



Duhok Governorate

SEAP Green Energy Plan 2021-2022

The key role of the Work Plan is to plan activities aimed to achieve the strategic objectives of Duhok Governorate Sustainable Energy Action Plan at a more detailed level.

DEVELOPED BY
IMPLEMENTING COMMITTEE OF SEAP SUSTAINABLE ENERGY PLAN
DUHOK PLANNING COMMITTEE
CONVENANT OF MAYORS

EUROPEAN COMMISSION | DUHOK GOVERNORATE

DETAILED ACTIVITY PLANNING

ANNUAL WORK PLAN 2021 - 2022

Area 1. SEAP-level networks active in the promotion of social awareness for using renewable and sustainable energy

MODULE 1 - FACILITATION OF JOINT ACTIONS

Under this module the applicant proposes to facilitate the cooperation between SEAP Team and Governmental Directorates, University of Duhok and Media Associations networks in social awareness areas of common interest and in which the promotion of joint actions can be foreseen over the year to find synergies in their actions and to promote an efficient working system coupled with better use of available resources. Cooperation between SEAP Team networks could be developed- amongst others - in the context of the SEAP 2030 strategy:

-under the **SEAP semester process**

-in the implementation of the **Social Awareness Package**

Leader of the joint action	Associated partners in the joint actions
Duhok Governorate	The Governorate HQ /medial specialist
	The directorate of Education
	The Directorate of the Endowment
	University of Duhok
	The directorate of Health
	Directorate of Environment

General strategic objective to achieve with the joint action proposed.

EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
100,000 of students & employees are aware of sustainable energy and follow the instructions	100 schools 100 religious buildings 50 governmental buildings	TV short messages (spots)	X	X	X	X	50,000\$
		Propaganda on streets	X	X	X	X	50,000\$
		Training courses, workshops and seminars in the schools, Universities and governmental entities		X	X	X	150,000\$
		Printed instructions for saving energy in schools and governmental buildings		X	X	X	50,000\$
							300,000\$
Reducing Pollution Saving Groundwater Recycling material	Green belt or Cove Sewerage System Waste Treatment plant in KWASHE Industrial Area 160 Factory 500,000 Individuals	Construction of Sewerage system to collect black water in KWASHI Industrial district	X	X	X	X	1,500,000 \$
		Establish an Industrial waste treatment plant	X	X	X	X	2,000,000 \$
		Allocating land and preparing a complete project for installing a green cover around the heavy pollution		X	X	X	1,900,000 \$
TOTAL:						5,700,000\$	

MODULE 2- HARD WORK ACTIONS

To be completed by the entire related general directorates in the governorate

FOR EACH OF THE PRIORITIES INDICATED IN POINT V 1.2 OF THE CALL THE ANNUAL WORK PROGRAMME CONTAINS THE LIST OF RELATED STRATEGIC OBJECTIVES AND EXPECTED OUTPUTS

1) DUHOK URBAN PLANNING DIRECTORATE

Leader of the joint action	Associated partners in the joint actions
DUHOK URBAN PLANNING DIRECTORATE	DG of Municipality of Duhok
	DG of Municipalities
	DG of Roads and Bridges
	DG of Agriculture

The following some project proposal which will need to be grouped with other offices and prepare further details:

	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
EXPECTED OUTPUTS	Environment friendly transportation	Redesign road cross sections by providing pedestrian sidewalks and safe cycling path (Barzani Road-southern part)		X	X	X	4,000mx35= 140,000 USD
		Conducting new efficient safe crossing point.			X	X	3x18,000 = 54,000 USD

	<p>Urban Planning for a renewable energy future (Feasibility study Project)</p> <p>Green belt or Cove KWASHE industrial area</p>	<p>Urban planning for a renewable energy future requires the collaboration of different disciplines both in research and practice. The transition towards a renewable energy future and the transition towards sustainable cities can be geared to one another presents a major challenge for research and practice. Our design team need feasibility study project to obtain new methodological steps towards sustainable city urban design.</p>		X		X	<p>2 x 2 ay workshop = 40,000 USD</p>
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TOTAL: 234,000 USD

Electricity Directorate

Leader of the joint action	Associated partners in the joint actions
Electricity Directorate	The Governorate HQ
	The directorate of Education
	The Directorate of the Endowment
	University of Duhok
	The directorate of Health
	Directorate of Environment

EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	

	<i>Plans for solar power for five schools (12 classes) and 10 health centres</i>	<i>Provide solar power for schools and health centres</i>		X	X	X	200,000 \$
	<i>Develop and preparing feasibility and design for the cascade hydropower plant Installation of 100 MW solar PP to support the shortage in National Electricity Network Install (1000)Solar Boilers for 1000 houses as a pilot Plans for solar power for five schools (12 classes) and 10 health centres Develop and preparing feasibility and design for the cascade hydropower plant</i>	<i>Follow and collect data for Hydro Power feasibility study (master plan of Khabur river)</i>	X	X	X	X	300,000\$
		<i>100 MW Cooperation with ministry of Electricity to install big solar power plant in Duhok.</i>	X	X	X	X	Investment
		<i>Solar boiler for residential sector (1000 units)</i>		X	X	X	1,700,000\$
		<i>Provide solar power for schools and health centres</i>		X	X	X	200,000 \$
		<i>Follow and collect data for Hydro Power feasibility study (master plan of Khabur river)</i>	X	X	X	X	300,000\$
TOTAL:							2,200,000 USD

3) Duhok Presidency Municipality

the general strategic objectives:

Carbon dioxide is released continuously into the atmosphere from natural sources. About 40% of the gas is emitted from volcanoes during the eruption It is carbon dioxide . It is estimated that volcanoes release between 130 to 230 million tons of volcanoes CO₂ to the atmosphere every year. However, the gas CO₂ is increasing in the atmosphere with increasing population and human activities, whether exhaled or from plants or power plants produced by burning fossil materials. In Duhok, the **population of Duhok in 2003** was 680,000 people and the population increased to more than 950,000 in 2016. This sudden increase increases the percentage of carbon dioxide and talk about the increase of the percentage is very long so we see the province of Duhok and government support to make serious attempts to reduce the emission of gases Greenhouse parks and landscaping and prevent the cutting of trees because trees need to process photosynthesis, which is done by the second Oxy carbon and the sun. The areas where the proportion of Agitator t DONC in Dohuk is 13.6 of city space and support still exists for the establishment of other city parks and planting continuously by maintaining the possibility of difficult financially experienced by the Kurdistan region in general.

So it is our duty key is the work sheets for planting non - wooded areas and the work of parks in designated parks areas in the design of the city with lighting the gardens of the solar energy of an alternative electric power generated by burning fossils to reduce energy consumption and thus reduce the second Oxy carbon emissions.

That among the possible strategy that offer this year 2019 AD is the revival of seven parks With landscaping with full disclosure and in different areas in Dohuk, which have a direct impact on climate change and the governor of the environment

EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
Reducing carbon dioxide in the atmosphere	<i>Building 6 public gardens to increase green area in Duhok to maintain the environment</i>	<i>1. Plant trees with irrigation system in the median road of interance of Duhok.</i>	X	X			116,000 \$
		<i>2. Construction and making garden for area No. 1/1424 in Masic quarter in Duhok including building, planting trees, irrigation system.</i>		X			276,500 \$

		<i>3. installing water tank for irrigation, extending water pipe and planting area with irrigation.</i>			X	82,500 \$
		<i>4. organize and planting area No. 7/71 with irrigation system.</i>		X		311,500 \$
		<i>5. build garden with all items mentioned in the bill quantity. For the piece area No. 460/29</i>		X		151,140 \$
		<i>6. Organize the area piece No. 5/3468 in quarter No. 76 in Shindokha and making garden with all items mentioned the tender.</i>			X	172,868 \$
		<i>7. Planting area piece No. 1/867 in Zirka quarter in Duhok with all items mentioned in the tender.</i>			X	92,130 \$
TOTAL:						1,202,638 \$

4) Duhok Municipalities General Directorate

Leader of the joint action	Associated partners in the joint actions
Duhok Municipalities General Directorate	The Governorate HQ
	The directorate of Education
	The Directorate of the Endowment
	University of Duhok
	The directorate of Health
	Directorate of Environment

Suggest to have allocated budget in the governorate for the project that need to be implemented.

the general strategic objectives:

- 1- Increasing population levels, booming economy, rapid urbanization and the rise in community living standards have greatly accelerated the municipal solid waste generation rate in developing countries (ex: Kurdistan Region-Iraq). Municipal authorities usually responsible for waste management in the cities, have the challenge to provide an effective and efficient system to the inhabitants. However, they often face problems beyond the ability of the municipal authority to tackle mainly due to lack of organization, inadequate financial resources, and multi-dimensional system.

Due to the developing economy and population explosion in Kurdistan Region-Duhok has led to the large scale migration of people from villages to cities which generate thousands of tons MSW daily. The MSW amount is expected to increase significantly in the near future; therefore, it was considered as a priority to stop this undesirable phenomenon in Duhok Governorate.

In order to improve waste management it is required the intervention by Government. Prior implementing any plan for improving the waste management sector at Duhok Governorate, it is required conducting research for 48 Municipalities including Duhok city Municipality due to the lack of data regarding waste materials in Duhok. This will enable the DG municipality of Duhok Governorate to collect data regarding MSW as well as assessing the barriers and drivers to domestic waste recovery in selected municipalities.

Implementing a waste collection separation scheme for recyclable materials (e.g. plastic, metal, glass, paper and cardboard) and organic waste (food and green waste) in two separate bins was highly recommended, However, it is required preparation appropriate environment for implementing such scheme. For example, Increasing public awareness to take more responsibility regarding the amount of waste generated and to improve participation in the waste collection separation scheme. In addition, implement waste hierarchy which give priority to prevention and 3R (Reduce, Re use and Recycle). This can be done by conducting campaigns through media on television, in mosques and church's by religious leaders and educating children at schools through the school curriculum.

- 2- The sorting process in the source will reduce the amount of waste buried in landfills/open dumps currently at a high rate. In addition, it will improve the by product in MRF material recovery facility at Kwashe –Duhok which may be a good revenue for DG municipalities. Moreover, it will reduce huge amount of greenhouse gases emitted by the waste material in treatment process which contaminate the environment, ground and surface water and threaten human health in surrounding environment.

- 3- Waste separation will also contribute to encourage investment in waste treatment especially composting; this is because more than 50% of waste composition in Duhok is organic materials which considered most important revenue for DG municipalities in Duhok Governorate.

EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
Consultancy Conducting Survey (Research) Environment Conservation Government as well as inhabitants will realise the importance of preserving the environment when sorting wastes at source enquire. This is because it contributes to step toward the concept of sustainability. Toward self sufficient Increasing the quantity and obtaining high quality of by-products. Compost	<i>For supporting Municipality team on the Ground</i>	<i>Consultancy activities for Municipality staff related to Environmental Impact and Adaptation process in Urban and Rural area.</i>	X	X	X	X	\$100,000
	<i>Conducting survey in all Municipalities for data collection as well as identify barriers and drivers to domestic waste recovery</i>	<i>Sorting waste in the source</i>					\$300,000
	<i>Public awareness including all sectors to preserve the environment when sorting wastes implement in the source.</i>	<i>Develop a systematic program with a long-term strategy to educate the all sectors of society and government especially (education, universities, religious platforms) By means of all means available in terms of participation of local government and the use of audio and video media and through the preparation of special programs for this purpose, as this stage of the most important stages of the implementation of the project.</i>	X	X	X	X	\$500,000
	<i>Sorting the wastes in the source.</i>	<i>Start the process of phasing out waste in a systematic and studied manner began in the most urbanized places and the provision of waste containers prepared for this purpose.</i>			X	X	500,000 \$
	<i>Waste Treatment Organic material could be inverted from Landfill/open Dump.</i>	<i>Composting process require receiving yard as well windrow machine, small lab for testing compost, personnel, storage along with marketing team.</i>	X	X	X	X	1,000,000\$
TOTAL:							2,400,000\$

5) Duhok Environment Directorate

Leader of the joint action	Associated partners in the joint actions
Duhok Environment Directorate	The Governorate HQ
	The directorate of Education
	The Directorate of the Endowment
	University of Duhok
	The directorate of Health

EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
<i>500,000 persons Installing solar power system for lab section in Duhok environment directorate</i>	<i>500,000 persons</i>	<i>30KWwatt solar power and wind power On the roof of the building</i>	X	X	X	X	58,266\$
<i>26 houses 200 persons Installing 2KWatt solar power and wind power system for Hamza village</i>	<i>26 houses 200 persons</i>	<i>2Kwatt solar power and wind power for each house</i>	X	X	X	X	442,000\$
TOTAL:							500,266 USD

Area 2: University of Duhok

FOR EACH OF THE PRIORITIES INDICATED, THE ANNUAL WORK PROGRAMME CONTAINS THE LIST OF STRATEGIC OBJECTIVES AND EXPECTED OUTPUTS

1) Support the SEAP Committee in its outreach activities, international and local level with the aim of ensuring the implementation of European policies in the relevant area (e.g. Programme for Employment and Social Innovation, Planning Projects, Students Initiative etc.).

The general strategic objectives:

This project is aimed at minimizing the usage of private cars and taxies in Duhok. Traffic congestion has become a part of everyday life in Duhok and is a growing problem threatening the overall quality of life and economic prosperity of the city. The Governorate has a modal usage of 74% of Private Cars and Taxies. The city, as known to the majority of the population, suffers from an extreme dependency on private vehicle movement and a significant lack in other alternative modes of transportation. That extreme dependence on private vehicles includes with it congestion issues that the city hugely suffers from and also causes environmental and economic externalities heavily affecting the city's ambience and its citizens alike. Some of the key challenges of such topic are the current unavailability of a formal mode of public transport. The extreme number of taxies, which are 18,317 (31%), that are currently in operation in the city is another reason that has on its lead to it being a dominant mode of transport for those who aren't owning private cars. In 2015, it was calculated that 22% of Greenhouse Gas Emissions result from the Transportation sector. Energy consumed per source is 54% and GHG Emission per source is 24%.

This project will mitigate 108,800 MWh and 27,091 t CO2 which will result in mitigation by 1.42%.

Leader of the joint action		Associated partners in the joint actions					
University of Duhok (Dr.Shireen Yunis)		The Governorate HQ					
		Duhok Municipality					
		The Directorate of the Urban planning					
		University of Duhok/Spatial planning department					
		The directorate of Transportation					
		Directorate of Environment					
		Directorate of Traffic					
EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
		<i>developing an integrated Bus system master plan within Duhok city(an area of 80Km2</i>			X	X	500,000 \$
TOTAL:						500,000 USD	

2. RISK MANAGEMENT

The risks can be identified by the following:

- some implementers may not respond to the program
- The people understand the message in an correct way

3. EXTERNAL EVALUATION

UNDP or another similar association can implement the external evaluation for the team performance to develop the report and present to the Covenant of Mayors. This can be carried out between November and December 2019.

The indicators will be the outcome of the implemented activities and the impact on the society

Area 1: Duhok Directorate General of Health

FOR EACH OF THE PRIORITIES INDICATED, THE ANNUAL WORK PROGRAMME CONTAINS THE LIST OF STRATEGIC OBJECTIVES AND EXPECTED OUTPUTS

1. Support the SEAP Committee in its outreach activities, international and local level with the aim of ensuring the implementation of European policies in the relevant area (e.g. Programme for Employment and Social Innovation, Planning Projects, Students Initiative etc.).

The general strategic objectives:

This projects entitled “Supply and installation of solar systems in primary healthcare centres in Duhok Governorate to support the vaccination units” aims to ensure access of Duhok population (2,336,994) including host community (1,511,858), Internally Displaced Persons (562,296 in 17 camps) and Syrian Refugees (77,172 in 4 camps) to quality primary preventive healthcare services with a main focus on immunization services.

This project, that will provide solar cell energy to 90 vaccination units at primary healthcare centres, will also have a capacity building and technical support components and an awareness campaigns among community members attending healthcare facilities. The project will also help to reduce fuel consumptions by generators and electricity supplies from public network since vaccines require 24 hour energy supply and will also protect and sustain the cool chain supply of vaccines.

The solar system referred to in this project consists of a set of solar panels, an inverter with charger options and a battery pack to ensure the continuous power supply to the vaccination units of the Primary Healthcare Centres during the hours when no other kind of electrical power sources (generator or public grid) is available.

Leader of the joint action		Associated partners in the joint actions					
Duhok Directorate General of Health		The Governorate HQ					
		Duhok Directorate General of Electricity					
		University of Duhok/Spatial planning department					
		Duhok Directorate General of Environment					
EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
<i>The usage of renewable energy sources in health facilities is a necessity, due to their high demand for energy and long hours of operation. The project feasibility study has been completed and the results show huge impacts on saving energy, fuel consumption and budget. About 20% of the project is completed and 11 Vaccination Units in Primary Health Centres were already supplied with solar cell in the framework of European Union Support to Duhok Health Sector through EU-MADAD Fund</i>	<i>Due to the inadequate power production capacity, the power provider has in recent years instituted a rotating power outage regimen in Kurdistan Region of Iraq, forced the health facilities to turn to the diesel generators during the power outages, causing addition burden to their budget due to the high cost for operation and maintenance of generators, not to mention the effects of air pollution knowing that, around 40 % of energy losses occur in transmission of power from the main power station to facilities. Using the renewable energy resources in health facilities will not only mitigate the emissions, but also will reduce the unseen losses due to power transmission. As per community and social benefits, the project will ensure healthy environment, keep vaccines safe and not affected by change in the cool chain as well as provide the saved energy to the community.</i>	<i>Primary healthcare centre assessment</i> <i>Installation of solar cell system</i> <i>Conduction of training courses</i> <i>Raising awareness component</i> <i>System maintenance</i>			X	X	1,200,000 USD
TOTAL:						1,200,000 USD	

2. RISK MANAGEMENT

The risks can be identified by the following:

- Financial crisis: Duhok Directorate General of Health to seek all the possible financial resources.
- Implementation: Duhok Directorate General of Health to do continuous monitoring during project implementation.

3. EXTERNAL EVALUATION

External evaluation party.

Joint evaluation procedures.

UNDP evaluation.

Area 2: Duhok Directorate General of Health

FOR EACH OF THE PRIORITIES INDICATED, THE ANNUAL WORK PROGRAMME CONTAINS THE LIST OF STRATEGIC OBJECTIVES AND EXPECTED OUTPUTS

2. Support the SEAP Committee in its outreach activities, international and local level with the aim of ensuring the implementation of European policies in the relevant area (e.g. Programme for Employment and Social Innovation, Planning Projects, Students Initiative etc.).

The general strategic objectives:

These projects entitled “Medical Waste Management in Duhok Governorate” aims to improve health services for Duhok population (2,336,994) including host community (1,511,858), Internally Displaced Persons (562,296 in 17 camps) and Syrian Refugees (77,172 in 4 camps). It is well known that health-care services inevitably create waste that may itself be hazardous to health and environment.

The waste produced in the course of health- care activities carries a higher potential to pollute the environment and causes infection and injury than any other type of waste. Wherever it is generated, safe and reliable methods for its handling are therefore essential. Inadequate and inappropriate handling of health-care waste may have serious public health consequences and a significant impact on the environment.

Sound management of health-care waste is thus a crucial component of environmental health protection, healthcare facilities are the institutions where multiple hazards coexist such as infections, sharp injuries, chemical and physical hazards. All health providers, health care seekers and visitors are susceptible to hazards and spread of infection from one to another could occur easily.

EXPECTED OUTPUTS	ANNUAL TARGET/ DELIVERABLES	PLANNED ACTIVITIES	TIMEFRAME				PLANNED INPUTS/BUDGET
			H1	H2	H3	H4	
<p><i>Healthcare facilities in Duhok Governorate, which constitute of 20 hospitals (public 13 and private 7), 170 primary healthcare centres (PHCs), 19 specialized centres and more than 200 private clinics and laboratories, produce 28 tons of medical waste every month. Areas of interventions are:</i></p> <p><i>1. Environment;</i></p> <p><i>2.Environmental Policies, Planning and Legislation;</i></p> <p><i>3.EnvironmentalEnhancement;</i></p> <p><i>4. Medical Waste Management.</i></p>	<p><i>There are currently more than 40 (mobile and fixed) clinics newly established within the health centres in refugee and IDP camps which place more burdens on Duhok Directorate General of Health. Support priority healthcare facilities in improving their infrastructure and capacity for the treatment of infectious healthcare waste, using non-burn waste treatment technologies such as microwave, rather than burning healthcare waste. Establish a private public partnership for healthcare waste management that will reduce the burden on the Directorate General of Health to manage healthcare waste.</i></p>	<p><i>1. Current medical waste management assessment</i></p> <p><i>2. Awareness raising among community members;</i></p> <p><i>3. Capacity building and training of healthcare personnel;</i></p> <p><i>4. Procurement of equipment for public sector;</i></p> <p><i>5. Providing support for private sector to manage the medical waste produced;</i></p> <p><i>6. Medical Waste Regulations and Guidelines.</i></p> <p><i>7. System maintenance</i></p>			X	X	3,500,000 USD
TOTAL:							3,500,000 USD

2. RISK MANAGEMENT

The risks can be identified by the following:

- Financial crisis: Duhok Directorate General of Health to seek all the possible financial resources.
- Implementation: Duhok Directorate General of Health to do continuous monitoring during project implementation.

3. EXTERNAL EVALUATION

External evaluation party.
 Joint evaluation procedures.
 UNDP evaluation.