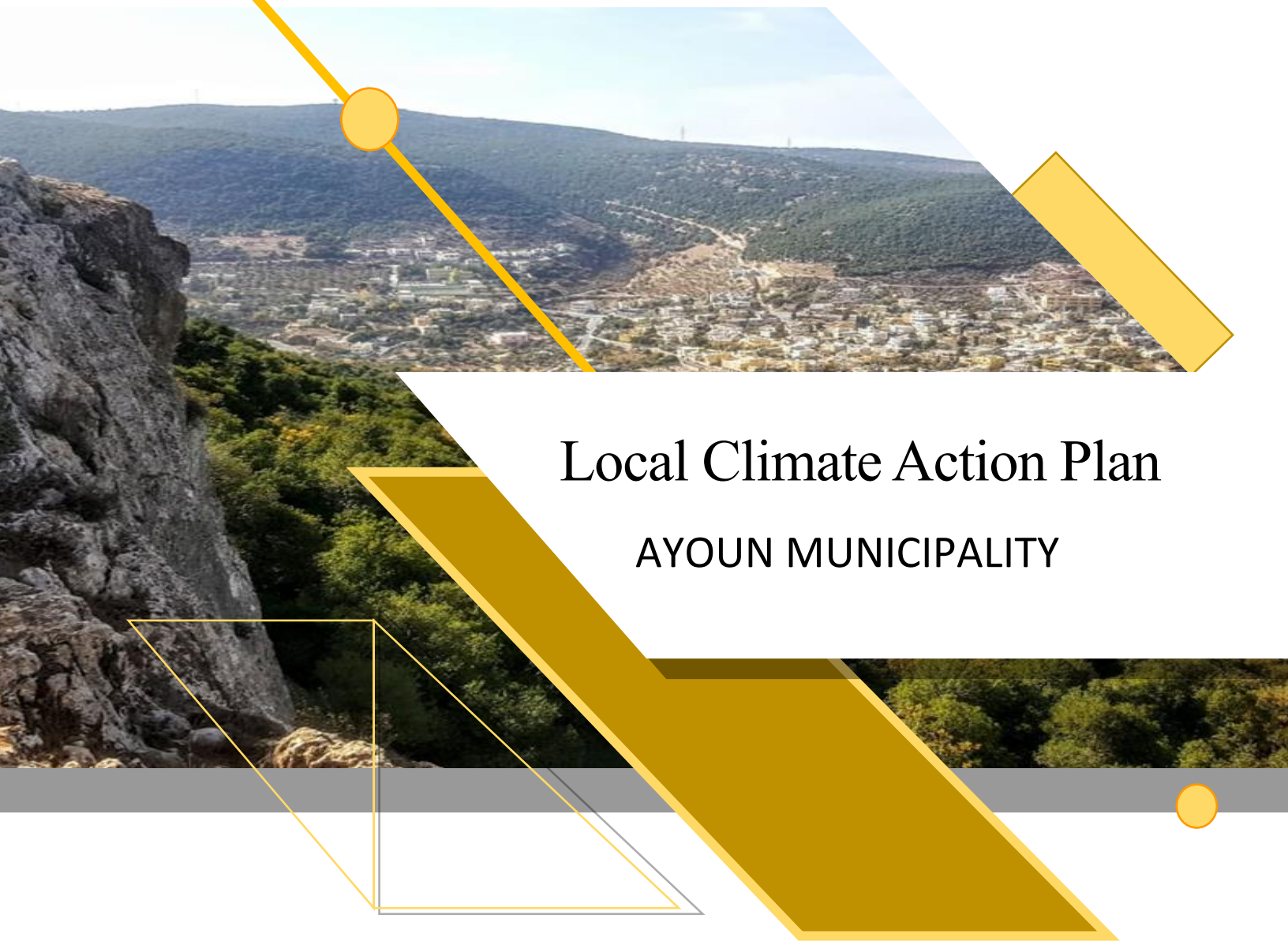

Local Climate Action Plan

AYOUN MUNICIPALITY

DIMETRIC
Development Dimension for Environment and Disaster Risk Reduction Consultancies

Contents

Table of Acronyms

BMU	German Ministry for the Environment, Nature Conservation and Nuclear Safety
CBO	Community Based Organizations
CO_2e	Carbon Dioxide Equivalent
EDCO	Electricity Distribution Company
GBC	Green Building Council
GIZ	German Development Agency
GoJ	Government of Jordan
JBC	Jordan Green Building Council
JREEF	Jordan Renewable Energy and Energy Efficiency Fund
JVA	Jordan Valley Authority
LCAP	Local Climate Action Plan
LE	Local Experts
LTRC	Land Transport Regulatory Commission
MA	Municipal Administration
MDU	Municipal Development Unit
MEMR	Ministry of Energy and Mineral Resources
MoEnv	Ministry of the Environment
MoLA	Ministry of Municipal Affairs
MoLA	Ministry of Local Administration
MoPIC	Ministry of Planning and International Cooperation
MoPSD	Ministry of Public Service Development
MoT	Ministry of Transport
MoTA	Ministry of Tourism and Antiquities
MWI	Ministry of Water and Irrigation
NAP	National Adaptation Plan (March 2019)
NCARE	National Center for Agricultural Research and Extension
NDC	Nationally Determined Contribution (2015)
NDCs-IKI	Developing an Effective Mechanism for the Review, Update and Implementation of the NDC of the Hashemite Kingdom of Jordan
RRCCG	Resilience-Ready Climate Community Group (RRCCGs)
SEED	Sustainable Energy and Economic Development
SNC	Second National Communication on Climate Change
TAP	Technology Action Plan
TBC	To be confirmed
TBD	To be determined
TNA	Climate Change Technology Needs Assessment Project – Jordan (April 2017)
TNC	Jordan's Third Communication on Climate Change
WAJ	Water Authority of Jordan

Municipality of Ayoun's Vision for the Future

"By 2030, the Municipality of Ayoun will strive to be a model of efficient resource management and a model for sustainable development (solar energy, rainwater), through the implementation of Actions and the involvement of the local community and stakeholders at a high level to enhance the practical application of innovative strategies and technologies, to catalyze behavior change to reduce emissions (mitigation), to employ strategies to reduce and eliminate the impacts of climate change (adaptation), and to promote equality and justice (gender mainstreaming) to cultivate an economically robust city"

~ Ayoun's Local Development Unit

The Local Climate Action Plan integrates aspects of mitigation, adaptation and gender mainstreaming to strategically respond to local climate change impacts.

The Actions contained within the plan illustrate Ayoun's vision of becoming a self-sustaining city step-by-step, through innovative projects.

Municipal Endorsement of the Local Climate Action Plan

Endorsement of Ayoun Municipality's Local Climate Action Plan (LCAP) and its List of Actions (LoA) by the Mayor, senior leadership and the City Council is sought as the final step to this phase of the project.

The endorsement of this document signals to the community that local leadership is ready to catalyze actions that counter current and future impacts of climate change. It also entails the municipality's commitment to engage the community, as a whole, to set the **direction**, generate **alignment** around strategies and sustain **commitment** to ongoing progress in achieving local resilience.

The LCAP and LoA are living documents, serving as formidable frameworks that provide the initial direction needed to take up climate action. The municipality is welcome and encouraged to further customize the LCAP and the LoA to strategically address vulnerabilities, accommodate local capacities and collaborate with stakeholders in innovative ways to affect real and lasting change.

Additionally, endorsement of the LCAP and the LoA represents the commitment to improve the indicators outlining current emissions generation as well as their anticipated reductions monitor and track progress; continue to improve data collection by sector, enabling equity across social groups, further illustrating the municipality's growth in climate action.

Ayoun Municipality City Council Members

Executive Summary

Climate Change compels the world to find the means to counter its consequences. Therefore, as climate change does not exclude the Hashemite Kingdom of Jordan, the Municipality of Ayoun has developed a plan to overcome climate impacts in the form of a Local Climate Action Plan (LCAP).

The LCAP is a three-pronged approach incorporating mitigation and adaptation actions aligned with gender mainstreaming measures to address the community's needs and contribute to national goals.

Ensuring the LCAP's applicability and support, the community was engaged through the Resilience Ready Climate Community Group (RRCCG) throughout the development process.

Situated in the northern part of the Jordan, the area is portrayed as the greenest area in the country. Consequently, the municipality is a popular destination for domestic tourism, and the municipality and community profit from its natural beauty and resources. At the same time, these characteristics are also threatened by changing climate conditions. Apart from the dependency on the tourism industry, agriculture is the other big pillar of the local economy which faces the ongoing occurrence of emigration from the sector by individuals seeking work elsewhere in nearby cities. Underlying these challenges, is the water, which is sourced from local springs, soil quality and factors impacting agricultural productivity. When agricultural production is threatened, this sector's underlying issues overflow into other areas, such as the municipality's prized forests which have endured oovergrazing, the felling of pine trees for wood to heat homes, and excessive amounts of litter from domestic and international tourists.

Mitigation Actions and its components aid in improving the outlook of local development by slowing the progression of climate change, one step at a time, by reducing emissions. Ideally, mitigation measures also decrease the financial pressure on lower income communities through cost savings resulting from energy efficiency and introducing renewable energy into the local energy mix. Adaptation Actions aim to safeguard and/or rehabilitate natural resources, promote health as well as provide avenues for employment opportunities. Gender Mainstreaming measures ensure that municipality finds the capacity to combat climate change impacts by supporting and enabling the inherent strength of its human resources.

The Actions of the LCAPs, as listed in the List of Actions (LoA), are the result of multiple community engagements, analyses of climate impacts and potential measures, are intended to ease the day-to-day and long-term impacts, economic pressures, and contribute positively to the employment rate in the municipality.

Local Climate Action Plan Snapshot			
Emissions Ambitions			**Adaptation Action Areas**
			NDC categories with the addition of "Communication & Public Awareness"
% of Residential energy demand met through the installation of PV Solar and solar water heater units			Water
Ambition	% CO_2e Decrease from Total		Water Storage and Efficiency
10% of Households have PV solar to supply their needs by 2025	3%		Rainwater harvesting, greywater technologies, health of springs through groundwater recharge
15% of Households have PV solar to supply their needs by 2030	4%		
Installation of PV Solar units to meet electricity demand of municipal buildings and street lighting			Agriculture & Food Security
Ambition	% CO_2e Decrease from Total		Improved Agricultural Practices
Supply 100% of energy demand of municipal buildings by 2020	0.2%		Crop patterns and varieties, supplementary irrigation, technology for control irrigation and used treatment compost; training in advanced application of fertilizers, pesticides and scheduling of irrigation
Supply 100% of energy demand of municipal buildings by 2025	3%		

% of Solid Waste averted from landfill	
Ambition	% CO_2e Decrease from Total
5% by 2025	.3%
10% by 2030	6%
% of Decreased Emissions through energy efficiency and renewable energy saturation in the commercial, small industry sector	
Ambition	% CO_2e Decrease from Total
20% of CO_2e from electricity consumption reduced by 2025	0.4%
30% of CO_2e from electricity consumption reduced by 2030	1%
% of grid government pumping stations reduce GHG's from non-renewable energy	
Ambition	
15% by 2025	1.0%
20% by 2030	1.3%

Communication & Awareness
Awareness, Capacity Building & Knowledge Sharing
Awareness campaigns and behavior change toward waste disposal, felling of pines trees and water conservation
Biodiversity, Ecosystems & Protected Areas
Forest Protection
As buffer for water sources, agricultural areas and economic features; development and monitoring of parks and forests
Urban Development & Mobility
Development of Infrastructure
Development of culverts, sewage systems, redirection of rainwater runoff, streets and guidebook for green building technology for the municipality

Gender Mainstreaming

- Actions should take into account high unemployment rates, power relations in decision-making in the municipality and other local authorities.
- It may be necessary to attach any action or project to a package of intensive and enhanced training and awareness of climate change concepts, encourage and enable the active participation of women's, youth and disabled persons' associations
- Support regular dialogue with decision makers and stakeholders of relevant ministries and associations at the national level such as the ministries of health, agriculture, education, environment, local administration and others on climate change policies. These meetings should help coordinate, identify, identify and build capacity for stakeholders on climate change topics.
- Strengthen the municipality's role in local activities and projects that build comradery among the community as well as fill a public need; for example: community clean-up days, tree planting, promoting women- and youth-initiatives.
- The municipality works to solidify its role as a support system for community needs, capacity building and improving local resilience to climate change impacts.

Actions Highlights

Energy

- Monitoring of Energy Consumption in the Municipality
- Community-shared Solar: Solar Enabled through Innovative Financing Mechanisms

Transport

- Advancing Public Transportation for Climate, Accessibility and Resilient Services (CARS)

Waste

- Clusterization of Commercial-Residential Sorting-At-source Recyclables Collection: Gateway to Waste to Energy Optioneering
- Organic Residues for Briquettes and Biodigestion

Industry

- Living Lab for Environmental Tourism & Recreation
- PV Powering Small Industry

Water

- Eco-Design Infrastructure at Spring Sites for End-Users and Recreation
- Rainwater Harvesting
- Greywater Reuse

Agriculture and Food Security

- Regional Agricultural Extension
- Urban Green Canopies with Vertical/Roof Farming and Water Capture and Re-use

Urban Development & Mobility

- Eco-Municipality: Converging Ayoun's Mitigation & Adaptation Components to become a Resilient Municipality
- Integrated Eco-Park

Health

- Rehabilitation of Drinking Water Sources

Biodiversity, Ecosystems and Protected Areas

- Land Trust: Conservation Easement between Landowners

1. Introduction

The ongoing pressures to counter climate change have caught the attention Ayoun's local leadership as climate impacts on local areas of economic, cultural, natural, and development activities can have devastating effects on communities and reveal unaddressed vulnerabilities. Impacts range from water scarcity, soil degradation, health issues, ecosystem loss, and economic viability, among other challenges. These are addressed in Ayoun's first Local Climate Action Plan (LCAP) which outlines Mitigative and Adaptive Actions to enhance the future outlook of the community and its resources.

Building resilience at the local level in the face of current and anticipated climate impacts is at the heart of Ayoun Municipality's LCAP and its respective List of Actions (LoA). These were developed by the Resilience Ready Climate Community Group (RRCCG) in collaboration with local municipal leadership, ministerial district representatives, conservation groups, the private sector, academia, non-profit representatives, and community members. Amid national plans and strategies that establish the climate context at the country-wide level, the LCAP aims to align local-level efforts to safeguard local natural resources, livelihoods, and development along strategic, climate-conscious pathways.

Utilizing the Nationally Determined Contribution categories (Energy, Transportation, Waste, Industry, Water, Agriculture, Urban Development, Health and Biodiversity) as the framework for investigating the local climate context of Ayoun Municipality, the LCAP produces a series of climate actions prioritized based on community input. These actions include mitigation measures that facilitate progress in promoting energy efficiency and decreasing the negative socio-economic impacts of resource scarcity. These actions also enhance community and environmental wellbeing through adaptation measures as well as enable greater community resilience by promoting equitable engagement and participatory opportunities governed by gender mainstreaming measures.

2. The Case for Climate Action

This LCAP was developed to pave the way for enhancing the municipality's resilience to negative climate change impacts experienced at the local level. Climate change impacts have been observed over time within the municipality, impacting livelihoods, health, safety, water availability, and power demands for heating and cooling of buildings.

The Municipality of Ayoun represents a community vulnerable to climate change, potentially including an overall decrease in precipitation, increased occurances of drought, and increased evaporation[1], among other things. The implications of these changes have already been observed across the municipality's varying sectors. It is imperative that the consequences of climate change (current and anticipated) are countered at the local level, requiring local engagement and grassroots knowledge in order to establish the agenda for climate action, create alignment among stakeholders, and identify and secure resources for the implementation of Actions.

The LCAP of the Municipality of Ayoun was developed through combined technological and social-synergetic experiences. Local knowledge was used through the RRCCG to outline Actions targeting Mitigation and Adaptation, while integrating aspects of gender equity and gender justice.

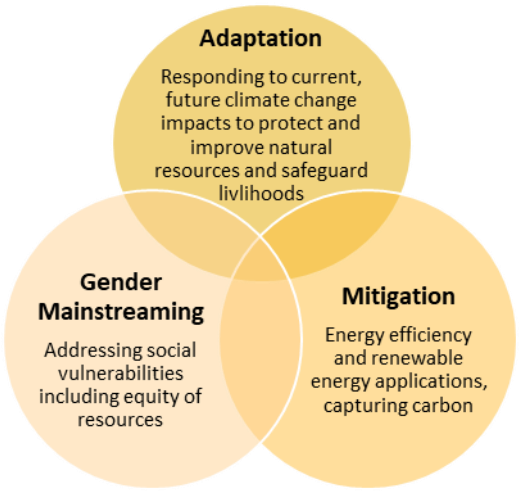

Figure 1 Framework of the LCAP and its Actions.

[1] Jordan's Third Communication on Climate Change

Local-level baselines, gathered leading up to the initial drafting of Actions, contributed to the identification of outcomes that need to take shape on the ground in order to counter experienced and anticipated climate consequences. These baselines and their influence on the resulting actions are detailed in the Mitigation, Adaptation and Gender Mainstreaming sections that follow.

3. Municipal Profile

Quantifying climate impacts in later sections and measures to act against them, requires an understanding of the current context of the municipality across social, environmental, governance and economic spheres. The municipal profile explores these areas respective of the categories of the Nationally Determined Contribution (NDC) which includes: energy, transportation and mobility, waste, industry, water, agriculture and food security, urban development, health, biodiversity, ecosystems and protected areas.

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The Municipality of Ayoun, located in Northern Jordan, is known for its lush mountainous landscapes and views. With a population of about 23,490[2], it encompasses the administrative divisions of the San'ar region, Rasoon region, Arjan region, Ba'wn region and Owsarah region.

Municipality is 650-1,150 meters above sea level with an area of 16 km^2. Typical climatic conditions result in frigid winters (as low as -2°C) and warm-hot summers (< 30°C). Annual precipitation averages to about 750 mm.

Unemployment rate is high – 18 percent with an average annual household income amounting to 5,000 Jordanian dinar with about 30 percent of the population below the poverty line. Seventy-five percent of the population is employed in the government sector with about 25 percent engaged in agricultural activities.

Figure 2 A view of main street

Energy

Municipality has installed 1,300 LED lamps for street lighting. A feasibility study is being prepared for installing PV solar panels on municipality's building.

There was a renewable energy project with the armed forces, where a special factory was built by the municipality and equipped with all necessary equipment to train young men and women (60 trainees total) in the maintenance and installation of solar cells to prepare them for labor market, established as a vocational training center which offered

[2] Ministry of Planning and International Cooperation.2018.

courses for the local community on energy with the support of the armed forces. However, administrative changes have halted the vocational center's activities.

The Sustainability Environment and Economic Development initiative (SEED), as part of its four-year program to install solar panels through a subsidization program (wherein a household pays for 50 percent of the cost of a the PV system in accordance to a payment plan), saw the installment of 154 PV units on households as of February 2020. Solar water heaters were also part of SEED's program, having installed 650 units.

Although the practice is illegal, the cold winters in the municipality as well as low income levels cause families to resort to felling trees to burn for heat, reducing tree cover in the area. Markets that sell firewood have opened in recent years, decreasing the occurrence of illegal tree felling.

Last year (2019), a feasibility study was underway for the installation of PV solar panels on the municipality's building; it's implementation is planned for the coming years.

Transportation

Nearly 50 percent of the households in the municipality has a vehicle with other commuters relying on public transport. The private sector manages bus and taxi routes.

Municipal vehicles run on diesel and gasoline. Although, there has been some consideration for the procurement of electric vehicles for municipal staff, financial resources remain unavailable to do so. The municipality has directed a fuel efficiency program for some of its vehicles which resulted in 60,000 Jordanian dinar in savings.

Waste

Many Jordanians visit the Municipality of Ayoun on the weekends for hiking and domestic tourism. These visitors often leave behind their wastes indiscriminately in the forests and picnic areas. Coordinating action to pick up this litter is challenging because of conflicting jurisdiction between the Municipality (under which is the jurisdiction of the municipality to manage solid waste collection and disposal) and the Ministry of Agriculture. Efforts to clean these areas have been conducted by volunteers.

Figure 3 al-Tanoor spring is the water source for the municipal network

There is no sewage network in the municipality and short-term plans do not incorporate an initiative to establish a sewage system. Unlined cesspits are currently utilized, and there are no wastewater collection and treatment systems.

Industry – Economy

The local tourism attracts about 200, 000 visitors annually who hike the local trails, scenic roads, landscapes, visit private resorts, camps and lodgings.

In addition to being included in the national "Jordan Trail", which extends from the very north of Jordan to its southern coast, there are various historical and religious sites in the region with include the Ajloun Forest Reserve, which boarders Ayoun's municipal boundary; the Roman Olive Museum, the Rasoon Reserve (recently removed from the global eco-tourism map) and Eco-Tourism Camp; the Jordan Trail, of which 30 km passes through the municipality; walking trails from Asimah and Sanar through Arjan and Mar Elias Church, ending at Ajloun castle. Tourism projects and investments are difficult to pursue due to the lack of public services and means of developing this sector. Additionally, the longer winters and later springs observed in recent years have had a negative impact on tourism.

The Armed Forces National Vocational Training Center, which specializes in solar systems, is a notable establishment in the municipality; however, as mentioned previously, activities have been discontinued.

A sewing factory, to employ mostly women, is an industry that the municipality would like to attract to the area in the near future in order to improve the local job market.

A local olive oil mill has managed to source its energy from by products resulting from the olive oil production process. Using the olive press cake, the mill is able to burn this fuel source to power its production. The surplus olive press cake is sold to other markets.

Water

There are six productive wells in the municipality. Three of these wells require rehabilitation, maintenance and restoration. One of these springs – al-Tanoor Spring, supplies the municipal water network, three others supply water for irrigation. Not all of the springs are equipped with the infrastructure for water collection and, therefore, are not exploited.

Changes in weather patterns as well as agricultural activities have, reportedly, produced a situation that jeopardizes the quality of water, such as runoff carrying agricultural chemicals into waterways, by-products of olive oil production and seepage impacting the quality of water resources.

A declining water table has disrupted the consistency of water supplies, averaging household deliveries to once every 20 days. Individuals typically need to buy additional water to cover the gaps in water supply.

Agriculture

The area is characterized by its forest and agricultural lands, on which crops such as figs, apricots, pomegranates, almonds, grapes and olives are cultivated.

Agriculture here is seasonal and delayed winter seasons, which have been observed in recent years, has disrupted planting seasons, to which the sector has yet to adapt. Crop production of fruit-bearing trees has been affected (decreased production) as a result.

Reduction in rainfall in recent years has affected crop yields with the agriculture community reporting about 60 percent decrease in productivity.

The cost of agricultural produce and commodities has inflated household living expenses. Due to challenges in the agricultural sector (economic strain and losses), farmers have increasingly abandoned work in this sector for more stable employment opportunities in other sectors or in other cities, particularly in Amman or Irbid.

Herding and the raising of livestock is a component of the sector; however, grazing lands are fragmented due to the establishment of protected natural areas as well as the division of land ownership in the municipality which has restricted options for agricultural investment projects.

Olive oil production and illegal disposal of zibar (wastewater resulting from olive oil production) was reported in recent years as having contaminated local water resources. Zibar disposal has reportedly been addressed; however, there is a lack of official documentation to confirm this.

Urban Development

The mountainous landscape of the municipality in addition to the occurrence of more frequent, intense rains has increased soil erosion, damage to and collapse of streets, and damage to local residences and urban infrastructure. The municipality, as a result, has invested in the construction of retaining walls and canals to restrict the extent of damage.

The municipality is home to four public parks. In partnership Jordan University of Science and Technology, the municipality has been developing a Master Plan for the city.

Municipality has worked with Jordan River Foundation to qualify local community members to work in the tourism sector. Municipality has established relationships with the private sector to promote investments within the city.

Figure 4 One of many of the ancient olive trees in Ayoun.

Health

Recent changes in weather patterns have resulted in an increased occurrence of sunstrokes, increased pest (insect) populations and illnesses.

Biodiversity, Ecosystems & Protected Areas

The municipality borders the Ajloun Nature Reserve and shares its distinctive plant biodiversity as one of the greenest areas in Jordan. Although tourism is a boon for the local economy, its impact on local biodiversity is a threat to both sectors due to littering, felling of trees and damage to parks.

As mentioned previously, high fuel prices and expense of energy causes some of the community members to cut down trees to burn for heat in the winter.

4. Localized Effects of Projected Climate Risks

Climate impacts at the local level take various shapes and forms, disrupting the activities of various sectors, as much as livelihoods and health as much as economic productivity. The following illustrates the potential impacts of climate change in the Municipality of Ayoun.

Energy

Decreased Rainfall

- Less groundwater recharge and groundwater level decline leads to increase energy needed (and expense) to withdrawal water
- Degraded and weakened regeneration of pine forests from encroachment of agricultural, development and economic activities, entails fewer woody resources to use for fuel
- For the solar panels already installed in Ayoun, the increase of dust in the air may entail more regular upkeep and maintenance to ensure panels' efficiency

Increased Occurrence of Drought

- Similar to above, decline and stress on groundwater levels due to demand requires more energy to withdrawal water
- Alongside warmer temperatures (overall and on average), drought would be a source of added stress on groundwater levels in the absence (and/or decrease) of groundwater recharge

Higher Temperatures

- Increase in energy demand as individuals try to cool homes, offices, etc.
- Increase in emissions if energy demand is not met by renewable energy options
- Increased need to pump water (groundwater withdrawals)

Intense Weather Events

- Power cuts/blackouts resulting from increased energy consumption (potentially increased costs) in response to high temperatures.

- Variations in fuel consumption and need; In winter, potentially increased tree feeling resulting from financial stressors that lead individuals to seek cheaper energy for heat

Transport

Decreased Rainfall

- Socio-economic stressors effecting individuals' ability to travel
- Increased presence of particulate matter in the air (alongside increased population, of which own vehicle)

Increased Occurrence of Drought

- Increased need to consider the use of air conditioning on public transportation

Higher Temperatures

- Irregular schedules, unprotected (unsheltered) bus stops (and irregular pick-up locations) pose risks to commuters
- Vehicles without climate control become increasingly uncomfortable for commuters, disproportionately for women, persons with disabilities and elderly

Intense Weather Events

- Disruptions in mobility (accessibility of roads) due to damaged and weakened infrastructure
- Unfavorable road conditions (flooding, road blockage, fog, black ice, snow)
- Commuters are less inclined to walk or bike, influencing generation of emissions

Waste

Decreased Rainfall

- More difficult for contaminants to be naturally filtered, aggravating soil and water quality; increased concentration of contamination in surface and groundwater from waste (contaminants released from breakdown of plastics/litter, wastewater, etc.)
- Increased need to treat wastewater
- Due to the cost of emptying cesspits, this could result in more violations or at-home solutions to empty cesspits; socio-economic stress could reduce willingness to conduct maintenance

Increased Occurrence of Drought

- Increasingly difficult for contaminants to be naturally filtered, aggravating soil and water quality
- Changes in the presence of odors, dust, bio-aerosols, and attraction of pests

Higher Temperatures

- Likely to impact processing of organic wastes, depending on technology and desired output
- Increased need to control disposal, flammable waste.
- Increased consideration for the health and safety of waste collection workers

Intense Weather Events

- Runoff and wind carries contaminants (zibar, fertilizers, pesticides, contaminants from plastics) into soil
- Wastes clog infrastructure meant to carry water away from the urban areas and reduce flooding
- Wastes resulting from extreme weather events (damaged infrastructure,

Industry

Decreased Rainfall

- Agricultural sector continues to experience decline
- Tourism industry could decrease if the characteristics that attract visitors continue to degrade and go unprotected
- Drain in economy as individuals choose to emigrate for improved economic opportunities in other cities
- Violations of waste and contaminants disposal due to cost
- Marketing seasons for the food and clothes, for example, shift
- Increased electricity bill for water

Increased Occurrence of Drought

- Financial stress to finance energy for cooling and water at times when there is a scarcity of either
- Possible increase in injuries and illness

Higher Temperatures

- Decline in tourism and income

- Financial losses for livestock owners and farmers
- Productivity of the local workforce may be influenced; increased need for safety precautions
- Increase need and expense to power cooling systems

Intense Weather Events

- Contaminants from wastes (resulting from economic activities) entering waterways

Water

Decreased Rainfall

- Groundwater quality decline
- Disappearance of springs

Increased Occurrence of Drought

- Reduction in per capita shares of water, disruption of water supplies (particularly as population increases in tandem)
- Increased water demand

Higher Temperatures

- Weather transformation that has depreciated access to drinking water and water for agriculture
- Less groundwater recharge, resulting in decreased replenishment of surface and groundwater reserves, salination and/or more contamination of available water resources
- Higher water loss by evaporation

Intense Weather Events

- If not captured (harvested) nor channeled, it can be a lost and destructive commodity
- Lack of sewage network adds to the amount of contaminants collected in runoff and entering water sources, threatening health

Agriculture and Food Security

Decreased Rainfall

- Soil degradation due to less groundwater recharge/groundwater level decline (decreased surface and groundwater reserves)
- Soil degradation negatively impacting agricultural productivity and, as a result, incomes
- Increased occurrence of farmers moving into forested areas to establish new farmlands by felling trees as soil degradation continues
- Wild, indigenous plants and animals are further threatened (with special reference to the above bullet point)
- With decreased rainfall, an increasing number of farmers will have to rely less on ran-fed irrigation and seek applicable technologies to water crops and animals
- Increased salination of water supplies (in turn, water of decreased quality, even when treated, can disrupt the efficiency of irrigation systems.

Increased Occurrence of Drought

- Fall in crop production due to narrowed cultivation period, shifting rainy season and rainfall patterns impacting crop development and harvesting patterns
- Farmers are faced with harvests that are too small to both feed their families and fulfill their other commitments.
- Increased need for improving soil's quality and water retention capability
- Increased need to identify alternative varieties of crops for cultivation
- Increased need to apply irrigation and improved agricultural techniques that are customized to meet the municipality's needs

Higher Temperatures

- Higher growing season temperatures impacting agricultural productivity, crop development, farm incomes and food security.
- Increase heat stress on crops and water loss by evaporation
- The winter season is delayed, which has hindered the traditional planting seasons and not adapting to them
- The water demand of crops will be more difficult to meet as groundwater recharge is decreased
- Loss of pasture for livestock, exacerbated by the existing lack of green spaces that are currently available to herders (referencing the division of land ownership in the municipality which has restricted options for agricultural investment projects in the municipal profile).
- Negative impact on productive and reproductive performance of livestock, increased incidence of livestock diseases and parasitic infestation, decreasing trend of feed and fodder resources.
- Increased need for pest and rodent control

Intense Weather Events

- Damage to agricultural areas
- Increased occurrence of soil erosion and washing away of crops, fertilizers and pesticides as a result of heavy rain runoff

- Higher inclination among farmers to abandon agricultural sector

Urban Development

Decreased Rainfall

- Municipal resources are strained under demand and community needs
- Decreased regeneration capability of forests (see water) is further affected by the felling of trees if households struggle to afford energy bills (heating of homes in winter).
- The possibility of increased occurrence of violations and vandalism as a result of natural resource scarcity (water) and economic stresses; increased cost of water
- Difficulty in keeping up with water demand as the population grows, increased stress on infrastructure

Increased Occurrence of Drought

- Irregular/unresponsive water pumping; vandalism and theft of water
- Aging infrastructure continues to contribute to leakage, reduction in water quality
- Consequences that already exist from cesspits (lack of sewage network) could be exacerbated as emptying prices are already considered high, in combination with the lack of regulation, resulting in continued contamination.
- Cross-sectoral infrastructure system failures
- Municipal capacity to respond to emergencies is weakened

Higher Temperatures

- Increase in energy bills (power cooling systems) and water (for drinking and for water-cooling systems (water-cooled Acs)
- Increase in emissions if energy demand is not met by renewable energy options
- Power cuts/blackouts resulting from increased energy consumption (potentially increased costs) in response to high temperatures.
- Increased need for renewable energy

Intense Weather Events

- Damage to homes, businesses and infrastructure from flash floods, landslides and wind
- The topography of the municipality (mountains and valleys): which entails high costs for the construction of fences, tunnels and ferries
- The migration of the local population to search for jobs in other cities and sectors
- Reverse migration to larger cities in search of improved income and standard of living
- Disruptions in mobility (transportation) due to damaged and weakened infrastructure
- Lack of sewage network is an obstacle to safeguarding natural resources, community health and infrastructure

Health

Decreased Rainfall

- If agricultural incomes are impacted negatively, it could reduce households' ability to respond to climate impacts (spending on health, cooling systems, electricity, etc.)
- Potential in social conflict
- Potential impacts on prevalence of asthma as air quality degrades
- Potential social stress and anxiety caused by increasing scarcity of water resources

Increased Occurrence of Drought

- Negative socio-economic impact on agricultural families
- Increased stress on natural systems (ecosystems, springs and groundwater)
- Increased sensitivity of persons with asthma

Higher Temperatures

- High summer temperatures place further stress on families of low income as a larger portion of expenses would likely go to power cooling methods or find ways to decrease use, do without cooling systems
- Potential increase in heat-related illnesses and hospital visits
- Decreased agricultural productivity, could influence the price of agricultural goods, creating socio-economic stress
- Decreased food security: food quality is affected due to decreased growth period and quantity which, in turn, could influence prices, affecting rural families disproportionately
- Pests (mosquitos)

Intense Weather Events

- Injury and/or illness resulting from flashfloods, mudslides
- Potential reverse migration (from larger cities to smaller cities) accompanied by increased construction as neighboring municipalities experience adverse weather events
- Appearance of non-indigenous to the area plants and animals (insects) species seeking more favorable conditions

Biodiversity, Ecosystems & Protected Areas

Decreased Rainfall

- Possible reduction in the flora and fauna that make the area unique
- Interference in the tourism industry
- According to the scoring of indicators, the highest sensitive ecosystems in Jordan are water vegetation in valleys (Wadis) and the forests vegetation in Ajloun and Jerash where big part of the pilot area of this assessment is located.

Increased Occurrence of Drought

- Potential increased occurrence of wildfires
- Weakening of forest ecosystems
- Declines in forest-floor cover which would also, in turn, weaken forest ecosystems
- Decrease in pastures

Higher Temperatures

- Increased risk of forest fires
- Disappearance of certain species if unable to adapt or move to a more favorable geographic area
- Ecosystems susceptible to invasive species migrating from other regions
- Reduction of wood resources
- Reduced water percolation and purification, reduced aesthetic value as ecosystems are weakened
- Higher temperatures elsewhere in the country may contribute to flora and fauna immigrations

Intense Weather Events

- Felling of trees for heating
- Unfavorable effects on pine trees including the felling of trees by the community for energy, impacts on trees' capacity to regenerate
- Autumn bird migrations shifting their routes

Figure 5
Overview of the LCAP Development Process

5. LCAP Planning Process

Initiation

The development of the LCAP was kicked-off in April 2019 with a workshop, introducing the aims of the LCAP and its main components: developing Actions through Mitigation, Adaptation, Gender Mainstreaming frameworks. The frameworks were investigated through the collection of baseline data at the community level. Local, contextual data (data-based and experiential) was at the core of the insights elaborated in the List of Actions (LoA) and the Local Climate Action Plan (LCAP). The facilitation of this data collection depended on the establishment of motivated community stakeholders, who would eventually make up the Resilience Ready Climate Community Group (RRCCG), an informal body of local stakeholders catalyzing momentum for consistent advancement in achieving climate Action.

Baselines Assessments

Investigating the Baseline Assessment was a means for identifying local experts and community leaders (formal and informal) to begin building the base for RRCCG participants. Additionally, because climate impacts and consequences of development have left their mark on various local sectors, local stakeholders have been engaged in developing the means to overcome these consequences. The Baseline Assessment was a means for documenting these stakeholder activities.

The core of the Baseline Assessment, however, was to build the foundation for Mitigation, Adaptation and Gender Mainstreaming components and their implications for the LoA. Distributed during the kick-off workshop, the Baseline Assessment remained a consistent tool to organize data that would aid in the development of scoping the context of climate actions, socio-economic analysis to develop insights for Actions to counter climate change impacts at the local level, account for existing plans and strategies, current demand for resources, and build upon local experience.

Stakeholder Engagement

With the continuous aid and support of the municipality's Mayor and Local Development Unit, stakeholder engagement was conducted through a series of focus groups, panel discussions and meetings with the local community. The first workshop in August was the initial follow up to the baseline as well as investigations for the Mitigation, Adaptation and Gender Mainstreaming components of the LCAP. This initial focus group invited a broad range of informal community leaders (namely, representatives of local organizations and citizens representing different sectors of the municipality).

1. Overall, ccommunity members, representatives of the private sector, women's associations, media, environmental and agriculture departments were in attendance, totaling 33

participants, 22 females and 11 males. This focus group was sub-divided to facilitate the collection of men's and women's perspectives, independently. Environmental Tourism Eye Association, its field of work is environmental tourism.

2. Ayoun on Jordan, and its field of work is intellectual
3. Green Valley Society, and its field of work is charitable
4. Charity, charity
5. Association of Women's Sellers
6. Ossra Women's Association
7. Arjan Women's Association
8. Association for Special Education
9. Children's Association
10. Milk Thread Cooperative Association

In September, a workshop was held to establish the RRCCG as a means for advocating for a climate-action agenda at the local level, capable of aiding the municipality in the identifying, mobilizing the community, and aiding in defining effective and sustained Actions to counter climate change. The RRCCG includes municipal staff (the mayor and the local development unit). During the initial focus group of the RRCCG, the participants were surveyed to develop an assessment for the prioritization of actions, identifying criteria emblematic of their main concerns of local climate impacts. Based on the survey, scores per criterium were established. It was also an opportunity to further detail already experienced climate change and developmental impacts and their perspectives on countering them.

Representatives comprising Ayoun's RRCCG have included: Environmental Department Manater of the Ministry of Environment, District Arjan Organization for Persons with Special Needs, Zaharat al Wadyan (social) Organization, Women's Baoun Organization, representative of Royal Society for the Conservation of Nature (specifically managing the Royal Reserve Ajloun), agricultural department manager of the Ministry of Agriculture. RRCCG is the bridging of technical, social, institutional and scientific spheres for the identification and defining Actions that are uniquely characteristic and evocative of the municipality.

In November, the RRCCG participated in adding an additional layer of depth to the development of Actions as local stakeholders representing NGOs, CBOs, private sector, educational sector, local governmental agencies were present to exercise ideas, goals and parameters of potential Actions for the LoA.

Local Climate Action Plan

The LCAP is the document that contains inferences gleaned through the Baseline Assessment, engagement with the community and RRCCG; the areas and relative scale of Mitigation potential; pathways for Adaptation that maintain the integrity of the unique characteristics of the municipality; and instituting the means for equal opportunity for engagement and benefits of Actions for the public through Gender Mainstreaming.

Local Climate Action Plan Objective(s)

The LCAP is a result of collaborative engagement between municipal leadership and community stakeholders to identify and strategize around Actions that are rooted in Mitigation, Adaptation and Gender Mainstreaming.

The key objectives of Ayoun Municipality's Local Climate Action Plan are to:

- Respond to current and anticipated impacts of climate change experienced within the municipality with multi-lateral, innovative and engaging Adaptation Actions that preserve (and /or rehabilitate) the natural environment and protect and promote health;
- Enable the ingenuity that results from the inclusion of an array of stakeholders, including women, men, youth, elderly and disabled, who represent a variety of experiences, skill sets and perspectives through Gender Mainstreaming strategies.
- Act locally to reduce emissions through Mitigation Actions, contributing to national response to climate change and the country's NDC.

- Realize the municipality's potential for development through strategic coordination to secure funding streams and communicating the municipality's aims for climate-resilient development.

List of Actions

Following the workshops of the RRCCG (outputs of September workshop: establishment of RRCCG and prioritization criteria and scores selected; November workshop: detailing and scoping of Actions), the finalizing the LoA and its prioritization according to the locally established criteria.

The RRCCG inputs were cross-referenced with initiatives outlined in national-level strategies and project scoping, contained in the following documents:

- *Jordan's Nationally Determined Contributions* (NDCs), for which Jordan intended to reduce its GHG generation by 14% by 2030, and by an additional 12.5% (dependent on the international financial aid) by 2030;
- *Jordan's Third Communication on Climate Change* (TNC, 2014) to glean exposure information in addition to expert inferences for the analysis on Mitigation pathways and Actions in Adaptation.
- The *National Adaptation Plan* (Draft, 2019) (NAP) document and the Biennial Updated Report.
- The Climate Change Technology Needs Assessment (TNA), which identifies mitigative and adaptive technologies.

The LoA is organized according to the sectors of the NDC: Energy, Transport, Waste, Industry, Water, Agriculture and Food Security, Urban Development, Health; and Biodiversity, Ecosystems and Protected Areas.

6. Baseline Analyses

6.1 MITIGATION ACTION SCOPING

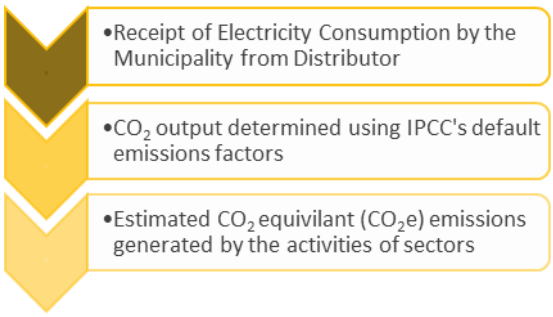


Figure 6 Process of developing CO_2 equivalent quantities for electricity-related emissions of the municipality's residential, governmental, commercial, agricultural, water (pumping) categories.

Mitigation Actions are typically associated with the reduction of emissions, which are created as a result of combustion (burning fuels such as in cars, or natural gas for energy) and other processes. Additionally, indirect impacts of strategic mitigation action can result in improving livelihoods by reducing spending on electricity as well as other cost savings typically associated with improving energy efficiency.

In the sub-sections below, a simplified GHG emissions inventory is used as a tool to identify and measure where emissions originate to establish a historical emission trend and aid in tracking the progress of Actions in reducing GHGs.

Developing a baseline for mitigation Actions began with understanding the amount of CO_2 equivalent (CO_2e) emissions associated with localized electricity consumption. This was done by requesting the data for the electricity consumption of the Municipality from the regional supplier Integrated Development Company (IDeCO, 2018). IDECO

supplied data for electricity consumption for the sectors and subcategories of Energy (domestic, government and street lighting), Industry (commercial sector and small industry), Agriculture, and Water (water pumping)[3]. The energy consumed in each of these sectors during the year 2018 was used to estimate the amount of CO_2e based on the International Panel of Climate Change's (2006) Tier 1[4] default emission factors.

Energy[5]

In 2018, the Municipality of Ayoun was responsible for GHG emissions of 3.20 Gg of CO_2e when accounting for electricity supplied from the distributor, Integrated Development Company (IDECO), generated from residential, governmental (street lighting separately), commercial sector, small industry, agriculture and water as discussed in the following sections. The estimated CO_2e emissions estimations, while based on electricity consumption, do not incorporate emissions generated from the use of gas or other sources of energy that may be used in heating households and other uses.

Through a regionally implemented SEED program, water heaters and solar PV units were installed on households - 650 and 154 units respectively by February 2020. This has aided households in reducing their electricity bills; however, whether it be due to changing behaviors (increased electricity use) or obstruction of sunlight, the households continue to purchase electricity from the network. It's a point that needs to be further investigated to inform future projects.

Thus, emissions generated from electricity purchased from the grid, amounted to about 2 Gg of CO2e.

Table 1 Emissions generated from residential electricity consumption (2018)

	Electricity (kWh)	**(Gg of CO_2)**
Residential	10,783,290	*2.27*

Per household energy consumption was estimated at 2,450 kWh annually, generating about $6.0x10^{-4}$ Gg of CO2e from electricity consumption annually.

Due to the SEED project and the installation of solar panels on households, the inventory needed to account for the share of electricity consumption that has already been averted due to these solar panels. About 0.09 Gg of CO2e are being averted due to the solar PV units (by solar water heaters – about 0.0002 Gg), under the assumption that they are efficiently and consistently able to cover the electricity demands of these households.

[3] Irbid District Electricity Company (IDECO)
[4] IPCC (2006) Guidelines for National Greenhouse Gas Inventories
[5] The number of municipal vehicles does not represent solid waste compactors, nor cabs.

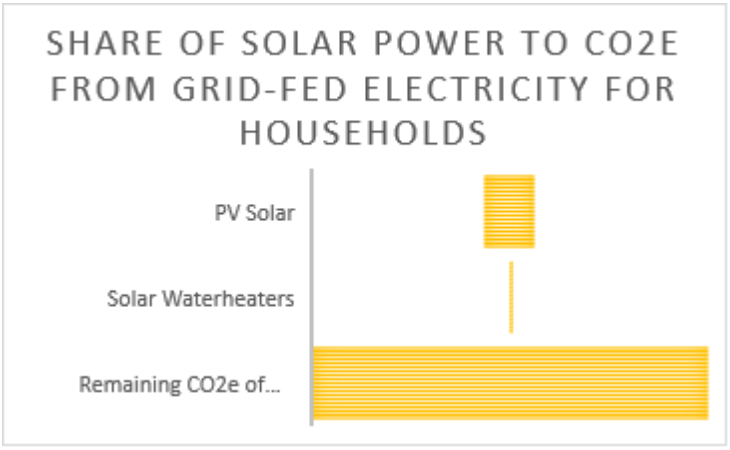


Figure 7 CO2e averted (Gg) by Solar PV Unites installed to supply electricity to households and solar water heaters, compared to the remaining generation of CO2e by the residential sector.

To date, the municipality has installed 1,300 LED lamps for street lighting while a feasibility study is being prepared for installing PV solar panels on municipality's building. The resulting emissions generation from municipal energy consumption is 0.02 Gg of CO_2e for municipal buildings and 0.28Gg of CO_2e from streetlighting.

Table 2 Emissions generated from Municipal electricity consumption (2018)

	Electricity (kWh)	**(Gg of CO_2)**
Municipal	75,563	*0.02*
Street Lighting	1,383,927	*0.29*

Transportation and Mobility[6]

Municipal transportation was analyzed for the estimated CO2e emissions produced in this sector. Based on IPCC methodology (Tier 1), fuel consumption by fuel type was utilized in analysis (fuel efficiency and other aspects that related to fuel combustion and, ultimately, the generation of GHGs were not). Municipal vehicles were estimated to have generated .18 Gg of CO2e

. A plan to monitor municipal vehicles use was implemented, resulting in 60,000 JOD in savings. Although due to a lack of data, municipal vehicles were not accounted for in the estimated emissions.

Similarly, public transport was not analyzed for lack of data and unavailability national data from which to scale down estimations of emissions generated in this sector.

Municipal Solid Waste

Jordan's First Biennial Update Report to the United Nations Framework Convention on Climate Change (2017) summarizes the CO_2 equivalent of solid waste disposal at the national level for 2012. Scaling the data to represent an estimation of emissions for solid waste disposal in Ayoun started with the national population of 2012, estimating

[6] The number of municipal vehicles does not represent solid waste compactors, nor cabs.

solid waste generation (kg) per capita relative to the emissions reported for that year, resulting in CO_2 equivalent per kg of solid waste.

The estimated CO_2/kg of solid waste of 2012 was applied to Ayoun's estimated solid waste generation of 2018 resulting in an estimated CO_2 equivalent generation of 3.92 Gg.
[7]

Industry

Industry includes commercial and economic activities including that of the shops that line the streets of downtown. Commercial and small industry combined resulted in a CO_2e generation of about 0.18 Gg.

Table 3 Emissions generated from Industry (economic) electricity consumption (2018)

	Electricity (kWh)	**(Gg of CO_2)**
Commercial	698,203	*0.15*
Small Industry	207,464	*0.04*

Water

Emissions from electricity used in water pumping accounted for 0.53Gg of CO_2e generated.

Table 4 Emissions generated from electricity used in Water Sector (water pumping) (2018)

	Electricity (kWh)	**(Gg of CO_2)**
Water	2,637,280	*0.56*

Agriculture

Calculation of CO_2e in the agricultural sector is inclusive of the electricity demand of the sector which accounts for electricity used in irrigation and related agricultural activities. Overall, 0.01 Gg of of CO_2e were generated, exclusive of emissions that may have been generated in other agricultural activities such as land use change, tilling and the application of pesticides and fertilizers.

Table 5 Emissions generated in the Agricultural sector based on electricity consumption (2018)

	Electricity (kWh)	**(Gg of CO_2)**
Agriculture	36,793	*0.01*

The inventory based on emissions from electricity consumption illustrates that 83 percent of community-wide GHG emissions came from sources within the built environment (residential, government, street lighting, commercial and industry).

[7] Transportation was excluded as an appropriate analogue had not been found at the time of analysis.

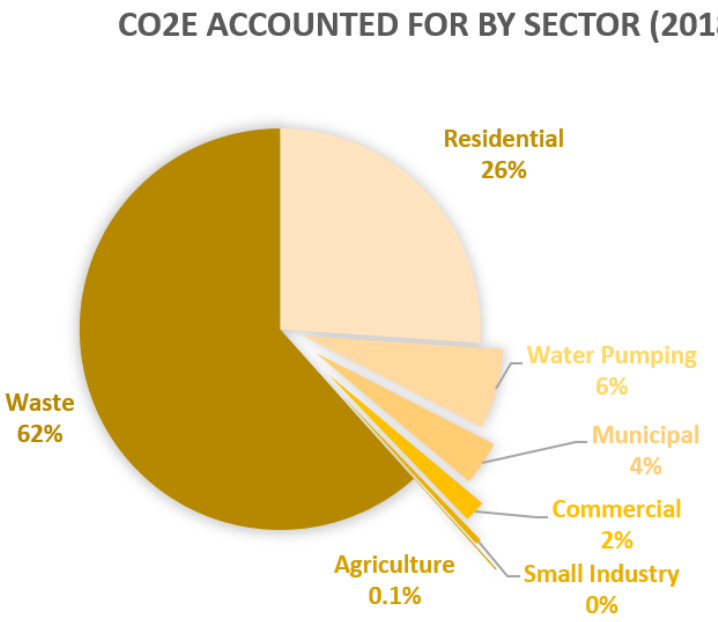


Figure 8 CO2e generated by sector. Residential, Municipal (including streetlighting), Agriculture, Water, Commercial and Small Industry were based on electricity consumption of 2018. CO2e from waste was estimated based on emissions calculated for this sector in Jordan's First Biennial Update (2017).

Not accounted for in the CO2-eq emissions and waste generation above is the quantities resulting from agricultural solid wastes as accounting for agricultural solid wastes for livestock by farmers is informal at best. Organic wastes resulting from agricultural activities and greenhouses are typically used (such as leaves, branches) as feed for livestock.

6.2 ADAPTATION ACTION SCOPING

Climate change and its effects present various challenges in Jordan. The Municipality of Ayoun is no different. Climate effects are detailed in the TNC (2014) along two scenarios: some effort internationally is made to reduce emissions (wherein CO_2 emissions begin to decrease by 2040) and no effort (no policy changes to reduce emissions) is made to reduce emissions, respectively – Representative Concentration Pathways 4.5 and 8.5[8].

Risks	Details
Decreased Rainfall (Precipitation)	In Jordan, the overall trend is a decrease in precipitation, with western Jordan being more vulnerable. RCP4.5: By 2070-2100, precipitation could decrease by 15% (range 6%- 25%). RCP8.5: By 2070-2100, decreased precipitation could be as much as 21% (range 9%-35%).
Increased Occurrence of Drought (Consecutive Dry Days)	Consecutive dry days are likely to increase over time by more than 30 days by 2070-2100 with increased evapotranspiration[9]. Intense droughts may be (partly) compensated by rainy years; however, there would still be an overall decrease in precipitation, particularly especially in Jordan's southern region. RCP4.5: Consecutive dry days increase to about 30-40 days in Jordan's southern highlands. RCP8.5: Additional increases in the number of consecutive dry days more likely to occur in the country's western and southern regions.
Warmer	**Warmer Climate:** by 2070-2100, RCP4.5: average temperatures could reach up to +2.1°C (ranging between +1.7 - +3.2°) RCP8.5: average temperatures rising +4°C (ranging between +3.8- 5.5°C)

[8] Biornes, C. (2015). A guide to Representative Concentration Pathways. CICERO
[9] Definition: evaporation and water requirement of plants

Climate (Higher Temperatures)	**Increased Occurrence of Heat Waves:** Average of maximum temperatures could exceed 42-44° C **Warmer Summers, drier autumn and winters**; Warming to occur during summer. In autumn and winter months, decreases in precipitation (an estimated median of 35%) by 2100. **Evapotranspiration:** Average potential evapotranspiration could increase to 70-100 mm by 2050 and 150 mm by 2100, increasing to 2,000+mm. however, it's "likely" to reach 250 mm by 2100. RCP results for western Jordan are similar.
Intense Weather Events	No change predicted. The number of days of heavy rain (more than 10mm) is not expected to change significantly, nor does the maximum wind speed, direction.

Table 6 Climate Change Projected Impacts (TNC, 2014)

In order to assess the risks at the local level, a Vulnerability Assessment in the form of a questionnaire was developed that outlined risks identified nationally. This was done by detailing the anticipated effects (reflected, for example, in Section 4 "*Localized Effects of Climate Risks*" per risk, i.e.: decreased rainfall, increased occurrence and duration of drought, increased temperatures, and occurrence of intense weather events as outlined in the national publication – the TNC (2014).

Focus group participants were given an orientation to uncover past and ongoing observances of climate risks in order to relate the topic to their own experiences and improve understanding among the group. Participants were then given the questionnaire to evaluate, along a scoring system of 1-5 (5 indicating the highest significance – exposure – to a climate risk and its corresponding effect, 1 – lowest significance).

The focus group's results are illustrated in the following table, as indicated by percentages, which were developed based on the compiled scores assigned by participants over the number of points possible per risk-effect. In comparison, the far right column is also assigned a significance; however, this significance highlights the risk-effect relative to the national context. This comparison underscores the importance of local community-based action to counter climate change and for the municipality to be able to identify, address and promote actions that address climate impacts on a grassroots level.

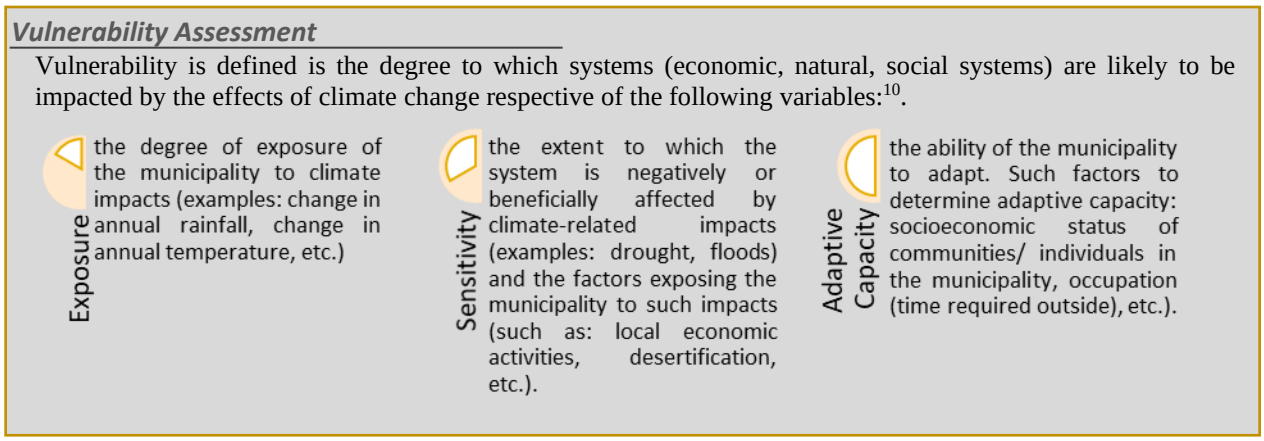


Figure 9 Components of Vulnerability

Participants selected among the risks and evaluated which ones were perceived and/or observed to have the most impact on the community. Among the range of effects resulting from climate risks, the participants assessed increased demand for water, decreased surface water runoff, destruction to agricultural crops, and decline in groundwater quality as the top-five impacts to be addressed.

[10] Scoring of significance was based on national publications: Jordan's Nationally Determined Contributions (NDCs); Jordan's First, Second and Third Communication on Climate Change; The National Adaptation Plan (Draft) (NAP) document; and Climate Change Policy for a Resilient Water Sector (MWI)

Table 7 Risks and Potential Impacts as Ranked by Focus Group Participants of Ayoun

Risk	Effects	Percentage	Significance[11]
Increased drought	Increased water demand	69%	5
High temperatures	Decreased surface water runoff	62%	2
Increased drought	Destruction to agricultural crops	62%	4
Rainfall decline	Decline in groundwater quality	55%	2
High temperatures	Decrease in groundwater recharge	52%	2
High temperatures	Decline in agricultural production	52%	2
Rainfall decline	Decline in groundwater levels	48%	3
Rainfall decline	Decline in livestock products	45%	2
Increased drought	Spread of disease	45%	1
Increased floods	Damage to dams	45%	2
Increased floods	Damage to lives and property	45%	1
Rainfall decline	Decrease in surface water runoff	41%	0
Increased floods	Destruction to infrastructure	41%	3
Rainfall decline	Disruption of agricultural systems	38%	4

7. Development of Actions

Inputs for Mitigation Actions

Oftentimes, mitigation is associated with the added benefits of improved financial spending on energy due to improved energy efficiency (through energy efficiency measures, building awareness in energy efficiency, enhancing transportation management, etc.). However, considering the variability of population growth, securing the means to integrate energy efficient and/or renewable energy technologies needs to occur in order to enable the community to adapt to rising temperatures, dropping water tables (entailing increased power to withdrawal water), and balancing expenses as household expenditures may adjust adversely.

Energy

The Municipality has initiated projects that contribute to the reduction of emissions such as the installation of solar panels on residential homes. Establishing goals for the saturation of residential solar PV, as well as to supply municipal power, can help the municipality plan for the potential socio-economic impacts and need for renewable energy in the community.

The following table (Table 9) was developed to illustrate pathways for mitigating emissions. The four emissions reduction scenarios below were modeled represent a simple projection of emissions increase based on population growth with 2018 as the base year to highlight action areas and their potential influence on emissions generation. The ambitions for the target areas solar PV to meet residential electricity demand of households (solar PV units and solar water heaters), agricultural and water sector energy demands are based on the Technology Action Plan's (2017) *Energy Ambitions*. The Ambitions governing the model's outputs for Public Buildings and Waste were

[11] Risks Ranked by Significance based on findings in National Publications: Jordan's Nationally Determined Contributions (NDCs); Jordan's First, Second and Third Communication on Climate Change; The National Adaptation Plan (Draft) (NAP) document; and Climate Change Policy for a Resilient Water Sector (MWI).

based on the municipality's goal to supply public demand for electricity with renewable energy and, waste – based observations and documentation of sorting and recycling initiatives ongoing in Jordan.

Table 8 Emissions Reduction Scenario Models

Emissions Reduction Scenario Models			
Solar PV: Installation of PV Solar units to meet electricity demand of households and solar water heater units (*considered mutually exclusive in model estimations*)	Target as a Percentage	Co2e averted (Gg)	%of total estimated emissions
2018	*4% as of 2020*		
2025	*if 10% by '25*	0.23	3%
2030	*if 15% by '30*	0.34	4%
Public Buildings: Installation of PV Solar units to meet electricity demand of municipal buildings and street lighting	Target as a Percentage	CO2e averted (Gg)	%of total estimated emissions
2025	--	0.08	0.2%
2025	*if 100% by '25*	.31	3%
Waste: If 5% of solid waste is treated (10% of organic, 5% of plastic and 5% of paper fractions) and 10% by 2025; and (20%, 10% and 10%) by 2030, respectively.	Target as a Percentage	CO2 averted (Gg)	% of total estimated emissions
2018	--	--	--
2025	*If 5% by 2025*	0.0054	0.063%
2030	*10% by 2030*	0.0866	1.012%
Commercial, Small Industry: Targeting energy efficiency and renewable energy in the commercial, small industry sector.	Target as a Percentage	CO2 averted (Gg)	% of total estimated CO2e
2018	--	--	--
2025	*If 20% by 2025*	0.038	0.437%
2030	*If 30% by 2030*	0.057	0.656%
Water: 20% of grid of government pumping stations switch to solar PV by 2030 (TAP, 2017). Modeled data based on the sector's electricity demand (IDECO, 2018).	Target as a Percentage	CO2 averted (Gg)	% of total estimated CO2e
2018	--	--	--
2025	*If 15% by 2025*	0.084	0.966%
2030	*If 20% by 2030*	0.112	1.288%

The reductions, analyzed in Table 9, represent renewable energy units installed on households (PV solar units on roof tops and solar water heaters, as mutually exclusive items), solar units to generate electricity for municipal buildings and streetlighting, treatment of solid waste streams (organic/biowaste, plastics, paper and cardboard), electricity consumption in the agricultural sector and water pumping based on each category's electricity consumption reported by IDECO with the exception of waste (data was scaled from Jordan's First Biennial Update (2017)).

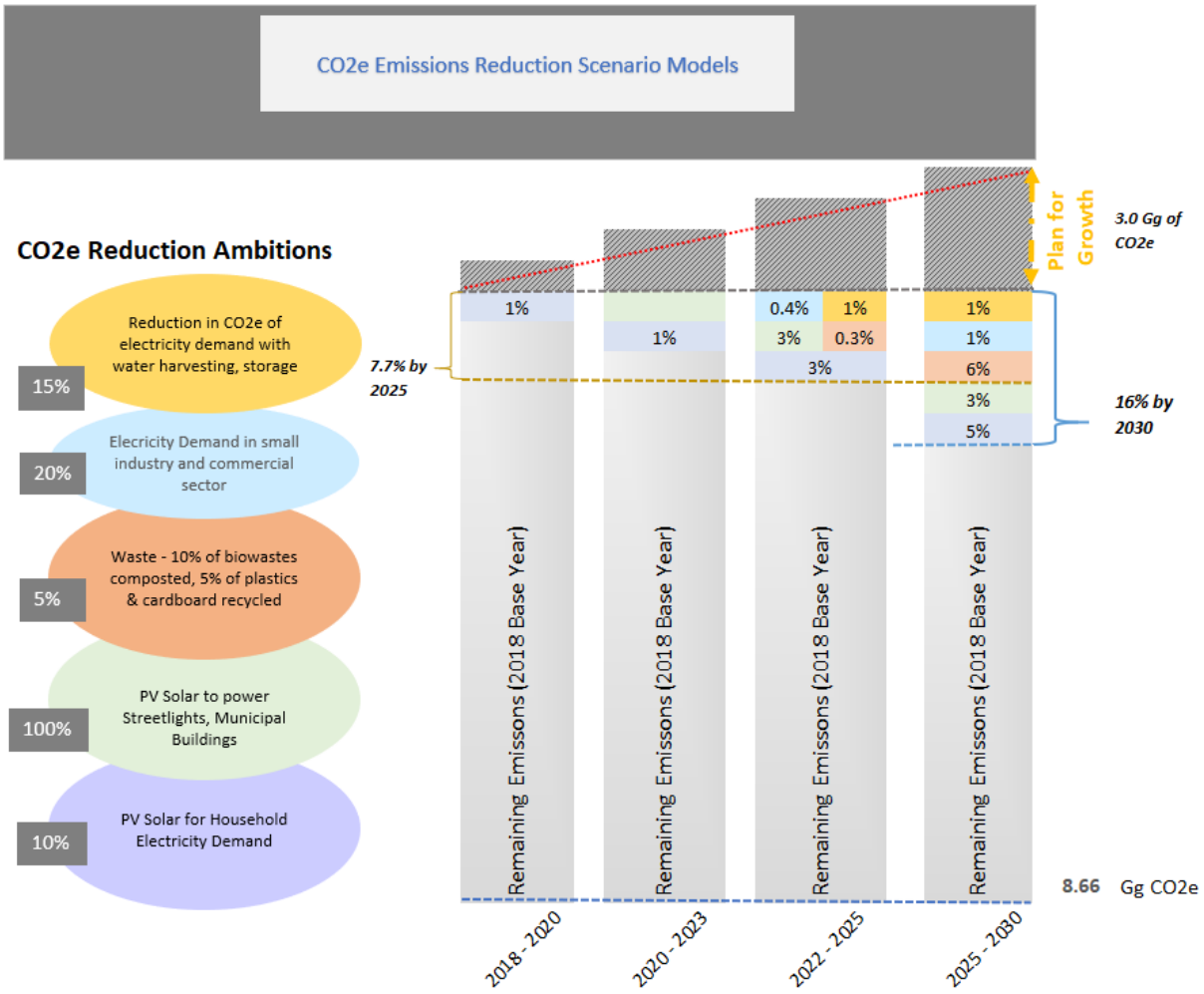
The model does not quantify emissions of transportation nor the emissions generated by the wider scope of activities in the agricultural sector, due to the limitation of data. Although these areas (transportation, agricultural activities that generate emissions not sourced from electricity consumption, not exclusively) have not been analyzed during

the development of the mitigation analysis and model, as more data becomes available for these activities, the models should be recalculated to represent these aspects.

The CO2e emissions reduction goals per category are also illustrated in the figure below (Figure 9). For example, if 10 percent of residential electricity demand were powered by solar PV units by 2030, it would result in a reduction of CO2 equivalent of 5 percent of total emissions of the base year for the included categories.

The municipality should evaluate and scale mitigation efforts to achieve desired targets, and offset population and developmental impacts (GDP growth, behavior changes, increased demand for water, not exclusively).

7.7% by 2025 Emissions Reduction Targets for Ayoun



By 2030, a basic outlook on population growth estimates Ayoun Municipality's population to be about 30,600, up from 23, 490 persons in 2018[12]. Due to the energy consumption of a larger community, in addition to an anticipated increase in the consumption of resources (if awareness and initiatives do not outweigh the factor of population growth), creates a context in which the impacts of climate change will be exacerbated.

Solar energy should also continue to benefit the residents of the municipality to ease the cost of electricity expenditure in addition to initiatives that raising awareness for energy efficiency and the acceptance of alternative fuel sources. If renewable, alternative energies that are affordable does not occur, then reducing energy demand is critical in the near-, mid- and long-term perspectives. As one of the core risks of climate change is increased temperatures, which in the municipality could correspond to an uptick in electricity consumption for climate-control technologies (such as air conditioning and heating units) at the household level as well as places of work.

Waste

There is a success story of circular product production in the Municipality of Ayoun. It is a model that can be further utilized for agricultural businesses and others where in so-called waste byproducts are re-invested as a commodity – particularly, a fuel source. The example is the local olive oil mill's use of a olive oil by product ("jift" or press cake) as an energy source to power the process of olive oil production. The mill's operator sells the surplus press cake. Press cake and olive oil wastewater are viable sources of energy (with properly targeted treatment technologies). If the municipality can utilize it, it would not only be a source of energy, but the (eventual) facility would help relieve olive oil producers of their olive oil wastewater, for which fees for disposal are considered burdensome.

Industry

The local economy is highly dependent on the tourism industry and, in turn, the tourism industry is dependent on the health and vibrancy of the environment and its protection. The forests and picturesque scenes attract about 200, 000 visitors annually who hike the local trails, scenic roads, landscapes, visit private resorts, camps and lodgings. Taking account of visitors' carbon footprint and utilizing it to guide and measure actions to scale the size and needed impact of initiatives in order to preserve, maintain and protect the natural resources can help drive investments to the industry as the pine forests are an increasing rarity in the region.

Targeting the municipality's local commercial entities (tourist camps and guest house, civic organizations, and private companies) as pilot areas for the testing of renewable energy sources (and their efficiency) in powering commercial activities for the area would enhance the market and illustrate the practical application of such energy sources in the region.

Transportation and Mobility

The lack of public infrastructure is another threat to the tourism sector. Addressing public transport to not only reduce emissions but to also provide safer, more efficient, and reliable mode(s) of transport for the community may incentivize commuters to travel by public transport, as opposed to their personal vehicles. Setting regulations to encourage potential users, providing capacity building for drivers and institutionalizing the roles of stakeholders to offer reliable transportation and building up pedestrian infrastructure could be utilized to incentivize improved modes of travel.

Regarding the municipal fleet, where possible could work toward replacing staff vehicles with energy-efficient models (hybrid, electric). Conducting regular maintenance of municipal solid waste collection and transport vehicles (compactors) and other loading vehicles is key to fuel efficiency and reducing emissions in municipal transport.

Maintaining the health of the pine forests, is also an area of mitigation that is represented in Actions as a means to safeguarding air quality and carbon capture. Safeguarding the forests will likely have to be conducted in tandem with renewable and/or producing a local and affordable alternative energy to deter tree felling. Collaborating on a

[12] Based on the exponential growth of the total population of the municipality at a national average growth rate of 2.2 percent (MoLA, 2019).

means to collect the amount of wastes accumulating in the forests due to the number of tourists who leave their wastes behind affects the health of the local environment, community and aesthetics.

Population growth, used as a variable to illustrate the potential increase in electricity consumption, solid waste generation and water demand per capita in the table below, has considerable potential to influence the amount of emissions generated and resources required to support a community facing the impacts of climate change. There are options within the scope of mitigation to offset population growth, such as introducing rainwater capture, greywater and water treatment to increase the quantity of water available, which reduces the need to pump and transport water; solar PV to counter the costs of electricity in the residential and commercial sectors; reducing costs and emissions in water treatment; treating waste as a resource for energy and or in the recycling market.

Related Actions:

- **Monitoring Energy Consumption within the Municipality**
- **Solar Saturation and Energy Efficiency in the Residential Sector**
- **Community-Shared Solar: Solar Utilization enabled through Innovative Financing Mechanisms**
- **Emissions Reductions and efficiency in the solid waste collection and transport**
- **Clusterization of Commercial - Residential Sorting-At-Source Recyclables Collection: Gateway to Waste to Energy Optioneering**
- **Municipal Climate Concept**
- **Briquettes Production: Waste as Energy and Resources Protection**
- **Advancing Public Transportation for Climate, Accessibility and Resilient Services (CARS)**
- **Extracting Energetic, Economic Value from Organic Wastes**
- **Olive oil Production By-Products (and Agricultural Organic Wastes) in Bio-Digestion**
- **Living Lab for Environmental Tourism & Recreation**

Inputs for Adaptation Actions

Assessment of Adaptation Options

Jordan is one of the leading countries in the region in conducting studies, issuing national climate change reports as well as having issued the first national-level climate change policy. For example, Jordan's TNC illustrates a wide range of potential adaptation options divided by sector. A list of potential adaptation options to reduce the impacts of climate change was developed based of desk review of the following related published reports: Jordan's TNC, SNC, and the review of Jordan's NDC report.

Corresponding to the results of Section 6.2, adaptation actions were assigned measures for the significance (5 high significance, 0 No significance) (Table 10), which were determined during a meeting of the RRCCG, to measure the suitability of these options for the municipality, as perceived by attendees.

The RRCCG then discussed appropriate adaptation options and were surveyed on the priority of the adaptation options, respective of the risk analysis.

The adaption options with highest significance were identified as ***Protecting forests and preventing overgrazing***, ***Rehabilitation of springs***, ***Utilization of water conservation and graywater technologies***, and ***Raising awareness***.

Table 9 Adaptation Options as Ranked by Focus Group Participants of Ayoun

Adaptation options	Percentage	Significance[13]
Protecting forests and preventing overgrazing	52%	4
Rehabilitation of springs	52%	1
Utilization of water conservation technologies	50%	2
Reuse of greywater	48%	1
Raising awareness about climate change, its impacts and adaptation	48%	5
Development of an early warning system for floods	48%	0
Improving the efficiency of water storage systems to reduce evaporation	45%	2
Improving efficiency of irrigation technologies	41%	2
Development of an early warning system for drought	41%	0
Wastewater treatment for use in irrigation	38%	2
Artificial recharge of groundwater	38%	1
Desalination of brackish water from wells	38%	4
Improving runoff capacity	38%	0
Changing agricultural patterns and cultivated crops	34%	4
Reducing dependence on irrigation	34%	0
Integrated Watershed Management	34%	1
Increasing the efficiency of irrigation systems	31%	3
Use of supplementary irrigation	31%	1
Adjusting the agricultural calendar	31%	1
Introducing new crop varieties	28%	2

Agriculture

Overgrazing is a particularly difficult topic in the Municipality of Ayoun. Not only are the forests becoming a rarity, threatened by climate, development, land-use change, water scarcity (and quality) as well as felling, but the ecosystems they host also continue to be in danger without an integrated framework that balances community interests and the wellbeing of ecosystem's. For this topic, the Consultant investigated frameworks for a Land Trust, which is an organization (an NGO, usually) that takes stewardship over property(ies) at the request of landowners. The property owners continue to own the land, but the steward (Land Trust) develops restrictions on use that aim to conserve natural resources and/or facilitate agricultural activity by the least disruptive (to ecosystems) means. This idea came about due to the current situation that there are multiple property owners in the Municipality of Ayoun and the landscape of this ownership creates challenges for introducing unified and impactful collective management. Through this Action, it may be possible to preserve the herding heritage by managing the sustainable use of lands. This Action would also be heavily supported by the Municipality of Ayoun's interest in establishing a Regional Agricultural Extension. The extension would be able to best inform on a management framework that would best serve the interests of the stakeholders involved, in addition to building the community's capacity to address other challenges resulting from as well as impacting the agricultural sector.

[13] Adaptation Options Ranked by Significance based on findings in National Publications: Jordan's Nationally Determined Contributions (NDCs); Jordan's First, Second and Third Communication on Climate Change; The National Adaptation Plan (Draft) (NAP) document; and Climate Change Policy for a Resilient Water Sector (MWI).

Water

The Municipality of Ayoun has demonstrated its concerns over the scarcity and quality of its remaining water resources – its springs, on which they depend on water for potable water and for agricultural activities (irrigation). Technologies for rainwater harvesting (small-scale as well as earthen cisterns) and graywater re-use are to be technologies with potential to aid in diversifying the local water portfolio in addition to employing best practices to conserve water in agriculture to reduce water withdrawal and loss. Rainwater harvesting technologies and cisterns could aid in addressing flash floods that have, in recent years, accompanied harsh, seasonal rains by channeling water into storage for later use.

Maintaining adequate water levels and its quality remain the most pressing issue, and with development and population increase, it can be forecasted to become an even more pressing challenge in the future. Additionally, moving out of the top, left-side corner, the decline in water resources quickly ripples into agriculture. After that, impacts on health, social cohesion and livelihoods would come under further strain.

Urban Development

Actions such as the Eco-Park and Eco-Design Infrastructure at Spring Sites are to be models wherein visitors are able to sustainably experience the natural features of the municipality with minimal disruption to the community and the sites themselves. Additionally, the Eco-Park offers an immersive awareness-raising experience where visitors can see technologies (renewable energy, rainwater harvesting, etc) first-hand. The value of awareness and increasing the public's acceptance and familiarity with these concepts is the leverage point on which success and failure are balanced.

The municipality's unique economy, development, communities and culture compose a mosaic of features that are vulnerable to climate change risks. To further draw the connection between the risk analyses in Section 6.2 as well as illustrate the often intersectoral actions, Figure 14 maps risks to effects and their respective "Action Areas" – broader categories that contain specific actions, corresponding to a particular climate risk and effect (Figures 12 and 13).

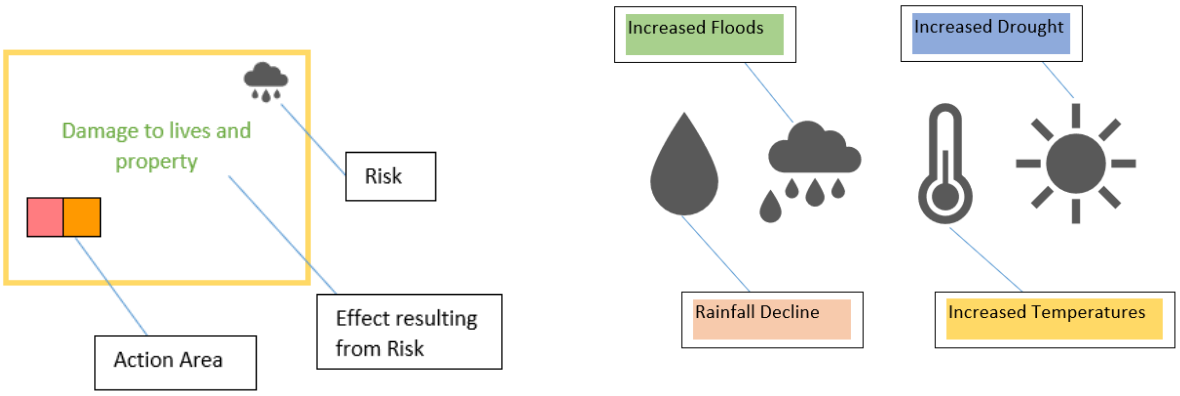


Figure 10 Risk indicators

The risks and their effect(s) were taken from the TNC and
ranked by the RRCCG according to their significance (capacity to affect negative consequences) such as increased floods, drought and temperatures and decline in rainfall. Moving from left to right, the risks increase in significance.

From top to bottom, is decreasing adaptive capacity to manage and respond to climate risks. The Generalized Action Areas in Table 11. The action areas are categorized by NDC and indicated in Figure 14 by color and acronym.

It is the objective of the LCAP to shed light on these issues and provide an initial framework for immediate action.

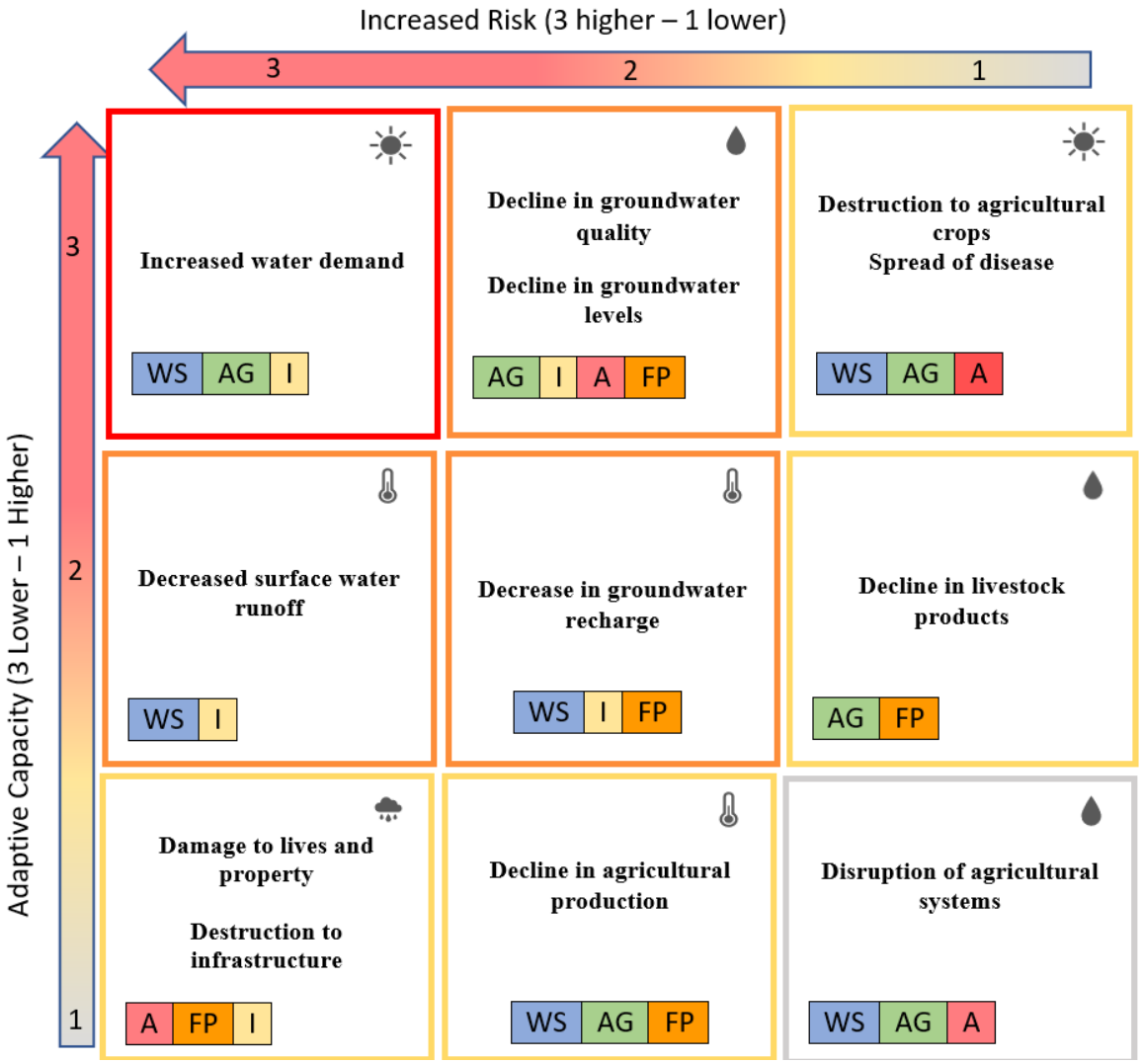


Figure 11 Actions Analysis for Adaptation Actions

Table 10 Action Areas

Generalized Action Areas			
Action areas are organized by NDC categories with the addition of "Communication & Public Awareness"			
Water	WS	Water Storage and Efficiency	Rainwater harvesting, greywater technologies, health of springs through groundwater recharge
Agriculture & Food Security	AG	Improved Agricultural Practices	Crop patterns and varieties, supplementary irrigation, technology for control irrigation and used treatment compost; training in advanced application of fertilizers, pesticides and

			scheduling of irrigation
Communication & Public Awareness	A	Awareness	Awareness campaigns and behavior change toward waste disposal, felling of pines trees and water conservation
Biodiversity, Ecosystems & Protected Areas	FP	Forest Protection	As buffer for water sources, agricultural areas and economic features; development and monitoring of parks and forests
Urban Development	I	Development of Infrastructure	Development of culverts, sewage systems, redirection of rainwater runoff, streets and guidebook for green building technology for the municipality

Related Actions:

- **Eco-Design Infrastructure at Spring Sites for End-Users and Recreation**
- **Rainwater Harvesting**
- **Regional Agricultural Extension**
- **Land Trust: Conservation Easement between Landowners**
- **Integrated Eco-Park**
- **Urban Green Canopies with Vertical/Roof Farming and Water Capture and Re-use**

Gender Mainstreaming in Actions

Climate change impacts men and women differently due to the tasks and responsibilities that are typically the responsibility of either gender.

The majority of studies have shown that women and girls are at greater risk from the consequences of drought, water shortages and food insecurity.

Socially constructed roles also affect men's responses to disasters; men are typically the ones to be injured during natural disasters due to their time spent outside the house. On the other hand, the threat to a woman's life may be linked to norms that can restrict her movement, knowledge and/or ability to appropriately respond to risks.

Figure 12 Gender Mainstreaming Methodology

Gender Mainstreaming: the process of integrating - at all stages – activities to ensure the inclusion of women and men express their visions and experiences, and participate in decision-making from identification of actions to implementation and evaluation to achieve justice.	Gender expert involved at all stages of LCAPs development
	Investigations of national policies and related strategies and policies; assessed the prevalance of these strategies and policies during field work
	Assessed municipal programs and projects related to climate change and related sectors
	Conducted In-depth interviews with stakeholders in municipalities, ministries and institutions associated with climate change
	Conducted focus groups, engaging stakeholders across sectors, gender, age and background
	Analyzed the institutional culture of the municipality and their awareness of climate change issues and women's empowerment

Therefore, the process of developing the LoA required integrating *Practical Gender Needs* and *Strategic Gender Interests* measures into each individual Action. Gender needs are considerations to ensure opportunities resulting from Actions are accessible to the public. Strategic gender needs pertain to society valuing the contributions of women in professional, social and familial settings.

Table 6 below illustrates an array of possible activities that were incorporated in Actions where possible to enhance the outcomes and improve local resilience. These activities are the result of a Gender Mainstreaming Exercise and Assessment during the Baseline Analysis phase of LCAP development (Figure, divided between sections **Identification of Actions**, the **Implementation of the Action** and the **Evaluation of Actions**.

The team was committed to integrating gender into the stages of methodology design, tools, data collection and the development of the municipal action plan framework. Several procedures have been implemented, and gender-sensitive methodologies have been used in collaboration with municipalities and the group of experts. The following have been done:

- The gender expert's involvement from the early stages of methodology design and action plans.
- An office review of national policies and strategies related to climate change and related sectors of the environment, water, energy and agriculture, and its arbitration of gender methodology.
- Access to municipal programs and projects related to climate change and related sectors;
- In-depth interviews with stakeholders in municipalities, ministries and institutions associated with climate change;
- Implementation of focus group panel discussions with civil society, taking into account the separate sessions held with youth, one with women's associations, and another with general stakeholders.
- The study of the institutional culture of the municipality and their awareness of climate change issues on the one hand, women's empowerment and gender justice on the other;
- Studying priorities in activities proposed by municipalities with a team of experts on adaptation and mitigation of the effects of climate change, and to strengthen them with the entrances to women's empowerment and women's organizations.

Through the methodology that has been used to identify the reality of the situation in the municipality of workers and the community, we must take into account key points in working with the community that it suffers from poverty and high unemployment rates among young people and university graduates, especially young women, and that the value of agriculture The investment rate is gradually declining, the municipality is under-resourced and unable to carry out its core tasks. The problems and proposals mentioned by municipal workers, as well as in focus group discussions, depend on the participants' limited experience, the nature of limited cooperation with the municipality, although there are few previous projects in the target areas in the context of climate change. Some of the measures to be taken into account include:

1. Any action must take into account high unemployment rates, power relations and decision-making in the municipality and other local authorities, and a general sense of marginalization in areas deprived of public services and investments.

2. It may be necessary to attach any action or project to a package of intensive training and awareness on climate change concepts for municipal and local council workers, community organizations, student and student schools, universities, and directorates related to the Brigade (this training should include topics Key to climate change and the environment, the importance of meaningful participation of society, youth and women, and working for society with it). This is through the active participation of women's organizations, youth associations and people with disabilities, and the use of an appropriate and easy-to-implement

motivational methodology such as competitions, competitions for best practices and initiatives in the face of climate change, and tourism visits.

3. Support dialogue with decision makers and stakeholders to discuss unfriendly climate change policies. These meetings should help coordinate, identify, identify and build capacity for stakeholders on climate change topics.

4. Strengthening the municipality's role in supervising regular activities carried out by groups of society. This should include community activity every month/two months. This may be like: organizing cleaning days; The municipality can contribute to promoting the marketing of women's products and associations, including food, juices and crafts, marketing and spreading awareness of the importance of clean energy, rationalizing electricity and water, and recycling grey water for use in homes and schools on the other, with the possibility of distributing any free means to help.

Table 11 A matrix of components, of which a selection was applied to each individual Action of the List of Actions of the Local Climate Action Plan.

	Practical Gender Needs
Identification of Actions	Participation of men, women, young people and persons with disabilities in discussion sessions and identifying problems, proposals and priorities
	Location and timing of meetings facilitates cultural needs (segregated rooms and/or providing childcare, location is accessible to the disabled)
	A social and gender expert is present at functions, events centered around community engagement
	Funding opportunities are unbiased
	Improving knowledge and concept of climate change and gender integration
Implementation	Building the capacity of municipal workers in gender and women's empowerment
	Participation of male, female and youth workers in supervising and implementing Actions
	Unbiased training and responsibilities are available to all, and efforts are made to remove barriers to women's participation
	Information is transparent and easily accessible
	Securing a nursery for childcare for male and female workers, supervised by the municipality
	Media campaigns promote women's empowerment, highlighting professional and leadership capacities
	Creating suitable economic opportunities for women to improve their income, including **training opportunities** in non-traditional skills (such as project-related technical and technological skills); **improving services and infrastructure** (nursery, transportation..) to enhance women's economic participation; safeguard labor rights, particularly for those who work in agriculture; **removal of barriers** traditionally placed on women that compound their workload; improving women's access to reproductive health services.
	Active participation of women's associations in implementation
	Improving and developing the role of women's associations in the community from traditional roles (charity,) to more leadership, renewable and related sectors related to climate change (water, energy and health)
	Active participation of youth
	Active participation of people with disabilities

Evaluation	Track the numbers of beneficiaries, participants and leaders/decision makers in initiatives, disaggregated by gender, age and geographical area of the municipality. Participation of women researchers and women's associations in data collection

The designation of the Gender Score Index ensures that the minimum requirements for justice and gender equality are met and that strategies contribute to improving the implementation of Activities and allocating the resources needed to ensure that any project, is as responsive to the practical and strategic needs of both genders as possible.

Gender Mainstreaming

G-0	Project has no potential to promote gender equality or women's empowerment
G-1	The project addresses gender equality only in some dimensions
G-2a	Gender is fully relevant, but it is not the main objective; it is mainstreamed into all relevant dimensions of the project
G-2b	Gender equality/ women's empowerment is one of the main objectives and is integrated in all relevant dimensions of the project.

8. List of Actions

Blending Mitigation and Adaptation aspects in a List of Actions was prioritized through the RRCCG during a workshop in September, 2019. The RRCCG's selection of criteria, which included: prioritizing Actions for improving soil health, livelihoods, stakeholder engagement, securing climate financing and others, helped shape the types of Actions and their details.

The LoA is organized according to the sectors of the NDC: Energy, Transportation and Mobility, Waste, Industry, Water, Agriculture and Food Security, Urban Development, Health; and Biodiversity, Ecosystems and Protected Areas with the additions of Urban Development and Communication. Each category corresponds to objectives, which are accompanied by strategies and the Actions. The resulting Actions are the product of the Mitigation, Adaptation and Gender Mainstreaming baselines. Consultations with the RRCCG informed on the types and scope of Actions as well as the set of values for the prioritization of Actions.

Actions discussed in previous sections are detailed in the LoA and its accompanying InfoSheets.

Priority:	
	Low Priority
	Medium Priority
	High Priority

Gender Mainstreaming	
G-0	Project has no potential to promote gender equality or women's empowerment
G-1	The project addresses gender equality only in some dimensions
G-2a	Gender is fully relevant, but it is not the main objective; it is mainstreamed into all relevant dimensions of the project
G-2b	Gender equality/ women's empowerment is one of the main objectives and is integrated in all relevant dimensions of the project.

TBD - To be determined by Local Development Unit, Municipal Administration

No.	Description of planned measures	Priority	A/M	Gender Indicator	Activity		Progress Update*	Responsibility			One-time costs		Ongoing costs (annually)		Sum	Status	Financing
					Beginning	Ending		Initiator	Submission of Approval/ Technical Support /Funding Avenues	Implementing Bodies (TBC)	Internal	External	Internal	External			
1. ENERGY																	
1A. MUNICIPAL-WIDE DEVELOPMENT																	
1.A.1	Monitoring the energy consumption in the boundary of the municipality	Medium Priority	mitigation	G-0	2022	permanent	TBD	Municipal Administration	Electricity Distributor	Municipal Administration	TBD	TBD	TBD	TBD	TBD		
1.A.2	Solar Saturation & Energy Efficiency in Residential Sector	Medium Priority	mitigation	G-2a	2021	2027	TBD	Municipal Administration	MDU, LE, MEMR	NGOs, Private Sector, Universities	TBD	TBD	TBD	TBD	TBD		
1.A.3	Stronger Foundations for the Built-Environment with Climate-Responsive Building Techniques (New construction)	Low Priority	mitigation	G-0	2021	2023	TBD	Municipal Administration	MoLA, GBC	TBD	TBD	TBD	TBD	TBD	TBD		
1.A.4	Community-Shared Solar: Solar Utilization enabled through Innovative Financing Mechanisms	High Priority	adaption of mitigation	G-2b	2021	2030	TBD	Municipal Administration	MiEMR, MoF, MoPIC	Donor Country	TBD	TBD	TBD	TBD	TBD		
1B. MUNICIPAL BUILDINGS																	
1.B.1	Elaborating energy audits for the municipal buildings	Medium Priority	mitigation	G-0	2018	2019	2025	Municipal Administration	Municipal Administration	Municipal Administration, MoLA	TBD	TBD	TBD	TBD	TBD		
1.B.2	Establishing a System for Monitoring Energy Consumption of Municipal Buildings	High Priority	mitigation	G-0	2020	permanent	TBD	Municipal Administration	Municipal Administration	MEMR	TBD	TBD	TBD	TBD	TBD		
1.B.3	Elaborate and Implement an Energy Directive for Public Buildings	Medium Priority	mitigation	G-1	2020	2021	TBD	Municipal Administration	GBC, MoLA	Municipal Administration	TBD	TBD	TBD	TBD	TBD		

1.B.4	Public Building Energy Efficiency & Zero-Refuse (Paper, Plastic) Initiative	Low Priority	mitigation	G-1	2020	2021	TBD	Municipal Administration	GBC, MoLA	Municipal Administration	TBD	TBD	TBD	TBD	TBD
1.B.5	Elaboration and implementation of procurement regulations for energy-efficient appliances, e.g. ACs, for the city administration	Low Priority	mitigation	G-0	2020	2021	TBD	Municipal Administration	City Council	Municipal Administration, staff	TBD	TBD	TBD	TBD	TBD
2. TRANSPORT															
2.1	Conversion of the municipal fleet to electric or hybrid cars	Low Priority	mitigation	G-0	2026	permanent	TBD	Municipal Administration	Municipal Administration	Municipal Administration	TBD	TBD	TBD	TBD	TBD
2.2	Emissions Reductions and efficiency in solid waste collection and transport	Medium Priority	mitigation	G-0	Jul-05	2023	TBD	Municipal Administration's Solid Waste Department (staff, drivers), consultant	City Council	Municipal Administration's Solid Waste Department (staff, drivers), consultant	TBD	TBD	TBD	TBD	TBD
2.3	Advancing Public Transportation for Climate, Accessibility and Resilient Services (CARS)	Low Priority	mitigation	G-1	2026	2030	TBD	Municipal Administration	LTRC, MoT, MoPSD, MoPIC		TBD	TBD	TBD	TBD	TBD
3. WASTE															
3.1	Avoidance of waste, especially plastic cups, in municipal administrations	Low Priority	mitigation	G-0	2020	permanent	TBD	Municipal Administration	City Council	MoLA	TBD	TBD	TBD	TBD	TBD
3.2	Recalculation of Waste-Collection Fees	Medium Priority	mitigation	G-0	2021	2021	TBD	Municipal Administration	City Council	MoLA Consultancy	TBD	TBD	TBD	TBD	TBD
3.3	Briquettes Production	Medium Priority	adaption of mitigation	G-1	2023	2021	TBD	Municipal Administration	City Council	MoLA, Donor	TBD	TBD	TBD	TBD	TBD
3.4	Olive oil Production By-Products (and Agricultural Organic Wastes) in Bio-Digestion	High Priority	mitigation	G-1	2022	permanent	TBD	Municipal Administration, Local Industry	MoA, NCARE	Municipal Administration, Local Industry, Cooperative, consultancy	TBD	TBD	TBD	TBD	TBD
3.5	Extracting Energetic, Economic Value from Organic Wastes	Medium Priority	mitigation	G-2a	2025	permanent	TBD	Municipal Administration, NGO / CBO	MoENV, MoLA, MEMR, MoA	NGO/ CBO, University, NCARE	TBD	TBD	TBD	TBD	TBD
3.6	Clusterization of Commercial - Residential Sorting-At-Source Recyclables Collection: Gateway to Waste to Energy Optioneering	High Priority	mitigation	G-2a	2021	2026	TBD	Municipal Administration, Solid Waste Department	City Council	Municipal Admnistration, Solid Waste Department, NGOs/CBOs, private sector	TBD	TBD	TBD	TBD	TBD
4. INDUSTRY															
4.1	Living Lab for Environmental Tourism & Recreation	Medium Priority	adaption of mitigation	G-2b	2022	2025	TBD	Cooperative/ Assoc of Ayoun's Tourism	MoENV	Cooperative, NGOs	TBD	TBD	TBD	TBD	TBD

							Industry								
4.2	PV Powering Small Industry	Medium Priority	mitigation	G-0	2024	permanent	TBD	Municipal Administration	TBD	Local Industries, consultancy	TBD	TBD	TBD	TBD	TBD
5. WATER															
5.1	Eco-Design Infrastructure at Spring Sites for End-Users and Recreation	High Priority	adaptation	G-2b	2020	2021	TBD	Municipal Administration	Municipal Administration	NGOs, Local Stakeholders	TBD	TBD	TBD	TBD	TBD
5.2	Rainwater Harvesting: Cisterns	High Priority	adaptation	G-0	2023	2024	TBD	Municipal Administration, WAJ, MoA	MoA, WAJ	TBD	TBD	TBD	TBD	TBD	TBD
5.3	Greywater Reuse and Groundwater Buffer	High Priority	adaption of mitigation	G-2a	2024	2026	TBD	Municipal Administration, NGO / CBO	WAJ, JVA, MoENV	Consultant, Donor, Local NGO, Universities	TBD	TBD	TBD	TBD	TBD
5.4	Decentralized WWT Systems at Pilot Sites	Medium Priority	adaptation	G-1	2026	2030	TBD	Municipal Administration, WAJ	WAJ	TBD	TBD	TBD	TBD	TBD	TBD
6. AGRICULTURE AND FOOD SECURITY															
6.1	Regional Agricultural Extension	High Priority	adaption of mitigation	G-2a	2021	permanent	TBD	Municipal Administration, NGO / CBO	MoLA, MoA, RSCN	NGO/ CBO, NCARE	TBD	TBD	TBD	TBD	TBD
6.2	Urban Green Canopies with Verticle/Roof Farming and Water Capture and Re-use	Medium Priority	adaption of mitigation	G-2a	2024	2026	TBD	Municipal Administration, NGO / CBO	GBC	Engineering Assoc., Universities, GBC, MoLA, WAJ	TBD	TBD	TBD	TBD	TBD
7. URBAN DEVELOPMENT & MOBILITY															
7.1	Eco-Municipality: Converging Ayoun's Mitigation & Adaptation Components to become a Resilient MunicipalityMunicipal Mitigation Strategy- Eco Municipality: Converging Ayoun's components to become a Resilient Municipality	High Priority	adaption of mitigation	G-2b	2020	2029	Annually	Municipal Administration	MoENV, MoLA	Local Community, Stakeholders	TBD	TBD	TBD	TBD	TBD
7.2	Integrated Eco-Park	High Priority	adaption of mitigation	G-2b	2020	2021	May	Municipal Administration	MoENV, MoLA, RSCN	Local Community, MoENV	TBD	TBD	TBD	TBD	TBD
7.3	Eco-Innovation Lab and Library	Medium Priority	adaption of mitigation	G-2b	2024		TBD	Municipal Administration, NGO / CBO	City Council	Local Community, Stakeholders	TBD	TBD	TBD	TBD	TBD
8. HEALTH															

8.1	Rehabilitation of Drinking Water Sources	Medium Priority	adaptation	G-2a	2023	2025	TBD	WAJ	WAJ	Donor Country, NGOs, Consultancy, Universities	TBD	TBD	TBD	TBD	TBD
8.2	Master Plan for Municipal Sanitation	High Priority	adaption of mitigation	G-1	2021	2021	TBD	WAJ	WAJ	WAJ, Consultancy, NGO	TBD	TBD	TBD	TBD	TBD
9. BIODIVERSITY, ECOSYSTEMS AND PROTECTED AREAS															
9.1	Land Trust: Conservation Easement between Landowners	High Priority	adaptation	G-2a	2023	2025	TBD	Municipal Administration	MoA, MoENV, RSCN	Municipal Administration, Engineering Assoc., Universities, GBC, MoLA	TBD	TBD	TBD	TBD	TBD
10. COMMUNICATION, PUBLIC AWARENESS															
10.1	Climate Action Website	Low Priority	adaption of mitigation	G-2b	2020	permanent	TBD	Municipal Administration	City Council	Local NGO, Youth Groups	TBD	TBD	TBD	TBD	TBD

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Energy	1.A.1		mid-term	permanent

Action – Title:

Monitoring the energy consumption in the boundary of the municipality

Goals and strategy:

Energy Savings, reduced emissions

Planned and coordinated data collection advances the baseline of energy consumption to develop indicators to better inform decision-makers (and help scope) Actions related to the feasibility of renewable energy options

Initial situation:

There is currently no consistent (neither regularly collected nor documented) data available on energy consumption in the municipality. In order to identify fields of action it is necessary to know the annual energy consumption by sector.

Description:

Data on energy consumption (electricity, gas) across sectors results for an improved understanding of trends. It will also the development, reporting of Actions and results of Actions.

Initiator:

City administration

Actors:

City administration, development department

Target group:

City administration, citizens

Action steps and timetable:

- Request the electricity distributor (EDCO) to coordinate the regular sharing of electricity consumption of the entire municipality, by sector (residential, industry, commercial, agriculture, municipal operations (street lighting, public buildngs, etc.)); file the data in an excel sheet and monitor them every year;
- Understand under what conditions this relationship (of data sharing between the distributor and the municipality) can be facilitated.
- publish the data publically on a website or social media account
- Survey the community by SECTOR regarding behaviors and systems of electricity consumption (where/when do their biggest expenses/energy consumption occur), build awareness and survey individuals, companies, etcs' attitudes toward new technologies, energy-saving behaviors, interest in trainings, etc. to use for future studies and justification of Actions. Work through local associations to assist in the community data collection.

· Survey residential electricity consumption (as well as other energies - gas, etc.), behaviors, attitudes, main consumers, gaps in electric power provision, etc.

· discuss the data in Climate (Implementation) team and plan actions based on this information

Gender Mainstreaming:

G-1: Engage women's organizations in data collection and analysis. The women's organization can aid in ensuring that information is transparent, easily accessible (and regularly updated) to the public, and practically applied to Actions. The organization and the Municipality's Social Expert (or RRCCG Gender Mainstreaming Focal Points) can aid in tracking the numbers of beneficiaries, disaggregated by gender, age and geographical area of the municipality, and aid in building community acceptance of the initiatives that result from this Action.

Success indicators/milestones:

The municipality has an up-to-date database of information that informs Baselines, Actions and discussions/coordination with potential donors that want to impact this sector.

Mitigation and Energy Efficiency Actions are paired with indicators (baseline versus improved and/or worst-case scenarios) that define success and/ or areas for improvement

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
None	N/a

Added value for the local economy:

Accompanying measures:

Further remarks:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Energy	1.A.2		mid-term	

Action – Title:

Solar Saturation & Energy Efficiency in Residential Sector (Solar PV)

Vision and Goals:

Working through various funding mechanisms, awareness and market incentives available to 10% of households in Ayoun, to amount to approximately 450 households (4,500 households in 2018) have installed solar PV electrification systems by 2030 (reference to the Technology Action Plan's Technology Needs Assessment (2017). For industry and commercial sector, achieve a 20% and 30% decrease in electricity demand by 2025 and 2030, respectively.

Initial situation:

Residential spending on electricity continues to burden households in the municipality.

The ongoing project subsidizing solar PV for families through a partial payment and repayment plan for solar PV installation on households

Details:

Working through various funding mechanisms **"Community-Shared Solar: Solar Utilization enabled through Innovative Financing Mechanisms**" - Action 1.A.6) , awareness and market incentives available to achieve market saturation to residential households

Continue to work toward energy efficiency in public buildings as well as households through awareness campaigns and engagement.

Building awareness and buy-in with the community, establishing jobs and economy around renewable energies. Immediate beneficiaries to be vulnerable communities, but accessible to all community groups.

Revisiting standards for the construction and management of public buildings

Gender Mainstreaming:

G2- a: Active participation of women's associations in implementation
Improving and developing the role of women's associations in the community from traditional roles (charity,) to more leadership, renewable and related sectors related to climate change (water, energy and health)

Involve women's association in the process of building the baseline data for the Action

Participation at the community level, through outreach (media, participation), capacity-building, beneficiaries and professionals, women are part of the strategic process of reducing emissions and increasing economic opportunities in renewable energy sources, and designing and implementing projects. Awareness initiatives focus on men's and women's behaviors on reducing energy consumption.

Establish Technical Training for engineers (ensuring facilitation of female enrollment).

Initiator:
Municipal Administration's Development Unit
Actors:
Municipal Administration's Development Unit, Local Experts, Ministry of Energy and Mineral Resources
Action steps and timetable:
* Seek reliable industries to decrease the cost of systems and increase trust among customers * Hold conference for all governmental bodies and concerned parties to discuss current situations and required development and improvements * Dissemination of solid proposal and documents of enforcement to the concerned governmental bodies * Design and implementation of a comprehensive training program for technicians and engineers * Establish demonstration facilities for public and users
Design and implement an effective awareness program that can reach prospective users
· Conduct environmental impact assessment on the area to determine the best location for the methane generation plants · Study the infrastructure and the reliability of solar energy for power generation · Study of solar cells that achieve the best efficiency based on brightness angle, duration and cost · Secure +/- 50 kW solar cells for houses Identify liaison officers Ensuring equal opportunities for males and females Promoting the role of women as volunteers and workers with symbolic rewards. Training engineers/engineers on alternative energy matters. To benefit from the return of renewable energy to conduct awareness workshops. Consider the choice according to efficiency and open the way for females to work in electromagnetic fields. Ensure that the municipality supports the continuity of waste collection and sorting Make a model supported by the organization and then work out
Success indicators/milestones:
Reduce electricity and energy bill The widespread dependence on solar energy as an energy source Increased job market, improved local economy Contribute to the dissemination of renewable energy efficiency
Total expenditure/(start-up) costs:
Financing (sponsoring, funding):
.
Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	Savings of GHG emissions (t/a)
To be estimated	Depending on the emission factor for electricity in Jordan

Added value for the local economy:
Improved job market for skilled technical persons as well as professional training opportunities. Impact of actions will be reflected in different sectors (namely energy and agriculture).

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Urban Development	1.A.3		2021 - 2023	

Action – Title:

Climate-Responsive Building Techniques for Ayoun's Built-Environment (New Construction)

Vision and Goals:

Newly constructed public and, eventually, commercial and residential buildings adhere to a degree of green-building practices that improve a facility's energy efficiency, water efficiency, air quality and overall accessibility.

Avoidance of household and building expenditures on heat / cooling loss.

Initial situation:

Minimal to no consideration for green-building practices on municipal buildings nor public, commercial buildings.

The extent ends with the installation of solar panels onto the roofs of vulnerable residents under Canada's SEED program to subsidize the technology.

Details:

Mandate energy efficiency aspects into the planning, consulting of construction projects to meet GreenBuilding standards.

Outline and act on prospects for Retrofitting existing public buildings; development of a concept for residential and commercial buildings to be rolled out along a designated timeline.

Amend sector policies and regulations including building codes to reflect climate change risks. Incorporate zoning and development changes to reflect increased vulnerability of specific locations and resources.

Modify sector policies and regulations, including building codes, to reflect the risks of climate change.

Combine zoning and development changes to reflect increased exposure to specific sites and resources.

Encourage the use of energy-saving devices by raising awareness of long-term benefits. Identify incentive mechanisms for projects that apply the decree by identifying "green buildings" guidelines and economic incentives. The guidelines also specify the healthy structure to separate grey water from black water.

Gender Mainstreaming:

G-0 The project addresses equality in its planning and regulatory aspects to improve accessibility and design considerations for safety and recreational activities that can benefit men, women, youth, elderly and disabled in their considerations. Incorporate capacity bulding at the local level for improved awareness and practical application of "greenbuilding" measures.

Initiator:

Municipal Administration

Actors:	
Jordan Green Building Council (and/or Jordanian National Building Council) , Ministry of Local Administration	
Action steps and timetable:	
Success indicators/milestones:	
Interest in the application of standards	
Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
.	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
To be estimated	Depending on the emission factor for electricity in Jordan

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Energy	1.A.4		mid term	

Action – Title:

Community-Shared Solar: Solar Utilization enabled through Innovative Financing Mechanisms

Vision and Goals:

Household application and use of solar technologies are enhanced and incorporated to produce economic benefits

Increasing penetration of solar PV in water heaters, water pumping and water desalination.

Donor outreach activities succeeds in the municipality being able to implement & develop its sustainable plan.

Initial situation:

The low income of local population

Investment in infrastructure has largely been the result of loans in recent years.

Description:

Community Solar is defined as a solar-electric system that, through a voluntary program, provides power and/or financial benefit to, or is owned by, multiple community members. Community Solar advocates are driven by the recognition that the on-site solar market comprises only one part of the total market for solar energy.

Integrating measures and solutions for technologies that enable solar PV, solar thermal and solar (water) pumping, desalination.

Subsidization through a funder is just one way of reducing the initial costs of solar; other means include: **bulk-purchasing**, **solar services co-op**, **utility-sponsored distributed generation on rooftops** (in which a utility owns or operates a project that is open to voluntary ratepayer participation), **group billing**, **special purpose entity** (Model in which individual investors join in a business enterprise to develop a community solar project) **virtual net metering**, **non-profit** (in which donors contribute to a community installation owned by a charitable non-profit corporation) or **joint ownership**. Extensive stakeholder engagement would seek to establish which option would be optimal.

As a means to increase access to solar energy and to reduce up-front costs for participants. The secondary goals met by many Community Solar projects include:

- improved economies of scale
- optimal project siting
- increased public understanding of solar energy
- generation of local jobs
- opportunity to test new models of marketing, project financing and service delivery

These "Creative mechanisms" are to foster greater deployment of solar energy projects are not limited to those described in this guide. Readers may be interested in investigating the following efforts that employ some elements of community solar:

Gender Mainstreaming:

G-2 b: Innovative financing mechanisms need to occur in close coordination with the respective local and national ministries to explore available options in community-shared solar financing options that can be supported by donor subsidization and enabled through a local organization, which can also take part in initiating trainings and awareness, enabling women, men and youth opportunities. In methods of outreach and awareness of energy efficiency and within the Solar Panel subsidization opportunity, all family members of the household are to be addressed as persons able to engage in energy efficiency practices and awareness.

Initiator:

Municipal Administration, NGO / CBO

Actors:

Municipal Administration, Ministry of Environment, Ministry of Energy and Mineral Resources, Ministry of Finance, Ministry of Planning and International Cooperation

Steps:

Conduct an energy, socio-economic and marketing baseline(s) for the target and/or pilot communities for off-grid solar PV systems.

Work through an NGO to engage communities and raise awareness about the initiative.

Interview and investigate PV systems suppliers about costs and prices of bulk purchases.

Host a workshop with the target communities regarding the stats (scale of PV), cost, intended locations and set up, discuss financing mechanisms (overviewed above), and the benefits of this renewable energy and its potential impact on their livelihood.
A financing mechanism is selected and committee is formed to manage it in coordination with municipal oversight.

Results are reported and utilized as case study.

Success indicators/milestones:

Solar PV saturation serving residential homes improve

Solar PV saturation on commercial buildings, parking lots, grave yards and other land increases, reducing energy bills and local expertise and application of PV systems and innovative financing

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

.

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**

Added value for the local economy:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Energy	1.B.1		Short term before 2020	2019 - 2020

Action – Title:

Elaborating energy audits for the municipal buildings

Goals and strategy:

Savings of energy in municipal buildings, savings costs for the municipal budget, municipality as model role

Initial situation:

Description:

Energy audits are used to determine and analyze the energy consumption of municipal buildings. Energy saving measures are developed and the results compiled in a report.

Initiator:

City administration

Actors:

City administration, facility department, external consultant

Target group:

City administration

Action steps and timetable:

- Depending on the capacities of the administration, the energy audit can be carried out by yourself or an external office can be commissioned.
- If the administration carries out the audit itself, the following steps must be carried out:
- Recording of building data: Building substance, technical installations, larger electricity consumers
- Energy consumption split according to electricity, heat, cooling
- Formation of indicators: kWh/m2, compare the figures with other municipalities
- Determination of energy saving measures
- Calculation of energy and CO2 savings
- If the municipality wishes to commission an external office, money must be placed in the budget for this purpose.

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
To be estimated	Depending on the emission factor for electricity in Jordan
Added value for the local economy:	
Accompanying measures:	
Further remarks:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Communal Buildings	1.B.2	Energy management	**Short term before 2020**	permanent

Action – Title:

Establishing a monitoring of the energy consumption of the municipal buildings

Goals and strategy:

Savings of energy and costs, municipality adopt their model role function

Initial situation:

The monthly meter reading, the evaluation of consumption and comparison with bills are not carried out.

Description:

Energy controlling means the consistent collection and evaluation of energy consumption and the associated costs. Energy controlling forms the basis for a reliable analysis of consumption values and enables the compilation of consumption indicators, which serve to assess the energetic condition of buildings.
The data obtained is used for monitoring purposes but also as a basis for investment decisions and the preparation of a renovation plan.
The use of software for energy controlling is recommended.
In addition to the further installation of media meters, there will also be meters (electricity, heat, water), which the caretakers will continue to have to read regularly and pass on to the responsible office. There is a monthly evaluation of the data and a consultation as well as evaluation with the responsible caretakers.

Initiator:

City administration

Actors:

City administration, building management

Target group:

City administration

Action steps and timetable:

- Definition of responsibilities in the city administration
- Finding a suitable tool for data acquisition and analysis (database recommended)
- Inform caretakers about the necessity of continuous consumption recording with necessary intervals and the form of data transfer.
- Feedback of the evaluation to the caretakers
- Preparation of an annual energy report with consumption, key figures and costs

· Publication of the report's results online and communicated via social media · Presentation of the energy report once a year to the relevant committee
Gender Mainstreaming:
Female community leaders and the city council are aware of the current status of gender equality Municipality builds awareness to enable and increase female participation Building the capacity of municipal workers in gender and women's empowerment
Success indicators/milestones:
• Monthly recording and monitoring of consumption • Annual evaluation and reporting as well as presentation to the responsible committee
Total expenditure/(start-up) costs:
staff costs, procurement costs for software and meters
Financing (sponsoring, funding):
municipal budget
Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
To be estimated	Depending on the emission factor for electricity in Jordan

Added value fort he local economy:
Accompanying measures:
Further remarks:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Municipal buildings	1.B.3		mid term	

Action – Title:

Elaborating and implementing an Energy Directive on how to run a public building

Goals and strategy:

Savings of energy in municipal buildings, savings costs for the municipal budget, municipality as model role

Initial situation:

Description:

By maintaining adequate temperatures in the administrative buildings (23 degrees in summer and 21 degrees in winter), significant electricity savings can be achieved. In order to bring about these behavior changes in the employees of the administration, an instruction will be drawn up and introduced which, among other things, determines the temperatures in the offices.

Initiator:

City administration

Actors:

City administration, facility department

Target group:

City administration

Action steps and timetable:

- Development of a Directive, an example provided by a consulting firm
- Discussion of the Directive in the Climate/Energy team
- Incorporation of changes, completion of the Directive
- Signature by the Mayor
- Announcement in the administration

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Estimation of approx. 10% of the electricity consumption in the municipal buildings	Depending on the emission factor for electricity in Jordan
Added value for the local economy:	
Accompanying measures:	
Further remarks:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Energy	1.B.4		short-term	Permanent

Action – Title:

Public Building Energy Efficiency & Zero-Waste Initiative

Vision and Goals:

Energy savings in municipal buildings, savings costs for the municipal budget, municipality as a role model

--

Energy consumption is divided according to electricity, heat and cooling

Formation of indicators: (kWh/m2), comparing figures with other municipalities

Identify energy-saving measures

Initial situation:

Details:

The municipality conducts an energy audit of the building, facilities and operations to coincide with the process of monitoring and procedures for energy consumption, thereby setting the targets for consumption reduction.

Depending on the municipal administrative capacity, an energy review can be conducted by the municipality or an external office can be assigned. If the department conducts the audit itself, the following steps must be implemented:

- Registration of building data: building material, technical installations, larger electricity consumers
- Energy consumption is divided according to electricity, heat and cooling
- Formation of indicators: (kWh/m2), comparing figures with other municipalities
- Identify energy-saving measures
- Energy and CO2 saving account
- If the municipality wishes to assign an external office, the funds must be budgeted for this purpose.

Adopting strategic official programs and decisions on zero-waste

- Through its typical function, the municipality must purchase only high-efficiency equipment, for example air conditioners, refrigerators, printers, screens, etc. For this purpose, you must develop a guide book that determines the level of equipment to be purchased (see above.
- Development and implementation of procurement regulations for energy-saving devices, for example air conditioners, in city management

- Collaborate with local organizations to start creating a recycling deposit box for paper, cardboard and [...] Come on paperless or "paperless days"

Application of green building practices (aspects of energy efficiency, planning and consulting in the new administrative building.

- The municipality plans to build a new administrative building. It has already been well planned, but it is still possible to make minor changes with climate change and mitigation.
- Engineers and technical planners should be contacted immediately to discuss the possibilities.
- Easy mobility of employees, role model, reduced use of gasoline.
- Transforming the municipal vehicle fleet into electric or hybrid vehicles.
- Possible measures can be as follows: window shading, green roof, greening façade, solar cell system on the surface
- The benefits of the measures should be discussed and presented.

Gender Mainstreaming:

Staff should be encouraged to participate in the exchange of ideas/means to reduce energy waste and improve energy efficiency in the workplace. Participation can be stimulated through friendly competition or through its construction activities between teams.

Initiator:

Actors:

Target group:

Action steps and timetable:

The town hall functions as a model of green building
Municipal buildings switch to energy-saving lighting, and are powered by solar energy.
Conducting an energy audit of municipal buildings
Follow-up audit
Identify areas and means to reduce energy cost and increase energy efficiency
Awareness of the efficiency of the use of devices
Raising environmental awareness and Interest in finding alternatives to energy-consuming devices

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

.

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
To be estimated	Depending on the emission factor for electricity in Jordan
Resilience Factor:	
Improving the environment Reduce the amount of energy consumed	
Added value for the local economy:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Internal Organization	1.B.5			

Elaboration and implementation of procurement regulations for energy-efficient devices, e.g. ACs, in the city administration

Goals and strategy:

Saving energy and costs

Initial situation:

Description:

In its role model function, the municipality should only procure highly efficient equipment, e.g. air conditioners, refrigerators, printers, monitors, etc. For this purpose, a guideline is to be drawn up which defines the standard of the equipment to be procured (see above).

Initiator:

City administration

Actors:

City administration, procurement

Target group:

City administration, citizens

Action steps and timetable:

- Elaboration of a guideline, an example is provided by Dimetrix
- Discussion in the Climate/Energy team
- Completion of the Directive
- Signature by the Mayor
- Announcement in the administration
- implementation

Success indicators/milestones:

- The quantity of consumption decreases
- Builds awareness and competency among staff

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	Savings of GHG emissions (t/a)

	Depending on the emission factor for electricity in Jordan
Added value for the local economy:	
Accompanying measures:	
Further remarks:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Mobility	2.1			

Action – Title:

Conversion of the municipal fleet to electric or hybrid cars

Goals and strategy:

Environmentally friendly employee mobility, model role, reduction of gasoline use

Initial situation:

The municipality's fleet runs on gasoline, diesel vehicles.

Description:

The municipality wants to convert its vehicle fleet to electric or hybrid vehicles.

Initiator:

City administration

Actors:

City administration, procurement

Target group:

City administration, citizens

Action steps and timetable:

- Analysis of the vehicle fleet Vehicle type, age, use, mileage per year, average length of journeys
- in the case of replacement purchases, examination of the possibility of choosing an electric or hybrid vehicle
- cost-benefit analysis
- Planning an appropriate amount of money in the budget
- Tendering, procurement

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
none	Depending on the emission factor for electricity in Jordan
Added value for the local economy:	
Accompanying measures:	
Further remarks:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Waste	2.2		Short-term - 2020	

Action – Title:

Emissions reductions and efficiency in the solid waste collection and transport (Process Maps)

Goals and strategy:

Integrated routing of solid waste collection and transport vehicles to improve efficiency (cost and emissions/fuel consumption) and laying out routing and schedule of collection routes for eventual sorting-at-source (SAS) initiatives.

Increase vehicle and equipment fuel efficiency

Reduce idling of waste collection and transport vehicles

Initial situation:

Routes are typically established informally. Monitoring, tracking and revision of routes is not routinely conducted, creating opportunities to correct inefficiencies and optimize solid waste collection and transport.

Details :

After the energy sector, the transport sector is the greatest source of GHG's in Jordan. Improving the efficiency of SW collection, whereby decreasing energy requirements and emissions while not sacrificing service delivery is a localized way of addressing inefficiencies in transportation, reducing costs and emissions.

Improving accessibility through proper bins placement and promotion of adherence to safety for SWM staff. Raising awareness about coordinated SW pick-up times.

Development of Process Maps for SW collection vehicles (and/or installing GPS trackers) to improve the efficiency of routes and collection of SWs

Initiator:

Municipal Administration's Solid Waste Department

Actors:

Municipal Administration's Solid Waste Department (staff, drivers), consultant

Target group:

Solid Waste Department

Action steps and timetable:

Reorganizing the tracks

Regulation of waste collection and transport

The cabs are evaluated. Redistribution of bins and containers

Success indicators/milestones:

the cost of collecting and transporting waste

Raising the level of hygiene

Resilience Factor:

Reducing emissions Increased efficiency in collection and transport of solid waste A proven and standard means for improving this area of the sector	
Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
.	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Added value for the local economy:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Transportation	2.3		Mid-term	

Action – Title:

Advancing Public Transportation for Climate, Accessibility and Resilient Services (CARS)

Vision and Goals:

The community enjoys access to a public transport system which is safe, reliable, efficient, accessible (to disabled) more environmentally friendly and satisfactory for both users and operators.

The municipality exhibits commitment and evaluates the benefits of electric-powered transport through the procurement of electric vehicle(s) for municipal use.

Initial situation:

Municipal fleet of vehicles are powered by gasoline or diesel.
Public transport is limited to private buses that operate on non-uniform standards of quality and efficiency, standardization and routing optimization to tailor to the needs of working and recreational people.
Public transportation are not equipped to accommodate persons with special needs (persons with disabilities).
Places for recreation and footpaths are not accessible. Sidewalks (if they are present) are, even in high-traffic areas, are open directly exposed to the elements and not necessarily ideal during the summer.

Details:

Municipal Vehicles

Electric vehicles are procured for municipal staff

Public Transport

Inner-municipal transport, especially small cars, services and taxis are subject to municipal regulations, providing the opportunity to provide training and capacity building to bus and taxi operators and increase coordination to improve demand management.

Feasibility study and procurement of electric internal public transportation within the Municipality area (and consider routes to destinations (Amman, etc.)); the buses being handicap accessible

Consolidate individual operators

Capacity-building plan for drivers and operators, set regulations to compel drivers to participate in courses
Ayoun would need to coordinate with LTRC/MoT, MoWPH to advocate an institutional framework for new law for public transport that will define the responsibilities among municipalities to ensure a high level of coordination

Set criteria and qualifications for public transport drivers

Eventually, electric busses are introduced if feasible

See Action **6.3.5 "Recreation & Pedestrian Infrastructure"**
Enhance pedestrian infrastructure (sidewalks, walkways, [..]) with a shaded pedestrian infrastructure ("canopies) that can cool regular pedestrian walkways, market areas and routes to tourist and recreational areas.

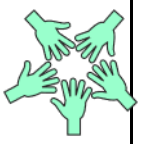
Pedestrian paths are cooled with green canopies where possible; other canopies can be constructed and coated to aid in reflecting the sunlight in an attempt to beautify and cool these areas.

These paths should be equipped with waste collection bins, preferably (recyclable bins).

Community groups and schools can submit design ideas (decorative and functional) for various sections of theses paths.
Provide a timetable for the introduction of mitigation fees to finance alternative transport priorities and improvements in the transport sector.

Gender Mainstreaming:

Mobility for women and persons with disabilities open up additional employment and recreational activities. Consultations with local stakeholders will be sought out to achieve the Actions goals including improving the accessibility of the city and neighboring destinations for persons with disabilities as well as the consideration of enhancing routes to destinations that host employment opportunities for women and scheduling transport operations to match demand.



Initiator:

Municipal Administration

Actors:

Municipal Development Unit, Land Transport Regulatory Comission, Ministry of Transportation

Action steps and timetable:

7 - 13 months

Municipal Vehicles

3- 6 months

Procure electric vehicles are procured for municipal staff

Public Transport

Conducting conversations and meetings with transport officials (LTRC/MoT, MoWPH to advocate an institutional framework for new law for public transport that will define the responsibilities among municipalities to ensure a high level of coordination)
Open dialogue with current drivers and operators of public transportation about the aims of the Action and the development of the sector.
Conduct a Feasibility Study for a Public Private Partnership of the enhancement of the public transport and pedestrian sectors

Review laws Consolidate individual operators Capacity-building plan for drivers and operators, set regulations to compel drivers to participate in courses Study the feasibility and purchase of internal public transport Action sought within the municipal area (taking into account the routes leading to destinations (Amman, etc.);	
Success indicators/milestones:	
Total expenditure/(start-up) costs:	
Financing (sponsoring, funding): .	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a) To be estimated	**Savings of GHG emissions (t/a)** Depending on the emission factor for electricity in Jordan
Added value for the local economy:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Waste, Internal Organization of Municipal Administration	3.1		Short term	

Action – Title:

Avoidance of waste, especially plastic cups, in municipal administrations

Goals and strategy:

Saving ressources, model role of the municipality

Initial situation:

Description:

In order to edit the consumption of resources it is necessary to produce as little waste as possible. A big problem worldwide and also in Jordan is the plastic waste. The administration sets an example and tries to avoid plastic as much as possible.

Initiator:

City administration

Actors:

City administration, procurement

Target group:

City administration, citizens

Action steps and timetable:

- In a first step the administration no longer offers water in small plastic cups and drinks in aluminium cans for employees or guests. Instead, large containers and glasses are used.
- In a second step, further waste reduction measures will be taken, such as
  - Replacing plastic plates with porcelain
  - Procurement of biscuits in larger containers
  - Use of recycled paper
  - Offer of local products in the catering of guests

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

The number of plastic cups and aluminium cans consumed annually to date is to be determined or estimated. This can then be used to calculate the resource savings.	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Added value for the local economy:	
Accompanying measures:	
Further remarks:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Solid Waste	3.2		short-term	Permanent

Action – Title:

Recalculation of Waste-Collection Fees

Vision and Goals:

The revision to waste collection fees improves the overall sustainability of solid waste management operations, provides a framework around which to build incentives for compliance (for residentail and commercial sectors), and enhances the feasibility of treatment options for solid waste.

Initial situation:

Littering and improper waste disposal (from burning of agricultural residue wastes - both organic and plastic, mistreatment of wastes from cesspits leading to environmental concerns and damage); waste collection and treatment infrastructure need an improved fees to advance the sector.

The lack of a mechanism that motivates improved complience on the part of the pulic and private insitutions to dispose of waste appropriately to decrease the potential for negative environmental impacts.

Details:

Change of the waste fees: the fees should deter the improper disposal of wastes

• Regulation for Nuisance Prevention and Waste Collection Fees within Municipal Borders
o Under this law, which was recently instituted (2016), outlines the following:
1. It is forbidden for anyone within the municipal borders to:
• Collect or transfer waste without the prior approval of the Municipal Council;
• Recycle, treat and destruct waste without the prior approval of the Municipal Council.
2. The Municipal Council is to collect an annual fee for waste collection, transfer and disposal services from each residential unit as follows:
• Class A Municipalities: 36 JOD
• Class B Municipalities: 24 JOD
• Class C Municipalities: 20 JOD
3. The Municipal Council and by the Minister of Municipal Affairs consent has the authority to determine and increase the waste collection, transfer, treatment and disposal fees from any facility, institution, shop or any activity that generate quantities of waste that require higher costs of collection, transfer, treatment, and disposal.
4. The Municipal Council and by the Minister of Municipal Affairs consent has the authority to determine the waste management and treatment fees of the solid waste generated from any entity or activity producing by its nature this type of waste, and in accordance to the cost of the collection,

transfer, sorting, storing, treatment, recycling and disposal of it.
5. Article 11 of this regulation states that 50% of the fees stipulated in this system shall be paid by the person generated the waste. This will encourage the residents to sort their waste.
6. The Municipal Council has got the right to specify sites for scrap, wood, used furniture, machinery accumulation, and to determine disposal and transfer timing of them.
7. The Municipal Council and by the Minister of Municipal Affairs consent has the authority to collect, transfer, sort, store, treat, recycle and dump waste or to manage and treat solid waste through a partnership with another municipality, a joint services council or through the foundation of a company owned by the municipality either solely or through partnership with the private sector.
§ 8. The Minister of Municipal Affairs has got the authority to consider any of the JSCs a municipality for the purposes of the application of the clauses of these regulations.

Gender Mainstreaming:

Within this Action, the re-evaluation of waste fees against more advanced waste-treatment options, which could lead to, not only greater income but also improved health and community aesthetics, the eventual engagement of women in advanced waste treatment options (such as recycling, sorting-at-source, biogas, composting, etc) requires an investigation into how women, women's associations, youth and men are to be involved, incentivized and benefit from advanced waste treatment options. This is improtant because, for example, sorting-at-source, would require households (or clusters of households) to be engaged in the activity to make the Action worthwhile. Thus, in this Action, engaging women, women associations, men, youth within the community as stakeholders (particularly, when the treatment options are being considered) should participate in developing the **waste generation baseline** and accurate data, developing appropriate fees and **incentive mechanisms** for treatment options. When the fees are established and a timeline of treatment Actions published, women, youth, local non-profit associations can act as ambassadors to engage the commercial sector, residential areas and farmers to raise awareness about complience as well as how individuals and the community can benefit.

Initiator:

Municipal Administration

Actors:

Municipal Administration

Action steps and timetable:

Estalish a waste generation and composition baseline

Consider the areas of investment in the waste sector and their timelines such as sorting-at-source, recycling, composting, biochar and other initiatives that will require wastes as inputs; What ways in which fees can support (create incentives or mechanisms) to support the success of these initiatives

Target and implement areas to improve existing municipal solid waste services to residences and commercial sector.

Conduct awareness campaign on the plans for development in the solid waste sector and how the new fees will aid in achieving the sector's development goals. Develop a shared understanding of benefis

between municipality and stakeholders.

Success indicators/milestones:

Feasibility of current solid waste operations is improved and future waste treatment options' viability assessed and needs outlined.
The municipality has an up-to-date baseline which serves as the basis for future studies and informs future sectoral investments.

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

.

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	Savings of GHG emissions (t/a)
none	n/a

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Waste, Energy	3.3			

Action – Title:

Briquettes Production

Goals and strategy:

Renewable energy sourced from waste from the olive mill

Initial situation:

The local olive oil facility uses its own waste biproduce from olive oil production (jift) to power its operations. Currently, there is a surplus of jift that is sold as a fuel to other municipalities, etc.

The felling of trees by the local community as fuel during the winter months is a threat to the health of forests and, ultimately, the community itself.

Description:

Production of briquettes locally from an organic waste source (jift) can provide a sustainable heat source for the community, add to the local economy, and deter the felling of trees.

Gender Mainstreaming:

From securing input materials to production, the employment opportunities in briquettes production should incorporate women in training and in securing additional income.

Initiator:

Municipal Administration

Actors:

Municipal administration, facility department

Target group:

Municipal Administration

Action steps and timetable:

- Development of a Directive, an example provided by a consulting firm
- Discussion of the Directive in the Climate/Energy team
- Incorporation of changes, completion of the Directive
- Signature by the Mayor
- Announcement in the administration

Success indicators/milestones:

Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)** Depending on the emission factor for electricity in Jordan
Added value for the local economy:	
Accompanying measures:	
Further remarks:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Waste, Energy	3.4			

Action – Title:

Olive oil Production By-Products (and Agricultural Organic Wastes) in Bio-Digestion

Goals and strategy:

Energy generation from waste materials, prevention of contamination of groundwater by olive oil production, waste utilisation.

Initial situation:

Olive oil production produces jift (press cake) and zebar (olive waste water), the later being a hazardous waste requireing the producer to pay fees to have wastes transported to the hazardous waste landfill. Fees are expensive and in the past there had been violations, reportedly.

Description:

Organic waste from agriculture is ideally suited for fermentation and production of biogas. This potential should be exploited in Al Ayoon in the future.

Gender Mainstreaming:

Production and utilization of this concept shouldn't ignore the prospect of women employment (in production and marketing).

Initiator:

Municipal Administration

Actors:

Municipal administration, facility department, private company, farmers

Target group:

Municipal Administration

Action steps and timetable:

- Analysis of quantities and composition of organic waste from agriculture
- Economic feasibility study for the construction of a biogas plant
- cost-benefit analysis
- Planning of the biogas plant

- location search
- Conclusion of approval and delivery contracts
- Installation and commissioning of the system

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Estimation of approx. 10% of the electricity consumption in the municipal buildings	Depending on the emission factor for electricity in Jordan

Added value for the local economy:

Accompanying measures:

Further remarks:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Waste, Energy	3.5			

Action – Title:

Extracting Energetic, Economic Value from Organic Wastes (Biogas)

Vision and Goals:

Diversification of renewable energy sources

Increasing the municipality's resourcefulness in extracting economic and energetic value from wastes

Initial situation:

There is an abundance of animal manure and biowastes from agricultural activities.

Discharge from residential cesspits threaten water supplies.

Details:

Feasibility study to be conducted to utilize biowaste (such as sludge from the cesspits or from the existing wastewater treatment plant) for energy as well as reduce costs of wastewater treatment.

Animal residues must be invested in the production of processed manure and bio-methane

The types of options very greatly (low-high investment, etc.); however, Digesters, such as floating drum digesters would be one technology to consider.

This and related options would require steps such as dewatering, desulphurization, and removal of CO2 before following production and before utilization of the gas in household cooking, burners, biogas/diesel engine and/or for electricity generation.

Also, see Action on separation at source improving the quality of waste inputs

Gender Mainstreaming:

Participation at the community level, either through outreach (media, participation), capacity-building, beneficiaries and professionals, women are part of the strategic process of reducing emissions and increasing economic opportunities in renewable energy sources, and designing and implementing projects. Awareness initiatives focus on men's and women's behaviors on reducing energy consumption.

Initiator:

Actors:

Ministry of Environment, Ministry of Agriculture, NGO / CBO, private

Action steps and timetable:

Conduct a feasibility study for the use of organic waste (e.g. sludge deposits from suction drilling or from the current wastewater treatment plant, from cess pits and agricultural wastes).

Identify liaison officers

Ensuring equal opportunities for males and females
Promoting the role of women as volunteers and workers with symbolic rewards.
Training engineers/engineers on alternative energy matters.
To benefit from the return of renewable energy to conduct awareness workshops.
Consider the choice according to efficiency and open the way for females to work in electromagnetic fields.
Ensure that the municipality supports the continuity of waste collection and sorting
Make a model supported by the organization and then work out
The town hall functioned as a green building model
Finding solutions for inorganic agricultural waste
It is preferable to take a sample of socially active women, train them to separate from the source, distribute baskets and then raise awareness.
a municipal sewage system will be established and the agreement has been signed

Success indicators/milestones:

Reducing the energy expenditures of the municipality
Reducing waste volumes Inorganic agricultural waste is not piled on the edges of the streets.

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

.

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
none	

Added value for the local economy:

Improved job market for skilled technical persons as well as professional training opportunities.
Impact of actions will be reflected in different sectors

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Waste	3.6			

Action – Title:

Reduce, Reuse, Recycle: Commercial - Residential Sorting-At-Source Recyclables Collection

Goals and strategy:

Sorting-at-source becomes a publicly accepted means for reducing the negative impacts of waste on the environement and the community, while opening up the door for advanced treatment options (such as developing energy from waste resources).

Initial situation:

Litter is a common nuisance in the urban area as well as parks. Waste resources are a lost commodity.

Details:

Municipal law provides for the municipality to enforce 'polluter pays principle'. The Municipality offers incentives to commercial sector based on the amount of recyclables that are diverted from waste collection and transport. Drop-off points need to be determined and established in a secure venue.

Ten commercial businesses initiate the initiative as a pilot group targeting specific waste fractions, eventually expanding to other waste fractions. The pilot group receives reduced waste fees for their work.

Local community organizations initiate awareness campaigns with residential areas, receiving a kick-back from recyclables collected from residential and park areas.

A parnership with a nearby sorting and recycling center is established.

It is an opportunity to profit from clean-up activities, especially in park areas if there is a proper mechanism.

Revenue collected by the municipality for these activities should be transparent and tracked with a portion being re-invested back into the community (activities, initiatives).

Sorting -at Source is a gateway Action to other Actions such as Briquettes, Biogas, Biochar and Composting and other actions for Waste-to-Energy because, when the recyclables are separated out, the organic fractions become of higher quality and more readily accessible.

- Purchase and placement of waste collection boxes
- Separation at source in pilot areas; separation at source is a gateway to convert waste into goods
- Feasibility study and energy source options for biogas (organic waste); Biogas and sewage treatment

Gender Mainstreaming:

Gender is integrated into local policy, linked to international and national vision. Building the capacity of municipal workers in gender and women's empowerment. Improving and developing the role of women's associations in the community from traditional roles (charity,) to more leadership, renewable and related sectors related to climate change (water, energy and health)Varied integration of gender and women's-based organizations to lead and assist in organizing activities, cooperatives, integration of mechanisms to boost household and commercial separation at source.

Initiator: Municipal Admnistration

Actors: Municipal Administration, Solid Waste Department, NGOs/CBOs, private sector

Target group: Public

Action steps and timetable:

Planning

Train a group of people active in a community in sorting -at-source and in building social acceptance of the activity

Conduct feasibility and market study of effective mechanisms for sorting-at-source at household level and commercial level

Purchase and placement of waste collection boxes

Separation at source in pilot areas; separation at source is a gateway to convert waste into goods

Feasibility study and energy source options for biogas (organic waste); Biogas and sewage treatment

Piloting

- Implementation of a pilot project with 50 interested private households
- Information and motivation for waste separation into fractions
- Search for customers for the fractions
- Reduction of waste fees for successfully separating companies
- Evaluation of the pilot project

Partnership

Work a cooperative memorandum between the following authorities: Directorate of Agriculture, Environment and Tourism with the municipality to allocate these bodies from their budget to provide the necessary materials to collect and transport waste from parks and the municipality must implement or work with a private company for implementation

Home sorting awareness

Sorting of houses in two sections, one section, plastic paper and the second materials.

Distribution of iron cages to commercial areas and starting from The Arjan area

Creating a market for recyclable materials

Expansion of waste separation to other private households

Dissemination of results to the public, practical comparisons, practical application, and motivation of committed people

Contract with official authorities for the sale of recyclable waste

Success indicators/milestones:

Reduce the cost of waste collection and transportation Economic upgrade Raise awareness of the importance of waste sorting and recycling
Increased hygiene Creation of jobs Reducing waste volumes
Resilience Factor (Mitigative / Adaptive Impact)**:**
Reduce collection and transportation times for waste
Total expenditure/(start-up) costs:
Financing (sponsoring, funding):
.
Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**

Added value for the local economy:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Industry: Tourism	4.1			

Action – Title:

Living Lab for Environmental Tourism & Recreation

Vision and Goals:

An integrated development plan that prioritizes the economic activities that are based on sustaining the quality and quantity of natural resources.

Initial situation:

Ayoun has scenic areas, forests, trails and some tourist facilities including the Roman Olive Museum and Rasoon Eco-Tourism Camp

The area was removed from the Global Eco-Tourism Map which led to a decline in the number of foreign tourists

The municipality is seeking a means to develop tourism

Description:

* Developing eco-tourism lodgings with renewable energy/energy efficient fixtures

* Aggregate bus, taxi and low-impact rideshare services into a single platform/app. It would be best if these services could be developed to accomodate domestic travelers (typically families going out to bar-b-q).

* Multi-purpose information center

* Develop and maintain trails to minimize damage and threats to natural habitats; provide awareness and capacity building for visitors and community

* Work with municipality to Protect and maintain springs (both aesthetically as well as in environmetal aspects) from visitors, use, pollution, litter, etc.

* Collaborate with neighboring Ajloun Nature Reserve and natural heritage corridor

* Multi-media adventure platform that not only features trails but media/videos featuring the characteristics of the local area (its biodiversity, climate impacts, and how the tourism market can operate in balance with

* Touristic and Recreational activities are accessible to families, tourists (domestic, international), seniors and persons with disabilities

* Real-time reporting of touristic, economic carbon footprint of activities

* Seek out and work to achieve international Eco-tourism standing

* Work to gain community support for initiatives as well as insights for progressive innovation in the sector

* Refer to Actions 2.3 "Advancing Public Transport for Climate, Accessibility and Resilient Services" and 10.2 "Land Trust"

Gender Mainstreaming:

Ensuring accessibility in planning and impementation of the Action; participation and input from multiple community groups enhances sustainability

Initiator:

Rasoon Eco-Tourism Camp

Actors:	
Tourism entities as a cooperative, District Arjan Organization for Persons with Special Needs, Community, Municipal Administration	
Target group:	
Public, tourists	
Action steps and timetable:	
* Touristic entities collaborate to address the shared needs of the sector * Evaluate solutions and coordinate with the municipality to attract available funds and address transport needs * Evaluate Eco-tourism standards and identify membership that would enhance the reputation of the local tourism market * Collaborate and incorporate the community when possible to improve local behaviors detrimental to the health of local ecosystems	
Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
.	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Added value for the local economy:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Industry, Energy	4.2		mid term	

Action – Title:

PV Powering Small Industry

Goals and strategy:

Savings of energy for commercial buildings buildings, cost savings

Initial situation:

Lack of investment in industrial/commercial activities

Description:

While industry does not make up the bulk of electricity demand, it is an area of investment to reduce costs, attract future investments and introduce renewable energies into the sector.

Initiator:

City administration

Actors:

City administration, facility department

Target group:

City administration

Action steps and timetable:

- Development of a Directive, an example provided by a consulting firm
- Discussion of the Directive in the Climate/Energy team
- Incorporation of changes, completion of the Directive
- Signature by the Mayor
- Announcement in the administration

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	Savings of GHG emissions (t/a)
Estimation of approx. 10% of the electricity consumption in the municipal buildings	Depending on the emission factor for electricity in Jordan

Added value for the local economy:

Accompanying measures:
Further remarks:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Industry: Tourism	5.1			

Action – Title:

Eco-Design Infrastructure at Spring Sites for End-Users and Recreation

Vision and Goals:

The "eyes" - springs of Ayoun are both protected from and enable visitors to sustainably utilize and/or enjoy these unique characteristics of the municipality

Initial situation:

Springs are vulnerable to rainwater runnoff (located close to streets (oil runoff) as well as the litter that lines the streets)

Minimal infrastructure is built around the springs' openings

Springs are utilized by public for its water resources and tourists for recreation

Description:

* Construct infrastructure from natural and renewable materials that enable practical accessibility to the local community. The infrastructure should enable access that does not cause damage to the local scenery but still allows the public to exract water

* Similarly, infrastructure constructed of natural and renewable materials could better facilitate visitors who wish to visit the springs but not distrupt the plant and wildlife around it

* Waste bins should be available and emptied regularly

* the infrastructure does not have to be "large" to accommodate these objectives; the design should be innovative and take the end-users and resources protection into consideration

* Work with municipality to Protect and maintain springs (both aesthetically as well as in environmetal aspects) from visitors, use, pollution, litter, etc.

Gender Mainstreaming:

Ensuring accessibility in design

Initiator:

Municipal Administration

Actors:

Municipal Administration

Target group:

Action steps and timetable:

* Survey of uses and identify activities that threaten the natural integrity of the springs

* Develop design ideas that are responsive to local needs and recreational visitors when possible, with protection of the springs being a priority

* Invite youth groups to participate in submitting ideas/characteristics for the eventual design of the infrastructure; in this way, it invites the public to add cultural components to the design

* Contract (engineer, architect) for design and procure renewable resources for its construction

* launch

Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
.	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Added value for the local economy:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Water	5.2		short - mid-term	

Action – Title:

Rainwater Harvesting: Cisterns

Vision and Goals:

Diversify water supplies by pairing buffering and Rainwater Harvesting (RWH) technologiesto 1) collect rainwater to store for use, 2) divert water from heavyrains away from urban/built areas and 3) decrease the occurance that rainwater runoff damages farmers' investments in the application of fertilizers and pesticides.

Increase water and wastewater infrastructure and efficiency

Promotion of a cheap and viable sustainable development-oriented technology.

Improve long-term resilience of water supply; Reduce impacts of drought and mitigate the waiting period of domestic water supplies; Increase the amount of water stored for agriculture and livestock watering.

Initial situation:

Groundwater is increasingly salinated and sparce. Municipal water distribution is often disrupted in summer.

Description:

Construction of Dams or Cisterns to Store Rainwater Runoff which increases water stores and decreases damage from runoff

Dams

Construction of dams (such as Percolation Dams, which reduce speed of surface water flow and increase the recharge of aquifers). Percolation dams can be constructed of natural materials that are locally available to store rainwater for irrigation, and or the regeneration of aquifers. If the tank is aboveground, it can connect with slope channel; to collect the rainwater coming down the wadi.

Water Tanks

Construction of water Tanks, depending on site survey and feasibility study, can be above ground or below ground.

Gender Mainstreaming:

Gender mainstreaming can take hold in the various aspects of the project from working to coordinate the vertical and horizontal alignment of stakeholders involved in the establishment and procurement of funds for the project. Additionally, there are various economic and technical areas of expertise resulting from by products and auxiliary activities of the reforestation project that could be valuable to women in their respective fields and their communities.

Initiator:

Municipal Administration

Actors:

Ministry of Local Administration, Water Authority of Jordan, Charity, agricultural association

Target group:

Action steps and timetable:

Determine the Baseline for local water sources (existing distribution and water supply data, quality of groundwater resources, groundwater level (past and projected future compared against present and future demand), a survey of water collection technologies.

Determining the quality of reservoirs/mechanism and geography of their distribution

Combine with Eco Park (Action _____) to improve management of sites.

Develop local water strategy concept to increase local water quantities and improve its quality.

Determine the sale price of water and mechanisms for distribution

Determine location of the dams/tanks

Ensure that non-revenue water is reduced by strategically coordinating placement of cisterns for 1) water collection purposes and 2) water distribution / end-users distribution

Prepare an engineering and agricultural strategy; developing required documents

Secure funding and open a tender for NGOs or consultancy to conduct the studies and implement the project

Encourage the placement of a tank outside the house

Educating citizens about the importance of water harvesting and the possibility of using water for agriculture purposes

Success indicators/milestones:

Reduce water runoff

Find a new water source

Reduce dependence on groundwater pumping

Total expenditure/(start-up) costs:

Resilience Factor:

Reduce dependence on groundwater pumping

Financing (sponsoring, funding):

.

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**

Added value for the local economy:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Water	5.3			

Action – Title:

Greywater Reuse and Groundwater Buffer

Goals and strategy:

Diversification of water supplies for cooling and household irrigation.

Increase recycled water and greywater use infrastructure

The community actively participants in creating and contributing to the design of graywater treatment technologies and its applications.

Initial situation:

Groundwater quality is deteriorated, producing less options for acceptable water in the municipality.

Municipal water available for use is scarce

Description:

Pilot areas:

Designate pilot public buildings, homes, and or schools, etc. to showcase a working, safe system in order to boost public confidence in greywater application. Have phases for re-design of the system, and, later, increase the area.

As a result of some projects in Jordan with greywater technologies, depending on the technology, systems that produced a smell were later rejected.

Cement tank be in the ground contain sand layers; to collect the Gray water from home; Identifying feasibility of small-scale to mid-scale filtration: wood-chip biofilter, mesh-filter bag, (slow) sand filter; multi-layer for treating grey water consist of natural adsorbents and combined with septic tank, wet pit pump, solar cells and disinfection unit and storage to be commercialized as final product

Pairing buffering of at-risk areas from runoff.

Redirecting water to irrigate grazing fields

These are systems used to treat domestic greywater in order to be suitable for restricted irrigation of home gardens. (treated to a standard satisfactory for intended reuse).

Restricted irrigation:

is irrigation of all types of crops with treated greywater except vegetables and plants including edible parts that can get in direct contact with irrigation water wither these parts are eaten raw or cooked.

Grey water filtration systems have been reported to aid households save nearly a quarter of their annual water bill.

Chemical graywater recycling - advantages: no odor, high filtration; disadvantages: high cost, public acceptance is still difficult to obtain.

Greywater use in climate control (Air Conditioning)

Gender Mainstreaming:

Participation of men, women, young people and persons with disabilities in discussion sessions and identifying problems, proposals and priorities Gender mainstreamed into awareness of installation, and accepted uses and applications of graywater. Women's associations can lead in building baseline and feasibility studies, selection and evaluation of pilot areas. Develop Training of Trainer (ToT) curriculum on practices, studies, feasibility of Action; monitoring of participating sites/homes; and developing framework for capitalizing of a marketing goods grown and construction of greywater technologies and their practical applicatio). ToTs can develop Guidebooks for the practical application of feasibility procedures, technical application).
Initiator:
Municipal Administration, NGO / CBO
Actors:
Municipal Administration, NGO/ CBO, Ministry of Environment, (irrigation) Ministry of Agriculture
Target group:
Pilot Groups with in the residential and commercial communities
Action steps and timetable:
Identify liaison officers Holding discussion sessions for women (Holding sessions for women to share experiences on water recycling. "One of the ladies reused chicken cleaning water to water the garden plants ?!" Establishing gray water networks in certain areas and building a treatment plant Awareness of the use of gray water
Success indicators/milestones:
Dependence on a new water source Increase the green area Create new jobs
Total expenditure/(start-up) costs:
Financing (sponsoring, funding):
.
Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**

Added value for the local economy:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Water	5.4			

Action – Title:

Decentralized WWT Systems at Pilot Sites

Vision and Goals:

Increase water and wastewater infrastructure capacity and efficiency
Increase use of renewable energy in water and wastewater systems

Initial situation:

Deteriorated cesspits and lack of sewar network suspected to be a source of groundwater contamination

Existing examples of decentralized wastewater treatment:

Maximizing Reuse of Water (Borda, ISSRAR) in Azraq, Jordan, aims to restore local ecology and landscapes by recovering wastewater for irrigation.

Integrated wastewater reuse at Feynan Ecolodge

There is a Decentralized Wastewater Treatment Research and Demonstration Facility in Fuhais, Jordan

Description:

Development of extension to WWT plant is better matched to the rate of development and needs of the community.

Increased capacity for waste water treatment and increased availability of treated water for applications within the city - such as greening and irrigation for crops for animal consumption.

Encourage mechanisms to reduce the financial burden of emptying cesspits by tanker (such as using sludge for Biogas production) and discourage the application of salt to dehydrate sludge as this has weekend the structures/walls of the cesspits leading to hazardous leakages, polluting soils and streams, such as growing salt-resistant plants for soil rehabilitation in addition to biochar use among other options.

Gender Mainstreaming:	
Local community organizations mobilize around awareness and capacity building of local community along a coordinated and systematic framework to tackle the multi-pronged issue of soil and water contamination, in addition to the health concerns, exacerbated and/or caused by the cesspits situation and the negatively impactful behaviors used to reduce costs of properly disposing of sewage.	
Initiator:	
Municipal Administration	
Actors:	
Municipal Administration, Water Authority of Jordan, Community	
Target group:	
Public	
Action steps and timetable:	
· Cooperation with donor agencies to initiate feasibility study for the expansion of the wastwater treatment plant · Assess feasibility of using solar PV units to power the decentralized wastewater treatment plant · Consultative process with stakeholders to evolve complete acceptance of physical, financial and managerial aspects · Plan for reuse of reclamed water and the conditioned sludge and its feasibility for other purposes · Maintain close collaboration with planning agencies to ensure allocation of priorities and resources	
Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
.	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Agriculture, Innovative-Practical Practices	6.1			

Action – Title:

Agricultural Extension

Vision and Goals:

The municipality proposes to set up an agricultural extension center in the region to develop this sector to improve the sector's viability and feasibility, by developing technical, strategic and scientific methods for agricultural production.

Initial situation:

There is a project underway with the Ministry of Environment to improve livestock practices and crop cultivation

The agricultural sector is suffering from environmental degradation (soils), climate impacts and developmental consequences. The complexity of the issue requires coordinated expertise to improve the sector.

Current properties in Ayoun divide forests (as buffers to agricultural land) and herding land. This proves difficult when trying to develop solutions because there isn't a mechanism in place to unify a collective management of land that is strategic to improving the environmental (groundwater, soils and forests) conditions.

Description:

Agricultural extension services must be significantly improved to provide the necessary advisory services and capacity-building activities regarding the advantages of the technology

Capacity building programs for farmers and community

Agricultural climate change adaptation technologies face several challenges in the fields of the economy, finance, market conditions, regulations, human skills, society and awareness, with barriers hindering its dissemination throughout the country. Therefore, specific measures are necessary in order to overcome existing barriers to the implementation of the prioritized technologies.

Gender Mainstreaming:

Women and diverse groups should be involved in capacity building opportunities and leadership roles as well as invited to apply their ingenuity to practical applications of technologies and concepts

Initiator:

Municipal Adminisration

Actors:

Local Administration, Community, Farmers, Ministry of Environment,
Ministry of Agriculture

Target group:

Farmers and herders

Action steps and timetable:

Agricultural extension services must be significantly improved to provide the necessary advisory services and capacity-building activities regarding the advantages of the technology

Capacity building programs for farmers and community
Design training programs (including design, implementation and maintenance) for extension staff.
Assess extension service needs.
Provide extension officers with the necessary tools (including equipment and tools for dissemination of the technology). Conduct training activities
Needs assessment; Identify centers and experts to conduct the activities; Organize field days, demonstrations, brochures and leaflets ;
Conduct study tours and fairs to learn from others' experiences and new technology advances.

Introduce economic incentives and subsidized tariffs in water-saving practices for irrigation in order to increase efficient use by land-owners and farmers

Review regulations related to water pricing by related institutes to provide incentives for water-saving technologies

Provide tax exemptions for the equipment and materials needed for innovative water-saving technologies

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

.

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**

Added value for the local economy:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Water, Urban Development	6.2			

Action – Title:

Urban Green Canopies with Verticle/Roof Farming and Water Capture and Re-use

Vision and Goals:

Diversifying water supplies for residential areas, schools and innovating new water collection options for agricultural areas .

Increase the green space and improve air quality

Increase building energy efficiency

Promoting a cheap and viable sustainable development-oriented technology of roof-top Rain Water Harvesting.

Counter Urban-Heat Island Effect with Rooftop and Verticle Gardens

Initial situation:

Municipal water available for use is scarce

Air quality and the amount of greenspace was a public concern.

Description:

Economic opportunities for groups interested in developing kits, installation and capacity building for cultivation of RVFs.

Municipal Rooftops

Small-scale, rooftop and/or **vertical farming** of a small range of crops; the municipality's roof can serve as a communal garden/rooftop park (beekeeping). Sound studies should be undertaken as part of the Training of Trainers (ToT) programs.

Rainwater Harvesting Piloting in Communities and Urban Environment

Pilot areas and communities should be selected in order to test designs and applications of Rainwater Harvesting technologies on various surfaces.

Job creation if action can serve as a case study for localized constructions of vertical agriculture techniques and use of greywater that can be adopted in other communities; training, construction and sales of materials / starter kits

Roof, vertical and fence gardens (RVF) gardens to grow plants and shrubs to aid in cooling and clean the air by introducing more plants into our polluted urban spaces.

Cooling the urban environment and making use of greywater technologies. Vegetated areas provide for a cooler environment while pavement (surface temperature) artificially increases air temperatures (urban heat island).

Gender Mainstreaming:

Gender is mainstreamed into results (Training of Trainers intiatiative for practical applications and economizing of the models). ToTs establish best practices, studies, feasibility of Action; monitoring of participating sites/homes; and developing framework for capitalizing of a marketing goods grown and construction of 'rooftop/vertical' kits as well as those that make use of greywater technologies and their practical application). ToTs can develop Guidebooks for the practical application of feasibility procedures, technical application)
Creating suitable economic opportunities for women to improve their income, including training opportunities in non-traditional skills (such as project-related technical and technological skills); improving services and infrastructure (nursery, transportation..) to enhance women's economic participation; safeguard labor rights, particularly for those who work in agriculture; removal of barriers traditionally placed on women that compound their workload; improving women's access to reproductive health services.
Initiator:
Municipal Administration, NGO / CBO
Actors:
Municipal Administration, Engineering Assoc., Universities, Jordan Green Building Council, Ministry of Local Administration, Water Authority of Jordan
Target group:
Pilot Groups with in the residential and commercial communities
Action steps and timetable:
Select specific surfaces to start Determine the sale price of water Raise awareness of the importance and types of plants Attention to placing water tanks in the urban/peri-urban environment. Conduct technical assessment and screening study to identify the most approriate modality for RWH Technology by Building Type Host consortium of local technical and engineering teams to explore RWH technolgies Showcase results of consortium during a workshop Revise or develop new water efficiency code or by-law for buildings to regulate water efficiency aspects, including RWH and regulate incentives, tax cuts and fees deductions aimed at increasing compliance of housing construction companies with roof-top RWH directives (building codes); enhance feasibility and payback period of technology Implement Installation in **Pilot areas** that demonstrate models by building type Develop and implement relavent trainings for construction/assembly and maintenance
Success indicators/milestones:
Self-sufficiency Increase the green area Create new jobs If vegetation is situated to cover building surfaces, then evaporative cooling can reduce the need for air conditioning by reducing the air temperature immediately adjacent to the building. Vegetation has shown to reduce energy need.
Total expenditure/(start-up) costs:

Financing (sponsoring, funding):	
.	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Added value for the local economy:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Climate	7.1			permanent

Action – Title:

Eco-Municipality: Converging Ayoun's Mitigation & Adaptation Components to become a Resilient Municipality

Goals and strategy:

The development of an integrated plan to manage the factors of adaptation and response and improve the handling of the effects of climate change through the development of an integrated systems and mechanisms that conserve and improve (the quantities and quality) natural resources and developing the local economy sustainably.
Ayoun becomes more resilient to current and projected impacts of climate change (such as extreme heat, leading to increased energy and water demands) by diversifying its energy resources, particularly renewable energy sources for protecting homes (AC) and water treatment.

Initial situation:

There is a climate strategy but it is not publically available. The public currently experiences the impacts of climate change across sectors.

Description:

This Action is about formalizing the municipality's intention to achieve improved local resilience by working towards the goals/visions outlined by the Resilience Ready Climate Community Group (i.e. the values determined of high importance). These include the following:

Improve Soil Quality and Long-term Resilience of Agricultural Activities
Improve the Standard of Living and Expand Employment Opportunities
Develop and Align Local Climate Action with National Strategies, Initiatives, and Support Mechanisms
Cultivate the potential of Human Capital (for example - capacity building, problem solving skills and leadership among stakeholders)
Promote Local Innovation in Climate Action
Secure Innovative, Mechanisms and Means for Climate Finanicng of Local Action
Implement Climate Action in a Sustained Way that Support and Reinforced the Local Economy
Improve Local Air Quality and Safeguarding against related Health Risks
Improve Overall Environmental Conditions (Quality and Quantify of Natural Resources)
Increase and Enhance Cooperation between Municipality, Private Entities and Community, improving Mitigative, Adaptive and Gender Mainstreaming Initiatives

Initiator:

City administration

Actors:

City administration, development department

Target group:
City administration, citizens
Action steps and timetable:
Endorsement of the Local Climate Action Plan:
The Local Climate Action Plan (LCAP) and its List of Actions (LoA) is reviewed by the mayor, relevant municipal staff and RRCCG. It is forwarded to the City Council for approval.
Formation of the Climate Implementation Team
Climate (Implementation) team is formed and approved (members represent the knowledge, experience and skills necessary to lead the implementation of the LCAP and its Mitigation, Adaptation and Gender Mainstreaming compenents). Associations and stakeholders are engaged in the election of members and in the annoucement of the intention to respond to climate impacts.
Outline Process for Improved Data Collection to incorporate more insights into the climate context of the municipality.
A public formally announces the LCAP (and ammendments if made) as well as genderalized timeline for implementation. Develop a 'Climate Primer', detailing the highlits of the LCAP and its List of Actions, overviewing national-level climate strategies' implications for local-level action to share with the RRCCG and Climate Implementation Team. *Initiate municipal-wide awareness* on climate impacts, the LCAP and intended processes for the planning, implementation and evaluation of Actions to take place in the municipality.
The Climate Concept:
Will quantitatively outline the indicators relating to the 10 Goals identified by the RRCCG (above). Will quantitatively outline goals and indicators to i**mprove energy efficiency and emissions reductions by sector.** Outlining and announcing investment decisions (such as renewable energies and Actions of the Local Climate Action Plan) to align and motivate local stakeholders to move along a shared development path. Create an online platform(s) to make the concept publically available
Steps:
Preparation for implementation of comprehensive program of incentives for users Identify Initiative liaison officers Study and establish goals for emissions reductions and shares by renewable energy source Hold conference for stakeholders to discuss current situations, development and required

improvements by goal year

Dissemination of proposal documents and documents of enforcement to concerned governmental bodies

Ensure equal opportunities for males and females

Promote the role of women as volunteers and workers with symbolic rewards.

Train engineers/engineers on alternative energy matters.

Conduct Awareness workshops on Renewable/Alternative Energy

Consider the choice of energy technology according to efficiency and open the way for females to work in the renewable energy field and its applications in Ayoun
Ensure that the municipality supports the continuity of waste collection and sorting, eventually leading to sorting at source

The town hall functions as a Model of Green Building principles

Identify solutions for inorganic agricultural waste

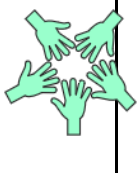
It is preferable to take a sample of socially active women, train them to separate from the source, distribute baskets and then raise awareness.

Research new support for solar-based pumps and their practical application

Municipal buildings have to switch to energy-saving lighting, powered by PV solar units.

Gender Mainstreaming:

Building the capacity of municipal workers in gender and women's empowerment in climate change aspects.
Participation of male, female and youth workers in supervising and implementing Actions
Conducting unbiased training and delegation of responsibilities and removing barriers to women's participation
Information is publically available, accessible and processes of data collection and analyses are transparent



Participation of men, women, young people and persons with disabilities in discussion sessions and identifying problems, proposals and priorities
Location and timing of meetings facilitates cultural needs (segregated rooms and/or providing childcare, location is accessible to the disabled)

A social and gender expert is present at functions, events centered around community engagement

Media shows women as beneficiaries as decision makers in climate-change initiatives

Participation of women researchers and women's associations in the data collection process

Women leadership associations' capacities are developed to specialize in climate change and related sectors

Success indicators/milestones:

Local Climate Action Plan and List of Actions is endorsed

Community-identified goals are assigned quantitative indicators against which to measure progress and achievement Reduced energy spending of the municipality Reduced waste volumes of inorganic agricultural waste piled on street sides	
Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Added value for the local economy:	
Accompanying measures:	
Further remarks:	

Employment:	Type of work:		work start:	Duration of work is six months
Preserving the environment and spreading environmental awareness	The establishment of a recreational environmental education park	7.2	Short term before 2021	

The establishment of a recreational environmental education park

Work - Address: Municipality of Ayoun / Rason Region

Objectives and Strategy:

-The project aims to shed light on a very important issue at the present time, namely climate change and its impact on the environment and people's lives.
-Applying sound environmental practices to give a clear picture to gardeners on how to benefit from renewable energy sources and applying environmentally friendly environmental practices to reduce environmental impact.
-Spreading the environmental awareness of the park's visitors, where the park will be an educational and awareness center for all visitors who will visit it.
-Integrate the environmental, cultural, economic and social dimension through the establishment of this park.
-Linking the theoretical sciences to practical experience through observation and practice, which makes it stored in the student's memory as a result of practice.
-Increasing the economic and social opportunities and benefits for the people of the region through job opportunities and opening the field for selling and displaying local products for women in the region.

Initial status:

The municipality park has the infrastructure of old olive groves, roman olive trees, health facilities and guard rooms that can be rehabilitated to benefit from the project.

Description:

The municipality of Ayoun is one of the areas where the population is characterized by difficult economic conditions, where the population is considered among the poorest groups. This is a very big challenge for the municipality to improve their living and economic conditions through the establishment of development projects aimed at improving their situation. A large number of hikers who have enjoyed the beauty of nature, leaving behind thousands of tons of waste and without any benefit to the people of the region and also due to the negative impact of the municipality of Ayoun on the surrounding environment, which distinguishes this region and also note the lack of awareness Both by local people and visitors to picnic areas.

Therefore, the need to establish an environmental garden is an urgent necessity and a priority because it has a positive impact in changing the behavior of the local population, school students and community women through education and awareness of the environment through watching environmental models on the ground and easy to apply in their homes and surroundings where they will be rehabilitated The park is owned by the municipality of Ayoun and the improvement and development will include the following:

1- Installation of solar panels to take advantage of sunlight and contribute to the provision of electricity bill

2 - Heritage house with a complete isolation system and an area of 20 square used as a training incubator for the tools used in the training process and a place to attract visitors

3 - water well with connections to a pipe from the roof of the service building being inside the garden to take advantage of rain water (water harvesting)
4- a small turbine to give an idea of the mechanism of operation and how to take advantage of wind energy
5 - gray water separation station and the target group will be women and residents of the region visitors, because they are the most possible category to benefit from the treatment of gray water
6- The work of a unit to convert organic puerperants to organic fertilizer and exploitation in agriculture, as the Orjan region is one of the active areas in the field of agriculture
7 - making wooden benches and toys for children through the use of reused materials to encourage the idea of reuse
8 - Indicative and indicative boards (Interpretation) to give the visitor and school students an idea of each activity in the garden in a self-learning

9 - Rehabilitation of environmental corridors within the garden for people with special needs

Initiator: Municipality of Ayoun

Representatives:

representatives from government agencies, representatives from the youth sector, women's associations, NGOs and youth activists of both sexes

Targeted Group:

- School students in the vicinity of the schools of the municipality of Ayoun to apply what they learn in theory in this park

- Community ladies to benefit from the experiences in the park

- Women's associations around the region to promote the concept of development and support these associations by involving them and open the door for them to sell their products to gardeners
- Locals of both sexes and different age groups

- Visitors from all regions of the Kingdom

- People with special needs of both sexes to give them the opportunity to learn and enjoy
- Interested in organic farming of farmers area

Work steps and schedule: per month

1- The first month: Rehabilitation of the park and restoration and make it ready for work

2 - the second and third month is the process of construction (heritage house isolated) water well (water harvesting)

3- Fourth month: Installation of the necessary equipment for the training process

4 - The fifth month installation of all sign boards and the preparation of the place to receive trainers and trainees

5- The sixth month receiving the target groups .

Total expenses / (start-up costs): 40 . 000 euros

Financing (Sponsor, Financing): German Agency GIZ		
Inventory of power (MWh / a)	**Inventories of greenhouse gas emissions (T / A)**	**Inventory of energy and greenhouse gases:**
Value added to the local economy: This park will contribute to creating job opportunities for the people of the region and increase their economic and social benefits by increasing the percentage of sales of local products and maximizing the interest through the purchase of most gardeners for these products and handicrafts produced by the region's women. The region believes that this project is pioneering and contributes to spreading awareness and true faith by providing them with benefits on the ground under the circumstances in which we live .		
Accompanying / attached measures:		

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
	7.3			

Action – Title:

Eco-Innovation Lab and Library

Vision and Goals:

An investigator-driven community(organization-NGO) that is highly successful in generating creative climate research that leads to the development of improved adaptation and mitigation actions.

Increased ability of the municipality to act on real data that pertains to their situation.

Awareness among the public is improved due to the regular public reporting and public engagement

Initial situation:

Climate data is quantified at the national level and local-level applications (per municipality) are to be roughly estimated. However, Jordanian municipalities represent great differences between them (elevation, rainfall, etc). Busaira is in need of being able to collect and analyse local data (and, hopefully, regional data) in order to better measure impacts (current and future) to develop robust and proactive Actions.

Information on current projects and planned initiatives is not readily available to the public.

Description:

Lending Library

Center for Practical Education in Energy Efficiency, Renewable Energy, Environmental Construction, Community Development and Data Hub with Real-Time Emission Calculations

Rental of heat sensors and other techniques by residential and industrial facilities to help determine energy loss, heat loss and other efficiency reduction factors

Green Technology Library: Easy to deal with renewable energy technology; Techniques that help determine heat loss (see related actions to save energy and finance with insulation, green construction)

Eco-Training

Environmental Training Centre:

Provides a model of appropriate home performance; hosting workshops for the development of local knowledge and practices as well as applying techniques; youth performances in "environmental theatre" and/or public film screenings (film projector); environmental justice and capacity-building of rural NGOs in the field of technical and scientific capabilities; training of trainers in climate change mitigation

Online courses, trainings and Certifications

Youth Citizen Scientists Group

A Youth Group, organized through the Observatory wiht the help of NGOs/local associations, receive training on climate change, monitoring and measuring devices. The Youth Group not only becomes more aware of climate change and environmental issues, but they can also assist in data collection and outreach such as surveying observations of contamination from cesspits, evidence of rangeland loss (desertification), the appearance (or sightings) of a particular flora/fauna of interest, etc.

Gender Mainstreaming:
Active participation of women's associations in implementation Track the numbers of beneficiaries, participants and leaders/decision makers in initiatives, disaggregated by gender, age and geographical area of the municipality. Participation of women researchers and women's associations in data collection In the selection of Personell (to supervise and operate the center) as well as the selection of participants for the Training of Trainers, NGO/community organizations should participate in engaging a diversity of qualified individuals. NGOs and community organizations should also be approached to enhance data collection capabilities through 'citizen science' initiatives.
Initiator:
NGO
Actors:
Municipal Administration
Target group:
Public, Regional industry/market looking to improve indicators for sustainability/energy efficiency, Individuals looking to gain practical experience and new knowledge
Action steps and timetable:
Integrating the project with Actions 6.1, 8.1, 8.3 and 8.4 Identify qualified personell to surpervise and operate the center Training of trainers from the Ministry of Energy, Environment and the Royal Society Putting equipment that helped college students for research projects Average level lending fees Develop a percentage of the proceeds for focused development Online Courses, Training, and Certifications Empowering young people by training in the energy sector A reference work for the houses that benefited and the associations that provided
Success indicators/milestones:
Total expenditure/(start-up) costs:
Financing (sponsoring, funding):
.

Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Added value for the local economy:	

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Water	8.1			

Action – Title:

Rehabilitation of Drinking Water Sources

Vision and Goals:

Clean, potable for household water supplies.

Initial situation:

The only source of water is spring water. Suspected contamination of groundwater resources.

Details

Rehabilitate drinking water sources

Reduce losses of drinking water

Ensure compliance with (hazardous) waste disposal regulations and apply measures to reduce contaminates entering groundwater sources from urban and agricultural runoff

Institute procedure to test water regularly so that if contaminants are present, it will be easier to determine the source if it (contamination) can be tracked on a timeline

Investigate improvements to infrastructure that will improve supplies (and reduce water loss) as well as protect groundwater sources

Gender Mainstreaming:

Initiator:

Municipal Administration

Actors:

Municipal Administration, Water Authority of Jordan,

Action steps and timetable:

* Assess water losses and develop baseline for water loss and threats to water quality
* Identify, assess and address sources of contamination (leakage from cesspits, runnoff (from developed areas and agriculture))
* Contact relevant ministry for funds for infrastructure development
* Conduct periodic testing of water quality
* Capacity building with the community about water resources protection and efficiency
* Feasibility assessment of available options
* Connect with other relevant Actions: Rainwater harvesting, Greywater Reuse, Decentralized wastewater treatment
* Conduct consultative process with stakeholders to evolve acceptance of pysical, financial and managerial aspects

Success indicators/milestones:

Total expenditure/(start-up) costs:
Financing (sponsoring, funding):
.
Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
none	

Added value for the local economy:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
	8.2			

Action – Title:

Master Plan for Municipal Sanitation

Vision and Goals:

Initial situation:

Municipal water available for use is scarce and water is contaminated by effluent from cesspits, agricultural pesticides and from illegal dumping of wastes in area waterways.

Details

Gender Mainstreaming:

Initiator:

Ayoun Municipality

Actors:

Water Authority of Jordan, JICA, Ayoun Municipality

Action steps and timetable:

Project Activities are Underway

Success indicators/milestones:

Total expenditure/(start-up) costs:

Financing (sponsoring, funding):

.

Energy and greenhouse gas savings:

Savings of end energy (MWh/a)	Savings of GHG emissions (t/a)
none	

Added value for the local economy:

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Biodiversity, Ecosystems & Protected Areas	9.1			

Action – Title:

Land Trust: Conservation Easement between Landowners

Vision and Goals:

Conserve landscapes in perpetuity and enabling a framework that enforces sustainable economic activities that prohibit activities harming natural resources, historical, cultural sites from commercial development or other activities that may lead to disruption or pollution.

Preserving the herding heritage by managing sustainable use of lands and building a framework suitable for disparate landowners and herders.

Improve investments and enhance innovation in economic models that are not detrimental to the natural capital (resources) of Ayoun.

Initial situation:

Current properties in Ayoun divide forests (as buffers to agricultural land) and herding land. This proves difficult when trying to develop solutions because there isn't a mechanism in place to unify a collective management of land that is strategic to improving the environmental (groundwater, soils and forests) conditions.

The municipality has been searching for a means to open up green spaces for livestock owners

Description:

* Biodiversity - protecting Biodiversity, habitats by prohibiting timber harvesting, improper waste management and limiting/prohibiting development
* Working landscapes - permitted uses regarding livestock, farming, rangeland management, irrigation, etc.
* Community & Heritage - improving sense of community, preserve wildlife, agricultural heritage, preservation of land in its open-productive- undeveloped state; preservation of water resources for agricultural purposes
* Land trusts (international) typically
* the land trust limits development to the level deemed necessary to protect conservation values; farming, forestry and agriculture cont

Gender Mainstreaming:

A successful landtrust requires strong leadership, transparency, and the ability to align stakeholders around the goals of the trust. Local women's and diversity groups should be at the front of promotion, baseline work, development of the framework and maintaining cohesion among landowners and stakeholders.

Initiator:

Local NGO (Women's Baoun Organization)

Actors:

Community, Municipal Administration, Ministry of Agriculture, Agricultural Associations, local herders and farmers
Target group:
Directly - Landowners; indirectly - farmers, local commercial entities
Action steps and timetable:
* Develop framework for the LandTrust to be established as an NGO) * Determine the values for conservation and standards (and values) of agricultural practice that the Land Trust is willing to promote * Conduct studies and identify expert(s) capable of developing a land trust framework that achieves the restoration of natural resources and ecosystems * Host roundtable with landowners, farmers, conservation groups, NGOs, touristic entities to introduce the concept as well as explore the frameworks for the establishment of a Land Trust * Combine with Action (Agricultural Extension) to measure, account for and address negative agricultural impacts and develop means among the Land Trust properties to eliminate these impacts * Training and capacity building with local commercial entities * Report and publicize initiative in media

Field of action:	Number:	Type of action:	Starting the action:	Duration of the action
Communication	10.1			

Action – Title:

Climate Action Website

Vision and Goals:

Improved awareness and public engagement on the topics of climate change.

Media (reports, pictures, documents, annoucements, etc) are regularly made available to the public, improving transparency and accountability.

Initial situation:

Existing information on past and current projects and future plans are not readily available to the public. This information is nearly exclusively within the municipality or with the donor(s) of a particular project.

There are few, if any, official reports nor documentation on local impacts of climate change.

Details:

An online platform is a means to communicate in various ways with the public. It can be the source of videos, short articles, reports/documents, data and project updates.

The online platform, in combination with social media, can also be a means for collecting information from the public.

It is a means for generating interest, highlighting local stories and personalities to build interest and knowledge about climate and what the municipality is doing to address its negative impacts.

Gender Mainstreaming:

See steps below.

Initiator:

Municipal Administration,

Actors:

Municipal Administration, NGO, Youth Group

Action steps and timetable:

Website is established

Past and ongoing projects relating to climate change are documented (digitized) so that they can be read and searched for online.

Media (reports, pictures, announcements, documents, the Local Climate Action Plan, List of Actions, and project updates; report on community perspectives as well as those of officials), are posted and made available to the public; Media campaigns promote women's empowerment, highlighting professional and leadership capacities

- Media shows women as beneficiaries as decision makers in climate-change initiatives
- The media shows men are as interested in family matters as they are with public affairs

Youth leaders are engaged to assist in the maintenance of material for the website (developing articles, videos, surveys and polls relevant to the stoy(ies) of countering climate change in the

municipality	
Success indicators/milestones:	
Total expenditure/(start-up) costs:	
Financing (sponsoring, funding):	
.	
Energy and greenhouse gas savings:	
Savings of end energy (MWh/a)	**Savings of GHG emissions (t/a)**
Mitigative / Adaptive Impact:	
Added value for the local economy:	

9. ANNEX:

7.1 Minutes of Meetings of RRCCG Workshop on Potential Actions

Al-Oyoon

The first focus group

Date:4/8/219 **Time: 9:30**

# of participants (33)

# of women (22)

# of men (11)

# of in the 1st session (20)

# of in the 2nd session (13)

Discussion: Climate change impacting society, society impacting the environment

Since there is insufficient awareness among the people in the region in the field of climate change and the environment in general, they have suffered from the effects of climate change during the past five years. Climate change has been evidenced, according to focus group participants, through by high temperatures, that led to a drop in the water table that reaches the houses; water supplies reach their homes just once every 20 days, forcing the people to buy water to ease their daily lives. In addition, during the winter, rainwater is not properly utilized (there is no water harvesting), and therefore the rainwater creates floods.

People often use firewood for heating because of the level of poverty in Ayoun. They used to cut down trees themselves but now there are markets to sell firewood.

The region suffers economically, with high unemployment despite the high literacy rate. Because the area is not suitable for the construction of factories or projects due to the multiple ownership of land, this also causes a lack of services, which, if available, are available for a month and expire. Many individuals with a higher-education degree returning to Ayoun are typically unable to find work related to their degree, leading them to work in agriculture. This agricultural work is not enough on its own to cover the cost of living expenses.

Most of the jobs available to females are working as teachers, for males - the Jordanian Armed Forces.

The empowerment of women in the region is good, a workshop was held on the political empowerment of women in the region.

A woman was elected as mayor once, and undertook several projects, such as:

1- Initiating a Training center
2- Renewable Energy Project with the Canadian Agency.
3- Sewing factory project: girls from ages 17 to 27 are trained for 3 months and then employed at the factory with a salary of 80 dinars.

Some topics are discussed in school workshops on renewable energy and how to cope with natural disasters such as earthquakes.

As for the local associations, there is cooperation between them and the municipality. The municipality attends the workshops, lectures and meetings organized by the associations, such associations "Association of Special Needs", which provides functional and physical treatment and provide funds for people with special needs on Eid's holidays, it also participates in projects with USAID.

Volunteers: The residents of the region carry out several voluntary campaigns, including:

1- Providing good parcels for poor families.
2- There was a voluntary day of cleaning in the forests of Ajloun, involving local associations, males and a few females.
3- Olive picking in the olive harvest season by school students and local associations.
4- Some associations remove the weeds from gardens and farms.

Attained sheet

Date:4/8/219 **Time: 9:30**

No.	Name		Organization	
1	Marim AL-Anizat	مريم محمد العنيزات	Ba'oon Women Charitable Society for Orphan Care	جمعية سيدات باعون الخيرية لرعاية اليتيم
2	Sara AL-Anizat	سارة طارق العنيزات		
3	Eman Mahmoud	ايمان محمود		
4	Saja Ahmad AL-Anizat	سجى احمد عنيزات		
5	Elahan Faiez Zaytoun	الحان فايز زيتون	Zaherat Valley Society	جمعية زهرة الوديان
6	Rasha Amjad	رشا امجد		جمعية زهرة الوديان
7	Jamela Zaytoun	جميلة زيتون		جمعية زهرة الوديان
8	Sabah Zaytoun	صباح زيتون		جمعية زهرة الوديان

9	Taghred Zaytoun	تغريد زيتون		جمعية زهرة الوديان
10	Tasniem AL-Anizat	تسنيم علي عنيزات	Ba'oon Women Charitable	جمعية سيدات باعون
11	SabaH Khalid	صباح خالد	Ain Umm Al-Ghozlan Association	جمعية عين ام الغزلان
12	Dalal Jamil	دلال جميل		
13	Wisal Mohmed	وصال محمد		
14	Najwa Ahmed Oudah	نجوى احمد عواد		
15	Thaowrah Essa AL-Qurashi	ثروة عيسى القرش		
16	Rimas Husan	ريماس حسين		
17	Raghad AL-Anizat	رغد عنيزات	Khat AL-Aban Association /	جمعية خيط اللبن /باعون
18	Doa' Mahmoud Dwikat	دعاء محمود	Arjan Qada' Association for Special Education	جمعية قضاء عرجان للتربية الخاصة
19	Ezhar Mustafa	ازهار مصطفى		
20	Limar Gazi AL-Qasmeh	ليمارا غازي		
21	Khawlh Mahmoud	خولة محمود	Khat AL-Aban Association /	جمعية خيط اللبن
22	Nisren Wasief	نسرين واصيف	Zaherat Valley Society	جمعية زهرة الوديان
23	Esmaiel Mohmoud	اسماعيل محمود	Arjan Qada' Association for Special Education	جمعية قضاء عرجان للتربية الخاصة
24	Fawaz Dwikat	فواز دويكات		
25	Mohmaed Maher AL-Anizat	محمد ماهر عنيزات	Khat AL-Aban Association / Baoun	جمعية خيط اللبن الخيرية
26	Haitham Zaki AL-Anizat	هيثم زكي عنيزات		
27	Sarer Zaytoun	سرور زيتون		
28	Akef AL-Douik	عاكف الدويك	Zaherat Valley Society	جمعية زهرة الوديان الخيرية
29	Ali akef Al-Rman	علي عاكف الرمان	Khat AL-Aban Association /	عضو بلدية العيون + جمعية خيط اللبن

30	Mouath Mahmoud Dwikat	معاذ محمود دويكات	Arjan Qada' Association for Special Education	جمعية قضاء عرجان للتربية الخاصة + رئيس
31	Ali Maqdad	علي مقداد		
32	Mohamed Akef	محمد عاكف	Zaherat Valley Society	جمعية زهرة الوديان
33	Ma'moun Dwikat	مامون دويكات		

The second focus group

Date: 10/9/2019

Team: Colette Linton, Abdullah Al-Shamali, Jamila Al-Zoubi, Razan Al-Saaida

The purpose of the visit is:

This visit was the second working group meeting and was broken down into two sessions: the first with the mayor and head of the local development unit and the second with local stakeholders (of which some from the first working group, and other representing local ministries and organizations).

The first meeting with the mayor and the director of local development was to:

- Update the mayor of the status of the list of actions to be included in the local climate action plan;
- Establish support from the Mayor to establish the Resilience Ready Climate Community Group (RRCCG) as an important instrument to align stakeholders (as well as gain the perspectives of, build ownership with and sustain momentum) around actions to address climate change with participants. The Mayor and head of the Local Development Unit were encouraged to introduce the concepts of the RRCCG during the second session of the working group as a means for strengthening the relationship with the community and stakeholders in the development and implementation of actions. The mayor and local development unit were also given an overview of the draft Terms of Cooperation of the RRCCG which is to be revised, including the initial identification of members and points of contact (by default – the head of the Local Development Unit) by October 14th. The Director of Local Development presents the idea of the RRCCG as a means to address climate change to the participants in the second session in order to identify the members and establish a means for sharing updates related to the project in the time-being through a medium of choice with the RRCCG.
- The team also discussed the planned exercise to be held during the second session with the goals to explore potential pilot projects in the municipality and confirm that there will be coordination between the experts and the RRCCG ahead of the workshop on October 14-15.

The second session is conducted with the representatives of ministries in the municipality (environment, agriculture, water, ...) the private sector, representatives working in conservation, and three or four representatives invited from the first working group meeting.

Activities of the second session include:

- A standard measurement of participants' criteria using a worksheet distributed by the team; the evaluation of the results of the criteria will be used to set priorities and level 1 and 2 of the list of procedures (standards working sheet in annex);
- A roundtable discussion on climate change and how its impact is experienced locally, and talk about local actions and possible solutions to challenges and problems;
- Introducing the principle of the work of the "RRCCG" by the Head of Local Development as a means of continuing the discussion on the topic and updating people interested in the latest developments and reaching a collective agreement on the first and second level of procedures and pilot project The proposal.

Preliminarily, but to be used in tandem with the list of actions developed by the experts, the municipality was provided with the instruction to start thinking critically about possible pilot projects. An Information Sheet (see annex) was shared (with a note that while all components are valuable, the top-half of the sheet is the basic project information that will be helpful in preparation for activities during the workshop).

Preparation of this summary ~ Eng. Abdullah Al-Shamli

Visit Overview:

The project, activities conducted, and next steps (including Workshop details) were explained to the Mayor and the Head of Local Development during the first session in addition to the roles we would request in making an attempt to begin forming the RRCCG. During the second session, the group of representatives and stakeholders offered forward several ideas and there was predominant view towards the establishment of projects related to the tourism sector.

Although the Mayor's presence at the meeting was an obstacle to obtaining an objective opinion from all participants as well as his persistence that everyone to follow his idea to acquire waste containers and bins for the municipality, the group, nonetheless, was able to share multiple ideas.

Summary of actions proposed by the group:

- **Support for the Tourism Sector**
  Impact(s):
  Many Jordanians visit Al Ayoun on the weekends for hiking and domestic tourism, leaving behind a lot of waste. According to the Mayor, these picnic areas do not fall within the municipality’s jurisdiction for solid waste collection. Sometimes, it’s been left to the efforts of volunteers to clean up the parks and picnic areas of the pine forests. There are also small tourism projects of which the owners have had difficulty developing and sustaining due to the lack of public services and means of developing this sector.

  Idea(s):

- Supplying the municipality with containers/bin to place in picnic areas in addition to a waste compressor and wages for cleaners working in those areas;
- The creation of a model park with a waste separation system, a water harvesting system(s), and a renewable energy generator;
- Support for small projects, such as guest houses, to develop the range of services in this sector in addition to training adventure tourism guides on ecotourism and conservation methodologies;
- Utilizing efforts above to realize a buffer zone for the neighboring Ajloun Forest Reserve.

- **Conservation of natural resources**

Impact(s):

In winter, some of the community resorts to cutting down trees to burn for heat. This practice is illegal and has reduced the proportion of tree cover in the area. Additionally, there is a lack of infrastructure for collecting water, and the three main springs in the municipality are not exploited.

Idea(s):

- Helping low-income municipal residents install solar energy systems to cover the need for electricity generation for heating households, reducing/eliminating the need to cut down and burn trees;
- Water harvesting projects, such as building water collection ponds and springs for agricultural use;
- Installing structures at the location of the springs to collect water so that the population can benefit from them. Additionally, developing the land around the springs in an aesthetically and environmentally friendly way for touristic purposes. Some mentioning restaurants and/or rest stops becoming a source of income for the municipality.

- **Raising Awareness and Capacity Building**

Impact(s):

A low level of climate change awareness, environmental practices and environmental conservation.

Action(s):

- The government should take the responsibility to develop and lead awareness campaigns;

Creating a women's network that knows about climate change topics. These would lead campaigns to visit schools, raise awareness and collect proposals for solutions for the region.

Attends sheet

No.	Name		Organization	Phone	email	note
1	Eng. Ra'ad Shrman	م.رائد شرمان	Ministry Of Agriculture	0792093886	_____	**Confirm (Recall in Tuesday)**
2	Isaa Dwiekat	عيسى دويكات	Team leader of hiking group	0779734776	_____	**Confirm**
3	Salam Shlowl	سالم شلول	Water Authority	0796632958	_____	**Confirm**
4	Emad AL-Sa'down	عماد السعدون	Olive mill plant owner	0782030105\0795133798	_____	**Confirm**
5	Ra'ad Abu AL-Hasan	رائد ابوالحسن	Ministry Of environment	0795181765	Fax: 026422742	**Confirm**
6	Eng. Ghanam	م.غنام	Farmer	0777492618	_____	**Confirm**
7	Tasniem Eniezat	تسنيم علي عنيزات	Baoun Ladies Charity	0777395148	_____	**Confirm**
8	Dua'a AL-Dwiekat	دعاء محمود دويكات	Arjan Charitable Association for Special Education	0772525826	Dwaikatdoaa992@gmail.com	**Confirm**
9	Akaef AL-Dwiekat	عاكف الدويك	Zahrat Al Wedyan Charity Association	0776226069	_____	**Confirm**

10	Mo'ath AL-Dwiekat	معاذ محمود دويكات	Arjan Charitable Association for Special Education	0772575467	_____	**Confirm**

The third focus group

25 November 2019, a Focus group was held in AlOyoon Municipality to finalize the drafted local climate action plan in the region. The meeting was held with members of the RRCCG. Then Liaison officers were selected for mitigation, adaptation and gender mainstreaming.

Mitigation, Adaptation and Gender Mainstreaming Session

The expert illumination the project and who that stapes have been in scientific and asked the RRCCG attendees to explain the step if their municipality wants to implement the project and the period tame each step the expert it as well as the effect for implementation of it. That illustrated in the actions table.

Gender Mainstreaming Session:

The session was good but insufficient; the attendees corrected and gave some additional information that was not given in the previous focus groups. They currently have an "environmental fuel" project that collects forest wastes (wastes of tourists and visitors) and olive wastes and uses them for home heating. All mosques in the region depends on solar energy and are currently applied at schools. There are only 5 HINO-type cabs in the municipality. (The municipality complains about the lack of spare parts for these vehicles, and if they are available they are in high price.) There are only 30 municipal cleaners.

As mentioned earlier, there is support from SEED for the municipality. In addition, SEED is covering street lighting with LED lights, and gender mainstreaming has been integrated into this project. It is illustrated by training engineers on how to install solar panels, where 29 persons were trained for 17 days and then employed in private companies. In addition, SEED conducted community training workshops on mechanics and solar panels, and trainee engineers were given a financial return. Since the SEED project is nearing completion the municipality needs a new support, funding or even a partnership with private associations or institutions to continue the working on the project.

As for the identification (Steps, Timeline, Success Indicators, Mitigative/Adaptive and gender mainstreaming Impact) of projects, It is as follows:

The following projects were discussed:

Waste Section:

As for the first project, the municipality stated that "materials entered into the project are not / will not be available".

For the project “Addressing emission reductions and the effectiveness of solid waste collection and transport to integrate the sector with innovative climate solutions (process maps)” one step was identified: “Study the waste collection pathways (Routes)”.

مشروع "متنزه ترفيهي بيئي نموذجي – العلاقة بين الابتكار المجتمعي ومعرض التطبيقات العملية لمجتمع مرن مقاوم"					
NO.	Steps	Description	Timeline	Success Indicators	Mitigative/Adaptive and gender mainstreaming Impact
1.	Define the target group	– the pupils. – Farmers. – Housewives.		–	
2.	Giving awareness sessions to school students.	– About the value of trees and their importance. – Environmental topics.			
3.	Give courses to farmers.				
4.	Exhibition of local products.	– Provide places (reservation) for women who manufacture some local products (jam, textiles, soap and others). – For farmers (vegetables, fruits, dairy products). – Reservation of these places will pay the municipality with financial return.			
5.	Training workshops for youth	– By associations. – Training on alternative energy.			

مشروع "الاستهلاك و الانتاج المستدامان من خلال المتاجر البيئية والممارسات البيئية التجارية"					
NO.	Steps	Description	Timeline	Success Indicators	Mitigative/Adaptive and gender mainstreaming Impact
1.	Integrate the	–		–	

	project with the eco-park project.				
2.	Partnership with local associations / women's associations.	– Such as beads and cloth recycling associations and making art paintings from tree boards. – Where the work will be on associations versus marketing by the project and the municipality.			

As for the "Screening of Chest in Commercial, Residential and Recreational Areas" project, it is divided into two parts:

1- Entertainment:

A Campaigns are being undertaken to collect waste from forests and parks, but they are not useful because they are quickly filled with waste. It was noted that waste sorting in uncontrolled areas, such as recreational areas, is difficult to implement at the source.

A special company for cleaning and waste has been proposed: It will be a joint contract between the Municipality, the Environment Directorate and the Directorate of Agriculture to develop a mechanism for collecting, sorting and transporting waste.

2- Commercial:

مشروع "الاستهلاك و الانتاج المستدامان من خلال المتاجر البيئية والممارسات البيئية التجارية"					
NO.	Steps	Description	Timeline	Success Indicators	Mitigative/Adaptive and gender mainstreaming Impact
1.	Conduct an awareness campaign.	Conducting a campaign to sensitize the people of the area before the process of “sorting in the source”. "Best to start with commercial and residential areas"		–	
2.	Select places.	The Arjan area was selected to carry out			

		the "commercial" sorting process using iron cages for waste.			

Water and Agriculture section:

It was emphasized that the Zibar must be given the greatest importance.

Urban and transportation section:

For the project "Enhancing Energy Efficiency through Isolation of Buildings and Improved Spatial Planning" the project needs to be legislated by higher authorities' / legislation review.

مشروع "بلدية صديقة للبيئة"					
NO.	Steps	Description	Timeline	Success Indicators	Mitigative/Adaptive and gender mainstreaming Impact
1.	Awareness of the Municipality employees.			–	
2.	Make a map of the associations.				
3.	Setting criteria to select the associations.	An online questionnaire has been proposed.			

مشروع "أسس أقوى"					
NO.	Steps	Description	Timeline	Success Indicators	Mitigative/Adaptive and gender mainstreaming Impact
1.	Build an	To avoid the risk of leakage		–	

	external tank.	of cesspits in to the water contamination.			

Attendees:

No.	Name		Organization
1	Eng. Ra'ad Shrman	م.رائد شرمان	**Ministry Of Agriculture**
2	Othman AL-Tawalha	عثمان الطوالعة	**RCN**
3	Salam Shlowl	سالم شلول	**Water Authority**
4	Emad AL-Sa'down	عماد السعدون	**Olive mill plant owner**
5	Ra'ad Abu AL-Hasan	رائد ابوالحسن	**Ministry Of environment**
6	Eng. Ghanam	م.غنام	**Farmer**
7	Tasniem Eniezat	تسنيم علي عنيزات	**Baoun Ladies Charity**
8	Dua'a AL-Dwiekat	دعاء محمود دويكات	**Arjan Charitable Association for Special Education**
9	Akaef AL-Dwiekat	عاكف الدويك	**Zahrat Al Wedyan Charity Association**
10	Mo'ath AL-Dwiekat	معاذ محمود دويكات	**Arjan Charitable Association for Special Education**

Focal Point for	Name	Phone
Mitigation	Dua'a AL-Dwiekat	0772525826
Adaption	Othman AL-Tawalha	0777841603
Gander	Tasniem Eniezat	0777395148

7.2 Gender Mainstreaming Group Session (Ayoun)

Al-Ayoun Municipality - Ajloun

Gender integration and gender justice methodology

Introduction

There is no doubt that the issue of climate change has become an important issue of our time, given its association and direct impact on vital sectors, whether agricultural, water or health. The impacts of climate on human society, and our ability to mitigate and adapt to them, are achieved through all social factors, including looking at gender and gender justice in society.

Although climate change, gender, economic, health and environmental factors, water, energy and agriculture issues interact strongly, the international community remains not at the level required to explore, analyse and understand that relationship, highlight gender as an important dimension in policies, conventions and programmes, and in climate change-related adaptation and mitigation measures at the international, national and local levels. The UNFCCC has adhered to a gender perspective, and that commitment was reflected in the Paris 2015 Agreement, particularly in the preamble; article VII, which focuses on (adaptation); and the first article focusing on (capacity building), but has not been addressed in mitigation and technology transfer. On the other hand, there is international interest in achieving sustainable development goals and goals, including Goal 13 of taking urgent action to address climate change on the one hand, and the fifth goal on empowerment and gender equality on the other.
This is not much different in the case of international conventions on women and binding on states, and in particular the Convention on the Elimination of All Forms of Gender Discrimination (CEDAW), which follows international and national reports in this regard, little is said in the link between climate change and gender.

The few important studies and reports linking climate change to gender have shown that men and women are differently affected by persistent climate change. For example, natural disasters such as droughts, floods and storms claim more lives than women. The majority of studies have also shown that women and girls are more at risk from the consequences of drought, water shortages and food insecurity, who may be significantly affected by undernutrition and malaria. Other studies have also shown that unmarried men tend to be more at risk than unmarried women, and that social isolation, especially older men, may be a risk factor. Socially constructed roles also affect men's responses to disasters; in the common community culture of the Arab countries and Jordan, male "heroism" expectations require men to act courageously, pushing them into risky behaviours in the face of danger and making them more likely to die in high-risk natural events. Swimming education for girls can significantly reduce their chances of survival in flood disasters.

Men and women differ in their roles, behaviours and attitudes with regard to actions that can help mitigate climate change. Surveys show that men consume more energy than women in many countries, particularly with regard to private transport, while women are often responsible for most household consumption decisions, including in relation to food, water and household energy. There is also evidence of gender differences in relation to the health and safety risks of new technologies to reduce greenhouse gas emissions.

Why gender in the municipal action plan on climate change

Adapting and mitigating the effects of climate change in Jordan is critical to protecting livelihoods and making continued progress towards sustainable development. Climate change affects all members of society and its effects on men and women, children and the elderly, can vary. It is therefore important to understand the gender dimension and gender justice when working on adaptation and mitigation measures because of the different gender roles they play in their society, and therefore the different impacts of climate change and its policies and programmes on their lives and decisions.

This part of the plan aims to provide a framework to strengthen the work of municipalities and partners in the development of climate change-related interventions, programmes and activities, which take into account the needs of all members of society: males and females, young people, children and adults, people with disabilities, and the poor. And the marginalized.

Methodology for preparing this part of the plan:

The team was committed to integrating gender into the stages of methodology design, tools, data collection and the development of the municipal action plan framework. Several procedures have been implemented, and gender-sensitive methodologies have been used in collaboration with municipalities and the group of experts. The following have been done:

- The gender expert's involvement from the early stages of methodology design and action plans.
- An office review of national policies and strategies related to climate change and related sectors of the environment, water, energy and agriculture, and its arbitration of gender methodology.
- Access to municipal programmes and projects related to climate change and related sectors;
- In-depth interviews with stakeholders in municipalities, ministries and institutions associated with climate change;
- Conduct focused panel discussions with civil society, taking into account the holding of one group with young people, one with women's associations, and another with stakeholders.
- The study of the institutional culture of the municipality and their awareness of climate change issues on the one hand, women's empowerment and gender justice on the other;
- To study priorities in activities proposed by municipalities with a team of experts on adaptation and mitigation of the effects of climate change, and to strengthen them with the entrances to women's empowerment and women's organizations.

Basic concepts

Before going into this part, it is necessary to begin by reviewing the most fundamental concepts that should be taken into account in the context of gender understanding, analysis, integration and climate change.

The concept ofgender is the set and expected roles and responsibilities of society for both males and females, determined by the culture, organization, religious beliefs and economic needs of society, rather than biological (sexual) differences, where they are acquired through social interaction, and are susceptible to change over time, and from one society to another and from one culture to another.

Gender andgender: The concept of sex refers to the biological and physical differences between males and females, which take on a cosmic characterthat does not vary by time andplace.

Gender integration: Thedefinition introduced by the Economic and Social Council of the United Nations**(ECOSOC)** in July 1997 may be one of the most common definitions of gender integration at the global level. It is a strategy to make the concerns and experiences of women and men an integral part of the design, implementation, control and evaluation of policies and programmes in the political, economic and social spheres, so that they benefit both women and men, and that gender inequality does not last. In other words, it can be said that the ultimate goal of gender integration is to achieve gender equality." Gender is usually integrated at all stages, from policy analysis and design to programme and project implementation, and also includes initiatives to make women and men express their visions and experiences and participate in decision-making in various areas, in order to achieve justice and true gender equality.

دمج النوع الاجتماعي/ الجندر في الأردن

Jordan is a middle-income country with limited natural resources, where Jordan has invested long in its human resources. The government's commitment to the rights of the people of The O'Rey, the government of the People's Republic of China, the rights of the people and the rights of the people of The O'Rey, the right to life and the rights of the people of The O'Reita, the right to life and the right to life, are the most important of the fundamental rights of the people. One of the most important components of Jordan's adoption in order to promote justice and gender equality is the establishment of the Jordanian National Commission for Women's Affairs and the Network of Gender Liaison Officers in the Public Sector.

The national committee is a member of the National Committee for Women's Affairs, which is responsible for the development of the national and regional social services. The Committee is also the representative of the Kingdom of Jordan in all matters relating to local, regional and international women's affairs.

Network of Gender Liaison Officers in the Government Sector: This network includes the majority of government ministries and institutions with the aim of supporting the generalization of gender sensitivity in national policies and programmes in all development sectors. The network's members are focal points between ministries and government institutions on the one hand and the Jordanian National Committee for Women's Affairs on the other. The organizational structure of gender liaison officers varies from institution to institution, not all ministries and

government institutions have gender-qualified divisions or teams. Interest in institutionalizing gender integration varies greatly between ministries and institutions associated with climate change and municipalities (environment, agriculture, water, energy, local administration, ministry of planning and international cooperation, and health).

However, there is no doubt that available national data show that there is a gender gap in Jordan in the development, humanitarian and human rights sectors. Jordan was still lagging behind in bridging the gender gap. In the latest Gender Gap Report of the World Economic Forum (2018), Jordan is at the bottom of countries in the level of progress in bridging the gender gap. Jordan ranks 138 out of a list of 149 countries, among indicators of indicators of focus: education, health, political participation and economic empowerment.

National policies and plans for climate change, women's empowerment and gender justice.

Jordan's 2010 Climate Change Action Plan was the main driver of national dialogue on gender and climate change, and has been a major influence on the kingdom's national climate plans and global climatecommitments. Gender was expressed as a national priority in the third national report of the United Nations Convention on Climate Change.

The national climate change policy for 2013-2020 also explicitly stated that the policy's objective is to seek to build the capacity ofcommunities and institutions in Jordan, taking into account genderand meeting the needs of vulnerablegroups, to adapt to climate change and improve mitigation opportunities;to enable women and men to access opportunities forinitiatives, programmes and grants; Several measures have been proposed to mitigate the effects of climate change on vulnerable groups, including: supporting NGOs and community organizations, raising awareness of energy efficiency, by adopting new sources and technologies for clean energy, providing solar water heaters and solar panels to families; developing emergency assistance plans for poor communities in extreme hot and cold weather; and strengthening building codes to enhance energy efficiency through proper building isolation.

The 2018 National Climate Change Adaptation Plan also devoted a special section on the basic principles to be taken into account for the integration of gender into national action plans, taking into account Jordan's commitment to mainstreaming the gender perspective in the context of sustainable development. The plan emphasized the need to provide guidelines for gender integration mechanisms in each sector; budget ary provision; identifying inputs for work in each sector; developing and applying gender-sensitive criteria in the choice and prioritization of adaptation options; establishing data, developing collection and evaluation mechanisms, and identifying follow-up and evaluation indicators. On the other hand, the adaptation plan called for the National Climate Change Commission JNCCC to be mandated to generalize gender sensitivity and vulnerable groups in all climate-related initiatives and projects, in all sectors and at all relevant levels.

The adaptation plan emphasized that there were still challenges to the effective consideration of the gender perspective and vulnerable groups in climate change policies, as the National Climate Change Policy 2013-2020 provided general recommendations, but more guidance on practical solutions and specific criteria was needed The

government's policy of "social and economic development" is to provide a comprehensive and comprehensive framework for the development of the country's economy. The government's efforts to address the gender-based violence in the country are being addressed. Finally, the lack of sustainable funds to increase the resilience of women and vulnerable groups.

National policies and coordination between relevant sectors in climate change and gender justice

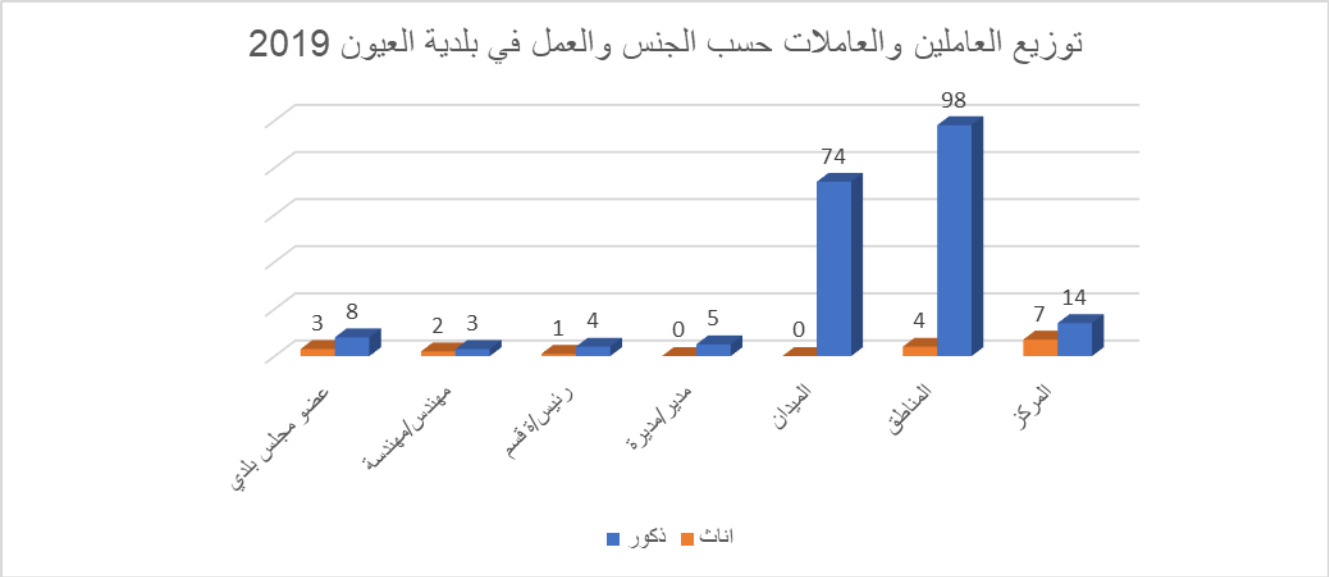
Although the National Plan and Climate Change Policy has partially devoted attention to women's empowerment and gender equality, on the other hand, that enthusiasm and interest is not clearly indicated in national strategies, jordan vision 2025, and the programs, projects and allocations that follow. Finance in various sectors associated with climate change.

The refore, the interest in women's empowerment and respect for gender equality is linked to programmes and sectors affected by climate change, linked to donors, without a national strategy and reference that ensures effective coordination between sectors associated with climate change, and follow-up The extent to which gender justice is achieved in those sectors. It is noteworthy that the methodology of participation of women's organizations in the programmes implemented is more specific ally in the programmes we have reviewed.

On the other hand, the mandate of the National Committee for Climate Change JNCCC and its advisory committee to generalize gender sensitivity in all sectors, initiatives and projects related to climate change alone will not establish mechanisms for gender integration and gender justice.

Al-Ayoun Municipality - Municipal Workers

For the purposes of gender analysis in the Municipality of Ayoune,a simple survey of municipal workers has been conducted to identify knowledge, direction and behaviour towards selected issues in the empowerment of women in the municipality and in the community. The number of municipal employees is estimated at 21 employees in the municipal centre, 33% female, while the proportion of females in the regions is only 0.03% out of 102 employees. There is no female director in five, and one in four heads of department is a department. The government's policy of promoting women's access to health care is a key issue in the government's efforts to combat the gender-based gender-based gender-based gender-based gender-based gender-based gender-based gender-based gender-based gender-based women's work.



The forms were randomly distributed to employees, 18 forms were filled out by employees; 44.4% were female and 55.6% male; 33.3% held diploma slot, 38.9% were mentors and 16.7% mentored. The majority of those surveyed have been working in the municipality for many years. General in out-of-town courses. They attributed this to a variety of reasons, the most important of which is that 72.2% of training courses are not available. The nature of the courses for those who have already enrolled, if they are internal and external training courses, has been focused on hardware and archiving topics.

As for their knowledge of the concept of gender, 83.3% of workers said they had never heard of the term, and all respondents showed that there were no women's programmes in the municipality. However, 27.8% indicated that there might be special programmes between the municipality and the community through the Development Unit. When asked about their knowledge of climate change, 83.3% said they had some knowledge of the concept of climate change. However, there are no climate change programmes in the municipality's work. Respondents also stated that the municipality faces many challenges, the most important of which are:

- Fiscal deficit
- Lack of workers
- Low salaries
- Incompetence of staff
- Regulations and regulations
- Lack of investment projects
- Customs and traditions

- The societal view of women
- No institutionalization of projects according to the decisions of the official
- Domestic wellwork
- There's no interest from the decision makers.

The gender analysis in the municipality of Ayoune revealed that workers take a positive attitude towards women's potential and their ability to bring about change in society, as 83.3% of the sample showed that they believe that women are capable of being mayors, which confirms the successful experience of The Municipality of Ayoun with the president of B I have his ex. Ninety-four percent respect men who help their wives in housework, and 55.5% disagree. It is in the positive that women have to do more to reach the same results as men. In contrast, 55% of respondents still believe that women are unable to work in all areas just like men, and more than 30% question that women are able to plan and change in society.

Table: The view of workers in the Municipality of Ayoune on a number of issues related to gender justice

I don't agree at all. **T** **%**	**I don't agree.** **T** **%**	**I do not know** **T** **%**	**I agree** **T** **%**	**I strongly agree.** **T** **%**	**Paragraph**
4 22.2	6 33.3	1 5.6	2 11.1	5 27.8	Women are able to work in all areas just like men.
1 5.6	0	0	9 50.0	8 44.4	I respect the man who helps his wife with the housework.
5 27.8	0	2 11.1	3 16.7	8 44.4	I believe in women's ability to plan and change in society.
9 50.0	6 33.3	1 5.6	0	2 11.1	I don't believe women can be mayors.
4 22.2	6 33.3	2 11.1	1 5.6	5 27.8	Women have to make a double effort and intelligence to reach the same results as men.

Al-Ayoun Municipality - Community

To get to know Al-Ayoun as a municipality and a community, a series of panel discussions and meetings with the local community in Ayoune municipality had to be held, and to talk to them about their view of the economic and educational situation, women's empowerment and issues related to climate change, and proposals for community projects to address climate change and empower women and girls in particular.

In August 2019, the project team held a panel discussion with women's associations, leaders, young girls and young women under the age of 18. It was not possible to separate the female group into two groups, so the female group was 22 leading women and young girls. Another session was held with 11 men's community associations and leaders, and an additional discussion was held in September 2019 with the committee, which was created within the community and the Municipality of Ayoune under the name of the National Resilience Group for Climate Change.

The economic and social situation in the municipality of Ayoune

The municipality of Ayoune has an area of 16 square kilometres, a population of 26,000 and 15 schools. Al Ayoun residents believe that Ayoune suffers from difficult economic conditions, despite the high percentage of educated people, and the region's naturalwealth, but the unemployment of young men and women has increased, lack of investment and development opportunities, and high poverty rates. "The Municipality of Ayoun Area is a very beautiful green agricultural area where we plant olives, apricots, pomegranates of all peaches and almonds, we have a lot of good water, and many people are educated and very high education, but little work, because we are a region of parties between the north of Ajloun and the city of Irbid."

The discussion group also showed that although the proportion of workers in the region in government jobs, army and teachers is high, because they cannot live a decent life depending on agriculture, agriculture is still valuable to a group of the population, especially retired military or government workers, who have Land that can be cultivated and invested. However, under difficult economic conditions and the absence of national policies that encourage agriculture alone, the people of Ayoun cannot rely on agriculture alone as a major source of income. One participant stated: "The job is a major source, agricultural land and our agricultural production is not enough and does not cover the cost of living. This year, there is no farmer with the cost of farming. Importing from abroad competes with domestic products, i.e. hitting the farmer in his own backyard, and this is a very big issue facing jordanian farmers, especially in the countryside. "The return on the ground is excellent with the monthly pension that helps him overcome the obstacles of life," he said.

The residents of the region also indicated that agriculture needs government policies that encourage farms, do not cause frustration, provide facilities and guidance, and do not put them in competition with products coming from outside the country. Especially since the famous crops in the Ayoune area are: olives, which is the main material, figs and pomegranates, which are mainly dependent on irrigation, they need supportive government policies. The current situation from the point of view of the people of Ayoun: "The government must support the citizen, the citizen of unity does not settle anything, we ask this place farmer to support and stand by his side and not fight, and reduce his importance and try to frustrate him, every farmer here does agriculture only to meet his needs and the needs of his children, he does not have Possibilities until it is cultivated and exported, ... "Our land is por and empty, it has wild animals, forest trees have become forested trees, and a few agricultural areas are of little material potential."

Participants indicated that the opportunities for investment are limited in all areas, so that they do not have a specialized vocational training centre, or associations specializing in cases of disability, which drives them to travel distances, and with difficulty of transportation in the event of disabilities for their children.

Like other Jordanian societies, Ayoune faces rapid social changes and events that have strengthened the role of Jordanian women. As we have mentioned, The People of Ayoun have an interest in education, the education of girls in particular and the obtaining the highest university degrees without discrimination with their young counterparts. Although women's economic opportunities are very limited in the face of high unemployment, women in the Ayoune region engage in public work within development, charitable and cultural associations. Young women's groups have expressed interest in any development initiatives and training programmes held in Ajloun province, whether public or private activities in empowering women in political and economic life.

The discussion groups expressed their pride in the fact that women were able to occupy the position of mayor, their assessment of that experience was that they were wonderful, that they played the role assigned to them best, so that they were able to remember and repeat their achievements: "We found a change during her time of work, active and she was She does all her work assigned to her and increases..... A training factory was set up by the mayor, where the sewing of about 300-400 girls was trained. There was a renewable solar project that was to be built in Osra, but unfortunately the project after the completion of work has been transferred to another area."

Existing programs and activities between the municipality and the community

The municipality has provided the team with a range of associations working in the municipality of Ayoune and in various fields, where we can mention the most important associations registered within the municipality:

Environmental Tourism of Ayoun Association, its field of work is environmental tourism.

Ayoun on Jordan, and its field of work is intellectual

Green Valley Society, and its field of work is charitable

Charity, charity

Association of Women's Sellers

Ossra Women's Association

Arjan Women's Association

Association for Special Education

The Association of Children and Children

1. Milk Thread Cooperative Association

The majority of these associations participated in the focused discussion groups. When asked about the nature of cooperation between them and the municipality, the participants and participants in the discussion sessions and meetings agreed that their relationship with the municipality is limited, arguing that the municipality has a

financial deficit and a shortage of cadres, which makes it unable to provide support to the local community and associations, even in the simplest ways. "If we want municipalities to help associations or society at least spray crops, or encourage agriculture, it can help farmers, or some simple logistical or material support is useful, but this is also not provided frankly, there are no possibilities in the municipality, dob hygiene matters and construction matters and human resources are limited as well, there is also no agricultural staff, and there is no person specializing in agriculture....."

The attendees also explained that the municipality does not have any investment projects such as the major municipalities, and that the municipality wishes to have a number of projects that can be able to employ Jordanian workers: "Municipalities that have the capacity such as Irbid and Zarqa municipality depend on the construction of factories or commercial stores to guarantee them and return It has benefits and improves its financial situation, and appreciates that other projects will work, and therefore help the government to reduce unemployment, when I say that the municipality is doing a mall of course there will be a workforce of about 200 to 300 employees..... There is no resort under the Ministry of Municipalities in particular," he said.

It should be emphasized that small communities such as Ayoune municipality are municipal employees or councillors and members of the municipal council are also members of a public or administrative body of associations. Therefore, there is nothing to prevent cooperation and joint action if there is an opportunity, financial and human resources to do so. As the associations have indicated, they always seek to participate in local councils' activities, and they are always ready to participate in any meetings the municipality invites them to.

Climate Change and The Municipality of Ayoune: Identifying Problems

The knowledge of the Ayoun Area discussion groups, particularly the women's group, was not based on previous experience or experience in related projects, and was the focus of the group's talk about poverty, unemployment and the lack of loans for projects. The same applies to the group of young women and girls under the age of 18, who did not mention the existence of any awareness programmes or activities carried out by schools or universities related to climate change, the environment or water and energy conservation.

While the group of local leaders and association heads had experience related to climate change, they participated in the Canadian Renewable Energy Seed project, where the acquisition of heaters or panels is backed by half the price of the project, and the rest of the price is paid in instalments. They considered this project to be distinct to provide electricity and hot water with a reduction in electricity tariffs, but considered that the number of subsidized heaters and panels allocated to associations was not enough to meet the needs of the residents of Ayoune. "We as an association have made heaters and hair panels so many that people are encouraged ..... We felt at the beginning of the topic that people were scared..... We are a village when they saw some of them using it, they were encouraged to use it, they found that the value of the electricity bill decreased, they used keers they replaced with heaters, and then they put the plates, so the bill went down and they encouraged each other."

The group of male leaders also raised the issue of increasing the population in the Ayoune area, thus increasing the area of cement and cement houses at the expense of agricultural land, in addition to raising the problem of logging and its use as fuel in winter, and the problem of putting waste and waste in forests, and areas Parks by visitors and hikers, and the municipality's inability alone and its limited capacity to dispose of such waste.

Finally, participants commented that they had no knowledge of the concept of climate change and what the problems associated with the issue were. Therefore, they cannot come up with an analysis and address of problems, constructive proposals and pilot projects in this area, nor have they distinguished between the concept and what is related to the environment: "There are no projects on environmental change..... Honestly, when you were asked what projects are you proposing on climate change? It never occurred to us! Because we as associations are a lot of active, but no one came as big institutions, targeted this topic or told us that we are working on such a topic. "Frankly, we have no ideas on this subject, except for the kaz bons or the increased cultivation of forest and non-forest trees."

A number of municipal workers also raised the need to modify the laws and change the mentality in the municipal tasks: "Now the typical concept of the municipality and unfortunately it is waste, lighting, streets only. Municipalities are supposed to have a big role, and I know that municipalities in developed countries like Germany, the United States and Britain, the municipality is a mini government in its region and therefore is responsible for investment and is responsible for tourism and it is also responsible for associations, but we have not every ministry is There is no coordination, except for simple personal efforts, but we are speaking as a legal system, the solution is supposed to start from the law."

The groups also called for the need to coordinate the work between all government agencies related to the municipality of Ayoun, and that the tasks of the local administration be responsible for everything, not the management of each sector separate from the other: "The local council must be responsible for the management of these matters even electricity and even water ..... Not every circle. And the problem is that we notice it in the ministry of municipalities when you build a street that you pay for, and the second day the Ministry of Water comes and digs this street it wants to make lines, and then the Ministry of Communications wants to work in it lines that dig it, and then the electricity comes with the same thing, this is a complex loss, it mean It works and then it is ruined, there is no coordination..... There should be coordination and there will be only one party that is responsible for this thing so that it bears responsibility before the House of Representatives, which is supposed to represent the point of view of the people," he said.

Climate change and the Ayoun area: basic actions

Through the methodology that has been used to identify the reality of the situation in the municipality of workers and the community, we must take into account key points in working with the community that it suffers from poverty and high unemployment rates among young people and university graduates, especially young women, and that the value of agriculture The investment rate is gradually declining, the municipality is under-resourced and unable to carry out its core tasks. The problems and proposals mentioned by municipal workers, as well as in focus group discussions, depend on the participants' limited experience, the nature of limited cooperation with the municipality, although there are few previous projects in the target areas in the context of climate change. Some of the measures to be taken into account include:

5. Any action must take into account high unemployment rates, power relations and decision-making in the municipality and other local authorities, and a general sense of marginalization in areas deprived of public services and investments.
6. It may be necessary to attach any action or project to a package of intensive training and awareness on climate change concepts for municipal and local council workers, community organizations, student and

student schools, universities, and directorates related to the Brigade (this training should include topics Key to climate change and the environment, the importance of meaningful participation of society, youth and women, and working for society with it). This is through the active participation of women's organizations, youth associations and people with disabilities, and the use of an appropriate and easy-to-implement motivational methodology such as competitions, competitions for best practices and initiatives in the face of climate change, and tourism visits.

7. Support dialogue with decision makers and stakeholders to discuss unfriendly climate change policies. These meetings should help coordinate, identify, identify and build capacity for stakeholders on climate change topics.
8. Strengthening the municipality's role in supervising regular activities carried out by groups of society. This should include community activity every month/two months. This may be like: organizing cleaning days; The municipality can contribute to promoting the marketing of women's products and associations, including food, juices and crafts, marketing and spreading awareness of the importance of clean energy, rationalizing electricity and water, and recycling grey water for use in homes and schools on the other, with the possibility of distributing any free means to help.

Climate Change and the Municipality of Ayoun: Measures to Integrate Gender

Gender integration is a strategy and methodology of action and not an objective or activity in itself, it is a strategy that ensures that the needs, experiences and experiences of members of society, both women, men, children, adults and persons with disabilities, are an integral part of the design, implementation, monitoring and evaluation of indicators and outputs of any policies, projects and procedures that will be adopted and implemented in the Municipality of Ayoune as part of the municipal action plan to address climate change.

Gender is usually integrated at all stages, from the analysis and design of problems, initiatives and actions to the implementation of programmes and projects, their evaluation and lessons learned. It also includes initiatives to make women and men express their visions and experiences and participate in decision-making in various fields, in order to achieve true gender justice and equality.

The following is a proposal for measures to be taken when incorporating gender tools into the municipalities' action plan, activities and projects:

Stage	اجراءات احتياجات النوع الاجتماعي العملية Practical Gender needs [14]	Strategic gender concerns measures Strategic gender interests[15]
Identify actions/initiatives/projects	Active participation of men, women, young people of both sexes and persons with disabilities in discussion sessions and identifying problems, proposals and priorities - Equal numbers of both sexes - Meeting times in harmony with women's care roles (caring for children and household chores) - A good place to meet and discuss - Not mixing if it causes special harassment for young women and young women - Ensure a place to care for children or persons with disabilities who need constant care during meeting and discussion - Providing adequate infrastructure for people with disabilities (deaf and dumb signal specialist, no high-level	Women leaders in the community and the local council are aware of the current status of gender equality Men's participation in family care work

[14] Practical gender needs are the needs of women or men that relate to responsibilities and tasks associated with their traditional gender roles or to immediate perceived necessity. Responding to practical needs can improve quality of life but does not challenge gender divisions or men's and women's position in society. Practical needs generally involve issues of condition or access.

[15] Strategic gender interests concern the position of women and men in relation to each other in a given society. Strategic interests may involve decision-making power or control over resources. Addressing strategic gender interests assists women and men to achieve greater equality and to change existing gender roles and stereotypes. Gender interests generally involve issues of position, control, and power.

	access) - Suitable and separate bathrooms and health facilities	
	The presence of a social type expert in all steps to determine procedures	The policy of gender integration in the municipality of Ayoune,linked to the international and national vision
	Availability of funding and motivation without gender discrimination	A reference point in the gender to which the municipality of Ayoune belongs
	Knowledge of the concept of climate change and the gender perspective of municipal and community workers	Budget for women's empowerment programmes in measures taken in climate change in the municipality
Implementation of the procedure/initiative	Building the capacity of municipal workers, male and female in the municipality on climate change Building the capacity of municipal workers in gender and women's empowerment Participation of male and female workers, especially young people, in supervising and implementing the procedure/initiative Equal training opportunities and solutions to any causes that prevent theteacherfrom participating in internal and external training and working in the field Find out why the employee is not	A career more interested in achieving equality for women working in the municipality to lead projects and departments Report any violation of discrimination against women in the municipality Make work in the field in the municipality more gender-sensitive

	involved in field work Distribution of responsibilities between engineers and engineers in the implementation of the procedure	
	Creating a nursery for the children of workers inside and outside the municipality, supervised by the municipality	Recognition of the welfare economy and the responsibilities it requires Men's participation in family care and domestic work
	Well-thought-out media and advertising campaigns for initiatives that include messages for women's empowerment. Combining the traditional role of women and girls in the family, and their economic, community and leadership roles. Highlighting the role of leading women - Mayor, engineer in media campaigns	Media shows women as beneficiaries and decision makers in climate change initiatives The media shows men, young men and children who are as interested in family matters as they are concerned with public affairs
	Creating suitable economic opportunities for women to improve their income - Training and qualification with non-traditional skills - Training in project-related technology skills - Get information - Creating the right place to work	Recognition of the welfare economy and the responsibilities it requires Men's participation in family care and domestic work Women's control over their movement, income and property. Women's active participation in

	– Ensuring labour and professional rights – No extra unstudied burdens on women	family and community decisions
	Active participation of women's associations in implementation Active participation of young people and young people Active participation of female and male schools Active participation of people with disabilities Improving and developing the role of women's associations in the community from traditional roles (charity, orphan care, sewing, beautification and cooking) to more leadership, renewable and related sectors related to climate change (water, energy and health)	A network of women's associations in The Municipality of Ayoune works with their counterparts at the provincial, regional and regional levels within a national and international vision within the fifth goal of sustainable development: empowering women and achieving justice and gender equality. Associations capable of writing projects and concluding agreements with national donors Leading women's associations specializing in climate change and related sectors

Follow-up and evaluation	Track the numbers of beneficiaries/participants in initiatives disaggregated by gender, age and geographical area of the municipality Track ing the numbers of leaders and decision makers in the municipality classified by sex Participation of women researchers and women's associations in data collection	Study the impact of initiatives on the lives of both women and men family, community and health (knowledge, direction and behaviour) Study any outcomes associated with girls and boys within the family (no discrimination, equal educational opportunities, no violence) Study the impact of initiatives on municipal workers (knowledge, direction, behaviour and opportunities for gender justice) Documenting stories and experiences

7.3 Baselines

7.3.1 Mitigation

تطوير خطط العمل المناخية المحلية في بلدية العيون									
المتطلبات البيانية الأساسية									
التخفيف									
البيانات الاساسية									
مساحة البلدية								(16) كم2	
الهطول السنوي								750مم/سنة	
مناخ البلدية								معتدل صيفا وبارد جدا شتاءاً	
سنة التخطيط الأساسية والسنة المستهدفة									
سنة الأساس(سنة جرد الإنبعاثات في الاردن)									
السنة المستهدفة (اختر السنة التي توافق مع إستراتيجية المناخ في الاردن)									
سكان البلدية والسكان الغير مقيمين									
تعداد السكان المقيمين يومياً (نسمة)								26000	
تعداد السكان غير المقيمن يوميا								1500	
بيانات جرد إنبعاثات الغازات الدفيئة في المجتمع (من الناحية المثالية)									
قاعدة جرد عوامل إنبعاثات الغازات الدفيئة في البلدية (بالتوافق مع البروتوكول العالمي لقوائم جرد إنبعاثات غازات الدفيئة على نطاق المجتمع GPC)								لا يوجد	
بيانات طاقة المباني للقطاع الخاص									
درجة الحرارة	25		درجة الرطوبة		40	الارتفاع غن سطح البحر		م عن 650-1150 سطح البحر	
بيانات الجرد الغازات الدفيئة للقطاع الخاص									
انبعاثات الغازات الدفيئة في البلدية	المباني التجارية					المباني السكنية			
التركيب السكاني									
متوسط عدد افراد الاسرة								5 أفراد	
توزيع السكان حسب الدخل (بالنسبة المئوية)									
المرتفع	10	**فوق متوسط**	15	**تحت متوسط**	20	**منخفض**	45	**غير ثابت (عمل غير رسمي)**	10
توزيع المنازل حسب نوع الدخل (بالنسبة المئوية)									
منازل مستقلة	100	**منازل مستقلة**	100	**منازل مستقلة**	80	**منازل مستقلة**	95	**منازل مستقلة**	95

شقق سكنية	0	شقق سكنية	0	شقق سكنية	20	شقق سكنية	5	شقق سكنية	5

مساحة التجاري المرخص	4*6=24 م2		منطقة عرجان	2184	منطقة راسون	1800
			منطقة باعون	1680	منطقة أوصرة	528

مساحة التجارية	1000	مساحة المكتب	0	مساحة المستشفى	0
مساحة التعليم	15 مدرسة	مساحة الفندق	0	مساحات اخرى	0
تشبع خدمة الكهرباء		100%			

مبنى البلدية وبيانات الطاقة العامة للإضاءة (سنة الاساس)

بيانات جرد البلدية

الرقم	نوع المبنى	كمية استهلاك الطاقة(كيلو واط. ساعة)	المساحة م2	كمية استهلاك الغاز(اسطوانة)	كمية استهلاك المياه
1	مبنى البلدية الرئيسي	17649	400	40 اسطوانة لكل مبنى سنويا	90دينار شهريا
2	منطقة عرجان	6150	200	يتم تبديل 3 اسطوانات غاز لكل مبنى خلال 4 اشهر(فصل الشتاء)	90دينار شهريا
3	منطقة باعون	6098	170		90دينار شهريا
4	منطقة راسون	3194	320		90دينار شهريا
5	منطقة أوصرة	6270	170		90دينار شهريا

إجمالي استهلاك مصابيح إنارة الشوارع (تيرا واط/ساعه).	3000دينار/شهر	تكلفة	18000دينار	متوسط ساعات تشغيل إنارة الشوارع يوميا (ساعة/يوم)	12
إجمالي استهلاك إشارات المرور في الشوارع (تيرا واط/ساعه).	0				

بيانات توليد الطاقة الكهربائية للشبكة الوطنية الخاصة بالبلدية

نسبة استهلاك الكهرباء للقطاعات	إنارة الشوارع	كيلو واط) 149123(17000دينار/شهر	ضخ المياه	1000 كيلو واط	تجاري	كيلو واط 1500	صناعي	0	منزلي	1200000ك.و

طاقة المتجددة	مصدر/ نوع الطاقة	النسبة المئوية لها من الانتاج	مصدر/ نوع الطاقة	النسبة المئوية لها من الانتاج
	الطاقة الشمسية (فواتية ضوئية)	100%	غاز	غاز طبيعي	0
	الطاقة الشمسية (المركزة)	0		النفايات الصلبة البلدية	0
	الرياح	0	الوقود	زيت الوقود المقطر	0
	كهرومائية (كبيره,صغيرة)	0		الفحم	0
	الكتلة الحيوية	0		مختلط (قطاع الطاقة الكهربائية)	0

بيانات النفايات الصلبة

الانتاج اليومي/ الحمولة (طن/يوم)	23.66	معدل التوليد (كغ/فرد)	0.91

مكونات النفايات الصلبة للبلدية						
النوع	الرقم	نوع النفايات الصلبة	النسبة المئوية %	الرقم	نوع النفايات الصلبة	النسبة المئوية %
المنزلية	1	الورق/الكرتون	20	6	البلاستيك	10
	2	المنسوجات	10	7	المعادن	5
	3	النفايات العضوية	30	8	زجاج	5
	4	خشب	10	9	اخرى	5
	5	المطاط والجلد	5			
النفايات الصلبة الأخرى		السكنية /الانشائية	10		التجارية	20
		الزراعية	10		الصناعية	5

إدارة النفايات الصلبة حسب نوع النفايات بالنسب المئوية %							
يوجد مكب في حدود البلدية	لا	المسافة للمحطة التحويلية (كم)	16	المسافة لمكب الإكيدر (كم)	52		
إعادة التدوير	0	طمر العشوائي	0	طمر صحي	100%	سماد عضوي	0
حرق(حاراق)	0	حرق غير منظم	0	هضم لا هوائي	0		

بيانات استهلاك الطاقة السنوية لمركبات تجميع النفايات لسنة الأساس					
الوقود الاساسي	ديزل	عدد شاحنات الديزل	35	رحلات شاحنات الديزل (كم/سنة)	127000
كفاءة شاحنات الديزل (كم/ لتر)	3	نسبة سكان البلدية ضمن خدمة جمع النفايات			100%

طرق معالجة المياه العادة للبلدية							
استهلاك مباني البلدية للمياه	**90دينار شهريا لكل مبنى**			**الاستهلاك الاجمالي لكل المباني**			**450 دينار شهريا**
استهلاك مباني المنازل للمياه	**دينار كل 3 أشهر30-20**			**استهلاك مباني المنازل للكهرباء**			**دينار شهرياً 35-25**
	معالجة مركزية			معالجة لامركزية			
هل تعالج مياه الصرف الصحي؟ لا	اسم المحطة	–	الحفر الإمتصاصية	100%	نظام الصرف الصحي	0	

مصادر المياه في البلدية						
تحلية المياه (ذات ملوحة متوسطة)	0%	مياه جوفية	100 %	تحلية المياه (مياه البحر)		0%
عمق المياه الجوفية	0%	مياه معاد تدويرها	0%	مياه سطحية		0%
عمق مصدر المياه الجوفية (بالامتار)						50
متوسط عمق مصدر المياه الجوفية (بالامتار)						50
كمية الطاقة لضخ المياه الجوفية / كثافةالطاقة المائية (كيلو واط.ساعة/ميغا لتر)		20	كمية الطاقة لضخ المياه الجوفية / كثافةالطاقة المائية (كيلو واط.ساعة/سنة			20
تشبع خدمة المياه (النسبة المئوية للسكان في البلدية الذين يحصلون على خدمة المياه المحسنة)						70.00%

بيانات النقل معدل الرحلات (رحلات/يوم/مواطن)			
مصدر الرحلة	النسبة المئوية		متوسط طول الرحلة (كم/ رحلة)
رحلات الافراد	كالركاب من الاجمالي	100	30
	كشحن من الاجمالي	0	0
رحلات البلدية	كالركاب من الاجمالي	100	10
	كشحن من الاجمالي	0	0

نشاط المركبة	المسافة المقطوعة لكل مركبة (كم لكل مركبة /سنة)		الرقم	صفة الاستعمال	العدد	المسافة المقطوعة	كمية المحروقات ب(لتر/سنة)
		للبلدية	1	بكب دبل	6	131300	15350
			2	قلاب	3	33500	15000
			3	كابسة	6	94500	34100
			4	باص نقل موتى	2	10000	1200
			5	مدحلة	1	معطل	معطل
			6	تراكتور زراعي	2	2500	600
			7	كمبريسة	1	معطل	معطل
			8	سيوزاكي	1	16000	2000بنزين
			9	صهريج	1	معطل	معطل
			10	لورد	2	15600	10000
		للافراد	1	السيارات			
			2	الباصات			
			3	أخرى			

النسبة المئوية لرحلات الركاب في كل من											
سيارات	40	دراجة نارية	0	سيارة اجرة	0	ميكرو باص	0	حافلة صغيرة	25	حافلة عادية	25
حافلات التردد السريع	0	دراجة هاوائية		5	على الاقدام	5	أخرى	0			

7.3.2 Adaptation

تطوير خطط العمل المناخية المحلية في بلدية لعيون	
المتطلبات البيانية الأساسية	
التكيف	
الأساسيات (الظروف الحالية للبلدية)	
الكفاءات والمهارات والموارد البشرية لا تفي بالتوقعات المطلوبة للقيام بدور نموي فعال	الظروف الاقتصادية
الدخل المنخفض	
ارتفاع نسبة البطالة	
عدم وجود مشاريع خاصة بالطاقة المتجددة	
عدم وجود استثمارات زراعية بسبب التوزع الكبير في ملكيات الاراضي	
عدم وجود انشطة استثمارية كبيرة و جميع الانشطة التجارية و الصناعية بسيطة جدا	
بعض المشاريع المقترحة واهمها مصنع للخياطة ومركز تدريبي مختص بالخلايا الشمسية.	
تتميز المنطقة بطبيعة جاذبة للسياحة ولكنها غير مستغلة بالشكل الصحيح	
توقف التمويل من الجهات المانحة ومحدودية الامكانيات	
تداخل الصلاحيات بين البلدية وسلطة وادي الاردن	الظروف السياسية
العلاقات الاجتماعية قوية بين سكان المنطقة	الظروف الاجتماعية
نقص الكفاءة والتدريب واستحداث الكفاءات العلمية	
كثرة الاراضي الحرجية و الزراعية الخصبة	الظروف البيئية
تقوم البلدية بحملات نظافة على المناطق السياحية التابعة لها وممها المحميات التابعة لها وايضا غابة برقش	
تعمل البلدية مسارات بيئية في مخيم برقش ومخيم راسون السياحي	
يوجد في المنطقة تنوع حيوي نباتي	
مصدر المياه الوحيد هو مياه الينابيع واهمها عين التنور التي تغذي شبكة مياه البلدية ويوجد ايضا 3 ينابيع تستخدم للري.	
التلوث الناتج من النشاط الزراعي	
الأنشطة	
الانشطة الجارية	
مشاريع (فتح وتعبيد الشوارع.انشاء عبارات وجدران استنادية .انارة الشوارع)	النشطة الخدمية
مصنع الخياطة بعد 10 سنين سيمتلك للبلدية فيه 250 موظفة	
مشاريع (مبنى البلدية. مجمع استثماري)	النشاط تنموية واستثمارية
مشروع تحويل النفايات الى طاقة ايجابية. مشروع الخلايا الشمسية	النشاط بيئية
مشروع خطط العمل المناخي لمجابهة التغير المناخي	
مشروع التوؤمة مع لدية جينا الالمانبة لاستملاك مصنع السماد العضوي	
سياحة الدينية(مقام الصحابي أبو عبيدة عامر بن الجراح ومقام الصحابي ضرار بن الازور)	النشاط السياحي
سياحة الاستجمامية(تل المزار. تل الفخار. تل قعدان. تل ابو سريوط. تل السعيدية. تل الخصاص وتل الفخار)	
تربتها الخصوبة ووفرة المياه نسبة الزراعة عالية جدا	النشاط الزراعي

	انتاج زيت الزيتون و التخلص غير المشروع من الزيبار
النشاط التجاري	النشاط التجاري عالي ويتم جمع وفرز الورق والكرتون وبيعه
النشطة المخطط لها	
مشاريع بيئية	مشروع فرز النفايات الصلبة الجافة
	مشروع الصرف الصحي
	مشروع SEED يدعم المشروع 50% من القيمة الاجمالية كما يتوجب على المواطن دفع 25% من القيمة دفعة أولى وما تبقى على اقساط وتعمل البلدية على ايجاد دعم 15% من قيمة الاجمالية لتأمين جميع منازل بنهاية 2020
الاستراتيجيات	
تطالب البلدية بعمل ممرات داخل الغابات للسيطرة على الحرائق	
كما تطالب بفتح مساحات خضراء امام الرعاة لزيادة الثروة الحيوانية في المنطقة	
تقترح البلدية انشاء مركز للارشاد الزراعي في المنطقة لتطوير هذا القطاع	
عمل استراتيجية لترويج المنطقة سياحيا حيث ان اغلب زوار محافظة عجلون يزورون الاثار والمحمية فقط وعليه يجب رسم مسار سياحي يمر ببلدية العيون وما فيها من اماكن سياحية.	
ايجاد استراتيجيات لجذب الاستثمارات الى البلدية	
العمل على التوسع في استخدام الطاقة شمسية كطاقة متجددة بدأ من الحطب للتدفئة	
تسعى البلدية تطوير خطة متكاملة لادارة عوامل التكيف والاستجابة وتحسين التعامل مع اثار التغيير المناخي من خلال وضع منظومة متكاملة	
اقتراح مشاريع لاستقطاب جهات مانحة لتمويل ومساعدة البلدية للوصول لخطة عملية ومستدامة للتعامل مع النؤثرات البيئية منها(انشاء مسلخ لتحسين وضع الاقتصادي والبيئي للبلدية. مشاريع الطاقة الشمسية	
تاثير المناخ	
الجفاف :نتيجة التذبذب للهطولات المطرية من عام الاخر وانخفاض مستوى مياه الينابيع	
تأخر موسم الشتاء مما اعاق مواسم الزراعة التقليدية المتبعة وعدم التأقلم معها	
ارتفاع درجات الحرارة صيفا مما اثر على دخل الاسر (وسائل التبريد)	
الحرائق	
الاعتداء الجائر على الغابات وتقطيع الاشجار لغايات التدفئة بسبب ارتفاع اسعار المحروقات وفقر المواطنين	
الانهيارات والتصدعات والانجرافات نتيجة تساقط الغزيز للامطار مما يترتب دفع تكاليف اضافية لاعادة تأهيلها	
النزوح والهجرة : ترك الزراعة والهجرة الى المدينة للبحث عن فرص عمل اخرى	
تضاريس البلدية (جبال واودية) : مما يترتب دفع تكاليف عالية لانشاء الاسوار والجدران والاقنية والعبارات	
الصحة : ضربات الشمس ولدغات الافاعي وانتشار البعوض في فصل الصيف وامراض الاطفال الناتجة عن انخفاض الحرارة شتاء	
التحول الجذري بالطقس ادى الى ازمات في الحصول على المياه الشرب والزراعة	
ضعف الوعي والتدريب والارشاد لدى المزارع لتغيير الانماط الزراعية المتبعة والتكيف مع التغير المناخي	
البيانات النوعية	
المياه و الصرف الصحي	يوجد شبكة للمياه البلدية تتغذى بشكل اساسي من عين ماء التنور وتغذي اغلب المنازل التابعة للبلدية
	كما يوجد 3 ينابيع اخرى للري
	لا يوجد ضمن حدود البلدية شبكة للصرف الصحي ولا يوجد اي خطط على المدى القريب لانشائها
	لا يوجد رقابة على التخلص من السوائل الخطرة مثل الزيبار او الزيوت العادمة مما يؤدي الى تلوث المياه الجوفية والينابيع
السياحة	تتمتع المنطقة بوجود كاثفة عالية من الاشجار الحرجية الجاذبة للسياحة المحلية
	يوجد في المنطقة العديد من النزل السياحية والمطاعم والمخيمات كما تتميز بوجود ممرات مائية للمشي والتسلق

	فيها بعض المرافق السياحية مثل متحف الزيتون الروماني ومخيم راسون للسياحة البيئية ولكنها بحاجة الى تسويق.
	كان هناك تأثير سلبي واضح للتغير المناخي على قطاع السياحة في المنطقة وذلك نتيجة طول فترة فصل الشتاء وتأخر الربيع.
التوع الحيوي	خروج منطقة راسون من خريطة السياحة البيءية العالمية ادى الى تراجع في عدد السياح الاجانب
	الاعتداء الجائر على الغابات وتقطيع الاشجار لغايات التدفئة بسبب ارتفاع اسعار المحروقات وفقر المواطنين
	• تقع حدود البلدية على حدود محمية عجلون الطبيعية حيث التنوع الحيوي النباتي والحيواني المميز وتعتبر المحميو من الوجهات السياحية المفضلة
	تزدهر المنطقة باشجار السنديان والملول والقيقب وغيرها من المجتمعات النباتية الفريدة
	هناك ممارسات سلبية من السياح تؤدي الى تدهور حالة التنوع الحيوي في المنطقة
الزراعة	تتميز المنطقة بهطول مطري غزير وتربة خصبة ومناخ معتدل ولذلك يكثر فيها زراعة الاشجار المثمرة ومن اهمها اللوزيات والزيتون والرمان والتين والمشمش)
	لا تعتبر الزراعة المصدر الاساسي للدخل لسكان المنطقة وذلك لان اغلب المحاصيل موسمية ويكون انتاجها لفترة معينة بالسنة.
	ارتفاع اسعار المحاصيل الزراعية واللحوم ادى الى عدم مقدرة السكان على شرائها
	الثروة الحيوانية ضئيلة جدا بسبب وجود اسوار محيطة بالمحميات الطبيعية حول المناطق الرعوية
	تأثرت اشجار اللوزيات بشكل كبير من موجات السقيع الناتجة عن التغير المناخي وقل انتاجها بشكل ملحوظ
	من المشاكل الاساسية التي تواجه الاستثمار في الزراعة هي توزع الملكيات على قطع اراضي صغيرة يصعب استخدامها لمشاريع زراعية استثمارية.
البيانات الكمية	

7.3.3 Gender Mainstreaming, Human Resources

تطوير خطط العمل المناخية المحلية في بلدية العيون

المتطلبات البيانية الأساسية

الموارد البشرية

جرد الموظفين

الرقم	الوظيفة	العدد الكلي	الذكور	الاناث
1	الموظفين في المركز	21	14	7
2	الموظفين في المناطق	102	98	4
3	مدراء/مديرات الوحدات	5	5	0
4	رؤساء الاقسام	5	4	1

5	المشرفين	0	0	0
6	الفئة الثالثة	15	14	1
7	الوظائف الميدانية	74	74	0
8	لجنة العطاءات الحالية	2	2	0
9	حمله الشهادات المتوسطة/ دبلوم	11	8	3
10	حمله الشهادات الجامعية الاولى	10	6	4
11	حمله شهادات الدراسات العليا	1	1	0
12	حملة شهادة التوجيهي	17	16	1
13	حملة شهادات اقل من التوجيهي	85	83	2
14	حملة شهادة الهندسة	5	3	2
15	أعضاء المجلس البلدي	11	8	3
16	المستفيد من المجتمع المحلي من دورات البلدية خلال ثلاث أشهر	20	12	8

الدورات التي تقدمها البلدية

الرقم	المكان	اسم المدرب ومكان العمل	اسم الدورة	الفئة المستهدفة
1	محطة المعرفة	اماني زيتون	دورات طباعة	الشباب
2	محطة المعرفة	اماني زيتون	ICDL	مجتمع محلي

البرامج التنموية في وحدة التنمية

نوع البرنامج التمنوي	الرقم	الاسم	تاريخ المباشرة والنتهاء	الجهة الممولة او الداعمة
الدراسات	1			
	2			
المشاريع	1			
	2			

الجمعيات المسجلة ضمن البلدية

الرقم	الاسم	نوعها	عنوان	اسم المدير	الرقم /الايميل
1	جمعية العيون السياحية البيئية	سياحية بيئية	عرجان	وصفي حداد	
2	عيون على الاردن	فكرية	راسون	منير شويطر	
3	الوادي الاخضر	خيرية	عرجان		
4	اواصر الخير	خيرية	عرجان		

5	سيدات عرجان		عرجان		
6	التربية الخاصة		عرجان		
7	سيدات اوصره		اوصره		
8	العيون التعاونية		عرجان		
9	خيط اللبن التعاونية		باعون		
10	سيدات باعون		باعون		

الفاعلين في القطاع الخاص ضمن البلدية				
الرقم	الاسم المنشأة	نوعها	عنوان	الرقم /الايميل
1				
2				
3				
4				
5				
6				