

# Planning

---

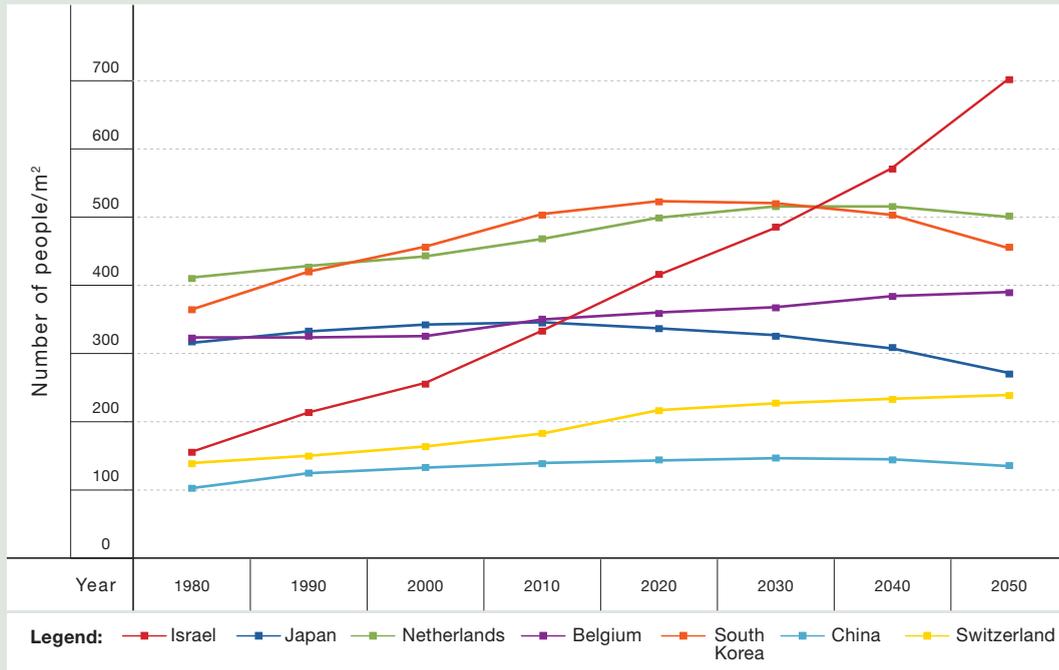
Urban and transportation planning are closely linked to human health. Planning plays an important role in preventing health hazards and sanitation problems in the urban space, and contributes to ensuring drinking water quality, sewage and waste treatment, and open green spaces in cities. In 1946, the World Health Organization (WHO) defined the term “health” as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Urban planning has a critical impact on public health because a healthy environment means not only an environment free of air pollution, noise, water pollution, and other hazards that directly endanger public health but also an environment that encourages physical, community, and social activity.<sup>1</sup>

Studies have shown that the urban environment—including transportation infrastructure, neighborhoods, buildings, parks and open public spaces—affects an individual’s health. The extent to which an individual is exposed to air pollution, noise, temperature, and green areas encourages or inhibits daily physical activity.<sup>2</sup> There is evidence that living near industrial areas and main roads increases exposure to air pollution and noise and raises the risk of morbidity and early mortality, whereas living in proximity to green spaces contributes to mental health and healthy birth outcomes and reduces rates of cardiovascular morbidity and early mortality. Several factors have been identified that encourage people to go out into the urban space, take walks, and ride bicycles—including low building density, mixed-use planning that enables use of resources throughout most of the day, and the accessibility and availability of frequent and reliable public transportation. These variables, where present, create an infrastructure that facilitates walkability, bikeability, and a neighborhood that encourages a healthy and active urban lifestyle.

Israel is one of the world’s most densely populated countries and has the highest rate of population growth among developed countries. At its current rate of growth, its population is expected to double by the middle of this century. (Figure 1).<sup>3</sup> This rapid population increase, however, is not evenly distributed across the population and is accompanied by an alarming reduction in open space. When looking at the past twenty years, the rate of reallocation of open space to developed land peaked in 2014–2017<sup>4</sup> and is expected to lead to an overall reduction in access to quality open space countrywide.

Population Density in Israel and Selected Countries, 1980–2050

→  
Figure 1  
Zafuf, 2020<sup>3</sup>



### Progress since 2017

The *Environmental Health in Israel 2017* report defined challenges related to Planning in Israel. Progress achieved in this area during the past three years is outlined below.

#### The challenge: Promote shading in open public spaces

**In short:** The Planning and Construction Regulations (Playground Shading) went into effect in 2019; the amended Planning and Construction Regulations (Calculating Land-to-Building Ratio in Plans and Permits) went into effect in 2020.

**Challenge for the coming years:** Raising awareness of the importance of shading and continuing to install shading in the public sphere in order to create climatic comfort in public spaces.

The Planning and Construction Regulations (Playground Shading), effective September 2019, mandate the shading of 70% of playground facility areas. An amendment to the Planning and Construction Regulations (Calculating Land-to-Building Ratio in Plans and Permits) (1992), effective 2020, encourages the installation of shading in open public spaces such as public gardens, paths, beaches, promenades, city squares, sports and recreation facilities, parks, trails,

**Legend:** Significant progress (green), Some progress (yellow), Little or no progress (red)

city boulevards, and open public areas, as well as open private property for which plans include a public right of way. Notably, the amended regulations exclude means of shading from the calculation of land-to-building ratios.

A cost-benefit analysis of shading in Israel, jointly prepared by the Ministry of Health (MoH), Tel Hai Academic College, and the Ministry of Construction and Housing, found that shading helps to lower pollution levels, mitigate the risk of skin cancer, and increase physical activity—all yielding health and economic benefits (Table 1).<sup>5</sup>

**Annual Benefit per Person from Physical Activity as a Result of Shading (NIS)**

Age Group	16–44	45–64	65+	Weighted Average
Adjusted life years added	137	1,221	2,971	721
Savings for the healthcare system	172	172	172	172
Productivity gain	260	290	290	290
<b>Total annual benefit</b>	<b>600</b>	<b>1,684</b>	<b>3,433</b>	<b>1,178</b>

← **Table 1**  
Israel Ministry of Construction and Housing and others<sup>5</sup>

\* The benefit of physical activity is estimated at NIS 600–NIS 3,433 per year. The maximum benefit is gained by someone who moves from “inactive” status to regularly “active” status (about 150 minutes per week).

<b>The challenge: Promote plans for paving bicycle paths</b>	
<p><b>In short:</b> Paths for bicycles and other alternative means of transport are being planned and built in accordance with the planning guidelines of the Ministry of Transport.</p>	<p><b>Challenge for the coming years:</b> Improve connectivity between bicycle paths and urban intersections; enforce riding on dedicated paths or on roads only.</p>

Sound urban planning includes a dense network of streets, sidewalks, and shading that facilitates walking and cycling and improves the quality of urban life.

In April 2020, the Israel Planning Authority (IPA) at the Ministry of Finance (MoF) published a policy document examining the degree to which urban planning is oriented toward the use of public transport.<sup>6</sup> The document was intended to help planners and planning offices learn how to realize the potential urban use of public transport.

The Central District (Machoz Merkaz) Planning and Construction Committee is promoting a plan to build paths for bicycles and other alternative means of transport (electric bicycles, electric scooters, and Segways), separating them from motor vehicles and pedestrians in order to prevent conflicts among road users. The plan is to link all communities in the district in

order to give bicycle riders efficient access to central train stations, employment zones, and education institutions. The plan is part of a comprehensive effort by the District Planning Office and the Ministry of Transport (MoT) to encourage the use of public transportation, including creating public transport lanes, building park-and-ride facilities, and strengthening connectivity between train stations and employment zones. The plan envisions three networks for bicycle riders—metropolitan, secondary, and local—that would stretch across 1,351 kilometers in this district.

In addition, a new national master plan for land transport infrastructure, TAMA 42, includes areas with detailed plans for bike paths. In March 2020, the National Council for Planning and Construction decided to submit the plan to the government for its approval.

**The challenge: Conduct Health Impact Assessments on large-scale projects**

**In short:** By government resolution, an inter-ministerial committee was formed that began to develop and apply an approved methodology for planning of mining and quarrying projects.

**Challenge for the coming years:** Approve methodologies for examining the public health impact of building plans as part of formulating national policy.

The Planning and Building Law requires an Environmental Impact Assessment (EIA) as part of the planning and construction process in plans that could significantly affect the environment. An EIA, however, does not address expected health effects and implications, leaving the health impact of various plans unclear. MoH sees great importance in including health considerations in the planning processes by incorporating an Health Impact Assessment (HIA) into the planning of future projects. For several years, MoH has been advocating for mandatory HIAs, unsuccessfully so far.

The purpose of an HIA is to prevent or minimize harm to public health that might result from implementing the proposed plan. An HIA offers many advantages, including a broad perspective of health (physical, mental, and social well-being), a comprehensive and in-depth review of the direct and indirect health effects of construction and development projects, public involvement in decisions that affect citizens’ lives and health, and an examination of several alternatives. It also conveys recommendations on maximizing positive health benefits, minimizing negative effects, and narrowing health disparities.<sup>7</sup>

In May 2018, the government formed an inter-ministerial team with representatives from MoH, MoF (IPA), the Ministry of Environmental Protection (MoEP), the Ministry of Energy (MoE) and MoT and tasked it with formulating and implementing a methodology for examining the health aspects of mining and quarrying projects.<sup>8</sup> MoH contends that every plan relating to national infrastructure projects—such as power plants, airfields, or quarries—should require an HIA on the part of the planning organization.

**The challenge: Give representatives of the Ministry of Health broader powers in the planning committees**

**In short:** The number of MoH participants in the committees has grown, as has the number of planning professionals at the ministry.

**Challenge for the coming years:** Add representatives on the planning committees to ensure MoH influence on planning processes.

Since 2017, two planning professionals have joined MoH and the ministry’s contribution to planning procedures at all levels has expanded. However, in several national planning institutions MoH representatives are substitutes or observers without voting rights; therefore, their ability to lead and exert influence in planning policy is limited.

**The challenge: Develop policies to reduce emissions of heat, radiation, and greenhouse gases**

**In short:** There has been a clear transition from using coal and polluting fuels to generate electricity to using natural gas and renewable sources.

**Challenge for the coming years:** Increase the share of renewable sources in energy generation and reduce that of polluting sources. Formulate a coherent government policy that encourages energy generation from renewable sources. Set a clear target for reducing the use of polluting fuels until their use is completely eliminated.

IPA is promoting a strategic national master plan for the energy sector, TAMA 41. The goal of the plan is to establish planning principles and rules for building and protecting infrastructure for energy generation facilities and dealing with the energy produced. The goal is to create a framework for energy infrastructure planning from an integrative, sustainable, and long-term perspective. Concurrently, the program emphasizes limiting the impact of energy facilities on the environment and on public health.<sup>9</sup> Energy sector plans such as TAMA 41 have a decisive impact on public health because energy facilities can pollute air, water, and soil, and affect different populations, especially vulnerable ones.

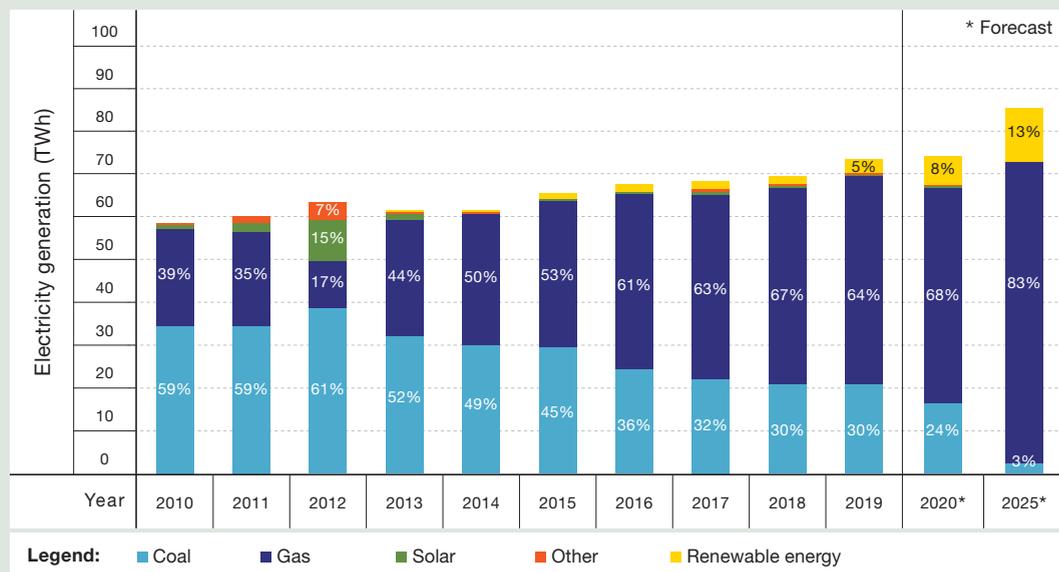
In 2018, the Minister of Energy announced a vision for ending coal use for energy generation within a decade. His statement was followed by work at MoE on energy alternatives in order to attain the goal. Acting in accordance with the Electricity Sector Law, 1996, the minister approached the Public Electricity Commission for professional consultation on defining policy principles toward shutting down the country’s coal-fired plants or converting them to natural gas. In 2020, the Minister of Energy decided to stop using coal to generate electricity, to retain this capability only as an emergency option and to convert plants from coal to natural gas. This transition is scheduled for implementation by the middle of the next decade.

In recent years, electricity generation in Israel has been shifting from coal and polluting fuels to natural gas and renewable sources (Figure 2),<sup>10</sup> bringing about a dramatic reduction in emissions of local pollutants and a decrease in emissions of carbon.

Importantly, however, natural gas is a fossil energy source that pollutes the air and contributes to greenhouse gas emissions; thus, an effort to reduce its use should be made. Indeed, along with the decision to stop using coal to generate electricity, consideration is being given to expanding the target for electricity generation from renewable sources from 17% to 25%–30% by 2030. If this is done, emissions and air pollution are expected to decline significantly.

**The Changing Mix of Fuels in 2010–2019 and Forecast for 2025**

→  
**Figure 2**  
Israel Electricity  
Authority<sup>10</sup>



**The challenge: Improve the efficiency of public transportation**

**In short:** Some progress has been made in advancing plans for mass transit systems—light rail systems in Tel Aviv and Jerusalem and a metro in metropolitan Tel Aviv.

**Challenge for the coming years:** Develop an interface among public transportation systems, make public transportation reliable and frequent, and increase the number of buses.

MoEP estimates the annual external cost of the health effects of traffic-related air pollution at over NIS 12 billion.<sup>11</sup>

Recent years have seen growing use of private vehicles—including hybrids—in Israel. Details of the country’s transportation situation at the end of 2019 are presented below<sup>11–13</sup>:

- There are about 3,600,600 motor vehicles in Israel, including approximately 3,085,300 private vehicles.
- From 2018 to 2019, the national fleet of motor vehicles grew by 3% and that of private vehicles by 3.6%.
- 14.2% of motor vehicles and 5.4% of private vehicles are diesel-fueled.
- There are about 175,200 private hybrid vehicles in Israel, in addition to 1,642 hybrid taxis—45% more than in 2018.

- The motorization rate in Israel rose from 390 vehicles per 1,000 residents in 2018 to 394 in 2019, this rate is low compared to other developed countries.
- Only eighty-four electric buses, fewer than 1% of all buses, are currently operating in Israel. In 2019, the number of private electric cars surged (655 in 2018, 1,196 in 2019).
- According to MoEP data, an urban diesel bus generates NIS 86 million per year in cumulative external costs (adverse health effects from air pollution) as against NIS 30 million per year from an electric bus.

Analysis of data reported from car manufacturers shows that the percentage of high-emission vehicles has decreased.

In light of the data presented above, there is clearly a need to improve the efficiency of public transportation and develop interfaces between public transportation systems. Plans for additional light rail lines in Jerusalem and metropolitan Tel Aviv have been promoted in recent years. Plans for bus rapid transit (BRT) lines are also moving ahead and dedicated lanes are being allocated for high-capacity vehicles and cars with at least two passengers. In addition to improvements in the efficiency of public transportation, however, traffic congestion charges and decrease in parking allocations are needed.<sup>4</sup>

## Future Challenges

---

Urban planning has a significant impact on public health at all stages of life, including early childhood. It is imperative to develop guidelines to prevent, whenever possible, siting of kindergartens and schools in close proximity to main roads. Due to the shortage of available land for development in Israel, however, some kindergartens and schools will be located near main roads. In these cases, detailed plans should require greenery or open public space along the roads, with classrooms kept at a greater distance.

All aspects of planning should aim to maximize the amount of green, open, high quality public spaces in cities and enable multiple uses of these areas—for example, the use of areas on school grounds by the general public. In this context, it is important to introduce the concept of a “healthy city.” A healthy city seeks to continually improve its physical and social environment in order to mitigate health inequality and emphasize health as a primary value and goal at all levels. The “healthy city” approach is closely linked to that of a “sustainable city”<sup>14</sup> and is conducive to promoting policies aimed at reducing emissions of heat, radiation, and greenhouse gases. There is a need to develop a methodology and set criteria in Israel for defining a “healthy city.”

In light of the major challenges posed by climate change, it is increasingly important to include health considerations at all levels of urban planning. This includes, for example, construction that integrates walking paths in open and shaded public spaces, adapting planning to a reality

in which more and more people are in homes (to avoid extreme temperatures), placing commerce in shaded settings or storefronts that include colonnades, and also distributing, and dividing business hours so that they suit the climate. Such planning also includes amending plans for water and sewage infrastructure in order to prevent flooding, reducing energy consumption, and pursuing renewable energy solutions. The final shutdown of the coal-fired power plants in Hadera and Ashkelon is a welcome and important step, but the alternative—using natural gas—should be closely examined in order to avoid making it a permanent solution in Israel. Natural gas, while less of a polluter than coal, still pollutes. MoE and the Israel Electricity Authority should promote a transition plan for energy generation from renewable sources and for construction of energy storage facilities.

In March 2020, the National Council for Planning and Construction recommended that the Minister of Finance issue planning and construction regulations that adopt Israeli Standard 5281 for sustainable construction (green building). All new buildings—residences, offices, stores, healthcare facilities, schools, public institutions, etc.—will be required to comply with the regulations starting from a target date that has yet to be determined. The standard encourages construction near centers of public transportation but does not sufficiently promote walking in the public sphere, within buildings, and in open spaces. A challenge for the coming years is to address additional relevant issues for sustainable construction and sustainable environment that the standard omits, such as making drinking fountains and public toilets more accessible, using landscaping that is economical in terms of water use and waste (cuttings), and encouraging the installation of solar energy production units on rooftops.

An additional challenge is to promote urban planning that incorporates public transportation (transit-oriented development). The ability to link different means of public transportation depends on the ability to bring public transportation to within 500 meters of the places where people live, work, or engage in recreation. Guidelines for integrating public transportation infrastructure and urban development were published. IPA is considering making such guidelines mandatory, meaning that a district committee or the National Committee for Preferred Areas for Housing (VATMAL) would not approve any plan that lacks a commitment by the developer to integrate public transportation into the plan.

At the beginning of 2018, the National Council for Planning and Construction called for the preparation of TAMA 49—a national master plan for the healthcare system that updates policy for healthcare system structures and spatial deployment of healthcare services by the year 2040. The challenge for the coming years is to prepare and approve the plan in order to outline the healthcare system's development needs. This includes the land needed for building healthcare institutions, promotion of strategic social principles in healthcare institutions (for example, reducing inequality in access to healthcare services), and designing the hospital complex to include urban nature as a means of shortening recovery times and creating a pleasant work environment.

## References

---

- (1) World Health Organization (1986). *Ottawa Charter for Health Promotion*, First International Conference on Health Promotion, Ontario, Canada, 1986.  
<http://www.who.int/healthpromotion/conferences/previous/ottawa/en/> (retrieved June 2020).
- (2) Nieuwenhuijsen, M. J. (2016). Urban and transport planning, environmental exposures and health—new concepts, methods and tools to improve health in cities. *Environmental Health*, 15(1), 38.  
<https://doi.org/10.1186/s12940-016-0108-1>
- (3) Zafuf—The Israel Forum for Population, Environment and Society. Shahaar, I., personal communication (July 2020).
- (4) Israel Ministry of Environmental Protection (2020). *Assessing the current state of affairs, June 2020* (Hebrew).
- (5) Israel Ministry of Construction and Housing, Israel Ministry of Health, and Tel Hai Academic College (2019). *Cost-Benefit Analysis of Shading in Israel* (Hebrew).  
[https://www.gov.il/BlobFolder/reports/research\\_1079/he/documents\\_r1079.pdf](https://www.gov.il/BlobFolder/reports/research_1079/he/documents_r1079.pdf) (retrieved June 2020).
- (6) Israel Ministry of Finance, Israel Planning Authority (updated September 2019). Planning oriented toward public transportation and sustainable movement (Hebrew).  
[https://www.gov.il/he/departments/general/planning\\_public\\_transp\\_sustainable\\_mov](https://www.gov.il/he/departments/general/planning_public_transp_sustainable_mov) (retrieved June 2020).
- (7) Negev, M. (2019). The impact of public policy on public health: The health-impact assessment as a tool for incorporating health considerations in decision-making. *Ecology & Environment*, 10(3), 16–23 (Hebrew).  
<http://www.magazine.isees.org.il/Abstract.aspx?ArticleId=866> (retrieved June 2020).
- (8) Israel Prime Minister's Office (2018). *Summary on examining health aspects in plans—TAMA 14/B Master Plan for Mining and Quarrying. Government Resolution 3627, May 3, 2018* (Hebrew).  
[https://www.gov.il/BlobFolder/pmopolity/dec3627\\_2018/he/3627.png](https://www.gov.il/BlobFolder/pmopolity/dec3627_2018/he/3627.png) (retrieved June 2020).
- (9) Israel Ministry of Finance, Israel Planning Authority (updated November 2018). TAMA 41—National Master Plan for Energy Infrastructure (Hebrew).  
[https://www.gov.il/he/Departments/General/tama\\_41](https://www.gov.il/he/Departments/General/tama_41) (retrieved June 2020).
- (10) Israel Electricity Authority (2020). *The electricity market status report for 2019* (Hebrew).  
[https://www.gov.il/BlobFolder/generalpage/dochmeshek/he/Files\\_doch\\_meshek\\_hashmal\\_doch\\_meshek\\_2019.pdf](https://www.gov.il/BlobFolder/generalpage/dochmeshek/he/Files_doch_meshek_hashmal_doch_meshek_2019.pdf) (retrieved December 2020).
- (11) Israel Ministry of Environmental Protection (2019). *Air pollution from transportation: Ministry of Environmental Protection review for cabinet meeting* (Hebrew).  
<https://infospot.co.il/Content/UserFiles/Upload/%D7%96%D7%99%D7%94%D7%95%D7%9D%D7%90%D7%95%D7%95%D7%99%D7%A8%20%D7%9E%D7%AA%D7%97%D7%91%D7%95%D7%A8%D7%94%20-%20%D7%A1%D7%A7%D7%99%D7%A8%D7%AA%20%D7%94%D7%9E%D7%A9%D7%A8%D7%93%20%D7%9C%D7%94%D7%92%D7%A0%D7%AA%20%D7%94%D7%A1%D7%91%D7%99%D7%91%D7%94%20%D7%9C%D7%9E%D7%9E%D7%A9%D7%9C%D7%94.pdf> (retrieved July 2020).
- (12) Israel Ministry of Environmental Protection (2019). *Activities of the Ministry of Environmental Protection for the transition to electric buses* (Hebrew).  
[http://transportation.org.il/sites/default/files/pirsum/rpl\\_plyyshmn\\_-\\_pylv\\_hmshrd\\_lhgns\\_lmbr\\_lvtvbsym\\_khshmllym.pdf](http://transportation.org.il/sites/default/files/pirsum/rpl_plyyshmn_-_pylv_hmshrd_lhgns_lmbr_lvtvbsym_khshmllym.pdf) (retrieved July 2020).
- (13) Israel Central Bureau of Statistics (2020). *Motor vehicles in Israel in 2019* (Hebrew).  
[https://www.cbs.gov.il/he/mediarelease/DocLib/2020/129/27\\_20\\_129b.pdf](https://www.cbs.gov.il/he/mediarelease/DocLib/2020/129/27_20_129b.pdf) (retrieved June 2020).
- (14) Israel Ministry of Environmental Protection, Israel Healthy Cities Network and Heschel Center for Sustainability (2010). *A healthy and sustainable city, principles and implementation guidelines* (Hebrew).  
[http://www.healthycities.co.il/upload/infocenter/info\\_images/25122010192704@ir%20briaumekeaiemet.pdf](http://www.healthycities.co.il/upload/infocenter/info_images/25122010192704@ir%20briaumekeaiemet.pdf) (retrieved June 2020).