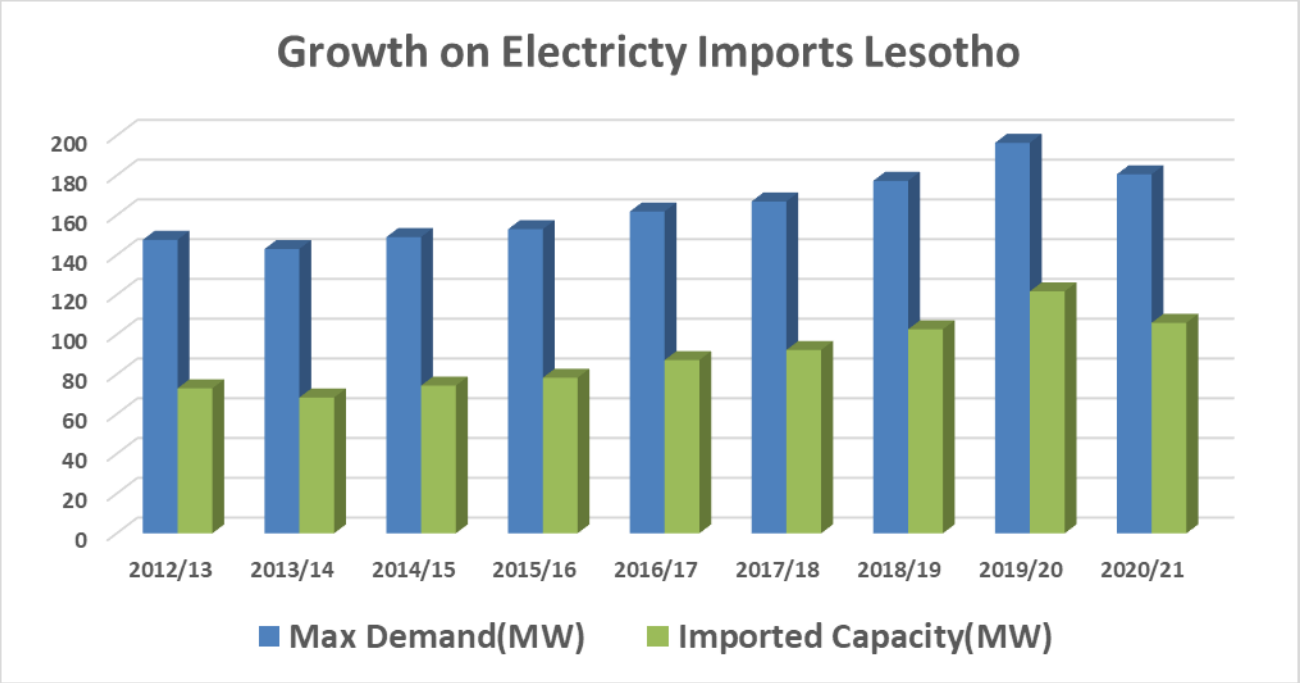
Further Feasibility Studies

- Having completed the feasibility studies commissioned in 2016, the pumped storage scheme option has been deferred due to the prevailing unfavourable economic conditions, and conventional hydropower has been recommended as the more feasible option to meet Lesotho's energy needs.
- To this end, the decision was taken to develop a hydropower scheme at Oxbow. Procurement of the engineering consultant for this scheme is planned for 2022.

Electricity Demand in Lesotho

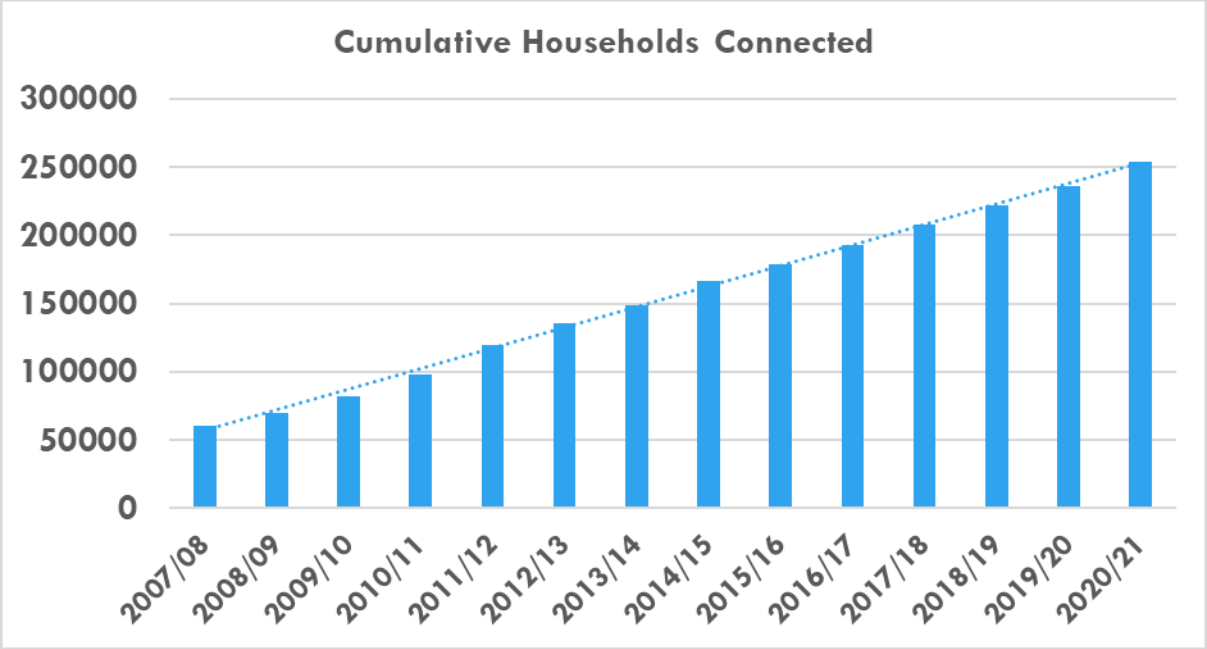
Year	Max Demand(MW)	Imported Capacity(MW)
2012/13	147.63	72.93
2013/14	143	68.3
2014/15	149	74.3
2015/16	152.98	78.28
2016/17	161.84	87.14
2017/18	166.91	92.21
2018/19	177.31	102.61
2019/20	196.41	121.71
2020/21	180.57	105.87

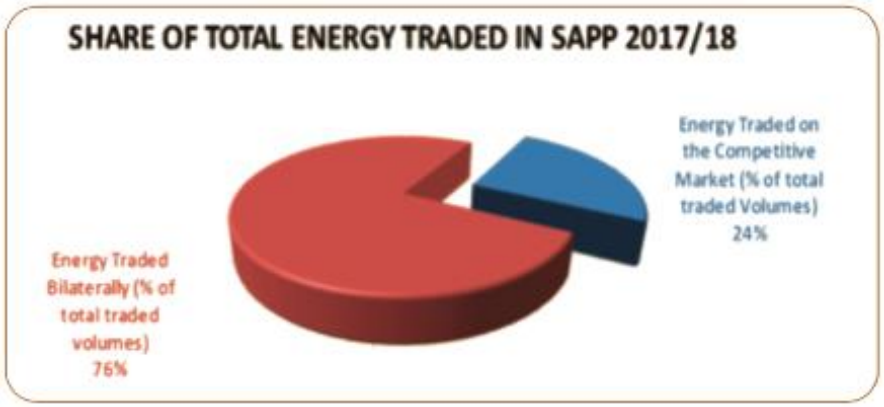
Source: Lesotho Electricity and Water Authority



Year	Cumulative H/H Connected
2007/08	60,406
2008/09	70,064
2009/10	81,907
2010/11	97,953
2011/12	119,899
2012/13	135,499
2013/14	148,932
2014/15	166,032
2015/16	178,618
2016/17	192,833
2017/18	207,584
2018/19	221,881
2019/20	236,388
2020/21	253,519

Source: Lesotho Electricity and Water Authority





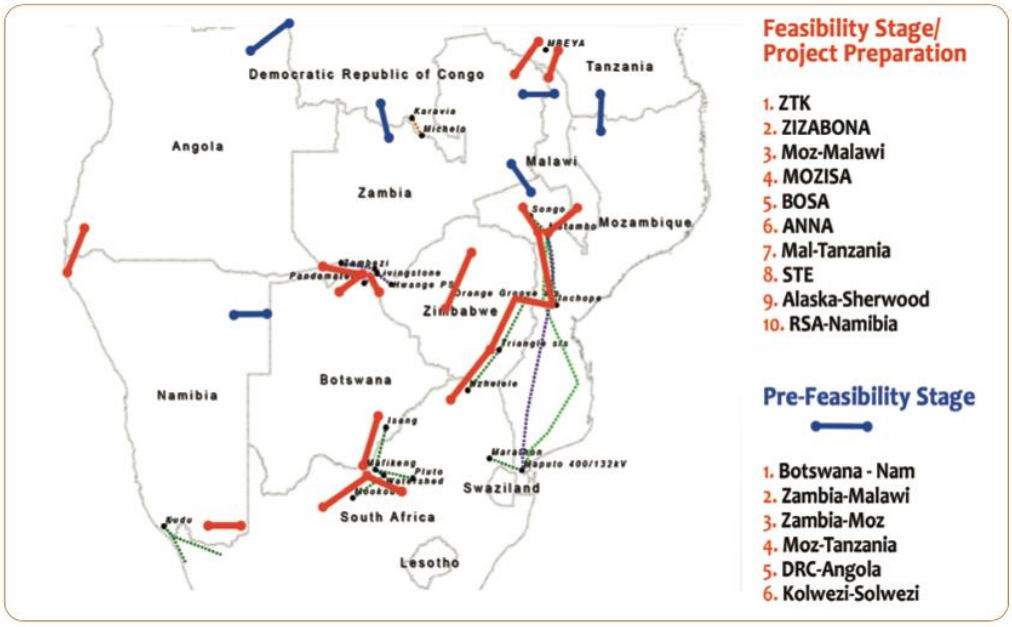
Source SAPP presentation to the October 2017 SADC Energy Thematic Group meeting in Gaborone, Botswana

Figure *2-5*: Share of total energy traded within SAPP in 2017/18

- Only 24% of energy was traded on the competitive market while 76% was through bilateral arrangements among Member State.

2.3.2 Transmission Projects (Interconnectors)

To enhance and facilitate power trading and transportation (transmission) within the region, SADC has embarked on a programme of strengthening existing power lines or constructing new ones.



Source SAPP

Figure *2-6*: Planned SADC Transmission projects

- A total of 10 projects were at the feasibility study stage and an additional 6 were at the pre-feasibility stage.

> ***Note to the Facilitator:*** *Since the trainings are happening in the countries, it will be important for the you to domesticate this information by presenting information that relates to country of the trainees. Add examples from your country on energy, access, tariff and transmission interconnectors, and where possible give the names of places and the responsible authorities on the mentioned service provision.*

2.3.3 Renewable Energies (REs)

- RE sources such as solar, wind, hydro, biomass, geothermal and tidal are found in abundance within SADC

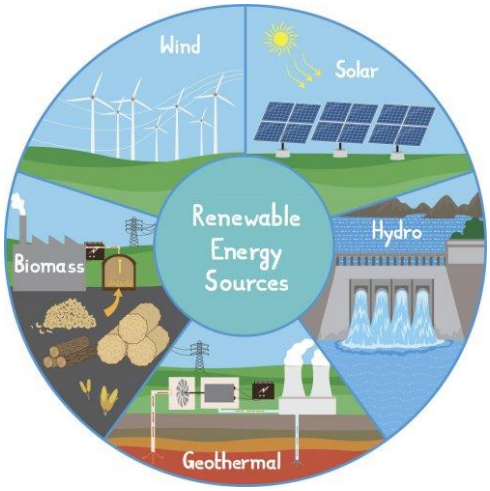
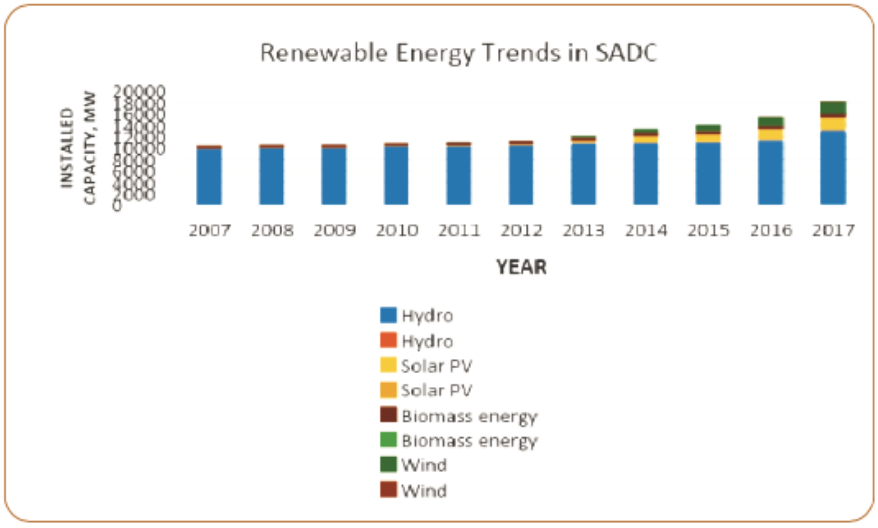


Figure *2-7*: Pictorial presentation of renewable energy sources



Source IRENA

Figure *2-8*: Renewable energy trends within SADC from 2007 to 2017

- The RE potential is huge within SADC
- SADC has recorded a steady growth in investments on Res
- The Region has set a target itself a target of reaching a 39% of RE contribution in the energy mix by 2030
- Member State are also adopting supportive policies and strategies examples include; Lesotho publishing NSDP II, Malawi developing the IPP framework, Botswana establishing the Energy Regulator and Zambia introducing the REFiT policy and the Office of Promoting Private Power Investment

RE Source	Potential	Total Installed Capacity
Hydro-power	40 874 MW	12 000 MW
Solar	20 000 TWh/year	1% generated electricity
Wind	800 TWh / year	Less than 1% wind generated
Biomass generated electricity	9 500 MW based on agriculture waste	2 500 MW generated electricity
Geothermal	4 000 MW	

1 TWh = 1 000 000 MWh

Source SADC - REEESAP 2016

Figure *2-9*: Renewable energy potential within SADC

- An installed capacity is only a small fraction of the actual potential e.g., only 1% of solar and less than 1% of wind has been explored so far
- Resources have to be mobilized to help the region reach its true potential.

Targets	2020 %	2025 %	2030 %
Access to electricity		71	85.5
Renewable energy mix in the grid	33		39
Off grid share of renewable energy as per total grid electricity capacity	5		7.5
Cooking or heating efficient devices penetration	10		15
Biodiesel blending ratio with diesel	5		10
Ethanol blending ratio with gasoline	10		20
Energy efficient percent saving achieved from grid consumption	10		15
Efficient charcoal production share in charcoal market	5		5

Source SADC-REEESAP 2016

Figure *2-10*: SADC RE Targets as of 2016

- The set targets are ambitious and require strong key stakeholders
- Incentives are required to fast-track growth and development within this sub-sector. They can be in the form of capital subsidy, grant rebates, investment and tax rebate credit, reduction in sales, energy, vat or other taxes.

2.3.4 Oil and Gas

- Prices of oil and gas are volatile but generally, the price is constantly increasing
- Angola, Mozambique, Tanzania, DRC, Madagascar and Namibia have Natural Gas
- Angola is the only Member State that extracts oils
- RSA has discovered shale gas
- Botswana, Mozambique and Zimbabwe have coal bed methane
- DRC and Madagascar have discovered oil deposits
- SADC aims to establish an Inter-State Gas Committee to promote inclusion of natural gas in the energy mix

Planned Renewable Energy Projects for Rural Lesotho

Districts	Places	Total capacity of Solar plant and back-up generator
Qachas' Nek	Lebakeng	64kW AC – Solar plant and 60kW - back-up generator
Quthing	Sebapala	116kW AC –Solar plant and 110kW AC back-up generator
	Tosing	157 kW AC Solar plant and 150 kW AC back-up generator
Mokhotlong	Tlhanyaku	117 kW AC-Solar plant and 110 kW AC – back-up generator
	Matsoaing	111 kW AC-Solar plant and 110 kW AC- back-up generator
Thaba- Tseka	Masha	120 kW AC – solar plant and 120 kW AC- back-up generator
	Sehonghong	104 kW AC – solar plant and 100 kW AC –back-up generator
Mohale's Hoek	Ketane	94kW (AC) – solar and 90kW (AC) – back-up generator
Mafeteng	Raliemere	61kW (AC) – solar and 60kW (AC) - back-up generator

Ha Ramarothole Solar Plant Mafeteng District 70MW solar power plant. Phase 1 (30MW)

Wind farms for energy generation in Lesotho

Lesotho offers the opportunity to build one of the highest windfarms in the world, with more than 80% of its territory lying at least 1,800m above sea level. Estimates have ranged that there is the potential to generate over 6,000 MW of wind power in the foreseeable future. Wind is a potentially significant source of energy for Lesotho not only for its own uses, but as well for export to its neighbours which present higher energy demands. Despite the potential to be one of the world's highest wind farms, Lesotho is susceptible to one of the highest rates of localised lightning strikes. Another concern is the ability of the aluminium composite blades to withstand the Mountain Kingdom's icy (down to -20°C) winters. Ice accumulation is a problem that can worsen in low-wind scenarios, which impacts economic viability.

2.3.5 Energy Efficiency (EE)

- Energy Efficiency reduces energy consumption and use
- SADC has established Southern African Center for Renewable Energy and Energy Efficiency (SACREEE) as a center of excellence to promote increased access to modern energy services and improved energy security
- SADC Industrial Energy Efficiency Programme (SIEEP) formulated to support acceleration of the implementation of the SADC Industrialization Strategy and Roadmap, 2015 – 2063
- The uptake of EE is very low within SADC and the following actions may help to accelerate its adoption:
    - Carrying-out energy audits
    - Benchmarking and target setting
    - Policy formulation
    - Private sector participation and
    - Awareness raising

2.3.6 Energy Efficiency Policy Options

- There is a need to develop clear policies and strategies
- Ambitious and realistic targets should be set and there should be legally binding
- Standards, regulations, tariff structures and net metering are a must.

Note to the Facilitator: *In ending, it is important to conclude by linking the subject with policy, bearing in mind that the overall goal of the training has a bearing on influence to policy. Perhaps to address that, you can end by ask them the following questions:*

- *Which policies can be developed in order to protect these sources of energy?*
- *Which policies can be developed to encourage the use of clean energy sources?*

2.4 Summary

- We are party to several international and regional programs
- SADC has a huge RE potential and a small fraction has been exploited
- We have developed supportive instruments (policies, strategies, plans, institutional arrangements) at the regional level
- Alignment to these instruments at the national level should be accelerated. We have noted progress in a few Member States
- Resources should be mobilized to reach the set targets.
- Participation of citizens, political actors, local authorities and civil society is crucial to ensure ownership and commitment.

2.5 Further reading

- SADC, 2010. Regional Energy Access Strategy and Action Plan. Gaborone, Botswana.
- www.sadc.int/files/5713/5791/7436/EUEI_PDF_SADC
- SADC, 2016. Renewable Energy and Energy Efficiency Strategy and Action Plan. Gaborone, Botswana.
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- SADC Regional Infrastructure Development Master Plan (2012) SADC Secretariat Gaborone Botswana
- SADC Regional Indicative Strategic Development Plan (RISDP) (2020–2030) SADC Secretariat Gaborone Botswana
- SADC Energy Monitoring (2018) Energy Division, SADC Secretariat, Gaborone Botswana
- SADC (2017): Energy Policy Brief No. 14 https://sadc-energy.sardc.net/attachments/article/351/Policy_brief_on_energy_efficiency.pdf
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- Southern African Development Community (SADC) Vision 2050, (2020) Gaborone, Botswana,
- Status of Integration in the Southern African Development Community (SADC) (2019), Gaborone, Botswana,
- Shikha Lakhanpal, (2018) Impact of renewable energy projects Deccan Herald The Renewable Energy Institute UK
- https://www.deccanherald.com/content/661665/impacts-renewable-energy-projects.html
- Department of Energy Lesotho Government Renewable Energy Projects

MODULE 3

3. WATER POLICY AND LAW

Learning Outcomes

- Understand the functions and powers of international legal and institutional systems
- Understand existing international and national systems and be able to conceptualise how the national systems draw from international systems
- Apply a general approach to thinking sustainably in cognisance of law and regulations as agreed or enacted, from the international to the national level

The module focuses on the rules and laws that enable both water resources management and the realisation of universal access to water and sanitation services. The module thus sets the stage for understanding obligations and rights of access to and use of the resource by different stakeholders; from states to citizens at different levels.

3.1 Policies and laws on water: Managing shared watercourses – a global perspective

The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (hereinafter UN Convention), was adopted by the UN Assembly in 1997, after four decades of work, and entered into force 17 August 2014 (acc. to Art. 36) with only 37 contracting states as at 2020. The Convention was influenced by various developments in international water law which include the Helsinki Rules of 1966, and is considered a treaty in terms of Article 2 (1)(a) of the Vienna Convention (1969). As captured in its preamble, the UN Convention establishes a framework for the utilisation, development, conservation, management and protection of international watercourses whilst promoting optimal and sustainable utilisation thereof for present and future generations.

Key points

The UN Convention (1995) establishes a framework for the utilisation, development, conservation, management and protection of international watercourses whilst promoting optimal and sustainable utilisation

Why the UN Convention on the Law of the Non-Navigational Uses of International Watercourses?

- The need to progressively codify and develop customary law in order to reduce the potential for interstate conflict over regulatory gaps and uncertainties
- The need to address increasing pressures on the quality and quantity of the waters in international watercourses given their importance to all nations

- The need to strengthen the law in support of the goals and principles of the UN, especially peace and security
- The need to better address, through written law, the fragmented system of basin/bilateral treaty practices given that the use of international watercourses is based in part by general principles of customary international law

(GA Res. 2669(XXV) (21 July 1971); GA Res. 49/52 (9 Dec. 1994))

Central to the Convention are substantive rules namely: equitable and reasonable utilisation (Article 5) and the prevention of significant harm (Article 7); and procedural duty of notification of planned measures; and the obligation such as pollution prevention and information exchange. Article 6 provides for some factors that may be taken into account of in arriving at equitable and reasonable utilisation. The duty to cooperate in good faith is therefore key to operationalising the UN Convention.

Key points

The principles of equitable and reasonable utilisation (Article 5) and the prevention of significant harm (Article 7) are central to the management of international watercourses

Note to the Facilitator: *Share the factors to be considered in arriving at equitable and reasonable utilisation i.e. article 6, and, either in plenary or as group work putting participants in groups, have a discussion around their relative importance to different countries*

3.2 Policies and laws on water: Managing shared watercourses – a regional perspective

The UN Convention influenced the development southern African regional water management frameworks with respect to shared watercourses. The SADC Protocol is one such instrument. The Revised SADC Protocol on Shared Watercourses, which was signed in 1995 and revised in 2000, can be said to be the primary legal instrument that establishes a coherent and harmonized regional framework for the management of shared watercourses in the region (Malzbender and Earle, 2008). The revised Protocol aims to "foster closer cooperation for judicious, sustainable and co-ordinated management, protection and utilisation of shared watercourses and advance the SADC agenda of regional integration and poverty alleviation". The Protocol is grounded on the need to maintain a balance between national development interests of member states and the global interest of ensuring environmental conservation and sustainable development (SADC, 2005). It subscribes to the principles set forth in the UN Convention such as equitable and reasonable utilisation and prevention of significant harm among others. The Protocol is operationalised through the SADC Regional Water Policy (2005) which provides a framework for sustainable, integrated and coordinated development, utilization, protection and control of national and transboundary water resources for the promotion of socio-economic development, and regional integration and improvement of the quality of life of all people in the region (SADC, 2005). The Policy highlighted the various opportunities water management presents to achieving the SADC goals and aspirations and the attainment of Millennium Development Goals (MDGs) (SADC, 2005). The goals and objectives of the Regional Water Policy remain relevant today and for the region's attainment of the Sustainable Development Goals.

Key points

The revised SADC Protocol on Shared Watercourses (2002) is grounded on the need to maintain a balance between national development interests of Member States and the regional interest of ensuring environmental conservation and sustainable development (SADC, 2005)

The Regional Water Policy and Regional Water Strategy provide important guidelines for the harmonisation of national water policies and laws in the region.

The Regional Water Strategy (2006) in turn gives effect to the Policy and provides strategies for implementation including monitoring and evaluation mechanisms (SADC, 2006). The Regional Strategic Action Plan on Integrated Water Resources Management (RSAP-IWRM) on the other hand, puts into operation the Regional Strategy by adopting and implementing five-year development plans (currently in its fifth phase to run from 2021-2025) through specific projects that put into operation the Strategy. The RWP and RWS are not legally binding and yet they provide important

guidelines for the harmonisation of national water policies and laws in the region (Malzbender and Earle, 2008).

Note to the Facilitator: Share the Regional Water Policy goals and objectives and ask participants (in groups or plenary) if these are still relevant today and for the region's attainment of the Sustainable Development Goals

3.3 Policies and laws on water: Managing shared watercourses – a basin perspective

Managing shared watercourses – a basin perspective

Based on Article 22 of the SADC Treaty, the Revised Protocol spells out the objectives and scope of institutional mechanisms for cooperation in water management. Transboundary water cooperation in the region embodied in cooperative frameworks makes practical the Revised SADC Protocol on Shared Watercourses. Water resources in southern Africa are vital to ensuring the sustainable social and economic development of the region. Fifteen transboundary river basins transverse the Southern African Development Community (SADC) catalysing regional integration and development in their paths. By volume, these shared watercourses represent 70 percent of the region's water resources (FAO, 2003). The majority of the 15 shared basins - which include the Buzi, Congo, Cunene, Cuvelai, Inkomati, Limpopo, Maputo, Nile, Okavango, Orange-Senqu, Pungwe, Ruvuma, Save, Umbeluzi and Zambezi - are shared by at least three or more countries. Yet, water resources in SADC are characterised by spatial and temporal variability and are unevenly developed, both of which have implications for management of the resource. Generally, the north is water rich while water scarcity pervades the south. Cooperative frameworks exist in all transboundary river basins wholly located in the SADC, albeit with unique histories and varied institutional arrangements.

Key points

Transboundary water cooperation as embodied in shared watercourse institutions' cooperative frameworks makes practical the revised Protocol

Stakeholder Participation in the Cubango-Okavango River Basin

In the Okavango Basin that is shared between Angola, Botswana and Namibia, the Every River Has Its People Project (endorsed by the Okavango River Basin Commission in 1999) has been touted as an example that best illustrates local participation in transboundary water management. Here stakeholder participation has been promoted and recognition given to national obligations on shared waters given that all three countries are, among other agreements, signatory to the SADC Protocol on Shared Watercourses (2000). The Project is aimed at developing the capacity of local communities within the basin to enable them to participate more fully in decision-making through among other things the formation of the Basinwide Forum. The project is donor funded and implemented by a nongovernmental organisation. The Project enables stakeholders to have exchange visit and so see other parts of the basin and gain a better understanding of how the system functions (Source: Bethune, 2006 in Fatch, Manzungu and Mabiza, 2010).

The hydro-geographical scale of transboundary river basins means that problems experienced and solutions devised reach beyond a single basin state, and as such necessitate cooperation (Karkkainen, 2005). Shared river basins require states to accept some form of restricted sovereignty and to enter into agreements that can enable joint management and prevent conflict (Turton, 2003). Effective transboundary water management requires a paradigm shift: from the promotion of national interest, to one that seeks to promote mutual interest for regional cooperation and peaceful collaboration (Amaral and Sommerhalder, 2004; WCD, 2000 in Turton 2003). Regional and basin agreements have been seen as vehicles that can be used to achieve this. However, there are questions as to whether this provides enough opportunities for other actors other than the state given that the state has been and is the primary stakeholder in transboundary water management. Where other institutions exist, which include sub-national, non-state actors and local communities, the link to the national level is not clear. Some of these actors may challenge the legitimacy of the state in transboundary water management (Karkkainen, 2005). However, the extent to which these actors can effectively participate largely depends on the laws and policies that are promulgated by the state.

Critical SADC Principles on Shared Waters

Under General Principles

Principle 2 - Utilization of shared water courses in the SADC Region shall be open to all watercourse states and this can be for Agriculture, Domestic, Industry, Navigational and Environmental uses.

Principle 6 – State parties shall exchange information and data relating to environmental conditions of the shared watercourses relating to quantity and quality of water resources.

Article 4 on Specific Provisions Include

Provision C on period for reply to notification of affected parties about intention to undertake water resource development and the possible impact on the environment and other related water parameters. Period of reply ranges from six months to twelve months.

Prevention and Mitigation of Harmful Conditions

- Permits and other similar authorizations to persons who intend to discharge any type of waste into the catchments to manage possible causes of significant harm.

Article 5 On Institutional Framework for Implementation

- SADC Water Sector Organs

i. the Committee on Water Ministers
ii. the Committee on Water Senior Officials
iii. the Water Sector Co-ordination Unit
iv. the Water Resources Technical Committee and Sub-Committees

Functions of the Committee of Water Ministers

i. Oversee and monitor the implementation of the protocol and assist in resolving potential conflicts on shared watercourses.
ii. Guide and coordinate cooperation and harmonization of legislation, policies, strategies, programmes and projects.
iii. Advise the Council on policies to be pursued.
iv. Recommend to council the creation of such other organs as may be necessary for the implementation of this protocol.
v. Provide regular updates to the council on the status of implementation of this protocol.

Functions of the Committee of Water Senior Officials

i. Examine all reports and documents put before them by the Water Resources Technical Committee and the Water Sector Coordinating Unit.
ii. Initiate and advise the Committee of Water Ministers on policies, strategies, programmes and projects to be presented to the council for approval.

iii. Recommendation to Water Ministers on creation of such organs as may be necessary for implementation of this protocol.
iv. Provide regular updates to the Committee of Water Ministers on the status of implementation of this protocol.

Environmental Protection and Preservation

- State Parties shall protect and preserve the ecosystem of a shared watercourse.

Introduction of Alien or new species

- State parties shall take all measures necessary to prevent introduction of species, alien or new, into the shared watercourse which may have effects detrimental to the ecosystems of the watercourse resulting in significant harm to other watercourse states.

Lesotho Environmental Act of 2008

Part VII Pollution Control

Water Pollution Prohibited.

1. No person shall discharge any poisonous, toxic, exotoxic, obnoxious substance, or any matter which is likely to cause harm to human health or aquatic environment into any waters.
2. A person who discharges or permits any person to discharge into the waters of Lesotho, contrary to water pollution standards established under this Act, a poisonous, toxic, exotoxic, obnoxious substance or any matter which is likely to cause harm to human or aquatic environment, commits an offence and is liable on conviction to a fine not less than M5000,00 or to imprisonment for a term not less than 2 years or both.

3.4 Policies and laws on water: Managing water at a national level

The adoption of IWRM in the region in the late 1990s (SADC, 2005; SADC, 2006; Swatuk, 2008), which is defined as a process which promotes the coordinated development and management of water, land and related resources that seeks to manage both surface and groundwater focusing on both water quality and quantity in a comprehensive and holistic way so as to maximise the resultant economic and social benefits in an equitable manner without compromising the sustainability of vital ecosystems in the face of the above challenges (GWP, 2000), opened up new possibilities for managing water. It is open to imagination how the region would have been enthusiastic about IWRM if it had been aware of the concept's vagueness and non-usability (Biswas, 2004; Jonker 2007 cf. Van der Zaag, 2005). But still the inclusiveness of IWRM seemed to have cast a spell on countries, hence its adoption in Malawi, Mozambique, Namibia, South Africa, Tanzania and, Zimbabwe (Manzungu, 2004). It was also supported by nongovernmental organisations wanting to be relevant in the development debate.

IWRM-influenced water sector reforms as captured in Member State water acts and policies in the region emphasize

- *improved governance through establishment of water management institutions that enable stakeholder participation; and*
- *the hydrological approach, hence, the basin as the unit of analysis*

IWRM claims to improve water governance chimed with the claim that the water crisis in the world is a crisis of governance (GWP, 2000). National water management institutions have been shaped by global trends in the form of regional and local in water management. In Zimbabwe, catchment and sub-catchment councils were formed a year after the enactment of the IWRM-influenced Water Act in 1998. In South Africa, the National Water Act of 1998 resulted in the provision for the formation of Catchment Management Agencies (CMAs). In both instances, institutions were hydrologically based. But there have also been some variations. In Mozambique, water management institutions have been developed on administrative-hydrologic regions in the shape of Regional Water Administrative Agencies (ARAs). This means that several basins fall under an ARA (Manzungu, 2004; Tapela, 2006). To a large extent, the state has retained considerable influence in water management (Jaspers, 2001, Jaspers, 2003; Manzungu, 2004; Swatuk, 2005).

Overview of Zimbabwean water reforms

Water sector reforms in Zimbabwe resulted in the repeal of the Water Act of 1976 and the enactment of the Water Act [Chapter 20:24] of 1998. It was felt that the 1976 Water Act was not in line with the aspirations and objectives of contemporary Zimbabwe (Pazvakavambwa, 2002), as through the principle of priority date system (among others), inequalities in water allocation and limited stakeholder participation were perpetuated. The 1998 Act was guided by 8 principles, one of which spelt that 'Water management should involve all stakeholders and should be managed at the

lowest possible level' (Latham, 2002:22). This resulted in the formation of stakeholder institutions in the shape of catchment and sub-catchment councils. The formation of the catchment and sub-catchment councils represents decentralised decision making in the management of water resources in Zimbabwe. Their establishment is provided for in Section 20(1) (a) of the Act. The functions of the catchment council as captured in sections 21(1) (c), 22 and 23 reflect a shift from centralised decision making. Catchment councils are given operational powers over water under their jurisdiction. This includes regulating and supervising the exercise of rights to and use of water. Section 20(1) (b) gives the minister powers to fix the number of representatives who constitute the catchment council. The catchment council can delegate, among other functions, the role of regulating and supervising the exercise of rights to and use of water to sub-catchment councils (Section 24(4) (a) and (b), and Section 24(5) (a) and (b) for other functions of the sub-catchment council). Various literature point to efforts that have been made in terms of enabling participation in water management (Latham, 2002; Kujinga, 2002; Swatuk, 2002). Since their formation, catchment council and sub-catchment council have experienced many problems (see Tapela, 2006). As at 2009, the agenda for sub-catchment council meetings (Shashe sub-catchment for example) came from the catchment council and were handed to councillors on the day of the meeting (Gwanda Urban Council- personal communication (February 3-2009). The subcatchment council was reported not to have made any substantive decisions with regard to water management as all decisions were made at the catchment council (Shashe sub-catchment councillors - personal communication (February 3-2009).

As far as transboundary water management is concerned, Section 6(2) (f) provides duties of the minister in terms of transboundary water management as: 'to give effect to any international agreement, to which Zimbabwe is a party, on shared water course systems in a spirit of mutual co-operation'. The need for participation came about as a result of changes in water resources thinking worldwide. The Water Act [Chapter 20:24] is influenced by IWRM principles of which participation is one. Provisions within the Act that enable decentralised decision-making attest to this. The form of institutional structure that the Act puts forward ends with the sub-catchment council as the lowest formal structure with the ministry as the highest decision-making body within the country. The Ministry of Water Management and Development is said to be reviewing the Act. It was felt that the sub-catchment council, as the lowest legally provided for tier, was too extensive and there was need for a lower tier(s) that allows for local participation (Source: Fatch, Manzungu and Mabiza, 2010)

Thus, IWRM-led water reforms in southern Africa have emphasised the creation of new institutions with little guidance offered regarding how the institutions can engage with stakeholders at different levels, especially at the local level. It is also significant that these new formalised institutions have tended to ignore informal traditional management arrangements (Manzungu and Machiridza, 2009 cf. Moench et al., 1999).

Such introduced institutions tend to lack legitimacy at the local level, and consequently fail to facilitate widespread stakeholder participation (Malzbender et al., 2005).

> ***Note to the Facilitator:*** *Using the water governance provisions as provided for in the national water act/policy/strategy of your country, discuss how national policy, legal and institutional frameworks create space for decentralised and broader stakeholder participation in water management.*

3.5 Further readings

- Agreement between the Government of the Republic of Botswana, the Government of the People's Republic of Mozambique, the Government the Republic of South Africa and the Government the Republic of Zimbabwe Relative to the Establishment of the Limpopo Basin Permanent Committee. Signed at Harare, 5 June 1986.
- Agreement between the Republic of Botswana, the Republic of Mozambique, the Republic of South Africa and the Republic of Zimbabwe on the establishment of the Limpopo Watercourse Commission. (2003).
- Government of the Republic of South Africa (1998), National Water Act No. 36, Government Gazette No. 19182, Cape Town.
- Government of the Republic of Zimbabwe. (1998). Water Act [Chapter 20:24]. Government Printer, Harare.
- Jaspers, F.G.W. (2003). Institutional arrangements for integrated river basin management. Water Policy 5: 77–90.
- Manzungu, E. (2002). More than a headcount: Towards strategic stakeholder representation in catchment management in South Africa and Zimbabwe. Physics and Chemistry of the Earth Vol. 27: 11-22.
- Neef, A. (2008). Lost in translation: the participatory imperative and local water governance in North Thailand and Southwest Germany. Water Alternatives 1(1): 89-110.
- Southern Africa Development Community (SADC). (2000). Revised Protocol on Shared Watercourses. SADC: Gaborone
- Southern Africa Development Community (SADC). (2005). Regional Water Policy. August 2005. SADC: Gaborone.
- Southern Africa Development Community (SADC). (2006). Regional Water Strategy (draft version). SADC: Gaborone
- United Nations (UN). (1997) Convention of the Law of Non-navigational Uses of International Watercourses. New York: United Nations, General Assembly.

MODULE 4

4. ENERGY POLICY AND LAW

Learning Outcomes

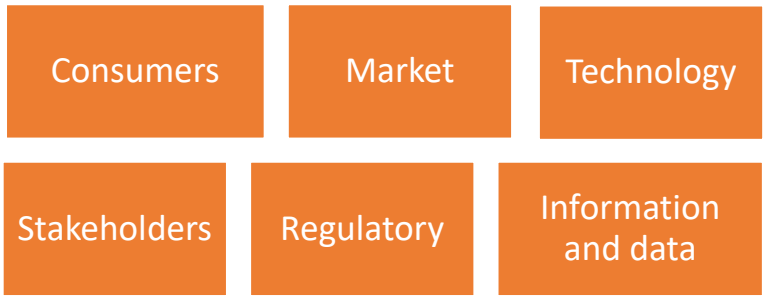
- Understand the value of energy policy and the role it plays in development
- To Create awareness on Continental, Regional and National Laws on Energy.
- Reflect on recent energy developments with focus on energy inequality and the energy challenges
- Political parties that are sensitized on the importance of reviewing energy laws to align with regional aspirations
- Heighten political actors mandate to advocate on energy policy reform

Note to the Facilitator: *In this section, start by emphasizing the importance of energy for human survival and the adverse impacts that energy production (as well as any other energy related issues) has caused, such as in the environment. And then after that explain the necessity of establishing policies on energy in order to also put a control on those impacts. Then go into highlighting the energy related policies in the region.*

NB*: Bear in mind that you as the Expert Facilitator will have to domesticate this content by listing the national policies for the country where you will be undertaking training.*

4.1 Why Energy Policy Matters

The world today is fully depending on energy for its socio-economic development and there is little useful work that does not depend on a reliable and affordable energy supply. In the rapid growing population in Southern Africa, meeting the rising energy demand and limiting its environmental impact are the two intertwined issues faced in the 21st century that need attention. In recent years, it has been evidenced that energy production, transport, and use expose us to serious environmental threats, national security challenges, and economic crises. Right now, most utilities make money by selling, not saving, energy. Therefore, developing regulations and related policies to encourage environment friendly renewable energy generation along with conservation strategies and technological innovations is important and needs to provide relevant and suitable policy recommendations for end-users. Below are mandatory elements that build framework on energy policy.



The United Nations Economic Commission for Africa-UNECA (2018) highlighted that the SADC region is faced with energy challenges such as low access; power shortages; constrained and ageing infrastructure; lack of funding for infrastructure; low tariffs, poor project preparation; weak energy policy and regulatory instruments; over-reliance on coal which runs contrary to global efforts to curb greenhouse gas emissions. The region also fell into power crisis since 2008 with severe impacts on economies, with huge losses in the gross domestic product (GDP). The calamity forced introduction of new policies and planning frameworks and development of new generation and transmission projects. A systemic transition towards more efficient energy regimes requires a strategically designed sequence of actions involving policy development at all levels, from local to global. Below are examples of applied energy strategies to improve on people's livelihoods and reduces poverty. Table 1 below highlights on defining goals, strategies, policies, and policy instruments.

Key points:

Energy is important for life on earth

There is a high energy demand in SADC, which is increased by growing population, urbanisation, industrialisation, etc.

However, energy production, transportation, and use have caused problems with the environment, national security, and economic crisis in the 21st century.

Specifically, the UNESA (2018) highlighted that SADC faces low energy access, ageing infrastructure, over-reliance on coal whose use goes contrary to global efforts to curb greenhouse gas emissions, weak energy policies, etc.

Therefore, to protect against/control these problems, it is important to develop policies to encourage environment friendly renewable energy generation, conservation strategies, and technological innovations.

Table *1*: Goals, strategies, policies, and policy instruments

Term	Definition	Examples
Goal	Overarching aim or framework	Sustainable development
Strategies	Pathways to achieve the set goal	Using energy provision and use to foster sustainable development
Policies	Courses of action to implement strategies	Making markets work more effectively by: • Restructuring the energy sector • Attracting private capital • Phasing out subsidies for conventional energy supply and consumption • Internalising externalities • Strengthening regulations • Supporting energy sector innovation • Accelerating the deployment of sustainable energy technologies • Promoting energy efficiency • Building institutional and human capacity in sustainable energy • Improving international cooperation and linkages between trade and the environment
Policy instruments	Specific measures used	• Efficiency standards • Public procurement policies • Voluntary agreements • Appliance labelling • Externality taxes and incentives (such as carbon taxes and early retirement incentives for older, less efficient, more polluting energy-using devices) • Fuel switching • Obligation to buy energy from renewable sources • Obligation to supply energy from renewable sources • Systems benefit charges (otherwise known as public benefits funds) • Supporting research and development demonstration projects • Lowering the cost of new technologies for more rapid deployment

Source: UNDP World Energy Assessment: Energy challenges and Sustainability (2015)

Key points:

The continent should not lose sight in building strong institutions that seek to promote renewable energy consumption and reduce supply and use of non-renewable sources of energy due to economic expansion and promotion of trade liberalisation policies. Again, there is the need to remove socio-economic and political barriers to increase production and use of renewable energy (Anthony et al 2020). Figure 4-1 and Figure 4-2 show the strides that have been done to improve the use of solar energy as a source of renewable energy in the Rural areas of Malawi and int eh townships of South Africa, respectively.

Figure *4-1*: Use of solar energy in Malawi rural areas

Figure *4-2*: Use of solar energy in South Africa townships

Africa is generally characterized by high levels of unequal asset and property distribution (inequality), which adversely impact the security of property rights. Thus, a rise in property rights could amplify the degree of inequality and negatively hurt the share of renewables in energy consumption. The continent should not lose sight in building strong institutions that seek to promote renewable energy consumption and reduce supply and use of non-renewable sources of energy due to economic expansion and promotion of trade liberalisation policies. Again, there is the need to remove socio-economic and political barriers to increase production and use of renewable energy (Anthony et al 2020).

4.2 Global and Continental Overview on Energy

The "Sustainable Energy for All Report (2021)" suggested that it is important to know where the world stands on SDG7 especially this year in the context of COVID-19 and the role energy access plays in fighting the pandemic. It highlighted that COVID-19 has stalled progress being made by developing countries, and a lack of energy access will compromise their ability to recover. Based on current trends without policy changes, 2.4 billion people will still be left without access to clean cooking by 2030, about half of those remaining without access residing in Sub-Saharan Africa of which the SADC region also falls within this relegation state. According to Randal et al (2016) the challenge for the global energy sector is twofold: first, to dramatically increase access to affordable, modern energy services in countries that lack them, especially for poor communities; and, secondly, to find the mix of energy sources, technologies, policies and behavioural changes that will reduce the adverse environmental impacts of providing necessary energy services.

Key points:

The Sustainable Energy for All Report (2021) emphasised the importance of knowing where the world stands with regard to SDG 7, considering that the COVID-19 pandemic has stalled progress in developing countries.

The report emphasised that the lack of energy access will compromise the ability of developing countries to recover from the pandemic.

Based on current trends without policy changes, 2.4 billion people will still be left without access to clean cooking by 2030, about half of those remaining without access residing in Sub-Saharan Africa

There is a need to increase access to affordable, modern energy services and to fix the mix of energy sources, technologies, policies and behavioural changes that will address environmental impacts.

The SADC energy sector recognises its responsibility to contribute to the UN 2030 Sustainable Development Agenda and the Sustainable Development Goals (SDGs). focusing on SDG 7 which advocates on energy for all. Target 7.1 advocates for access to affordable and clean energy by 2030. Furthermore, target 7.4 focuses on improving international cooperation towards facilitating access to clean and renewable energy research. This concerted global effort shows a revived interest in the investment, production, and consumption of cheaper and environmentally friendly sources of energy. Globally, the average consumption of renewable energy has been rising as a result of these efforts (IEA 2018).

Key points:

SADC is committed to attain the UN SDGs 7, which advocates for Access to Energy for all.

Agenda 2063 of the African Union, as the strategic framework for transforming Africa commits the continent prioritising, among other things, inclusive social and economic development.

As access to renewable energy expands, so do the social, economic and environmental benefits, making it vital to the success of the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change. However, realising the full potential of this sector requires careful legislation (UNEP 2016).

As access to renewable energy expands, so do the social, economic and environmental benefits, making it vital to the success of the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change. However, realising the full potential of this sector requires careful legislation (UNEP 2016).

The Takeaways from Tracking SDG 7, The Energy progress report (2021) mentioned that; Sub-Saharan Africa is falling further behind on energy access and efficiency. In Sub-Saharan Africa, the 2019 electricity access rate was just 46 percent: with an increase from 548 million people in 2018 to 570 million people who still lacked access to electricity. The world's 20 least-electrified countries in terms of percentage of population with electricity are all in Sub-Saharan Africa. And for the first time, more people without access to clean cooking solutions are in Sub-Saharan Africa than anywhere else. In the last decade, population growth has outpaced new clean cooking access, resulting in 50 percent more people without access to clean cooking solutions in the region. Sub-Saharan Africa also has one of the lowest average annual improvement rates in energy intensity at just 1.4 percent, well below the global average of 2.0 percent in 2019 and the 3.0 percent needed to achieve the SDG7 target. At the continental level, Agenda 2063 of the African Union, as the strategic framework for transforming Africa commits the continent prioritising, among other things, inclusive social and economic development.

4.3A Glance at Southern Africa Region and Energy

Ambitions of Southern Africa are clearly implied in the Declaration and Treaty that established the shared community of SADC. The SADC community craves for a united, prosperous and integrated region. The region has developed a common agenda consisting of policies and strategies, which are operationalised through a series of Protocols and Strategic Plans. It is worth mentioning that protocols are legally binding documents that protect the aims of the Community by providing codes of procedure and practice on various issues, as agreed by Member States. Sometimes Protocols have subsumed or are reinforced by Charters, Declarations, Agreements and Memoranda of Understanding on specific aspects of Member State cooperation and integration (Status of Integration in SADC 2019). Table 2 below presents the SADC Protocols/ Policies on Regional Infrastructural Development.

Key points:

The SADC community craves for a united, prosperous and integrated region.

The region has developed a common agenda consisting of policies and strategies, which are operationalised through a series of Protocols and Strategic Plans

It is worth mentioning that protocols are legally binding documents that protect the aims of the Community by providing codes of procedure and practice on various issues, as agreed by Member States.

There is a SADC Protocol on Energy (1996) which seeks to promote the harmonious development of national energy policies and matters of common interest for the balanced and equitable development of energy throughout the SADC Region.

Table 2: The SADC Protocols /Policies on Regional Infrastructure Development

Name of Protocol	Summary of the Protocol/Policy
Protocol on Energy 1996	Promotes the harmonious development of national energy policies and matters of common interest for the balanced and equitable development of energy throughout the SADC Region. The Protocol clearly outlines the institutional mechanisms and financial provisions in place for implementing the Protocol. Through the Protocol, the processes of sharing of energy data and information and cooperating with non- SADC states and Organisations are clearly defined.
Protocol on Transport, Communications and Meteorology 1996	Through the Protocol, Member States agree to strategic goals and policies for an integrated network of transport, communications, and meteorology, with specific funding sources, regulatory mechanisms, environmental controls, and technical standards.
Revised Protocol on Shared Watercourses 2000	The Protocol aims to foster closer cooperation among Member States for protection, management, and use of shared watercourses in the region. Member States agree to cooperate on projects and exchange information on shared watercourses, consulting with each other and collaborating on initiatives that balance development of watercourses with conservation of the environment.
The Programme for Infrastructure Development in Africa (PIDA)	PIDA seeks to develop efficient, reliable, cost-effective and environmentally friendly infrastructure for the physical integration of the continent. This programme is running from 2010 to 2040 and is being implemented at the African Union level in partnership with Regional Economic Communities such as SADC. It focuses on four key development sectors namely: (a) Energy (b) Transport (c) ICT (d) Water.
The Regional Infrastructure Development Master Plan (RIDMP).	RIDMP is the Infrastructure Vision of the SADC region, running from 2012 to 2027. It focuses on six sectors namely energy, transport, ICT, water, meteorology and tourism. It is an integral part of PIDA, though tailored to suit the regional context. RIDMP consist of six sectoral plans namely: (a) The Energy Sector Plan (ESP); (b) The Transport Sector Plan; (c) The ICT Sector Plan; (d) The Water Sector Plan;

	(e) The Meteorology Sector Plan; and, (f) The Tourism Sector Plan.
Revised SADC Regional Indicative Strategic Development Plan (RISDP) 2015-2020,	The Regional Indicative Strategic Development Plan (RISDP) is a comprehensive development and implementation framework guiding the Regional Integration agenda of SADC.

Key points:

The SADC region still faces many challenges including slow domestication of agreed policies and legal frameworks implementation despite having a comprehensive regional integration agenda.

The region has made some progress in the energy sector (48%), with successes being recorded not only at the SADC level but also within the respective Member States. For example, the Regional Electricity Regulatory Association (RERA 2018) has been established to address regional cross border electricity regulation and to harmonise policies and standards. Some other strategies include the SADC Industrialisation Strategy and Roadmap of 2015 - 2063 and its associated Action Plan of 2015 which define economic and technological transformation of the region. The Regional Infrastructure Development Masterplan (2012) focuses on major infrastructural development that are required to implement industrialisation policy. The Revised Regional Indicative Strategic Development Plan (RISDP) (2015) acknowledges the roles that both energy and water play addressing regional challenges and achieving sustainable and inclusive socio-economic development. However, the region still faces myriad challenges including slow domestication of agreed policies and legal frameworks implementation despite having a comprehensive regional integration agenda.

The remaining agenda to respond to the prevailing challenge is *who has to take action???????!!!*

4.4 Outreach Actors on Energy Policy

Note to the Facilitator: *Participants should be made aware of their capacity and responsibility in advocacy on energy policy reform since it comes along with more benefits on biophysical and socio-economic aspects. Moreover, emphasis should be on use of clean energy addressing SDG 7 which their respective countries are party to. There is also a need to highlight on short and long-term benefits in use of clean energy.*

Essential roles put parliaments at the centre of the energy agenda. For example, for international agreements to be effective, they must be transposed into national legislation, requiring oversight of government performance and allocation of funds and, as conduits between decision-makers and the citizenry, parliamentarians can ensure that strategies benefit the communities they target. They can as well influence national policy, build strong legal frameworks, direct spending in new directions, and establish stronger policies and targets for action on renewable energy. In short, the transition to a post-fossil fuels world will benefit considerably from the support of parliamentarians ready to use their political capital for the promotion of renewable energy.

Key points:

In order for the agreements that were made at the International Level to be effective, they have to be domesticated or transposed into national legislation which requires government oversight, allocation of funds, etc.

This is an indication that all national actors, including political actors, those in government and those in opposition, and those outside of parliaments, as well as members of the civil society should advocate for improved access to clean renewable energy for all as agreed at the UN, AU and SADC levels.

- Key Notes on Energy Policy

Designing energy policy

- Conduct Demand Outlook Survey: transition to low carbon emission
- Engage strategic planning and implementation modalities:
- Develop flexible and responsive market and regulatory frameworks
- Recognize international agreements to suit local context

Energy Policy to fit local context

- Develop clear long-term vision
- Create stable institutional arrangement
- Create stakeholders' engagement platforms
- Expand on local leadership
- Improve on political consensus

Elements of energy

Energy Policy should take consideration of 3Es

- Energy Security
- Economic growth
- Environmental Protection

Benefits of promotion of clean energy

- Made from unlimited renewable sources (sun, wind, etc.)
- Helps preserve and protect the environment for future generations
- Uses little to no water in many forms
- Doesn't damage the land
- Doesn't emit

Lesotho Energy Policy Goals

1. Contributing towards the improvement of livelihoods
2. Contributing towards economic growth and investment
3. Ensuring security of supply
4. Contributing towards the protection of the environment

Energy Policy Principles

a) Integrating energy into national and sectoral planning is a crucial catalyst for energy effective utilization to improve the livelihoods of the people of Lesotho as well as driving the economic growth
b) Effective coordination of the energy sector is expected to bring wide spectrum of stakeholders, including vulnerable groups, to share experiences and plan together for better integration of energy into relevant programmes.
c) Empowerment of broader stakeholders on energy issues to bring them on board for informed participation will be executed through awareness raising, education and training.
d) Public-Private Partnerships are viewed as playing a central role in energy project development especially they are an important platform for engagement of the private sector and cooperative associations in building the economy of Lesotho.
e) Stakeholder involvement will be a prerequisite step towards developing a national energy policy.
f) Environmental Sustainability framework will guide the programmes and activities of the energy sector. Continuous capacity building targeted to improve the qualifications and skills of the energy.
g) Gender equality will be an integral part when energy programmes and activities are formulated and implemented.

4.5 Further Reading

- Anthony Jnr, B. (2020) Smart city data architecture for energy presumption in municipalities: concepts, requirements, and future directions. International Journal of Green Energy
- Hansen, U.E. and UNEP, D. (2016) Mapping of Solar PV and Wind Energy Markets in Kenya: Current State and Emerging Trends.
- IEA EBC (2018) annexes advance technologies and strategies to reduce energy use and GHG emissions in buildings and communities. Energy and Buildings,
- Mañoso Gimeno, C., (2019) Analysis of the application of solar energy in the SADC region. A potential solution for energy access in remote rural areas.
- Randal, E., Chapman, R., Moores, J. and Howden-Chapman, (2016) Streamlining urban housing development: Are there environmental sustainability impacts
- Regional Electricity Regulatory Association (RERA 2018) SADC Secretariat Gaborone Botswana
- Regional Infrastructure Development–Short Term Action Assessment SADC, (2019) Secretariat Gaborone Botswana

- Revised Regional Indicative Strategic Development Plan (RISDP) (2015) SADC Secretariat Gaborone Botswana
- SADC Industrialisation Strategy and Roadmap of 2015 - 2063 and its associated Action Plan of 2015 SADC Secretariat Gaborone Botswana
- Sustainable Energy for All Report (2021) 1750 Pennsylvania Avenue NW Suite 300 Washington, DC 20006 USA
- UNDP World Energy Assessment: Energy challenges and Sustainability (2015)
- UNECA (2018). Regional integration and energy sustainability in Africa: Exploring the challenges and prospects for ECOWAS. African Development Review

MODULE 5

5. INTEGRATED WATER RESOURCES MANAGEMENT

Learning Outcomes

- Understand the main elements of an IWRM approach to sustainable management of water resources.
- Be able to promote complex relationship between end user of water and water ecosystems
- Encourage equitable allocation of water on a sustainable basis.
- Appreciate the need for reforms to the way water is being managed.

Note to the Facilitator *This section is about a multi-sectoral approach to water resources management. You should not be surprised to see more of the content that has already been covered in other modules. Note that the focus of this chapter is to show how an integrated approach can benefit sustainable natural resources management.*

NB: *Since some content has already been presented in other modules, try not to repeat it in your training. Just focus on the approach itself and its benefits.*

5.1 What is Integrated Water Resources Management?

At its simplest, integrated water resources management is a logical and appealing concept. Its basis is that the many different uses of water resources are interdependent. That is evident to us all. High irrigation demands and polluted drainage flows from agriculture mean less freshwater for drinking or industrial use; contaminated municipal and industrial wastewater pollutes rivers and threatens ecosystems; if water has to be left in a river to protect fisheries and ecosystems, less can be diverted to grow crops. There are plenty more examples of the basic theme that unregulated use of scarce water resources is wasteful and inherently unsustainable.

Integrated management means that all the different uses of water resources are considered together. Water allocations and management decisions consider the effects of each use on the others. They are able to take account of overall social and economic goals, including the achievement of sustainable development. This also means ensuring coherent policy making related to all sectors. As we shall see, the basic IWRM concept has been extended to incorporate participatory decision-making. Different user groups (farmers, communities, environmentalists) can influence strategies for water resource development and management. That brings additional benefits, as informed users apply local self-regulation in relation to issues such as water conservation and catchment protection far more effectively than central regulation and surveillance can achieve.

Management is used in its broadest sense. It emphasizes that we must not only focus

on development of water resources but that we must consciously manage water development in a way that ensures long term sustainable use for future generations.

Integrated water resources management is therefore a systematic process for the sustainable development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives. It contrasts with the sectoral approach that applies in many countries. When responsibility for drinking water rests with one agency, for irrigation water with another and for the environment with yet another, lack of cross-sectoral linkages leads to uncoordinated water resource development and management, resulting in conflict, waste and unsustainable systems.

***Note to the Facilitator**: At this point, ask the trainees this question.*

Could you give more examples where integration can be beneficial?

5.2Why IWRM?

Water is vital for human survival, health and dignity and a fundamental resource for human development. The world's freshwater resources are under increasing pressure yet many still lack access to adequate water supply for basic needs. Growth in population, increased economic activity and improved standards of living lead to increased competition for, and conflicts over, the limited freshwater resource. Here are a few reasons why many people argue that the world faces an impending water crisis:

- Water resources are increasingly under pressure from population growth, economic activity and intensifying competition for the water among users;
- Water withdrawals have increased more than twice as fast as population growth and currently one third of the world's population live in countries that experience medium to high water stress;
- Pollution is further exacerbating water scarcity by reducing water usability downstream;
- Shortcomings in the management of water, a focus on developing new sources rather than managing existing ones better, and top-down sector approaches to water management result in uncoordinated development and management of the resource;
- More and more development mean greater impacts on the environment; and
- Current concerns about climate variability and climate change demand improved management of water resources to cope with more intense floods and droughts.

5.3 Key issues in water management

5.3.1 Water governance crisis

Sectoral approaches to water resources management have dominated in the past and are still prevailing. This leads to fragmented and uncoordinated development and management of the resource. Moreover, water management is usually in the hands of top-down institutions, the legitimacy and effectiveness of which have increasingly been questioned. Thus, weak governance aggravates increased competition for the finite resource. IWRM brings coordination and collaboration among the individual sectors, plus a fostering of stakeholder participation, transparency and cost-effective local management.

5.3.2 Securing water for the people

Although most countries give first priority to satisfying basic human needs for water, one fifth of the world's population is without access to safe drinking water and half of the population is without access to adequate sanitation. These service deficiencies primarily affect the poorest segments of the population in developing countries. In these countries, meeting water supply and sanitation needs for urban and rural areas represents one of the most serious challenges in the years ahead. The SDGs strive for access to clean water for all by 2030. Doing so will require a substantial re-orientation of investment priorities, which will be much more readily achieved in those countries that are also implementing IWRM.

5.3.3 Securing water for food production

Population projections indicate that over the next 25 years another 2-3 billion people will need food. Water is increasingly seen as a key constraint on food production, equivalent to if not more crucial than land scarcity. Irrigated agriculture is already responsible for more than 70% of all water withdrawals (more than 90% of all consumptive use of water).

Even with an estimated need for an additional 15-20% of irrigation water over the next 25 years - which is probably on the low side – serious conflicts are likely to arise between water for irrigated agriculture and water for other human and ecosystem uses. IWRM offers the prospect of greater efficiencies, water conservation and demand management equitably shared among water users, and of increased recycling and reuse of wastewater to supplement new resource development.

5.3.4 Protecting vital ecosystems

Terrestrial ecosystems in the upstream areas of a basin are important for rainwater infiltration, groundwater recharge and river flow regimes. Aquatic ecosystems produce a range of economic benefits, including such products as timber, fuel wood and medicinal plants, and they also provide wildlife habitats and spawning grounds. The ecosystems depend on water flows, seasonality and water-table fluctuations and are threatened by poor water quality. Land and water resources management must ensure that vital ecosystems are maintained and that adverse effects on other natural resources are considered and where possible reduced when development and management decisions

are made. IWRM can help to safeguard an "environmental reserve" of water corresponding with the value of ecosystems to human development.

5.3.5 Gender disparities

Formal water management is male dominated. Though their numbers are starting to grow, the representation of women in water sector institutions is still very low. That is important because the way that water resources are managed affects women and men differently. As custodians of family health and hygiene and providers of domestic water and food, women are the primary stakeholders in household water and sanitation. Yet, decisions on water supply and sanitation technologies, locations of water points and operation and maintenance systems are mostly made by men.

The Gender and Water Alliance cites the example of a well-meaning NGO that helped villagers to install pour-flush latrines to improve their sanitation and hygiene, without first asking the women about the extra two litres of water they would have to carry from distant sources for every flush. A crucial element of the IWRM philosophy is that water users, rich and poor, male and female, are able to influence decisions that affect their daily lives.

Note to the Facilitator: *At this point, ask the following questions:*

- What are the key water issues in your community or area?
- Please give practical examples on issues mentioned above?
- Do you think IWRM is applied in your community?
- Do you think an IWRM approach is beneficial in addressing the issue?
- If IWRM is beneficial, how best would you have approached the issue at the beginning?

Lesotho Water and Sanitation Policy 2007 Objective

- Apart from addressing specific water resource management issues and in recognition of the fact that water impacts on many other sectors, this policy document is aligned with the National Vision 2020, the Poverty Reduction Strategy, the Millennium Development
- Goals and other related policies such as those on Decentralization, Energy, Environment, Food Security, Gender, Forestry and Land Reclamation, HIV/AIDS, Industrialisation, and Science and Technology.
- The Lesotho Water and Sanitation Policy goes all-out to embrace our principle that "Kopano ke Matla - Unity is Strength". United we shall stand in the quest for a better future for all of our people.

5.4Water Management Principles

A meeting in Dublin in 19923 gave rise to four principles that have been the basis for much of the subsequent water sector reform.

Principle 1: Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.

The notion that freshwater is a finite resource arises as the hydrological cycle on average yields a fixed quantity of water per time period. This overall quantity cannot yet be altered significantly by human actions, though it can be, and frequently is, depleted by man-made pollution. The freshwater resource is a natural asset that needs to be maintained to ensure that the desired services it provides are sustained. This principle recognizes that water is required for many different purposes, functions and services; management therefore, has to be holistic (integrated) and involve consideration of the demands placed on the resource and the threats to it.

The integrated approach to management of water resources necessitates coordination of the range of human activities which create the demands for water, determine land uses and generate waterborne waste products. The principle also recognizes the catchment area or river basin as the logical unit for water resources management.

Principle 2: Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels.

Water is a subject in which everyone is a stakeholder. Real participation only takes place when stakeholders are part of the decision-making process. The type of participation will depend upon the spatial scale relevant to particular water management and investment decisions. It will be affected too by the nature of the political environment in which such decisions take place. A participatory approach is the best means for achieving long-lasting consensus and common agreement. Participation is about taking responsibility, recognizing the effect of sectoral actions on other water users and aquatic ecosystems and accepting the need for change to improve the efficiency of water use and allow the sustainable development of the resource. Participation does not always achieve consensus, arbitration processes or other conflict resolution mechanisms also need to be put in place.

Governments have to help create the opportunity and capacity to participate, particularly among women and other marginalized social groups. It has to be recognized that simply creating participatory opportunities will do nothing for currently disadvantaged groups unless their capacity to participate is enhanced. Decentralizing decision making to the lowest appropriate level is one strategy for increasing participation.

Note to the Facilitator: *At this point, ask the following questions:*

- *Is stakeholder participation really possible in practice?*

Principle 3: Women play a central part in the provision, management and safeguarding of water.

The pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. It is widely acknowledged that women play a key role in the collection and safeguarding of water for domestic and – in many cases – agricultural use, but that they have a much less influential role than men in management, problem analysis and the decision-making processes related to water resources.IWRM requires gender awareness. In developing the full and effective participation of women at all levels of decision-making, consideration has to be given to the way different societies assign particular social, economic and cultural roles to men and women. There is an important synergy between gender equity and sustainable water management. Involving men and women in influential roles at all levels of water management can speed up the achievement of sustainability; and managing water in an integrated and sustainable way contributes significantly to gender equity by improving the access of women and men to water and water-related services to meet their essential needs

Principle 4: Water has an economic value in all its competing uses and should be recognised as an economic good as well as a social good.

Within this principle, it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price. Managing water as an economic good is an important way of achieving social objectives such as efficient and equitable use, and of encouraging conservation and protection of water resources. Water has a value as an economic good as well as a social good. Many past failures in water resources management are attributable to the fact that the full value of water has not been recognized.

Value and charges are two different things and we have to distinguish clearly between them. The value of water in alternative uses is important for the rational allocation of water as a scarce resource, whether by regulatory or economic means. Charging (or not charging) for water is applying an economic instrument to support disadvantaged groups, affect behavior towards conservation and efficient water usage, provide incentives for demand management, ensure cost recovery and signal consumers' willing- ness to pay for additional investments in water services.

Treating water as an economic good is an important means for decision making on the allocation of water between different water use sectors and between different uses within a sector. This is particularly important when extending supply is no longer a feasible option.

Lesotho Water and Sanitation Policy 2007

- Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
- Its utilization must therefore be sustainable.

- Since water sustains life, in order to be effective, the management of water resources demands a holistic approach, linking social and economic development with the protection of natural ecosystems.

- Effective management of water resources would also link land and water uses across the whole of a catchment area as well as the groundwater aquifer in an integrated management framework.

- Water has an economic value and should be recognized as an economic good. Managing water as an economic good is an important way of balancing its competing uses and achieving its equitable, efficient and sustainable utilization while encouraging its conservation and protection.

- Water management and development should be based on a participatory approach, involving users, planners and policy-makers.

- A participatory approach involves raising awareness on the importance of water among policy-makers and the general public.

- A participatory management approach also requires that, decisions be taken at the lowest appropriate level of governance, with full public consultation and the involvement of users in the planning and implementation of water and sanitation programmes and projects.

- Women and girls continue to play a central role in the provision, management and safeguarding of potable water.

- The pivotal role of women as providers and users of water and as guardians of the living environment requires enabling policies and strategies to empower them to participate at different levels of decision-making in water resources management and development and to share in the benefits of water utilization on the basis of equity.

- All the Basotho are entitled to have access to a sustainable supply of potable water and to the provision of basic sanitation services at an affordable cost.

- Public-Private Partnerships are essential for sustainable development of water resources and accelerated access to potable water and sanitation services to the un-served and underserved population on account of improved efficiency of operations and investments, and

- Each riparian state within a shared watercourse has a right to reasonable and equitable utilization of water within its boundaries. This right may be exercised through an integrated basin management approach and the active participation in planning and implementation of joint programmes aimed at conserving and sustainably utilizing river basin systems.

5.5Water Use, Impacts and Benefits

5.5.1 Impacts

Most uses of water bring benefits to society but most also have negative impacts which may be made worse by poor management practices, lack of regulation or lack of motivation due to the water governance regimes in place.

Each country has its priority developmental and economic goals set according to environmental, social and political realities. Problems and constraints arise in each water use area, but the willingness and ability to address these issues in a coordinated way is affected by the governance structure of water. Recognizing the interrelated nature of different sources of water and thus also the inter-related nature and impacts of the differing water uses is a major step to the introduction of IWRM.

Table 1: Impact of water use sectors on water resources

	Positive Impacts	Negative Impacts
Environment	◆ Purification ◆ Storage ◆ Hydrological cycle	
Agriculture	◆ Return flows ◆ Increased infiltration ◆ Decreased erosion ◆ Grondwater recharge ◆ Nutrient recycling	◆ Depletion ◆ Pollution ◆ Salinisation ◆ Water logging ◆ Erosion
Water supply & sanitation	◆ Nutrient recycling	◆ High level of water security required ◆ Surface and groundwater pollution

5.5.2 Benefits from IWRM

- *Environment benefits*
  - Ecosystems can benefit from applying an integrated approach to water management by giving environmental needs a voice in the water allocation debate. At present these needs are often not represented at the negotiating table.
  - IWRM can assist the sector by raising awareness among other users of the needs of ecosystems and the benefits these generate for them. Often these are undervalued and not incorporated into planning and decision-making.
  - The ecosystem approach provides a new framework for IWRM that focuses more attention on a system approach to water management: -protecting upper catchments (e.g. reforestation, good land husbandry, soil erosion control), pollution control (e.g. point source reduction, non-point source incentives, groundwater protection) and environmental flows. It provides an alternative to a

sub-sector competition perspective that can join stakeholders in developing a shared view and joint action.

- *Agriculture benefits*
  - As the single largest user of water and the major non-point source polluter of surface and groundwater resources, agriculture has a poor image. Taken alongside the low value added in agricultural production, this frequently means that, especially under conditions of water scarcity, water is diverted from agriculture to other water uses. However, indiscriminate reduction in water allocation for agriculture may have far-reaching economic and social consequences. With IWRM, planners are encouraged to look beyond the sector economics and take account of the implications of water management decisions on employment, the environment and social equity.
  - By bringing all sectors and all stakeholders into the decision-making process, IWRM is able to reflect the combined "value" of water to society as a whole in difficult decisions on water allocations. This may mean that the contribution of food pro- duction to health, poverty reduction and gender equity, for example, could over-ride strict economic comparisons of rates of return on each cubic metre of water. Equally, IWRM can bring into the equation the reuse potential of agricultural return flows for other sectors and the scope for agricultural reuse of municipal and industrialwaste- waters.
  - IWRM calls for integrated planning so that water, land and other resources are utilised in a sustainable manner. For the agricultural sector IWRM seeks to increase water productivity (i.e. more crop per drop) within the constraints imposed by the economic, social and ecological context of a particular region or country.
- *Water supply and sanitation benefits*
  - Above all, properly applied IWRM would lead to the water security of the world's poor and unserved being assured. The implementation of IWRM based policies should mean increased security of domestic water supplies, as well as reduced costs of treatment as pollution is tackled more effectively.
  - Recognizing the rights of people, and particularly women and the poor, to a fair share of water resources for both domestic and household-based productive uses, leads inevitably to the need to ensure proper representation of these groups on the bodies that make water resource allocation decisions.
  - The focus on integrated management and efficient use should be a stimulus to the sector to push for recycling, reuse and waste reduction. High pollution charges backed by rigid enforcement have led to impressive improvements in industrial water-use efficiencies in the industrialised countries, with benefits for domestic water supplies and the environment.
  - Past sanitation systems often focused on removing the waste problem from the areas of human occupation, thus keeping the human territories clean and healthy, but merely replacing the waste problem, with often detrimental environmental effects elsewhere. Introduction of IWRM will improve the

opportunity for introduction of sustainable sanitation solutions that aim to minimise waste-generating inputs, and reduction of waste outputs, and to solve sanitation problems as close as possible to where they occur.

- At a practical local level, improved integration of water resource management could lead to greatly reduced costs of providing domestic water services, if for instance more irrigation schemes were designed with a domestic water component explicitly involved from the start.

5.6 Implementation of IWRM

The case for IWRM is strong – many would say incontestable. The problem for most countries is the long history of sectoral development. As the Global Water Partnership puts it:

"IWRM is a challenge to conventional practices, attitudes and professional certain- ties. It confronts entrenched sectoral interests and requires that the water resource is managed holistically for the benefits of all. No one pretends that meeting the IWRM challenge will be easy but it is vital that a start is made now to avert the burgeoning crisis."

IWRM is, above all, a philosophy. As such it offers a guiding conceptual framework with a goal of sustainable management and development of water resources. What it does demand is that people try to change their working practices to look at the bigger picture that surrounds their actions and to realize that these do not occur independently of the actions of others. It also seeks to introduce an element of decentralized democracy into how water is managed, with its emphasis on stakeholder participation and decision making at the lowest appropriate level All of this implies change, which brings threats as well as opportunities. There are threats to people's power and position; and threats to their sense of themselves as professionals. IWRM requires that platforms be developed to allow very different stake- holders, often with apparently irreconcilable differences to somehow work together.

Because of the existing institutional and legislative frameworks, implementing IWRM is likely to require reform at all stages in the water planning and management cycle. An overall plan is required to envisage how the transformation can be achieved and this is likely to begin with a new water policy to reflect the principles of sustainable management of water resources. To put the policy into practice is likely to require the reform of water law and water institutions. This can be a long process and needs to involve extensive consultations with affected agencies and the public.

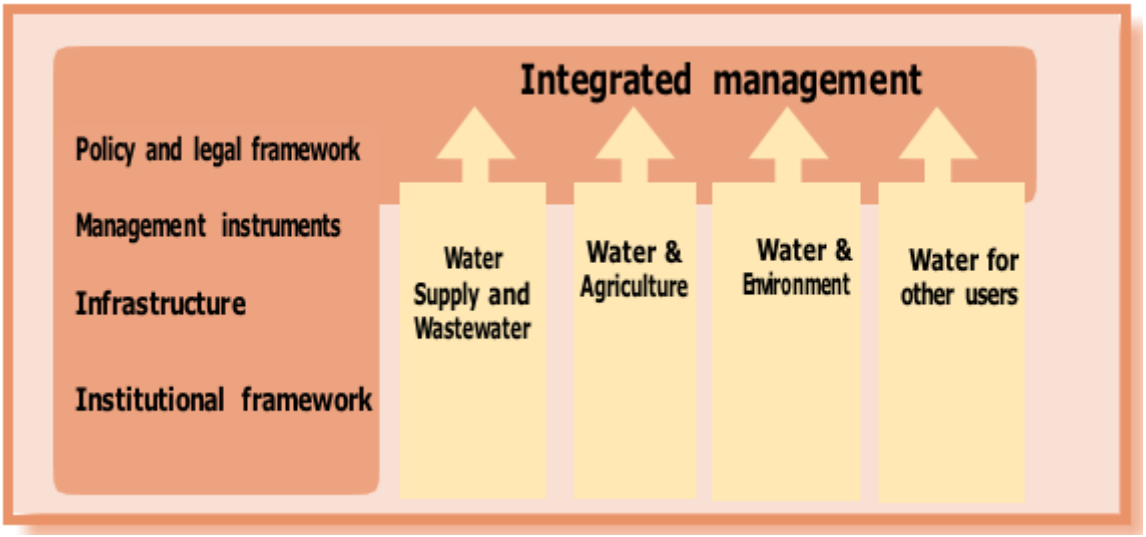


Figure *5-1*: IWRM and its linkages to the subsectors

Implementation of IWRM is best done in a step-by-step process, with some changes taking place immediately and others requiring several years of planning and capacity building.

5.7 Policy and legal framework

Attitudes are changing as officials are becoming more aware of the need to manage resources efficiently. They see too that the construction of new infrastructure has to take into account environmental and social impacts and the fundamental need for systems to be economically viable for maintenance purposes. However, they may still be inhibited by the political implications of such a change. The process of revising water policy is therefore a key step, requiring extensive consultation and demanding political commitment.

Water legislation converts policy into law and should:

- Clarify the entitlement and responsibilities of users and water providers;
- Clarify the roles of the state in relation to other stakeholders;
- Formalise the transfer of water allocations;
- Provide legal status for water management institutions of government and water user groups;
- Ensure sustainable use of the resource.
- Bringing some of the principles of IWRM into a water sector policy and achieving political support may be challenging, as hard decisions have to be made. It is therefore not surprising that often major legal and institutional reforms are only stimulated when serious water management problems have been experienced.

5.8 Institutional framework

For many reasons, developing country governments consider water resources planning and management to be a central part of government responsibility. This view is consistent with the international consensus that promotes the concept of government as a facilitator and regulator, rather than an implementer of projects. The challenge is to reach mutual agreement about the level at which, in any specific instance, government responsibility should cease, or be partnered by autonomous water services management bodies and/or community-based organizations.

The concept of integrated water resources management has been accompanied by promotion of the river basin as the logical geographical unit for its practical realization. The river basin offers many advantages for strategic planning, particularly at higher levels of government, though difficulties should not be underestimated. Groundwater aquifers frequently cross catchment boundaries, and more problematically, river basins rarely conform to existing administrative entities or structures.

In order to bring IWRM into effect, institutional arrangements are needed to enable:

- The functioning of a consortium of stakeholders involved in decision making, with representation of all sections of society, and a good gender balance;
- Water resources management based on hydrological boundaries;
- Organisational structures at basin and sub-basin levels to enable decision making at the lowest appropriate level; and
- Government to co-ordinate the national management of water resources across water use sectors.

Note to the Facilitator: *At this point, give the following exercise to the participants. This is to test if they can relate what IWRM is and how it applies in their communities.*

EXERCISE

Integrated Water Resources Management

Purpose: To draw out the progress with IWRM in the region/ country and action at river basin level.

Activity: 30 minutes

Provide participants with cards and marker pens. Standard advice is one idea/sentence/bullet per card. Each person completes a card for each question:

- *Has river basin management of water resources been introduced where you live?*
- *What is the biggest challenge for implementing IWRM in the basin?*

The participant will stand up, state the country and river basin/ organization they represent and read the card which will then be displayed on a wall.

Facilitator

Organize the cards on the wall e.g. by country, status, common challenges. Summarize the results of the two questions at the end of the session.

5.9 Further reading

- The International Conference on Water and Environment, Dublin, Ireland, January 1992.
- RBO Manual (FINAL 29 July 2008).pdf (cap-net.org)

Module 6

6. THE NEXUS APPROACHES

Learning Outcomes

- Gain a deeper understanding of the Water-Energy-Food (WEF) WEF Nexus as an integrated and holistic management approach in decision-making processes within the water, energy, food and environmental sectors
- Learn about different perspectives, needs, priorities and values of other sectors and their interconnections in an interactive and participatory way.
- Gain knowledge about the inextricable linkages between the three sectors (Water, Food and Energy) and see how this understanding can be used to make policy decisions that promote sustainable development and poverty reduction.

> ***Note to the Facilitator:*** *All along in this chapter we have been learning about IWRM, which mainly focuses on breaking the silos in the management of water resources. To also emphasize the need to involve various sectors in managing water because water is finite, we only have so much to support all these water needs.*
>
> *Now in this section you want to make the participants aware that the interlinkages between energy, water, food production and climate change. These are called the Nexus approaches.*

"Introduction to the Water-Energy-Food Security Nexus" provides a theoretical introduction to the concept of the WEF Security Nexus. The aim of the training module is to allow workshop participants to gain a deeper understanding of the WEF Nexus as an integrated and holistic management approach in decision-making processes within the water, energy, food and environmental sectors.

How to deliver water, energy and food for all in a sustainable and equitable way, while preserving the health of natural ecosystems that form the basis of any economic activity? The Nexus approach moves beyond traditional sectoral thinking in order to achieve overall security and sustainability of all resources.

6.1 Interlinkages between water-energy-food-ecosystems

The Nexus approach stems from the realization that water, energy, agriculture and natural ecosystems exhibit strong interlinkages (see Table 1), and that under a traditional sectoral approach, attempting to achieve resource security independently often endangers sustainability and security in one or more of the other sectors. Under the Nexus approach, interlinkages, synergies and trade-offs are analysed, with the aim of identifying solutions, fostering water-food-energy security and efficiency, and reducing impacts and risks on water-dependent ecosystems.

Table 2: Multi-dimensional interlinkages between water, energy, food and ecosystems

Water <-> Energy: Water plays a key role in energy production, e.g. in hydroelectric plants, for cooling thermal (fossil-fuel or nuclear) plants and in growing plants for biofuels. Conversely, energy is required to process and distribute water, to treat wastewater, to pump groundwater and to desalinate seawater.
Water <-> Food: Water is the keystone for the entire agro-food supply chain. Conversely, agricultural intensification impacts water quality.
Food <-> Energy: Energy is an essential input throughout the entire agro-food supply chain, from pumping water to processing, transporting and refrigerating food. Conflicts around land use for food production may arise in the case of biofuels or extended solar installations.
Healthy ecosystems are an essential requirement for the sustainability of all the above and are negatively affected if water, energy or food are used in an unsustainable way.

Gaps identified on Lowlands Water Supply Project

- When transmitting water from Metolong reservoir to Maseru CBD and adjacent urban arrears of Teyateyaneng, Roma and Morija, communities along the water transmission system were not catered for domestic and agriculture uses.
- The planning process to construct the water systems did not include all the key stakeholders due to non-integrated water resource management approach that was used.
- Sector planning that is still employed lacks national coordination that is key to integrated water resource management.

6.1.1 Capturing synergies and managing trade-offs

The Nexus approach allows the analysis of interlinkages between sectors, in order to reap positive synergies and to effectively manage trade-offs. This is done by adopting an integrated and coordinated approach across sectors, with a view to reconcile potentially conflicting interests, as sectors compete for the same scarce resources, all the while capturing existing opportunities and exploring emerging ones.

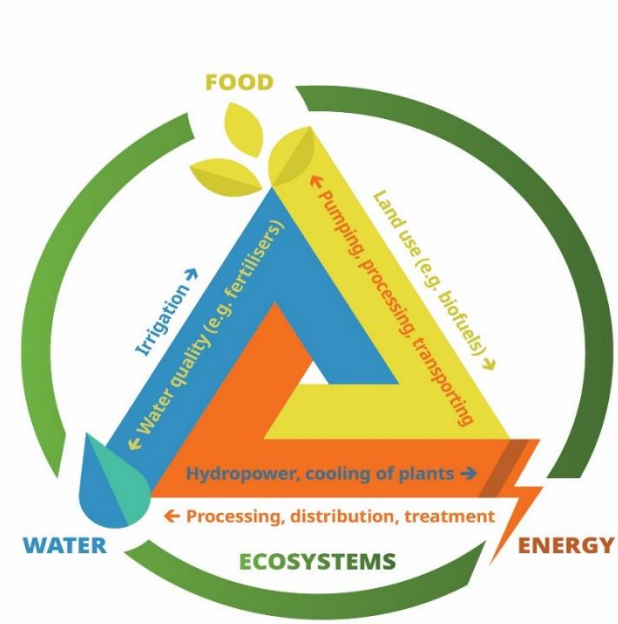


Figure *6-1*: Illustration of the Nexus Approach

6.1.2 Further Reading

- Cap-Net, 2003. Integrated Water Resources Management. Tutorial available http://www.archive.capnet.org/iwrm_tutorial/mainmenu.htm
- GWP Background paper No. 4. Integrated Water Resources Management available at: http://www.gwpforum.org/gwp/library/TACNO4.PDF
- UNDP Millennium Development Goals http://www. undp.org/mdg/.
- https://www.gwp.org/en/learn/iwrmtoolbox/About_IWRM_ToolBox/What_is_the_IWRM_ToolBox/

6.2Climate change, water and energy

6.2.1 Basic concepts on climate change

Weather- the current conditions of the atmosphere at a particular place and time. Some characteristics of weather are temperature, humidity, precipitation, cloudiness, wind, and atmospheric pressure. Weather conditions are temporary and change frequently.

Climate- The average weather conditions in a particular location or region at a particular time of the year. Climate is usually measured over a period of 30 years or more.

Global Warming- An increase in temperature near the surface of the Earth. Global warming has occurred in the distant past as the result of natural causes. However, the term is most often used to refer to recent and ongoing warming caused by people's activities. Global warming leads to a bigger set of changes referred to as global climate change.

Climate change- A significant change in the Earth's climate. The Earth is currently getting warmer because people are adding heat-trapping greenhouse gases to the

atmosphere. The term "global warming" refers to warmer temperatures, while "climate change" refers to the broader set of changes that go along with warmer temperatures, including changes in weather patterns, the oceans, ice and snow, and ecosystems around the world.

Emissions- The release of a substance (usually a gas when referring to the subject of climate change) into the atmosphere

Green House Gases (GHG)- Also sometimes known as "heat trapping gases," greenhouse gases are natural or manmade gases that trap heat in the atmosphere and contribute to the greenhouse effect. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, and fluorinated gases.

Anthropogenic Activities- Emissions of greenhouse gases, greenhouse gas precursors and aerosols associated with human activities is known as anthropogenic emissions. These include burning of fossil fuels for energy, deforestation, and land use changes that result in net increase in emissions.

Adaptation - Adjustment in natural or human systems to a new or changing environment is known as adaptation. Adaptation is a process by which individuals, communities and countries seek to cope with the consequences of climate change. 'Adaptation is not coping', it is about the capacity to shift strategies as conditions change and to develop systems that are resilient and sufficiently flexible to respond to change. It may be planned or autonomous. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation.

Mitigation- Technological change and substitution that reduce resource inputs and emissions per unit of output. Although several social, economic and technological policies would produce an emission reduction, with respect to climate change, mitigation means implementing policies to reduce greenhouse gas emissions and enhance sinks.

Vulnerability- The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.

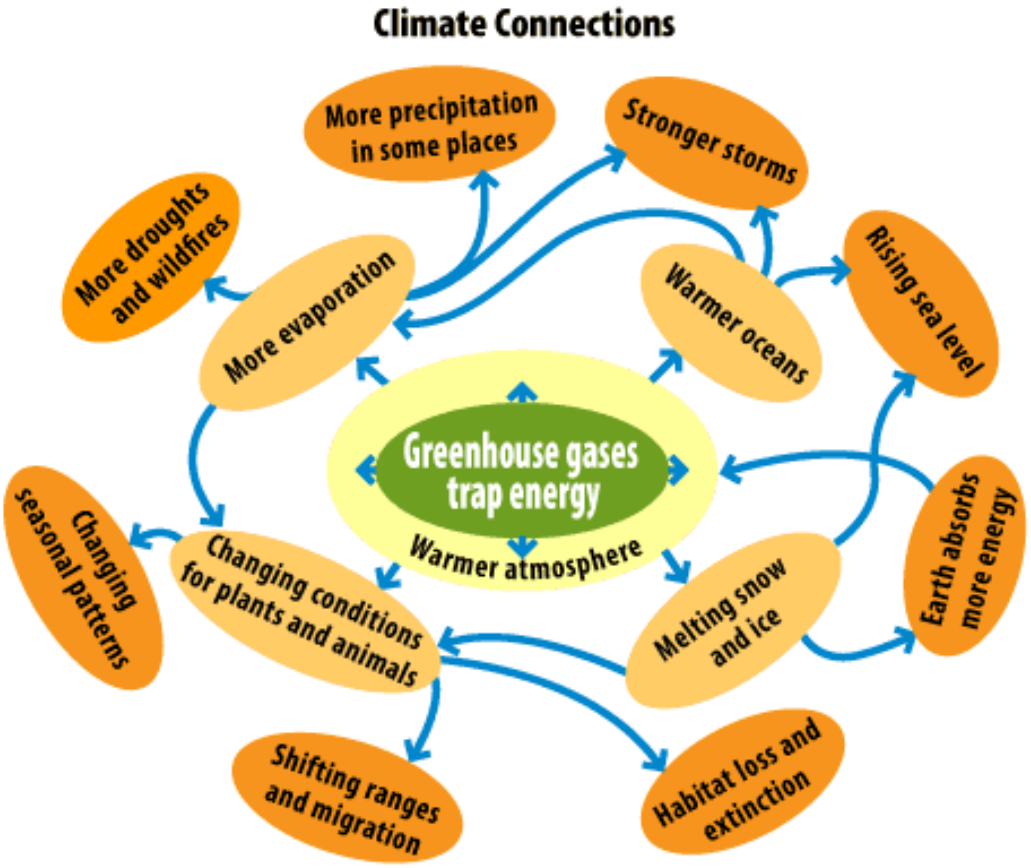
Resilience- The capacity of a system, community or society potentially exposed to hazards to adapt by resisting or changing in order to reach and maintain an acceptable level of functioning and structure is known as resilience. This is determined by the degree to which the social system is capable of organizing itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures. The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential

basic structures and functions. It is the amount of change a system can undergo without changing state.

Sustainability- Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is usually noted that this requires the reconciliation of environmental, social and economic demands - the "three pillars" of sustainability.

United Nations Framework Convention on Climate Change (UNFCCC). This convention has been ratified by a broad cross-section of both developed and developing countries. The goal of the convention is to prevent dangerous human interference in the climate system. Achieving this goal is controversial despite the broad international consensus behind the convention.

The Intergovernmental Panel on Climate Change (IPCC) is perceived as the leading international body for the assessment of climate change. In the 23 years since its founding, it has become a key framework for the exchange of scientific dialogue on climate change within the scientific community as well as across the science and policy arenas.



Source: PA (2017)

Figure *6-2*: The complex connections contributing to Climate

Note to the Facilitator: *Create connectedness in climate change terms and socio-economic development, this should include:*

- Climate Change Education for economic change
- Advocacy on urgency and need for change
- Policy Implementation and action
- Power of awareness raising and capacity building

Climate Change Actions

Key Points

Adaptation

Improving weather and climate information systems.

Supporting the development of climate change adaptation-specific policies, programmes and plans.

Promoting diversified agricultural production

Promoting water conservation and rainwater harvesting in areas where enhanced water stress

Mapping changes in the range of fish species and

strengthening the monitoring of fish stocks

Promoting sustainable forest management and adopting harvesting techniques

Developing or enhancing systems for monitoring drinking water, food and air quality, in areas affected by higher temperatures, floods and rising sea level.

Design and construction of measures to protect critical energy infrastructure from the impacts of floods and storms.

Conservation of mangroves and coral reefs to protect coastal zones from weather-related catastrophes

Key Points

Mitigation

Retrofitting buildings to make them more energy efficient; adopting renewable energy sources like solar, wind and hydro

Develop more sustainable transport such as bus rapid transit, electric vehicles, and biofuels; and promoting more sustainable uses of land and forests

Technology transfer: reduction of GHGs requires innovation to make current technologies cleaner and climate-resilient.

Carbon sequestration: converting non-forest land to forests; planting trees or allowing forests to regenerate naturally; restoring peatlands; and converting crop land to permanent pasture.

6.2.2 What causes climate change

The earth is getting warmer because people are adding heat-trapping gases to the atmosphere, mainly by burning fossil fuels. These gases are called greenhouse gases. Burning fossil fuels releases carbon dioxide, a heat-trapping gas, into the atmosphere, which is the main reason why the climate is changing. These changes are happening because the earth's air, water, and land are all linked to the climate. The earth's climate has changed before, but this time is different. People(anthropogenic) are causing these changes, which are bigger and happening faster than any climate changes that modern society has ever seen before. Earth is a closed system, full of intertwining cycles that require balance we are dependent on it though it is not dependent on us.

Key points:

Burning of fossil fuels such as coal related products leads to release of greenhouse gases, such as carbon dioxide, into the air

Green-house gases trap heat in the atmosphere

Trapping of heat causes an increase in atmospheric temperatures, called global warming

The warming of the earth affects other resources that are linked to climate (as shown on Figure 6-2) such as water, land and plants, etc.

Human activities (anthropogenic activities) are mainly responsible for climate change.

Impacts of Climate Change in Lesotho

- Diminishing vegetation cover and grasslands
- Reduction in Wool and Mohair production
- Extreme winters that disturb the natural ecosystem
- Challenges of the need to change vegetation
- Endangered Food security
- New types of diseases

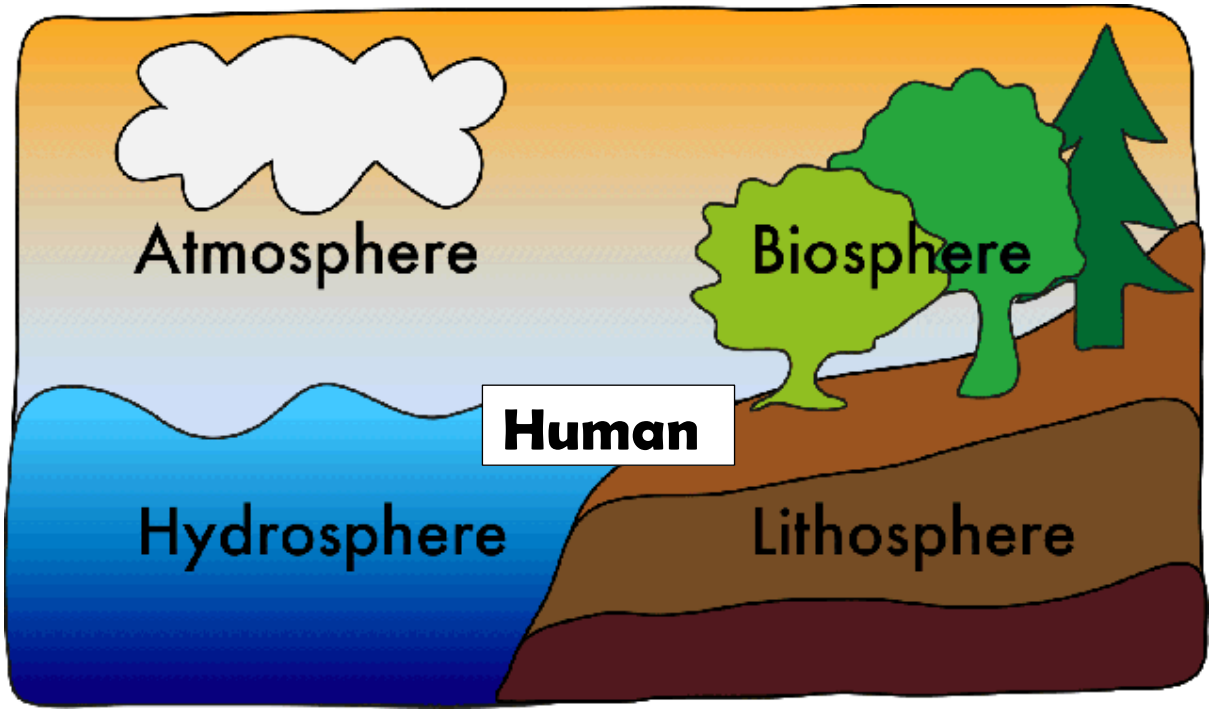


Figure *6-3*: The Earth Systems

Atmosphere- Blanket of air surrounding the earth-oxygen, carbon dioxide, nitrogen etc

Hydrosphere- Water in oceans/seas, rivers and rainfall

Lithosphere- Crust of the earth-rocks/ boulders, cliffs

Biosphere- All life on earth- Human, plants, animals, fish, insects

Humans are increasingly influencing the climate and the earth's temperature by burning fossil fuels, cutting down forests and farming livestock. This adds enormous amounts of greenhouse gases to those naturally occurring in the atmosphere, increasing the greenhouse effect.

6.2.3 Climate change Impacts and effects on water resources

Water resources are sensitive to variations in climatic patterns. It is believed that there will be changes in the water resources sector due to climate change. Climate change cause the weather to become more extreme, be it droughts, violent storms, heavy snowfall and rain or extreme changes in temperature. Moreover, Climate change also distorts the natural habitats and lives of plants and animals. Other plants and animals may die if temperatures suddenly become too cold or hot for them. Some places may experience a reduction in water flow, whiles others may have increased water flow. Availability of clean water may be affected too. All these incidents combined are termed effects of climate change.

Climate Change Impact is a way of looking at the effect's climate change has on people and environment of over time. It's important to be aware of these changes in order to deal with impacts that have already happened and prepare for those that will most likely

take place. Climate change threatens the cleanliness of our air, reduces our water sources and limits food supply.

Southern Africa has been declared as one of the world's most drought prone region. This was projected a long time ago by Ohlsson et al (1995) that by 2025 Lesotho and South Africa will be facing absolute water scarcity, Malawi will be beyond water barrier, while Zimbabwe, Tanzania and Mozambique will be experiencing water stress. Water resources are affected by climate change through its impact on the quantity, variability, timing, form, and intensity of precipitation.

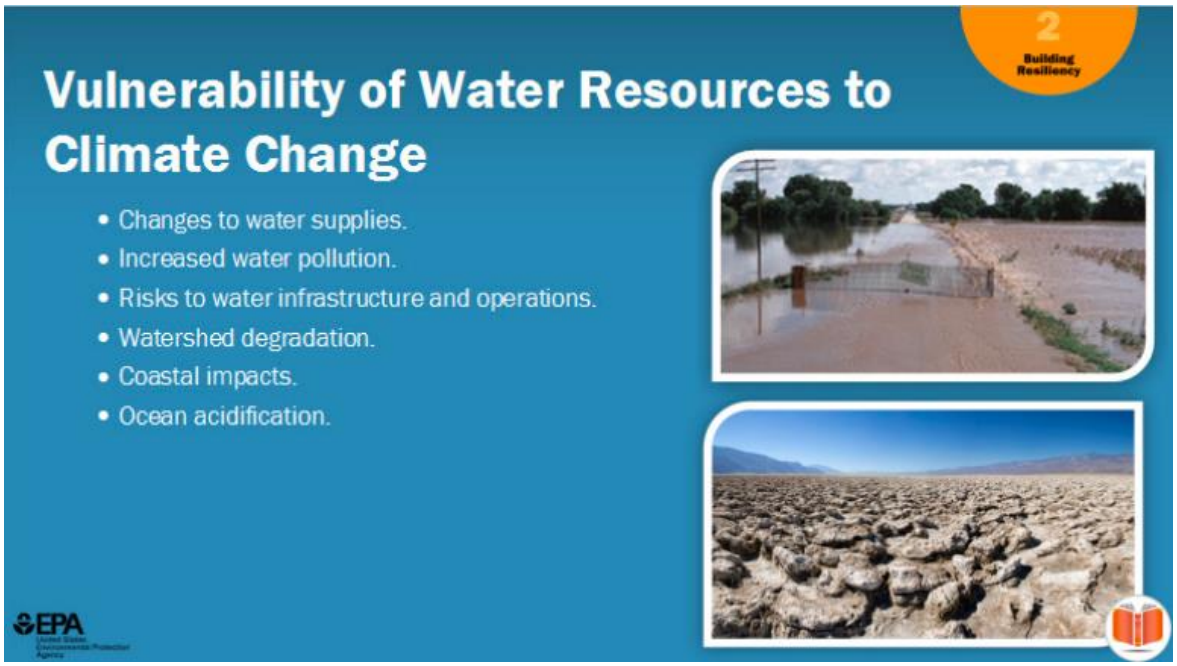


Figure *6-4*: Vulnerability of Water Resources to Climate Change. Source: *https://www.epa.gov*

Figure *6-5*: Floods in Mozambique (2013)

Figure 6-6: Hailstorm Lesotho (2018)

Figure 6-7: Drought in South Africa (2018)

6.2.4 Climate change and energy

Energy demand is increasing in the region, causing greenhouse gas (GHG) emissions from the energy sector also to increase. The trend is set to continue, driven primarily by economic growth and the rising population. Climate change presents increasing challenges for energy production and transmission. A progressive temperature increase, an increasing number and severity of extreme weather events and changing precipitation patterns will affect energy production and delivery. Climate change impacts on energy will eventually lead to:

- Droughts, drying up of hydropower reservoirs
- Heavy floods cause siltation and clogging of hydro power plants
- Strong winds and heavy snows cause destruction of energy infrastructure
- Weather variation reduces predictability probability;
- Extreme cold or hot conditions increases energy consumption

Figure *6-8*: Clean Renewable energy (solar and wind)

Key points:

Access to clean energy is low in the SADC regions, mainly as a result of lack of appropriate infrastructure to harness it.

As a result, the use of some non-renewable sources of energy have caused an increase in greenhouse gas emissions.

This is projected to continue, driven primarily by economic growth and the rising population.

Temperature increase, increasing number and severity of extreme weather events and changing precipitation patterns will affect energy production and delivery.

Climate change impacts on energy will eventually lead to:

- *Droughts, drying up of hydropower reservoirs*
- *Heavy floods cause siltation and clogging of hydro power plants*
- *Strong winds and heavy snows cause destruction of energy infrastructure*
- *Weather variation reduces predictability probability;*
- *Extreme cold or hot conditions increases energy consumption.*

6.2.5 Why should you be involved in addressing climate change?

The costs of climate change are already being felt today and if measures are not taken as of now, tomorrow's 's population will suffer terrible results in the future. The climate crisis is real and it's impacting people around the world today and Southern Africa is no exception to these impacts. From our well-being to our wallets, we're seeing the effects of a world transformed by rising temperatures and changing climate patterns, and the outlook is about as far from getting us relaxing.

When we pollute the atmosphere by using dirty energy sources like coal, and gas, we end up with dirty weather. Climate change poses a huge threat to something people need above all else; water. We need it for drinking and of course, also for growing food. Farmers around the world depend on a stable climate to grow their crops and put food on our plates. But as climate change leads to more droughts, floods, and extreme weather, we see harvests wither or wash away.

Again, we should note that extreme weather linked to climate change also has huge economic outcome. The warmer it gets, the bigger the hit to the economy. Hot weather, flooding and other extreme weather events damage infrastructure, put heavy burdens on electrical supplies and disrupt how we travel and commute. The economy is also threatened by climate change including sectors such as; Tourism, Agriculture, Rangelands, Forestry, Energy, Transport and many others posing a potential economic loss to the country's GDP.

Without knowledge and understanding of the social, economic and environmental impacts of climate change, how can we expect people to be ready to deal with the consequences and help find the solutions? Climate change is one of the greatest problems facing us today and it is imperative that communities learn not just the science, but also its impacts. The creativity of young people is invaluable in the search for innovative solutions to climate change. Starting today, now, we need to change our lifestyles and our attitudes. We need to produce, transport, consume, regulate, govern and think differently.

Public participation can play an important part in efforts to achieve climate neutrality. Proposed measures can be undertaken and will include:

- Periodic education and training of communities on climate change
- Access to information through various platforms; media fora and others
- Consultations
- Participation in projects implementation
- Lobby for financial assistance
- Establish Networks and partnership
- Practice smart approaches to agriculture
- Best water management practices
- Pollution remediation on energy sources and use transportation
- Biological conservation .....and much more!!!

The climate challenge is large and complex. But it is very likely that many people, working from many angles, can help address climate change and its consequences.

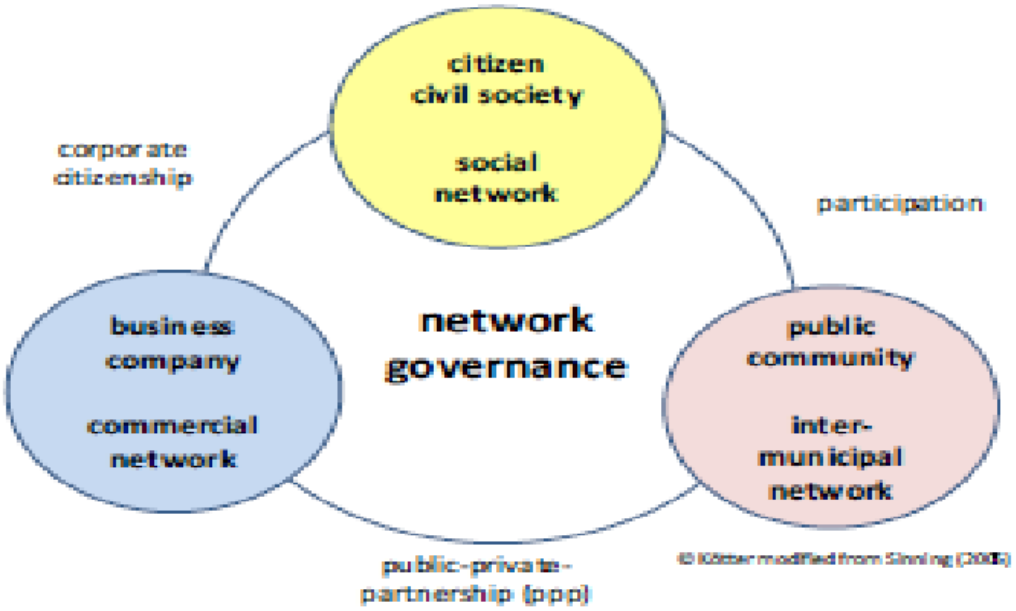


Figure 6-9: Network Governance and Stakeholder Participation on Climate Change (Friesecke etal, 2012)

6.3 Further reading

- Build A Resilient World - un.org -//www.un.org/climate-change
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- Thuiller, W., (2007). Climate change and the ecologist. Nature, 448(7153), pp.550-552.
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- Water Facts: www. unwater,org

MODULE 7

7. THE GOVERNANCE OF ENERGY AND WATER RESOURCES MANAGEMENT

Learning Outcomes

- Understand the role of governance in striving towards sustainable access to water and energy for all
- Understand the principles of good governance and stakeholder engagement

> ***Facilitators Notes:*** *You will recall that the various institutions in the management of water and energy were discussed in the preceding sections of this doc. In this chapter, the focus is placed on the roles of each institution or governance structure and how the governance structures relate. So, as much as possible, place emphasis on that.*

7.1 General Definition of Governance

According to the Oxford Dictionary it defines governance as the art or manner of governing exercising control or authority over the actions of subjects and systems of regulations.

7.2 Definition of water and energy governance

A Local Government's ability to apply IWRM principles successfully very much depends on a favorable (water resources) governance framework. It is, therefore, important that Local Governments are fully aware of existing governance structures before embarking on the planning and implementation of IWRM and actions. This approach is generally applicable to natural resources governance energy included

Many different definitions of governance can be found in literature and policy papers. This document uses, as its basis, the term 'governance' as defined by the UNDP:

"[Governance is the] exercise of political, economic and administrative authority in the management of a country's affairs at all levels. Governance comprises the complex mechanisms, processes, and institutions through which citizens and groups articulate their interests, mediate their differences, and exercise their legal rights and obligations.]"

Accordingly, *water and energy resource* governance refer to the system through which decisions on management of these resources are made and enforced. *Governance* of these resources will broadly look at the use of institutions, structures of authority and collaborations on allocation of resources and coordination or controlling activities in communities or the economy in general. This may involve a closer look on how policy goals, policies, regulations, rules and incentives that guide how instruments are implemented and delivered. This is explained in more detail in the following sections.

7.3 Elements of governance

Following the UNDP definition, natural resources (water and energy included) governance can be described through different elements, namely:

- the various **institutions** formally responsible for the management of water and energy resources;
- the **mechanisms** within which this management must operate; and
- the actual **processes** that are carried out to manage these resources.

Elements of governance can be defined at different administrative levels. These will vary depending on a country's political and institutional set up, although in general terms the basic elements are universal.

7.3.1 Institutions

The institutions with formal authority in defining the binding frameworks for water and energy resources management are manifold. They include government administrations and regulators at local, national and supra-national levels as well as agencies and organizations at community or end-use levels.

Other stakeholders such as non-governmental organizations (NGOs), water/resource users associations, community-based organizations and the private sector can be involved in the system, but their influence is different in nature since they lack the authority of government bodies. They are, however, important vehicles through which interest groups can exercise influence over decision- making.

Local Government, as the level of government most closely associated with local affairs, is in a unique position within the natural resource governance system. Although it has no direct mandate for water and energy resources management, it does have numerous mandates that are directly and indirectly linked to these resources. Local Government can also use its 'authority' to broaden stakeholder involvement in local decision-making processes, thereby enabling a more participatory approach to natural resources management at the local level.

7.3.2 Mechanisms

The mechanisms for governance of these resources consist of the legislation, regulations and policies with which the management of these resources must be in accordance. Such mechanisms are usually developed at international, national and community levels.

As far as Local Government is concerned, the legislation formulated by National Government is likely to be most relevant. Although increased decentralization provides Local Government with the power to develop its own bylaws and policies at the local level, these must still comply with the provincial, national and supra-national frameworks. Local Governments therefore need to have a good understanding of such legal and regulatory frameworks to avoid contravention and the consequent fines and

penalties this could bring.

An example of an international framework for water and energy governance is the Southern African Development Community's (SADC) revised Protocol for Shared Watercourses (SADC 2001)[3] and SADC Energy Protocol (1996). The Protocols aims to achieve closer cooperation and coordination in the management of the regions watercourses and energy resources to advance the SADC objective of regional integration and poverty alleviation. At the national level, the National Water Policies of Mozambique and Zimbabwe, and the National Water Acts of South Africa and Botswana, for example, provide the framework within which water resources management in these countries needs to operate.

The mechanisms of natural resources governance are only effective if enforced. Widespread compliance of the stipulated laws and regulations will only occur if a strong regulator is in place to carry out enforcement and ensure consequences are forthcoming when infringement is proven.

7.3.3 Processes

The processes refer to the interaction between institutions and the application of governance mechanisms. Processes can be a range of measures associated with Local Government mandates that use water and energy for specific purposes. Local Government must ensure that these measures are in line with the legislation and policies as set out in the relevant frameworks with which natural resources management need to comply.

Governance processes at the local level are not limited to measures adopted in the fulfilment of mandates associated with these resources. Local Government is also the main institution in charge of regulation, integrated planning, stakeholder participation and conflict resolution at the local level.

As mentioned above, the processes of governance refer to the interaction between institutions through which the mechanisms are applied. Such interaction can be, for example:

- The elected council of a Local Government takes the decision to establish a process for involving local stakeholders in natural resources management.
- A regulating body evaluates an Environmental Impact Assessment of a land-use plan developed by a Local Government in an ecologically sensitive area.
- A municipal association organizes a consultation process with its members to receive input of their advocacy on local needs vis-à-vis a management agency.
- A National Government task force investigates the impacts and challenges of decentralization measures in the water and energy sectors at Local Government level to prepare a revision of relevant Local Government mandates.
- A regional institution invites National Governments to identify new priorities for adjustment of its policies based on the latest economic or social trends.

7.4Implications for Local Governments

The different aspects of water governance at all hydrological and administrative levels define Local Government's role and responsibilities in the management of water resources locally. This principle applies equally to the management of energy resources. As Local Governments do not have a direct mandate for water and energy resources management, they usually do not take part in the development of respective legislation and policies. This will consequently have an impact on their ability to successfully apply natural resources management principles when carrying out mandates that are in any way related to water and energy resources.

Local Governments should therefore seek out situations, where they can contribute to framework development and policy making at higher levels of governance. Local Government associations can be one channel through which this representation can take place at national level, as in certain cases these possess the necessary power and voice to influence higher level decision-making bodies. At national or regional levels, it is more likely that National Government will represent local needs and it is therefore a challenge for Local Government to ensure that their interests do not become neglected.

Within the boundaries of prescribed legal and policy frameworks, Local Governments themselves have some leeway to adapt the governance structure locally to benefit local needs and conditions. This includes creating local legislation and policy and, especially, opening up the decision-making process to more stakeholders from whom a better understanding of local issues can be gained and additional resources and capacities derived.

In order to take advantage of such opportunities, Local Government should ensure that they have a good knowledge of:

- Issues around water and energy governance in their country;
- their own position in the water and energy governance framework and the degree of freedom they possess to set the rules at the local level;
- the local stakeholders with whom to share decision-making and other tasks in natural resources management; and
- the scope to lobby for local needs and interests at higher levels of government through, for example intermediary organizations and municipal associations.

7.5 Good governance in water and energy resources management

7.5.1 Definition of good governance

Whereas a governance analysis is looking at the institutions, mechanisms and processes of resources management in a more *descriptive* manner, 'good' governance is a *value-based* perspective. Depending on the specific values to be emphasized, a variety of definitions can be found each looking at good governance from a different angle of interest. The Organization for Economic Co-operation and Development's (OECD) definition of good governance has been chosen for the purpose of this document:

"Good governance is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law. It assures that corruption is minimized, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision-making."

Good governance is an ideal that can never be fully achieved, but rather worked towards. Good governance shares common values/principles with practices such as IWRM, three examples include social equity, transparency and accountability which shall be expounded in the following paragraphs. The theory is that governance improves as these principles increasingly form the basis of the overall binding rules for policy implementation.

7.5.2 Principles of good governance

As mentioned above, working towards good governance is achieved by following the principles through which it is defined. Good governance and IWRM are also closely linked because the former serves as an enabling framework for the latter.

Figure 7-1 lists some good governance principles and their practical consequences in the water sector.

Social inclusion

The notion of social inclusion refers to the goal that all social groups have equal access to natural resources and associated benefits. In many cases the disadvantaged and vulnerable - such as the poor, elderly, disabled, people suffering from chronical diseases, or those living in refugee camps - may be deprived of access to these benefits.

Ignoring the importance of social inclusion can have severe implications. For example, not securing a safe and reliable supply of water and energy to a farming community belonging to a marginalized ethnic minority, will threaten their livelihoods and may force them to abandon their land or live under difficult conditions. Another example may be an instance where the quality and success of the medical therapy for HIV/AIDS patients may be jeopardized when a respective health care center does not receive the same water and energy supplies as other facilities specializing in more 'accepted' diseases. The absence of these services can affect issues such as sanitation, portable water, hygiene, refrigeration, education and information sharing.

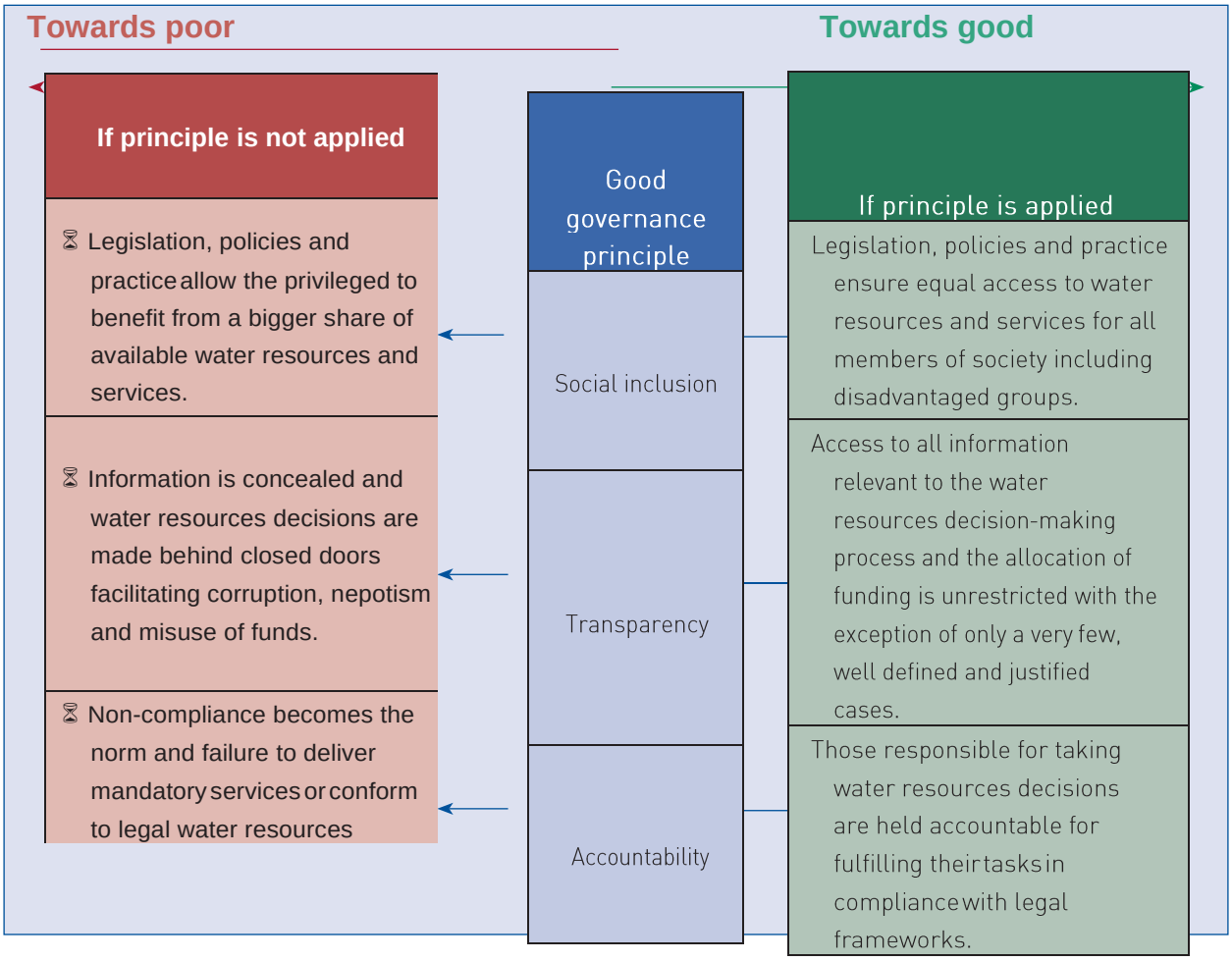

Figure 7-1– The principles of good governance.

The public sector has a significant responsibility in addressing these imbalances and can do so by ensuring that water and energy policies and legislation are non-discriminatory. However, it is not sufficient to rely only on such frameworks. In order to achieve tangible change on the ground, it is the application of frameworks in practice, or – in the case of laws – their enforcement, that make the difference. One option is, for example, to prioritize measures that respond particularly to the water and energy needs and interests of disadvantaged groups. Among others, this can entail the distribution of water and energy supplies from locations where they are available in abundance to locations that are under serviced. Through such measures, a Local Government can contribute to mitigating social disparities, thereby increasing social inclusion and equity which is also one of the core principles and goals of IWRM.

Disadvantaged groups

Disadvantaged groups can be loosely separated into three categories of social exclusion:

- economic status – for example, those who lack resources and the ability and

means to access services;

- living location – for example, those based in informal settlements; and
- identity-based discrimination – for example, those suffering from discrimination due to the health, age, gender, religion, race, etc.

These three categories are usually closely linked and an element of one will often be associated with elements of another. Due to exclusion from certain community activities, networks and benefits, disadvantaged groups usually have little opportunity to be part of decision-making processes. This is also the case in the water and energy sectors where, despite being obvious water users, the interests and needs of these groups often remain largely neglected.

Empowerment is key to achieving social inclusion. Empowerment refers to the removal of barriers that hinder disadvantaged groups from being fully integrated within a community and gaining access to their fair share of the benefits provided. Such barriers can exist due to, for example, discriminatory legislation and policy, economic and thus financial issues, difficulties in communication, and less opportunities for education.

In order for IWRM to be truly operational and achieve its sustainability goals, Local Governments will have to exercise their authority at local level to ensure that no unsurpassable thresholds inhibit disadvantaged groups from making their voices heard. Stakeholder participation, capacity building, and prioritization of the needs of disadvantaged groups are the main pathways for empowerment and can ultimately balance disparities and achieve more fairness in society. This approach is applicable to all natural resources management and governance, energy included.

When involving stakeholders in participatory fora, access for all main groups, independent of their social status, is key in order to achieve a comprehensive picture of the local situation and get broad support and commitment to solve the issues at stake (see also Section 4). Capacity building helps enable disadvantaged groups to lobby for their interests and contribute to the identification of problems and solutions on an equal basis with more powerful social groups. Prioritization of their needs - such as focusing on water supply, sanitation and energy requirements in informal settlements - can improve their living conditions in more direct and tangible terms.

Increased equity and justice will be an economic as well as a social asset for a community. Local Governments should understand this potential and put social inclusion as high as possible on their political agenda.

Gender

In most cases, water and energy needs of a local community are addressed as a whole without distinguishing between the different requirements of men and women. These needs may, however, be diverse and by ignoring them inequality in the access to these resources and services can occur. Gender is therefore a key area of social inclusion that, if addressed, can greatly reduce social injustice.

Women often have less say in the water and energy sectors than men, especially in

societies where the roles and responsibilities of men and women are rigidly defined, with the role of women being limited to end-use levels. However, the productive roles of women outside of the domestic setting, for example in agriculture, industry or education, are equally important, but often remain largely ignored. This can cause problems for women in getting sufficient access to water and energy for productive purposes, so that they are in comparison to men - disadvantaged in the economic sector.

Another example of exclusion on gender and water involves defining the link between female education and sanitation in schools. A lack of gender-separate and appropriate sanitation facilities discourages female attendance thereby depriving them of the opportunity to gain an education equal to that of men. Similarly, when gender needs are not properly defined when it comes to energy, inappropriate interventions may be adopted, for instance lighting might be provided in schools where students are day-scholars with the assumption that they may come to school for evening studies without considering the security risks for girl-children and social norms which may not allow them to leave homesteads late in the evening thus denying them the service indirectly.

Good natural resources governance therefore requires gender issues to be included throughout the process, especially when drawing conclusions and planning projects and actions. This follows the principle of social equity and results in more effective decision making, which can indirectly benefit economic development throughout the community.

Transparency and accountability

A transparent governance system, in which it is clear as to who is accountable for decisions and actions taken, is an important requirement for good governance.

A lack of clarity concerning the reasoning behind decisions taken, the spending of funds, the collection and utilization of information, and with whom the responsibility lies if things go wrong can open doors to corrupt practice, that is the use of a position of public authority for private gain. This creates a work environment where there is little incentive to carry out tasks effectively. In the water and energy sectors the result can be a lack of performance in the delivery of services as well as increased inequality in how costs and benefits derived from resources are distributed. Ultimately, corruption can undermine economic development by generating inefficiency and deterring external investment in the two sectors. Loss of public trust and belief in the creditability and legitimacy of public institutions usually follow.

Providing widespread access to information and treating it as a public good are crucial for both transparency and accountability. Access to information allows stakeholders to confirm the quality and validity of the data used in the decision-making process. This helps prevent misuse and false interpretation and clarifies why decisions were taken and who was responsible for them. Stakeholders can also play a substantial role in information collection by contributing their own knowledge to the process.

Transparency in decision-making

Good governance requires decisions to be taken in compliance with legal frameworks and in a way that those affected are aware of the process and have access to all available information. Transparency in decision-making helps to ensure that those not directly involved in the process are, nevertheless, able to understand and intervene. Information that should be freely available includes why policy decisions were made, who will benefit from these decisions and the likely impacts of these decisions on the local community.

When decisions are taken behind closed doors, distrust and accusations of corruption can result. Those with a stake in water and energy resources management are unaware of the motives behind decisions taken and will have no guarantee that such decisions were developed in the interest of the community as a whole rather than an elite few. A transparent procedure also reveals the stakeholders' role in decision-making and confirms that their input has been impartially considered and involvement is genuine rather than just for show.

Transparency in the use of funds

Transparency in the use of local and national funding for resources development is key in the prevention of financial corruption at the local level. The general public has a right to know how their taxes are being used, should be in a position to question this usage and, if necessary, should be able to request inquiries into what appears to be misuse or poor investment of public finances.

Accountability

Good governance requires that the key stakeholders, who have the authority to take and enforce decisions, are held accountable for what is decided. The legal framework within which the management of water and energy resources operate should be clear to ensure that if laws are violated consequences such as investigations, requests for justification, public hearings and ultimately penalization can be, and are impartially, enforced on those responsible. If not in place, the result can be the neglect of duties and mandatory responsibilities, as failure to comply with legal requirements goes unpunished.

7.5.3 Implications for Local Governments

Good governance reflects an ideal situation that is only partially realized in many countries. A Local Government should not remain inactive if surrounding conditions are not perfect for entering into natural resource governance issue. Based on its competence at local level and taking advantage of the motivation of the local community, as well as the knowledge and interests residing in different sectors and organizations, at least some small steps for change are always possible.

A Local Government is responsible for *all* members of its community. As the sphere of government closest to the people in a given locality, it is in the best position to observe local situations and developments that require interventions. If there is evidence that certain groups are pushed to the edge of local society and are deprived of fair access to Local Government services, corrective actions must be taken. By working together

with representatives of disadvantaged groups, understanding their needs and putting them higher up on the local agenda, major progress can be achieved towards a more inclusive local society.

In the same way, Local Government can make it part of their policy to emphasize transparency in all their decisions and actions independent of the priority given to transparency in higher spheres of government. Collaboration with local stakeholders cannot work if major decisions are taken behind closed doors and the public has reason to suspect that 'deals' are being made contrary to the overall interest of the community. Effective stakeholder participation requires a solid basis of mutual trust in the relationship between the public and the Local Government.

The proximity between Local Government and the community for which it is responsible makes it easier to shape services in a way that they truly meet local needs and expectations. However, this proximity also has implications in the opposite direction, as the electorate is in a position to point the finger at a Local Government that performs badly in the fulfilment of its obligations. In smaller towns particularly, successes and failures are much easier to associate directly with the people, parties or departments responsible for them. Even personal meetings with leading decision- makers may in principle be possible. Additionally, local media has a major role in observing and commenting on Local Government performance. Local Government will therefore always face more of a challenge over being held accountable for their actions than higher levels of government that are more distant from their constituency.

To summarize, Local Government is well advised to avoid the likely risks – and costs! – of poor policies and management practices, both generally and in the water and energy sectors. Local Governments should place prominent value on the principles of good governance, a practice that pays dividends particularly through the benefits derived from working with stakeholders. Rather than relying on improvements at the national level, Local Governments can use their own sphere of competence to continue to strengthen democracy and justice at the local level and thus stipulate reform from the bottom up.

7.6 Stakeholder participation in decision making

As has been pointed out in previous sections the participation of representatives of all stakeholders in water and energy resources management decision-making is a key requirement of good governance and natural resources management.

A stakeholder in natural resources management can be any group, institution, organization, business or individual with an interest or role in water and energy resources management. Users are the most obvious group of stakeholders, but others may exist, such as regulators. All of these have different interests, some of which can be contradictory, and therefore representation of all community stakeholders is important to understand needs and demands and also to form a shared agreement on the way that water and energy resources are managed.

7.6.1 The benefits of stakeholder involvement

The benefits of bringing all stakeholders on board are manifold and improve the likelihood of 'doing things right'. This is because a comprehensive stakeholder involvement can:

- help complete the compilation and understanding of data and other information on local energy and water resources and their uses;
- provide a deeper understanding of local issues and contribute to identifying future priorities;
- draw attention to different or even opposing interests of stakeholders and help address conflicts before they escalate into major clashes;
- bring in more ideas, resources and capacities to share the responsibilities for managing water and energy resources;
- create a sense of ownership within the local community for water and energy resources management and development
- strengthen awareness on the true value of water and energy for a sound livelihood.

7.6.2 Stakeholder participation at different levels of governance

Stakeholder participation is essential at all levels of governance within both administrative and resource-based institutions.

Stakeholder involvement at river basin level is important, as most rivers in Southern Africa are transboundary and the amount of water available to countries differs from plenty to none. Similarly, availability, exploitation and delivery of energy resources varies from location to location and in most cases sharing of these resources is local, national or regional that is it is transboundary in nature. It is therefore critical to ensure the understanding of neighboring needs to prevent governments from making popular decisions to satisfy national interests at the expense of their neighbors. This can be achieved through the interaction of National Governments and other national authorities and bodies.

At national level, stakeholder involvement is usually realized through area level/local authorities. National laws and rules define the role of Local Government within this process. For example, in Catchment Management Authorities and similar bodies, Local Government is just one of a wide range of stakeholders. Taking their role as stakeholders seriously, Local Governments should be eager to learn about and understand other communities' problems and interests elsewhere in the catchment. Contributing to Catchment Management Authorities is also an opportunity to advocate the interests of their own communities.

At local level, Local Governments have a certain flexibility to involve a wider range of stakeholders in the decision-making process. Doing so can provide the benefits listed above and is crucial for applying the natural resources management principles.

- Water governance relates to control of water resources for different water demand types as a basic need.
- For instance; if there is a demand for a borehole, the Water Affairs department has to give permission based on availability of groundwater in that area if it is not within Water and Sewerage Company (WASCO) service territory, otherwise, the applicant is referred to WASCO for water connection application.
- Any customer connected to water supply system has to pay for water supply services in accordance with tariff regime applicable. Failure to comply may lead to application of penalties by water supply institutions.
- It is the responsibility of water supply intuitions to ensure that quality of supply and service standards for water are met all the time.
- Any institution whether it would be national, district or local level has to be licensed by the water and energy regulator (LEWA) in order to participate in water supply value chain.
- Energy governance for now still applies to electricity offered by Lesotho Electricity Company through the regulatory framework that establishes standards of power supply for all customer categories. The tariff allowable applies to each customer category based on the cost of supply imposed on the electricity supply company. The quality of supply and service standards are set and enforced by the regulator; Lesotho Electricity and Water Authority (LEWA) at all times to ensure access and safety of electricity supply to consumers.
- The department of energy improves access to energy products e.g Gas, Paraffin, Diesel, Petrol etc by regulating their prices by geographical locations e.g lowlands and highlands and subsidizes the costs of energy sources in order to manage the volatility of prices as these products comprise the basic sources of energy that affect food security in the country.
- LEWA uses both the quality of supply and service standards with tariff regimes to regulate both the water sector and the energy sector. The electricity and water utility value chains are regarded as natural monopolies in the transmission and distribution business units while they can allow some competition at the production and supply business units. Any independent power producer (IPP) willing to enter into the electricity production will be granted license to do so upon presenting a power sale agreement (PSA) with a potential off-taker. At the end-user section of the value chain, different suppliers can also be granted electricity supply to take the business to different communities.

7.7 Summary: What Natural Resources Management (NRM) means for Local Governments

NRM is often discussed at transboundary, national and local level with limited participation and representation of Local Government. However, the local level is key for making the reforms of water and energy resources management work. For this, an effective contribution from Local Government is indispensable.

The success of Local Government involvement in NRM greatly depends on the surrounding governance system that determines its mandates and responsibilities. The system varies according to the degree of decentralization a country has established and other factors, such as historical background, colonial heritage and cultural traditions. Local Government must, therefore, have a good understanding of the governance structures within which they must work, as these not only define their opportunities in NRM, but also their limitations.

Furthermore, it is important for Local Government to be well aware of their capacities and resources to perform their mandates in a satisfactory way. If this is not the case, Local Government should request clarification of the expectations directed at them and seek support from higher levels of government through, for example, Local Government associations.

Local Governments can further strengthen their readiness for NRM by forging links and establishing coordination with neighboring Local Governments in the river basin, possibly even beyond national boundaries. Doing so can help to share knowledge and experience, as well as contribute to a more rational use of water and energy resources.

In all cases, regardless of the specific conditions under which a given Local Government might operate, there are always some possibilities, however limited, through which the status of local water and energy resources in the performance of daily routines can be considered. Each Local Government can start with small steps, building on existing capacities in the community.

Politically, there is a lot to be gained for the local leadership. Broad stakeholder participation, taking also into account those groups that are often marginalized or excluded, can greatly increase trust in the Local Government. In the long run, information sharing, listening and responding to stakeholder needs and interests and involving them in implementation will enhance the benefits of NRM and strengthen the community as a whole. Finally, local ecosystems will become more sustainable and provide a more viable basis for supporting the livelihoods of current and future generations. Local Government should therefore use their power to pro-actively shape the situation at the local level and become a role model for good governance, even if the overall system of governance is not ideal.

To summarize, it can be said that Local Government is in a favorable position to contribute to NRM. Capitalizing on its proximity to the local population and its living

conditions, Local

Government can use its power and rights to accelerate improvements in the management of water and energy resources. This could be on a small scale and refer only to a few selected responsibilities; or on a larger scale, mainstreaming NRM across all mandates through the implementation of a comprehensive local action plans.

7.8 For Further Reading

- Understanding-the-context.-role-of-local-government-in-iwrm-iucnicle-et-al-2008.pdf (gwp.org)
- An Enabling Framework for Citizen Participation in Public Policy: An Outline of Some of the Major Issues Involved - ICNLVOLUME 12, ISSUE 4, NOVEMBER 2010
- CSOs and Citizens´ Participation: Technical Assistance for Civil Society Organisations – TACSO, July 2011

MODULE 8

8. PUBLIC POLICY DEVELOPMENT: THE CASE OF ENERGY AND WATER

Learning Outcomes

- Understand the role of policy in sustainable development
- Formulate a policy and be able to identify, and give reference, to the relevant higher-level legal instruments
- Apply the appropriate tools for policy formulation
- Identify stakeholders and develop strategies for their engagement

Note to Facilitator: *The politicians and civil society actors usually have some idea or actually a comprehensive enough idea on what a policy is and what public policy is. So, in this module, try to ask them question as much as possible. You may find that you don't really have to "teach" on definitions but you probably just have to make a highlight based on the areas that they seemed to know well and what they seemed to lack.*

NB:

1) ***Unlike in the other modules above where we were mainly dealing with the "WHAT", in this module we are dealing mainly with the "HOW" part. How can a political party develop citizen responsive policies? How can a political party influence already existing policy? What structures can a political party put in place in order to be able to develop citizen responsive policies on clean water and clean energy?***
2) ***The Political Actors and Civil Society Actors, because their functions and level of authority are different, they would apply different approaches to influence policy. As a result, there are guides in the module that indicate how to address each party.***

8.1 Introduction to Public Policy

8.1.1 What is Public Policy?

Public Policy is a system of laws, regulatory measures, courses of action, and funding priorities concerning a given topic or an issue by a governmental entity or its representatives; it is what a government decides to do or what NOT to do. Decisions on

action and/or inaction are often articulated through executive statements or decrees, policy papers, written plans, administrative orders, etc

Dye (1972) defines public policy as "whatever governments choose to do or not to do". Dimock (1954), says public policy is "deciding at any time or place what objectives and substantive measures should be chosen in order to deal with a particular problem". According to Chandler and Plano (1988), public policy is "the strategic use of resources to alleviate national problems or governmental concerns". Freeman and Sherwoods (1970) states that it is the public answer to the interest in refining the human circumstances.

8.1.2 Nature of Public Policy

Note to Facilitator: *Ask the following questions to the participants*

- *What does a word 'public' mean?*
- *What does a word 'policy' mean?*
- *What do you think makes a Policy to be a 'Public Policy'?*
- *Do you agree that achievement of a better life is mostly dependent on our own efforts or does the government have a role to play for the citizens to get a better life?*

Key points:

Public Policies are goal oriented

Public policy is what the government actually decides or chooses to do

Public policy is the outcome of the government's collective actions.

Public policy is made as the means to solve a particular problem or concern in a society through a course of action.

It also involves a decision by the government not to take any action on a particular issue.

A policy entails making a choice among alternatives

It put the spotlight to the public and its problems

It is a mechanism for developing socio-economic system that enables society to lead a better life

It assists in maintaining the delivery of the goods and services.

Policies are very critical in public administration and sustainable development. A policy outlines the programme of the government or organisation. Public policies are formulated and implemented with the view to reach government objectives for the benefit of the public. They detail a pattern or course of action that the governmental officials and actors take in a collective sense instead of discrete and separate decisions. Public policy is the broad direction or perspective that the government takes in order to make decisions. Public policy operates within a political environment and administrative system thus being translated into a certain form such as law, ordinances, court decisions, executive orders, decisions, etc.

There is a distinction between decisions and policies. Decisions can be a one- time action while policy consists of several decisions that are taken to fulfil its aims. A policy comprises of a series of decisions bound together into a coherent whole. A policy entails making a choice among alternatives. Once policies have been developed, organisations or individuals within an organisation make decisions within a policy framework.

The government has the responsibility to provide solutions to critical societal challenges that affect socio-economic development. This calls for a good policy-making which will provide a much-needed balance among a wide range of competing interests or priorities, without losing sight of the desired policy outcome.

Public policy is the important aspect in the democratic government as it puts the spotlight to the public and its problems. It is regarded as the mechanism for developing socio-economic systems that push for society to lead a better life and assists in maintaining the delivery of the goods and services. It identifies social ills within the system and becomes a procedure for determining the future.

8.2 Public Policy Formulation

Public policy formulation is the manner in which public policy is formed, implemented and evaluated. Policy making process is a dynamic and complex process operating in a wide-ranging environment, with components interconnected by communication and feedback loops that interact in different ways. Some parts of the process are clear and obvious, but many others are obscure and cannot be observable as more often, only officials know about them.

As the process is continuous, it requires a continuing input of resources and motivation. Within policy making process, there are different structures meant to contribute to the process in their unique manner.

Decision-making is also part of the process and for many structures, the image of "public interest" influences the public policy making process. Good governance defines the decision-making process upfront and it defines clear roles and responsibilities. While these are defined, people can focus on understanding the issues and identifying good solutions. Some necessary conditions of governance which are also important for policy development and implementation are inclusiveness, transparency, accountability, participation, predictability and responsiveness.

Key points:

In developing a policy, there has to be a balance between wide range of competing interests and the desired outcome.

Note to Facilitator: *From your understanding of public policy so far, can you identify the characteristics of a good public policy?*

8.3 Features of a Good Policy Making

Table 3 below presents a list of features that make a good policy making process.

Table *3*: Features of a good policy making process

Item	Description
1. Forward Looking	It takes a long-term view based on statistical trends and informed predictions of social, political, economic and cultural trends, for at least five years into the future of the likely effect and impact of the policy.
2. Outward Looking	The policy making process takes account of influencing factors in the regional, national, and international situation; and draws on experience in other regions and countries.
3. Innovative, flexible and creative	The policy making process is flexible and innovative, questioning established ways of dealing with things, encouraging new and creative ideas; and, where appropriate, making established ways work better
4. Evidence Based	The advice and decisions of policy-makers are based upon the best available evidence from a wide range of sources; all key stakeholders are involved at an early stage and through the policy's development.
5. Inclusive	The policy making process takes account of the impact on and/or meets the needs of all people directly or indirectly affected by the policy; and involves key stakeholders directly
6. Joined up	The process takes a holistic view; looking beyond institutional boundaries to the administration's strategic objectives and seeks to establish the ethical, moral and legal base for policy.
7. Learns lessons	Learns from experience of what works and what does not. information on lessons learned and good practice disseminated.
8. Communication	The policy making process considers how policy will be communicated with the public through development of communication strategy.

9. Evaluation	Systematic evaluation of the effectiveness of policy is built into the policy making process
10. Review	Existing/established policy is constantly reviewed to ensure it is really dealing with problems it was designed to solve, taking account of associated effects elsewhere

Source: Adapted from: Office of the First Minister and Deputy First Minister, Northern Ireland, A Practical Guide to Policy-Making in Northern Ireland (n.d.) (Office of the First Minister, undated)

Note to Facilitator: *Let participants list societal problems they can think of that are related to energy and water.*

Let participants role play policy making process using one of the problems identified.

Key points:

A problem is identified

The problem is studied

Options are prepared for a solution

The options are studied

An option is chosen

The option is implemented

The problem is solved.

8.4 Policy Cycle

The policy cycle is a standard process that explains how policy should be drafted, implemented and assessed. It serves more as a guide for policy formulation rather than being a well-defined process. Figure 8-1 below shows a typical policy cycle.

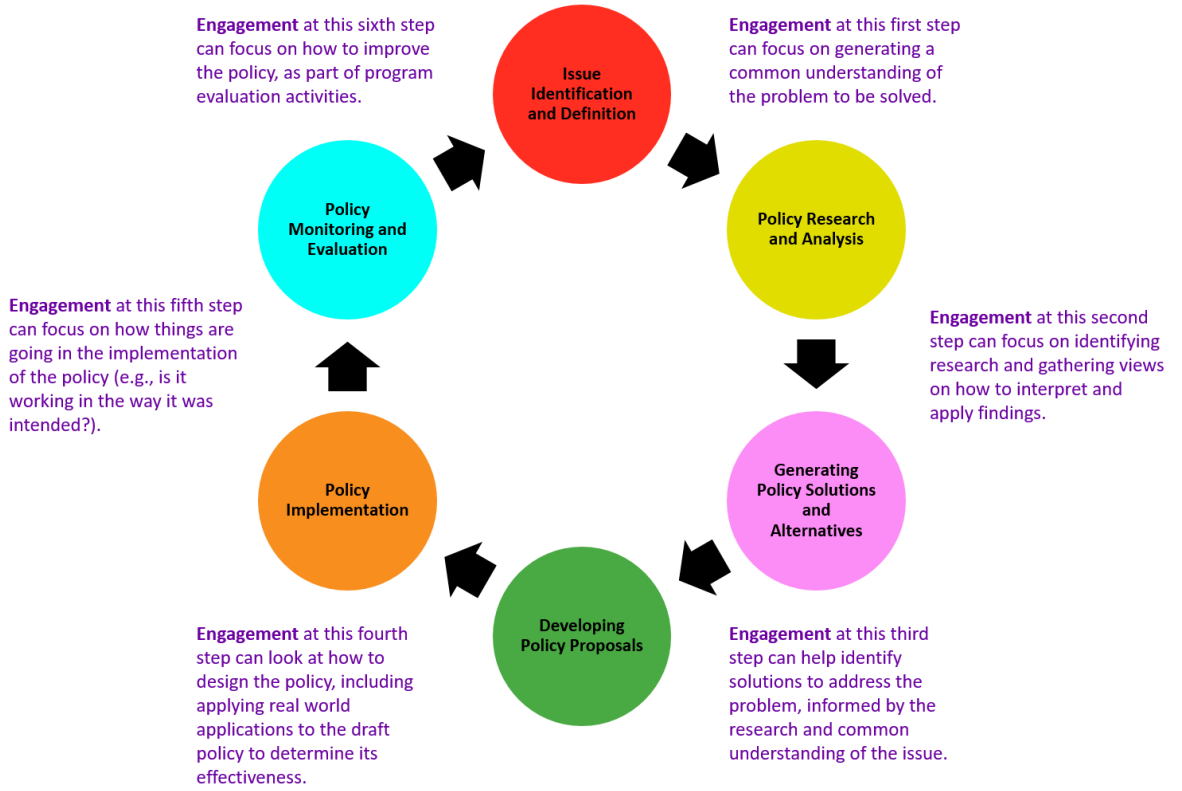

Figure *8-1*: The Policy Cycle

A policy cycle generally includes the following stages:

a. Identification of policy problems, through demands for government action

Identification of a societal problem and its placement on the policy agenda is a starting point in policy formulation process. There are many societal problems, but only a small number will be given official attention by legislators and executives, hence will constitute policy agenda. Decisions need to be made on what, whether and how to proceed. This will involve discussions about the issue, the information needed, the key actors to be consulted and the policy options that may be available.

b. Agenda setting or focusing the attention of public officials on specific public problems

Agenda setting is the issue-sorting stage, during which some concerns rise to the attention of policy makers while others receive minimal attention or are neglected completely. The importance of this phase lies in the fact that there are thousands of issues that might occupy the attention of policy makers, but in practice only a handful actually do gain their consideration.

c. Formulation of policy proposals, their initiation and development by the policy planning organisations, executive, legislative and interest groups

This step defines the structure of the policy. What goals need to be achieved? Will there be additional implications? What will the costs be? How will key stakeholders react to these effects? It involves reviews of the available evidence, and discussions with key stakeholders and opinion formers. It will also include some initial analysis of the issue in question, of the options for action, and of the merits of alternative courses of action.

d. Adoption and legitimation of policies through the political actions of the government, interest groups, and political parties

When making decision on the policy measures to be adopted, policymakers will assess the likely effectiveness of the options available (including the 'do nothing' option), the financial costs and benefits of taking action, and the political implications of taking action. Once the appropriate approval is granted, then a policy can be adopted.

e. Implementation of policies through bureaucracies, public expenditure and activities of executive agencies

Implementation refers to translation of new laws and programmes into practice. Establishing that the correct partners have the resources and knowledge to implement the policy. For successful implementation, there should be an institution (Public officers) mandated to turn the objectives into operational framework and should be held accountable for actions. This could involve creating an external organisation to carry out actions. Policy means nothing if there is no proper implementation so monitoring is necessary to ensure correct policy implementation.

f. Evaluation and analysis of policy implementation and impact

This step assesses the effectiveness and success of the policy. Did any unpredicted effects occur? These assessments can be quantitative and/or qualitative. It involves reviewing the effectiveness, the dependability, the cost, the intended and unintended consequences, and other relevant features of the policy measure in question. This step studies how the policy might be improved, or provides additional support for its continuation. Additionally, the policy can be terminated if deemed redundant, accomplished, or ineffective.

8.5 The Political Party Policy position development process: A step-by-step overview

Note to Facilitator: *Political Parties, either as part of government, or as opposition in preparation for elections, or to challenge the status quo in government, are the ones that initiate policies. Unlike the Civil Society Actors that mainly influence the policy development processes by the government. So, this section on political party position development process is specifically targets the Political Parties.*

When Policies or political party positions on water and energy resources have been established, it becomes easier to make united decisions because reference is made to existing policies whenever a case arises. Figure 8-2 and Figure 8-3 present the process of developing a policy position. Figure 8-2 and Figure 8-3 were adapted from Natural Resource Governance Institute (2018).

8.5.1 Process initiation

- **Determine the objective and scope of the process:** The first step in developing a natural resource policy position is to identify the overall objective of the process. Why does a PP want to develop a policy statement?
- **Identify the most relevant issue areas**: Here you discuss what exactly the policy position will cover. The PP should carefully consider which issue areas along the water and energy resources are most important to the country/community at the moment as well as those that could be important for long-term development.
- **Secure the mandate and resources**: At this stage, those that are leading the process need to secure the necessary mandate, time and funding. This is the time to get approval from the senior party members to carry on with the identified objectives, scope and issue areas.

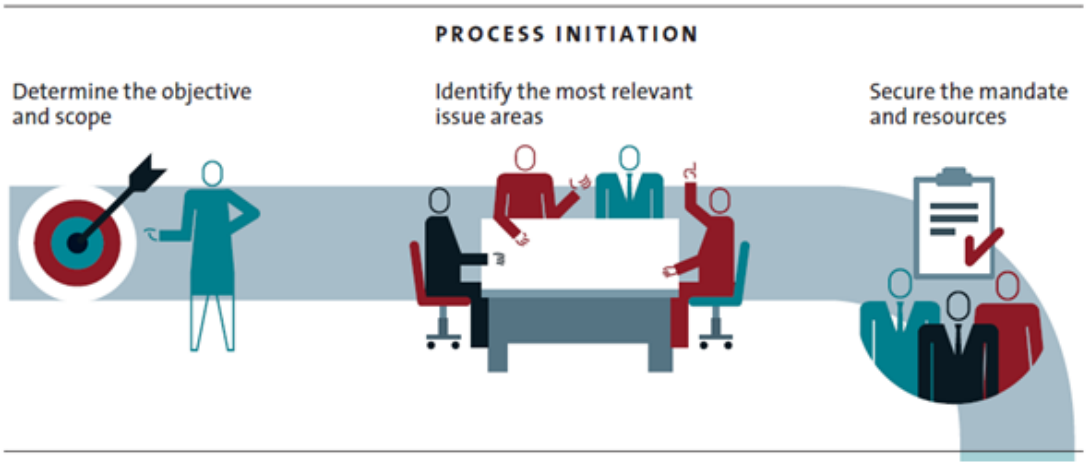

Figure *8-2*: The initiation phase of the policy position development process.

8.5.2 Process design

- **Agree the governance of the process**: The Political Party has to establish a working group that will lead the development of the policy position on behalf of the Political Party. If a political party already has an established committee, such as a natural resources committee, it could be the most appropriate to lead this exercise. The party should assign a coordinator of this exercise, particularly if the committee has just been established. The team should consist of members with knowledge of water or energy resources.
- **Identify sector experts to involve**: Here, the party has to identify the experts whose knowledge will be needed in the process. In most cases, the relevant CSO already has experts in the field, particularly if the CSO was established to specifically deal with energy and water resources. However, political parties may usually not have such experts. So, this step is most important for the political parties. These experts will help the organisation to adequately assess the feasibility, risk, returns and trade-offs of different

policy options. They can also assist in the review of domestic and international practice to determine what is most appropriate and realistic for the country, and most in line with the broader party stances and ideology. Experts can also train party officials so that they are confident enough in their basic knowledge of the issues and know where to look to respond to the government as time passes.

- Identify stakeholders and consult: It is required that the party engages in transparent and robust consultations during the drafting process, ensuring that the new position both secures buy-in from within the party and reflects broadly based stakeholder inputs. So, the party has to carefully select the stakeholders to consult. Two stakeholder groups are particularly important, and often overlooked, in informing strong resource governance policy for long-term sustainable development: women and youth. Women are disproportionately affected by the social, environmental and economic impacts water and energy development policies, while the youth are the future of the community so their views have to be invited.
- Develop and implementation plan for the process: An implementation plan that maps out key stages and milestones can help the Coordinator keep the process on track. The implementation plan must show the activities that will be undertaken in the policy position process, the time the process will take, the resources needed, who will be responsible for each activity. This person will perform the duties of monitoring and evaluation of the process.

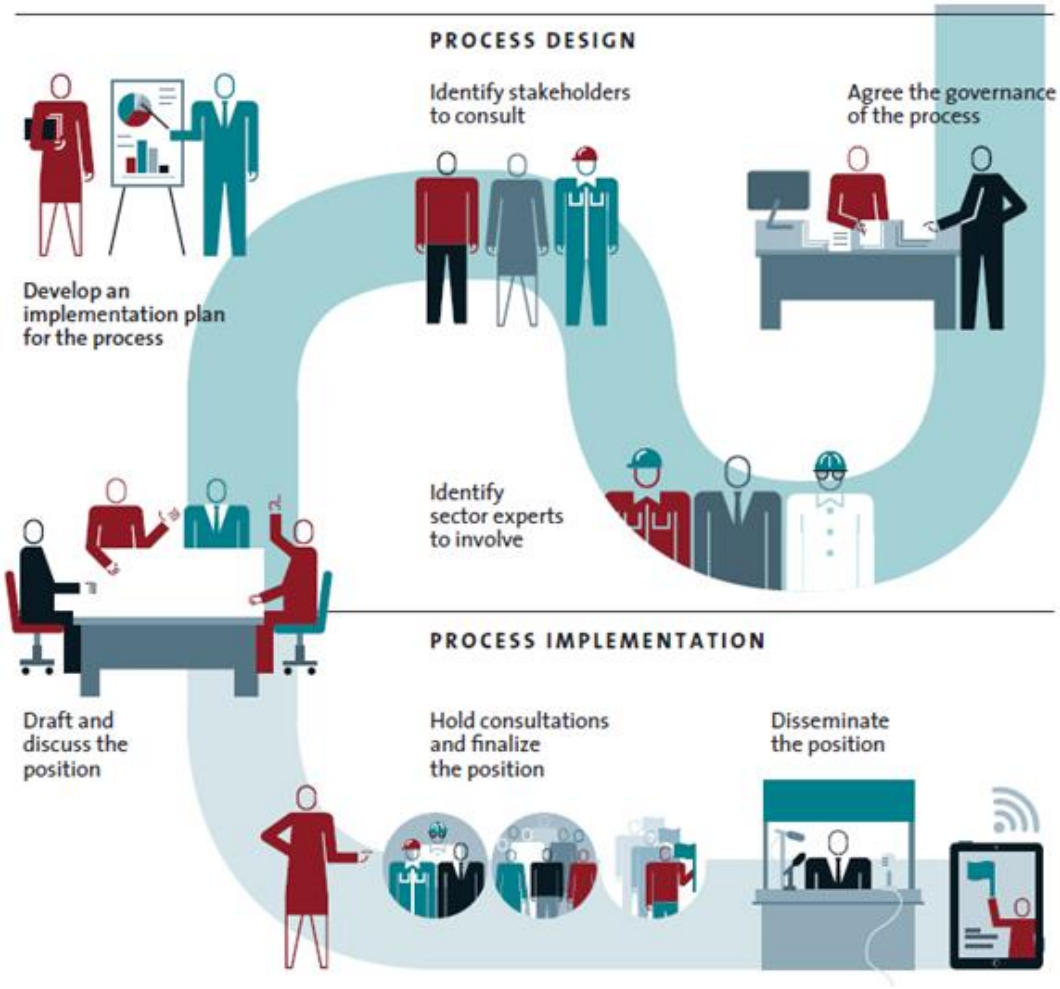

Figure *8-3*: Design and implementation phases of the policy position development process.

8.5.3 Process implementation

- Discuss and draft the position: In order to develop a clear and comprehensive policy position, the working group will need to meet several times for expert presentations, discussions on natural resource policy options and drafting. There must be enough time and space to concentrate on the complex issues without disturbances. One option is to hold policy retreats outside of the normal working area where there are no such disturbances.
- Hold consultations and finalise the position: In order to inform the drafting process and increase buy-in for implementation, the working group should collect feedback on the draft policy from the wider party's membership, and external stakeholders and experts. Public consultations can also be a great way to get input, test assumptions and begin to secure buy-in.
- Secure overall party approval: Once the policy position has been finalized, the working group will need to submit the draft for approval. The final resource policy position must be properly understood and accepted by the party leadership.

- Disseminate the position: Once the position has been developed, the organisation has to ensure that its constituencies and the general public have a solid understanding of the policy position. This will help the party articulate its priorities, commitments and expertise prior to an election. If the position has been developed for mainstreaming into an electoral manifesto, then the publication will follow the party's own manifesto launch process. If the party wants to give resource governance issues special prominence, which may make sense given the social and economic importance of the topic, it can consider publishing the position as a standalone document. In some cases, the best approach is to use the radio, television media, newspapers and social media platforms. Above all, it is important for the political party to make known its policy position to the public so as to lobby buy-in of the public.

8.6 Challenges facing civil society organisations from influencing policy and strategies to address them

Note to Facilitator: *CSO's are often faced with challenges that hinder them from effectively undertaking their mandates of advocacy, sometimes against government decisions. This section presents some of the challenges and expresses some strategies on how the challenges can be mitigated.*

You can start by actually asking the CSOs to list some of the challenges that they have. You may find that their main challenges are not listed below, in which case you can create a dialogue on how they think such challenges can be addressed. Once they are done, you may now go through hat is in the module.

It has already been emphasised that the CSO's have a role to put the government or political actors to task. To ensure that the policies or decisions do not negatively affect the human rights of the citizens. In an assessment of the effectiveness of civil society organisations and challenges facing them, Court, et al. (2006) had the following proposal to improve their effectiveness.

CSOs' engagement in government policy is restricted by numerous barriers that are both internally and externally imposed:

- Hostile governments can marginalise the research and service delivery of CSOs, and exclude them from policymaking. CSOs' inadequate understanding of policymaking processes often constrains their influence on political decisions.
- While they frequently collect wide-ranging data, CSOs often produce 'soft', anecdotal evidence which is less persuasive to politicians. CSOs' communication strategies also fail to present data accessibly.

- CSOs do not usually share information among themselves. There are too few 'bridging' strategies which unite the work of CSOs across communities.
- Technical and financial capacity constraints limit CSOs' ability to participate in policy. Smaller CSOs' voices are often side-lined by larger organisations.

CSOs must undertake better targeted strategies to increase their access to policy decisions. Court et al. (2006) provides tools and examples for how to do this:

- To overcome unfavourable political contexts, CSOs can undertake domestic policy campaigns, lobby foreign states to influence their own governments and implement pilot projects to test new policy approaches.
- CSOs should scrutinise national policy processes to improve their understanding of the domestic political environment, implementation mechanisms and policymakers' priorities.
- CSOs should intervene strategically in every stage of the policy process by presenting credible, practical, relevant evidence which is most likely to have a policy impact.
- CSOs should tailor their communication strategy to the needs of policymakers and other target groups and use high-level communication tools to heighten the accessibility and usefulness of their lobbying activities.
- Greater networking among CSOs and other stakeholders can amplify policy-related evidence and mobilise resources to enable CSOs to branch out from service activities and increase their lobbying potential.
- CSOs' financial and technical capacity constraints can be overcome by forming partnerships with other organisations that are richer in leadership, training and research resources.

8.7 The role of Political actors and Civil Society Actors

Note to Facilitator: *the preceding modules focused on building capacity on the situation related to water and energy as natural resources, the governance structures, the management approaches, etc. It is important for one to have a good understanding of a resource and its management practices in order to be in a position to develop policy around it.*

This section is simply about, "what can political actors and civil society actors do to influence policies". As you approach this topic, bear in mind that the political actors and civil society actors probably already know how they can influence policy. To gauge their knowledge and determine the depth to which you can explain, you can ask them these questions: ***[If time allows, you can even form focus group discussions for participants to separate and then comeback to present for the whole group]****.*

If you are training Political Actors ask these questions*:*

- *How can politicians whose political party is in government influence policy implementation?*
- *How can politicians whose political party is in opposition influence policy implementation?*
- *How can politicians whose political party is outside of parliament influence policy?*

- *Ask the political actors to name the committees that are there in their political party that are formed to serve the society, e.g., youth committees, women committees…*
- *Ask them if they have a committee that deals with natural resources or policies related to natural resources.*

If you are training Civil Society Actors ask these questions:

- *What is the role of civil society in influencing policy implementation?*

8.7.1 What can the Political Actors do to influence Public Policy implementation?

- Political parties have to design clear policy positions relating to water and energy resources. This will enable them to play a more active role in ensuring that their countries resources are managed well and in the best interests of the wider population. The policy position process is an important opportunity to build the party's internal expertise and to set out clear stances on a range of technical issues.
- The political parties can develop committees that are responsible for natural resources public policy influence. It is very important for the political actors to strive towards evidence-informed policymaking. This committee can be established by members in the political party who are experts in the fields related to natural resources management. Alternatively, in order to achieve that,

the committee may also be tasked with the responsibility to approach the technocrats for advice on natural resource management. This committee may be responsible for pushing these policies from their party perspectives.

- To identify the problems that are relevant to water and energy from the communities. These include; lack of access, bad water quality and degradation, issue of allocation, tariffs on water and electricity, reliance on fossil fuels, transboundary issues-*how to engage other states in infrastructure development of water resource*.
- Once the problems have been identified, the PAs can work in collaboration with technical people to analyse the issues to understand what the causes are and how the problems can be solved. They develop a policy position on such issues
- To place the issues on the public space so that they can lobby for them. These issues will be factual because they were identified with an oversight of the technocrats in the field.
- Once these factual issues have been identified and policy position developed in a consultative manner, (these based on data and expertise support), it can be used to build their manifestos and their lobbying campaigns. Through this approach, their campaigns will be based on facts. This goes for those that are in parliament and in government, and those that are in parliament as opposition, as well as those that are outside of parliament.
- Through the same approach, the political actors that are outside of parliament can take the government to task based on facts that are evidence based.
- They can push for the establishment of institutions that manage water and energy, their financing and the implementation of their policies.
- Once the policy gets implemented, there is a need to track the policy implementation to ensure that the policy is being implemented according to what is intended. This role can be played by those in government and those outside of government.
- They undertake monitoring and evaluation (M&E): If there are challenges with implementation, there is a need to go back a refine improve or change the approach.
- States have international obligations that include treaties, conventions, development goals (e.g. SDGs), etc. So, it is the responsibility of the political actors, in particular those that are in opposition to put the government to task and evaluate budget allocations and government plans to ensure that they are in line with the international obligations that the state is a signatory to.
- It is necessary for the states to develop policies that improve water resources management, alternative water sources, conjunctive uses of water, water harvesting, re-use-reduce-and-recycle, etc., in order to relieve the water supply institutions thereby improving access to water for all.
- In as far as access to energy is concerned, develop policies that provide incentives for people who utilise clean energy sources such as solar energy,

including subsidies on purchase of such products. As we saw in Module 4 section 4.1 where solar energy is installed in Malawi rural areas (Figure 4-1) and in the township of South Africa (Figure 4-2).

8.7.2 What can the Civil Society Actors do to influence Public Policy implementation?

- Generally, the CSOs are responsible for advocacy and for monitoring. Section 7.5.2 highlighted the principles of good governance as social inclusion, transparency and accountability. These are the pillars based on which the CSOs monitor the efforts of the government. The CSOs in as far as natural resources issues are concerned is to push for equity, transparency, effectiveness accountability in the actions of the government.
- Most of the time, when elections are approaching, most political parties are reluctant to deal with sensitive or controversial issues that cause them to make unpopular decisions. This is where the civil society can come in and advocate for such issues to be addressed.
- Since the CSOs are usually involved at the local level where they interact with the communities, they often get to know the issues that the communities struggle with on a daily basis. Therefore, the CSOs have a responsibility to take those issues into the public space where policy implementation, influence or development can occur.
- Their role is also to ensure that the human rights are respected.
- They monitor implementation and effectiveness of the policies that have been set. The good thing about them is that they can be equally effective at any period of election cycle and can operate without fear or favour.
- CSOs are able to empower communities to identify the issues that concern them. This the CSOs are able to do because they are able to bring different stakeholders together.
- They are more like a bridge between the government and the communities.
- Through their experience, CSOs can be innovative and bring new thinking and new issues such as climate change, disaster risk reduction and gender into the policy area and appropriate implementation at the local level.
- Communication is very key; so, the CSOs are able to ensure that information is able to reach the low communities and they are able to break down the information in a way that they are able to understand.

8.8 Exercise on Policy formulation

Note to Facilitator: *Now that you have reached the end of the module and you have covered all the supporting knowledge including the basic sciences on water and energy as natural resources, the management practices, the existing global, continental, regional and national policies, and you have finally covered the policy formulation concepts, it is important for the participants to be able to apply the policy formulation process.*

1) *Ask the participants to divide themselves into groups. If possible, form groups out of the already existing ones, e.g., same political party, those from the same community, etc. forming groups out of already existing ones helps the participants to initiate conversations and plan ahead into what they are going to proceed with beyond the training. They will genuinely develop policies that they will take forward beyond the training.*
2) *After forming groups, tell them to follow the Policy cycle on section 8.4 to develop a water or energy related policy.*
3) *Ask them to come back and present policy processes to the entire group.*

8.9 Further Reading:

- Béland D., Carstensen M. B. & Seabrooke L. 2016. Ideas, political power and public policy. Journal of European Public Policy, 23:3, 315-317, DOI: 10.1080/13501763.2015.1122163 To link to this article: https://doi.org/10.1080/13501763.2015.1122163
- Northern Ireland Executive. 2016. A practical guide to Policy Making in Northern Ireland. [online] Available at: https://www.executiveoffice-ni.gov.uk/sites/default/files/publications/ofmdfm_dev/practical-guide-policy-making-amend-nov-16.PDF
- UNIT 1 Public policy: meaning and nature. Available at https://egyankosh.ac.in/bitstream/123456789/19329/1/Unit-1.pdf
- Hai, P. D. *Process of public policy formulation in developing countries*. Faculty of Public Policy, graduate academy of social science. Available : https://www.politicipublice.ro/uploads/public_policy_formulation.pdf (Accessed: 28th November 2021)

SYNOPSIS

This training is intended to capacitate the political actors and civil society organisations with relevant knowledge, information, tools and instruments that can assist them in understanding, developing, implementing and overseeing policies, governance and management frameworks on water and energy resources in their respective countries and communities, as well as in the region. Additionally, this training intends to furnish the political actors and civil society organisations with the regional dynamics around energy and water and help them to recognise regional issues that could have implications on policy development.

A political party is defined as an organised group of people with similar political aims and opinions, that seeks to influence public policy by getting its candidates elected to public offices (ACE Electoral Knowledge Network, 2022). Examples of such public offices are parliament, municipality council, local council, etc. Political parties are identified as essential institutions of democracy (National Democratic Institute (NDI), 2022) and are regarded as necessary for the functioning of any modern democratic political system (ACE Electoral Knowledge Network, 2022). It is through these democratic systems that the citizens place their aspirations for a better life in to the hands of the political parties with a hope that their developmental or socioeconomic challenges will be addressed.

The World Economic Forum (2021) considers civil society as a wide array of organisations: community groups, non-governmental organisations (NGOs), labour unions, indigenous groups, charitable organisations, faith-based organisations, professional associations, and foundations. They often work hand in hand with the ordinary members of the community and in some cases, these ordinary members are actually members of the civil society organisations. As a result, the civil society organisations tend to carry the views of the ordinary citizens and understand their needs better. The political actors are influential in policy decision making and the civil society organisations are often representatives of local communities. Additionally, the DWF recognises that central to building sustainable national energy and water governance management mechanisms, is the active engagement of and the interface between political actors and local communities in policy making.

The DWF recognises that political actors and civil society organisations are key in advocating for building sustainable national energy and water governance management mechanisms, not only for unlocking benefits for citizens at the national level, but at the local community and regional levels as well. Some of the key roles of political parties and civil society organisations are as thus:

Political parties

- Political parties that are in parliament are responsible for passing or authorising the financial budgets to be released for government operations over a specific period such as a financial year.

- Those who are in government are charged with the responsibility to ensure that natural resources are managed transparently, accountably and in the long-term best interests of their country (Natural Resource Governance Institute, 2018). They also deal with the management of resources that have been allocated by parliament. They often implement the developmental policies and views of their political parties.
- Those that are in opposition put the government to task by showing accountability in the use of finances and in improving access to clean water and renewable energy
- Their role therefore, is to ensure that the budget allocation agrees with the goals and commitments made at the global, regional and national levels and to stand against human rights violations.
- Those that are outside of parliament can play a role that is similar to that of civil society organisation by lobbying for support in challenging some of the decisions made by parliament regarding access to water and energy.

Civil society organisations

- They are an important source of information for both citizens and government.
- They monitor government policies and actions and hold government and parliament accountable by lobbying for support to stand against human rights violations.
- They engage in advocacy and offer alternative policies for government, the private sector, and other institutions.
- They deliver services, especially to the poor and underserved.
- They defend citizen rights and work to change and uphold social norms and behaviours.

In order for the political actors and civil society organisations to effectively undertake their roles in advocating for policy formulation on water and energy, it is important for them to be aware of the issues related to water and energy access and management, so that they can understand how such issues can have implications on policy development. The United Nations University (2014) states that water and energy are among the world's most pre-eminent challenges that have to be brought to the attention of the world. The UN has predicted that by 2030, the global population will need at least 40% more water and 50% more energy. These two resources are somehow intertwined, such that *"it is often the same people who lack access to water and sanitation who also lack energy"*. This was said during the 2014 world water day by the Secretary General of the World Meteorological Organisation (WMO) and chair of UN-Water, Mr Michel Jarraud. He further expressed the need for these energy and water challenges to be carried into the post-2015 development discussions. This indicates the entrenched nature of these global energy and water challenges that have to be met through development and implementation of effective policies.

While analysing access to energy in the Southern African Development Community (SADC) region, the Regional Infrastructure Development Master Plan Assessment Report of 2019, highlighted that approximately 50% of the SADC residents have access to electricity. In the rural areas, only 32% has access to electricity. The total installed electric power in Southern African Power Pool (SAPP) operating members is 62 343 MW, which is predominantly generated from coal and hydropower. Coal supplies 62% of power generation in Southern Africa, but is considered a contributing factor to global warming, therefore, though it helps to address socio-economic issues, it contributes other environmental threats. On the other hand, hydro supplies about 21% of energy in Southern Africa. As a result of lack of infrastructure, only 61% of the region's population have access to safe drinking water.

In reporting progress toward achieving SDG 6, the UN Water (2021) states that the global proportion of population that uses safely managed drinking water service is 74%. Compared to 62% in 2000, this shows that progress has been made. In fact, generally, all regions of the world have seen growth in drinking water services. The report shows that Europe and Northern America have the highest proportion at 96% followed by Northern Africa and Western Asia at 79%, then the Latin America and the Caribbean at 75%, which is followed by Central and Southern Asia at 62%. Finally, the least coverage is in Sub-Saharan African region at 30%. This shows that, although the Sub-Saharan Region has shown improvement as compared to 17% in 2000, it still lags far behind in access to clean drinking water services.

According to the Energy Progress Report (Tracking SDG 7) that was released by the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), the UN Department of Economic and Social Affairs (UN DESA), the World Bank, and the World Health Organisation (WHO) in 2021, states that during the last decade, a greater share of the global population gained access to electricity than ever before, but the number of people without electricity in Sub-Saharan Africa actually increased. The report also stresses the importance of significantly scaling up efforts in countries with the largest deficits in order to ensure universal access to affordable, reliable, sustainable, and modern energy by 2030. The recent Covid-19 pandemic has contributed to challenges related to access to achieving the SDGs by 2030. This is despite the fact that the number of people without access to electricity has declined from 1.2 billion in 2010 to 759 million in 2019. The decentralised renewable-based solutions gained momentum, the number of people connected to mini grids more than doubled between 2010 and 2019. Currently, an estimated 660 million people, most of which are in Sub-Saharan Africa would still lack access in 2030.

The global and regional goals sort of indicate the expected direction that policy development on water and energy must take at all levels. Now, the follow are the regional issues that could have implications on policy development, thereby affecting the ability to meet the above goals.

Water:

- As a result of lack of infrastructure, only 61% of the SADC region's population have access to safe drinking water (SADC, 2012).
- While the SADC region lags behind in access to water, it actually has an abundance of renewable water. Lack of infrastructure is an impediment for access to water in the SADC region. The 2012 SADC Regional Infrastructure Master Plan outlines the regional plans for infrastructure development over 25-year period. From 2013 to 2021, the region aimed at increasing access to safe clean drinking water from 61% of the population to 75%.
- The sub-Saharan Africa has shown improvement in access to water from 17% in 2000 to 30% in 2021.

Energy:

- During the last decade, a greater share of the global population gained access to electricity than ever before, but the number of people without electricity in Sub-Saharan Africa actually increased (UN DESA and WHO, 2021)
- SADC falls behind all African regions on energy access and the planned projects intended to improve access lag behind due to lack of funding (SADC, 2021).
- The SADC region relies heavily on electricity production from Coal, which, however, contributes to global warming. As must as coal supplies help the region by improving access to electricity, it contributes to climate change, which is characterised by droughts and floods that impact on access to water and energy, among others, by destruction of energy and water supply and management infrastructure.
- According to the Press Release of the Congress of the People 26 held on 4th November 2021 (UNCC), significant commitments have been made to end the use of coal. Some commitments include:
    - Twenty-three countries, including five of the world's top 20 coal power-using countries, have committed to phase out coal power
    - Major international banks committed to end international public financing of new unabated coal power by end of 2021.
    - 25 countries and public finance institutions committed to ending international public support for the unabated fossil fuel energy sector by the end of 2022.
    - At the COP26, countries committed to move towards the generation and use of clean power. Therefore, in their energy policy development plans, countries need to bear in mind

It is evident from the above that there still remains a need in Sub-Saharan Africa, in particular, to employ efforts to improve access to clean water and energy, and improve their management and protection as well. It is imperative for all arms of government

and institutions, inclusive of state and non-state, political actors, both in government and in opposition, those with representation in parliament and those outside of parliament to contribute towards achieving these goals.

In conclusion, it is the hope of the DWF that the knowledge and skills that are contained in this module will help the political parties and civil society organisations to navigate the complex challenges of water and energy resource governance, and to take a more active role in formulating developmental policies that contribute to long-term, sustainable development that benefits all citizen of the community, country and the region at large.

Appendix

3-day Course outline

Ideally, this training is supposed to be undertaken in 5 days but the 3-day course outline has been provided as an option in cases where circumstances may only allow for a shorter period.

<table>
<tr><td colspan="4">Democracy Works Foundation</td></tr>
<tr><td colspan="2">Trainees</td><td colspan="2">Political Parties and Civil Society Actors</td></tr>
<tr><td colspan="2">Duration of course</td><td colspan="2">3 days</td></tr>
<tr><td colspan="4">DESCRIPTION CURRICULUM</td></tr>
<tr><td colspan="4">This curriculum is designed to provide the political actors and civil societies organizations (CSOs) with knowledge and capacity on renewable energy and access to sustainable clean water to enable them to better deal with emerging water and energy governance issues and to assist them to embed these issues in their campaigns, policies, manifestos and advocacy initiatives.</td></tr>
<tr><td colspan="4">COURSE OBJECTIVES</td></tr>
<tr><td colspan="4">The objectives of this course are:
A. Provide political actors and civil society actors with a broad understanding of sustainable clean energy and water resources management;
B. Provide political actors and civil society actors with a broad understanding of their roles in influencing policies on energy and water
C. Equip political actors with knowledge on how they can develop and implement citizen-responsive policies, using energy and water policies as case studies
D. Equip civil society actors with tools on policy advocacy and influence in the energy and water sectors (targeting Eswatini CSOs)
E. Provide a Southern Africa regional perspective on the challenges in the management of energy and water resources and tools which can assist political actors and civil society to respond to these challenges in their specific countries</td></tr>
<tr><td colspan="4">CURRICULUM CONTENT</td></tr>
<tr><td colspan="2">MODULES</td><td>LEARNING OUTCOMES</td><td>Aligned Objective</td></tr>
<tr><td colspan="2">Administration issues: Introduction, etc. (08:30 to 09:00)</td><td colspan="2"></td></tr>
<tr><td rowspan="2">DAY 1</td><td colspan="3">MODULE 1: WATER AS A NATURAL RESOURCE AND ACCESS TO CLEAN WATER</td></tr>
<tr><td>Session 1 (09:00 to 11:00)</td><td>i. Understand the basic science behind water as a natural resource</td><td>A</td></tr>
</table>

	• Water as a transboundary resource • Human rights to water and sanitation • National goals and coverage	ii. Develop an awareness of the resources in your community and the basic understanding of their interdependence/connectedness	A,
		iii. Understand the existing global and regional goals towards access to water and energy resources	E
		iv. Develop an awareness of challenges in their management at the national and Southern African Region	E
	Tea Break (11:00 to 11:30)		
	Session 2 (11:30am to 13:00) <u>Institutional arrangement in water sector/levels of governance</u> • Administrative levels • Hydrological levels	v. Understand the institutional framework that is responsible in water management	A, E
	Lunch (13:00 to 14:00)		
	MODULE 2: ENERGY AS A NATURAL RESOURCE AND ACCESS TO CLEAN RENEWABLE ENERGY SOURCES		
	Session 3 (14:00am to 15:30) <u>Definition of basic energy concepts</u> • Sources of energy	vi. Have an awareness of different sources of energy, potential benefits on renewable clean energy and challenges that come along with energy emissions	A, E

	• National Goals and coverage	vii. Understand the dynamics of energy in the Southern Africa Region together with its commitments and progress in access to clean renewable energy as per the International agreements	E
	Tea and end of day activities		
DAY 2	MODULE 3: WATER POLICY AND LAW		
	Session 1 (09:00 to 11:00) • Policies and laws on water: Managing shared watercourses – a global perspective • Policies and laws on water: Managing shared watercourses – a regional perspective	viii. Understand the functions and powers of international legal and institutional systems	Error! Reference source not found., E
		ix. Understand existing international and national systems and be able to conceptualize how the national systems draw from international systems	Error! Reference source not found., E
	Tea Break (11:00 to 11:30)		
	Session 2 (11:30am to 13:00) • Policies and laws on water: Managing shared watercourses – a basin perspective • Policies and laws on water: Managing water at a national level	x. Understand existing international and national systems and be able to conceptualize how the national systems draw from international systems	Error! Reference source not found., E
		xi. Apply a general approach to thinking sustainably in cognizance of law and regulations as agreed or enacted, from the international to the national level	C, E

	MODULE 4: ENERGY POLICY AND LAW		
	• Glance at southern African region and energy • Outreach actors on energy policy	xii. Have an awareness on Continental, Regional and National Laws on Energy	D, E
		xiii. Heighten political actors mandate to advocate on energy policy reform	C
	Lunch (13:00 to 14:00)		
	MODULE 5: INTEGRATED WATER RESOURCES MANAGEMENT		
	Session 3 (14:00am to 15:30) • Key issues in water management • Water management principles	xiv. Understand the main elements of an IWRM approach to sustainable management of water resources.	Error! Reference source not found., Error! Reference source not found., Error! Reference source not found.
		xv. Appreciate the need for reforms to the way water is being managed.	C, D
	Tea and end of day activities		
DAY 3	MODULE 6: THE NEXUS APPROACHES		
	Session 1 (09:00 to 11:00) • The Nexus approaches and Climate change	xvi. Gain a deeper understanding of the WEF Nexus as an integrated and holistic management approach in decision-making processes within the water, energy, food and environmental sectors	Error! Reference source not found., B, C

		xvii. Know the climate change scenarios and policy implications	Error! Reference source not found., E
	MODULE 7: THE GOVERNANCE OF ENERGY AND WATER RESOURCES MANAGEMENT		
	• Good governance in water and energy resources management	xviii. Understand the role of governance in striving towards sustainable access to water and energy for all.	B
	Tea Break (11:00 to 11:30)		
	MODULE 8: PUBLIC POLICY DEVELOPMENT: THE CASE OF ENERGY AND WATER		
	Session 2 (11:30am to 13:00) • Public Policy Formulation • Features of a Good Policy Making • Policy Cycle	xix. Formulate a policy and be able to identify, and give reference, to the relevant higher-level legal instruments	B, C
	Lunch (13:00 to 14:00)		
	Session 3 (14:00am to 15:30) • The role of Political Actors and Civil Society Actors in Public Policy	xx. Apply the appropriate tools for policy formulation	D
Tea and end of Training			

LEARNING ACTIVITIES		
Course Teaching and Learning Activities of the Training		Aligned Learning Outcomes
	1. Interactive discussions	All
	2. Focus groups discussions	xix, xx
	3. Simulation/dramatization of processes	xix

MEANS FOR FEEBACK ON TRAINING COURSE
The Trainees feedback post training questionnaire is one of the ways that are used in this Training for evaluation. DWF places significant importance on learning of Political parties and CSOs and on the continuous enhancement of teaching and learning outcomes. Trainees are asked to complete these post training evaluation forms. Questionnaire items relate to the overall evaluation of the course, trainer as well as an evaluation of training facilities.
CURRICULUM APPROVAL
DWF Signature: Date:

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