



State of Israel  
State Comptroller and Ombudsman  
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Ministry of Transport and  
Road Safety

# **The Israel Meteorological Service**

Abstract



## Ministry of Transport and Road Safety

# The Israel Meteorological Service

### Background

The Israel Meteorological Service (IMS) is an auxiliary unit in the Ministry of Transportation and Road Safety. The IMS is responsible for: providing weather forecasting services and warnings of anomalous weather phenomena; providing forecasts and warnings for various sectors of the economy; conducting meteorological observations to compile a national climate data bank; establishing, operating, and maintaining a basic meteorological database; conducting applied meteorological research for government ministries and the public sector; and is responsible for international activities in the field of meteorology.

### Key figures

**NIS 30.5 million**

annual average IMS budget in 2017-2019

**400**

volunteers who measure rainfall around the country

**82**

meteorological measuring stations where devices are installed to measure rainfall, temperature, wind, humidity and more


**71 employees**

the IMS has three professional divisions: the operational meteorological division, the technological infrastructure division, and the research division

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## Scope

-  From August 2018 to March 2019, the State Comptroller's Office examined IMS activities. The examinations were conducted at the IMS offices in Beit Dagan. Supplemental examinations on regulatory legislation and purchasing were conducted at the Ministry of Transportation, and on meteorological measurements - at the Ministry of Agriculture and Rural Development.

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## Key Findings

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-  **The status of the IMS and its fields of responsibility:** The meteorological sector operates without overall legal regulation defining the state entity responsible for the field, the services the IMS should provide, and if those services can be opened up for competition. Furthermore, the law does not define the authority responsible for publishing alerts and warnings for anomalous and dangerous weather events.
  -  In 2017, the IMS worked with the Civil Aviation Authority to map the differences between the directives of Appendix 3 to the Chicago Convention and Israeli law, and found that **112 standards and recommendations are not regulated by Israeli law**. As of the completion of the audit, legislative procedures to close these gaps had yet to be advanced.
  -  **Network of measuring stations:** The distribution of stations, some dating back to the British Mandate era, occurred without planning and without an overall vision of needs. At the same time, other government and public entities set up meteorological stations for their own needs, sometimes adjacent to IMS stations. IMS stations are mostly located on public lands, while a minority are on private land. The land rights of most of the stations have yet to be regulated.
  -  **Cloud radar** is used to provide early warning of strong rain showers and other rare phenomena, enabling local preparation for expected weather hazards. The proper functioning of radar is of great importance in providing information to the aviation sector, including the prevention of hazards and damage to aircraft. The IMS cloud radar was purchased 20 years ago and operates with outdated technologies. In recent years, it has malfunctioned several times, until it was completely shut down in the winter of 2018.
  -  Purchase and contractual procedures at the IMS take place without any preliminary assessment of the cost of purchase. The audit noted incidents in which the IMS refrained from publishing tenders and engaged with service providers even when the sum was higher than NIS 50,000, requiring the issuance of a tender.








**Regulation of IMS operations with other entities:** Absent a law governing the operations of the IMS with other entities, the IMS regulated its operations with those entities through agreements to cooperate and share work.

**Operation of cloud radar:** Since the cloud radar has gone out of use, the IMS has found an interim solution to provide a cloud radar picture. This picture is a product that integrates automatic rainfall gauges with available radar systems through the use of algorithms of short term forecasting systems.

**Strengthening the meteorological service:** Despite its limited resources, the IMS operates in several fields. It carries out meteorological observations to ensure a national climate data bank; establishes, operates, and maintains a basic meteorological database; conducts applied meteorological research for government ministries and the public sector to promote meteorological science and develop scientific understanding of the weather and climate in Israel; and is responsible for international operations in the meteorological field.

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## Key recommendations

-  The Ministry of Transportation must work to regulate the field of meteorology, including defining the role of the meteorological service and its status and fields of responsibility.
-  The IMS must examine the distribution of its measuring stations and find the optimal distribution.
-  To increase the efficient use of public resources, the IMS must increase cooperation with the various entities involved in measuring, among them the Ministry of Agriculture, the Israel Electric Corporation, the Ministry of the Environment, the Airports Authority, the Mekorot Water Company, and the Ministry of Defense.
-  The Ministry of Finance and Ministry of Transportation must consider all relevant aspects of purchasing a new cloud radar, while exercising cost-benefit considerations with regard to purchasing a new radar as opposed to continued use of the existing radar.
-  To receive high-quality, uniform data, the IMS must further the purchase of measuring equipment for the meteorological stations meeting international standards, replace the booths for storing field equipment outdoors with high-quality, modern booths and replace aging equipment for which spare parts are no longer available.

- 💡 The IMS must make sure to manage its engagements with suppliers in accordance with the law.

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## Summary

There is great importance to the existence of a central state entity to concentrate operations in the meteorological field to carry out observations, publish weather forecasts, transmit data to counterpart national meteorological centers in other nations, and provide warnings of anomalous weather events that might cause damage to property and person. The Ministry of Transportation must study the needs of the IMS and regulate its operations as a state entity. Furthermore, it should act to strengthen the IMS and optimize interfaces between it and other entities dealing with the subject to ensure the quality of forecasting and the efficiency of resource allocation from a national perspective.

### The IMS building



