MINISTRY OF
WATER AND IRRIGATION

سلطة وادي الأردن
J.V.A

Jordan Valley Authority Strategy Plan

2024-2026

"Let's take a look at the climate crisis for example, no country can individually address its environmental impact, therefore, we need to have partnerships that can create an actual change. Jordan is taking part in these efforts, building strong partnerships to manage and sustain water resources. We see more and more opportunities to work with our partners to maintain the World Heritage Sites and our distinguished natural habitats, such as the Dead Sea, Jordan River, and Aqaba's coral reef, which are threatened by climate change".

His Majesty King Abdullah II bin Al Hussein
20 September 2022

In the Name of Allah, the Merciful

Jordan Valley Authority (JVA) was established in 1977 to create inclusive development in the Jordan Valley region in pursuance of the Jordan Valley Development Law No. 17 of 1977. It was granted a wide range of duties, including the construction of roads, health, educational, and service facilities, in addition to the development of water resources, land, and other environmental and touristic facilities. One of JVA's major mandates is the development of water resources in the Jordan Valley and utilizing them in irrigated agriculture, domestic use, industry, power generation. To achieve this goal, JVA built dams on main water streams with a design capacity of 364 mcm, in addition to many irrigation projects that provide water to around 30,000 hectares of agricultural land stretching along the Valley to the north and south of the Dead Sea. It is worth noting that irrigation water in the Jordan Valley is managed by advanced operational systems, such as SCADA and a water management information system (WMIS), ensuring efficient and fair water management. In alignment with Royal directions and to meet the growing demand on drinking water, JVA provided significant attention to the drinking water sector in Jordan and considered it a top priority when allocating water resources to various economic sectors.

To provide decent living conditions in the Jordan Valley region and to settle the population in their areas, JVA allocated more than 60,000 housing units to the people of the region, according to specific and clear criteria, ensuring justice and transparency. JVA also distributed about 10,000 agricultural units to entitled beneficiaries and provided them with the necessary water resources, which contributed to agricultural development in the Jordan Valley, generating many job opportunities for the local community, increasing agricultural exports to foreign markets, providing the treasury with hard currency, and contributing to self-sufficiency in agricultural crops and food security.

Based on the Economic Modernization Vision (2022-2033), which focused on enhancing water and food security and reducing water loss, and considering water scarcity due to climate change, JVA sought to develop existing water resources and search for new sources. Meanwhile, JVA took significant efforts to reduce water loss by establishing several projects to rehabilitate the infrastructure of irrigation systems along the Valley, updating preventive maintenance programs,

and elevating JVA's technical capabilities. JVA also implements water harvesting projects with the aim of rehabilitating terrestrial ecosystems by enhancing freshwater resources and finding new ones in various Valley areas, the Jordanian Desert, and desert pastoral areas. More than 620 water harvesting sites have been implemented with a total storage capacity reaching around 130 mcm.

Furthermore, JVA ensures Jordan's water rights through its prudent management of transboundary water, which effectively contributes to mitigating the effects of climate change on water resources, the drinking water sector in the Kingdom and irrigation water in the Jordan Valley.

On the other hand, in line with the efforts of previous Jordanian governments to involve the private sector in water management and distribution, the JVA established Water User Associations in the Jordan Valley in 2008 to participate in the management and distribution of irrigation water to farmers, ensuring fair distribution, limiting attacks on water resources and facilities, reducing violations, and increasing irrigation efficiency at the farm level. This experience was considered a pioneering experience at the region's level.

It is worth noting that the Jordan Valley Development Law stipulates articles that grant the necessary privileges to encourage agricultural, industrial and tourism investment in Jordan Valley. Hence, JVA developed the Lease of Agricultural Units and Other Lands Bylaw, to enable investors to submit investment applications in the Jordan Valley area in a fair and transparent manner. JVA also provides the industrial sector in Southern Valley with abundant quantities of water at competitive prices to encourage and support the industrial sector so that it can maximize its production and exports to foreign markets.

In conclusion, this pioneering institution will continue to do its utmost to develop, preserve and protect water resources in the Jordan Valley, to achieve the Royal directives aiming to provide decent living conditions for the people of this country. JVA cadre will also continue to carry out their mandates with efficiency and competence, to achieve the JVA's vision of sustainable water and land resources to achieve comprehensive development. They will continue to carry JVA's message oriented towards the development of the Jordan Valley region.

May God bless you and protect you under the victorious Hashemite leadership

Secretary General of the Jordan Valley Authority

Eng. Hesham Hilal Al-Hesa

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Introduction

JVA launched its Strategic Plan (2024 - 2026) in pursuance of the Economic Modernization Vision (2022- 2033), the Public Sector Modernization Roadmap (2022-2025), and the National Water Strategy (2023 - 2040), where JVA represents a cornerstone of the water sector, and its institutional goals contribute to the achievement of the sectoral goals.

The main priorities of the JVA's Strategic Plan revolve around achieving the tasks stipulated in the Jordan Valley Development Law and its amendments of 1988. JVA plays a significant and primary role in achieving water and food security and developing the Jordan Valley region. For example, in terms of developing and protecting the Valley's water resources, JVA's role is represented in increasing the current water storage capacity by improving existing facilities such as dams and water harvesting systems, increasing their storage capacity, carrying out necessary maintenance on an ongoing basis, protecting facilities from pollution (especially pollution resulting from the discharge of untreated wastewater and other hazardous materials), enforcing laws and legislations, and continuous monitoring of water resources.

JVA's role also includes maintaining Jordan's agreed-upon shares of transboundary water.

The issue of water loss takes an important part of the Water Sector Strategic Plan. In that regard, JVA works on reducing water loss in irrigation water systems by rehabilitating the northern and southern parts of King Abdullah Canal and many water networks.
In order to improve energy efficiency and reduce energy costs, one of JVA's main goals is to increase renewable energy efficiency and expand the use of alternative energy. JVA also seeks to increase and develop non-conventional water sources and expand the use of reclaimed water in irrigating crops, which contribute to securing additional quantities of freshwater for drinking.

This plan differs from its predecessors because it focuses on accurate needs-based planning and on addressing the challenges facing the water sector in general and JVA in particular. These challenges fall under several themes, most important of which are climate change and its impact on water resources, in addition to legislative, financial, and administrative challenges.

The impact of climate change on surface water resources in the Jordan Valley, which depends on rainfall that is fluctuating and declining in its quantities, is evident. In addition, major surface and groundwater resources are shared with neighbouring countries. Additionally, there are

shortcomings in legislations that help in lowering violations against water resources and water facilities' infrastructure.

JVA faces financial challenges and a deficit in the government budget needed to establish projects that achieve JVA's objectives, such as dams, water harvesting, and energy projects; particularly since the magnitude of investments required to establish such projects is huge, faced by a challenged return on investment. In addition, the rate of revenue collection from farmers is low and the tariff per cubic meter of irrigation water is likewise low. Through its Strategic Plan, JVA aims at enhanced governance and institutionalization of its work.

Jordan Valley Authority's Establishment and Mandate

JVA was established in 1977 in pursuance of the Jordan Valley Development Law No. 18 of 1977, which was later replaced with Law No. 19 of 1988. JVA was granted largescale duties in terms of the integrated social and economic development of the Jordan Valley, which was delineated at the time by the northern borders of Jordan to the northern tip of the Dead Sea in the south, and from the River of Jordan in the west to all areas of Yarmouk and Zarqa basins below 300m above sea level, in addition to any area designated as part of the Jordan Valley by the Council of Ministers, such as the area between the northern tip of the Dead Sea to the northern border of Aqaba City in the south, and the area 500m above sea level from the east and Jordan's border in the west, which was added to the Valley in pursuance of the Council of Ministers' decision No. 6/59/12/6339, dated 22/5/1977.

JVA's mandates are stipulated in Article 3 of the Jordan Valley Development Law No. 19 of 1988, and since then, JVA continuously worked on implementing its mandates, including:

A. Developing the Valley's water resources and using them in irrigated agriculture, domestic use, municipal use, industry, generating electric power and other useful purposes. JVA also holds the responsibility of protecting and preserving these resources and carrying out all works in those regards, such as:

    1) Conducting the necessary studies to evaluate water resources, including hydrological and hydrogeological studies, geological surveys, test well drilling and establishing monitoring stations.

    2) Studying, designing, implementing, operating and maintaining irrigation projects, facilities and related works of various types or purposes, including dams and their appurtenances, hydropower stations and their appurtenances, wells, pumping stations, reservoirs, water supply and distribution networks, as well as ground and surface drainage works, flood protection works, roads, operation buildings and maintenance.

3) Surveying, classifying, identifying, and reclaiming arable irrigated lands, and dividing them into agricultural units.

4) Settling disputes arising from the use of water resources.

5) Organizing and directing the establishment of private and public wells.

B. Developing, protecting and improving the environment in the Valley, implementing all necessary works for this purpose and developing structural and detailed site plans for land outside the organizational boundaries of municipalities.

C. Studying, designing, constructing and maintaining agricultural road networks in the Valley, provided that JVA continues to follow up on the implementation of main road projects that it started but has not completed yet.

D. Developing tourism in the Valley and identifying areas that have advantages that can be exploited for tourism and recreational purposes and establishing tourism and recreational facilities in them.

JVA established Water User Associations in various areas of the Valley as a partner in improving irrigation management, and they have been delegated the responsibility of distributing irrigation water to farms.

Foundations for updating the Strategic Plan

After extensive studies and the issuance of the Economic Modernization Vision (2022-2033), the Public Sector Modernization Roadmap (2022-2025), and the National Water Strategy (2023-2040), which addressed the most important challenges facing the sector and the resulting pivotal and strategic goals to achieve water security; and with the Jordan Valley Authority's Strategic Plan (2021-2023) reaching the end of its cycle, JVA developed a new strategic plan for the period (2024-2026) directed towards achieving sectoral and national priorities and responding to developments affecting Jordan Valley and water security directly or indirectly, most importantly:

- Water scarcity due to surface and groundwater depletion.
- Declining water volume in Yarmouk and Jordan Rivers due to diversion of upstream flows and other uses.
- High water losses (physical water loss and illegal uses / non-revenue water (NRW)) attributed to technical reasons such as leakage, lack of regular metering and poor infrastructure performance; and administrative reasons such as weak water management and weak enforcement of laws against illegal use.
- Demographic changes and population growth which have increased the rate of water demand against the limited supply.
- Climate change effects, such as rising temperatures, increasing frequency of floods and droughts affecting water and food security, and changing patterns of rainfall and snow cover, which have led to a sharp decline in the quantities of water stored in dams and poor recharge of groundwater reserves.
- Poor awareness of efficient water use, especially in the agricultural and industrial sectors.
- Weak commitment by all parties to regional and transboundary water agreements concluded with neighbouring countries, which affects Jordan's share of that water.
- Low efficiency of services and operations compared to high costs and energy requirements.
- Donor funding directed towards priorities related to municipal water and sanitation.

Strategic and Action Plans' Development Methodology

JVA's Strategic Plan (2024 - 2026) was developed according to a participatory approach that engaged various stakeholders in alignment with the Economic Modernization Vision (2022-2033) and the National Water Strategy (2023 - 2040) in addition to several sources, masterplans, documents, and other reports that formed along with the Guideline for Developing the Public Sector Strategic Plans. Furthermore, developing the strategic plan revolved around the following main themes:

- Preserving and developing surface water sources
- Achieving water and food security
- Taking measures to reclaim and reuse water in agriculture to address the impacts of climate change on the water sector
- Determining the volume of water loss and addressing this important issue
- Reinforcing the concept of governance and serving public interest to the best possible extent
- Improving energy efficiency and transforming to alternative sources of energy

JVA's strategic planning team developed an action plan to implement the strategic and action plans, which included the following phases:

- Reviewing the Economic Modernization Vision (2022 - 2033) and the Public Sector Modernization Roadmap (2022-2025), concluding national pillars and priorities related to the water sector, and aligning them with sectoral and then institutional goals.
- Reviewing the National Water Strategy (2023 - 2040) and concluding JVA's main goals, direct objectives, shared objectives, responsibilities, and proposed strategic direction while taking into consideration the outcomes of JVA's Strategic Plan for the years (2021-2023).
- Analysing the internal and external environments using SWOT and PESTEL analysis tools and concluding JVA's internal strengths, weaknesses, opportunities and threats, the external political, economic, social, environmental and legal factors affecting JVA, and factors that

have recently affected the sector since launching the National Water Strategy until the date of preparing the strategic plan.

- Studying and determining JVA's current status based on the results of the analysis of the two environments, relevant documents and studies, meetings with specialists and partners, evaluation questionnaires, and other tools.
- Extracting strategic options that reflect the information gained about the internal and external environments and aligning them with available financial and human resources and opportunities within the JVA's environment.
- Evaluating strategic direction options according to specific criteria, including:

  1) Financial factors

  2) JVA's readiness to adopt each option

  3) Option's impact on achieving the strategic goals

  4) Vital factors and any regional or local developments related to JVA’s work
- The institutional strategic goals were identified such that they achieve JVA's mandate.
- Drafting a matrix aligning national, sectoral and JVA's institutional goals.
- Drafting the strategic plan by the Planning and Transboundary Water Directorate to reflect a preliminary perception of the abovementioned points.
- Developing the implementation plan that would achieve the strategic institutional goals and complement sectoral goals.
- Reviewing all of JVA's initiatives and projects and connecting them to concerned directorates, units and divisions. Setting qualitative indicators and quantitative ones along with their calculation equations and setting annual targets.
- Circulating the draft strategic and action plans among stakeholders for review and feedback.
- Revisiting the draft strategic and action plans according to received feedback.
- Approving the strategic plan by the Planning, Coordination, and Monitoring Committee and then by JVA’s Secretary General then publishing it.

Vision

Sustainability of water resources and land for comprehensive development

Mission

Managing, developing, and protecting water resources and transboundary water for all purposes and lands in the Jordan Valley, to contribute to the Valley's development, protection of its environment, and promotion of its investment environment in partnership with the private sector.

Values

In achieving its vision and mission, JVA follows the following values:

- Participatory action and integration
- Creativity and excellence
- Fairness, integrity, and equal opportunity
- Loyalty
- Teamwork
- Transparency
- Social responsibility

Current situation in the Jordan Valley

Water situation

JVA plays a significant role in managing water resources in the Jordan Valley, as it is the solitary institution responsible for managing and developing surface water resources, securing 33% of the total water used in Jordan for various sectors. This quantity collected from all surface water sources locally is estimated to have reached 471 mcm in 2022[1], including transboundary water. The difference between the two values represents either the quantity of surface water that was not collected or was lost (including evaporated water).

The limitation of water resources in the Kingdom is due to reliance mainly on rainfall, which is characterized by fluctuating spatial and temporal distribution, especially in light of climate factors. The average rainfall for the year 2021/2022 reached about (6192 mcm), while water loss due to evaporation is estimated at (5814 mcm) of the volume of rainfall, and the volume of groundwater recharge reached 245 mcm, while the surface runoff was 133 mcm.

JVA is working to benefit from this rainfall through various water harvesting projects, such as the 16 main dams operating in the country, with an approximate total storage capacity of (288 mcm), in addition to many excavations and desert dams spread throughout the Kingdom, with a total capacity of (128 mcm).

Managing and protecting water resources, to ensure the sustainability of irrigation water allocations for the agricultural sector, is a matter of utmost importance and a priority for JVA. Surface water systems represent important means of mixing fresh water with reclaimed wastewater to be used in irrigation. They are also essential to achieving water security. Accordingly, there is a need for additional investment in surface water supplies, improving their infrastructure, and strengthening their management frameworks.

There are many challenges facing water resources, as surface water systems (consisting of dams, transportation networks and King Abdullah Canal) are greatly affected by weather conditions and climate change. Furthermore, dams lose a significant portion of their storage capacity due to the accumulation of sediments[2] in them over time. The accumulated sediments in 4 out of 16 main

[1]Water Budget 2021-2022 - Ministry of Water and Irrigation
[2]GIZ- The Third National Water Plan 2022

dams account for about 27% of their original capacity (39 mcm out of 142 mcm). The accumulated sediments also cause operational problems in dams, as they may cause blockage and thus disrupt systematic water drainage. In addition, surface water is vulnerable to illegal use and pollution, because it is exposed and easily accessible. Overall, surface water use has increased in recent years, with the increase of water harvesting, from about 42% in 2013 to 57% in 2021, leaving little room for more surface water use as technical issues become more complex and require costly investments, making this option less feasible. Furthermore, declining rainfall rates and fluctuating surface water availability makes planning for its use less dependable.

Total water loss in the Jordan Valley water system is significant; estimated in 2021 at 27% of total water flowing from all sources. This amount represents the overall loss from sources and dams, through natural water streams and King Abdullah Canal's transportation systems, up until irrigation water distribution networks.

According to a 2018 study by the Water Management Initiative funded by USAID, water loss in the King Abdullah Canal was estimated in 2018 at 19% in the northern part and 38% in the southern part. Physical loss (seepage) in King Abdullah Canal, which is estimated at 40% of total water loss (20 mcm in 2021), is a major challenge that requires significant investments to address. On the other hand, administrative loss from King Abdullah Canal and irrigation water distribution systems, represented by the illegal extraction and use of water, constitutes 57% of the total water loss in the Canal; that is, about 28 mcm in 2021. Reducing these numbers requires tightening and enforcing laws to limit vandalism and illegal use. The remaining estimated 3% of water loss is due to evaporation from the Canal, representing less than 2 mcm annually.

Through its Strategic Plan, JVA aims to implement several projects to increase and develop surface water resources, reduce water loss, and address the shortage of fresh surface water, which is expected to decrease by 15% by 2040 due to climate change. Meanwhile, JVA is expanding the use of reclaimed wastewater for irrigation purposes.

Financial situation

JVA faces a serious financial challenge including:

- **Expenses:** Employee salaries represent more than 50% of the total maintenance and operation cost, while electricity accounts for around 20%. The rest of cost is divided among other expenses such as: Costs of water purchased from Lake Tiberias and costs of supplies and spare parts (each representing about 15%).
- **Revenue:** Revenue is derived from the industrial sector, agricultural sector, energy sector, and other sources. The industrial sector's consumption of water is considered to be low and at a tariff that returns the full cost, while the agricultural sector, which consumes a big portion of the water, pays a subsidized tariff that was approved in 1994. Hydroelectric power is generated and sold at King Talal Dam, and additional revenues are generated from leasing some of JVA's land for investment purposes.
- **Water Loss:** The total water loss in the Jordan Valley water systems is about 27%, and it can be considered a good opportunity for improvement and reduction, thus providing larger quantities of water to be sold for various uses and collecting additional revenues for the Authority.

Technical, Operational and Service situation

The operation process in JVA consists of three operational levels. It starts from the main source, then the carrier lines and finally irrigation water distribution networks. Water needs for drinking, agricultural or industrial purposes are determined according to availability of the main sources. Since JVA is the main supplier of irrigation water to farmers in Jordan Valley, a daily irrigation order is prepared based on the irrigable area, licensed agricultural patterns, water needs of each crop and water availability, in accordance with the Irrigation Water Use and Control Regulations of 2003. Accordingly, the process of liquefaction from the main sources, monitoring of the carriers and determining the height of the gates on the King Abdullah Canal is carried out so that the pumps can be operated to supply irrigation networks in various areas, while taking into account the quantities of fresh water that will be pumped for drinking purposes through Wadi Al Arab pump to Yarmouk Water Company as well as Zai pump and Zara Ma'in carrier to Miyahuna Company. The process of preparing irrigation orders and monitoring the liquefied quantities is

carried out through the WMIS computerized systems and the King Abdullah Canal remote monitoring system (SCADA).

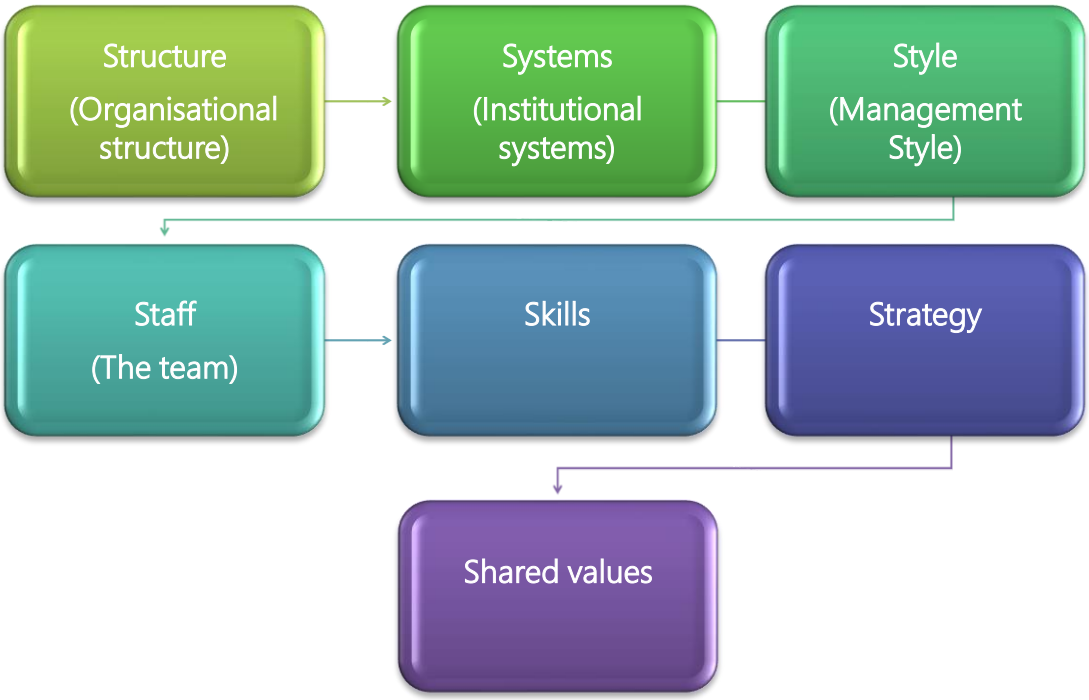
In order for JVA to be able to carry out its operational and service tasks, it carries out seasonal maintenance to prepare and equip the facilities for the rainy season, as well as emergency maintenance as needed.

SWOT Analysis

JVA, through several brainstorming sessions by the SWOT Analysis Committee team, studied and analysed JVA's internal and external environments and identified strengths and weaknesses as well as opportunities and threats using the SWOT Analysis model and through the tools specified in the Strategic Planning Guide, according to the following models:

The (7S) Model

An analysis that is based on seven internal factors compatible with the strategic plan. Through this analysis strengths and weaknesses are identified. These factors are:



PESTEL Model

An analysis of some of the external factors to determine opportunities and threats and address their negative impacts, such as:

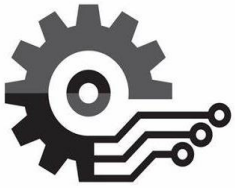
Political

- Laws and legislations governing the institution's work
- Employment regulations
- Health and safety regulations.
- Antitrust laws

Economic

- Environmental laws
- Energy consumption regulations
- Citizens' behaviour with environmental issues

Social



- New innovations and discoveries
- New platforms and technical tools
- Cost of technological obsolescence
- Cost of technical advancement and innovation

Technical

- Financial levels
- Educational levels
- Social levels
- Population's demographic properties

Environmental

- Inflation
- Unemployment rates
- Economic growth rates
- Interest rates
- Income levels
- General budget status

Legal

- General political atmosphere
- General government policies
- Internal political stability
- Regional unrest

First: Analysis of the Internal Environment

JVA's internal environment was analysed using the (7S) model. The following points of weakness and strength were found:

Internal factors	Strength	Weakness
Strategy	- National visions and a new sectoral strategy. - The Strategic Plan was built in alignment with national and sectoral goals. - A list of programs and projects that achieve strategic goals is available and another group of future projects and programs with observable impact is available if the needed budget is provided. - The Strategic Plan focuses on the needs of partners and service recipients. - The private sector is engaged in achieving the Strategic Plan goals.	- Poor funding to implement some of the action plan items and future projects.
Organizational Structure	- An updated and flexible organizational structure that is aligned with the Strategic Plan's goals and JVA's mandates. - A job description for all job titles is clearly stated.	- Some organizational units are missing, which affects the implementation and achievement of JVA's goals. - Shared responsibilities with other water institutions, which sometimes weakens financial and operational management.

Institutional Systems	- JVA is the only national authority that organizes Jordan Valley operations with regards to managing surface water and land. This gives it a wide range of powers. - A law and instructions that govern JVA's actions and operations is available. - Instructions on using irrigation water in Jordan Valley and standards for mixed irrigation water No. 1766/ 2004 exist.	- Item (A) of article (17) of the Jordan Valley Development Law regarding establishing an independent financial system and regulations is not in effect. - The Law on Collecting Public Funds in Jordan Valley is not in effect as stipulated in Article (17/E). - Failure to activate the judicial police capacity of employees and provide them with due protection accordingly, which weakens enforcing punishments against violations.

Management Style	- Participatory planning, implementation and decision making based on feedback, needs and changing circumstances. - Internal management is oriented towards empowering employees and building their skills and capacities in all fields. - Institutional development that is aligned with the government's directions in economic modernization and developing the public sector. - A matrix of mandates is available and updated annually based on needs versus available competencies. - A planning and management committee is established to approve numerous decisions in various fields. - Utilization of donor funding of projects and many supportive activities. - Automation of a large portion of operational, monitoring, and service procedures in addition to payment methods and electronic collection. - An automated control centre is available to manage and monitor King Abdullah Canal and some other water sources. - A WMIS is available and serves all levels in JVA administratively and financially, from the agricultural unit until the water source. - A new system was developed to archive most of the Authority's documents in various departments.	- Weakness in completing the automation process and linking its implementation with the Ministry of Digital Economy. - JVA's inability to cover all operational costs and the poor implementation of preventative and corrective maintenance programs for its establishments and machinery. - Limited financial sources needed to implement JVA's ambitious projects that have a significant and sustainable water impact aligning with national and sectoral strategic priorities. - Legal, institutional, and financial responsibilities of irrigation water supply, transportation and production are interconnected with irrigation water distribution services. This makes it difficult to control the costs. - Goal achievement levels are not connected to an incentives system that includes a specific mechanism for incentives and institutional development. - Poor incentive system that affects JVA's ability to attract employees in general and specifically competent employees. - Poor implementation of institutional and good governance standards.

	- An electronic portal was developed for correspondence. - Activating the Regulations on Governing Projects to monitor various projects. - Several agreements signed with public and private institutions, such as the Land and Survey Department, in addition to coordination with various relevant ministries such as the Ministry of Agriculture and the Ministry of Environment. - The senior management relies on computerized systems and their outputs to take many important decisions. - Technical workshops specialized in JVA's maintenance works are established and used to serve the local community in crises and emergencies. - Continuous communication with the local community and raising awareness in various fields, such as pest control and efficient and safe use of irrigation water. - Reinforcing partnerships and utilizing them in developing and raising the efficiency of water systems. - Continuous planning to increase JVA's revenue.	

Staff	- Teamwork, where committees and workgroups are formed to accomplish many tasks with clear objectives and timelines. - A monitoring and evaluation system for employee performance is in place. - Employees participate in courses, seminars, and local and international conferences whenever possible. - Competent technical and specialized employees are available in most fields of JVA's mandates. - Employees are aware of and committed to laws and regulations.	- Poor coordination among directorates in some cases, which hinders the accomplishment of tasks in time. - Lack of human resources in all divisions and directorates. - Not all employees are included in courses and conferences that build their competencies due to the lack of a clear mechanism and funding. - Some technical specialists are lacking. - Some competencies are leaving JVA to private sectors or more attractive sectors with better salaries and incentives. - Poor adoption of creative ideas due to limited funding.
Shared Values	- JVA adopts a group of shared values that govern its work. It propagates and promotes these values among its employees and senior management on one hand and between employees and partners on the other.	- Inability to reach an ideal adoption of some shared values due to the lack of a clear accountability mechanism.
Skills	- Competent technical and specialized employees are available in most fields of JVA's mandates. - Employees are aware of laws and regulations.	- Some technical specialists are lacking.

Second: Analysis of the External Environment

JVA's external environment was analysed using the (PESTEL) model and the following threats and opportunities were found:

Theme	Opportunities	Threats
Political	- Internal political stability provides a safe environment to establish JVA's projects. - Distinguished political relationships with countries around the world, which encourages funding opportunities for investment projects. - Legislative bodies and political parties are engaged in developing laws and regulations and setting budgets. - Democratic practices in the community and freedom of press enhance monitoring of government work. - International agreements with neighbouring countries to manage transboundary water are present, and work is underway to develop them in a manner that would ensure Jordan's water rights.	- Increase in refugees from neighbouring countries due to instability in the region, putting pressure on water sources and its infrastructure. - Cooperation in the issue of transboundary water is affected by regional unrest and instability in surrounding countries that contain the upstream of the water sources, which in turn threatens international agreements.
Economic Factors	- Interest of international and local organisations, such as the Potash Co., KFW, and USAID, in JVA's efforts, which encourages partnering and networking with them. - Private sector's uptake of tourism, agricultural, and industrial projects in Jordan Valley. - Stable political and monetary policies and stable currency value. - Government's direction to encourage economic growth through the Economic Modernization Vision.	- Increased inflation rates and high prices negatively affect investment and the efficiency of institutional performance (operational costs and salaries). - Increased budget deficit and public debt and their repercussions on JVA's budget. - Decreased economic growth rates and its negative effect on investment sustainability and JVA's revenue in light of water scarcity.

		- Lack of genuine investment opportunities, which negatively affects JVA's revenue. - Low economic returns per cubic meters of irrigation water in light of the agricultural sector's productivity in Jordan.
Social factors	- Population window; since most of the population belongs to the youth group. This helps fill vacancies in JVA. - The confidence that Jordan Valley's local community puts in JVA, thanks to its continuous achievements. This presents the opportunity to implement several development projects. - Active local community organisations that help achieve JVA's strategic goals. - Water User Associations that act as a partner for JVA under agreements that govern roles and responsibilities. - Increased awareness among employees about the methods of water use efficiency and use of modern technology in irrigation. - Activating the roles of women and young people in various fields of operation, especially water and agricultural projects.	- Repeated violations against water sources and land. - Lack of specialized competencies in Jordan Valley, which forces JVA to attract competencies from outside the region, thus increasing expenses. - The tribal system is prominent in some areas of Jordan Valley. - Low educational level of some service recipients. This negatively affects awareness of laws, regulations and water uses. - Hiring foreign workforce.
Technolo-gical factors	- The country adopts digital solutions and continuously develops government software and IT projects. - JVA uses technology to provide many services. - Technological advancement in the water sector and the widespread use of communication and social media platforms and applications by JVA. - JVA keeps pace with technological developments in water resource monitoring and	- High cost of accelerating technological development. - Weak implementation of electronic connection services between public institutions. - Hacking of various systems in government institutions. - Lack of awareness and communication with farmers on the

	control systems, various information systems, general inventory management systems, financial systems, tenders, land, and personnel affairs. - Adoption of advanced technical solutions and good production practices such as hydroponics, modern and efficient irrigation systems, water harvesting, and transition to high-value crops. - The availability of wide options of irrigation efficiency improvement technologies in the local market, and the use of innovative solutions that can be widely adopted by many farmers and agricultural companies.	latest techniques and practices which increase water use efficiency.
Environmental factors	- General trend towards using alternative energy sources and the possibility of benefiting from it in JVA's projects. - Jordan's moderate climate and Jordan Valley's location are attractive for investors. - Availability of non-conventional water sources that can be utilized in Jordan Valley according to internationally approved standards. - Advances in using non-conventional irrigation water sources, including reclaimed water and brackish water desalination. - International and official interest in the environmental aspect and its impact on accelerating JVA's projects that have an environmental aspect to them. - Availability of legislations that protect the environment and raise environmental awareness in the society. - National direction to use treated wastewater in irrigation.	- Using fossil fuel as a source of energy and its negative effect on the environment and operational costs. - Lack of environmental awareness among some groups of the community in Jordan Valley, resulting in dumping waste in the Canal, drowning incidents, and overuse of pesticides. - Climate change, fluctuating rainfall, and drought risks. - Pollution of surface water resulting from disposal of hazardous untreated wastewater. - Low quality of mixed water due to scarcity of rainwater, which causes an imbalance in the approved mixing ratios.

Legal factors	- Legislative development in Jordan and issuing laws that keep pace with political, technical, and administrative developments and implement numerous reforms. - No duplication between JVA's activities and other institutions' activities, which provides it with a wide range of powers in areas under its jurisdiction. - The government's direction to modernize the public sector.	- Lack of a unified water law. - Legislations that govern the water sector are not fully developed yet. - Lack of cooperation between the water sector and other sectors, such as the agricultural sector.

Strategic options and directions based on the SWOT matrix

- Increasing conventional and non-conventional water resources, raising the efficiency of irrigation systems, and reducing water loss by financing and implementing projects through distinguished political relations and with the support of international organizations and government directives.
- Improving operational and administrative systems by keeping pace with technological developments, which contributes to raising the efficiency of the sector.
- Comprehensive management of irrigation water, protecting surface water resources, enhancing control over them, and improving risk management.
- Raising the efficiency of irrigation water use practices and increasing their economic return.
- Reducing the cost of operating and maintaining irrigation water systems.
- Enhancing regional cooperation on shared water resources to protect Jordan's water rights towards achieving water security.
- Preserving Jordan's rights to transboundary water.
- Developing the environment and lands of the Jordan Valley region, and its environmental, investment and tourism sustainability.
- Increasing the private sector’s participation in implementing capital, investment and tourism projects and in improving operational efficiency and sustainability.
- Enhancing control over water resources by activating the necessary regulations.
- Enhancing JVA's resilience against climate change.
- Raising the efficiency of water systems and expanding the scope of using renewable energy in various operations.
- Investing and raising the population’s awareness and activating the role of youth in preserving water resources and land and protecting them from attacks.
- Conducting programs and seminars to increase citizens' awareness of the environment and protecting water resources from pollution and waste.
- Utilizing competencies to use technology and develop enacted regulations.
- Utilizing legislative development and the flexibility of the organizational structure in creating the needed units.
- Reform, restructuring and organization represented by reviewing legislation, strengthening rule of law, separating responsibilities and creating the necessary units.

- Benefiting from government regulations and legislation in developing the regulations and instructions governing JVA's work.
- Increasing JVA's financial revenues by activating laws related to the collection of public funds and dues to JVA.
- Adopting and employing innovative technology in various fields; managing and governing data; and developing graphic analysis, reporting mechanisms and evidence-based decision-making.
- Enhancing institutional competencies and capabilities; promoting strategic planning, monitoring and performance-based evaluation; and benefiting from training programs provided by donor agencies for human resource development.
- Building institutional competencies and capabilities by enhancing the rewards and incentives system and encouraging teamwork.
- Promoting decentralization, activating the matrix of powers, and raising the level of employee performance by benefiting from the adopted management approach.

Formulating strategic objectives

JVA, in partnership with stakeholders, drafted its strategic objectives for the period 2024-2026 based on:

- The National Water Sector Strategy 2023-2040; JVA's main, direct sub-objectives, joint objectives, responsibilities and proposed strategic direction; and the outcomes of JVA's Strategic Plan (2021-2023).
- The Economic Modernization Vision (2022-2033) and its stipulated water sector national axes and priorities relating to the Jordan Valley Authority.
- Relevant master plans, strategies, official references, reliable data and other important local and international references and agreements.
- JVA's internal strengths, weaknesses, opportunities and threats; and the external political, economic, social, environmental and legal factors affecting JVA, in addition to what was stated in the National Water Strategy (2023-2040) and developments in the sector since the launch of the National Water Strategy until the date of preparing the strategic plan.
- Outputs of the SWOT analysis for the internal and external environments, in line with the strengths, available financial and human resources and available opportunities within a logical framework for external threats.
- Objectives stipulated in the Jordan Valley Development Law and its amendments and other relevant documents.

Strategic Objectives of the Jordan Valley Authority

Based on all of the above, JVA's strategic objectives were formulated as follows:

1) Increasing and developing conventional and non-conventional water resources.
2) Reducing water loss, increasing the efficiency of irrigation water systems, and improving operational efficiency.
3) Enhancing regional cooperation on shared water resources.
4) Developing and investing in the lands of the Jordan Valley region.
5) Enhancing energy efficiency and expanding the use of alternative energy.
6) Governance and building institutional capacities.
7) Strengthening partnerships with the private sector.

National, Sectoral and Institutional Goals' Matrix

National Goals	Sectoral Goals	Institutional Goals
Improved water supply	Management and sustainable protection of surface water resources and infrastructure	Increasing and developing conventional and non-conventional water resources
	Enhancing the quantity of water supplied from non-conventional resources for irrigation purposes, to limit consumption of freshwater needed for drinking	
	Enhancing regional cooperation on shared water resources to protect Jordan's water rights and enhance water security	Enhancing regional cooperation on shared water resources
Reduced water loss Improved water supply	Increasing efficiency to reduce the cost of operating and maintaining irrigation water systems	Reducing water loss, increasing the efficiency of irrigation water systems, and improving operational efficiency
	Reducing water loss in all irrigation systems	
	Improving cash flow management	
Improved water supply Governance of the water sector and activating water laws and regulations	Increasing private sector participation in improving operational efficiency and sustainability, introducing innovation and technology frameworks, achieving higher flexibility in implementation, improving risk management, and utilizing alternative funding	Developing and investing in the lands of the Jordan Valley region Strengthening partnerships with the private sector

National Goals	Sectoral Goals	Institutional Goals
Governance of the water sector and activating water laws and regulations	Governance and institutional development	Governance and building institutional capacities
Enhanced energy efficiency and carbon emissions	Efficient use of energy and renewable energy	Enhancing energy efficiency and expanding the use of alternative energy

Strategic Goals, Programs and Initiatives Matrix

Strategic Goals	Programs and Initiatives
Increasing and developing conventional and non-conventional water resources	Increase the use of non-conventional water sources in irrigation, in order to reduce the consumption of fresh water and increase the total quantities of water available for irrigation
	Strengthen communication mechanisms with concerned authorities from the Ministry of Agriculture, the Ministry of Environment, academic and research sectors, and the private sector
	Implement legislations and mechanisms regulating high-value agriculture (does not consume a large amount of water and has a good economic return)
	Increase the current capacity for storing surface water and improving water supply
	Protecting surface water from pollution resulting from disposal of hazardous untreated wastewater
	Improving the quality of the soil, water, and plants
Reducing water loss, increasing the efficiency of irrigation water systems and improving operational efficiency	Reducing water loss in King Abdullah Canal
	Reducing water loss in irrigation water distribution networks in Jordan Valley
	Implementing water distribution and transportation networks
	Climate change adaptation/ rehabilitation of irrigation water networks
	Improving the efficiency of distribution and conveyance systems
	Reducing water loss resulting from leakage, illegal use, and low efficiency of invoicing and meters, to less than 25 mcm
Enhancing regional cooperation on shared water resources	Maximizing sustainable allocations and productive use of shared surface water in Yarmouk basin and Jordan River
	Reinforcing cooperation mechanisms and management of transboundary water

Strategic Goals	Programs and Initiatives
Developing and investing in the lands of the Jordan Valley region	Developing, sustaining, and investing in the lands of the Jordan Valley region
	Reinforcing a suitable environment for the private sector to participate in investments in Jordan Valley land
Enhancing energy efficiency and expanding the use of alternative energy	Improving energy efficiency in producing, conveying, and supplying bulk water by improving operations
	Developing wide-scale renewable energy projects (<1 megawatt) in cooperation with the Ministry of Energy and Mineral Sources
Strengthening partnerships with the private sector	Empowering Water User Associations
	Increasing revenue to ensure covering the cost
Governance and building institutional capacities	JVA governance, and activating water laws, regulations and instructions in force
	Building the capacities of the Procurement and Contracts Department and implementing projects with efficiency, effectiveness and transparency
	Improving services provided to beneficiaries
	Maximizing digital transformation and automation of procedures to increase JVA's efficiency and effectiveness
	Reinforcing the institutional capacities and administrative practices in water sector institutions to increase their responsiveness and flexibility in meeting the changing needs of managing the water sector
	Promoting the concept of gender

Strategic Goals Matrix (2024 - 2026)

Strategic Goals	Performance Indicators	2022	2024		2025		2026	
		Baseline	Targeted	Achieved	Targeted	Achieved	Targeted	Achieved
Increasing and developing conventional and non-conventional water sources	Volume of conventional water (mcm)	193	195		197		200	
	Volume of non-conventional water (mcm)	140	142		144		145	
Reducing water loss and increasing the efficiency of irrigation systems and operation	Percentage of conveyance efficiency	81%	86%		86%		90%	
	Percentage of distribution efficiency	81%	86%		87%		87%	
Promoting the participation of the private sector	Percentage of agricultural land contracted with Water User Associations	51%	52%		54%		58%	
Developing and investing Jordan Valley land	Area of regulated land	700	850		850		850	

Strategic Goals	Performance Indicators	2022	2024		2025		2026	
		Baseline	Targeted	Achieved	Targeted	Achieved	Targeted	Achieved
Promoting regional cooperation on shared water sources	Implementation rate of what was agreed in agreement annexes	100%	100%		100%		100%	
Enhancing energy efficiency and expanding the use of alternative energy	Energy saving rate	-	3%		3%		3%	
Governance and promoting institutional capacities	Increasing the rate of service recipient satisfaction	78.8%	83.8%		84%		84.2%	
	Increasing employee satisfaction rate	74%	75%		75.5%		76%	

JVA Organizational Structure

Jordan Valley Authority

The Ministry of Water and Irrigation