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TS 6. Integrated Land Use Planning

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"Water-Driven Sectoral and Spatial Planning Ensuring Food Security under Changing Climate Conditions"

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Esteemed Moderator Mahmoud Abdelfattah,

Esteemed Panelists,

Esteemed FAO and Country Representatives,

Ladies and Gentlemen,

First and foremost, I would like to express my gratitude for this kind invitation. In this regard, I would also like to convey the greetings of my Minister, His Excellency İbrahim YUMAKLI. Unfortunately, I was not able to meet you in person today. However, in the next event, and I sincerely hope we have the chance to do this in Türkiye, we will have the opportunity to meet in person, which would bring us great pleasure.

Honorable Directors, Representatives,

Esteemed Participants;

Climate change, as is well known, is a significant issue directly affecting the availability and quality of water resources, as well as global food security.

Rising temperatures, irregular precipitation patterns, and the increasing frequency and intensity of droughts are significantly altering the water-dependent growth periods and harvest times of crops, thereby adversely affecting product quality, yield, and overall agricultural production.

However, it is possible to achieve sustainable socio-economic development while preserving ecosystem services through a more integrated approach. In this context, Sustainable Land Management practices, which enhance integration in the management of land, water, biodiversity, and other environmental resources, can significantly contribute to increasing carbon sequestration and achieving up to a 58% increase in crop yields.

On the other hand, alongside the impacts of climate change on the agricultural sector, the economic consequences of increasing water scarcity continue to grow. Today;

- 2.3 billion people lack access to safe drinking water, and 3.6 billion people are deprived of sanitation services, adversely impacting health, education, and economic development. And,
- Nine out of ten natural disasters are water-related.

In the face of this urgency, the necessary measures remain insufficient. Water resources are under significant pressure, and water services are inadequate due to the lack of critical environmental investments in the sector.

In regions highly vulnerable to climate change, such as the Mediterranean, which includes Türkiye, the decline in water resources makes water management more complicated and poses a significant challenge for agriculture.

According to studies conducted to determine the impacts of climate change in our Country:

- Water potential is estimated to decrease by approximately 30 %.

Considering the expected reduction in our water resources due to the growing population and the impacts of climate change, it is likely that we will fall into the category of water-scarce country by 2030.

If the necessary measures are not taken by 2030, nearly half of our country's population and approximately 80 % of irrigated agricultural land will be at risk of water scarcity.

According to the Nationally Determined Contributions (NDC) Synthesis Report published in 2022, in the majority of climate change adaptation components, 87%, freshwater resources have been identified as a priority area. Measures have been proposed to improve the availability, efficiency, and quality of water resources, including the development or

construction of water infrastructure, as well as the creation of water resource plans, strategies, and systems.

The parties aim to strengthen basin management, as well as the efficiency of water use and irrigation. Key measures include integrated water resources management, the protection and restoration of water-related ecosystems such as forests, wetlands, and rivers, and the diversification of water supply.

Esteemed Participants;

In our country, 90 % of food production is provided from soil. Considering the socio-economic developments, it is essential to make sectoral and spatial planning according to water for the protection and sustainable management of water and soil resources, as well as to ensure food security and sustainable growth.

In this context, to improve the situation and reverse the negative trends, Türkiye has adopted an integrated management approach that includes planning and implementation aimed at using water, soil, and biodiversity resources more sustainably and efficiently.

This approach is a significant step, particularly in terms of the conservation, development, and balanced management of water and soil resources. Identifying suitable implementation options based on different land/soil management practices tailored to various climate conditions, which contribute to climate-smart land use systems, presents a key opportunity for enhancing climate change adaptation and mitigation and establishing a resilient ecosystem.

However climate change has strengthened the environmental dimension of planning and has become a new rationale for coordinating actions and integrating various policy priorities. In other words, climate change plays a crucial role in adapting traditional water management models in spatial planning to respond to climate-related issues.

In this context, to minimize the adverse impacts of climate change in our country and in line with SDG's, an integrated water resources management approach is being implemented with a participatory and holistic approach.

In this context, within the framework of the basin-based management goal, various regulations focused on the 'planning-implementation-monitoring-control' mechanism have been published, and a regulatory infrastructure has been established and continues to be developed.

First of all, in order to ensure safe and clean water, which is the most basic human need and the primary component of healthy food preparation, in a sustainable and uninterrupted manner from the source to the tap, **drinking water basin protection plans** are prepared in which the measures to be taken for the protection of the source are determined as the first step.

River basin management plans have been prepared and are being continued to prepare for the 25 basins in our Country. River basin management planning improves the quality and quantity of water, enhancing the availability of the resource while also ensuring the fulfillment of water demands, including those of the agricultural sector.

Sectoral Water Allocation Plans are being prepared to ensure the more effective planning. Within the scope of sectoral water allocation plans, supported by ecosystem-based scientific studies, we have determined the amount of water that can be allocated to agriculture, industry, tourism, public use, and most importantly, environmental flow during dry, semi-arid, and normal periods.

With Sectoral Water Allocation Plans, the determination of crop patterns within the framework of the 'water-driven agriculture' policy and the support of the production planning process, considering land productivity, rainfall, and irrigation opportunities, is provided. Additionally, strategic products specific to the basin are identified in the Sectoral Water Allocation Plans, and the water footprint of these products is calculated. The water footprint allows for the comparison of the net income values of these products.

Drought Management Plans have been prepared in our country. Within the scope of these plans, measures to manage risk instead of crisis have been determined. The implementation of these measures is expected to result in the conservation of approximately **12 billion cubic meters** of water annually, equivalent to the **current water volume of the Aral Sea/Lake**.

Additionally, work has commenced this year to establish a **'Drought Forecasting and Early Warning System'** to manage risk rather than crisis during droughts. With this system, early warnings will be provided to water-using sectors such as agriculture, drinking water, tourism, and industry before the onset of drought, ensuring that risks are managed and the impacts of drought are minimized.

Another important study in our Country is the preparation of Flood Management Plans. The aim of the Flood Management Plans is to minimize the loss of life and property caused by floods. To achieve this, flood-prone areas, including agricultural lands, are identified, flood hazard and risk maps are created, and necessary measures are outlined. The prepared Flood Management Plans serve as a crucial foundation for spatial planning. Agricultural products are categorized according to sensitivity classes defined by the Turkish Insurance Association, and the expected total damage for agricultural lands within potential flood areas is determined, leading to the creation of agricultural flood risk maps.

Additionally, efforts are ongoing for the establishment of the Flood Forecasting and Early Warning System to minimize potential flood damage. The completion of the system's installation is planned by the end of 2028.

The river basin management, drought management, flood management, and sectoral water allocation plans mentioned above are all integrated plans that serve as important foundations for our sectoral and spatial plans.

Additionally, adaptation activities, such as "**rainwater harvesting", "greywater reuse",** and **"water pricing"** have been identified, with implementation costs and details varying by region and work area.

On the other hand, **studies have been carried out on the reuse of used waters**. In this regard, particularly in water-scarce areas and drying lakes, goals have been set to increase agricultural production through the reuse of used waters and to reduce the pressure on groundwater by reusing water. Preliminary feasibility reports have been prepared in line with these objectives.

Building on this example, we must take action to harness our freshwater resources and reuse used water, while choosing more efficient ways to use water in order to provide food for the ever-growing global population.

In this context, in order to adapt to the changing climate, protect water resources, and ensure their sustainable management, **the "Water Efficiency Campaign" was launched, on January 31, 2023 under the auspices of First Lady Emine ERDOĞAN**, with the principle of "**Zero Water Loss**".

This Campaign focuses on the efficient and sustainable use of water while ensuring a balance between conservation and utilization, to guarantee the sustainable management of our water resources, which are vital for production, food security, development, and social welfare.

Within the scope of this Campaign, **a ten year "Water Efficiency Strategy Document and Action Plan" has been developed**, setting national visions and targets for water efficiency.

The action plan includes **9 national goals** and **114 priority actions**. Additionally, **162 sectoral water efficiency guidance**, detailing the implementation steps to achieve these goals, have been published.

Through these actions, we aim to achieve the following by 2030:

- Reduce water losses in drinking water systems from thirty two percent 32 % to 25%
- Increase agricultural irrigation efficiency from 51 % to sixty percent 60 %
- Achieve a 30 % water recovery in industrial production
- Reduce per capita water usage from 150 liters per day to 120 liters per day

In this context, during the margins of COP29, the national statement delivered **by His Excellency President Recep Tayyip ERDOĞAN, a call was made to all countries at the United Nations to join the Water Efficiency Campaign effort.**

Esteemed Participants;

Some changes are urgent because current trends lead to water issues and bottlenecks that will increase costs and create financial risks.

With this in mind, we have transitioned to an agricultural planning model centered on water. It is essential that the planning of all sectors, particularly industry, tourism, and agriculture, takes into account the quantity and quality of water and is structured accordingly.

Furthermore, the selection of locations for settlements, organized industrial zones, tourism investments, and agricultural enterprises must consider not only drought risks but also flood risks. This approach ensures that spatial planning is both effective and sustainable. Based on this understanding, we have developed flood hazard and risk maps for 25 basins to serve as a foundation for all planning efforts.

As we know that spatial planning is a vital tool in managing both water scarcity and excess water, playing a critical role in preventing loss of life and property.

We must protect and manage our water resources with awareness. In this context, under the reality of climate change, we need to transition to a more integrated and sustainable structure in both sectoral and spatial planning, based on water resources. We are aware that achieving this goal is only possible through high-level coordination and collaboration.

Before concluding my remarks I would like to highlight that we are always open to share our know how and experience with FAO member states to develop a common basis and mutual understanding for strengthening cooperation in sustainable and integrated management of land and water resources under the influence of climate change.

Thank you for your attention.