



Mutah university's climate action plan 2021-2025



The overall climate changes in the world have resulted in clear impacts on the ecosystem and, consequently, on humanity. These various impacts include food and water security, and health issues for humans and animals. Climate change impacts have been monitored easily because of development of the monitoring stations and satellites that provide accurate measurements of the earth's temperature, warm gases emission, and annual average rain rate over the globe in different areas. Jordan is among countries that implement additional steps to mitigate the side effects of climate change on people and ecosystem by reducing warm gases emission to the environment. Jordanian efforts are part of the global initiatives to put Sustainability Development Goals (SDGs) in effect.

Shifting from Fragmented to Integrated Climate Change Thinking

Changing our thinking from silo, fragmented, and carousel effect thinking to holistic and meaningful thinking is essential when dealing with SDGs. This new way of thinking is needed to enhance the Education for Sustainable Development (ESD) to teach individuals the actions needed to facing climate changes, changing consumption patterns, developing entrepreneurial and sustainable capabilities, and combating poverty by being productive. Integration is main characteristic of this new way of thinking to create a meaningful continuum of practices to combat climate change that can fruit in all domains.

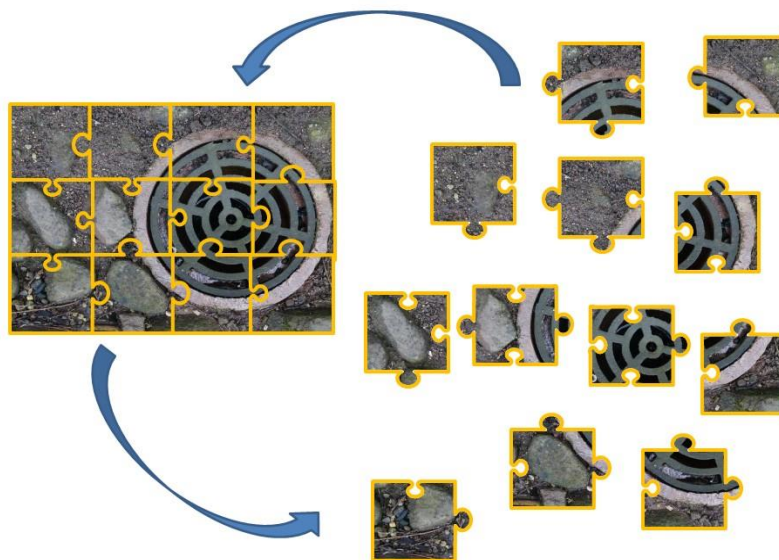


Figure 1: Jig Saw Puzzle Analogy showing that Sustainable Development Goals (SDGs) are not fragmented pieces but forming a continuum that carries meaning and can be implemented to mitigate climate change arising challenges.

Mutah university's integrated strategies and actions towards facing climate change challenges

Mutah University looks to climate change challenges mitigation as a continuous strategies built on integration between planning and actions, as illustrated in Figure 1. Fragmentation of plans and actions will result in blind practices and eventually minimal effects filtered to fundamental changes. An intentional effort is exerted to create harmony internally between the University's strategic, executive sustainability, and climate action plan and similarly between the university units and centers responsible for these documented plans and practices. This internal harmony in the two domains pushed towards creating harmony in the whole practice continuum, starting from planning and ending in implementation, see Figure 1.

Climate practices integration is one of the most important added values to the developed climate change vision. This vision is based on gathering the climate change practices offered by university centers and units as one continuum that aims to end up in achieving the main goal of these efforts of mitigating climate change challenges, as illustrated in Figure 1. The importance of combating the negatives of fragmentation of these diverse efforts is reflected in constructing an integrated picture of the university's climate change activities, as illustrated in Figure 2. Seeing the big picture of these collaborative practices is of paramount importance to climate change problems mitigation integration.

Mutah University has adopted several executive steps that serve the national strategy facing climate change. Mutah university's current strategic plan for 2021 – 2025 aims to reduce the impact of climate change and its consequences, which include:

- i- Funding research projects.
- ii- Conduct workshops aim to reduce warm gases emission.
- iii- Shifting to Photovoltaic (PV) energy.
- iv- Reduce of using non-clean fuel.
- v- Recycle of generated waste.

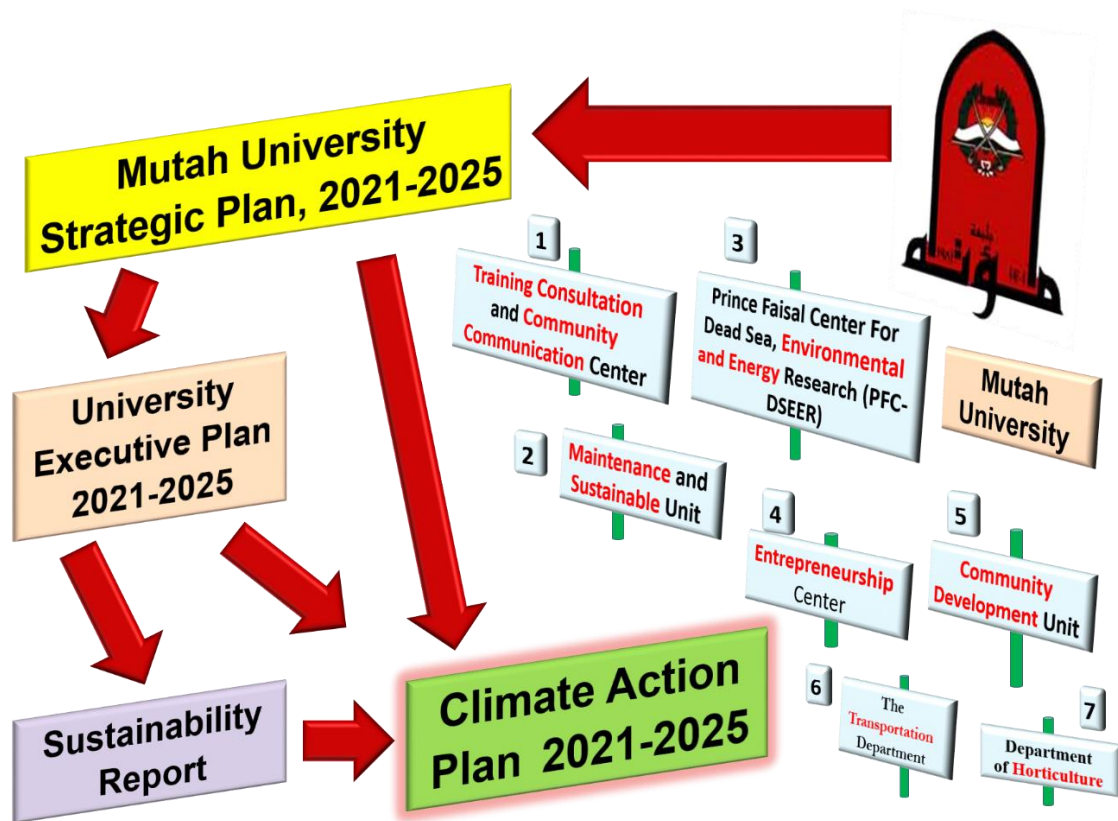


Figure 2: A big visual picture of Mutah university's integrated efforts between the planning and implementation sides that end in an effective continuum of Climate Action Plan strategies and actions.

During the past two years, Mutah university has developed a solar energy system to supply all university facilities with electricity; it is also augmented the planting of trees within the university campus, resulting in 70 % of the campus being green. The current climate action plan is extracted from the university strategic plan 2021-2025.

Building Mutah University Climate Change Mitigation Vision based on Climate Change Solution Factory Framework

Energy and climate change challenges are highly connected and should be treated as one continuum. In this decade, the world is hardly pushed towards adopting more stringent and innovative practices to conserve and manage existing energy resources and mitigate climate change challenges. In response to these global and local energy and climate change crises pressing conditions, Mutah university's energy management and climate change visions increasingly concern a significant portion of the university management and technical staff. University units and centers collaborate to put these integrated two visions into practice, Figure 3:

- i- Training, Consultation, and Communication Center
- ii- Maintenance and Sustainable Unit
- iii- Prince Faisal Center for the Dead Sea, Environmental and Energy Research

- iv- Entrepreneurship Center
- v- Community and Development Center

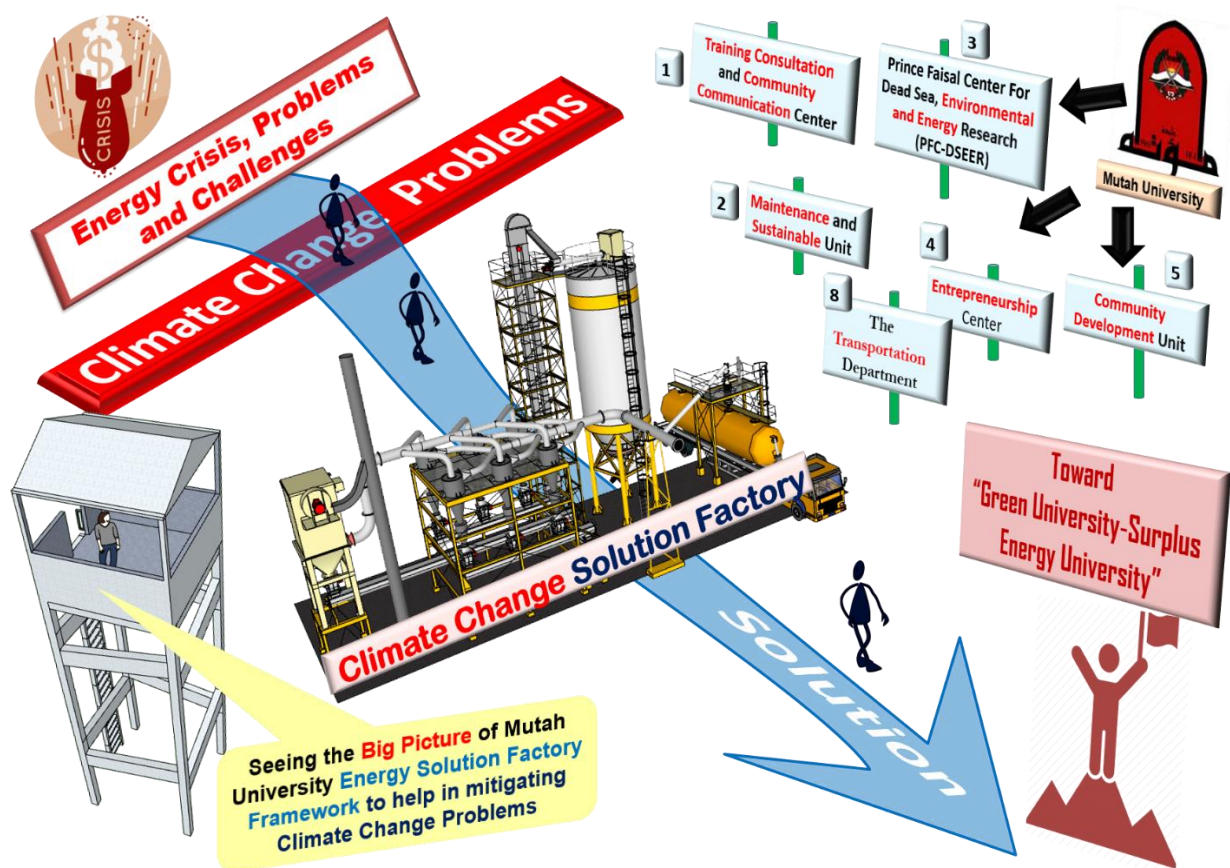


Figure 3: A Visual big picture of Mutah University Climate Change Challenges Mitigation vision based on Climate Change Solution Factory Framework

Climate change mitigation activities are paralyzed by fragmentation and the absence of an integrated vision to accommodate different activities of several units and centers at Mutah university. Climate change solution factory framework is the most important framework that can unify the climate change efforts under one umbrella, which can be moved easily to serve many contexts, as illustrated in Figure 3. Academic institutions globally emphasize policies, technologies, and knowhow generation environments that can be incubated to fruit developments in all fields. The philosophy of looking to universities centers and units as factories that can convert challenges into opportunities to transfer knowhow and technologies and produce solutions. Mutah university climate change vision is mainly based on this important factory solution perspective, as illustrated in Figure 3.

Constructing Far Reaching Road Map of Mutah University Climate Change Challenges Mitigation Actions (Planning and Actions Sides)

The adopted Climate change solution factory framework creates a generic template which combine all energy management efforts in a generic solution production form that can be quickly mobilized to be implemented in all contexts, as illustrated in Figures 1 and 2. The construction of an integrated picture was a second important step in shifting our thinking in

climate change challenges mitigation from the fragmented mode to the integrated and continuum mode, as illustrated in **Error! Reference source not found.** It is the time to go deep into micro integration by looking deeply at climate change challenges mitigation actions, see Figure 4.

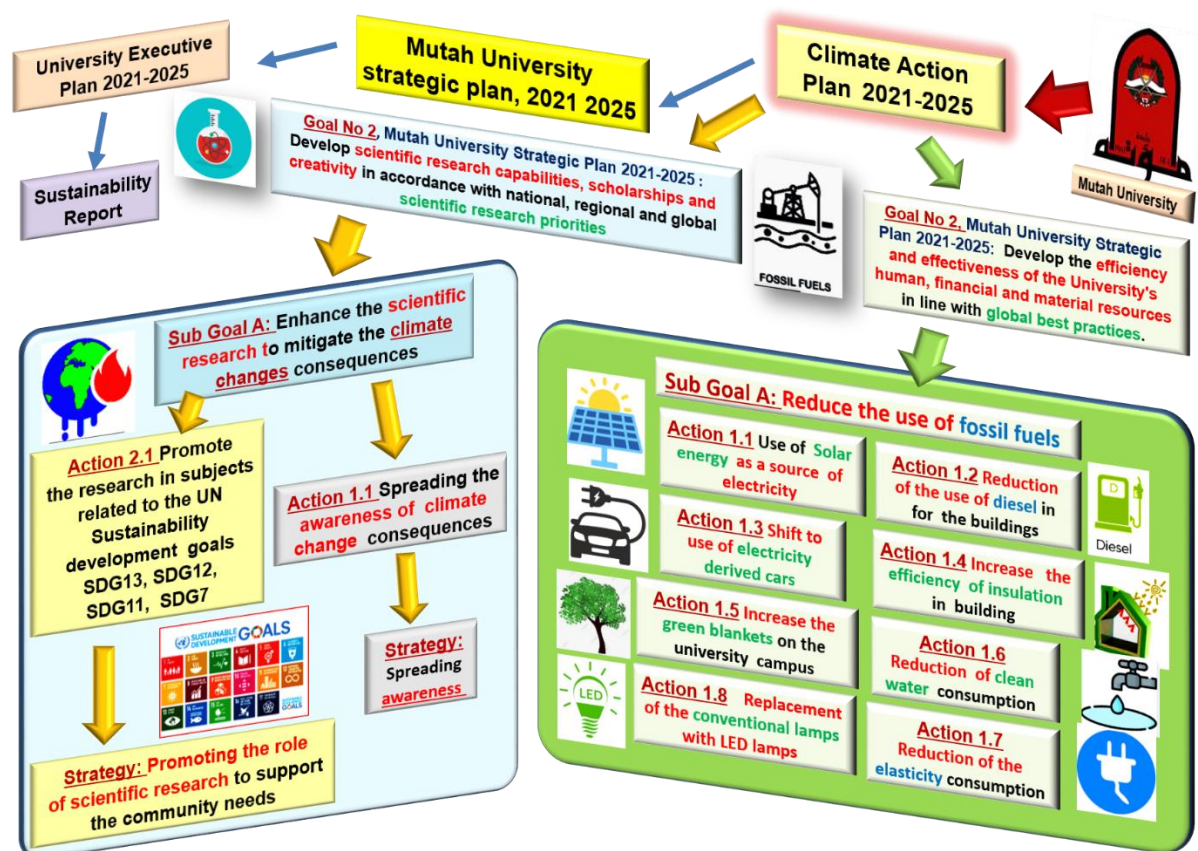


Figure 4: Visual big picture of Mutah University Climate Change Challenges Mitigation Strategies and Actions.

Vital education role in creating SDGs continuum

The Sustainable Development Goals (SDGs) are a collection of 17 interlinked global goals designed to be a "blueprint for achieving a better and more sustainable future for all", Figure 5. The SDGs were set to be achieved by the year 2030. Education for Sustainable Development (ESD) is directed towards achieving the SDGs. ESD for 2030 is the global framework for implementing SDGs from 2020-2030. ESD places emphasis on education's contribution to the achievement of the SDGs. Given the fact there is very little time left to achieve the SDGs, it is crucial to accelerate ESD in the decade of action to deliver the goals, Figure 5.

As shown in Figure 5, education is at the heart of the SDGs. education is key for progress toward achieving all SDGs and should therefore be part of the strategies to accomplish each of them. As All SDGs are interdependent, the silo approach to education should be totally avoided. SDGs can only be achieved if implemented together. It is, therefore, necessary to go beyond a silo approach and ensure that the education sector is better articulated with other development sectors. To effectively convey the role of the collaborative work of all the SDGs

and the crucial importance of making them work as a continuum, Jig Saw Analogy is visually created in Figure 1. The single piece of this puzzle is meaningless until all the elements are arranged in a meaningful and current arrangement.

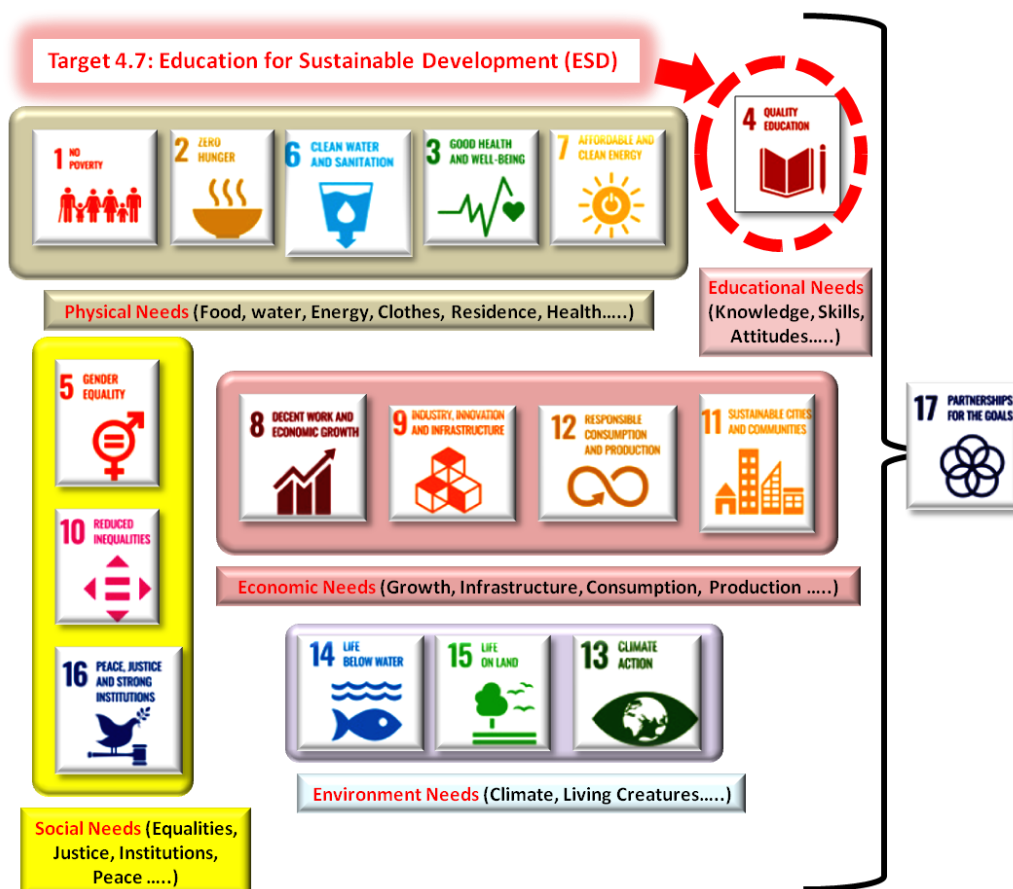


Figure 5: Sustainable Development Goals (SDGs) Structure and the core position of Education for sustainable development (ESD) in achieving these huge goals (Adapted from UNESCO 2020).

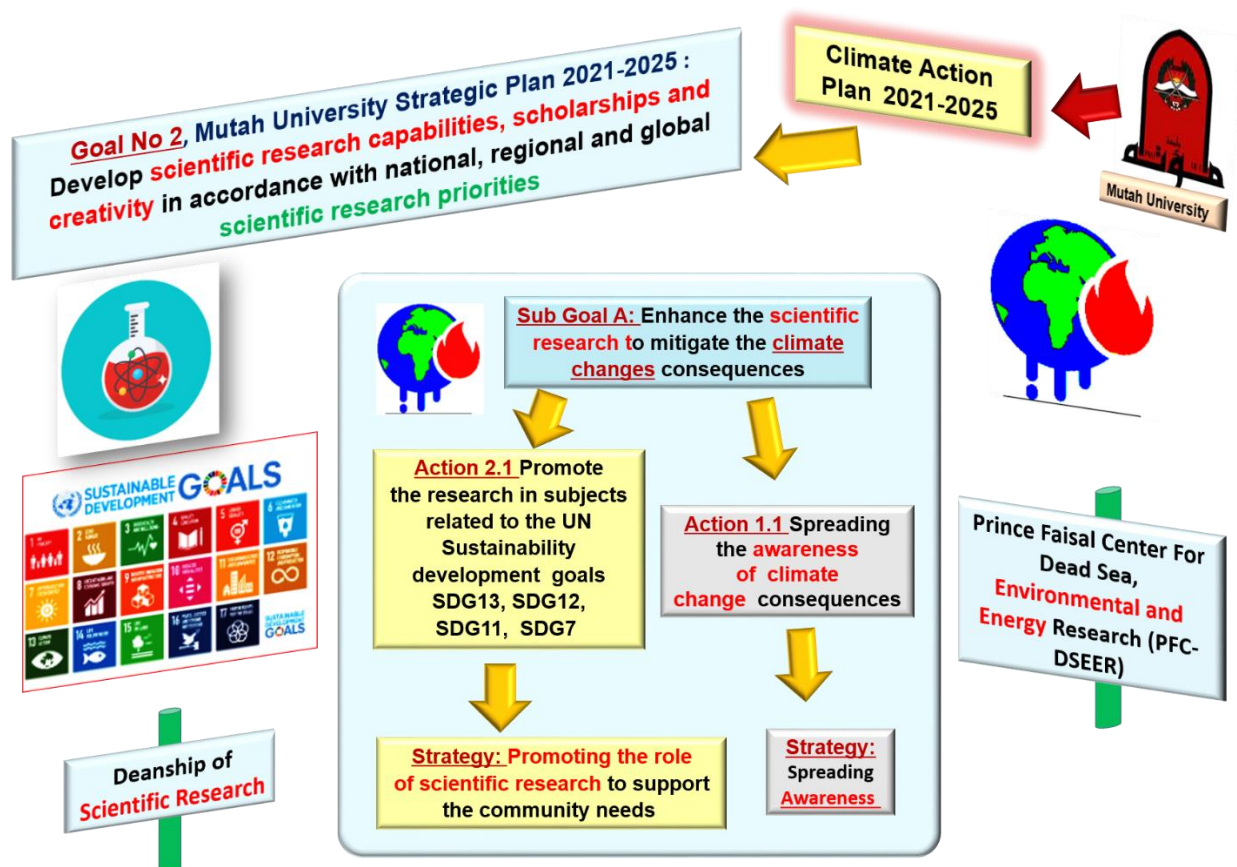


Figure 6: Visual big picture of Mutah University Climate Change Challenges Mitigation Strategies and Actions by Enhancing the scientific research.

Enhancing the scientific research to mitigate the climate changes consequences

Goal number 2 of Mutah university strategic plan 2021-2025 aims to develop scientific research capabilities, scholarships, and creativity following national, regional, and global scientific research priorities with a sub-goal A that focuses on enhancing the scientific research to mitigate the climate change consequences, Table 1 and Figure 6.

Table 1: Goal No 2 of Mutah university strategic plan 2021-2025, develop scientific research capabilities, scholarships, and creativity following national, regional, and global scientific research priorities. Subgoal A: Enhance the scientific research to mitigate the climate changes consequences						
Strategy	Action	Responsible	Funding Source	Time	KPI	Notes
Promoting the role of scientific research to support the community's needs	2.1 Promote the research in subjects related to the UN sustainability development goals SDG13, SDG12, SDG11, SDG7	Deanship of scientific research	Annual research fund plan (100 000) JOD	2021-2025	Number of publications at each SDG per year	
Spreading awareness	2.2 Spreading the awareness of climate change consequences	Deanship of scientific research	1000 JOD	2021-2025	One workshop per semester for public (50 attendees at least)	

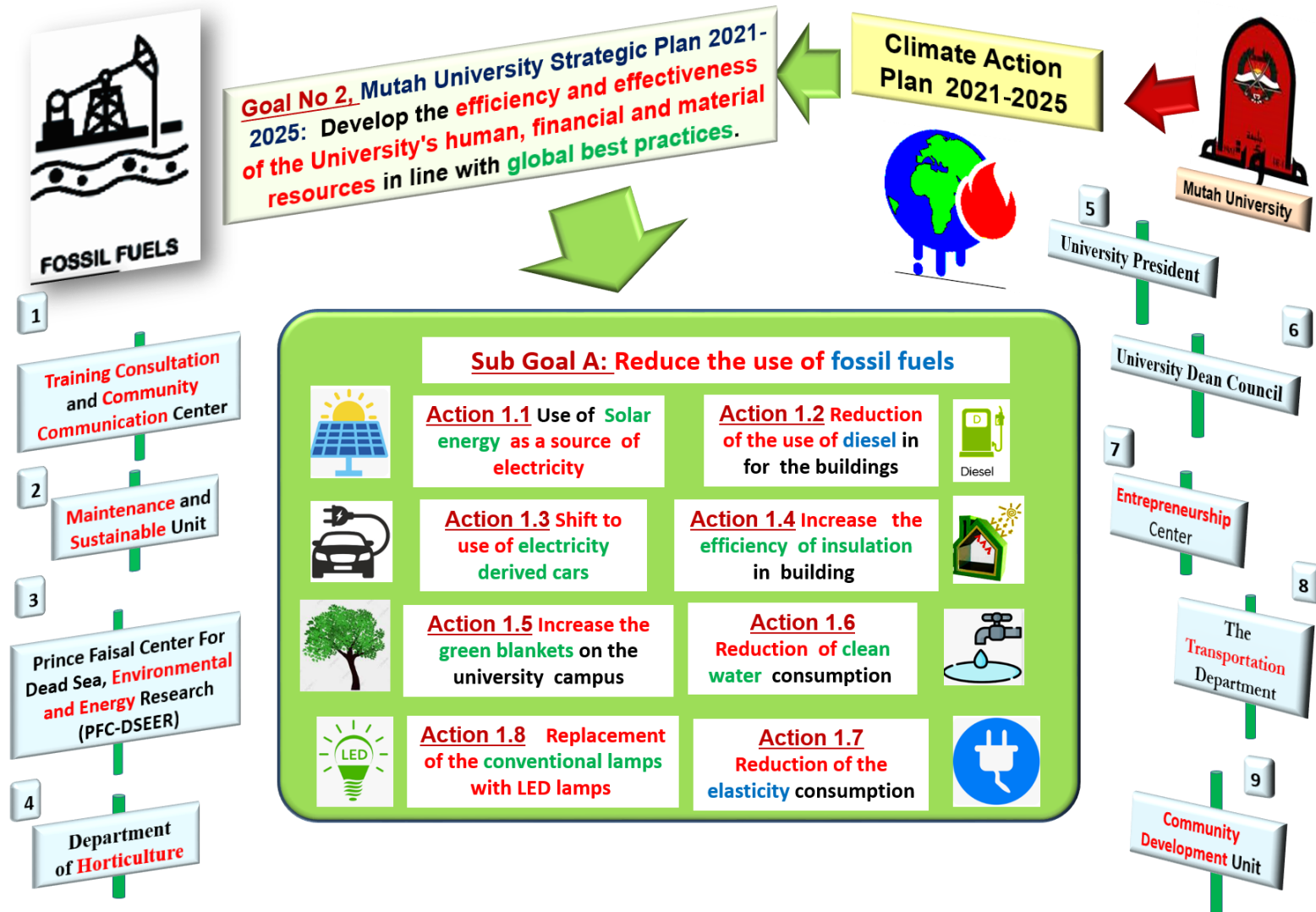


Figure 7: Visual big picture of Mutah University Climate Change Challenges Mitigation Strategies and Actions by reducing fossil fuel use. Reducing the use of fossil fuels (Implementation Action Side)

Goal number 2 of Mutah University Strategic Plan 2021-2025 aims to Develop the efficiency and effectiveness of the University's human, financial and material resources in line with global best practices with Subgoal A, which focuses on reducing the use of fossil fuels, See Table 2 and Figure 7.

Table 2: Goal No 2: Mutah University Strategic Plan 2021-2025, Develop the efficiency and effectiveness of the University's human, financial and material resources in line with global best practices. Subgoal A: Reduce the use of fossil fuels						
Strategy	Action	Responsible	Funding source	Time	KPI	Notes
Promoting the sustainability resources (University executive plan 2021-2025)	1.1 Use of Solar energy as a source of electricity	University President University dean council	The project is a gift from the European and UAE partners	Strategic plan 2021-2025	<ul style="list-style-type: none"> • Megawatt production per year • Contribution % to university consumption 	Mutah has launched the first stage of its solar energy project to produce 5 MWe satisfying 80% of its electricity needs.
	1.2 Reduction of the use of diesel in for the buildings	<ul style="list-style-type: none"> - Vice-president for Administrative affairs -The Maintenance Department 	University budget	Strategic plan 2021-2025	<ul style="list-style-type: none"> • Liters of diesel consumed per the square meter of buildings 	
	1.3 Shift to use of electricity derived cars	<ul style="list-style-type: none"> • Vice-president for Administrative affairs • The transportation department 	400000 JOD	Strategic plan 2021-2025	<ul style="list-style-type: none"> • Number of buses operated by electricity 	

Strategy	Action	Responsible	Funding source	Time	KPI	Notes
Promoting the sustainability resources (University executive plan 2021-2025)	1.4 Increase the efficiency of isolation in building	<ul style="list-style-type: none"> • Maintenance department 	400000 JOD	Strategic Plan 2021-2025	<ul style="list-style-type: none"> • Number of renovated isolated buildings 	
	1.5 Increase the green blankets on the university campus	<ul style="list-style-type: none"> • Department of Horticulture • Faculty of agriculture 	20000 JOD	2021-2025	<ul style="list-style-type: none"> • New trees planted within the campus 	
	1.6 Reduction of clean water consumption	<ul style="list-style-type: none"> • Department of Maintenance 	10000 JOD	2021-2025	<ul style="list-style-type: none"> • Rate of consumption per capita per year 	

	1.7 Reduction of the elasticity consumption	<ul style="list-style-type: none"> • All University deanships • Department of Maintenance 	5000 JOD	2021 2023	<ul style="list-style-type: none"> • Number of installed electricity meters for old buildings 	
	in offices (campus)				<ul style="list-style-type: none"> • Annular electricity consumption report 	
	1.8 Replacement of the conventional lamps with LED lamps	<ul style="list-style-type: none"> • Department of Maintenance 	10000 JOD	2021 2025	<ul style="list-style-type: none"> • Number of replaced lamps at the campus 	

References

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