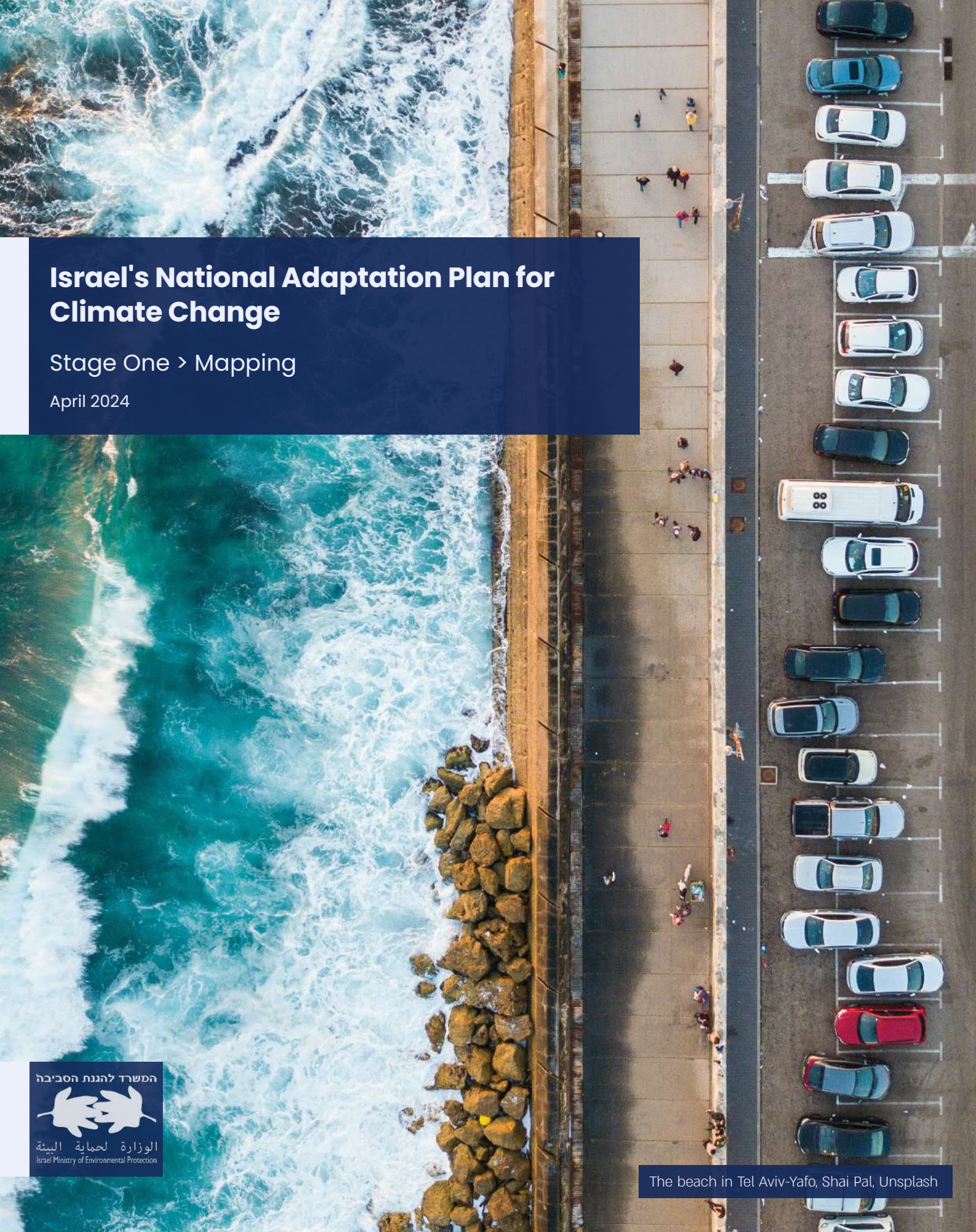
Israel's National Adaptation Plan for Climate Change

Stage One > Mapping

April 2024



המשרד להגנת הסביבה
الوزارة لحماية البيئة
Israel Ministry of Environmental Protection

The beach in Tel Aviv-Yafo, Shai Pal, Unsplash

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Message from **the Minister**

Idit Silman |
Minister of Environmental Protection

In recent years, during which we have faced a global pandemic and an existential war, we have learned that we can no longer take our familiar reality for granted and must develop resilience in order to cope with these changes. Additionally, we have witnessed climate change that is impacting Israel as well. These changes are reflected, among other things, in more extreme and frequent weather events. The intensification and worsening of these events cause significant damage, including harm to ecosystems, public health, and human lives, as well as damage to Israel's economy and increased security risks.

As a result, climate change is one of the core issues of the Ministry of Environmental Protection's activity. Alongside the ministry's mitigation plans, reflected in advancing the Climate Bill, reducing greenhouse gas emissions, and promoting energy efficiency, the ministry places significant emphasis on adaptation and Israel's preparedness for climate change within government ministries and local authorities.

As part of this adaptation, the National Adaptation Plan for Climate Change was formulated through a unique secretariate established for this purpose. The secretariate's role is to develop recommendations for Israel's response to climate change and the extreme events occurring and projected in our region. The plan constitutes a roadmap for government ministries and local authorities across multiple domains, coordinating the main efforts being undertaken.

We seek to protect the population from climate change and are committed to transparently sharing our progress, challenges, and successes while working collaboratively with our partners across all government ministries and local authorities. All of this is to ensure optimal adaptation and a safe environment for the residents of Israel, now and in the future.

Trees in the City of Haifa, Municipality of Haifa

Trees on Rothschild Boulevard, Yoav Aziz

Foreword

The climate crisis is in full swing. With each passing day, we feel and understand the depth and intensity of the changes affecting many aspects of our lives. These changes touch upon our most fundamental reference points, such as sea levels and the dangers to coastal areas, extreme temperatures, and a reality confronting us with major events like heat waves, storms, floods, and inundations—where human frailty is exposed against the forces of nature. Additionally, the disappearance of animal and plant species from the planet, once overlooked, can no longer be ignored.

Despite all this, the discourse around climate change and the need for adaptation remains one of a gradual process spanning decades. For many, this timeline seems distant and impractical. Some assume that the necessary adjustments and preparations will occur naturally over time, through flexibilities and moderate future adaptations of various systems. Many from this school of thought believe that the immediate challenges we face today easily overshadow the distant and vague threats posed by climate change adaptation.

These perspectives often lead to unproductive responses. Some are paralyzed by the seemingly insurmountable challenge, while others choose to completely ignore the rapidly changing reality we behold. Neither of these approaches serve to advance the necessary practical actions for adequately preparing for the accelerating climate change.

Preparing appropriately for climate change requires a thorough and structured effort. Given the pace of climate change, it is possible to undertake a planned, systematic, broad, and in-depth process. However, due to the severity of the impacts on one hand, and the comprehensive nature of the national adaptation process on the other, we do not have the privilege of delaying or allowing short-term challenges, such as pandemics and wars, to divert our attention from the goal or keep us from addressing this issue in a focused and consistent manner.

The process that Israel is embarking on is complex and requires an in-depth examination of all aspects of our lives. This field is relatively new on a global scale; therefore, the ability to learn from others and rely on their experience is somewhat limited. Setting quantitative indicators for climate adaptation is not simple, and determining the relevant goals and means for proper adaptation at various levels is quite a complex task. Discussions on these issues are ongoing in many international forums, and adequate solutions have yet to be fully developed.

Over the past decade, the Ministry of Environmental Protection, through its various divisions, has been leading national processes for preparing for climate change. The ministry has initiated government resolutions on this matter and published reports that have shaped the fundamental concepts of the emerging professional fields in the context of climate change.

The plan presented here marks the first stage in developing a comprehensive national plan that will ultimately include agreed-upon implementation actions. We hope this field will soon be anchored through climate legislation, and that all governmental, institutional, and local bodies will work thoroughly and decisively toward improving their adaptation to the climate change crisis, in a way that will help Israel better cope with the challenges across various aspects.

Rani Amir,
Senior Deputy Director General,
Natural Resources and Climate Resilience

Dr. Amiel Vasl,
Head of Climate Resilience Division

Gazelle Valley, Jerusalem, Amir Balaban Assaf Tzoar

Introduction

The impacts of climate change extend across all areas of life, presenting a range of global, regional, and local risks and impacts. In order to prepare for these effectively, in 2009, Government Resolution No. 474 was adopted[1], mandating a committee of directors-general, headed by the Ministry of Environmental Protection, to formulate a national plan for climate change preparedness and adaptation.

This committee drafted a policy paper – "Israel's Preparedness for Climate Change Adaptation: Recommendations to the Government for a National Strategy and Action Plan" – whose recommendations were adopted by the government eight years later, in Resolution No. 4079[2]. According to this resolution, Israel acknowledges climate change and the need to prepare for its impacts.

In order to implement the resolution, a **Climate Change Adaptation Secretariate** was established, including representatives from 35 entities, such as government ministries, state authorities, local government organizations, and non-governmental organizations (NGOs) (hereinafter referred to as "the Secretariate"). In 2021, the Secretariate published its first report– "Israel's Climate Change Adaptation Report", containing empirical data constituting the foundation for its work and operational conclusions for promoting climate change adaptation.

A year later, the Climate bill was submitted to the Knesset, passing its first reading. The bill aims to regulate adaptation to climate change by establishing provisions regarding the preparation and submission of climate adaptation plans by government ministries, local authorities, and certain corporations established by law. Additionally, the bill seeks to formalize the development of a national climate change adaptation plan based on these individual plans. It also proposes provisions for updating the adaptation plans and reporting requirements with regard to their implementation. Currently, efforts are underway to promote an updated version of the bill, which was approved in its first reading in April 2024.

Furthermore, at the end of 2022, Government Resolution 1902[3] was passed, setting the deadline for the preparation of ministerial adaptation plans for the end of 2023. As a result of this amendment, accelerated processes of formulating ministerial climate change adaptation plans began, alongside the **development of the National Adaptation Plan for Climate Change (preliminary mapping phase).**

[1] Government Resolution No. 474 (HAM/1) of June 25, 2009, on "Climate Change Adaptation – Preparedness for Climate Change and Greenhouse Gas Emission Reduction".

[2] Government Resolution No. 4079 from July 29, 2018, on "Israel's Preparedness for Adaptation to Climate Change: Implementation of the Recommendations for a National Strategy and Action Plan."

[3] Government Resolution No. 1902 from October 23, 2022, on "Israel's Preparedness for Adaptation to Climate Change: Implementation of the Recommendations for a National Strategy and Action Plan – Amendment to Government Resolution."

2009 — Government Resolution No. 474

2017 — Policy Paper – Recommendations for Adaptation

2018 — Government Resolution No. 4079

2021 — The Secretariate's Report on Israel's Adaptation to Climate Change

2024 — The Climate Bill (First Reading)

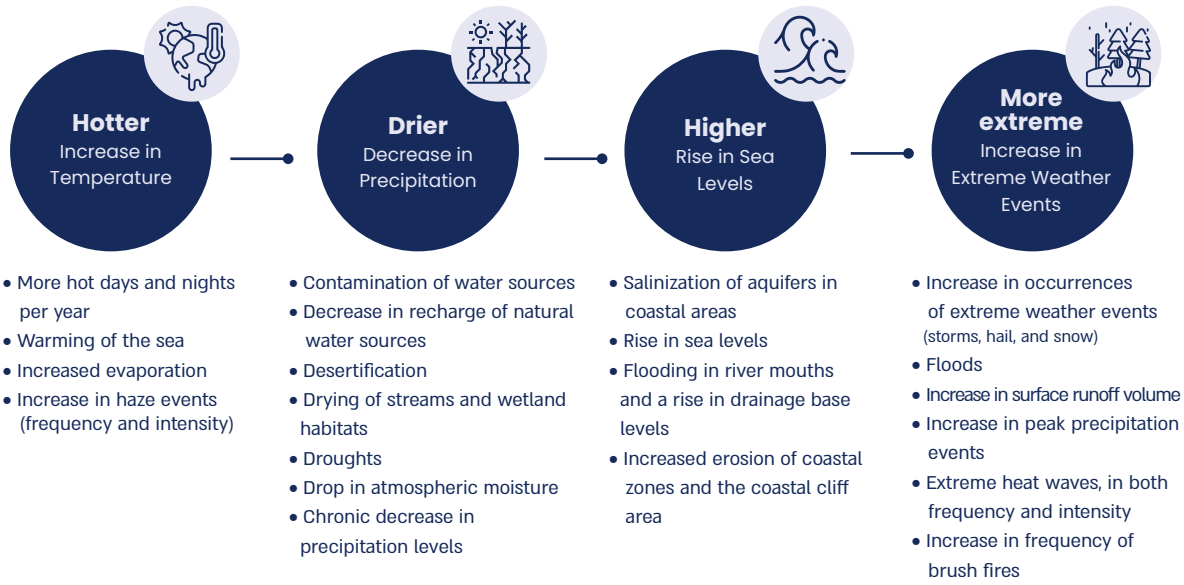
2024 — The National Adaptation Plan for Climate Change (Mapping Stage)

From the book Fires in Open Areas in Israel, published by Israel Fire and Rescue Authority, Dr. Shay Levy

Climate Trends and Major Impacts of Climate change

Climate change in Israel manifests itself in four main trends: hotter (rising temperatures), drier (decreasing precipitation), higher (rising sea levels), and more extreme (increased frequency of extreme weather events). These trends are interconnected, amplifying one another, and each has a tremendous destructive potential on Israel. Each trend brings with it direct impacts, as illustrated in the following diagram.

The main trends and their impacts:



Description of the main trends[4] |

Hotter | Rise in Temperature

The average temperature in Israel has risen by approximately 1.4°C from 1950 to 2017, and it is expected to increase by an additional 1.2°C by 2050, according to SSP5-8.5 scenario projections (see Appendix 2), and by another 4°C by 2100 under this scenario.

Drier | Decrease in Precipitation

Climate models for the Mediterranean Basin predict a general trend of decrease in annual precipitation by the end of the 21st century. In Israel, over the past 30 years, there has been a noticeable trend of reduction in overall precipitation, though this trend is not statistically significant. From 1988 to 2017, precipitation decreased by an average of 3.4% (nationally) compared to the years 1961-1990, and there has been a tendency for fewer rainy days in recent decades.

[4] The description of the trends was prepared by TASC and approved in coordination with HIAL and the Israel Meteorological Service.

According to climate models analyzed by various research institutes around the world, and after data analysis by the Israeli Meteorological Service, this trend is expected to continue, with precipitation expected to decrease by an average of 10-20% in the years 2071-2100 compared to the 1988-2017 average. Additionally, a change in precipitation distribution is expected, with consecutive years of below-average rainfall, even when there is no decline in the national average of precipitation levels. For example, the years 2012-2018 saw a decrease in rainfall in northern Israel compared to the long-term average, along with a decrease in the replenishment of water sources.

Higher | Rising Sea Levels

In recent decades, changes in the Mediterranean Sea level have been observed, exceeding the global average. Observations over the past 40 years indicate a trend of rising water temperatures (approximately 0.13°C per year) and salinity (approximately 0.007 per year) of the upper water mass (LSW).

The rise in sea level is expected to cause changes to the coastline, narrowing of beaches at the foot of coastal cliffs, continued erosion of coastal cliffs, altering of the local shoreline profile, and harm to unique coastal habitats, such as algal reefs. In addition, rising sea levels will lead to longer flooding periods in shallow coastal areas and increased intrusion of seawater into estuaries (river mouths). Excessive salinization of the coastal aquifer as well is affected by the rising sea level. Due to decades of over-extraction, groundwater is in a deficit state, and the coastal aquifer has already been damaged by the eastward intrusion of the interface (between seawater and freshwater). Any further eastward progression will only worsen the situation. Further impacts are expected on coastal infrastructure and tourism.

Extreme weather | Increase in Extreme Weather Events

Extreme weather phenomena will become more frequent and severe, manifesting in prolonged heatwaves, widespread forest fires, peak rainfall events, storms, and more. A review of extreme temperature events in Israel over the past two decades shows a significant increase in the frequency of heatwaves where the temperature is 6 degrees Celsius higher than the average and lasts for more than three consecutive days.

The implications of these four trends are evident in all areas of life: security, energy, infrastructure, economy, public health, welfare, agriculture, biodiversity, open spaces, and more. A list of possible implications is provided in Appendix 3.

The National Adaptation Plan is designed to assess and map the areas impacted by climate change in Israel, identify how they are affected, prioritize key initial actions, and formulate strategies to reduce risks and capitalize on opportunities in these areas.

The plan focuses on the adaptation axis (climate change adaptation) and includes the vision, content domains, principles, objectives, and key measures mapped for optimal adaptation. It was developed through a comprehensive review of international adaptation plans, previous initiatives in Israel, consultations with government ministries, other government bodies, and local authorities, as well as discussions with experts. Additionally, it incorporated insights from measures formulated by the secretariate throughout its years of operation.

Each action in the plan will be broken down into tasks, with a special designation for actions that were highly prioritized by the secretariate on a cross-sectoral basis. Actions prioritized in this manner are those that, after a cost-benefit analysis, are recommended for early implementation. For each task, a lead government ministry was designated (or two in exceptional cases), alongside a set of partners involved in the process. The aim was to assign a single responsible party to coordinate all stakeholders for the task. Additionally, an estimated budget and timeframe for completion were defined for each task. For each initiative, a series of specific obstacles to its implementation were also outlined. Cross-cutting obstacles, such as rigid planning, lack of data, or the general difficulty in accurately predicting the effects of climate change, were not included in the list. This omission does not diminish their importance but rather highlights that these challenges are a constant part of the reality in which public policy processes in this field are promoted. Finally, an estimated overall budget for each initiative was defined.

It should be noted that after this phase of the plan is completed, the secretariate will continue to develop a cost-benefit analysis methodology that will be applied to the initiatives and tasks of the mapping phase, allowing for the prioritization of these tasks. After this analysis, it will be possible to advance the initiatives with the highest value first, as part of a determined implementation plan. This, and more, will be expanded upon in the document's conclusion.

Phases of Developing the National Adaptation Plan for Climate Change (Phase One – Mapping)

Phase 1 | Review of Climate Change Trends Worldwide and in Israel

In the first phase, the trends, and potential impacts of climate change on the world in general and on Israel in particular were examined, including effects on local authorities. Additionally, previous works in Israel in the field of climate change adaptation were reviewed, and additional implications and initiatives recommended for Israel were identified.

Phase 2 | Review of International Climate Change Adaptation Plans

This phase involved reviewing the climate change adaptation plans of three advanced countries: the Netherlands, the UK, and New Zealand. From these plans, additional impacts, and possible measures to address were identified. An analysis of the nature of the main actions in these plans was conducted in order to incorporate them into the Israeli plan. A summary of the international review is included in Appendix 1 – International Research.

Phase 3 | Defining the Vision, Principles, Goals, and Actions for the National Plan

Based on the reviews, ministerial and municipal plans, and discussions with relevant governmental and local entities, a vision, principles, goals, and preliminary actions were defined for Israel's National Adaptation Plan for Climate Change.

Phase 4 | Refining the Goals and Actions of the National Plan

The secretariate convened on September 4, 2023, in order to validate and refine the vision, principles, goals, and actions formulated. In the meeting, secretariate members were divided into focus groups based on their professional background, relevant to the bodies they represent. These groups worked on processing, adding, amending, and prioritizing goals and actions in each area. At the end of the meeting, insights and actions for each content domain were presented, followed by further cross-cutting prioritization by the secretariate members. After the meeting, additional comments and feedback were received from secretariate members regarding the plan's actions.

Stage 5 | Public Participation

Finally, during a broad public participation meeting held on November 9, 2023, the National Adaptation Plan was presented by representatives from various fields, and feedback was received from additional partners in government ministries, local authorities, third-sector organizations, and others.

Plan Overview (Executive Summary)

Vision of the National Plan:

National resilience and adaptation to the gradual and extreme trends of climate change, aimed at promoting prosperity and reducing harm to society, the economy, and the environment.

Principles of action:

The plan outlines five (5) core principles of action that form the basis of the adaptation strategy. These principles reflect the priorities and the need for a flexible, inclusive, integrative, and multi-sectoral strategy. Additionally, these principles serve as guidelines for the implementation of Israel's initial climate change adaptation plan and for future adaptation initiatives. The principles shall guide the implementation of actions and strategies moving forward.

1. **Consideration for vulnerable populations in implementation – adapting immediate and long-term responses to the most climate-vulnerable populations as part of building resilience for all.** This principle emphasizes the importance of equity, inclusion, and distributive justice through explicit consideration of vulnerable populations when developing national and departmental actions. This consideration stems from an acknowledgment of the disproportionate impacts of climate change on vulnerable and marginalized communities, such as low-income groups, the elderly, people with disabilities, individuals with chronic illnesses, minors, and others. These populations are likely to be affected in various areas, including housing, economy, health, and more, underscoring the need to develop tailored responses for them across all aspects of the plan.

   Beyond illustrating a commitment to safeguarding the rights and welfare of these populations, this principle also promotes targeted interventions designed to enhance resilience and reduce vulnerability to climate change.

2. **Risk reduction while preserving nature through nature-based solutions – policies, planning, and regulations that support solutions based on natural means, with an emphasis on protecting, enhancing, and restoring nature.** This principle highlights the importance of leveraging the inherent benefits of ecosystems in addressing the effects of climate change. The plan acknowledges the vital role played by ecosystems in responding to climate change and incorporates nature-based strategies. This principal advocates for the restoration and conservation of natural habitats, which not only enhance biodiversity but also provide essential services like flood regulation, carbon sequestration, shading, and urban cooling through trees, and more. Nature-based solutions can help both in preserving open spaces and in enhancing their absorptive capacity, and providing responses to various challenges, such as flood control. Therefore, these solutions should be applied whenever possible.

3. **Modular solutions enabling adaptation to multiple scenarios – planning actions and decisions in a way that allows flexibility and adaptation to various scenarios.** This principle emphasizes the importance of a dynamic and multi-purpose approach to addressing the evolving challenges of climate change. By adopting modular solutions, the plan acknowledges the uncertainty surrounding climate change forecasts and enables the implementation of adaptable strategies for different scenarios. The use of modular solutions allows decision-makers to make informed choices based on real-time data, taking into account evolving circumstances.

4. **Forming multi-sectoral and international collaborations – promoting collective expertise and joint efforts in tackling complex climate challenges in Israel and globally.** This principle underscores the importance of collaborative efforts spanning diverse sectors and borders in order to address the multifaceted impacts of climate change. Through the development of partnerships between various sectors, research institutions, and the like, the plan promotes the pooling of expertise, resources, and ideas. Additionally, international collaborations foster knowledge exchange, allowing countries to learn best practices from each other across all areas of the plan.

5. **Local authorities as key partners in climate change adaptation – local authorities' familiarity with their communities, and the integration of their knowledge and resources, play a vital role in building climate resilience within their jurisdictions.** This principle emphasizes the central role that local authorities play in providing an effective response, tailored to their communities and regions. Active involvement of local authorities in the planning and implementation process contributes to creating actions relevant to the needs of the population and urban areas. Additionally, the principle recognizes the added value that local authorities bring to regional vulnerability assessment, priority setting, and efficient resource allocation. Given that local authorities' activities span across all areas of the plan, it is essential to align the plan's actions with the adaptation strategies of local authorities. Furthermore, tasks and implications should be derived from these actions for the local authorities to implement.

A dried-up spring, Assaf Tzoar

Map of the **National Plan**

Based on the stages of developing the national plan outlined above, and in light of the principles of action, it has been determined that the National Adaptation Plan for Climate Change shall address five key content domains, along with a series of cross-cutting initiatives. Each of these content domains is broken down into specific goals and initial actions, resulting in a plan that includes 16 goals and 48 primary actions:

Map of content areas and goals |

Content Domain	Defense and Emergency	Economy	Built-up Areas and Infrastructure	Agriculture, Nature, and Water	Health and Welfare	Cross-Sectoral
Goals	Strengthening the defense response	Assessing the economic impact on the Israeli economy	Establish, adapt, and manage infrastructure	Adaptation of the agricultural sector	Protecting public health and preventing health disparities	Building climate monitoring and forecasting capabilities
		Readiness of the business sector and labor market		Maintaining the resilience and robustness of ecosystems		Developing data collection and processing systems
	Strengthening preparedness for climate-related emergencies	Support for climate technologies	Adaptation of the built environment and its surroundings	Conservation and restoration of natural water sources	Ensuring the welfare of vulnerable populations by reducing and preventing their susceptibility to climate change	Providing access to climate information for the public sector, academia, and decision-makers at all levels
						Making climate information accessible to the public

Defense and Emergency

Future vision: Defense and emergency bodies are adapted and resilient to climate change, maintaining continuity of operations, ready to deter enemies and achieve victory under any climate scenario. Additionally defense and emergency bodies are equipped to provide optimal responses to climate-related emergencies on both the national and regional level.

Goals and actions in the defense and emergency content domains |

Goals	Strengthening the defense response	Strengthening preparedness for climate-related emergencies
Actions	Risk assessment from an internal and regional perspective and its implications	Updating and refining short-term and long-term national reference scenarios
	Development and implementation of resilience plans in defense infrastructure systems, weapons systems, and operational capability	Developing, implementing, and practicing national emergency plans based on short-term climate reference scenarios
	Development and implementation of national geo-strategic responses arising from conflicts over national resources	Integrating national warning and alert systems for extreme events with reporting entities and systems
	Inclusion of climate change as a threat in annual and multi-year situational assessments	
	Promoting international collaboration to build defense resilience and address climate-related emergencies	

Actions prioritized by the secretariate

Economy

Future vision: An economy adapted to climate change, leveraging the economic opportunities presented by it, with the goal of maintaining Israel's economic resilience and the well-being of its residents.

Goals and actions in the economy content domains |

Goals	Assessing the economic impact on the Israeli economy	Readiness of the business sector and labor market	Support of innovative climate technologies
Actions	Selecting reference scenarios for preparedness and quantifying the required adaptation measures	Providing accessible information on climate change and adaptation strategies for the business sector and employees	Developing and implementing innovative climate technologies in order to address national challenges
	Developing a national resilience plan for disruptions in supply chains	Adapting labor market regulation to climate conditions	
		Adapting tools to deal with market failures in the financial system (banks, insurance companies, and investment firms)	

Actions prioritized by the secretariate

Built-up Areas and Infrastructure

Future vision: Infrastructure, construction, and energy systems are adapted to climate change, undergoing continuous adjustments, alongside the adaptation of Israel's urban and regional environments to the changing climate.

Goals and actions in the field of built-up areas and infrastructure |

Goals	Establish, adapt, and manage infrastructure	Adaptation of the built environment and its surroundings
Actions	Developing a smart and decentralized electrical grid	Planning and adaptation of drainage systems in urban areas
	Planning and adaptation of transportation infrastructure	Developing and implementing watershed and urban runoff management and flood protection plans
	Planning and adaptation of communications infrastructure	Acclimatizing the built environment with a focus on urban heat
		Adapting urban areas and their surroundings to fire threats
		Integration and preservation of natural and ecological systems within the built environment
	Adapting infrastructure, buildings, and public spaces in coastal areas to rising sea levels and protecting them from extreme events	

Actions prioritized by the secretariate

Agriculture, Nature and Water

Future vision: Agricultural sectors adapted to climate change and increased supply of fresh agricultural produce in accordance with population needs, stable and functioning ecosystems, and a diversified water economy that provides water in the required quantity and quality for all the needs of the population and nature in Israel.

Goals and actions in the agriculture, nature, and water content domain |

Goals	Adaptation of the agricultural sector	Maintaining the resilience and robustness of ecosystems	Conservation and restoration of natural water sources
Actions	Transition to climate-adapted agriculture in the plant and animal sectors	Preserving biodiversity and restoring open spaces	Updating the national water management master plan
	Investment in R&D and innovation for adapting crops and livestock to climate change	Restoration of open spaces and improvement of their function	Conservation and restoration of rivers and wetlands
	Strengthening the fund for agricultural natural disaster insurance	Maintaining connectivity and terrestrial and aerial ecological corridors	Reducing pressure on natural water sources
	Eradication of pests in crop agriculture and livestock farming		

Actions prioritized by the secretariate

Health and Welfare

Future vision: High-quality healthcare services that protect the public from morbidity and mortality risks resulting from climate change. Robust social services that strengthen social-climate resilience and provide support to individuals, families, and communities , with a particular focus on vulnerable populations. All of this aims to maintain social and health resilience for the residents of Israel.

Goals and actions in the health and welfare content domain |

Goals	**Protecting public health and preventing health disparities**	**Ensuring the welfare of vulnerable populations by reducing and preventing their susceptibility to climate change**
Actions	Establishing a monitoring system for illness and mortality resulting from climate change	Mapping the needs of populations vulnerable to climate change and developing tailored responses
	Formulating and implementing a national food security plan	
	Mapping the health impacts of climate change and adapting the healthcare system (infrastructure, operations, human resources, and public guidelines)	
	Training professional teams in climate change adaptation in the health and welfare sectors	

Actions prioritized by the secretariate

Cross-cutting Initiatives

Future vision: Developing decision-support mechanisms for science- and knowledge-based decision-making at all levels, and providing the Israeli public with consolidated, reliable, and accessible information on climate and climate change adaptation.

Goals and actions in the cross-cutting content domain |

Goals	Building climate monitoring and forecasting capabilities	Developing data collection and processing systems	Providing access to climate information for the public sector, academia, and decision-makers at all levels	Making climate information accessible to the public
Actions			Establishing a climate adaptation portal	
	Strengthening and expanding short- and long-term climate scenario modeling and forecasting capabilities	Establishing a "data lake" for gathering climate change-related data	Integration of climate content in official training provided by the state	Development and integration of climate content in education and academia
	Monitoring changes in the region due to climate change	Establishing a climate data processing infrastructure to support decision-making	Establishing a scientific expert committee to assist government ministries and subsidiary units in climate change adaptation	Public awareness campaigns and outreach activity
	Encouraging academic and applied research on climate change adaptation and impacts			

Actions prioritized by the secretariate

The Plan **in Numbers**

As stated, the National Adaptation Plan for Climate Change will address five content domains with specific goals, actions, and tasks, alongside a cross-cutting content area (a total of six). For each task, a lead entity, implementation partners, a budget, and a timeframe for completion were determined. This section will examine the key insights arising from the distribution of actions and tasks across various aspects.

Methodological notes for measurement and analysis:

- The tasks are generally independent and can be executed concurrently; therefore, the duration for implementing an action was calculated based on the longest individual task.
- The total budget required for implementing an action was calculated as the sum of the costs of its component tasks.
- Tasks that were budgeted with a cost range (for example, "NIS 10-20 million" or "up to NIS 50 million") were calculated based on the average of the range ("NIS 15 million" and "NIS 25 million", respectively, in these examples).
- Tasks with no upper budget limit (for example, "over NIS 250 million") were calculated based on the lower limit ("NIS 250 million" in this example).

It should be noted that some tasks budgeted at "over NIS 250 million" are complex and intersect with climate and adaptation issues; however, they also have significant implications in other areas, which is why they are high-budget tasks. To avoid double budgeting, this methodology was established.

Additionally, the plan's budget and other parameters will be calculated excluding some of these tasks. The methodology takes into account all types of actions and tasks, even though they may vary in terms of maturity and implementation stages. Furthermore, there is no reference to the source of the budget (whether ministerial or additional) for all types of tasks.

Similarly, tasks with a timeframe estimated as a range (for example, "1-3 years") were calculated based on the average of the range ("2 years" in this example).

For ongoing tasks that require annual renewal, the timeframe was calculated as approximately 10 years, as the plan is intended to be fully implemented within a decade (the duration of the longest action). An "immediate" timeframe was calculated as one year.

Below are some segmentations of the aggregate data that present the main points of the plan >>

The plan **includes**

6
Content Domains

48
Actions

Nearly -
200
Tasks

TOTAL COST OF THE PLAN IS

NIS 9.5 billion

For 10 years

Prioritized actions

are actions selected by secretariate members across various content domains.

These actions will be implemented first, subject to a cost-benefit analysis

16 actions

Constituting 33% of the total actions, prioritized by the Climate Change Secretariate

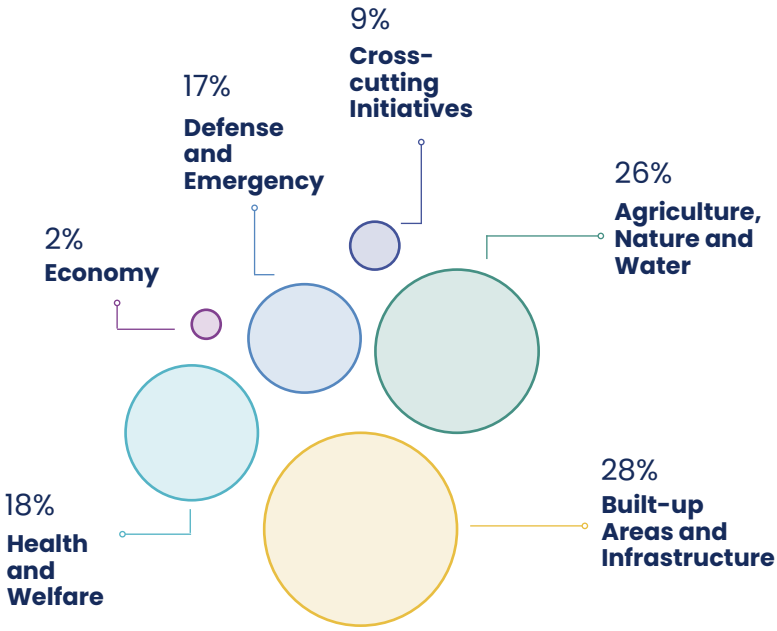
Cost of prioritized actions

Stands at NIS 4 billion

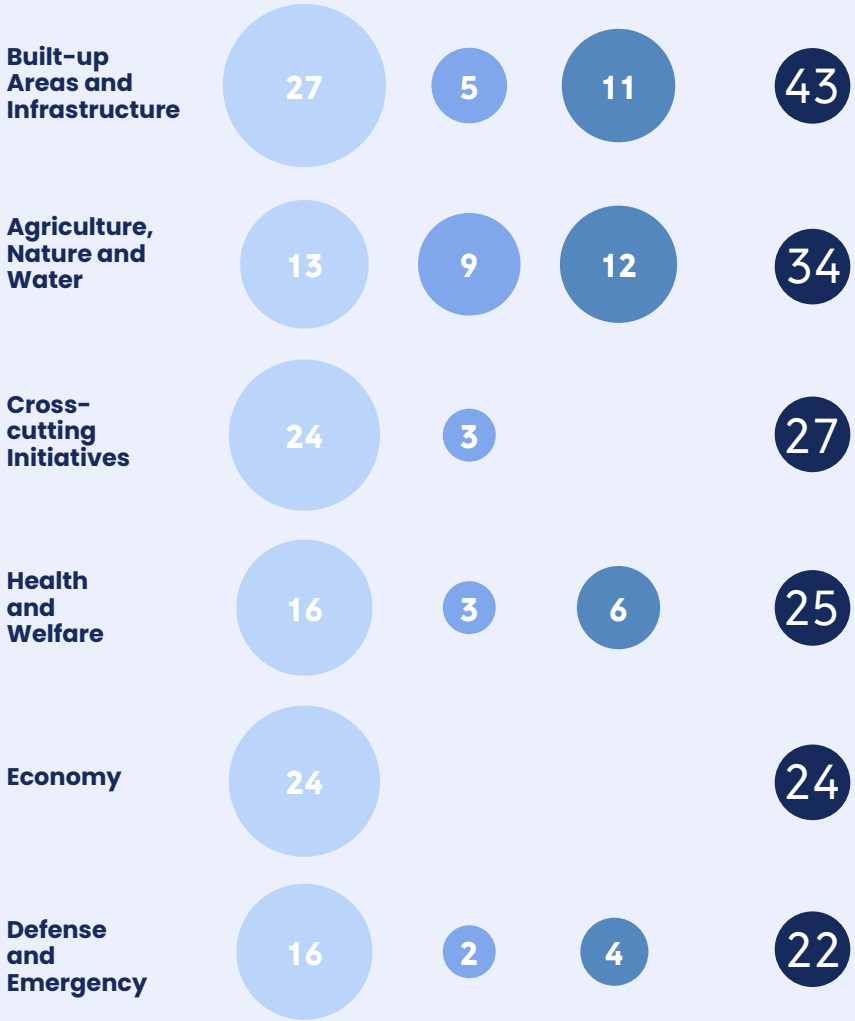
Analysis of the budget distribution across content domains

The budget distribution indicates that the **agriculture, nature and water** content domains have the highest cost, as they include relatively mature projects that are in the implementation stage.

* Percentage of total budget allocation across content domains



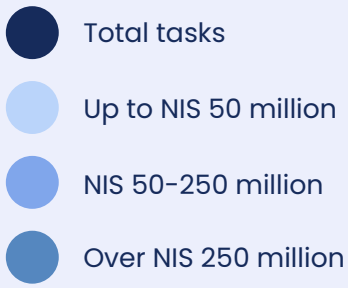
Breakdown of tasks included in the plan by content domains and budget ranges



Across the entire plan, the average cost **per action** stands at

NIS 300 million

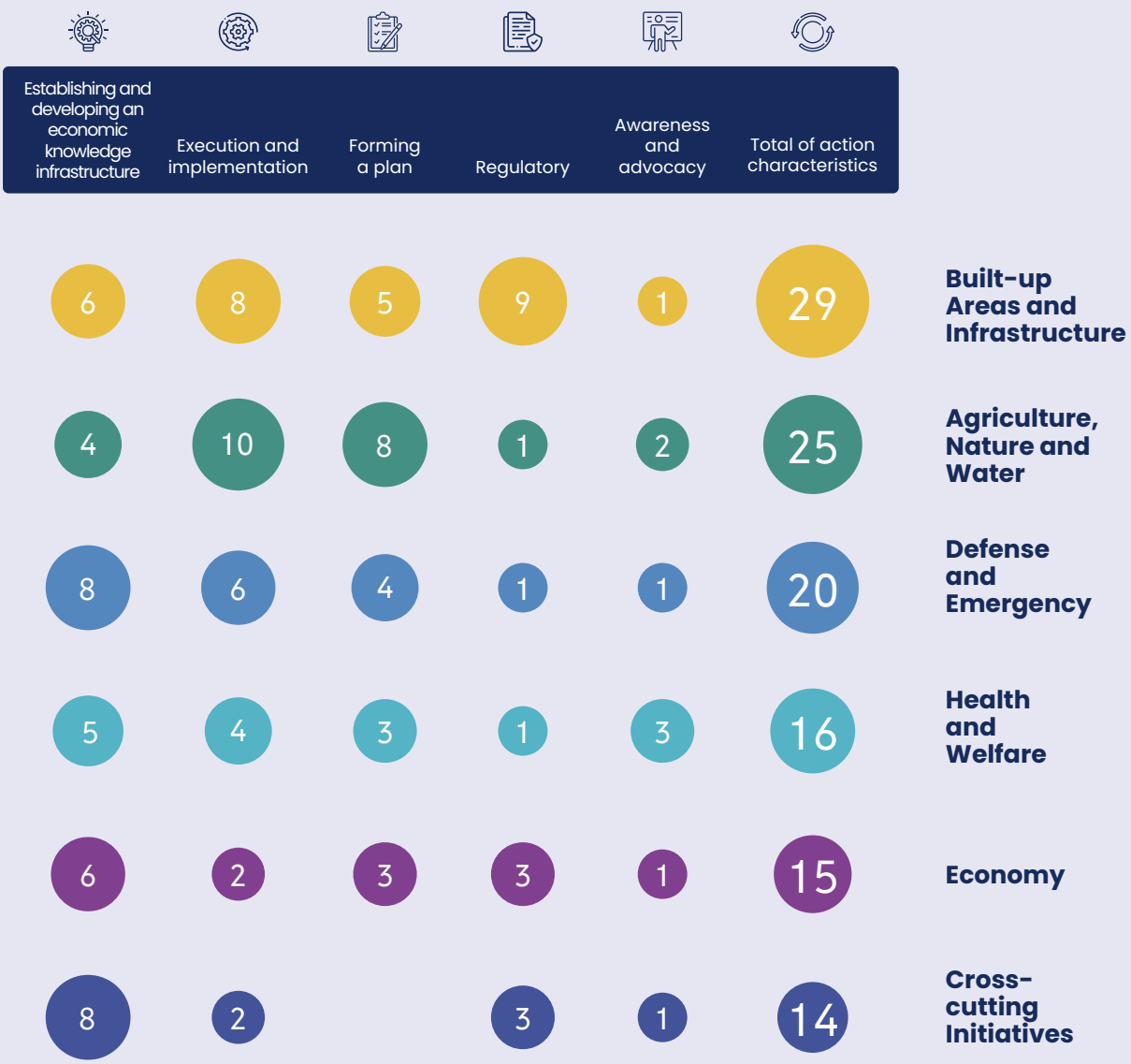
This suggests that the majority of actions are relatively low-cost, and even the more expensive ones do not significantly raise the overall average beyond the medium range



More than 50%

of the actions deal with establishing and developing a knowledge infrastructure, execution and implementation

Classification of actions by content domains and characteristics



Note: Each action was classified in several ways; hence, the total classifications exceeds the number of actions in the plan (48). The plan is preliminary; thus, most of the actions are foundational, focusing on knowledge and infrastructure development, with nearly half being focused on planning

Over 30 ministries and government entities are in charge of advancing nearly 200 tasks as part of the plan's various actions

Firefighting, Israeli Air Force

The Ministry of Environmental Protection leads **17%** of these tasks, thus handling the highest volume

Following closely, the Ministry of Agriculture and the Ministry of Health each lead **10%** of the tasks

Number of tasks led by key entities in the plan by content domain

Ministry of Health

Total | **20** tasks

Ministry of Agriculture

Total | **20** tasks

Ministry of Environmental Protection

Total | **33** tasks

The Meteorological Service

Total | **9** tasks

Planning Administration

Total | **9** tasks

Water Authority

Total | **15** tasks

The legend :

- Defense and Emergency
- Economy
- Agriculture, Nature and Water
- Health and Welfare
- Built-up Areas and Infrastructure
- Cross-cutting Initiatives

Ministry of Welfare

Total | **8** tasks

Within **5 years** approximately **80%** of the plan's actions shall be completed

The remaining **20%** are concentrated in the content domain of agriculture, nature, and water, where the implementation period is usually about **10 years**.

From the book Fires in Open Areas in Israel, published by Israel Fire and Rescue Authority, Dr. Shay Levy

Photo by Juan Manuel Sanchez on Unsplash

Defense and Emergency

Future vision: Defense and emergency bodies are adapted and resilient to climate change, maintaining continuity of operations, ready to deter enemies and achieve victory under any climate scenario. Additionally defense and emergency bodies are equipped to provide optimal responses to climate-related emergencies on both the national and regional level.

Goals and actions in the defense and emergency content domains |

Goals	Strengthening the defense response	Strengthening preparedness for climate-related emergencies
Actions	Risk assessment from an internal and regional perspective and its implications	Updating and refining short-term and long-term national reference scenarios
	Development and implementation of resilience plans in defense infrastructure systems, weapons systems, and operational capability	Developing, implementing, and practicing national emergency plans based on short-term climate reference scenarios
	Development and implementation of national geo-strategic responses arising from conflicts over national resources	Integrating national warning and alert systems for extreme events with reporting entities and systems
	Inclusion of climate change as a threat in annual and multi-year situational assessments	
	Promoting international collaboration to build defense resilience and address climate-related emergencies	

Actions prioritized by the secretariate

First goal | Strengthening the Defense Response

Action | Risk assessment from an internal and regional perspective and its implications

Background | climate change presents complex internal and regional risks that require a deeper understanding of its impacts both within Israel and across the entire region. As climate change intensifies, so does its effect on national security. Events such as resource shortages, widening socio-economic gaps, and climate-induced migration, for example, have the potential to destabilize the region; hence, their likelihood and severity must be assessed. To optimally prepare for the defense implications of climate change, it is essential to develop a knowledge base that defines threats, maps vulnerabilities, and analyzes their implications for national security. Comprehensive risk assessment and integrative management will aid decision-making processes and promote effective, climate change-focused responses.

Action and task details | assessment of the vulnerabilities of defense components – infrastructure, resources, personnel, etc., against expected climate threats. This includes assessing the implications of climate change on all aspects of defense bodies' activities, conducting intelligence assessments on the internal and regional impacts of climate change, and evaluating how these impacts may influence the development of risks to Israel.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Establishing a classified climate knowledge center	Defense establishment	Mossad, ISA, Ministry of Innovation, Science and Technology	Up to 50	Up to 2
Conducting vulnerability surveys on infrastructure and weapons systems	Each defense body and its infrastructures	-	Up to 50	2 to 4
Analyzing the implications of climate-related threat on all the defense bodies' activity components	Each defense body internally	-	Up to 50	Up to 2

Barriers

- **Data availability and quality |** insufficient or low-quality data can hinder accurate risk assessment.
- **Lack of attention |** ongoing defense challenges, all the more so during times of conflict, often push the issue of climate change aside.

Action characteristics

Total budget

Approximately NIS 75 million

Action | Development and implementation of resilience plans in defense infrastructure systems, weapons systems, and operational capability

Background | climate change poses diverse challenges to critical infrastructure systems, weapons systems, and overall operational capability. In order to ensure the continued functioning and effectiveness of these essential components, one must gain a deep understanding of how climate change may impact these elements ("vulnerability mapping") and develop plans to address these vulnerabilities in order to create resilience and enhance the ability to cope with climate threats.

Action and task details | after mapping vulnerabilities and risks (as part of the aforementioned risk assessment), implementation plans will be developed to build climate resilience in systems, weapons systems, and operational capabilities. These plans shall be based on three components: defining and implementing standards for climate resilience; updating climate requirements in future projects; and addressing existing capabilities by incorporating measures to cope with climate threats. In order to update requirements and develop plans to address vulnerabilities, it will be necessary to acquire updated environmental climate intelligence, map "assets," process data, and derive insights from the information (some of these tasks build upon tasks from the previous action).

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Updating climate requirements for force-building in existing and planned projects (infrastructure and weapons systems)	Initiating body – IDF (Israel Defense Force), Ministry of Defense (including Shin Bet and Mossad for their infrastructures)	Ministry of National Security, academia, technology companies, and defense industries	50 to 250	2 to 4
Development and implementation of plans to address vulnerabilities and build resilience in infrastructure systems, weapons systems, and force deployment	Each defense body internally	Ministry of National Security, Ministry of Transportation, defense industries, Ministry of Agriculture (Drainage Authorities)	Over 250	Over 4
Addressing vulnerabilities and building climate resilience, with continuous monitoring of updated climate information and adjusting various infrastructures	Each defense body internally	Defense industries, Ministry of Agriculture (Drainage Authorities)	Over 250	Over 4

Barriers

- **Knowledge base |** understanding the interactions between climate impacts, infrastructure vulnerabilities, and military preparedness requires advanced models and analytical tools, as well as knowledge and expertise that are currently lacking.
- **Lack of attention |** ongoing security challenges, particularly during times of conflict, push the issue of climate change to the bottom of the priority list. This increases the risk of addressing it only in response to climate disasters, rather than through proactive adaptation measures designed to mitigate risks.

Action characteristics

Total budget

Over NIS 650 million

Action | Development and implementation of national geo-strategic responses arising from conflicts over national resources

Background | climate change has numerous implications, one of the most significant being the destabilization of regional governments due to conflicts over diminishing resources (such as water), exacerbation of socio-economic tensions, and the creation of favorable conditions for the emergence of sub-state actors in wake of these changes, and more. These changes could be significant and include climate migration, regime changes in the region, and even lead to wars.

Action details and tasks | developing and implementing comprehensive responses (defense and others) for coping with regime changes, regional instability, and waves of migration that will affect both Israel and neighboring countries, as well as preparing for resource conflicts with states in the region.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Risk mapping and development of possible responses	IDF	Population and Immigration Authority, partner defense establishments, local and international research bodies (such as the Gazit Institute), academia	Up to 50	Up to 2
Developing and carrying out work plans for response implementation	IDF and Ministry of Defense	-	Over 250	Over 4
Passing a government resolution to approve selected responses, budgeting, and implementation	Ministry of Defense	National Security Council	-	2 to 4

Barriers

- **Knowledge base |** understanding the interactions between climate impacts, infrastructure vulnerabilities, and military preparedness requires advanced models and analytical tools, as well as knowledge and expertise that are currently lacking.
- **Lack of attention |** ongoing security challenges, especially during and after fighting, push the issue of climate change to the bottom of the priority list. Seemingly global and long-term issues like climate migration may appear theoretical compared to immediate security challenges from Gaza, Judea and Samaria, Lebanon, and other areas.

Action characteristics

Total budget

Over NIS 300 million

Action | Inclusion of climate change as a threat in annual and multi-year situational assessments

Background | the climate crisis poses risks across a wide range of political, economic, environmental, defense, health, and other areas. To effectively address and prepare for these risks, it is essential to integrate climate change as a key consideration in the annual and multi-year assessments of national defense and emergency bodies. This approach ensures the identification, analysis, and timely, comprehensive response to climate-related threats.

Action details and tasks | adding the climate crisis as a threat in the annual and multi-year assessments of national defense and emergency bodies. These assessments will generate scenarios for key security and civilian risks, including fires, heatwaves, floods, refugee issues, and the loss of energy security.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Inclusion of climate change in the annual and multi-year assessments across all relevant units of national defense and emergency bodies	All emergency and defense bodies	-	Up to 1	Up to 2

Barriers

- **Lack of attention |** ongoing security challenges, especially during and after fighting, push the issue of climate change to the bottom of the priority list. Seemingly global and long-term issues like climate migration may appear theoretical compared to immediate security challenges from Gaza, Judea and Samaria, Lebanon, and other areas.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Approximately NIS 0.5 million

Flooded aircraft, IDF Spokesperson

Action: Promoting international collaboration to build defense resilience and address climate-related emergencies

Background | the impacts of climate change pose a significant threat to the security and stability of countries worldwide. Extreme weather events, rising sea levels, and resource shortages can lead to social, economic, and political disruptions, potentially exacerbating existing conflicts. Given the trans-national nature of climate change, no country can effectively address its impacts in isolation. Therefore, joint efforts at the international level are essential for building regional resilience and reducing the security risks associated with climate change. These efforts must also occur at the regional level, recognizing that without a shared solution, an unresolved problem in one country can impact its neighbors as well.

Action details and tasks | mapping and analyzing climate impacts on countries in the region and relations with them under normal circumstances, identifying opportunities for collaboration, and forming a strategy for regional cooperation. Additionally, supporting countries in the region through climate financing, signing bilateral and multilateral agreements, and facilitating negotiations among countries to enable the exchange of information, resources, and best practices related to climate adaptation and defense resilience.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Mapping and analyzing climate impacts on countries in the region	Ministry of Innovation, Science, and Technology	Ministry of Foreign Affairs, IDF, and Ministry of Defense	11	Over 4
Identifying opportunities and developing a strategy for regional collaboration	Ministry of Foreign Affairs	National Security Council, Ministry of Regional Cooperation, Ministry of Energy, IDF, and Ministry of Defense	2-1	2
Supporting developing countries through climate financing	Ministry of Foreign Affairs	National Security Council	Over 250	Over 4
Signing bilateral and multilateral agreements and conducting negotiations between countries	Ministry of Foreign Affairs	Professional ministries	-	4-2

Barriers

- **Political differences and lack of trust |** diplomatic and political differences and a lack of trust between countries can hinder the establishment of collaborative efforts, especially in light of the Iron Swords conflict.
- **Short-term focus** | international collaboration often requires long-term commitments and investments, which may conflict with short-term political agendas and priorities.

Action characteristics

Total budget

Over NIS 283 million

Second goal | Strengthening Preparedness for Climate-related Emergencies

Action | Updating and refining short-term and long-term national reference scenarios

Background | accurate and up-to-date national reference scenarios are essential for climate change adaptation. These scenarios serve as a common denominator for coordinating and preparing for future climate impacts and guiding decision-makers across various sectors. Refining these short- and long-term scenarios is essential for developing targeted adaptation strategies, allocating resources appropriately, and enhancing the resilience of the Israeli economy.

Action details and tasks | updating reference scenarios using various methods, such as current data, scientific research, meteorological data, climate models, and demographic trends. These scenarios must be suited to different time frames – ensuring accuracy in the short term and up-to-dateness in the long term. Subsequently, based on the scenarios, the potential impacts of each scenario should be mapped for different sectors, such as agriculture, infrastructure, water resources, public health, etc. It should be noted that short-term scenarios (for issues like floods, heatwaves, and cold weather over a five-year period) are the responsibility of the National Emergency Authority, while long-term scenarios fall under the responsibility of the Ministry of Environmental Protection. Additionally, it should be noted that underlying this action is the need to develop accurate forecasting models – though these have been included as a task in the cross-cutting goals and actions section.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Developing forecasting and research capabilities related to climate change	The new forecasting center to be established under the Meteorological Service	National Security Council, Ministry of Environmental Protection	250-100	4-2
Developing a short-term economic scenario	National Emergency Authority	Meteorological Service	1.5	3
Developing a left-term economic scenario	Ministry of Environmental Protection	National Emergency Authority, Meteorological Service, Israel Oceanographic and Limnological Research (IOLR)	Up to 50	4-2

Barriers

- **Data limitations |** climate-related data are complex. Additionally, limited availability of data or uncertainties in forecasts can affect the accuracy of reference scenarios.
- **Technical capability |** developing and updating reference scenarios requires expertise in climate modeling, data analysis, and integrated assessment methods.

Action characteristics

Total budget

Approximately NIS 201.5 million

Action | Developing, implementing, and practicing national emergency plans based on short-term climate reference scenarios

Background | the increasing frequency and intensity of climate-related disasters necessitates a proactive approach to emergency response preparedness. Developing and implementing national emergency plans based on up-to-date climate reference scenarios is essential for effectively protecting lives, health, assets, the economy, and infrastructure. These plans enable central and local governments, as well as various communities, to respond swiftly and comprehensively to the challenges posed by climate-related emergencies, minimizing damage and ensuring an appropriate and coordinated response.

Action details and tasks | formulating a national approach for handling climate emergencies and reducing risks from extreme events, updating the emergency management system as needed (legislation, defining responsibilities, etc.), developing and updating national emergency plans, and conducting practical exercises. This will be based on an environmental-climate intelligence picture, the formulation of which will be led by the Ministry of Environmental Protection.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Developing a comprehensive adaptation plan for each body individually	National Emergency Authority	Each body is in charge of developing its own plan	0.2	Every year
Practicing and implementing short-term plans	National Emergency Authority	Government ministries, local authorities	10-5	5 (once every 5 years)
Developing a national framework for addressing climate change (within the reference scenarios relevant for the National Emergency Authority)	National Emergency Authority	National Security Council, Ministry of Environmental Protection, Federation of Local Authorities, and the Forum of 15	0.2	1

Barriers

- **Data limitations |** accurate data on climate forecasts, infrastructure vulnerabilities, and potential hazards are essential for effective planning and adaptation. Data gaps and inaccuracies can undermine the quality of the plans.
- **Separation of authority |** defining the roles and responsibilities of ministries, government authorities, and boundaries of jurisdiction is necessary in order to avoid duplication on one hand and unaddressed gaps on the other.

Action characteristics

High prioritization by the secretariate

Total budget

Approximately NIS 7.5 million

Action | Integrating national warning and alert systems for extreme events with reporting entities and systems

Background | there is a risk to residents and national infrastructure from prolonged dry seasons and rising temperatures, which lead to an increase in the frequency and scale of fires, heatwaves, etc. Additionally, intense storms over short periods are expected to increase the frequency of floods, flash floods, and similar events across the country, mainly in urban areas. In countries and cities around the world dealing with the climate crisis, a key component of preparing for extreme events is the design and establishment of early warning and alert systems that provide both short-term forecasts and real-time information, often based on advanced predictive and indicator technologies.

Action details and tasks | developing early warning systems (i.e., alerts in advance to allow time for preparation) and real-time alert systems (i.e., immediate notifications to activate plans and defenses) for extreme weather events. These systems will enable the state and its residents to prepare for such events, reducing or preventing harm to people, infrastructure, and the environment. Additionally, developing technologies for the early detection of extreme events (including fires). These systems will be made accessible and provide real-time alerts to users.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Developing warning and alert systems for extreme weather events based on climate prediction models (floods, fires, heatwaves, flash floods, etc.)	Israel Meteorological Service, Ministry of National Security	Israel Fire and Rescue Services, IDF, Israel Meteorological Service, Home Front Command, Local and Regional Government Centers	10	4-2
Developing technologies for early detection of forest fires	Israel Meteorological Service	Israel Fire and Rescue Services, Ministry of Natonal Security	5-10	4-2

Barriers

- **Technological complexity |** integration of data sources and various systems can be technologically complex, requiring appropriate infrastructure and software solutions.
- **Coordination challenges |** coordination among entities with different areas of responsibility (such as data collection, public alerts, etc.).
- **Security sensitivity |** the system is security-sensitive, so protecting it against breaches and false alerts is crucial.
- **Information sharing |** continuous information sharing among involved entities is essential for the success of the action; however, the necessary infrastructure or motivation for information sharing between different entities does not always exist.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Approximately NIS 17.5 million

* Action | Inclusion of climate change as a threat in annual and multi-year assessments of national security components

Detailed under the goal >> strengthening the defense response

* Action | Promotion of national and international collaboration for building defense resilience and addressing climate-related emergencies

Detailed under the goal >> strengthening the defense response

669 Rescue Unit in Besor Stream, Israeli Air Force

Economy

Future vision: An economy adapted to climate change, leveraging the economic opportunities presented by it, with the goal of maintaining Israel's economic resilience and the well-being of its residents.

Goals and actions in the economy content domain |

Goals	Assessing the economic impact on the Israeli economy	Readiness of the business sector and labor market	Support of innovative climate technologies
Actions	Selecting reference scenarios for preparedness and quantifying the required adaptation measures	Providing accessible information on climate change and adaptation strategies for the business sector and employees	Developing and implementing innovative climate technologies in order to address national challenges
	Developing a national resilience plan for disruptions in supply chains	Adapting labor market regulation to climate conditions	
		Adapting tools to deal with market failures in the financial system (banks, insurance companies, and investment firms)	

Actions prioritized by the secretariate

First goal | Assessing the Economic Impact on the Israeli Economy

Action | selecting reference scenarios for adaptation and quantifying the required adaptation measures

Background | mapping the economic implications of climate change is essential for informed decision-making and efficient resource allocation. However, Israel currently lacks economic reference scenarios. The selection of an economic reference scenario for adaptation relies on forecasts provided by the Israel Meteorological Service and should reflect the future damage from various scenarios, alongside a cost-benefit analysis of actions designed to mitigate the scenario's impacts.

Action details and tasks | developing a set of possible reference scenarios derived from Meteorological Service forecasts, assessing their economic and fiscal implications (including the estimated cost of adaptation measures), and selecting an economic reference scenario.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Assessing the economic impact on GDP and fiscal models resulting from reference scenarios	Ministry of Finance (Chief Economist)	National Economic Council, Bank of Israel, Ministry of Environmental Protection, National Emergency Authority	2	2
Developing a methodology for cost-benefit analysis of adaptation actions	Ministry of Environmental Protection	Ministry of Finance, Bank of Israel, National Economic Council	2	2
Selecting economic reference scenarios	Ministry of Environmental Protection	Ministry of Finance, Bank of Israel, National Economic Council, Ministry of Economy	5-2	4
Determining the costs related to public well-being	Ministry of Environmental Protection	Ministry of Finance, Ministry of Labor, Ministry of Economy	2	2

Barriers

- **Authority and data limitations |** currently, there is no designated national body in charge of producing agreed-upon climate change forecasts, and there is a lack of accurate data regarding climate change in Israel.
- **Model complexity |** economic models assessing the impacts of climate change can be difficult to develop and analyze due to the interconnectedness of various sectors, thus creating uncertainties in the forecasts. This applies to public well-being as well.
- **Policy implementation |** comprehensive economic forecasts in this field may indicate a strong need for significant policy changes, reallocation of resources, or shifts in development priorities. Political resistance, driven by vested interests, could pose a barrier.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Approximately NIS 9.5 million

An agricultural worker exposed to outdoor weather conditions, Ran Cohen

Action: | developing a national resilience plan for disruptions in supply chains

Background | supply chains are a critical component linking producers and consumers along the value chain across different regions and countries. The increasing frequency and intensity of climate events can disrupt supply chains, leading to shocks in supply and demand, rising costs of goods, increased trade insurance costs, and shortages of essential services. These disruptions could result in significant economic damage. Preparedness for potential disruptions in supply chains is essential for ensuring the resilience of economies and societies in the face of climate change impacts.

Action details and tasks | developing a plan to ensure the reliability and resilience of Israel's transportation and supply chain systems. Mapping critical supply chains essential for Israel's immediate functioning (such as fuel, food, etc.), as well as supply chains with medium- to long-term impacts and high exposure to climate-related disruptions. Assessing potential failure points, examining different industries and sectors to identify challenges and opportunities in the long term, and reducing risks for the business sector. Exploring opportunities to diversify supply chain sources both geographically, and in terms of improving local production efficiency and advancing technological developments.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Mapping critical and vital supply chains in the immediate term	National Security Council / Emergency Economy	Ministry of Economy, Ministry of Agriculture, Ministry of Innovation, Science, and Technology; Ministry of Finance, Ministry of Foreign Affairs	5-2	2-1
Mapping of long-term supply chains	Ministry of Economy	Ministry of Agriculture, Ministry of Innovation, Science, and Technology; Ministry of Foreign Affairs, National Security Council	1	Up to 2
Implementing policy tools to strengthen supply chain resilience (local production, stock updates, source diversification, and training)	Ministry of Economy	Ministry of Agriculture, Ministry of Innovation, Science, and Technology; Ministry of Foreign Affairs, National Security Council	Up to 50	2 to 4

Barriers

- **Analysis complexity |** a methodological challenge in conducting the analyses.

Action characteristics

Total budget

Approximately NIS 30.5 million

Second goal | Readiness of the Business Sector and Labor Market

Action | Providing information and training to the business sector and employees on climate change and adaptation

Background | businesses play a crucial role in the economy and are key stakeholders in climate change adaptation efforts. However, many businesses lack the knowledge and resources needed in order to assess and effectively address climate risks.

Action details and tasks | collecting and publishing information related to business, operational, and employment needs as part of the economy's adaptation to climate change. This includes information on how businesses, public organizations, and employees can adapt to climate change, such as guidelines, case studies, best practices, technologies, research, and assessment tools related to climate change, along with associated risks and adaptation measures. Making this knowledge accessible to employers and employees through various channels. Establishing a tailored information system for businesses can provide the tools, resources, and guidance needed in order to understand the impacts of climate change (such as areas and times hazardous for outdoor work), conduct assessments, and develop preparedness strategies.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Collecting information on the adaptation of employees, public organizations, and businesses to climate change	Ministry of Economy	Ministry of Labor, Ministry of Environmental Protection	10-5	Up to 2
Developing an information access system and regularly updating it (with the option to connect to the national portal)	Ministry of Economy	Ministry of Labor, Small and Medium Business Authority, Ministry of Environmental Protection	10-5	Up to 2
Mapping and developing professional training programs for safe work under changing weather conditions and for new required occupations and skills	Ministry of Labor	Israel Institute for Occupational Safety and Hygiene, Labor Organizations	10-5	3

Barriers

- **Lack of awareness |** businesses and employees, including employee organizations, may not be aware of the benefits of accessing information and resources on climate change.
- **User engagement (small businesses, companies, and employees, including employee organizations) |** ensuring the involvement and participation of users can be challenging and requires addressing their needs effectively.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Approximately NIS 22.5 million

Action | Adapting labor market regulation to climate conditions

Background | climate change can have significant implications for the world of work in areas such as working conditions, occupational health, and economic stability. Current laws, regulations, and work practices may not adequately address these new challenges (e.g., working outdoors in extreme temperatures and preparation for building floods). Adjusting them to account for climate change is essential in order to ensure employee safety and well-being, while maintaining economic resilience and human capital as well.

Action details and tasks | conduct a systematic review and adaptation of laws, regulations, and work procedures in order to address the effects of climate change on the workforce. This process should begin with an assessment of risks and potential impacts of climate change on sectors, industries, work patterns, and demand for goods and services. Following that, labor market regulation should be reviewed and adapted in order to reflect the evolving needs and challenges posed by climate change (certification of occupations, adjustment of working hours, breaks, schedules, and protective equipment requirements). Additionally, guidelines should be developed for occupational health and safety, including instructions for working in extreme temperatures, exposure to air pollutants, etc.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
The assessment of risks and the potential impacts of climate change on sectors and industries have been altered.	Ministry of Economy	Ministry of Labor, Ministry of Health, Ministry of Agriculture, employee and employer organizations, academia	5-2	2
Mapping existing and relevant regulation for climate vulnerabilities, and assessing the need for adjustments	Ministry of Labor	Ministry of Environmental Protection, Ministry of Defense, Ministry of Health	5-2	3
Developing guidelines and recommendations on health, occupational safety, and emergency work procedures	Ministry of Labor	Ministry of Health, National Insurance Institute	5-2	2

Barriers

- **Resistance to change |** some industries and stakeholders may resist changes to existing regulations due to concerns about additional costs or disruptions to established work practices.
- **Data limitations |** there may be a lack of availabiity of suitable data on risks, exposures, and climate-related impacts on employees and businesses. Data gaps could hinder assessments.
- **Variability between businesses |** addressing the impacts of climate change on different businesses and regions requires flexible regulations tailored to varying circumstances.

Action characteristics

Total budget

Approximately NIS 14.5 million

Action | Adapting tools to deal with market failures in the financial system (banks, insurance companies, and investment firms)

Background | climate change poses complex risks to the financial system, including banks, insurance companies, and investment firms. For example, damage to valuable coastal assets threatened by rising sea levels must be reflected in insurance policies and mortgages. Traditional financial tools and mechanisms that are not adapted to climate change could lead to market failures and potential systemic disruptions. Adapting financial tools in order to handle climate-related risks is essential for ensuring the stability and resilience of the financial sector.

Action details and tasks | cooperation between financial regulators to adapt the financial sector to the upcoming changes. This includes assessing investment and financing risks, providing tools and guidelines to the public, and aligning regulation and economic taxonomy with those of the European Union.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Internalizing investment and financing risks resulting from climate change through cooperation between relevant regulators	Ministry of Finance	Protection; Capital Market, Insurance and Savings Authority; Securities Authority, Supervisor of Banks, Bank of Israel	10-5	2
Coordinating regulatory efforts to improve financial-environmental regulation, with a focus on aligning with European Union regulations	Ministry of Finance	Ministry of Environmental Protection; Financial Stability Committee; Capital Market, Insurance and Savings Authority; Securities Authority, Supervisor of Banks	5-2	4
Developing an Israeli taxonomy and classifying economic actions based on their environmental impact	Ministry of Environmental Protection	Securities Authority, Supervisor of Banks, Financial Stability Committee, Capital Market, Insurance and Savings Authority, Ministry of Finance	5-2	2
Providing tools and guidelines to financial institutions for identifying climate risks and their impact on the financial system	Ministry of Finance	Ministry of Environmental Protection, Financial Stability Committee; Capital Market, Insurance and Savings Authority	1	2
Assessing and managing climate change risks to national assets and infrastructure	Ministry of Finance	Ministry of Environmental Protection, Financial Stability Committee; Capital Market, Insurance and Savings Authority	10-5	Up to 4

Barriers

- **Complexity of financial products |** developing adaptive financial tools that accurately address climate risks may be a complex task due to the intricate nature of financial products.
- **Data limitations |** relevant data on climate-related risks, exposures, and impacts may not be readily available. Data gaps could undermine accurate risk assessment.
- **Coordination and collaboration |** ensuring cooperation between the financial sector, regulators, policymakers, and climate experts can be particularly challenging, especially given differing priorities.

Action characteristics

Total budget

Approximately NIS 25.5 million

Third goal | Support for Innovative Climate Technologies

Action | developing and implementing innovative climate technologies in order to address national challenges

Background | climate technologies, both from the fields of adaptation (such as precise climate forecasting, nature-based solutions mimicry) and mitigation (clean energy, alternative proteins), have the potential to drive economic growth while simultaneously addressing climate change challenges. The development and implementation of these innovative technologies can enhance energy security.

Action details and tasks | integrating climate tech startups to drive breakthroughs in the field, exploring the formation of an international joint support fund to promote innovative climate technologies, supporting innovation centers (in environmental/climate fields), supporting the activity of the international climate change center DeserTech, policy and regulatory adaptation (policy, regulations, and incentives). Promoting climate-related projects and technologies, including climate tech, agri tech, desert tech, food tech, and energy initiatives, and creating training programs designed to integrate workers into these industries or work with advanced methods in sectors with high exposure, such as construction and agriculture.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Integrating adaptation startups in order to drive breakthroughs in the field; mapping and prioritizing relevant challenges	Innovation Authority, Ministry of Environmental Protection	Ministry of Environmental Protection, Ministry of Energy, Ministry of Transportation, Ministry of Economy, Prime Minister's Office, Ministry of Agriculture, Ministry of Finance, Ministry of Health	Up to 50	1
Exploring the formation of a joint support fund with global institutions to promote innovative climate technologies	Ministry of Innovation, Science, and Technology	Ministry of Foreign Affairs, Ministry of Environmental Protection; Ministry of Innovation, Science and Technology; Ministry of Energy, Ministry of Transport, Ministry of Economy, Prime Minister's Office, Ministry of Finance	Up to 20	Up to 2
Supporting innovation centers (food tech, agri tech, etc.)	Innovation Authority, Ministry of Environmental Protection	Government ministries partnering with the innovation centers (each in their respective field)	Up to 30	1
Diversifying existing funding sources for climate technologies through Yozma Fund 2.0	Innovation Authority, Ministry of Finance	-	Up to 50	2
Policy and regulatory adaptation to facilitate the adoption and dissemination of climate technologies	Innovation Authority	Climate regulators	Up to 30	2
Encouraging employers to develop and fund training programs for using innovative technologies	Ministry of Labor	Ministry of Economy, industrial organizations, Ministry of Agriculture, Ministry of Construction and Housing	10-5	4-2

Barriers

- **Funding |** developing and expanding climate technologies requires significant investment. Limited availability of funding or competition for resources may hinder progress.
- **Technological readiness |** some climate technologies may still be in early stages of development and may not yet be ready for widespread adoption in Israel.
- **Skills gap |** developing a skilled workforce capable of implementing and maintaining climate technologies often requires substantial training and capacity-building efforts in Israel.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Approximately NIS 180 million

Gazelle Valley, Amir Balaban

Built-up Areas and Infrastructure

Future vision: Infrastructure, construction, and energy systems are adapted to climate change, undergoing continuous adjustments, alongside adapting Israel's urban and regional environments to the changing climate.

Goals and actions in the field of built-up areas and infrastructure |

Goals	Establish, adapt, and manage infrastructure	Adaptation of the built environment and its surroundings
Actions	Developing a smart and decentralized electrical grid	Planning and adaptation of drainage systems in urban areas
	Planning and adaptation of transportation infrastructure	Developing and implementing watershed and urban runoff management and flood protection plans
	Planning and adaptation of communications infrastructure	Acclimatizing the built environment with a focus on urban heat
		Adapting urban areas and their surroundings to fire threats
		Integration and preservation of natural and ecological systems within the built environment
	Adapting infrastructure, buildings, and public spaces in coastal areas to rising sea levels and protecting them from extreme events	

Actions prioritized by the secretariate

First goal | Establish, Adapt, and Manage Infrastructure

Action | Developing a smart and decentralized electrical grid

Background | extreme climate events can damage the electrical grid, disrupt infrastructure, and lead to interruptions in electricity supply. They can also increase the demand for electricity and place additional strain on the system. Adaptation to climate change requires a resilient energy infrastructure that can withstand extreme weather events and power outages while accommodating changing consumption trends as well.

Details of the action and its tasks | transitioning to an efficient, smart, and environmentally friendly electricity grid capable of real-time adaptation to changing conditions. This move contributes to both enhancing energy security and preparing the economy for power outages and overloads, while also improving the efficiency of the electricity system by maximizing the use of renewable energy sources, and thus contribute to reducing air pollution in Israel and meeting national greenhouse gas reduction targets. To achieve this, several integrated actions must be promoted, including adapting electricity infrastructure to extreme weather, and increasing demand, diversifying energy production sources (including expanding renewable energy generation), integrating energy storage systems, and transitioning to smart and decentralized grid management. This action requires the implementation of advanced monitoring, control, and communication technologies, in order to create a smart grid that can adapt to real-time conditions. In addition, integrating systems that store surplus renewable energy for peak demand periods or when renewable sources are unavailable (such as nighttime or cloudy days) is essential.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Strengthening demand and production forecasting capabilities	Ministry of Energy	Electricity Authority, Chief Scientist (Ministry of Energy), Ministries of Transport, Economy, Environmental Protection	Up to 50	Up to 2
Integrating large-scale energy storage into regular and emergency grid operations	Ministry of Energy	Electricity Authority, Ministry of Energy, local authorities, Chief Scientist	Over 250	Over 4
Connecting Israel to neighboring countries or distant nations for infrastructure and energy cooperation in future shortage situations	Ministry of Energy	Electricity Authority, Ministry of Energy, Ministry of Foreign Affairs, Ministry of Regional Cooperation	Over 250	2-4
Developing a smart electricity grid	Electricity Authority	Ministry of Energy, local authorities	Over 250	Over 4
Developing and expanding transmission and distribution networks	Electricity Authority	Ministry of Finance, Ministry of Energy, local authorities	Over 250	Over 4
Establishing resilience centers that integrate renewable energy generation and energy storage in new and existing buildings (also appears in urban heat initiative)	Ministry of Energy and Ministry of Environmental Protection	Planning Administration, local authorities	250-50	4-2

Barriers

- **Investment in infrastructure |** developing a smart and decentralized electricity grid requires significant investment in new technologies, infrastructure, and grid upgrades.
- **System stability |** the shift towards greater reliance on renewable energies introduces new vulnerabilities to climate events, such as heat waves accompanied by dust storms.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Over NIS 1075 million

Green roof, bird research station, Amir Balaban

Action | Planning and adaptation of transportation infrastructure

Background | climate change leads to extreme events and chronic changes that can impact various transportation systems on land, air, and sea. For example, asphalt on roads may crack under high temperatures, and railroad tracks may warp. Inadequate drainage systems in risk-prone areas on roads and runways can cause flooding and erosion, potentially leading to transportation disconnections and road accidents. Additionally, rising sea levels may pose a threat to ports (both maritime and air).

Details of the initiative and its tasks | improving and adapting various transportation systems to extreme weather events as well as to ongoing and chronic climate changes. Additionally, implementing technologies capable of responding to sudden extreme events, such as floods, where the automatic closure of affected traffic routes can prevent harm to people and property.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Adaptation of standards, guidelines, and planning	Ministry of Transportation	Planning Administration, national infrastructure companies	50-10	4-2
Adaptation and implementation of maintenance guidelines	Ministry of Transportation	Government companies under the Ministry of Transportation, local authorities	400	4-2
Risk area mapping	Ministry of Transportation	Meteorological Service, Israel Oceanographic and Limnological Research, Israel Fire and Rescue Authority, government companies under the Ministry of Transportation, local authorities	10-5	2
Upgrading transportation infrastructure in risk areas	Ministry of Transportation	Local authorities	500	4-3
Examination and implementation of technologies and/or nature-based solutions to address immediate extreme weather events	Ministry of Transportation	National Emergency Authority, Ministry of Innovation, Science and Technology	10-5	2

Barriers

- **Environmental impact |** adapting infrastructure in a way that does not harm the environment and prioritizing nature-based solutions (over technological solutions) could pose a challenge.
- **Multiple entities |** the large number of parties involved in land transportation infrastructure (government companies, the Ministry of Transportation, local authorities) requires coordination among them.

Action characteristics

Total budget

Approximately NIS 545 million

Action | Planning and adaptation of communications infrastructure

Background | climate change leads to extreme events that could damage the country's communications systems, which are essential national infrastructure used, among other things, for managing and responding to such events.

Details of the initiative and its tasks | improving existing communications systems and adapting them to both extreme climate events and the ongoing effects of climate change.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Adaptation of standards, guidelines, and planning	Ministry of Transportation	Planning Administration, national infrastructure companies	50-10	4-2
Adaptation and implementation of maintenance guidelines	Ministry of Transportation	Government companies under the Ministry of Transportation, local authorities	400	4-2
Risk area mapping	Ministry of Transportation	Meteorological Service, Israel Oceanographic and Limnological Research, Israel Fire and Rescue Authority, government companies under the Ministry of Transportation, local authorities	10-5	2
Upgrading transportation infrastructure in risk areas	Ministry of Transportation	Local authorities	500	4-3
Examination and implementation of technologies and/or nature-based solutions to address immediate extreme weather events	Ministry of Transportation	National Emergency Authority, Ministry of Innovation, Science and Technology	10-5	2

Barriers

- **Environmental impact |** adapting infrastructure in a way that does not harm the environment and prioritizing nature-based solutions (over technological solutions) could pose a challenge.

Action characteristics

Total budget

Approximately NIS 287 million

Action | Adapting infrastructure, buildings, and public spaces in coastal areas to rising sea levels and protecting them from extreme events

Background | climate change is causing sea levels to rise, reducing the width of Israel's coastline, decreasing the distance between the sea and infrastructure, and increasing the potential damage from extreme marine events, which are also expected to intensify. Higher sea levels raise the drainage base of coastal streams, impacting the design and efficiency of stormwater drainage systems, and accelerating erosion of the coastal cliff.

Action details and tasks | enhancing protection and planning in the coastal area to prepare for rising sea levels. This will be achieved by improving the quality and processing of information related to the coast, coastal streams, and infrastructure in coastal environments, with special attention to sensitive plans and weak spots. The assessment will include both areas at elevated risk and unique assets that require enhanced protection.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Mapping the Israeli coastal area (at high precision)	Ministry of Environmental Protection and the Survey of Israel	Ministry of Energy (Israel Oceanographic and Limnological Research), local government	1	2
Development and maintenance of sea level monitoring systems (including the Red Sea) and coastal streams	The Water Authority, Israel Oceanographic and Limnological Research (IOLR), Survey of Israel		50-10	2
Mapping coastal vulnerabilities (drainage systems, coastal streams, cliffs) and forming targeted adaptation plans accordingly	The Mediterranean Coastal Cliffs Preservation (MCCP) company, Israel Planning Administration, Nature and Parks Authority	Coastal Authorities Forum	10-5	2
Establishing an adaptation scenario for sea-level rise, and accordingly updating the Protection of the Coastal Environment Law and setting a mechanism for updating the coastline	Ministry of Environmental Protection	Israel Planning Administration, Ministry of Construction and Housing, local government	2	4-2
Appointing an entity for monitoring the coastline	Ministry of Environmental Protection	Coastal Authorities Forum	No budgetary implications	Immediate

Barriers

- **Geopolitical situation |** monitoring and forecasting in relation to the Red Sea requires international coordination with the surrounding countries, This is dependent on the prevailing geopolitical reality in the region.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Approximately NIS 47 million

Soil erosion, Agma

Second goal | Adaptation of the Built Environment and its Surroundings

Action | Planning and adaptation of drainage systems in urban areas

Background | climate change is leading to extreme rainfall events and increased river discharge, heightening the risk of floods and making soil conservation difficult in many areas. Conventional drainage systems are already insufficient in order to cope with the changing patterns. Therefore, it is essential to adapt drainage systems to climate change and implement nature-based stormwater management solutions, such as green roofs, with a watershed-based perspective. This should ensure efficient and effective management of excess water in urban areas, preventing floods, infrastructure damage, pollution of rivers and seawater, and disruptions to the population, while aiming to increase the recharge of groundwater.

Details of the action and tasks | enhancing coordination between entities involved in stormwater management and drainage, and finding practical solutions for unaddressed issues, including amending the Drainage Law in order to require basin drainage authorities to adhere to multi-year master plans, conduct risk assessments, promote soil conservation from a watershed perspective, and separate urban stormwater systems from sewage systems to prevent river and sea pollution.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Amendment of the Drainage Law	Water Authority	Ministry of Agriculture	Up to 2	2
Separating urban runoff systems from sewage systems in order to prevent pollution of rivers and the sea	Water Authority	Ministry of Agriculture	Over 250	10-5
Developing a training framework for assimilating 'runoff-conscious' planning principles and using a runoff calculator	Planning Administration	Ministry of Agriculture	5-2	1
Developing solutions and tools for runoff management in public spaces and private lots, as part of new plans and existing infrastructure	Planning Administration and Ministry of the Interior	Local authorities	10-5	2
Formulating guidelines for addressing floodplains	Water Authority	Planning Administration and the Ministry of Agriculture	Up to 2	1

Barriers

- **Resistance to change |** stakeholders in the construction and infrastructure sectors may resist adopting new standards and work methods due to concerns over higher costs.
- **Allocation of responsibility |** allocating responsibility between the region (a river authority or drainage authority) and the city can be complex, as can the responsibility for managing runoff control measures in private lots designated for residential, commercial, or other uses.

Action characteristics

Regulatory | Awareness and advocacy | Economy | **Execution and implementation** | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Over NIS 263 million

Kinneret at sunset, Chris Gilmour, Unsplash

Action | Development and implementation of watershed and urban runoff management and flood protection plans

Background | rapid population growth and accelerated construction contribute to increased runoff and flooding, requiring space management with a national perspective. Additionally, climate change leads to more intense and unpredictable rainfall patterns, increasing the risk of flooding in many areas. Developing and implementing watershed plans for runoff management and flood protection are essential in order to reduce flood risks, protect infrastructure, and improve climate resilience in planning and development in Israel.

Detailed actions and tasks | risk mapping and development of a response plan through the formulation of plans or strategies in flood-prone areas for managing runoff and preventing floods. The strategies shall be based on detailed floodplain calculations for existing areas or those expected to undergo future development adjacent to rivers, as well as economic assessments of the possible alternatives for each area.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Regulating and implementing runoff water management from a watershed perspective (TAMA 1/7 and the Drainage Law)	Ministry of Agriculture and Planning Administration	All government ministries and local authorities, drainage authorities	Up to 50	4-2
Forming a runoff management and flood protection plan for drainage authorities	Ministry of Agriculture	All government ministries and local authorities, drainage authorities	Up to 50	4-2
Strengthening the forecasting and alert capabilities of the Flood Forecasting Center	Water Authority	All government ministries	Up to 50	Up to 2
Implementation of TAMA 1/8 amendments (urban runoff management) and preparation for urban runoff and drainage master plans	Planning Administration and Ministry of the Interior	Local authorities	2-5	4-2

Barriers

- **Allocation of responsibility |** the complexity of responsibility over urban areas, open riverbed areas, and stream channels passing through built environments requires coordination between local authorities and drainage authorities, especially given that watershed management crosses municipal boundaries and necessitates a centralized response from all drainage authorities.

Action characteristics

High prioritization by the secretariate

Total budget

Approximately NIS 82.5 million

Action | Acclimatizing the built environment with a focus on urban heat

Background | urban heat refers to the rise in temperatures in urban areas due to factors like humidity, radiation, air flow, material composition, and the lack of green spaces. Urban heat can exacerbate the effects of climate change, leading to increased energy consumption, heat-related health issues, and a decline in urban functionality. Developing and implementing adaptation plans to address urban heat is essential for mitigating its negative effects and improving urban climate resilience.

Action details and tasks | conduct a comprehensive assessment of the scope and severity of urban heat across different parts of the city, considering aspects like exposure, adaptation, and sensitivity, such as temperature differences, land use patterns, and socio-economic disparities. Based on this analysis, an adaptation plan will be formulated.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Climate adaptation solutions for vulnerable populations	Ministry of Construction and Housing, Ministry of Welfare	National Insurance Institute, Israel Electric Corporation, housing companies (Amidar, Amigur, etc.), Ministry of Energy, Ministry of Health, local authorities	25	Over 4
Preparation of urban plans to reduce heat stress in the urban environment (afforestation and shading)	Ministry of Agriculture, Ministry of Environmental Protection	Local authorities, Planning Administration, Ministry of Health, Forum 15	60	2
Annual optimal tree planting, reduction of tree felling permits, and improvement of tree status in planning and construction processes	Ministry of Agriculture	Local authorities, Ministry of Environmental Protection, Jewish National Fund	250-100	Every year
Establishment of local resilience centers for emergency situations	Ministry of the Interior	Ministry of Energy, Ministry of Environmental Protection, Ministry of Welfare and Social Services, Ministry of Education, Planning Administration, local authorities	No budgetary implications	2
Integration, mapping, and heat-adapted analysis in urban, strategic, and spatial plans	Planning Administration, Meteorological Service	Ministry of Environmental Protection, Ministry of Energy, Ministry of Health, Local authorities	2	4-2
Development and implementation of heat planning guidelines, including updating the requirement for microclimate studies	Planning Administration	Ministry of Health, Ministry of Culture and Sports	Up to 2	4-2
Inclusion of health assessments in national projects or plans, addressing adaptation issues	Ministry of Health	Planning Administration, Ministry of Energy, Ministry of Infrastructure		2

Action characteristics

High prioritization by the secretariate

Total budget

Over NIS 538.5 million

Action | Adapting urban areas and their surroundings to fire threats

Background | fires are expected to occur more frequently and with greater severity due to climate change. In order to improve protection for communities and open spaces, it is essential to promote processes aimed at raising awareness and reducing fire-related risks.

Action plan and tasks | establishing buffer zones around sensitive areas can help reduce the risk of fires spreading to populated areas, infrastructure, and natural habitats. By anchoring buffer zones into law, their implementation and long-term effectiveness can be ensured. In addition, promoting a "from the home outward" policy to reduce the flammability of buildings, infrastructure, and communities will help lower the risk of wildfires. Public awareness campaigns on the importance of preparing for large-scale fires due to the climate crisis can contribute to more effective preparedness.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Developing fire protection plans for high-risk settlements and infrastructure	Israel Fire and Rescue Authority	Ministry of the Interior, regional/local government, Jewish National Fund (KKL), Israel Nature and Parks Authority, Israel Land Authority	150 (for approximately 500 settlements/ neighborhoods, around 50-500 per plan)	Over 4
Developing and implementing a public awareness campaign for residents of fire-threatened areas	Israel Fire and Rescue Authority	Ministry of the Interior, regional/local government	25	4-2
Protection of buffer zones through legislatoin, regulations, and land-use planning	Ministry of National Security	Fire and Rescue Authority, regional/local government, Jewish National Fund (KKL), Israel Nature and Parks Authority, Israel Land Authority, Planning Administration, Ministry of Environmental Protection, local government	Up to 5	4-2
Establishing buffer zones (based on prioritization)	Ministry of National Security	National Security Council, Israel Fire and Rescue Authority, regional/local government, Jewish National Fund (KKL), Israel Nature and Parks Authority, Israel Land Authority, Planning Administration, Ministry of Environmental Protection, Ministry of Agriculture	Over 250	Over 4
Improving response capabilities for wildfires	Israel Fire and Rescue Authority	Ministry of National Security, Police, regional/local government, Jewish National Fund (KKL), Israel Nature and Parks Authority, Home Front Command, National Emergency Authority	Over 250	Over 4

Barriers

- **Landowner resistance |** landowners in designated buffer zones and within municipal areas may oppose restrictions on land use and management.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Over NIS 677.5 million

Syrian milkweed (Gomphocarpus sinaicus) in a shelter garden, Yael Orgad

Action | Integration and preservation of natural and ecological systems within the built environment

Background | natural and ecological systems exist within the built environment as well and enable humans to utilize them as nature-based solutions; for example, for controlling pests and other nuisances. However, these systems may also negatively impact life in the built environment, creating conflicts between human needs and nature. Additionally, extreme events, such as heavy rainfall, have significant effects on natural and ecological systems in urban areas, making it necessary to act in the realms of both ecology and planning, in order to preserve these systems and minimize harm to them.

Action details and tasks | actively integrating natural and ecological systems into the built environment and preserving existing systems through pre-adapted processes of planning and implementation, aimed at reducing the harmful impacts of human activity on these systems.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Integration, conservation, and fostering of natural and ecological systems within the built environment	Planning Administration	Ministry of Environmental Protection, local authorities	50-10	3-2
Minimizing harmful impacts on natural and ecological systems during the planning and execution of infrastructure and construction projects	Ministry of Environmental Protection	Planning Administration, executing companies (Israel Electric Corporation, Mekorot, construction companies, etc.), local authorities	50-10	3-2

Barriers

- **Knowledge gaps |** lack of awareness among decision-makers and insufficient understanding of how to actively and effectively integrate nature-based solutions, natural, and ecological systems into planning processes.
- **Prioritization |** protection of ecological systems is often deprioritized in favor of economic and other feasibility considerations.

Action characteristics

Total budget

Approximately NIS 60 million

*Action | Protection and adaptation of infrastructure and construction in coastal areas to sea level rise and extreme events

Detailed under the goal >> establishment, adaptation, and management of infrastructure.

Agriculture, Nature and Water

Future vision: Agricultural sectors adapted to climate change and increased supply of fresh agricultural produce in accordance with population needs, stable and functioning ecosystems, and a diversified water economy that provides water in the required quantity and quality for all the needs of the population and nature in Israel.

Goals and actions in the agriculture, nature, and water content domain |

Goals	Adaptation of the agricultural sector	Maintaining the resilience and robustness of ecosystems	Conservation and restoration of natural water sources
Actions	Transition to climate-adapted agriculture in the plant and animal sectors	Preserving biodiversity and restoring open spaces	Updating the national water management master plan
	Investment in R&D and innovation for adapting crops and livestock to climate change	Restoration of open spaces and improvement of their function	Conservation and restoration of rivers and wetlands
	Strengthening the fund for agricultural natural disaster insurance	Maintaining connectivity and terrestrial and aerial ecological corridors	Reducing pressure on natural water sources
	Eradication of pests in crop agriculture and livestock farming		

Actions prioritized by the secretariate

First goal | Adaptation of the Agricultural Sector[5]

Action | Transition to climate-adapted agriculture in the plant and animal sectors

Background | climate change and population growth directly impact agricultural sectors through shifts in temperatures, changes in rainfall distribution, and increased frequency of extreme weather events. Ensuring the resilience of food production systems is essential for food security, sustainable agriculture, the prosperity of rural peripheries, and the continued functionality of open spaces and ecological corridors. This action is necessary in order to enhance the adaptation of agricultural systems and minimize the negative effects of climate change on food production.

Details of the action and its tasks | implementing strategies and practices designed to improve the resilience of agricultural systems to changing climate conditions. This includes preserving agricultural lands as much as possible; developing, adapting, and utilizing genetic tools (developing climate-adapted plant varieties and animal breeds); management tools (water management, conservation/regenerative agriculture, cooling and shading systems for plants and animals); and technological solutions to address climate change. Incentives shall be provided to encourage farmers to transition to climate-adapted agriculture. For some challenges, solutions already exist, and farmers need support in transitioning to climate-adapted practices. In other cases, solutions for climate challenges are still lacking or in various stages of development and implementation in the field. In such cases, the focus is on strengthening both fundamental and applied agricultural research and promoting training in climate-adapted agriculture. Sometimes, planning barriers exist, requiring solutions to allow the expansion of agricultural areas under coverage (netting, greenhouses) and even adding climate-controlled structures. Mapping and preparing a plan for the agricultural sector's adaptation to climate change shall be based on a risk assessment of local agricultural production (the agricultural sector) and food supply from imports in light of climate change.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Developing a risk assessment for agricultural crops based on crop models, economic models, learning from farmers, and accumulated global experience	Ministry of Agriculture		Up to 2	Up to 2
Funding applied research or pilot plans for the development and implementation of advanced agricultural technologies	Ministry of Agriculture	Ministry of Innovation, Science, and Technology	36	10
Providing incentives for farmers to invest in measures for preventing or reducing climate-related damage	Ministry of Agriculture	Ministry of Finance	150	7
Supporting sustainable agriculture practices (conservation tillage, regenerative agriculture, etc.)."	Ministry of Agriculture		200	10

[5] The recommendations in this objective are based on the report of the Committee for Implementing the Adaptation of Food Systems to Climate Change by 2030, Ministry of Environmental Protection, September 2023

Barriers

- **Economic |** the implementation of new growing practices or the adoption of new, more resilient technologies and crops involves initial costs that some farmers may not be able to afford. Additionally, uncertainty about the prices for produce may deter farmers from making investments that could reduce vulnerability to climate events and from adopting new technologies and crops.
- **Knowledge limitation |** in some cases, there are potential solutions, but they need to be adapted to the type of crop and the growing area. In other cases, guidance is needed on climate-adapted farming methods (in some cases, no known solution exists, requiring investment in research and development to bridge the gaps).
- **Planning limitations |** protection for agricultural land is insufficient, and it is steadily being lost. Furthermore, there may be planning obstacles to a transition from open spaces to greenhouses and addition of agricultural structures.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Approximately NIS 387 million

Screens for climate protection, Gideon Toperoff

Photo by Veronica Chalyj on Unsplash

Action | Investment in R&D and innovation for adapting crops and livestock to climate change

Background | climate change and population growth threaten food security in Israel and worldwide. In order to address the impact of climate change on crops and livestock, it is essential to invest in research, development, and innovation. These investments can lead to the development of climate-resilient crop varieties, improved livestock breeds, innovative technologies, and agricultural practices that enhance adaptation and ensure continuous food production in a changing climate. Israel's past achievements, particularly in water and irrigation research, and their commercial application, have positioned the country as a leader in agricultural resilience on a global scale. These successes make Israel a global knowledge hub in the era of climate change. Continued and increased investment in R&D is necessary in order to optimally meet the significant challenges posed by climate change in agricultural production.

Details of the action and its tasks | development and utilization of crop varieties resistant to extreme climate conditions, expansion of the Israel Plant Gene Bank's capabilities to enhance the preservation of genetic resources, forming the foundation for future development of climate-resilient varieties.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Investment in basic research – funding studies	Ministry of Agriculture	Council for Higher Education, Ministry of Science	150	10
Investment in basic research – research infrastructure, including training and development of suitable human resources	Ministry of Agriculture	Council for Higher Education, Ministry of Science	20	3
Development of the Israel Plant Gene Bank as a national infrastructure for preserving genetic diversity and for the future development of climate-resilient varieties.	Ministry of Agriculture		2	3

Barriers

- **Long timelines for results |** developing climate-resilient varieties may take years and requires patience and sustained investment.
- **Research infrastructure |** in addition to funding, significant development of research infrastructure is needed as a foundation for expanding innovation in the field. This includes investing in research personnel, along with incentive programs for students and scholarships.

Action characteristics

High prioritization by the secretariate

Total budget

Approximately NIS 172 million

Action | Strengthening the fund for agricultural natural disaster insurance

Background | climate change increases the intensity and frequency of extreme weather events, such as storms, droughts, and floods, which pose significant risks to agricultural production and farmers' livelihoods. Strengthening the Insurance Fund for Natural Risks in Agriculture (KANAT) is crucial for providing financial protection to farmers against climate-related losses, and ensuring the stability of the agricultural sector in the face of climatic uncertainty.

Details of the initiative and its tasks | improving and expanding existing insurance mechanisms that provide coverage for climate-related damage to crops, livestock, and agricultural assets.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Increasing government expenditure for subsidizing insurance premiums	Ministry of Agriculture	Ministry of Finance, Insurance Fund for Natural Risks in Agriculture	250-50	10

Barriers

- **Economic |** increasing the budget—not to reduce farmers' share of the premium, but merely to cover the rise in premium costs due to extreme events in recent years—results in higher subsidy costs. High premiums: insurance premiums may still be too expensive for some farmers, especially small-scale growers.
- **Complexity and financial knowledge |** risk assessment and underwriting processes for insurance can be complex, and farmers may encounter difficulty understanding coverage terms and procedures.
- **Lack of knowledge |** currently, there are no sufficient assessments of the changing risk to farmers as a result of climate change.

Action characteristics

Total budget

Approximately NIS 151 million

Action | Eradication of pests in crop agriculture and livestock farming

Background | continuous, focused, and reliable monitoring of pests (insects, disease-causing agents, and weeds) in livestock and plant sectors is essential for adaptation to climate change. As the climate continues to change, it directly impacts their spatial and temporal distribution, as well as the severity of their effects on agricultural systems and natural ecosystems. These changes in the dynamics of pests and diseases can lead to problematic consequences, including reduced crop yields and negative effects on food security and livelihoods. Proper planning will help proactively respond to emerging threats, make informed decisions, and develop targeted strategies to mitigate the damage caused by pests, diseases, and weeds.

Details of the action and its tasks | establishing a national monitoring and data collection network that incorporates advanced technologies such as remote sensing, advanced traps, sensor networks, and data analysis for monitoring the spread, behavior, and impact of pests, diseases, and weeds in key crops. The data will be synchronized with climate data. This initiative can help reduce the spread of existing pests, prevent the introduction of new ones, and reduce the use of pesticides.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Forecasting the spread of key pests based on epidemiological-climatic models (risk assessment). Developing plans to prepare for dealing with both existing and emerging pests	Ministry of Agriculture	Ministry of Environmental Protection, Nature and Parks Authority, research institutes	Up to 50	Up to 2
Research and study to select target species/indicator species, monitoring sites, monitoring and trapping methods, timing of monitoring, delineation of pest distribution areas, and restriction of further spread	Ministry of Agriculture – Plant Protection and Veterinary Institute	Ministry of Health, Ministry of Environmental Protection, Israel Institute for Biological Research, academia	Up to 50	Up to 2
Monitored data; classify, categorize, and retrieve it, including climatic data (temperature, precipitation, wind, soil type, etc.)	Ministry of Agriculture – Plant Protection and Veterinary Services	Software companies, Ministry of Environmental Protection, Nature and Parks Authority	Up to 50	Up to 2
Improving methods for identifying existing pests and new pests in Israel	Ministry of Agriculture	Universities and research institutes	250-50	Over 4
Sample monitoring of live animal shipments for early detection of disease risks, including zoonotic diseases that pose a risk to the health of both humans and animals	Ministry of Agriculture – Veterinary Services	Ministry of Health, Ministry of Environmental Protection	Up to 50	Up to 2

Barriers

- **Technological infrastructure |** developing and maintaining a monitoring network requires significant technological investment, including remote sensing equipment, data analysis tools, and skilled personnel.
- **Data management |** handling and analyzing large amounts of data collected from various sources is a complex process.
- **Funding |** continuous funding will be needed for long-term monitoring efforts to ensure consistent data collection and analysis.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Approximately NIS 250 million

Heat and drought tolerance research in wheat, Gideon Toperoff

Sand nourishment for protecting the coastal cliff in Netanya, The Mediterranean Coastal Cliffs Preservation Government Company Ltd.

Second goal | Maintaining the Resilience and Robustness of Ecosystems

Action | Initiative: preserving biodiversity and restoring open spaces

Background | natural ecosystems such as Mediterranean forest and scrublands, coastal plain sands, and wetlands provide essential services to humanity, supporting our very existence. However, these ecosystems are increasingly vulnerable in the era of climate change, including habitat degradation and species loss. By protecting and restoring open spaces, we can strengthen ecosystems, preserve the services they provide, and prevent species extinction. Successful conservation and restoration efforts will enhance the resilience of ecosystems to climate change and extreme weather events. Additionally, incorporating nature-based solutions in development and construction processes will help mitigate anthropogenic (human-caused) impacts and address climatic phenomena such as urban heat, floods, and waterlogging.

Details of the action and its tasks | maintaining the resilience and robustness of ecosystems involves two main types of tasks: one type constitutes legislative and regulatory tasks, such as designating nature reserves, conserving species, or protecting ecological corridors. The other type involves nature-based solutions designed to protect existing ecosystems. All efforts are guided by the biodiversity conservation action plan, which is crucial for ensuring the implementation of these efforts.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Protection of terrestrial and marine ecosystems through the designation of nature reserves and ecological corridors	Israel Nature and Parks Authority	Ministry of Environmental Protection, Planning Administration	2-5	3
Protection of species populations, with a focus on key species, flagship species, and endangered species, including protection against poisoning, hunting, and fishing	Israel Nature and Parks Authority	Ministry of Environmental Protection, Ministry of Agriculture	50-10	Every year
Promotion of solutions to address invasive species – including legislation, risk assessment, and eradication action	Ministry of Environmental Protection	Israel Nature and Parks Authority, Ministry of Agriculture	Over 250	8
Preservation of the genetic diversity of wild plants resistant to climate change	Ministry of Agriculture	Ministry of Environmental Protection, Israel Nature and Parks Authority	10	8

Barriers

- **Disputes over land use |** conflicts regarding land use priorities and competition for resources may delay restoration efforts, particularly in areas with conflicting interests.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Over NIS 293 million

* Action | Eradication of pests and viruses in livestock and crops

Detailed under the goal >> adaptation of the agricultural sector

Flooding in orchards, Anat Zisovitch-Kharit

Action | Restoration of open spaces and improvement of their function

Background | open spaces play a crucial role in preserving biodiversity and the ecological systems in Israel. For instance, open spaces allow for water infiltration into aquifers and groundwater and act as buffers between residential, commercial, and industrial areas, thus providing protection from environmental hazards. In addition, urban nature sites, which support natural systems as part of the local ecosystem, also exist within these areas. Urban nature sites, aside from being green attractions for the public, ensure ecological richness, native vegetation, and wildlife. Given that these areas are already impacted by human activity, they require greater protection from climate change through preliminary planning, alongside legislation and regulation. Protecting open spaces ultimately serves to protect people.

Details of the action and its tasks | in order to preserve open spaces and urban nature sites while enhancing their function, nature-based solutions must be implemented in order to preserve habitats that are underrepresented, or ecological systems that require special treatment.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Restoration of open spaces and improvement of their function, with emphasis on underrepresented habitats, sensitive and unique ecosystems, and wetlands	Ministry of Environmental Protection, Israel Nature and Parks Authority	Israel Land Authority, Israel Nature and Parks Authority, Ministries of Agriculture, Housing and Construction	Over 250	8
Development, planning, and restoration of urban nature sites, and the implementation of nature-based solutions in urban infrastructure	Ministry of Environmental Protection	Local authorities	250	8

Barriers

- **Disputes over land use |** conflicts regarding land use priorities and competition for resources may delay restoration efforts, particularly in areas with conflicting interests.

Action characteristics

High prioritization by the secretariate

Total budget

Over NIS 500 million

Action | Maintaining connectivity and terrestrial and aerial ecological corridors

Background | ecological corridors are areas that connect habitats of animals and plants, designed to ensure smooth passage, and reduce the harmful impact of habitat fragmentation caused by human activity. Without movement through these corridors, the ability for species to travel or migrate is limited, affecting genetic diversity, and increasing susceptibility to diseases and climate change. Strong terrestrial and aerial ecological corridors help protect biodiversity from climate change and, as a result, reduce the negative impacts on humans. Therefore, they must be considered in both planning and implementation phases.

Details of the action and its tasks: this initiative has two main aspects: first, preserving existing corridors and opening bottlenecks through master plans; second, planning and constructing new corridors at critical locations identified in advance, based on planning and development needs.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Updating statutory, regional, and comprehensive master plans in order to maintain connectivity and protect national ecological corridors	Planning Administration	Ministry of Environmental Protection, Israel Nature and Parks Authority	10-5	10-5
Planning and constructing ecological crossings at key locations in order to ensure ecological continuity	Ministry of Environmental Protection, Israel Nature and Parks Authority	Planning Administration, Israel Land Authority, Ministry of Transportation, Ministry of Housing and Construction	200	8
Resolving bottlenecks in critical ecological corridors	Ministry of Environmental Protection	Israel Nature and Parks Authority, Ministry of Agriculture, regional councils, drainage authorities	80	5

Barriers

- **Disputes over land use |** conflicts regarding land use priorities and competition for resources may delay restoration efforts, particularly in areas with conflicting interests.

Action characteristics

Total budget

Approximately NIS 310 million

Third goal | Conservation and Restoration of Natural Water Sources

Action | updating the national water management master plan

Background | climate change and population growth directly affect water resources due to changes in precipitation patterns, rising sea levels, and an increased frequency of extreme weather events. These changes present significant challenges in water management. By updating and improving the national water management master plan and adopting sustainable water use and management strategies, we can ensure that our water resources are managed efficiently.

Details of the action and its tasks | promoting desalination and technologies for improving water supply efficiency and saving water, including irrigation with treated wastewater, thus increasing the available water supply for the country and its citizens. Additionally, completing the connection of the entire country to a central water system. Furthermore, introducing water to replenish groundwater reserves or to improve groundwater quality and prevent the salinization of aquifers.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Increasing desalination capacity	Water Authority	Israel Land Authority, Accountant General	Over 1,000	10-5
Completing the connection of disconnected areas in Israel to the national water distribution system	Water Authority	Israel Land Authority	Over 1,000	10-2
Transferring treated wastewater to various consumption areas – improving the wastewater treatment system and the reclaimed water system (as part of the Water Authority's master plan and the government decision to stop the use of spring water for regular consumption)	Water Authority	Ministry of Agriculture, Ministry of Environmental Protection	Over 1,000	10

Barriers

- **Data availability |** accurate and up-to-date data on climate, hydrological conditions, and water demand are essential for efficient planning.
- **Budget |** government funding is required for investments in the water sector. Continuing the policy of no government investment ("closed water economy") could lead to higher water prices for agriculture, reduced agricultural production, increased prices for consumers, and the discharge of unused reclaimed water into streams and the sea.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Over NIS 3000 million

Action | Conservation and restoration of rivers and wetlands

Background | Rivers, streams, and wetlands play a vital role in ecosystems and water supply, offering both environmental benefits and cultural recreational value. However, the effects of climate change, such as altered precipitation patterns and rising temperatures, are changes in river flow patterns leading to degradation of rivers, the alteration of aquatic ecosystems, and a decline in water quality. Prioritizing the conservation and restoration of rivers can enhance their resilience to climate change, ensure sustainable water resources, and protect aquatic ecosystems.

Details of the action and its tasks | implementing the key aspects of the strategic plan for the conservation and restoration of Israel's rivers, while considering flood risk assessments, the flooding of developed areas, and river pollution. Additionally, promoting nature-based solutions for stabilizing riverbanks to prevent erosion. The Ministry of Agriculture, in coordination with relevant authorities, leads plans mentioned in the Built Environment and Infrastructure section, focusing on floods and inundations.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Releasing spring water into streams and increasing the budget for their reservoirs	Water Authority	Drainage authorities, Israel Nature and Parks Authority, Ministry of Agriculture, Ministry of Environmental Protection	Up to 50	5
Restoration of the streams' geomorphological structure	Ministry of Environmental Protection	Water Authority, drainage authorities, Israel Nature and Parks Authority, Ministry of Agriculture	250	10
Improving water quality in streams by preventing pollution and ensuring source water	Ministry of Environmental Protection	Water Authority, drainage authorities, Israel Nature and Parks Authority, Ministry of Agriculture	250	10
Preventing stream pollution	Ministry of Environmental Protection	Water Authority, drainage authorities, Israel Nature and Parks Authority, Ministry of Agriculture	500	10
Stopping the discharge of treated wastewater into streams and making it more worthwhile for agricultural use (in terms of price)	Water Authority	Ministry of Environmental Protection, Nature and Parks Authority, Ministry of Agriculture	500	10

Barriers

- **Disputes over land use |** conflicts regarding land use priorities and competition for resources may delay restoration efforts, particularly in areas with conflicting interests.
- **Awareness of the issue and the importance of reclaimed water |** not all relevant ministries are aware of the significance of using reclaimed water, especially the need to reduce its cost for agricultural purposes, even though it is being promoted as a matter of policy by the Ministry of Agriculture.

Action characteristics	Regulatory · Awareness and advocacy · Economy · Execution and implementation · Forming a plan · Establishing and developing knowledge infrastructure
Total budget	Approximately NIS 1,025 million

Seed collection for definition, Gene Bank

Action | Reducing pressure on natural water sources

Background | Climate change is altering precipitation patterns, evaporation rates, and water availability, placing increasing pressure on our natural water sources. Competing demands for water from agriculture, industry, households, and ecosystems further exacerbate this stress. By implementing strategies to reduce pressure on natural water sources, we can ensure sustainable water resources, improve the health of ecosystems, and safeguard water availability for future generations.

Tasks and procedures | promoting water-saving technologies and practices in agriculture, industry, and households in order to reduce overall consumption. For example: establishing water recycling systems, reusing wastewater from various sources (domestic and industrial), and encouraging rainwater collection in urban areas for non-potable uses.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Formulate a plan to preserve the Sea of Galilee as a strategic water reservoir by releasing the natural water sources upstream of the Sea of Galilee basin.	Water Authority	Israel Oceanographic and Limnological Research Institute (IOLR), Israel Nature and Parks Authority	Up to 250	5-2
Water infiltration – assimilation of runoff conservation principles	Water Authority	Ministry of Environmental Protection, Ministry of Health, Planning Administration, local authorities, Ministry of the Interior	Up to 50	Up to 5
Promoting technologies to optimize water supply, including treated wastewater – improving treatment and application methods	Water Authority	Ministry of Agriculture, Ministry of Environmental Protection	Over 1,000	10-5
Creating alternative water sources for agriculture (treated wastewater and desalination) and solutions that enable the functioning of ecosystems	Water Authority	Ministry of Environmental Protection, Ministry of Health, Planning Administration, local authorities, Ministry of the Interior	250-100	Up to 5

Barriers

- **Awareness of the issue and the importance of reclaimed water |** not all relevant ministries are aware of the significance of using reclaimed water, especially the need to reduce its cost for agricultural purposes, even though it is being promoted as a matter of policy by the Ministry of Agriculture.

Action characteristics

Total budget

Over NIS 1,375 million

Health and Welfare

Future vision: High-quality healthcare services that protect the public from morbidity and mortality risks resulting from climate change. Robust social services that strengthen social-climate resilience and provide support to individuals, families, and communities , with a particular focus on vulnerable populations. All of this aims to maintain social and health resilience for the residents of Israel.

Goals and actions in the health and welfare content domain |

Goals	**Protecting public health and preventing health disparities**	**Ensuring the welfare of vulnerable populations by reducing and preventing their susceptibility to climate change**
Actions	Establishing a monitoring system for illness and mortality resulting from climate change	Mapping the needs of populations vulnerable to climate change and developing tailored responses
	Formulating and implementing a national food security plan	
	Mapping the health impacts of climate change and adapting the healthcare system (infrastructure, operations, human resources, and public guidelines)	
	Training professional teams in climate change adaptation in the health and welfare sectors	

Actions prioritized by the secretariate

First Goal | Protecting Public Health and Preventing Health Disparities

Action | Establishing a monitoring system for illness and mortality resulting from climate change

Background | extreme weather conditions, such as heatwaves, floods, fires, and storms, can have severe impacts on public health and safety, leading to strain on the healthcare system and the risk of an increase in morbidity and mortality rates. Additionally, climate change is expected to significantly affect the distribution, prevalence, and transmission of diseases due to changing temperature and humidity patterns, shifts in ecosystems, and more. These chronic and extreme climate changes present numerous health impacts, including illness and death. Therefore, it is essential to enable the ability to monitor and track these effects, enabling timely interventions and necessary policy adjustments, during both routine and emergency situations, in order to mitigate negative impacts on the public. Furthermore, analyzing this data will contribute to research aimed at finding protective measures and understanding the relationship between climate and morbidity and mortality.

Tasks and procedures | establish a climate-related morbidity monitoring system, including real-time tracking of extreme weather events and alerts for disease outbreaks. Automated reports will be generated, detailing emergency room visits and reasons for hospitalization, particularly when there is suspicion that these are linked to specific climate conditions. The creation of a continuous and consistent data collection system regarding community deaths will utilize data from primary care clinics, the Ministry of the Interior, and other relevant bodies. The collected mortality data should include information on causes of death, with the possibility of multiple causes being specified. Upon gathering the data, it is recommended to analyze them and draw conclusions from two key perspectives: first, the epidemiological aspect, focusing on understanding the link between climate and morbidity; second, mapping vulnerabilities with an emphasis on populations especially sensitive to climate change.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Characterization and establishment of the monitoring system	Ministry of Health	Israel Meteorological Service, local authorities, Ministry of Welfare, Ministry of the Interior, Ministry of Environmental Protection, Ministry of Social Equality, health maintenance organizations (HMOs), Healthy Cities Networ	30	Up to 2
Collection of real-time mortality data and creation of a dashboard to make the information accessible at the regional/municipal level for decision-makers and the general public	Ministry of Health	Israel Meteorological Service, local authorities, Ministry of Welfare, Ministry of the Interior, Ministry of Environmental Protection, Ministry of Social Equality	10-5	Up to 2
Development of a data reporting protocol, real-time updates, and alerts	Ministry of Health	-	1	2
Promotion of local research to assess the health impacts of climate change, both in terms of epidemiological effects and impact on vulnerable populations	Ministry of Health	Israel Meteorological Service, Ministry of Welfare, Ministry of the Interior, Ministry of Environmental Protection, universities, and research institutes	10	3

Barriers

- **Technical infrastructure and consolidation of data |** development and maintenance of the technical infrastructure required for real-time data collection, analysis, and reporting require investment and unification of data from various relevant sources.
- **Safeguarding privacy and data security |** balancing the need for open access to data without revealing identifying details and personal health information.
- **Coordination between bodies |** translating real-time data and alerts into policy actions and effective responses requires coordination between health bodies, social services, local authorities, the meteorological service, and emergency services. Insufficient coordination may hinder policy implementation.
- **Classification of reasons for ER visits, hospitalizations, and deaths |** it is challenging to isolate the cause of illness or death in cases where potential worsening or death is known to be associated with exposure to climate change (e.g., a stroke-related death during a heatwave may not be classified as climate-related, assuming it could be proven the death would have occurred regardless).

Action characteristics

High prioritization by the secretariate

Total budget

Approximately NIS 51 million

Action | Formulating and implementing a national food security plan

Background | the climate crisis is expected to negatively impact the production capacity of agricultural lands in Israel and worldwide, leading to food price increases, growing competition between countries for food, and reduced exports from food-producing nations. Moreover, there is an increasing risk of simultaneous extreme events in multiple regions globally, resulting in acute food shortages ("breadbasket failure") and, in some cases, water contamination. In Israel, the rapid population growth rate, and the continuous rise in food consumption, coupled with the shrinking agricultural land available for food production, further exacerbate the issue. In order to ensure that the country's population has consistent access to safe, healthy, and nutritious food, it is essential to develop and implement a comprehensive national food security plan. The Ministry of Agriculture, at the request of the National Security Council (NSC), has begun formulating such a plan. The Ministry of Health's role is to serve as a professional guiding partner, ensuring that Israel's food and water reserves are healthy, nutritious, and of high quality, and that appropriate guidelines on the subject are communicated to the public (food security).

Tasks and procedures | formulating steps to promote and change consumption habits according to the Ministry of Health's dietary recommendations. The latter focus on a Mediterranean diet based on fresh fruits and vegetables, legumes, whole grains, fish, olive oil, and limited animal products. Additionally, developing alternative food sources (food tech), in line with health considerations, while ensuring the necessary resources for agriculture, primarily land (a statutory plan for protecting agricultural land – National Master Plan 35), water (for agriculture and drinking), advanced knowledge and technology, and skilled labor. Addressing the health implications of increasing the percentage of desalinated water. The goal of the national food security plan is to ensure a consistent and affordable supply of food over the long term, in sufficient quantity, quality, and variety to support a healthy lifestyle for the entire population, while promoting local agriculture and climate-adapted, sustainable food systems.

Photo by Roxanne Desgagnés on Unsplash

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Development of a national food security plan and publication of guidelines for the public (including an inter-ministerial public awareness campaign)	Ministry of Agriculture, Ministry of Health	National Security Council, Ministry of Economy, Ministry of Environmental Protection, National Food Security Initiative, Ministry of Education	Up to 50	Up to 2
Promoting research and supporting food tech and agri-tech	Ministry of Agriculture, Ministry of Health	Ministry of Innovation, Science, and Technology	100	Every year
Improving the nutritional quality and restoring essential minerals to food	Ministry of Health	Ministry of Agriculture, production councils, retailers, farmers	2	Every year
Ensuring the quality of drinking water, including restoring essential minerals to it	Ministry of Health	Ministry of Agriculture, Water Authority, Ministry of Environmental Protection	20	Every year
Encouraging the consumption of healthy, raw, and locally produced food in line with Ministry of Health recommendations	Ministry of Health	Tax Authority, Ministry of Finance, Ministry of Economy, Ministry of Agriculture, local authorities, Ministry of Education	10-5	Every year
Making healthy food accessible to vulnerable populations and encouraging its consumption	Ministry of Health, Ministry of Welfare and Social Security	Ministry of Agriculture, Ministry of Education	1,000	Every year

Barriers

- **Trends and economic forces |** trends like alternative proteins and the economic forces behind them can sometimes border on misleading the public. For example, alternative protein products may be highly processed foods that do not meet the Ministry of Health's recommendations.
- **Conflict of interest |** government ministries do not always prioritize public health interests but rather focus on economic development and growth drivers.
- **Identifying at-risk populations |** populations at risk due to mild illnesses or a lack of health literacy are not necessarily the same as those identified through welfare services. Unlike welfare-dependent populations, they are often not officially registered as such. Therefore, in order to provide them with accessible health guidelines (related to food and beyond), it is necessary to first identify them.

Action characteristics

High prioritization by the secretariate

Total budget

Approximately NIS 1,155 million

Action | Mapping the health impacts of climate change and adapting the healthcare system (infrastructure, operations, and public guidelines)

Background | climate change can significantly affect public health, both directly and indirectly, including heat-related illnesses, vector-borne diseases, respiratory issues, vascular problems, and mental health challenges. Mapping these health impacts during routine times and in climate emergencies, as well as assessing the healthcare system's ability to respond, are essential for developing effective adaptation strategies, improving healthcare infrastructure, and enhancing the ability of healthcare professionals to deal with climate-related health challenges.

Tasks and procedures | strengthening the adaptation of healthcare services for emergencies and routine situations related to climate change, including appropriate training, and integrating professional content on climate change into relevant academic curricula. Expanding the registration of chronic patients (for adaptation purposes, not for monitoring, which is covered in another action in the plan), mapping acute health impacts, assessing the resilience of healthcare services, and publishing appropriate public guidelines.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Monitoring the health impacts of climate change and promoting health research based on health and climate intelligence – on the healthcare system	Ministry of Health	Israel Meteorological Service, Ministry of Environmental Protection, Healthy Cities Network	10-5	Every year
Forming qualitative and quantitative assessments of the resilience of healthcare services	Ministry of Health	-	5	2
Mapping, identifying, and registering at-risk populations from the health standpoint based on disease or risk factors	Ministry of Health	Health maintenance organizations (HMOs), hospitals, professional medical associations	10	2
Strengthening the preparedness of healthcare services for emergencies and routine situations in line with the reference scenarios and emergency frameworks in the healthcare system	Ministry of Health	Hospitals, Magen David Adom (MDA), rescue forces	20	3-1
Publishing appropriate public guidelines based on risk management and monitoring of health impacts	Ministry of Health	Ministry of Education, Ministry of Environmental Protection, local authorities	5	Every year

Barriers

- **Data availability |** access to personal health data, climate forecasts and assessments, geographical information, and conclusions drawn from their integration is essential for conducting a comprehensive impact assessment and managing a data repository on the subject.
- **Behavioral change |** individuals and communities may be slow to adopt new public health methods and behaviors, particularly when the impacts of climate change and the associated risks may not be immediately evident in their daily lives.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Approximately NIS 70 million

Or Akiva, Shazar Complex before Restoration, Ministry of Construction and Housing

Action | Training professional teams in climate change adaptation in the health and welfare sectors

Background | the impacts of climate change have social, economic, health, and psychological consequences that can disproportionately affect vulnerable populations. Professional teams can play a significant role in addressing the needs of these populations and helping the broader public and communities adapt to changing conditions. Therefore, it is essential to provide these teams with professional training and equip them with relevant knowledge and skills to respond effectively.

Tasks and procedures | development of training programs for various professionals required to address climate-related fields, such as individual and community social workers, public health physicians, family doctors, pediatricians, and healthcare professionals. The training programs will focus on climate change and community adaptation and may begin during academic studies in each of these professions. The training will include disaster preparedness, mental health support, mapping vulnerable populations, community support, and fostering community-health-climate resilience.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Mapping the required knowledge and outlining relevant challenges for professionals, as well as the professional content that can address them	Ministry of Health	Council for Higher Education, academia, Ministry of Environmental Protection, Israeli Medical Association (IMA), and other professional associations	Without a designated budget	1
Designing the training programs based on professional and academic consultation, including planning the monitoring of their effectiveness.	Ministry of Health	Council for Higher Education, academia, Ministry of Environmental Protection, Israeli Medical Association (IMA), and other professional associations, representatives of hospitals and health maintenance organizations (HMOs)	0.5	1
Conducting the training programs, starting as a pilot and then implementing them on a broader scale	Ministry of Health	Council for Higher Education, academia, Ministry of Environmental Protection, Israeli Medical Association (IMA), and other professional associations, representatives of hospitals and health maintenance organizations (HMOs), Israel National Digital Agency	1	1.5
Defining a protocol for professional qualification and maintaining competence through ongoing training on the subject	Ministry of Health	Council for Higher Education, academia, Ministry of Environmental Protection, Israeli Medical Association (IMA), and other professional associations, representatives of hospitals and health maintenance organizations (HMOs), national digital infrastructure	1	5-3

Barriers

- **Training complexity |** these professionals must be well-versed in the health and welfare aspects of climate change, sensitive enough to communicate this effectively to vulnerable populations, and capable of providing support in relevant situations.
- **Time constraints |** professionals in these fields already face a heavy workload and have limited availability for additional training.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Approximately NIS 2.5 million

Summer sun, created by Freepik, AI

Second goal | Ensuring the Welfare of Vulnerable Populations by Reducing and Preventing their Susceptibility to Climate Change

Action | Mapping the needs of populations vulnerable to climate change and developing tailored responses

Background | vulnerable populations, including low-income individuals, the elderly, children, and people with disabilities, are disproportionately affected by climate change, impacting their health and well-being. These groups often have limited resources, reduced mobility, and greater sensitivity to health risks. Mapping their specific needs and developing adaptive responses will help ensure their safety, well-being, and resilience in the face of changing climate conditions.

Tasks and procedures | mapping the needs of vulnerable populations, existing responses, and gaps at the national level in areas such as housing, access to healthcare services, energy, transportation, water supply, food security, and social support systems; promoting social climate policies in these areas, including a national approach to addressing energy poverty. Additionally, developing a climate support package for vulnerable populations, adapting and creating individualized and community plans to support populations vulnerable to climate change, and promoting public awareness to improve personal and community adaptation. Setting standards within community frameworks and outside the community that cater to vulnerable populations and are adapted to climate change.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Identification and mapping of vulnerable populations (health, socio-economic, geographic, etc.)	Ministry of Welfare and Social Security	Ministry of Environmental Protection, Ministry of Health, Ministry of the Interior, Ministry of Social Equality, Ministry of Education, Ministry of Housing, Ministry of the Negev and the Galilee, local authorities, academia, civil society and third sector, National Insurance, Company for Community Centers	Up to 50	4-2
Identification and mapping of existing responses and gaps at the national and local levels			Up to 50	4-2
At the individual level – defining, developing, and implementing a climate adaptation package for vulnerable populations			Over 250	Up to 2
At the community level – developing and implementing plans to strengthen community resilience, including advocacy campaigns, and raising awareness of climate risks among target populations		Ministry of Health, Ministry of Education, Ministry of Social Equality, Federation of Local Authorities in Israel, civil society, third sector	Over 250	4-2
Climate-adapted planning for community frameworks and housing frameworks		Ministry of Health, Ministry of Education, Planning Administration, Ministry of Interior, Ministry of Construction and Housing, local authorities, the third sector (green organizations advising on environmental and energy efficiency)	Over 250	Over 4
Development and implementation of a national plan to address energy poverty		Ministry of Energy, National Insurance, Ministry of Infrastructure, Israel Electric Corporation, academia	Over 250	4-2

Barriers

- **Data collection (for identification and mapping) |** lack of access to accurate demographic data, issues of data confidentiality, and data sharing between ministries, along with vulnerability indices and qualitative insights from vulnerable communities, are necessary for comprehensive assessments.
- **Community participation |** ensuring meaningful participation of vulnerable communities in the assessment and adaptation planning process may require overcoming language barriers, cultural differences, etc.
- **Sensitivity and inclusivity |** it is essential to ensure that the responses are culturally, gender, and age-appropriate, in order to avoid unintended negative impacts.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Over NIS 1,050 million

* Action | Training professional teams in climate change adaptation in the health and welfare sectors

Detailed under the goal >> protecting public health and preventing health disparities

Desert field crops agriculture, Gideon Toperoff

Cross-cutting Initiatives

Future vision: Developing decision-support mechanisms for science- and knowledge-based decision-making at all levels, and providing the Israeli public with consolidated, reliable, and accessible information on climate and climate change adaptation.

Goals and actions in the cross-cutting content domain |

Goals	Building climate monitoring and forecasting capabilities	Developing data collection and processing systems	Providing access to climate information for the public sector, academia, and decision-makers at all levels	Making climate information accessible to the public
Actions			Establishing a climate adaptation portal	
	Strengthening and expanding short- and long-term climate scenario modeling and forecasting capabilities	Establishing a "data lake" for gathering climate change-related data	Integration of climate content in official training provided by the state	Development and integration of climate content in education and academia
	Monitoring changes in the region due to climate change	Establishing a climate data processing infrastructure to support decision-making	Establishing a scientific expert committee to assist government ministries and subsidiary units in climate change adaptation	Public awareness campaigns and outreach activity
	Encouraging academic and applied research on climate change adaptation and impacts			

Actions prioritized by the secretariate

First goal | Building Climate Monitoring and Forecasting Capabilities

Action | Strengthening and expanding short- and long-term climate scenario modeling and forecasting capabilities

Background | as the impacts of climate change intensify, accurate assessment and forecasting of climate data become essential for informed decision-making. A climate computation center shall serve as a coordinating hub that collects, updates, analyzes, and disseminates climate data, models, and complex forecasts. This presents a challenge, as Israel is located at the edge of the relevant area for the nearby modeling centers; hence, the accuracy of the models received for it is relatively low. However, this action is critical to providing the government, policymakers, researchers, and the public with the tools necessary to understand, plan for, and adapt to changing climate conditions.

Details of the action and its tasks | establishing a climate computing center within the Israel Meteorological Service (based on Government Decision 1791) – a high-performance supercomputer for running high-resolution climate models and simulations, and to serve as research infrastructure for studying and understanding the climate mechanisms in our region. Additionally, focused forecasting capabilities should be developed by the professional bodies in charge of the ongoing monitoring of climate phenomena. Finally, the processed information should be presented to the public and made accessible to academia.

Underwater, Jamal Ali

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Establishment and strengthening of the climate computing center	Israel Meteorological Service	Ministry of Environmental Protection; Ministry of Innovation, Science, and Technology; Ministry of Agriculture, Ministry of Energy, Ministry of Transportation, academia, the defense establishment, Water Authority	Up to 50	5
Development of capabilities for forecasting urban heat islands	Israel Meteorological Service	Israel Institute for Biological Research, Israel Space Agency, Survey of Israel, academia, the defense establishment, Forum of 15	Up to 10	Up to 2
Development of capabilities for forecasting floods (in urban areas)	Water Authority	Forum of 15, Federation of Local Authorities in Israel, Planning Administration, Ministry of Agriculture, and drainage authorities.	Up to 10	Up to 2
Development of capabilities for forecasting marine trends	Israel Oceanographic and Limnological Research	Israel Meteorological Service, academia, defense establishment	Up to 20	Up to 2
Development of capabilities for forecasting the potential and extent of fires	Israel Meteorological Service	Israel Fire and Rescue Authority, Jewish National Fund (KKL), Israel Space Agency, academia, the defense establishment	Up to 10	Up to 2
Development of capabilities for forecasting additional meteorological phenomena (fog, dust storms, etc.)	Israel Meteorological Service	Academia, defense establishment	Up to 10	Over 4
Development of complementary, focused, and supportive academic research in order to understand climate mechanisms and trends, and improve model calibration and forecasting accuracy (as well as training relevant personnel)	Ministry of Innovation, Science, and Technology	Ministry of Environmental Protection	30	5

Barriers

- **Human capital resources |** the initiative relies on significant investment in professional personnel (both existing and additional personnel that need to be recruited and trained).
- **Data integration |** integrating data from sources with different formats and resolutions requires careful data management methods.

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

High prioritization by the secretariate

Total budget

Approximately NIS 85 million

Underwater, Jamal Ali

Action | Monitoring changes in the region due to climate change

Background | accurate and reliable climate data form the foundation for understanding climate change trends and making informed decisions for appropriate adaptation. A network of climate reference stations serves as a resource for collecting high-quality data on temperature, precipitation, humidity, wind patterns, and other climate variables. This data is essential for assessing the impacts of climate change, developing adaptation plans, and tracking long-term trends.

Details of the initiative and tasks | establishing monitoring systems for key climate phenomena through a network of climate reference stations and specific monitoring systems in hydrological and marine domains.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Establishing a network of climate reference stations	Israel Meteorological Service	Jewish National Fund, Israel Nature and Parks Authority	Up to 10	Over 4
Establishing a hydrological monitoring system and a network of hydrometric stations in small basins	Water Authority	Ministry of Agriculture – Soil Conservation Department, academia	Up to 10	Over 4
Developing a monitoring system for sea level and storms	Survey of Israel, Israel Oceanographic and Limnological Research	Israel Meteorological Service, academia	Up to 10	Over 4

Barriers

- **Site selection |** identifying suitable and accessible monitoring locations that accurately represent different climate zones can be challenging, along with the difficulty in finding appropriate and feasible points from a spatial standpoint, due to planning constraints.

Action characteristics

Total budget

Approximately NIS 15 million

Action | Encouraging academic and applied research on climate change adaptation and impacts

Background | in order to develop effective strategies for climate change adaptation, it is essential to rely on accurate and up-to-date information regarding the potential impacts of climate change, both domestically and globally. Both academic and applied research provide the necessary foundation for evidence-based decision-making and the development of informed policy. By promoting research on climate change adaptation and impacts, we can better understand Israel's vulnerabilities, identify areas of priority for action, and ensure that adaptation efforts are targeted and effective.

Tasks and procedures | promoting research to expand knowledge about climate impacts in various fields through calls for proposals, grants, research budgets, international collaboration, capacity building, and more.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Incentivizing multidisciplinary academic research on the impacts of the climate crisis and adaptation methods, including promotion of international collaboration	Ministry of Environmental Protection	Ministry of Innovation, Science and Technology; Ministry of Energy, Ministry of Agriculture, Ministry of Health, Ministry of Welfare and Social Services	100	5
Mapping knowledge gaps in the field and incentivizing actions to bridge them	Ministry of Environmental Protection	Academia, private sector	Up to 50	5 (establishment) and thereafter annually

Barriers

- **Multidisciplinary collaboration |** climate change is a complex issue that requires cooperation across various disciplines. Encouraging interdisciplinary research can address communication challenges and integration of diverse expertise, though it is less common in academia and difficult to advance.

Action characteristics

Total budget

Approximately NIS 125 million

Second goal | Developing Data Collection and Processing Systems

Action | Initiative: establishing a "data lake" for gathering climate-related data

Background | for the computational processing of climate models and projections, vulnerability assessments, and the preparation of adaptation plans at the local government level and in other ministries (such as the Ministry of Health) require integrative data from diverse sources, including geographic/spatial information layers (GIS-based). Current workflows largely rely on drawing data from various sources, in which the gathered data is often outdated, difficult to access, and sometimes contradictory. Over time, managing the response to the climate crisis will be exceedingly difficult without accessible, unified, reliable, and standardized information that can be easily and quickly shared across organizations and made available to residents.

Tasks and procedures | a data lake or retrieval system needs to be established that can locate the required data for climate computations at any moment. This information system will include data from various sources, data standardization, processing, and dissemination.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Analysis of the current state and proposal for a technical solution	Israel National Digital Agency	Survey of Israel, all government ministries, Forum of 15, Federation of Local Authorities	Up to 50	2
Developing data architecture and initial implementation on selected data sources	Israel National Digital Agency	-	Up to 50	4-2
Developing the data lake information system	Israel National Digital Agency	Central Bureau of Statistics	Up to 50	4

Barriers

- **Data inconsistency |** lack of uniformity in data structure, data taxonomy, and even in the data itself. For example, discrepancies in the calculation of agricultural areas between the Ministry of Agriculture and the Central Bureau of Statistics.

Action characteristics

Total budget

Approximately NIS 75 million

Action | Establishing a climate data processing infrastructure to support decision-making

Background | effectively managing the climate crisis requires comprehensive data control and the ability to derive broad insights. Thus, a data repository (as part of the data lake) is needed in order to consolidate relevant information based on cross-referencing, processing, and analysis of available climate data. The data processing infrastructure is designed to meet this need, supporting data processing workflows for decision-making at all levels.

Tasks and procedures | this action involves establishing a technological infrastructure that enables efficient and rapid data processing, generating insights that will help translate climate information into actionable knowledge accessible to decision-makers.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Mapping and cross-referencing knowledge sources	Ministry of Environmental Protection, Israel National Digital Agency	Israel National Digital Agency, computational center, various government ministries, academia, private sector	10	1
Characterizing exposure, sensitivity, and adaptive capacity indicators as a foundation for building vulnerability models	Ministry of Environmental Protection	National Academy of Sciences, Israel Society of Ecology and Environmental Sciences, Public Knowledge Workshop, relevant government ministries, computational center, Forum 15, Federation of Local Authorities	Up to 5	3 (establishment) and thereafter annually
Implementing the use of model results	Ministry of Environmental Protection	All local authorities and government ministries	5	Every year

Barriers

- **Technical infrastructure |** developing and maintaining the technical infrastructure necessary for data processing requires investment.
- **Information and knowledge operations |** ensuring that such a broad scope of information is accurate, current, and relevant for various stakeholders demands ongoing efforts and expertise in curating, validating, and updating the data.

Action characteristics

High prioritization by the secretariate

Total budget

Approximately NIS 17.5 million

* Action | Encouraging academic and applied research on climate change adaptation and impacts

Detailed under the goal >> building climate monitoring and forecasting capabilities

Restoration of Fishponds near Naaman Stream, Assaf Tzoar

Third Goal | Providing Access to Climate Information for the Public sector, Academia, and Decision-makers at all Levels

Action | Establishing a climate adaptation portal

Background | climate change poses a significant challenge that requires collective action and comprehensive, informed decision-making across all levels. Accurate, up-to-date climate information accessible to the public, government, and local authorities is essential for understanding the impacts of climate change, making informed decisions when shaping adaptation strategies, and monitoring the implementation of actions. Therefore, establishing a climate knowledge center is necessary; it will serve as a hub for the collection, processing, dissemination, and exchange of climate-related information, fostering awareness and enabling effective responses to climate change.

Tasks and procedures | creating an integrative environment designed to support the development and monitoring of adaptation plans. The portal will make accessible the knowledge and insights generated by the data processing center, including a decision-support tool based on scientific knowledge, for decision-makers and the public. The portal will display geographic data on exposure, vulnerability, adaptive capacity, and vulnerability of different systems to climate risks. Additionally, as part of establishing the portal, a system will be set up to consolidate local authorities' adaptation plans, enabling goal setting and steps to achieve them, progress reporting, periodic comparisons, cross-authority learning, and work plans for targeted projects, such as urban forestry, among others. It will also include an encyclopedic information management system containing relevant government decisions, funding sources, articles, videos, etc. For example, the system will provide information on concepts like "green roofs" (including economic aspects and actionable insights); a national climate dashboard will offer an integrated status overview, including mitigation and adaptation indicators at both national and municipal levels. The portal is currently undergoing initial setup and pilot testing.

Olives in the snow, Hemed Harav

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Establishment of a climate risk portal	Ministry of Environmental Protection	Israel National Digital Agency, Survey of Israel, Ministry of Defense, Ministry of Health, Ministry of Welfare and Social Services, Ministry of Agriculture, National Academy of Sciences, Forum 15, Federation of Local Authorities	Up to 50	3 years for establishment, followed by annual maintenance
Development of a system for consolidating local authorities' adaptation plans	Ministry of Environmental Protection	Ministry of the Interior, Israel National Digital Agency, Forum 15, local authorities	5	
Development of a system for managing encyclopedic information	Ministry of Environmental Protection	Israel National Digital Agency	5	2
Creation of a national climate dashboard	Ministry of Environmental Protection	Israel Meteorological Service, Survey of Israel, Israel National Digital Agency, Home Front Command, National Security Council, local authorities	5	2

Barriers

- **Availability of reliable and high-quality information: this action depends on the two previous ones |** the establishment of a data lake as well as a climate data processing infrastructure. Therefore, the challenges facing those actions are relevant here too.
- **Technical infrastructure |** developing and maintaining the technical infrastructure needed to create an integrative environment and present information in a useful and practical way requires investment.

Action characteristics

Total budget

Approximately NIS 40 million

Action | Integrating climate content into official state training programs and forming a supportive organizational structure

Background | adaptation to climate change is a collective effort that requires knowledge and engagement across the public sector workforce and stakeholders. In order to effectively address the challenges posed by climate change, it is essential to design a supportive organizational structure for climate-related matters to facilitate the implementation of this field across various ministries and build capacity and awareness at all senior levels of government, especially within future leadership across different echelons. Integrating climate content into official state training programs is crucial in order to ensure that decision-makers, public employees, and staff possess the knowledge and skills needed to understand, anticipate, and respond to the impacts of climate change. This action, alongside the proposed training program for professional teams in the Health and Welfare chapter, will complete the training structure across the entire public sector.

Tasks and procedures | integrating climate change topics into government training and making it accessible to relevant officers. As part of this integration, it is necessary to develop tailored curricula aligned with the country's climate objectives, covering areas such as climate science, vulnerability assessments, risk management, and sustainable practices. Additionally, the training should be customized to the participants' current and future roles.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Preparation and implementation of a plan for a supportive organizational structure and training within relevant government ministries	Civil Service Commission	Ministry of Labor, Ministry of Environmental Protection, Ministry of Education, National Academy of Sciences	Up to 50	2

Barriers

- **Low prioritization |** concern that the topic may receive lower prioritization compared to routine matters and other training needs.

Action characteristics

Total budget

Approximately NIS 25 million

Action | Establishing a scientific expert committee to assist government ministries and subsidiary units in climate change adaptation

Background | climate change poses a significant challenge that requires comprehensive, well-informed decision-making. Its impacts span across multiple sectors, demanding expertise in various disciplines. As the effects of climate change unfold, it is crucial that governments have access to accurate, up-to-date, and relevant scientific information. Establishing a scientific expert committee can help facilitate access to knowledge and recommendations for government ministries and subsidiary units, enabling them to develop effective strategies for climate change adaptation.

Tasks and procedures | the establishment of an inter-ministerial scientific expert committee, advising on climate-related issues in accordance with the draft Climate Bill currently under legislation. The committee's primary objectives include assessing climate vulnerability across sectors, regions, and communities, and providing data-driven recommendations for strategies, policy, and various adaptation actions based on the committee's expertise.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Identifying relevant experts, securing approvals, and issuing letters of appointment	Ministry of Environmental Protection; Ministry of Innovation, Science, and Technology; National Academy of Sciences	Relevant government ministries, climate change adaptation secretariate	5	1

Barriers

- **Interdisciplinary coordination |** bringing together experts from diverse fields requires effective coordination to ensure their knowledge is seamlessly integrated into their recommendations.

Action characteristics

Total budget

Approximately NIS 5 million

* Action | Encouraging academic and applied research on climate change adaptation and impacts

Detailed under the goal >> building climate monitoring and forecasting capabilities

Fourth Goal | Making Climate Information Accessible to the Public

Action | Development and integration of climate content in education and academia

Background | education plays a key role in shaping society's understanding, attitudes, and responses to critical challenges such as climate change. Integrating climate content into educational curricula and academic programs is essential to provide future generations with the knowledge, skills, and values needed to address climate change impacts and contribute to sustainable development. This action supports the cultivation of a society capable of making informed decisions and actively participating in climate adaptation efforts. Unlike similar past initiatives aimed at professional teams, this action is relevant across all study tracks and disciplines offered in schools, universities, and colleges in Israel.

Tasks and procedures | engaging the Council for Higher Education in order to incorporate mandatory climate-related courses in academic programs and integrate these courses into existing curricula for undergraduate and advanced degrees, as well as for professionals whose fields of work intersect with the impacts of climate change. Additionally, developing a multi-annual climate change education program for Israeli students, titled "Climate for Every Child".

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Establishing a partnership with the Council for Higher Education in order to integrate mandatory climate courses in academia and assimilate climate studies into existing curricula across all fields of study.	Council for Higher Education	Ministry of Environmental Protection	20	2
"Climate for Every Child" program	Ministry of Education	Ministry of Environmental Protection	5	1

Barriers

- **Resistance to change |** traditional training programs may resist the integration of new climate-focused modules, due to concerns about increased workload, perceived irrelevance, or lack of familiarity with the topic.

Action characteristics

Total budget

Approximately NIS 25 million

Action | Public awareness campaigns and outreach activity

Background | public awareness and engagement are critical components of adapting to climate change. Raising awareness about the impacts of climate change, the importance of adaptation, and individual or collective actions that can be taken leads to more sustainable behavior. This empowers communities, individuals, and stakeholders, encouraging them to contribute to overall and personal climate resilience. Public support can drive policy changes, promote sustainable behavior, and facilitate collaboration across various sectors.

Tasks and procedures | develop a comprehensive strategy to carry out campaigns and activities that raise public awareness. This includes creating targeted campaigns on climate change impacts, adaptation strategies, and potential actions through various communication channels.

Task	Lead entity	Partners	Budget (NIS million)	Implementation timeframe (years)
Preparation and dissemination of campaign materials and informational content.	Ministry of Environmental Protection	Ministry of Health, Ministry of Education, Ministry of the Interior, academia, Government Advertising Bureau	20	Every year

Action characteristics

Regulatory | Awareness and advocacy | Economy | Execution and implementation | Forming a plan | Establishing and developing knowledge infrastructure

Total budget

Approximately NIS 20 million

Housing and air conditioners in Beit She'an, Amiel Vasl

* Action | Encouraging academic and applied research on climate change adaptation and impacts

Detailed under the goal >> building climate monitoring and forecasting capabilities.

* Action | Establishing a climate adaptation portal

Detailed information provided under the goal >> making climate information accessible to the public sector.

Firefighting, Israeli Air Force

Summary and Next Steps

The National Adaptation Plan for Climate Change, developed in part based on the relevant ministerial plans, presents a comprehensive approach covering five main content domains and a cross-cutting theme. The plan's actions are designed to address the urgent challenges posed by climate change within these domains.

As stated, this plan constitutes an initial mapping of potential actions for implementation. Following its publication, a comprehensive risk management process shall be conducted, serving as a preliminary stage for future adaptation plans.

Additionally, a methodology for conducting a cost-benefit assessment of the plan will be developed, based on risk management. Using this methodology, the plan's key actions will be evaluated by the secretariate, with the entire process expected to take about three years. As a result, it will be possible to allocate a budget for the plan based on the total cost of its initiatives and to assign dedicated personnel to climate adaptation matters in government ministries with significant activity in this area, enabling them to advance the topic in a focused manner.

Finally, it is recommended that the plans of government ministries and local authorities be aligned with the national plan's actions and work towards their implementation. In this context, it is recommended to consider the actions prioritized highly by the management, as well as to pay attention to the guiding principles accompanying the plan from its vision through to its final actions.

It should be noted that this plan is being advanced under Government Resolution 4079. Furthermore, the Climate Bill, currently in progress, will provide a mandatory framework for the preparation and tracking of both the national and ministerial adaptation plans, alongside mitigation efforts and additional climate-related activity.

Shade of Trees in Petah Tikva, Municipality of Petah Tikva

Appendices

Appendix 1 | International Research

As part of the formation of the national plan, an international review was conducted, examining climate adaptation efforts in three countries: the Netherlands, Britain, and New Zealand. These plans were evaluated in terms of both their content and structural approach, with these two parameters forming the conceptual foundation for Israel's climate adaptation plan.

Netherlands link to plan

Date of publication

2016

Plan years

Not known

Risk management-based

Yes

Are there ministerial/ sectoral plans as well?

No

Does the plan address budgeting aspects?

No

Goals

Six main goals. The Netherlands' national adaptation plan maps out the primary impacts and prioritizes addressing the six most urgent and impactful consequences.

Plan structure

Based on main impacts

1. Background

Relating to climate change in the Netherlands and the processes undertaken in this regard

2. Trends

(Warmer, wetter, drier, and sea level rise) with detailed implications and attribution of each impact to relevant sectors: water, nature, agriculture, health, tourism and recreation, infrastructure, energy, communications, security, and safety.

3. Risk management

Prioritizing six impacts that require immediate adaptation actions based on criteria of impact and urgency [6].

Identifying additional impacts that may worsen over time, where urgent action is needed due to their significant impact.

4. Goals (six)

5. Key actions for addressing urgent impacts

6. Implementation plan (developed separately)

[6] Impact and urgency of response: Likelihood of the impact occurring (in the coming decade/century); degree of uncertainty, and the impact's effect on the economy, people, nature, and the environment.

List of impacts and key goals in the Dutch plan

Impacts requiring immediate action in the Dutch plan

1. Heat waves leading to higher morbidity, hospitalizations, and mortality in hospitals, along with decreased productivity
2. More frequent malfunctions in critical systems: infrastructure, energy, communication, and transportation
3. More frequent crop failures and additional issues in the agricultural sector
4. Shifts in migration patterns for species (both animal and plant) due to changes in climate zones, coupled with a lack of coordinated international policy
5. Rising rates of infectious and allergic diseases
6. Cumulative effects—impacts in one sector leading to failures and issues in another

Goals of the national strategy in the Netherlands

1. Raising awareness of the need for climate crisis adaptation
2. Encouraging and implementing climate adaptation measures
3. Establishing and developing a knowledge infrastructure
4. Addressing urgent climate risks
5. Adjusting policy and legislation
6. Monitoring and reviewing the plan

Selected examples of key actions (associated with impacts)

- Development and promotion of local plans for addressing heat and urban heat management
- Adapting insurance products to meet farmers' needs
- Assessing vulnerabilities in transportation infrastructure

Alongside the strategic adaptation plan for climate change, a separate low-resolution implementation plan was developed in the Netherlands.

The Dutch implementation plan is general, setting aspirations but not detailing the methods for executing actions by the various government ministries and state authorities.

Britain (link to plan)

Date of publication

2018 (Second plan published)

Plan years

5 years

Risk management-based

Yes

Are there ministerial/ sectoral plans as well?

Partial and not legally anchored

Does the plan address budgeting aspects?

No

Goals

67 risk- and sector-oriented goals

Plan structure

The national adaptation plan in Britain is carried out every five years, spanning five sectors, with the plan's goals presented across these sectors rather than being defined for the plan as a whole.

1. **Background** Relating to climate change in Britain and the processes undertaken in this regard
2. **Detailed outline by sector:** Natural environment and natural assets, infrastructure, people and the built environment, businesses and industry, and local authorities. Each sector is outlined as follows:
    1. Vision
    2. Key risks[7]
    3. Objectives, processes, plans, and past and future actions (structure varies by chapter)[8]
3. **Strategy for implementation and reporting on status of adaptation** for climate change
4. **Implementation plan (action log):** Goal, risks, topic, action, timing, monitoring method (if any), and authority in charge

[7] For each sector, several risks were defined as part of the risk assessment process, with the primary risks summarized and highlighted as part of the adaptation plan.

[8] Within each sector, there is a description of ongoing or planned plans and processes underway, whereas the specific actions are listed in the action log at the end of the plan. Some actions may appear in the chapter without being included in the action log, and vice versa.

Example | Infrastructure sector structure

1. Vision

"A resilient infrastructure network prepared for current natural disasters and future climate change"

2. Key risks

- Infrastructure damage from river flooding, rising groundwater, coastal erosion, and inundation.
- Damage to infrastructure from high winds, lightning, storms, and large waves.
- Transportation network impacts due to failure of dams and bridges.
- Multi-system failures resulting from the collapse of interconnected infrastructures.

3. Selected examples of actions from the chapter

- Conducting regular stability checks on mountain slopes in cases of landslides, erosion, and more.
- Exploring the use of new technologies, such as monitoring cameras on key bridges for real-time river level tracking.
- Flood risk assessments conducted by airports with over 5 million passengers annually, as part of their annual resilience planning.

Selected examples of goals throughout the chapter

- Enhancing the resilience of transportation infrastructure to all types of flooding.
- Increasing the resilience of the transportation network by implementing measures to reduce failure of embankments and slopes caused by heavy rainfall.
- Improving coordination among local infrastructure operators in order to better understand critical risks arising from interdependencies.

Review of the goals in the British plan

The goals can be categorized into five key areas:

Risk reduction through nature-based solutions

Example: Enhancing natural river processes in order to improve water storage capacity

Consideration of future planning or policy

Example: Integrating adaptation into future forest policy

Increasing climate resilience[9]

Example: Enhancing the long-term resilience of homes, businesses, and infrastructure

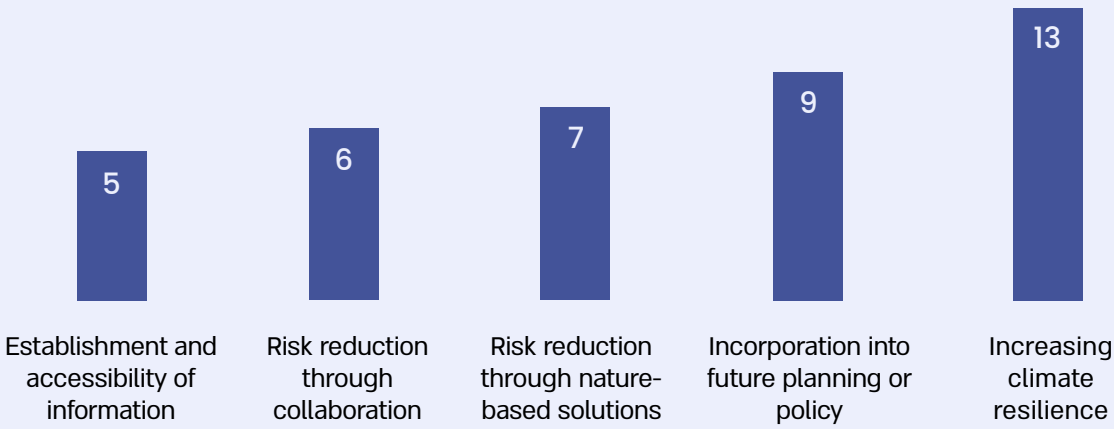
Establishing and making information accessible

Example: Creating a national database of critical bridges essential for vital services

Risk reduction through collaboration

Example: Improving coordination among local infrastructure operators in order to formulate the critical risks arising from interdependencies.

Breakdown of the frequency of topics in the British plan |



[9] Goals in which the term 'climate resilience' is mentioned without being able to fit them into the other four categories

New Zealand (link to plan)

Date of publication
2002

Plan years
6 years

Risk management-based
Yes

Are there ministerial/ sectoral plans as well?
No

Does the plan address budgeting aspects?
No

Goals
4 cross-cutting goals

5 sectoral goals

Plan structure
The New Zealand adaptation plan is divided into cross-cutting and sector-specific chapters, with goals defined for each chapter. In addition to these goals, the plan outlines 10 guiding principles to support its implementation.

Based on 4 cross-cutting priorities and approximately 5 sectors:

Background on climate change in New Zealand and presentation of key elements from the national plan

Priorities of New Zealand's plan

- Encouraging validated, risk-based decision-making
- Future planning and investment to enable climate resilience
- Developing climate resilience by implementing diverse adaptation options
- Integrating climate resilience in governmental strategies and policies across five key sectors:
  - Economy and financial system
  - Communities
  - Infrastructure
  - Homes, buildings, and places
  - Natural environment

Structure of sectors:

1. An expanded explanation of the topic and the importance of taking action
2. Significant risks
3. Goals
4. Actions

List of impacts and primary goals in the New Zealand plan

- Monitoring and reviewing the plan
- Addressing urgent climate risks
- Encouraging and implementing climate adaptation measures
- Adjusting policy and legislation
- Establishing and developing knowledge infrastructure
- Raising awareness of the need for climate crisis adaptation

Goals of New Zealand's adaptation plan

- Formulating legislation and appropriate institutional arrangements that define clear roles and responsibilities
- Providing reliable information on climate risks and possible solutions
- Strengthening adaptation capacity through tools, training, and methodologies
- Investing in creating climate resilience
- Identifying risks and opportunities for action by various sectors, businesses, and local economies
- Strengthening the financial system as a foundation for stability and growth
- Reducing the vulnerability of assets exposed to climate change
- Ensuring all new infrastructure is climate-adapted
- Renewing plans to improve adaptive capacity
- Ensuring community adaptability to climate change
- Supporting vulnerable individuals and communities
- Supporting communities in times of disruption or transition
- Enhancing the health sector to be equipped to support climate-affected vulnerable communities
- Strengthening homes and buildings to withstand climate impacts, while addressing social and cultural needs
- Urban planning aimed at minimizing risks to local communities
- Minimizing threats to sites of cultural heritage
- Establishing healthy, interconnected ecosystems that foster thriving biodiversity
- Ensuring a resilient biological system to reduce the spread of pests and new diseases
- Utilizing nature-based solutions to enhance climate resilience

Proposed Structure in **Israel**

Insights from both the content and structure of international plans have influenced the design of Israel's climate change adaptation plan.

In terms of content, the surveyed countries focus on similar issues within their climate adaptation plans, which include:

In terms of structure, a hybrid approach combining elements from the reviewed plans is proposed for the Israeli context:

Netherlands

The Dutch program addresses six cross-sectoral goals for the entire program

New Zealand

The New Zealand plan combines the two approaches and includes 4 trans-sectorial goals and another (approximately) 15 sectorial goals

Britain

The British plan includes goals by sectors and risks, totaling approximately 67 objectives

Israel

Israel adopts the structure of New Zealand's adaptation plan, incorporating the advantages of both different approaches. The plan defines five content domains ("sectors" in international terminology) along with a series of cross-sectoral goals and actions. All of this is accompanied by guiding principles, from its vision to the implementation of the final actions.

Appendix

Appendix 2 | SSP

SSP Scenarios – Shared Socioeconomic Pathways – are climate change scenarios that provide narratives describing alternative socioeconomic developments up to the year 2100 (see Figure 1). They are used to outline different greenhouse gas emission scenarios under varying climate policies. The term SSP first appeared in the IPCC's Sixth Assessment Report on climate change in 2021, replacing the previously used term RCP.

The IPCC has defined five SSP scenarios:

Scenario 1: SSP1-1.9 – Very Low Greenhouse Gas Emission Scenario

Scenario 2: SSP1-2.6 – Low Greenhouse Gas Emission Scenario

Scenario 3: SSP2-4.5 – Medium Greenhouse Gas Emission Scenario

Scenario 4: SSP3-7.0 – High Greenhouse Gas Emission Scenario

Scenario 5: SSP5-8.5 – Very High Greenhouse Gas Emission Scenario

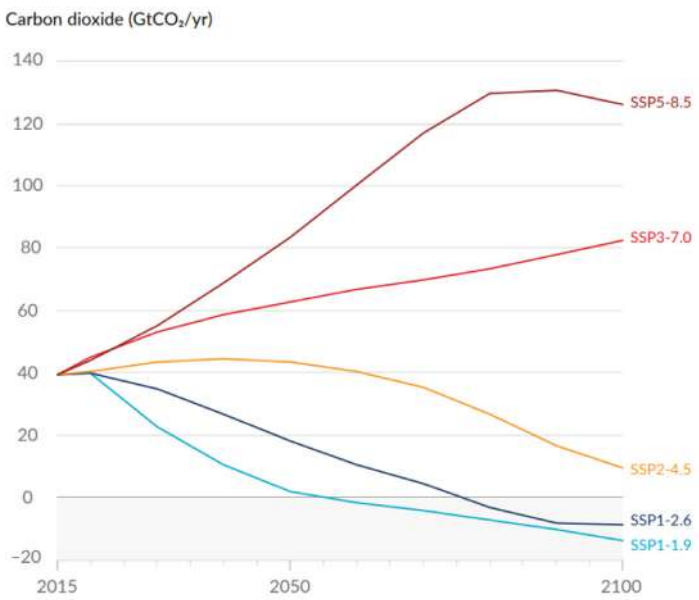


Figure 1 | Future annual CO^2 emission levels in the five SSP scenarios

Source: IPCC, 2021 : Summary for Policymakers in Climate Change 2021 : The Physical Science Basis

Appendix

Appendix 3 | Impacts

This list of impacts is not exhaustive and is mapped from the 2021 Climate Change Adaptation Report and the baseline scenarios of the Meteorological Service.

Additionally, the criticality of these impacts and their relevance to some of these consequences can be observed in the ranking within the heat map developed by the Strategy Committee of the Climate Change Adaptation Secretariate (to learn more on the committee's work click [here].

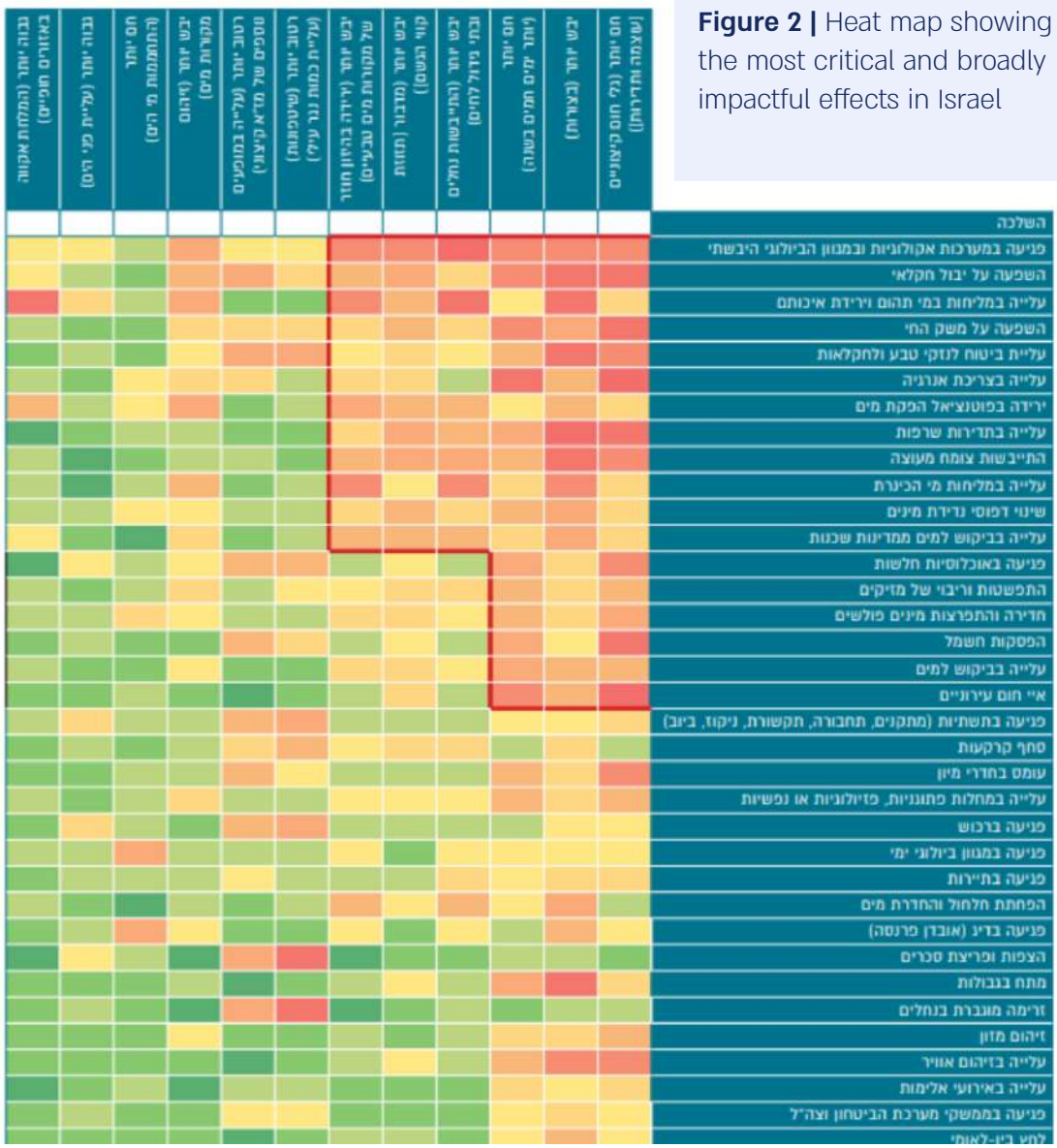


Figure 2 | Heat map showing the most critical and broadly impactful effects in Israel

Source: Report by the Climate Change Adaptation secretariate , April 2021, p. 43

List of **Impacts |**

- Landslides
- Fires caused by lightning strikes
- Accelerated rate of species extinction
- Increased flooding and surface runoff
- Emergence of invasive species, disappearance of native species, and altered life cycle timing of various organisms
- Salinization of groundwater
- Reduced infiltration and groundwater recharge
- Spread of foodborne and waterborne infectious diseases
- Increased energy demand for desalination
- Increased evaporation from surface water reservoirs
- Accumulation of urban heat
- Buildup of sediment on city streets and transportation routes
- Building flooding
- Dam overflow and breaches
- Disruption of domestic airport operations
- Impact on livestock production
- Rising political instability due to climate change
- Emergence of conflicts or formation of cooperation regarding resources (such as water)
- Desiccation of woody vegetation
- Dehydration, heatstroke, and even fatalities
- Food contamination
- Increased river flow
- Blocked pathways
- Decline in water quality
- Decrease in fish stocks
- Reduced potential for water production
- International pressure
- Increased pressure on freshwater resources
- Large numbers of homeless people evacuated from their homes
- Damaged and stranded vehicles
- Climate migrants and refugees
- Tension at borders
- Disconnection of settlements from access routes to them
- Cliff erosion
- Soil erosion
- Overcrowding in emergency rooms
- Energy poverty impacting vulnerable populations; rise in violent incidents
- Delays in international flight schedules
- Rising insurance costs for natural disasters and agriculture
- Increased demand for water
- Increased demand for water from neighboring countries
- Increased demand for electricity
- Increase in air pollution
- Increase in agricultural pests
- Rise in endemic diseases
- Increase in pathogenic, physiological, or mental illnesses
- Increased salinity in Lake Kinneret
- Higher frequency of wildfires
- Damage to commercial and industrial zones
- Damage to heritage sites and coastal structures

- Threats to food security
- Impact on fishing (loss of livelihood)
- Damage to marine biodiversity
- Disruption to security establishment and IDF operations
- Impact on terrestrial ecosystems and biodiversity
- Threats to life and property
- Negative effects on tourism and leisure activities
- Decrease in crop yield and quality
- Damage to infrastructure (facilities, transportation, communication, drainage, and sewage)
- Injury and death due to extreme weather events
- Injuries from building collapses, fallen trees, and falling objects
- Roof collapses
- Collapse of greenhouses
- Falling trees
- Power line breaks
- Disruptions in energy supply
- Traffic disruptions
- River flooding sweeping away individuals
- Changes in the composition of wildlife and vegetation dependent on water sources
- Shifts in the geographic distribution of vector-borne diseases
- Changes in migration patterns of species
- Changes in livestock productivity
- Traffic accidents
- Illness and mortality due to heat waves and floods
- Competition for water resources for human needs at the expense of nature

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Ministry of Health | Isabella Karakis
Ministry of National Security | Shai Amram
Ministry of Agriculture | David Asaf
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