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Climate Resilience of Municipalities in Israel – Steps towards a Social Climate Policy

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Many of the lectures at today's conference discuss Mitigation of greenhouse gas emissions. In the coming minutes I wish instead to discuss the other path of action which arises in view of climate change, namely Adaptation to the climate crisis. At the heart of this lecture is the question – what can be done to prepare for and defend against climate changes? At its core is the concept of **Resilience**, with a focus on both social and community aspects.

We are here today at a conference organized by the Association of Environmental Justice in Israel (AEJI), and so I find it important, at the outset, to emphasize the link between adaptation issues to those of justice, equality and equity. The Intergovernmental Panel on Climate Change, IPCC, emphasized in its last report, published in 2014, that "Climate-related hazards exacerbate other stressors, often with negative outcomes for livelihoods, especially for people living in poverty". The IPCC, which comprises thousands of scientists and weighs each word with infinite care, determined beyond any doubt that climate changes act as a threat multiplier – in other words, that they worsen the condition of the weakest links in society even more. This determination makes the question – What is to be done? – even more pressing. How do we thus adapt to climate changes and act to minimize their effects on vulnerable populations?

The key concept which will accompany us in this lecture is *resilience*. This is defined as the ability of a system to maintain functionality in light of pressures or disruptions. A resilient system is characterized by flexibility, resourcefulness, constant and continuous learning and the ability to adapt to a wide range of circumstances, most of which are unpredictable. A resilient society will cope more successfully with turmoil, by means of minimizing damages on the one hand, and improving the way we address turmoil on the other.

Creating resilience is an extensive process, which begins well before the actual crisis and proceeds long after it strikes. The process of building resilience includes numerous partners and addresses a long list of issues. A customary classification refers to three main areas of resilience – "what?", "who?" and "how?". "**What?**" addresses the physical aspects of resilience – natural systems and manmade infrastructures; "**who?**" refers to social aspects and resilience-generating agents – such as individuals, communities and organizations; and "**how?**" indicates those policies, institutions and mechanisms that impact the generations of resilience.

Many researchers today refer to resilience as a new environmental paradigm. They claim that the perception of sustainability that accompanied us in recent decades, is no longer sufficient. While sustainability focuses on *sustaining* an existing equilibrium, and an attempt to prevent climatic disaster (through mitigation practices), the resilience approach recognizes that we have shifted to another level – the climate crisis is already here, the equilibrium is broken, and we must deal with the new situation. Andrew Zolli, who wrote a book about the paradigm of resilience, suggests a helpful simile that clarifies the differences between these approaches: sustainability tries to stop the ocean, while resilience attempts to surf its waves. Or, to use another example – sustainable building tries to minimize the impacts of a building on its environment, while resilient-promoting building would try to adapt the building to potential environmental impacts.

The concept of resilience is progressively securing its hold as a key concept of environmental action, with a growing list of bodies and organizations promoting resilience. Another effect of this approach is its rallying power. As you may surely know, the environmental discourse is often perceived to be apocalyptic and hopeless. Resilience, on the other hand, offers a positive approach and emphasizes what can be done to overcome crises, by referring to the potential power of individuals and communities, in particular those of vulnerable populations.

Public discourse typically addresses the physical aspects of resilience – the "*what*". Electricity generators, floodgates and breakwaters are often discussed. Today, though, I prefer to focus on the social, community, administrative and institutional aspects of resilience – the "*who*" and "*how*". The following example, which sends us twenty years back to Chicago, can help explain their immense importance in climatic contexts.

In July 1995, Chicago was struck by a severe heat wave. Temperatures soared to 42 degrees centigrade (which, when adjusted to account for humidity and pollution felt almost like 48 degrees). Nights provided no relief, and within five days, some 750 people had died as a result of the extreme heat and thousands of others were hospitalized.

Research which looked at the identities of the dead and sick came to an interesting conclusion: the most influential factor in successfully coping with the heat wave was neither health, geography nor demography, but rather a social factor: the extent of a person's support networks and social contacts. It thus became clear that fewer women than men died in the heat wave, because they tended to have more social contacts. Fewer Hispanics, who live in familial communities, died than African-Americans, and those living in neighborhoods that had thriving public spaces, which generate meeting points (such as shops, church meetings, and neighborhood committees) and thereby enable the creation of community life and a culture of mutual responsibility, survived better than those in neighborhoods in which the public space had been abandoned, social cohesion had disintegrated and a culture of fear reigned – neighborhoods in which the elderly were afraid to open a window or leave their homes or ask for help, and as a result died alone in their closed apartments. In fact, the researchers found that living in neighborhoods characterized by community cohesion provided their residents with immunity from climate harm, almost to the same extent as living in an air-conditioned apartment.

Another factor worth mentioning in context of the Chicago heat wave is the functioning of the authorities, which in this case was minimal and limited. The city had not activated emergency plans, mobilized rescue teams, acted to locate those in need, or published warning to residents explaining how they could protect themselves from the heavy heat; and even claimed that since this is a natural disaster – their hands were tied. Four years later, in the second-worst heat wave in Chicago's history, lessons had clearly been learned and applied, and the local authority demonstrated completely different behavior: it instructed the public how to behave, declared a state of emergency and evacuated the needy and elderly from their homes to aid centers which it had opened. And indeed, the number of deaths in this disaster dropped dramatically – from almost 800 to 80.

This example clearly illustrates that social and institutional infrastructures play a significant role in the creation of climate resilience, which is of no less importance than the resilience of physical infrastructures and socio-economic status. This Chicago example can thus serve both as a warning and as an inspiration to local authorities addressing climatic emergencies.

From the 1995 Chicago heat wave, we move to the 2013 Jerusalem snowstorm, which you will surely remember – the storm, the most severe since the 19th century, caused heavy damages: urban and inter-city traffic routes were blocked for hours and days, people were trapped in their cars on Route 1, localities were cut off, and in many areas electricity, water supply systems and telephone networks – both landlines and cellular – collapsed for several days.

The storm did not appear suddenly nor was it a surprise. Meteorologists had predicted a severe storm, and Israel's municipal heads and mayors were preparing for it. And yet, its intensity overwhelmed them:

"There was no connection between the snow procedures we had in place and what actually happened on the ground"; "I realized we were going into a state of emergency that the city is unfamiliar with"; "This storm caught us with a lack of readiness for its intensity"; "We experienced utter chaos – no one knew what was being done or by whom"; "I found no organized mechanisms in place, whereby if I wanted to go by the book... there was no book". These are all quotes from the mayors of affected municipal authorities: namely Jerusalem, Har Adar, Merom Galil and Shomron.

An analysis of how authorities coped with the storm, as emerges from their own testimonies, suggests an overwhelming lack of preparedness for a storm of this magnitude: a shortage of tools available for the local authorities; an absence of methodical procedures (replaced by personal ad hoc interactions – for example the mayor of Jerusalem "picking up the phone" to call the army chief of staff...); there was a scarcity of information which rendered decision-making difficult; a lack of coordination between local and national levels and between municipal authorities and volunteers; logistical difficulties (all the snow-ploughs, for example, were positioned at one location, and could then not be moved due to the blocked roads); and the challenges faced by authorities in their efforts to overcome the hazards and damages caused by the storm. Aspects of environmental injustice can also be observed in the substantial disparities in the ability to cope between strong and weak municipal authorities – the weaker ones, in particular Arab localities and unrecognized Bedouin villages, had physical infrastructure less able to cope with climatic events, less financial means and less ability to mobilize resources.

Analysis of activities during the storm also shows a great degree of mobilization of individuals and organizations, and the existence of a significant community support network, which found expression at this challenging time. Volunteers used their off-road vehicles to help the rescue efforts; volunteers in neighborhoods checked up on senior citizens and people in need; municipality employees rallied to help; strong localities assisted their weaker neighbors. This mobilization contributed to the localities' community resilience, and was a decisive factor in the fact that the storm ended with hardly any casualties. Precisely because this social and volunteer component characterizes Israeli culture – both Jewish and Arab – it is important to find the appropriate mechanisms to harness it to orderly and effective activity in times of crisis. And indeed, we saw that in localities in which established community infrastructures operates (such as the community administrations in Jerusalem) the responses were better organized and provided better assistance to those in need.

This snow storm is not an exceptional case. It is an indicator of what local authorities might be expecting with even greater severity in the coming years. Too many – both in local and in central government – tend to repress climate changes and discuss, instead, the "storm of a century" and "a snow storm that even the elders of Safed cannot remember", but reality proves that climate changes are already here, the so-called "storms of a century" actually come around every decade, and floods, forest fires and heavy heat waves are occurring at an ever growing rate.

Unfortunately, the resilience discourse is not yet commonplace in Israel. While environmental organizations are promoting the issue, a governmental plan for climate adaptation has just been shelved, and the concept itself is not yet familiar to local authorities nor assimilated into their activity. Furthermore, when discussing resilience, the main focus still tends to be on its physical aspects.

At the Association of Environmental Justice in Israel we seek to introduce the discussion of social and community aspects of climatic resilience. A comprehensive document which I have written on the issue is expected to be published in the near future, presenting an extensive list of recommendations to promote social and community resilience at the local-government level.

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I would like to take advantage of the few minutes I have left by introducing some of the above-mentioned document's primary recommendations, in a nutshell.

In one sentence, the recommendations can be presented thus: **Generate municipal mechanisms, promote multi-sectoral co-operations, collect and disseminate information, take advantage of existing municipal tools, mobilize the public and strengthen communities.**

And to spell it out in more detail:

1) **Generate municipal mechanisms:**

Municipal commitment is measured by action, appointments, authorizations, learning, knowledge and co-operation. To create municipal mechanisms that address resilience, there is no necessity to recruit new employees, existing staff can be used and an inter-disciplinary inter-departmental team established to coordinate the issue. Include representatives of the "how", "what" and "who" realms – infrastructure, community and policy, and act to formulate procedures in due time to help guide the municipality in its conduct during in an emergency.

2) **Promote inter-sectoral cooperation:**

Global experience proves time and time again that cities develop better adaptation and resilience strategies when they cooperate with a variety of bodies external to the city authority – namely the business sector, NGOs, academia and the public. Involve these stakeholders in resilience-building processes from the earliest stages, and use their knowledge and skill sets. Another form of cooperation which is important to develop is that with neighboring localities, in particular contacts between stronger and weaker localities: the climate crisis, clearly, is not limited by municipal boundaries, and neighboring authorities will be trying to deal with similar challenges. Joint activity will enhance the array of available resources available to each municipality and thereby strengthen their resilience and preparedness.

3) **Collect and disseminate information:**

Effective policies are based on both information and data. This is especially so when the subject is the climate crisis. It is important to be familiar with risks and the likelihood of the occurrence of such crises, and to map vulnerable infrastructures and vulnerable populations. In regard to the social aspect, it is important to conduct a comprehensive and constantly-updated registration of vulnerable residents, so as to be able to provide assistance and respond during times of need. Vulnerable groups may include the elderly, young children, the ill and/or the mentally ill and women and children in situations where they are facing abuse or domestic violence.

With regard to knowledge, remember that in addition to scientific knowledge, residents' local knowledge is also of importance, and it reflects the community's needs and sensitivities. Additionally, it is important not only to gather information but also to pass it on, both within the municipal authority as well as to the public. Transparency is key to promoting resilience, by intensifying the trust residents have in their municipal authority, and by encouraging residents to cooperate with the guidelines issued by the authority. One should also consider how one would inform residents during a crisis, when the usual forms of communications might collapse or be otherwise impaired.

4) **Take advantage of existing municipal tools:**

Don't try to reinvent the wheel: in many cases existing tools and municipal plans can be used to promote climate resilience. Additionally, one should perhaps focus first on executing steps which are beneficial to the authority and its residents not only in case of climate change – this is often referred to as "no regret" steps. It is anticipated that this approach can increase the chance that authorities will act to strengthen climate

resilience, because they will thereby be achieving additional important goals at the same time. This further undermines a disturbing inclination of some mayors to refrain from addressing climate change, perhaps because they think that this is only about changes that will occur in the future, after their term in office ends...

5) **Mobilize the public:**

Public participation has been discovered to be a very significant component in creating climate resilience at the local level. In recent years, thousands of cities worldwide have been formulating strategic climate resilience and adaptation plans, and studies indicate that public participation makes such plans more comprehensive and effective, and generates a more active public during times of crisis. Well-informed and mobilized residents are a resource for the city. To quote the mayor of Safed, speaking about the snowstorm: "One prepared resident is worth as much as ten effected residents. They can be transformed from being a burden to the system, to being a useful addition to the efforts being made."

6) **Strengthen communities:**

We have seen that social ties and strong communities can save lives. An analysis of previous climatic disasters clearly indicates that in places where community support systems existed, the impact of the disaster was smaller than in places where no such networks were in place. This effects the role of local authorities, who should now work to encourage and strengthen the neighborhood support networks by all means at their disposal.

Inspiration can be drawn from two successful examples in Israel: one is the Jerusalem model of Community Councils, which operate in city neighborhoods/quarters as a connecting link between residents and the municipal authority. We saw evidence of this during the last snow storm when volunteer activity was coordinated, and the state of the elderly and needy was monitored, allowing them to be provided with food, heating and company.

Another example is the network of resilience centers, which operates in localities in the conflict zone surrounding the Gaza Strip. Within the framework of their activities a role was defined for a locality auxiliary volunteer – "he is familiar with his local environment, and knows the local community, and so is able to quickly identify victims suffering trauma and thus to help his neighbors with the tools we provide him with... they make phone calls, visit homes, check up on everyone, and accordingly are able to relay the needs to us". These centers were established due to an ongoing security emergency situation, but are based on much the same principles of mutual help and assistance.

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To conclude my talk today, I would like to finish with the following three statements about the nature of Resilience:

Firstly – **IT IS SOCIAL**. If we refer back to the Chicago example we opened with, we observed that while climate hazards are threat multipliers for poor and vulnerable populations, community resilience acts as a power multiplier in those same communities. Strong unified communities come through crises with fewer fatalities. As the American sociologist Robert Samson noted, the cliché "survival of the fittest" is no longer true, "when disaster strikes, it's survival of the sociable".

Secondly – **IT IS URBAN**. There are a variety of reasons for cities being the central activity arena on the issue of promoting climate resilience. Firstly, the fact that the majority of residents of the world – and certainly most residents of Israel – now live in cities. Secondly, the fact that urban localities are at the forefront of coping with climate change related phenomena, and are expected to suffer their consequences – try to imagine what happens to a city disconnected from water or electricity for several days, or to a city where the supermarkets have been emptied of food... Different cities in one country might deal with completely different challenges – think of Be'er Sheva and Safed, for example – one is threatened by the rising desert line, the other by snowstorms. An additional reason, which surprised me when I learned of it, is that most urban areas in which people will be living by the mid-21st century are in fact yet to be built. This means we still have a real opportunity to amend our course. Whereas around the world there is now vibrant action to address the issue of urban climatic resilience, in Israel this remains marginalized. It is important for cities to take responsibility of this issue, and for the central government to act, encourage and promote municipal action.

And thirdly – **IT IS URGENT!** Climate changes are already here, their impacts are noticeable and expected to further increase and exacerbate. The risk of inaction is far more severe than that of taking the necessary action... Only early preparation and resilience building, considering all of its aspects, can enable the prevention and mitigation of the potential damages to our health, the economy, ecology, security and society, as well as exploitation of the opportunities and the possibilities embodied in the expected process.