Climate Resilience and Local Governmental Policy:
Lessons from Los Angeles and Tel Aviv
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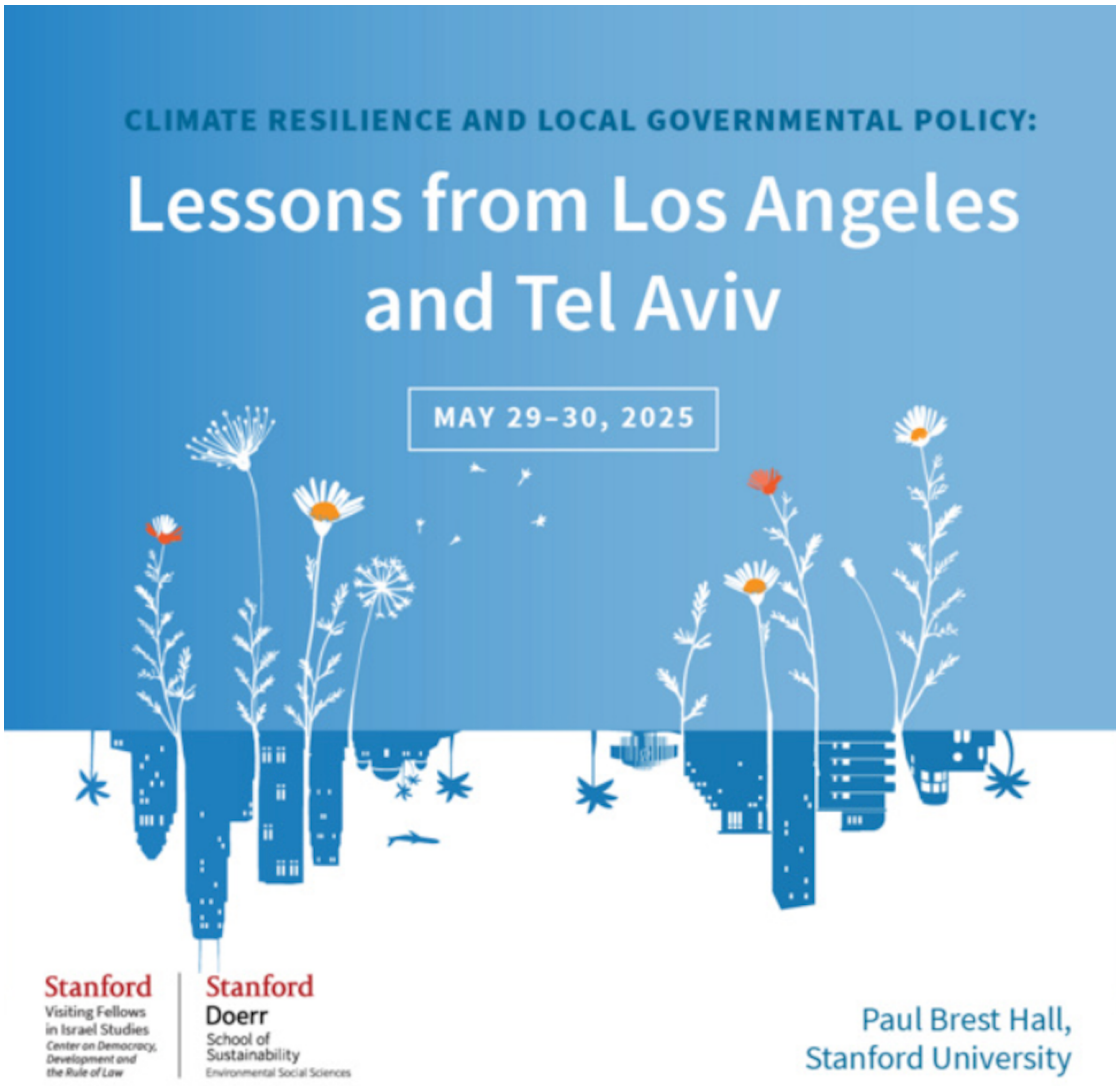
Paul Brest Hall, Stanford University

Keynote Addresses and Session Abstracts



Climate Resilience and Local Governmental Policy: *Lessons from Los Angeles and Tel Aviv** -- Keynote Addresses and Session Abstracts**

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*Recording of conference sessions can be found at:
https://www.youtube.com/playlist?list=PLjSvbbhu6GB7GgJjtoFCUeb8DJgl7AoWQ
Power point presentations from the conference can be found at:
https://drive.google.com/drive/folders/1g6XvfyPo88_4lUMW6MRs0BwsXtuRm6YD
**Session abstracts and summaries of presentations were recorded by panel chairs.

Day 1:

Opening Session:

Introduction to the Conference:

Alon Tal, Conference Chair, Visiting Professor and Israel Fellow, CDDRL, Stanford University / Tel Aviv University, Department of Public Policy

Welcome to Stanford University and the opening of our conference on Climate Resilience and Local Governmental Policy: Lessons from Los Angeles and Tel Aviv. Thank you for coming. Reforestation and afforestation may be Israel's greatest environmental achievement. Over the centuries, a litany of conquerors abused the land of Israel and extirpated an estimated 97% of the natural vegetation and woodlands. But over the past seventy years, in a long process of trial and error, the national commitment to restoring the natural landscape produced remarkable results, and forests have returned, transforming large areas of the country. The afforestation techniques for the drylands that Israel developed are extraordinary.

But even Israel's intrepid and innovative foresters were not ready for the challenge of climate change. On May 17th, 2025, just two weeks ago, a new record for heat in Israel was recorded: 113 degrees Fahrenheit. This came after the driest winter in over a hundred years.
It is little wonder then that on Holocaust Memorial Day, this year Israel witnessed the largest wildfire in its history. And then, but one week later—symbolically on the eve of the country's Independence Day celebrations on April 30th —Israel yet again experienced its largest wildfire ever -- this one twice the size, decimating enormous swaths of forests in the Jerusalem hills.

Extreme weather events are everywhere. Of course, the whole world was alarmed and distressed by the Los Angeles fires earlier this year, when 16,000 structures were destroyed and 29 people lost their lives. In 2024, in the American south-east, 159 people died in Hurricane Helene. Spain lost 205 people in massive flash floods, just a few years after Germany and Belgium saw 243 casualties following unprecedented rains.

Of course, the magnitude of the damage due to climate change in the Global South is far greater. Approximately 33 million people were affected and 2.1 million were left homeless in Pakistan's 2022 monsoon flood. In that climate tragedy, at least 1,739 people—including 647 children—perished. A year later, in the Democratic Republic of the Congo, 440 people died and over 2,500 remain missing.

The Middle East is particularly vulnerable to global warming—indeed, it is generally referred to as a "climate hotspot." Just this week, in the United Arab Emirates, temperatures reached 125 degrees. And it is still only the merry month of May. In our region, having an air conditioner is often the difference between life and death. During the annual pilgrimage to Mecca—the Hajj—this year, 1,300 people died of heat exposure. Having not made arrangements to stay in hotels, they simply cooked to death in their makeshift campsites.

The climate crisis is here: Ready or not. The problem is that all too frequently, we are "not."

We all can do better. And this conference will focus on how.

There are, of course, many lessons from the Los Angeles catastrophe which we already are teaching about. In the area of vegetation and fuel management to reduce fires, for instance, we need to take fuel-reduction targets more seriously. Environmental regulations and liability fears often delayed prescribed burns—and this proved to be disastrous. Urban-wildland interfaces (where homes meet vegetation) remained overgrown. Increased investment in prescribed burns, mechanical thinning, and clearing of flammable vegetation are clearly some of the things we need to take more seriously.

We need to make our infrastructure more resilient. Utilities need to upgrade transformers, deploy high-risk weather shut-off protocols, and Early Warning Systems (as PG&E does in Northern California). Urban planning and building codes are a critical component of a city's strategy. We need to enforce fire-resistant building codes, require defensible space around homes, and discourage development in high fire-risk zones. Too many homes in canyons and hillside areas still use flammable roofing or lack proper setback distances. Planning policies continued to allow construction in high-risk wildland areas. And like everywhere else, coordination between agencies needs to be better.

But perhaps the greatest single lesson regarding climate resilience to emerge from the past year is that local governments are on their own. Central government is not going to provide the leadership or the financial support to bring about the necessary quantum leap in local climate resilience. Cities are going to have to make this happen.

Los Angeles and Tel Aviv are two places that have long recognized the gravity of the climate crisis and the critical role that municipal governments need to play in improving their cities. We are delighted that so many of their officials and professional experts in the area of adaptation and resilience have taken time off to join us and share their perspectives.

One question you may be asking is why a Center for Democracy and Development at Stanford has taken the lead on this conference, along with its partners from the Social Science Department of the Doerr School of Sustainability. Here's the thing: There are many complicated questions related to governance and the balance between local and central government that need to be sorted out. The climate crisis requires a rapid response and democratic societies need to figure out how to do this effectively.

When climate policy was in its infancy, there was still considerable uncertainty about the very existence of global warming. Climate skepticism was still an intellectually defensible position. That's when advocates came up with the "No Regrets Policy" as a slogan and strategy. There were important things to do that were worth doing—even if, in the end, the climate was not changing. Renewable electricity, energy conservation, electric vehicles—all made sense economically and environmentally, regardless of the need for mitigation.

Climate resilience, however, is different. Yes, some measures are "win-win" and need to be accelerated regardless of climate considerations. Planting more trees in cities, for example, is a no-brainer. But burying power lines—which is an important proactive step in many

neighborhoods—is very expensive. Addressing sea level rise will require enormous investments. This means we have to be very smart about how to use the limited resources available for climate resilience activities optimally.
This conference is about resilience and adaptation. At the same time, it is important to note that climate mitigation and the reduction of greenhouse gas emissions remain the paramount global objectives. But the symptoms of climate change are too severe to be ignored any longer. Environmentalists have known for over 50 years that we need to "Act Locally". This conference will focus on what this means in the area of climate resilience.

Before I briefly introduce our first speakers, I want to address yesterday's public letter that some of you may have heard about, protesting against the very convening of this conference. I can only speak for myself, but not a day goes by without me being acutely aware and deeply troubled—both by the Israeli hostages who have been held now for 600 days in Gaza, as well as the horrible toll that this war has brought with it on the people of Gaza.

I assume that the vast majority of the participants in the conference, like the vast majority of Israeli citizens, strongly support an immediate ceasefire and the release of hostages. But I believe that it's precisely these values—this commitment to human rights, along with the aspiration for coexistence and intergenerational justice—that requires us to continue studying, learning together, and acting to address the climate crisis. Climate change and environmental protection is far too serious a challenge to be left as a spectator sport—or to be truncated in times of war. During the past couple of months, over 50 ballistic missiles, each capable of taking out a couple of buildings, have been launched at my home. And while I scramble to take shelter, I don't lose sight of a fundamental truth: global warming and its consequences are not waiting.

So let us begin.

Keynote Speaker:

Nancy Sutley, City of Los Angeles Deputy Mayor, Mayor's Office of Energy and Sustainability (MOES)

Los Angeles and Tel Aviv share significant partnerships and connections in many ways, particularly when it comes to Weather, Diversity and our love to hang out on beaches. That is why I am also excited to talk about shared commitment to sustainability.

I would like to use this opportunity to talk about our Mayor's Sustainability priorities, and what we're doing to ensure Los Angeles meets its climate and resilience goals as climate change is impacting us in real time.

As we all know, the climate crisis is one of the greatest challenges of our time, and the catastrophic effects of climate change require us not only to transform our city, but also to strengthen our resilience and transform the way we address this crisis.
In Los Angeles, we're experiencing record-breaking heat year after year and fire seasons that extend into what used to be our wettest months. We're no longer preparing for a far-off future scenario; we're responding to climate impacts that are already impacting the health, safety, economy and infrastructure of our communities.
We must now invest in and manage resources that reduce risks in ways that also address underlying inequities that create disparate impacts across communities.
Governments must work together across jurisdictions –from national to the local level– to provide leadership and services to communities. This can include the work of convening local stakeholders in the private sector, as well as community nonprofits and critical infrastructure sectors that support and are enabled by all levels of government. Communities must be understood as dynamic networks that can respond to and act upon persistent needs to advance resilience. Strengthening community resilience means providing them with resources to build their own adaptive capacity.
We need policies that support innovation while improving the quality of life at a neighborhood scale. And infrastructure, from our water and power systems, housing to transportation, must be designed to protect communities and nature from the hazards that pose the greatest risk.
Resilience means working collectively to build a future where everyone has the opportunity to thrive.
CLIMATE CABINET AND GOALS

Mayor Bass has assembled a Climate Cabinet comprised of key city departments to ensure that our efforts are coordinated and effective, leading to a more equitable future for all.
Some of the Main Goals of the Mayor include:

Ensuring that LADWP is 100% carbon free by 2035
Accelerating progress toward zero carbon transportation by expanding public charging platform and clean public transportation
Enhancing Los Angeles' water resources to create a more resilient and affordable system for Angelenos.

70% local water

100% CARBON FREE BY 2035

As we face the impacts of climate change in LA, one key initiative that we've been working on under Mayor Bass' leadership is ensuring that our city is on track to reach its goal of going 100% renewable by 2035. This is an urgent initiative that positions LA as a global leader in the transition to clean energy.

One of the main reasons LA can take on this challenge is because we have the Los Angeles Department of Water and Power (LADWP), which happens to be the largest municipal utility in the country. That means it's publicly- and locally-owned and controlled, allowing us to set goals that reflect the needs of our community.

To give some background on the goal: In 2021, LADWP began the **LA100** study, which was a partnership between LADWP, the Department of Energy's National Renewable Lab, and a long list of community stakeholders. The study showed that achieving a 100% clean energy grid was technically feasible by 2035, all while making sure ratepayers and community members are protected. Now we're putting this into action by investing in solar, wind, geothermal and energy storage capacity. This year, LADWP will be taking out its last coal power plant and replacing it with a blended hydrogen-natural gas - the first in the nation.

EV CHARGING INFRASTRUCTURE

Beyond our own grid, LADWP is also supporting the transition to clean energy among other major sources of emissions. For example, LADWP has already invested more than $120 million in EV charging infrastructure since 2018, much of which has gone to multifamily buildings. Los Angeles currently has the most EV chargers than any other City in the United States with close to 38,000. Over 17,000 has been installed since our Mayor took office. DWP also provides EV rebates to ensure we're focusing on communities with the greatest need, not just those who have the means to purchase an EV.

Recently, LADWP launched its "Powered by Equity" initiative to make sure our EV charging network grows in communities that have historically been left out. That effort was deeply informed by LA100 Equity Strategies, a study we partnered on with UCLA and NREL to identify where investments in clean energy could have the biggest impact.

WATER

As climate change intensifies, Los Angeles is experiencing more unpredictable precipitation patterns and extreme weather swings, known as "weather whiplash," with longer dry spells followed by sudden, intense storms. These shifts have made it clear that we must fundamentally rethink how we manage and invest in our local water system and reduce our reliance on traditional imported water supplies.

To address this, the City of LA has already prioritized diversifying its water supply portfolio to create a resilient and sustainable source of water for the City. This means continued investment in demand management, groundwater remediation, stormwater capture, and beneficial reuse.

One of these initiatives is maximizing the use of recycled water from the City's largest wastewater treatment facility, Hyperion. In March 2025, the LADWP Board of Commissions and

the Board of Public Works unveiled the Pure Water Los Angeles Master Plan and the Hyperion Program Implementation Plan, marking a significant milestone advancing the sustainability and resilience of Los Angeles' water supply.

Achieving the Zero Wasted Water goal requires not only strategic planning but also incentives for residents and businesses to participate in water conservation efforts.
The Los Angeles Department of Water and Power offers **water conservation programs**, incentivizing homeowners to:

- Replace lawns with native, drought-resistant plants,
- Install rain barrels and infiltration systems to capture stormwater,
- Reduce runoff and support groundwater recharge.

LADWP also offers a Technical Assistance Program (TAP) that assists businesses with modernizing their facilities such as cooling towers with the latest water efficient equipment to save money and conserve water.

EXTREME HEAT

Last summer was one of the hottest on record and we can expect more extreme weather and the Mayor's Office is working closely with city departments to increase the city's response to heat waves. This includes extending library hours during heat waves to offer safe, cool spaces for community members. It also includes planning long-term investments like increasing the city's tree canopy, installing shade structures to lower urban heat in the places that need it most. During these extreme weather events, we coordinate with departments to activate a network of cooling centers and resilience centers, including Rec & Parks sites, libraries, and even pet-friendly shelters. We also provide free LADOT rides to ensure no one is left without a place for respite from the heat.

What's important to note here is that these aren't simply environmental initiatives; these build the city's resilience to climate change. And we're prioritizing neighborhoods that have historically been underinvested in.

To ensure communities are receiving these benefits, we've been working with community partners to build local capacity to adapt to climate change, and ensure that residents have the resources and information they need as our city experiences these changes.

To further the city's efforts on extreme heat and drought, we're also expanding nature-based solutions — including shade equity strategies and tree canopy programs that prioritize historically disinvested neighborhoods We're also investing heavily in stormwater capture systems that can help replenish the city's groundwater basin so we can be more resilient to longer and more frequent drought conditions. This will allow communities, especially the most vulnerable to benefit from our natural environment despite a changing environment.

In addition Los Angeles will guard against extreme heat by promoting cool streets, tree planting, and cool building design features.

Equity plays a critical role in this mission by focusing on our most vulnerable communities—making sure they're not just included in the conversation but are at the forefront of our efforts, benefiting from green jobs, reduced energy costs, and improved air quality.

As extreme weather heat becomes the new norm, we're quickly confirming that we must invest more resources into the grid and ensuring all communities benefit from the investment.

WILDFIRE REBUILD

The Recent Fires destroyed communities in the great Los Angeles area. The Palisades Fire directly impacted the City of Los Angeles' Pacific Palisades community and destroyed homes, community centers, churches and businesses. The Fires demonstrated how real climate change is to us in Los Angeles.

Recently, the Mayor released a new Emergency Executive Order on Resilient Rebuilding to make sure when we build back in the Pacific Palisades we build back stronger. The City is going to do everything we can to rebuild in a way that protects homes and businesses against wildfires. Unfortunately, as we all know, unprecedented natural disasters like these wildfires will not be the last extreme weather disasters…. And that is why we must continue to prepare and continue to position ourselves as a leading city in climate resilience.

Under this order our City departments are actively planning paths forward in the Palisades to:

- Streamline permitting for owners who rebuild all-electric, more fire-resistant homes
- Promote the use of fire-resistant construction materials to harden homes and businesses as Los Angeles begins to rebuild: and
- Further strengthen the resiliency of utilities and ensure power reliability during severe weather events
- Enhancing the structural and environmental resilience of existing housing ensures it remains habitable and safe during extreme weather events.

Most importantly, **climate-resilient housing designs** not only protect us from wildfire incorporate natural cooling techniques, adequate ventilation, and heat-reflective or heat-dissipating materials. These features create safer living conditions during heatwaves, protect residents' well-being, and reduce reliance on energy-intensive air conditioning.
While resilient housing is a critical foundation, it is only one part of the solution.

To build resilient and sustainable communities, we also need to go beyond just the Palisades Community. We need to ensure that all communities that are in Los Angeles' Wildland Urban Interface are prepared and ready for the next wildfire.

In order to do this, we need strong support and coordinated action from the businesses, community and academics to help the City of Los Angeles become a model of resilience in the face of climate change.
We know that we can not address climate change working in silos. We must work together across all sectors - government, non-profit and businesses - to tackle this issue.

ENVIRONMENTAL JUSTICE
In LA, we're prioritizing environmental justice and economic opportunity. We're transforming our city's infrastructure and systems in ways that don't just reduce emissions, but also uplift and protect communities that have historically been left behind.
An example of this is our city's first-ever Climate Vulnerability Assessment (CVA), where youth leaders and community organizers from our most climate-impacted neighborhoods worked alongside city planners to identify multi-benefit solutions to climate change locally. This work was about ensuring that every voice, especially the voices of young people, is included in how we build resilience.

Working with LADWP, we are trying to specifically address issues to ensure all communities in Los Angeles have access to the energy transition.
Perhaps one of our most successful programs has been LADWP's Comprehensive Affordable Multifamily Retrofits or CAMR program.
It is an initiative aimed at assisting low-income multifamily property owners in Los Angeles - Building owners receive funding to reduce CO2 emissions for their tenants.

CAMR specifically targets multifamily buildings where a significant portion of residents are considered low-income. LADWP provides support in developing a retrofit work schedule and identifying suitable contractors to execute the retrofit project.
Some CAMR participants may be eligible for additional incentives to install solar panels, allowing tenants to benefit from the generated electricity.

What is also unique about CAMR is that it bundles State and Utility incentives to the customer offering a comprehensive program. In fact just recently the program is leveraging an additional $5M from the City's Gas Franchise agreement to boost incentives and provide deeper incentives for customers.

Los Angeles Cleantech Incubator (LACI) and LA Resilient Rebuilding Cup
Developing new technologies and supporting innovative solutions to reach our climate goals is an important part of the Cities strategy to support and build the City's economic development and create green jobs.

LADWP manages the La Kretz Innovation Campus for the City of Los Angeles, a space where science, entrepreneurship, environmentalism, and policymaking merge to advance the development of a sustainable future that includes clean and abundant water supplies, a commitment to 100% renewable energy, and an inclusive green economy. The Campus was specifically designed to assist with young startups in cleantech to be successful businesses.

The Campus has supported a number of successful small businesses, including Israeli companies, through strategic partnerships that advance cleantech innovations. These efforts reinforce our commitment to global collaboration on climate adaptation solutions.

Overall, the campus promotes the following activities:

- R&D - Research and Development in Cleantech supports LADWP and City goals and mandates

- Adapt - Helps LADWP and the City understand, prepare and adapt to new technologies currently impacting the Utility Sector
- Innovate - Promotes Innovation and Creative Workforce for the City
- LADWP Customer Engagement - Promotes development of energy efficiency and water conservation technologies among our customers

The Los Angeles Cleantech Incubator (LACI) is launching the LA Resilient Rebuilding Cup, an initiative to identify and support innovative technologies that strengthen community resilience in the face of climate-related disasters, particularly in fire-affected areas of Los Angeles. Through this effort, LACI aims to accelerate solutions that can be piloted locally and scaled to advance climate resilience. Selected innovators may also be invited to join LACI's nationally recognized Incubation program, gaining access to two years of business support and mentorship to help bring their impact-driven solutions to life.

LA 28
In terms of future opportunities, we have major global event**s** coming to our city very soon– starting with the FIFA World Cup in 2026, and the Olympics in 2028. The City has made significant progress in preparation for the 2028 Games. The Los Angeles region has already secured funding to strengthen critical infrastructure, expand the Metro Rail system, and reconnect communities ahead of the 2028 Olympic and Paralympic Games. This will allow our residents to get from UCLA to Downtown in under 30 minutes, and allow us to leverage existing plans for a stronger and more resilient recovery.

LA28 signed on to the "ShadeLA" campaign, a public-private partnership co-led by USC and UCLA with a goal of expanding shade across the region. Perhaps the most significant sustainability aspect of the games is what we are not doing: building new permanent structures. By leveraging existing venues and previous game sites, Los Angeles will significantly reduce the embodied carbon footprint of the games.

All of these initiatives are preparing the city for our role as the host of the 2028 Olympic and Paralympic games. Los Angeles is aiming to make the LA28 Games one of the most sustainable Games in history. As part of that goal, we are committing to hosting a transit-first Games that will promote public transit and use of zero-emission vehicles. The goal of Los Angeles' Olympic investment is to ensure that the games' infrastructure will have a lasting impact that will continue to make Los Angeles' a global leader for climate action.

Thanks again for the opportunity to speak to you about Los Angeles sustainability goals and I look forward to hearing from Noah Efron on Tel Aviv's initiatives. As we move forward toward a more sustainable future, it's really cities that have the most potential to drive change. This is why collaborations and discussions like this are important to share information, grow, and advance climate resilience.

Keynote Speaker:

Professor Noah Efron, Member of Tel Aviv City Council; Chair of Tel Aviv Municipal Environmental Committee; Bar Ilan University

Climate Resilience in Tel Aviv-Yaffo: Principal Challenges & Challenging Principles

Honorable Deputy Mayor Sutley, Honorable Vice Mayor Veenker, Professor Stoner, Professor Tal, and other distinguished participants of this singular gathering: What an honor, and a pleasure it is to be here.

Our tragedy went like this.

On Friday, January 3, 2020, the weekend forecast called for light winds, temperatures in the 50s, -- the low teens in Celsius -- possibility of rain.

On Saturday, January 4, rains came more quickly and powerfully than anyone expected, drainage systems in some neighborhoods in the city were overwhelmed, especially in the older, neighborhoods with older infrastructure, neighborhoods like the hardscrabble Ha-Tikva quarter, in which, at number 2 Nadav Street, two beautiful kids, each 25 years old, a couple, Stav Harari and Dean Yaakov Shoshani, these two kids saw out-their-window the street starting to flood, it was still morning, and they got the idea that they ought to move their car to higher ground from their building's underground parking lot, which, they figured was bound to get flooded, and they got in the elevator, pressed the button for basement, unaware that already, by then, the pit of the elevator shaft was flooded, and when the elevator reached the pit, it short-circuited and for Stav Harari and Dean Shoshani there was no way out of the elevator carriage, and the flood waters rose, and they phoned emergency services, but because of the flash flooding and all the service-calls that came with it, the emergency response system failed, it crashed, and Stav Harari and Dean Shoshani called out, and neighbors heard and came with hammers and screw drivers and such tools as they had, but these were not enough to get the kids out of the elevator, and when, finally, emergency workers came, it was too late to rescue Stav Harari and Dean Shoshani.

And on Sunday, January 5th, 2020, more than a thousand people crowded into the Yarkon Cemetery for the funerals, and burying two beautiful 25 year old kids young-and-in-love is by-its-nature agony, but if you watch the videos today, beside the pain inherent in it, what stands out is the dumbstruck-shock of the thing:

It. Was. Only. Rain. People. Do. Not. Die. From. Rain. In. Tel. Aviv. In. 2020. How. Could. A. Thing. Like. This. Happen.?

That was how our tragedy went, our first big climate-change tragedy. And though every tragedy is irreducible -- we learned from the great mathematician Georg Cantor that infinities come in different sizes -- and our first big climate-change tragedy is smaller than many, maybe most, cities' big climate-change tragedies. Hurricane Ida in New York. The Mati Wildfire in Athens. 1301 pilgrims on the Hajj killed in Mecca last summer. Fires in Australia. Mudslides in

Freetown. Floods in Cologne. A deadly heatwave in Karachi. And of course, your wildfires in Los Angeles that we watched with horror and worry and heartbreak. And what each of these tragedies shares with all the rest-of-them is the sure knowledge that as shocking as these events are, they are each-and-every-one-of-them harbingers of future tragedies that are sure to come unless we act with a wisdom and determination that our species is not known for.

The name of this keynote session is "The Urgency of Climate Resilience" which urgency, I gather, if you are here in this room, you already feel and understand, and maybe you already know that since 1950, the average temperature of our region has risen by 1.4 degrees Celsius, and that the number of nights when temperatures climb above 28 degrees (82 and a half degrees Fahrenheit) averaged 48 between 2010 and 2019, but last year reached 69; and the number of days when the temperatures climb above 32 degrees (90 Fahrenheit, roughly) averaged just under 7 in the last decade, and last year reached 39, and maybe you already know that our best models show that by the end of the century rainfall will go down anywhere from a sixth to a quarter, and that sea levels will rise by 106 centimeters, and that the rise in extreme weather events that we have already seen is just a small down-payment on what we are going to see.

Facts like these are familiar to all of us, I think. We also know how complicated and ramified our climate crisis is, seemingly touching everything, everywhere, all at once. And for those of us who come to the problem from a municipal perspective– trying to "see it as a city" to borrow James C. Scott's memorable formulation -- there are all sorts of other challenges we face, too.

Challenges Facing Up to Climate Change

One of these challenges is the obduracy, the fixity, of infrastructure. Stav Harari and Dean Shoshani lived in a newish building on a street in a neighborhood with not-at-all-newish infrastructure – water and sewage networks, energy grids, roads and sidewalks, and all the rest.

The stolid rigidity of these systems is part of their nature: infrastructure is designed for stability and durability and use for the long-run, and because of this, changing it is hard. This is a fact that is especially important, and vexing, when we seek climate justice, as it militates towards that most exasperating dictum from Ecclesiastes, "That which is, has been long ago; and that which is to be, has already been." In our struggle to change how we do now-and-in-the-future water, power, transportation and all the rest, we forever confront how we did water, power, transportation and all the rest in the past, in the form of concrete, brick, stone, glass and metal, things that, by their nature, resist change, and take a price for it. Inequality is often coded into, is embodied by, this concrete, brick, stone, glass and metal.

And there is another sort of stubborn obduracy that complicates our efforts to address climate change: the time-lag built into urban-planning itself. In Tel Aviv-Yaffo, as in many cities, what gets built today often reflects decisions made a decade or more ago—at a time when, what-all-we-knew-or-thought-we-knew about climate, technology, and public priorities was different. A building finished in 2025 may have been conceived in 2012, approved in 2017, and permitted in 2020. By the time a new building opens its doors for the first time, important things in the world will have shifted from when it was first conceived. This lag between plan and reality means that even as we adopt new climate goals, our built-environment continues to replicate older

patterns—of energy use, water management, and all the rest—implicated into plans often drawn before or as we grew serious-and-smarter about our climate crisis.

Something like this is true, too, of the way the city is set up, its managerial infrastructure that by its nature, too, was made yesterday, for yesterday's challenges. The first great success of our present Mayor, Ron Huldai -- who when he first took office in 1998 inherited a city in spectacular disarray, on the verge of insolvency – his first great success was to create for the city a framework for good-government in a modernist, progressivist idiom: rationalized and well-ordered, with decently-funded units with well-defined areas of expertise, serious and systematic planning apparatuses, centralized oversight and review, etc., all of which amounted then to a revolution in good governance, and this newly rationalized government was pressed immediately into the project of renovating decaying infrastructure, also in a modernist idiom, but all this came a moment before the extent of our climate crisis was apparent to any but the most rarified few. Which is how it came to pass that now the mayor is called upon – and the rest of us, too -- to stage a second revolution, one that moves governance from disciplinary silos to interdisciplinary planning-and-practice, one that allows for new kinds of distributed, rather than rigidly-centralized, control, one that embraces adaptive systems over monumental infrastructure, one that prizes a sensitivity to place, to locality, over sweeping and more universal policy, and one that prefers an experimental and improvisational ethos over strict-by-the-book technocratic rationalism.

Another challenges we face is, not to put too fine a point on it, our national government. Often, too often, there is a mismatch in scales between the sort of systemic responses that our climate crises demand, and the sorts of responses that local government is equipped and allowed or authorized to offer. In all sorts of ways that matter, we sometimes find ourselves in Tel Aviv-Yaffo in a sort of regulatory straitjacket – without the authority that we would need to create the solutions that we would-and-should create to improve our transportation systems, our energy systems, our water systems.

It is true that there have lately been voices in our national government advocating, as part of a national strategy to address climate change, the delegation of more authority to local government, but voices are sometimes just voices, and the fact remains that the national government is doing far too little to address our climate crises, while – insult to injury –making it harder for city governments to do what we can-and-should be doing. I won't presume to speak about here, but from the headlines that reach us across the ocean, it is not hard to imagine that here, too, in the United States, the Federal government's failures of vision and action may make the work of cities with vision that are eager to act, that much harder.
Add to that, that we also find ourselves in a sort of fiscal straitjacket, prevented by law from issuing municipal bonds and pressing into service other financial tools that cities often use to fund ambitious projects and programs.

Still another challenge we face is the problem of maintaining our focus and shepherding the focus of residents-citizens of the city, on climate, in a time of perpetual, existential crises. We, of course, now, have the agonies of a horrid war our government shows no signs of soon bringing to a close, and which miseries will linger for generations for everyone in the region, which is our tragedy but it may be true that here too, in the United States, in a very, very different way, it is

also a time when crisis pursues crisis, danger follows danger in train, and this is a challenge for those of us seeing to maintain the focus on our climate crisis that we need, if we are to address it with success.

Still another challenge we face is the pressure of very rapid growth, Tel Aviv-Yaffo is a city that expects to grow in population by between then-again a fifth and a quarter in the next decade, adding 600,000 square meters of new building, increasing in that ten-year-interval our energy needs by 40%.

Tel Aviv-Yafo's Response to Climate Change

And these big challenges – the obduracy of physical infrastructure; the obduracy of managerial systems; a too-lackadaisical national government that too-listlessly controls many of the levers of change, including those that ought to be, but are not yet, in local control; a lack of good tools to finance expensive foundational change; a state of permanent political and social crisis; our very rapid growth, and all the pressures that brings – these big challenges – and of course there are more – they make it that much harder to respond to a crisis that already by its nature is what António Guterres famously called a "hellish" problem, and Tel Aviv-Yafo's response to all this has been first, well, to respond.

A good deal of our response is codified in a plan that the city will put out in the just a few weeks: its newest, most complete, most ambitious action plan for climate-change preparedness. In 2020, two years after we joined the C40, the first part of the plan was issued, that part focusing on adaptation, which is now augmented with a detailed approach to mitigation, and the forthcoming ambitious action plan describes six flagship missions – cooling the city, more effective water management, working toward carbon neutrality, enhancing ecosystem resilience, building community resilience, and promoting innovation through climate-tech and clean-tech -- which flagship-missions translate into dozens of clearly-defined-and-measurable goals to be met on a tight schedule, most by 2030, goals like planting tens of thousands of trees amounting to a third again of the urban forest from the 2020 baseline, or reducing carbon emissions by half by 2030, on the way to carbon neutrality in 2050, and a great many more. It is both a plan of achievable goals and a plan of great ambition – as befits the challenge, the plan, too, is everything,-everywhere,-all-at-once, you will no doubt hear a good deal about it in the sessions at this conference, delivered by brilliant-committed people we are fortunate enough to have in the room with us here, who we are fortunate enough to have in Tel Aviv as leaders in our efforts fashion the strategies, goals and approaches the plan describes – among them Udi Carmeli, the city engineer, Eitan Ben Ami, the head of the city's environment and sustainability authority; Dr. Boaz Keidar, the director of the municipal unit on sustainable planning and energy, also Dr. Orli Ronen, of The-Laboratory-for-Innovation-&-Urban-Sustainability at Tel Aviv University and a long-time collaborator of the city on these matters, and there are others.
Behind the plan, and all the efforts that have emerged in the city while the plan was being devised, lie some foundational principles:

One is that climate justice must be a motive force, a spirit, that is part of everything we do. Addressing climate change is essentially a fundamental restructuring -- there is no way around that -- it is a ripping out of old infrastructure – be it concrete, metal and glass; be it the city's organizational chart, be it our regulatory frameworks – and putting in place new infrastructure,

and this is hard, but it is also an opportunity. The sociologist of Technology Bruno Latour was right when he said that infrastructure is "society made durable," and in building new infrastructures to replace the old ones, we are making a new sort of society and we are making it durable. In building new infrastructure to replace old infrastructure, we are making a new sort of society and we are making it durable. One of the things that Eitan Ben Ami and his people have done, to give just one small example by way of illustration, is to set up 24-7 free giving-and-exchange clothes closets around the city, where people leave clothes they're done with and take clothes they want, and the fact that these closets are there, they are now part of our urban infrastructure, it creates a new model of consumption, a new way of thinking about and using clothes, and these giving-and-exchange-clothes-closets makes this new model of consumption durable, in front of our eyes.

Another foundational principle is: Ain't-no-one-gonna-do-this-but-us-ourselves. The vexing issue of the regulatory straitjacket Tel Aviv-Yaffo finds itself in, the city addresses through serious and strategic efforts to lobby the national government and to work with it, and prod it along, and these efforts produce some results over time. But it is also an issue that the municipality addresses through creating workaround-solutions of florid creativity. Faced with a national government ban on allowing public transportation in the city on the Sabbath, a long-term concession to orthodox religious parties-and-politicians, the city created a system of free busses on the Sabbath, including intercity busses, and it is a system that has a certain Rube-Goldberg-ishness to it, and it is fabulously expensive, but it allows, say, young city residents who want to visit their folks in the suburbs for traditional family dinners on Friday nights to not hold onto cars they don't really need to have and no one wants them to have. It says in the Talmud בְּמָקוֹם שֶׁאֵין אֲנָשִׁים, הִשְׁתַּדֵּל לִהְיוֹת אִישׁ, "in a place where there are no humans, try to be human." That, too, is a foundational principle.

Another principle is that tireless energy is needed. Another is that creativity, originality and a certain out-of-the-boxitude are needed, which when I feel these things flagging in myself, my own answer is to pop over see what they are up to in the sustainable planning department in the city, after which I find myself buzzing electric with ideas and inspiration, and eager anticipation for things that in one year, or five, or ten, I will see on the streets of the city. You will hear Boaz Kedar who heads the department tomorrow, and you will understand how I feel.

Another principle is that without losing sight of the big picture, and the big challenges, and all the uncertainty and all the lousy news, it is still crucial to appreciate those successes such as they are, and those advances, such as they are, that are happening, all the time. Which leads directly to the last principle I will mention this morning, that our climate crisis can only be addresses with and through community and communities, of two sorts.

The one, community and communities of residents-citizens of the city. Eitan Ben Ami has overseen a massive effort to create strong networks of people of all sorts from all over the city, who are now involved in facing up to climate change day-to-day in spectacularly varied ways: in community gardens, in planting trees in yards and neighborhoods, in communities arising around local currencies, in composting initiatives, in volunteer-mending projects, or bicycle renovation projects, environmental leadership programs, sustainability day camps, communal refrigerators and food sharing, the list can feel endless, and the effect is to create communities that create the

awareness and the resilience that we need now and crucially that we are going to all-of-us need even more in the future.

And the other sort of community that is needed and that is being nurtured, is between the city and what surrounds us. In 2022, Tel Aviv-Yaffo initiated a regional climate pact among cities in the gush-dan region. We are part of a climate initiative of the Forum-of-Fifteen, an umbrella organization of the biggest cities in Israel. We are part of the forum of beach and waterfront authorities. We are an eager member of the C40. We eagerly seek out opportunities for learning and collaboration like this one, today. These networks, these communities, within Tel Aviv-Yaffo, between Tel Aviv-Yaffo and other cities in Israel and the world; between Tel Aviv-Yaffo and NGOs and academia, it is a foundational principal of our efforts that they a basis of such climate resilience as we will summon up.

(As I aside, I might add, that in these agonizing days of war and suffering in Gaza, these meta-principles – justice, showing up, with energy, and creativity, going beyond old solutions, finding common cause among ourselves and with other people and peoples, knowing that our humanity-and-our-future depend on our ability to make common cause – these would be good principles to start with to address the other hellish crises-of-our-own-creation that bedevil us in these dark days.)

Conclusion

And I will end with this: One of the hellish aspects of a problem like our climate crisis is that it is so big, so ramified, so complicated, that it leads easily to despair. Going through old clippings about Stav Harari and Dean Shoshani, who would now be just-turned-thirty, I felt the tug of despair. But in the sorts of responses we will discuss here over the next two days, it is possible to feel a still-stronger-tug in the opposite direction. Because:

The opposite of despair is concern for justice

The opposite of despair is stepping up. The opposite of despair is doing, such as you can do.

The opposite of despair is the sure knowledge that in this, Ecclesiastes is wrong, "that which is to be, need **not** be that which has already been"

The opposite of despair is the ability to see and appreciate such progress as is being made in front of our eyes.

The opposite of despair is community and fellowship.

The opposite of despair is the inspiration one gets from listening to the resolve and the vision that you described, Nancy.

The opposite of despair is a gathering like this one, for which I am grateful.

Panel 1: Water Management in Water Scarce Cities: Combatting Droughts and Ensuring Supply

Chair: Professor, Prof. Bruce Cain, Director, Stanford, Director of the Bill Lane Center for the American West

Presentation:
Atty. Felica Marcus, Stanford University, Fellow Water in the West Program

Panel Discussion

Professor Dror Avisar, Director of the Center for Water Research, Tel Aviv University

Maya Crabtree, Environmental Director, Forum of 15, Israel.

Dr. Gregory Pierce, Co-Executive Director, Luskin Center for Innovation, UCLA
Break

The Panel on Water Management in Water Scarce Cities centered on a comparison of how Los Angeles and Tel Aviv cope with scarce water supply problems. Felicia Marcus provided the opening presentation focusing on Los Angeles while Dror Avisar and Maya Crabtree responded from the Tel Aviv perspective. Both cities must deal with the challenge of providing water for large populations in a semi-arid climate that is now stressed by rising temperatures and longer, more severe droughts due to climate change.

In the twentieth century, Los Angeles solved its water problem by importing water from Northern California and the Colorado River through an elaborate system of canals and pumps. Tel Aviv is much more dependent on water desalination, something that is harder and more expensive to implement in California due to environmental laws and politics. Israeli desalinization is state of the art but draws its water from relative shallow seas that are increasingly polluted by improperly treated waste and stormwater from other Mediterranean countries. Some California communities in California have also built desalination facilities, but Los Angeles has not. Rather, LA has undertaken more surface water recycling.

California faces the challenges of shifted surface water flow timing and diminished mountain snowpacks due to climate change. This will require both more and different forms of water storage. Los Angeles also must worry about the impact of population growth in the Upper Colorado basin and deeply embedded environmental skepticism about reservoirs and dams. Tel Aviv will continue to rely heavily on desalination but might consider more recycling as California has done since recycling costs are generally lower than desalinization. At the same time, Los Angeles and other California coastal cities may have to consider more desalinization if the water scarcity issues get worse over time with global warming.

Panel 2: Health, Trees and Thermal Comfort: Urban Strategies

Chair: Dr. Netta Lipman, Past Deputy Director, Climate Adaptation, Israel Ministry of Environmental Protection, TAU

Panelists:
Eitan Ben Ami, Director of Environmental Agency, Tel Aviv-Yafo Municipality

Rachel Malarich, Los Angeles, City Forest Officer

David Pearlmutter, Professor, Ben Gurion University

Marta Segura. Los Angeles Chief Heat Officer & CEMO Director

Leeor Carasso, Tel Aviv University

Integrated urban planning for thermal comfort: The discussions underscored the imperative of integrating tree cover expansion into all facets of urban planning, including transportation and infrastructure development. Policy recommendations emerged for stronger regulatory frameworks and incentives to promote tree planting in new developments and on private land, transcending traditional public greening efforts.

Cross-sectoral coordination and partnerships: Effective heat resilience strategies demand seamless coordination across municipal departments (planning, health, infrastructure) and robust partnerships between local governments, research institutions, and community organizations. This collaborative approach is vital for overcoming political, economic, and technical barriers to investment in nature-based solutions and ensuring widespread adoption and long-term maintenance of urban forests.

Contextualized and adaptive species selection: Given diverse climatic constraints, particularly drought in arid regions, the selection of appropriate tree species is paramount. Future policies should emphasize species resilience and adaptability to changing climatic conditions, ensuring the sustainability and efficacy of urban tree canopies for cooling.
The session collectively reinforced the critical role of urban forestry as a foundational component of climate resilience, advocating for evidence-based, equitable, and highly coordinated strategies to enhance thermal comfort in a warming urban environment.

Panel 3a. Financing Climate Resilience in Local Government

Chair:
Dr. Blas L. Pérez Henríquez, Director of the California-Global Energy, Water & Infrastructure Innovation Initiative at Stanford University

Panelists:
Hend Halabi, Israel Ministry of Environmental Protection, Climate Adaptation Division

Dr. Michael Roth, Energy-Water Resilience Support Specialist, Golden Colorado

Tamar Zandberg, Director of Climate Policy Center, Ben Gurion University; Past Minister of Environmental Protection, Israel

Abby Edwards, CA Governor's Office of Land Use and Innovation

Snir Schwartz, Tel Aviv University Law School

This panel brought together policymakers and experts from California and Israel to explore how local governments can finance climate resilience amid structural, fiscal, and political constraints. While Israel and the United States differ markedly in governance models—centralized versus decentralized—panelists emphasized that many of the underlying challenges are shared, and that cross-national learning can support more equitable and effective climate action.

Governance and Institutional Context
Panelists underscored the structural asymmetries between national and local governments. In Israel, even major cities like Tel Aviv lack fiscal autonomy; they cannot collect their own taxes and must apply for national funds to implement basic infrastructure such as bike lanes or tree planting. In contrast, U.S. cities—especially in California—have more administrative authority but often lack sustained funding. Wealthier municipalities like Palo Alto are able to demonstrate best practices, but lower-income jurisdictions face persistent barriers to implementation due to resource gaps and siloed institutional structures.

Policy Innovations and Legislative Mandates
In Israel, the forthcoming Climate Bill will require all municipalities to submit climate adaptation plans every two years and update their national adaptation plan every five. Support tools such as dedicated tracks for Arab and Bedouin communities and expanded shading initiatives are under development. In California, the Integrated Climate Adaptation and Resiliency Program (ICARP) provides grants and technical assistance to local jurisdictions, with a strong emphasis on equity, data-driven planning, and cross-sector coordination.

Equity, Framing, and Public Engagement
Across both contexts, equity emerged as a core concern. Panelists emphasized the need to design funding mechanisms that prioritize the most vulnerable communities rather than those with the greatest administrative capacity. Effective framing is also essential—especially in the U.S., where political polarization around climate change persists. Terms like “resilience,” “public safety,” and “infrastructure reliability” can often resonate more effectively with communities and decision-makers.

Financing Mechanisms and Military Models
Innovative financing models from the defense sector may hold lessons for civilian resilience. Israel’s Energy Efficiency Fund enables military units to finance projects through shared savings, while the U.S. uses Energy Savings Performance Contracts (ESPCs) to fund energy improvements without upfront costs. These approaches align financial incentives with long-term sustainability goals and may offer templates for municipal adaptation.

Challenges and Next Steps
Common barriers include misaligned budgeting periods, institutional silos, insufficient coordination across sectors, and political cycles that disrupt long-term planning. Nevertheless, both California and Israel are moving toward embedding climate planning into formal governance processes, with growing recognition of the need for flexibility, community leadership, and sustained investment.

Conclusion
The panel concluded with a call to action and the importance of leadership. Climate impacts are intensifying, and the cost of inaction is rising. Local governments must be empowered with the tools, resources, and autonomy to lead in climate resilience. As Blas Pérez Henríquez, the panel chair noted in his closing remarks, "Health impacts and climate-related disasters are becoming more frequent, more destructive and more costly. The time to act is now."

Panel 3b: Preparing for Sea Level Rise – Local Strategies

Chair:
David Behar, Climate Program Director at the San Francisco Public Utilities Commission

Panelists:

Udi Carmely, City Engineer, Tel Aviv-Yafo, Municipality

Dr. Daniella Hirschfeld, Utah State University(Invited)

Dr. Eric Klinenberg Wagner School of Public Service, New York University (Invited)

Galit Cohen, Senior Research, Institute for Security Studies/ Jewish Climate Trust

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Preparing for Sea Level Rise – Local Strategies

This panel explored coastal resilience challenges with global and local reports about science translation, shoreline vulnerability, and two case studies at different stages of adaptation action in Tel Aviv-Yafo and New York City.

Daniella Hirschfeld outlined the complexity in the multi-hazard coastal environment, where threats from rising seas, rising groundwater, precipitation intensity, and fluvial flooding can compound risk. To address this intricate set of risks, adaptation requires multi-disciplinary expertise in science, policy, planning and design. Many of these challenges begin with the science – what do we know and how do we use this knowledge to create resilience? A global study revealed problems in at least one area: sea level rise projections, where a global practitioner survey led by Hirschfeld and 27 co-authors revealed a chaotic ecosystem, with widely varying approaches in the uptake of these projections in planning. This included over 50% of respondents reporting they were using a single SLR projection in planning even out to end-of-century, an approach counter to best practice given deep and irreducible

uncertainties on this temporal scale. Substantial differences in risk management also emerged, with high end SLR projections ranging from under 1 m to over 3 m by 2100. Practitioner-led global workshops in 2022 highlighted approaches needed to address these challenges, including a focus on realistic, local projections, incorporation of lived experiences in communities, and durable, ongoing collaborations between a range of informed actors, from scientists to boundary organizations to practitioners.

Galit Cohen zeroed in on one hazard shared by many coastlines, cliff erosion, with a focus on 45 km of Israeli coast. Causes both human driven, such as vegetation removal and development, and natural, including waves and storms, are joined by rising seas to define this growing threat. As a national master plan develops among ministries, local authorities, and scientists, resource limitations may require hard choices about where to implement engineering solutions and where to step away and let coastal processes proceed. Questions about preserving natural assets and existing development will arise, as will decisions governing future actions and human settlements. The evolution of rising seas, physical observations, and policies over time will be essential to maintaining a flexible adaptation strategy.

As reported by Udi Carmely, Tel Aviv-Yafo has undertaken major efforts to assess threats to the coastline of Israel's largest city. Its 14 km shoreline includes narrow, sandy beaches, two ports and a marina, erodible cliffs, and many valuable assets. Politically, the threats posed by rising seas, which are gradual, long term, and even abstract in the present, can be difficult for the political system to address. Significant economic issues and conflicts, as between tourism and real estate development, add decision complexity. And gaps in the science and difficulties in public communication of the choices faced add to planning challenges. Nonetheless, with Tel Aviv-Yafo facing compound risks related to coastal flooding, aquifer saltwater intrusion, and rising groundwater, the city is moving forward with plans to address a combination of significant SLR rise plus an extreme storm event by 2100 that would raise sea levels about 1.7 m above today's levels. One critical tool in this analysis are preliminary inundation maps that visualize future water levels against the elevation of the city's shoreline. These maps show significant impacts both from inundation and cliff erosion, with the potential for exacerbation from inland rainfall and drainage outlets. Next steps in the vulnerability assessment include refinement of flood mapping with improved shoreline elevation data, full assessment of susceptible assets, and building partnerships in this work with neighboring municipalities, the national government, and academia.

Eric Klinenberg reported on adaptation action underway in New York City. Resilience design in New York has followed years of vulnerability assessment and the galvanizing event of Hurricane Sandy in 2012. Big picture conversations about walling off the region were entertained, as well as options related to retreat of communities from vulnerable shorelines. Out of Sandy, a federally supported effort called "Rebuild by Design" created a contest among consultant teams with broad public engagement to develop solutions throughout the greater New York area. In some cases, resistance to inundation was proposed through breakwaters and armoring; in others, containment, diversion, and discharge was the focus. The use of nature wherever possible was emphasized. Concerns among citizens about the future of their homes and communities were surfaced. And finally, emphasis has been placed on achieving adaptation without exacerbating existing inequalities.

Panel 4: Forest Fire Prevention, Cities and the Climate Crisis

Chair:
Prof. Chris Field, Director, Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies; Perry L. McCarty Director, Woods Institute for the Environment, Stanford University

Presentations –
Frank Bigelow, Community Wildfire Preparedness & Mitigation Deputy Director, Cal Fire

Colin Price, Professor, Department of Geophysics, Tel Aviv University; Chair, Planet Zero Initiative

Yoav Perlman, Director of Birdlife Israel, Society for Protection of Nature in Israel

Dandi Hardi, Stanford University, Graduate School of Business
Over the past 14 years, forest fires have fundamentally changed. In California, we no longer talk about "fire seasons"—it's now a year-round fire regime. Firefighters are no longer laid off in the off-season. This shift became starkly clear this January, when catastrophic wildfires erupted. To date, over 23 million acres have burned—a staggering number.
About 95% of fires are caused by human activity. As populations expand into fire-prone areas, the risk increases. Public education is key: something as simple as using a gas lawnmower can spark a blaze. While arson is rare, accidents—like dragging chains or vehicle malfunctions—are common causes.

Technological upgrades are being deployed. CalFire now operates 352 fire engines and a network of 1,500 cameras, many using AI and multispectral imaging to detect fires early—even through smoke. Aviation tools have improved: old S-2 aircraft with 1,200-gallon capacity have been supplemented by C-130s that carry 4,000 gallons. Similarly, new Sikorsky helicopters have replaced many of the aging Vietnam-era models, doubling capacity and enhancing detection.
Community-focused wildfire prevention emphasizes defensible space, home hardening, and fire-wise communities. As new developments arise, resilience must be built in. A key strategy is fuel reduction, including shaded fuel breaks and prescribed burns under strict protocols.

A striking finding: CalFire's damage inspection team reports that homes which ignore fire prevention have a greater than 90% chance of complete destruction in a wildfire.
California has the strictest wildfire-related building codes in the U.S. Chapter 7A mandates non-combustible siding, multi-pane windows, Class-A roofing, and tight vent screening. But many homes were built before these standards. That's why "Zone 0" protections were introduced—clearing the first five feet around a home of all flammable material in houses that are suspectible to fires.

Home hardening is essential: retrofitting older homes with non-combustible fencing and materials can break fuel continuity and save structures. New real estate disclosure laws aso require sellers to inform buyers of fire risk reduction efforts and offer low-cost retrofit checklists.

Financial support is available to California homeowners: up to $40,000 in mitigation grants for retrofits. A recent climate bond $25 million specifically for defensible space work. New requirements also mandate 20-foot separation between homes and outbuildings like sheds.

Innovative fire research is also underway in Israel. Cell phones can act as environmental sensors—tracking temperature, humidity, and pressure—to estimate Vapor Pressure Deficit (VPD), a key indicator of fire risk. High VPD correlates with severe fires, as seen in Israel and Portugal. This suggests mobile data could supplement traditional weather stations.
In Israel, native scrublands often burn less readily than conifer forests. Promoting natural habitats with fire-resistant vegetation can reduce risk.

Finally, new technologies are emerging. Fire Dome is one such system: inspired by the Iron Dome, aims to create the first fully autonomous ground-based wildfire defense system. Using thermal cameras and mini-launchers, it detects and extinguishes fires within a 100-acre perimeter—even before they spread—without relying on wind-vulnerable drones or delayed human response.

Day 2

Panel 5: Climate Justice: Identifying and Protecting Vulnerable Populations in Urban Environments

Chair: Rodolfo Dirzo, Stanford University, Associate Dean for Integrative Initiatives on Environmental Justice

PRESENTERS

Noga Kronfeld-Schor, Department of Zoology, Tel-Aviv University, Past Chief Scientist, Israel Ministry of Environmental Protection

Matthew Gonser, Climate Resilience Officer, Los Angeles County

PANELISTS

Mark Buntaine, Bren School of Environmental Science & Management, University of California, Santa Barbara

Meital Peleg-Mizrachi, Yale University Department of Economics

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Rodolfo Dirzo provided some context for the panel. Dirzo alluded to the term "Anthropocene" (term proposed by Nobel Laureate Paul Crutzen to recognize a new geological epoch of anthropogenic impact on the planet) to emphasize the fact that one of the most widely recognized drivers of global environmental change is climatic change. Dirzo remarked then that anthropogenic climatic change is characterized by its disproportionate impact on populations that contribute the least to factors that drive climate change, and that this disproportionality is evident at several scales – among countries, regions, and even within cities. Addressing this issue is imperative. Fortunately, this panel brought researchers that discussed climate justice through the lens of the identification and protection of vulnerable populations in urban settings. A central element of the panel was to examine the experiences of two complex metropolis, Los Angeles (City and County in this case) and Tel-Aviv. Additionally, the panel included reflections and discussion of insights and learned lesson from these two metropolises and provided complementary broad overviews of climate justice issues in the USA and Israel more broadly. Here I provide a summarized account of the panel.

Professor Kronsfeld-Schor described an impressive effort of development of a national climate adaptation portal as a basis for climate justice decision- making, emphasizing, to start with, that tackling this issue should be based on rigorous scientific information. Her presentation analyzed the topics of hazard, exposure, vulnerability/susceptibility to climate-related damage to address the basic questions of who and what is exposed to the impacts generated by the identified hazards.

The effort, based on the participation of an impressive team of experts from the Ecological Society of Israel and Israel's Academy of Science identified a critical need of high-resolution information leading to the description of the specific patterns of unequal distribution of climate change (CC) impacts. The team developed an Index of Vulnerability as a means to inform action plans for social resilience. Relevant deliveries of the effort include exposure indicators, sensitivity maps, and a first draft of the portal to be released in January 2026, with plans of publishing and disseminating these materials in Hebrew, Arabic and English. A recorded version of Prof. Kronsfeld- Schor's presentation "A national climate adaptation portal" is available in

https://www.youtube.com/watch?v=0QcctDyoEps&list=PLjSvbbhu6GB7GgJjtoFCUeb8DJgl7AoWQ&index=8

Matt Gonser provided, as preamble, a discussion of the relevant cross-cutting topics underlying his presentation on an updated plan for the Los Angeles County Sustainability Plan, including environmental justice, climate resilience, green economy, and the inextricable connections among these. His presentation showcased the county's vulnerability assessment which is meant to be complementary to and synergize with a variety of other related activities to climate justice. The Vulnerability Assessment (VA) is based mostly on the City of Los Angeles but provides insights and technical support to the other 87 unincorporated cities of the county (a county with a population larger than that of Israel!). The VA includes information on hazards, social and physical vulnerability, complemented with scenario-building models.

The salient aspects of the plan include the identification of infrastructure-related issues of exposure and sensitivity relative to adaptive capacity; environmental justice- related elements of inequity in infrastructure education, economic opportunities and health, institutionalized biases, inequity in living conditions. The expected outcomes of the Sustainability Plan include the vulneravility assessment, mapping tools and, an innovative component of "cascading impacts" (those resulting from local impacts having consequences beyond the specific location of the impact—similar to the ecological concept of tele- connections). Gonser's discussion addressed a description of next steps, emphasizing the importance of local communities' engagement in the assessment, including community feedback on needs, responses and preparedness, community-based co-creation of solutions and partnership developments. His overall vision for the next steps is to materialize a program of "Climate justice in practice: from maps to people". Gonser's presentation "Climate justice: Identifying and protecting vulnerable populations" is available in this link https://www.youtube.com/watch?v=0QcctDyoEps&list=PLjSvbbhu6GB7GgJjtoFCUeb8DJgl7AoWQ&index=8

Panel respondents

Mark Buntain opened his presentation with the critical questions of what happens when we do not consider the elements of climate justice addressed in Kronsfeld-Schor and Gonser's presentations, who/what is being impacted and whose risks are being assessed. His brilliant presentation highlighted the huge heterogeneity in what local governments are or are not doing regarding climate justice in cities and how such dramatic heterogeneity needs particular ad hoc response plans. However, his meta-analysis uncovered that the majority of USA jurisdictions do not have hazard mitigation plans or means of addressing the environmental manifestations of climate change, such as flooding, by way of example.

Notably, since many jurisdictions do not have hazard mitigations plans, they are not taking advantage of the federal financial resources targeted for those climate impacts. Furthermore, two golden-value figures of his analysis revealed that the probability of executing plant adaptations by local jurisdictions is high in those localities where the local population is composed of white, high-income populations. Dramatically, the situation is opposite in low-income, non-white majority populations, where the percentage of plan adoption to address flooding risks is statistically indistinguishable from zero. Buntain's conclusion is that it is critical that the programs, efforts, institutions and personnel dedicated to climate change response observed in Los Angeles and Tel Aviv are deployed in the thousands of underserved populations in the USA (and globally). Buntain's fantastic presentation "Floods and Fairness: Unequal Responses to Climate Risks" can be seen via this link https://www.youtube.com/watch?v=0QcctDyoEps&list=PLjSvbbhu6GB7GgJjtoFCUeb8DJgl7AoWQ&index=8

Meital Peleig-Mizrachi addressed the topics of transition local green economies and transition to green jobs for vulnerable communities. She emphasized that such transitions require the training of workers from underserved communities, including low-income, Indigenous Peoples, women, and informal workers. In Israel, these are represented by peripheral communities, low-income households with people of limited or no training in topics related to green jobs. To address this issues, she has developed a road map of action composed of access to green jobs training for young and early- career professionals, improvement of working conditions in jobs of high social and environmental value, and transitioning from work in polluting industries to environmentally friendly industry. She exemplified the collaborations with the Tel-Aviv Yafo municipality regarding job creation with training on how to install solar panels for Arab youth. Her overall recommendations included economic diversification, fomenting equity and engagement of minorities in decision- making processes, and collaboration with municipalities to develop place- based solutions based on the explicit identification of vulnerable groups.

The panel moderator and the two respondents of the panel observed that Kronsfeld-Schor and Gonser's presentations described climate justice-related programs of great sophistication, enormous granularity, comprehensiveness and inspirational value for other cities of the USA, Israel and the world. These represent a model of coordinated effort that, to the extent possible, should be emulated by other cities (of course considering the local conditions, histories and socio-economic structures). Peleig-Mizrachi's presentation "No One Left Behind: Advancing a Just Transition and Green Jobs for Vulnerable Communities in Israel" can be seen in this link
https://www.youtube.com/watch?v=0QcctDyoEps&list=PLjSvbbhu6GB7GgJjtoFCUeb8DJgl7AoWQ&index=8

Panel 6: The Role of Climate Technologies in Local Climate Adaptation Strategies

Chair, Dr. Gordon Bloom, Director, Social Entrepreneurship and Innovation Lab (SE Lab)-Human & Planetary Health; Founder, Social Entrepreneurship Collaboratory (SE Labs), Stanford University

PANELISTS

Dr. Gemma Guilera Ferre, Managing Director, Sustainability Accelerator

Meagan Mauter, Associate Professor, Stanford University & SLAC National Accelerator Laboratory

Leila Madrone, Executive in Residence, Activate

Noam Sonnenberg, Director, Global Climate Tech Projects & Former Director, PLANETech

This session explored innovative approaches to integrating climate technologies into local adaptation efforts. Moderator, Prof. Gordon Bloom, drawing from his experience at Stanford University, the Harvard Kennedy School, and his recent establishment of Stanford's Sustainable Societies Lab, set the stage by contextualizing climate technologies within the broader nexus of human and planetary health. He described our current era as a "perfect storm" characterized by intersecting crises of climate change, global pandemics, and social unrest. Bloom underscored the importance of balancing technological and social innovations, arguing that technological

solutions like renewable energy systems must be paired with novel social frameworks that effectively guide human behavior. He emphasized Stanford's role as a "purposeful university," committed to accelerating practical, equitable solutions for global challenges.

Leila Madrone, Executive in Residence at Activate, spotlighted the significant gap in funding and innovation for climate adaptation and resilience (A&R), noting that less than 3% of private climate capital currently addresses this area. Madrone described this gap as "innovation white space," stressing the need to develop new models beyond traditional venture capital structures. She proposed cultivating cooperative ecosystems and corporate partnerships to better align funding with the unique demands of adaptation technologies, such as flood defenses, wildfire-resistant infrastructure, and resilient agriculture. Madrone highlighted Activate's efforts to pioneer these new investment pathways, prioritizing long-term impact over short-term market returns.

Dr. Gemma Guilera Ferre, from Stanford's Doerr School of Sustainability Accelerator, presented the Climate Adaptation 2025 Cohort, exemplifying Stanford's commitment to translating cutting-edge research into scalable global solutions. The cohort includes 11 interdisciplinary projects targeting technology, policy, and finance innovations, with the ambitious goal of enhancing the adaptive capacities of one billion people by 2035. Key themes from the cohort involve addressing climate impacts on health, leveraging nature-based solutions, advancing extreme heat mitigation technologies, and bridging the gap between technical development and real-world implementation. The Accelerator's strategy emphasizes collaborative co-creation, neutral convening, and interoperable frameworks, taking inspiration from their successful SYNCHRONICITY project deployed across 20 cities.

Meagan Mauter of SLAC National Accelerator Laboratory addressed the critical role of infrastructure amid increasing climate variability. Advocating for versatile, distributed, inclusive, and digitally-enabled water systems, Mauter underscored the value of multifunctional infrastructure combining wastewater treatment, flood protection, and ecological benefits. She emphasized the necessity of inclusivity, ensuring historically marginalized communities benefit from resilient solutions, and highlighted the transformative potential of digital technologies in enabling adaptive, real-time management and optimization of infrastructure.

Noam Sonnenberg, Director of Global Climate Tech Projects at PLANETech, outlined the group's initiative to cultivate a robust global climate-tech innovation network centered in Israel. He stressed the importance of collaborative tools such as the Climate Challenge Map and the Climate Tech Report, designed to connect startups, NGOs, and stakeholders globally. These tools facilitate knowledge sharing, innovation acceleration, and practical implementation of climate solutions, reinforcing Israel's role as a pivotal hub for climate technology advancement.

Collectively, the panel highlighted an integrated vision for local climate adaptation, emphasizing innovative funding mechanisms, interdisciplinary collaboration, inclusive infrastructure development, and global cooperation as key elements for successfully addressing climate resilience challenges.

Panel 6b: Civil Society's Role in Promoting Climate Resilience

Chair: Kate Gordon, CEO, California Forward – In Conversation with Alon Tal

PANELISTS

Tammy Gannot, Deputy Executive Director, Adam Teva V'din (the Israel Union for Environmental Defense)

Michele Hasson, Senior Director, Equity & Community Partnerships, Environmental Health, Natural Resources Defense Council, Los Angeles

Dr. Doreen Lustig, Associate Professor, Tel Aviv University, Buchmann Faculty of Law

Jonathan Parfrey, Executive Director, Climate Resolve

Shira Zchout, Director of Regional Councils, Aclima

This panel brought together leading practitioners and scholars working at the intersection of law, advocacy, and community partnerships to explore the evolving role of civil society in advancing climate resilience.

The session opened with a conversation **between** Prof. Alon Tal **and** Kate Gordon, CEO of CA FWD, a statewide organization committed to building a more sustainable, resilient, and inclusive economy across all regions of California. Gordon previously served as Senior Advisor to U.S. Energy Secretary Jennifer Granholm in the Biden-Harris administration and, before that, as Director of the California Governor's Office of Planning and Research and Senior Climate Policy Advisor to Governor Gavin Newsom.

Throughout the interview, Gordon emphasized the increasing frequency and severity of climate-related disasters and the growing fiscal burden they place on governments. She advocated for embedding climate risk and resilience into procurement and investment decisions from the outset, while acknowledging the challenges posed by political time cycles and long-term uncertainty.

Moderated by Kate Gordon, the panel began with each participant introducing their work in supporting civil society efforts to enhance climate resilience in Tel Aviv or Los Angeles.

The discussion then turned to a series of structured questions addressing the complex relationships between different levels of government and civil society actors. Key themes included:

- The respective roles and coordination challenges among national, regional, and local governments in adaptation planning
- Adaptation strategies for unincorporated and rural areas, with insights from Shira Leon Zchout

- The tensions between housing development and land-use policies that aim to promote long-term resilience, explored by Tammy Gannot
- The importance of vision and leadership in advancing climate policy, highlighted by Jonathan Parfrey
- The difficulties of aligning short-term political and financial frameworks with the long-term nature of climate risk—raising questions of intergenerational justice and climate litigation, addressed by Doreen Lustig
- Community-level interventions that provide immediate, tangible benefits, and the role of NRDC in supporting grassroots efforts across California, discussed by Michele Hasson

The panel underscored the essential role of civil society in bridging knowledge gaps, advocating for policy reforms, and developing localized, inclusive approaches to climate resilience. It also highlighted common challenges in integrating long-term climate goals into current legal, institutional, and political frameworks.

Panel 7: Urban Climate Resilience Programs and Public Policy: What's Next?

Chair: Alon Tal, Visiting Fellow in Israel Studies, Center on Democracy, Development and the Rule of Law, Stanford University; Tel Aviv University Department of Public Policy

PANELISTS

Boaz Keidar, Head of Sustainable Planning and Energy, Tel Aviv-Yafo Municipality

Joe Kruger, Affiliated Fellow, Georgetown Climate Center, Georgetown University

Orli Ronen, Head of Urban Sustainability Lab, Tel Aviv University

Buzz Thompson, Professor, Doerr School of Sustainability, Stanford University

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The session opened with a reflection on the emergence of the climate resilience agenda. Joe Kruger observed that when climate resilience began gaining attention in the late 1980s and early 1990s, initially in parallel with growing awareness of climate change. Initially, climate resilience was considered to be "defeatist" and the assumption was that the international could respond in time to prevent significant impacts due to global warming. Therefore, early climate policy efforts focused on mitigation and emission reduction. But the 2000s brought recognition that certain impacts were already locked in. Events like Hurricanes Katrina and Sandy accelerated this shift. Under the Obama administration, resilience received greater institutional attention, with a federal task force created and integration into the 2015 Paris Agreement.

When asked which governments are leading, Kruger pointed to California, Massachusetts, New York, and Maryland. These states embed resilience into local planning documents and financial strategies, emphasizing climate equity and cross-agency coordination.

The discussion then turned to federal policy reversals. Joe Kruger observed that U.S. climate policy has long swung between administrations. Civil society, he noted, has developed a playbook: defend existing programs, empower state and local leadership, and prepare for the next political opportunity. However, current challenges include brain drain from federal institutions, funding cuts for research, and erosion of rule of law.

Or emphasized that cities remain underrecognized globally, even though most people live in urban areas. Cities are on the front lines of the polycrisis and must become sustainable and equitable by 2030. But the real challenge is building urban resilience without allowing it to become the sole defining urban characteristic.

Asked about positive city-level developments, Orli Ronen cited a mayor in Argentina who prioritized transportation, open space, and waste management. The city introduced Bus Rapid Transit and leveraged it to promote waste separation. On barriers to implementation, Ronen stressed the need to mainstream resilience. Embedding it in statutory planning—rather than relying on elected officials—would secure long-term progress. Municipalities must be recognized for their leadership and granted mechanisms to institutionalize policies.

Turning to Tel Aviv, Boaz Keidar described "bureaucratic activism" as a key approach: pushing bottom-up reforms from within government. Tel Aviv currently has the most ambitious climate plan in Israel. Keidar emphasized the importance of aligning developers using both incentives and regulation. He also argued that money does not constitute the main obstacle to resilience in Tel Aviv, which is fiscally stable. Rather, collaboration among stakeholders is the limiting factor. A top priority is a green retrofit program for the city's aging housing stock, much of which was built in the 1960s and lacks insulation or fire safety. A heatwave coupled with a blackout could be catastrophic. When asked about local political understanding, Keidar noted that most politicians are aware of the risks but prioritize short-term threats. Progress requires working within the political system.

Buzz Thompson offered a more critical perspective, issuing warning that under the Trump administration, efforts to dismantle institutions focused on climate solutions have intensified. Preserving federal capacity will require action before 2026. He also emphasized that urban areas—often built on coasts or floodplains—are uniquely vulnerable. While U.S. cities have improved over the past decade, global coordination is lacking.

Regarding an appropriate response by academia, Thompson argued that universities must disseminate research beyond the academy. Communication should be a central focus—both for adaptation and mitigation. It is critical to persuade the public to accept changes and financial investments that may not yield immediate benefits. Looking ahead, Thompson envisioned a best-case scenario of more integrated resilience efforts. Current work remains highly fragmented across sectors and geographic regions.

During the question and answer conference wrapup, audience members raised important questions: Judith Schwartz asked why climate messaging struggles to resonate and urged relatable narratives. Thompson responded with a strategy: invite people to write letters to their children or grandchildren explaining their climate actions.

Ethan McMahon highlighted the absence of interdisciplinary perspectives—especially from social sciences—and noted the lack of youth presence. Dror pointed out the omission of water security from the session. Another attendee suggested leveraging students and the arts to better communicate with legislators.

Yoav Perlman expressed hope that this would be the first of many conferences and advocated for a future event on biodiversity. Maya Crabtree proposed a session on the gap between planning and implementation. Shira added that food security and agriculture also deserve focused discussion.

The session concluded with thank-yous and gifts. Participants expressed aspirations for the establishment of a Stanford in Israel program to allow the kind of academic collaboration produced by the conference to continue.