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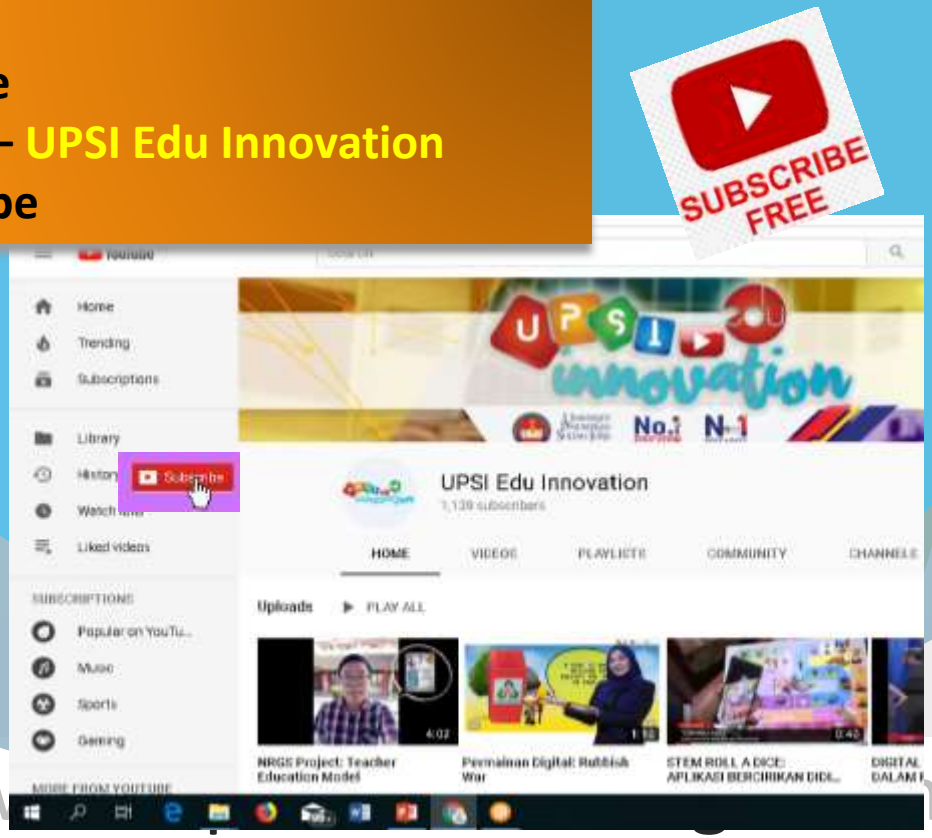

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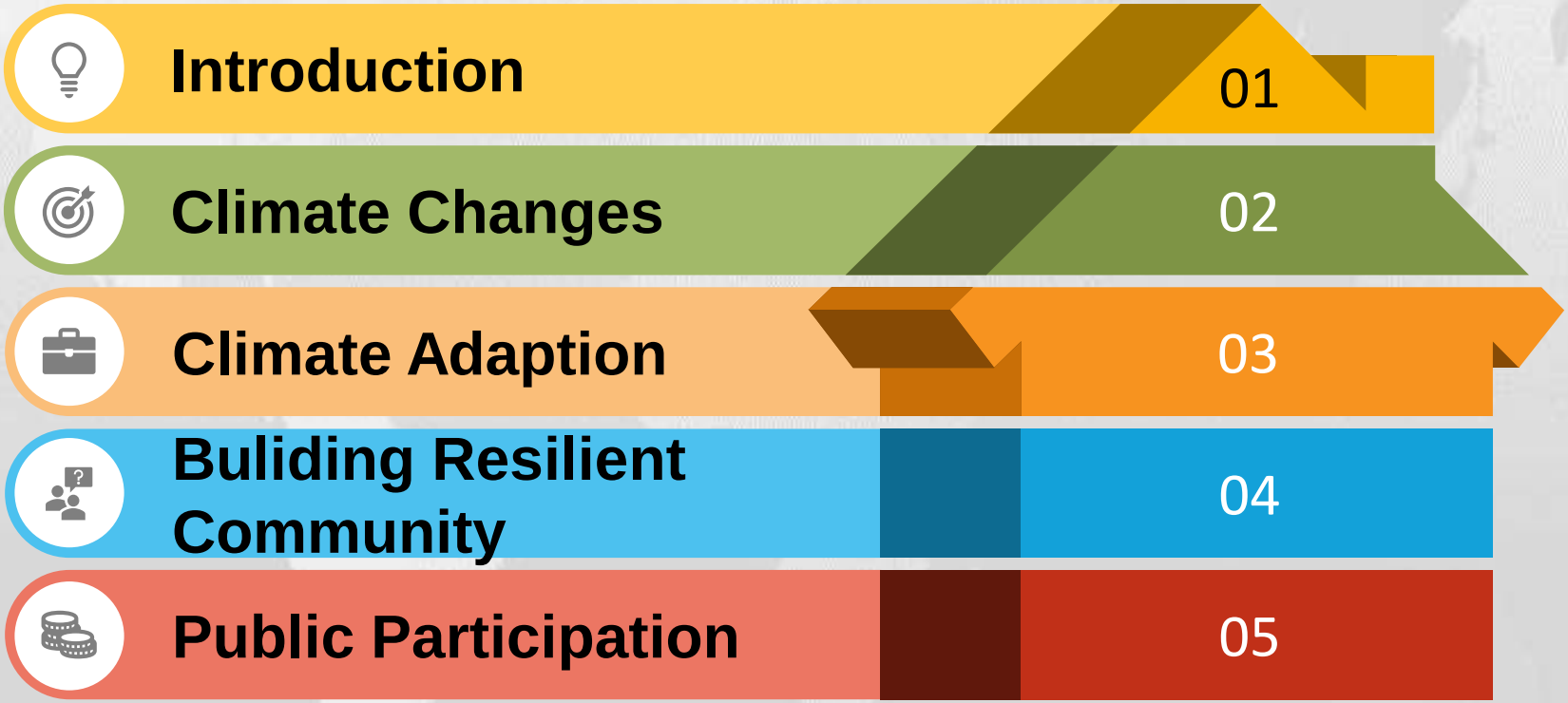
UNS UNIVERSITAS SEBELAS MARET

BUILDING RESILIENT COMMUNITIES

IN THE FACE OF CLIMATE CHANGE

ASSOC. PROF. DR. MOHD HAIRY IBRAHIM

SCOPE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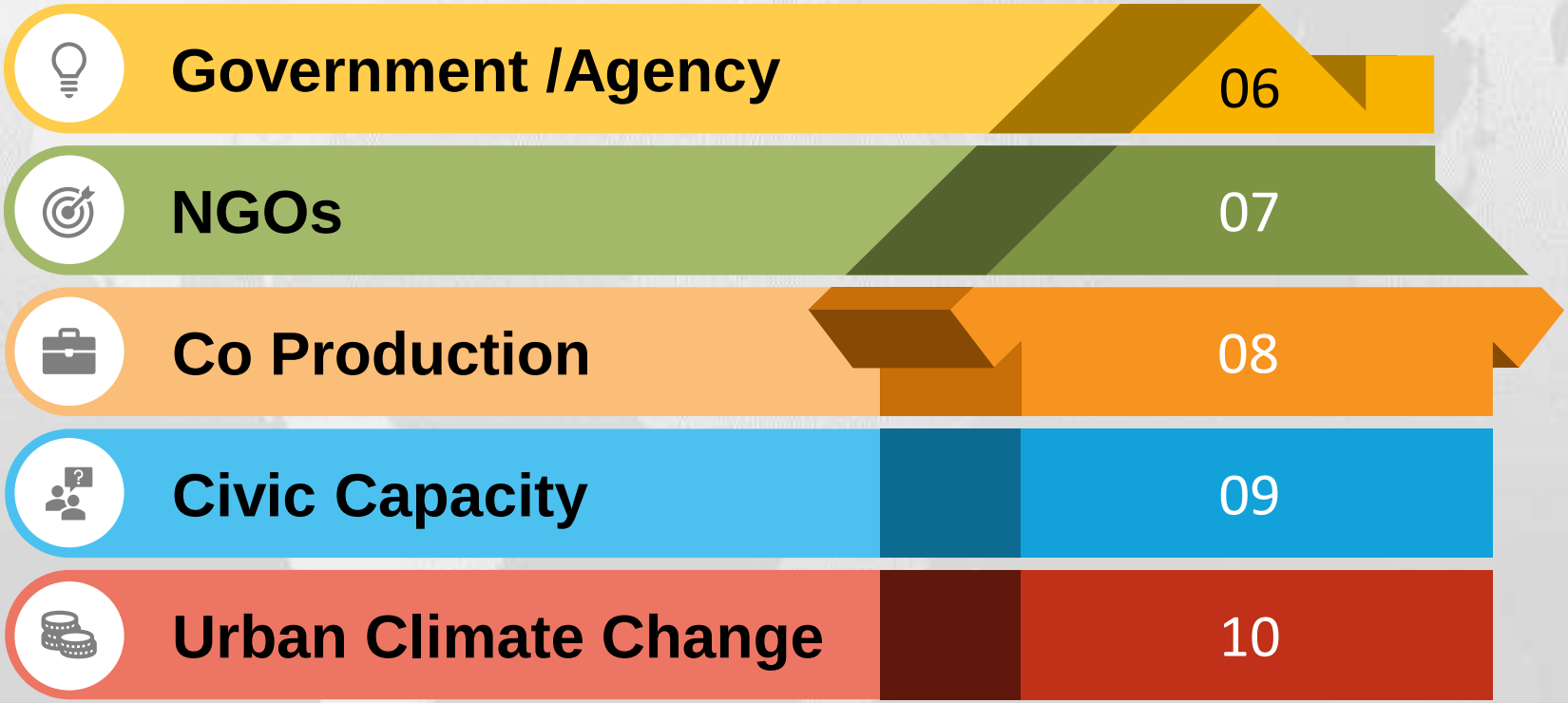
SCOPE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CLIMATE CHANGE

Climate Change is :

- **change in the pattern of weather**
- **changes in oceans, land surfaces and ice sheets**
- **occurring over time scales of decades or longer**

Climate change poses myriad challenges for urban areas, ranging from localized flooding during severe weather events to increased temperatures and worsening air and water quality.

(Seto and Satterthwaite, 2010)

Change in ecosystems and desertification

Acidification of the Oceans

Heatwave

Extinction of spesies

Massive migration

Melting of the Poles and Rising Sea Level

Extreme weather phenomena

India's floods expose poor countries' total vulnerability to climate change - 01/09/2017

Buildings all around the village of Pratappur were swamped after flood defences failed

Weatherwatch: melting Arctic ice – 10 June 2019

Sea ice in the Hudson Strait. Arctic ice has shrunk drastically in the last 40 years..

2 May 2016

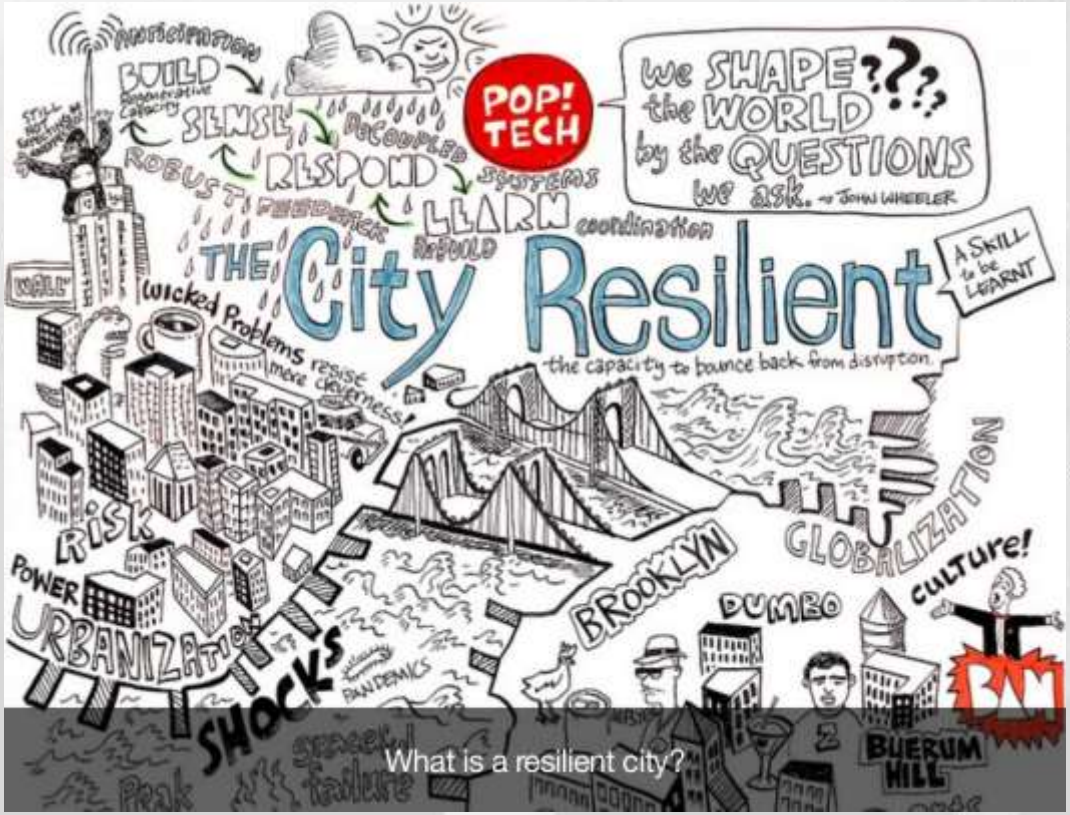
Change in ecosystems and desertification

Approximately 300 people have died in the past month as a result of the deadly drought and heat wave in India. A large portion of the nation is undergoing extreme droughts and record-breaking temperatures, with the two hottest months of the year yet to ensue.

Wildfires are burning across nearly 4,000 hectares in Catalonia in north-eastern Spain – 28 June 2019

RESILIENT CITY

What is Resilient City?



A 'Resilient City' is prepared to absorb and recover from any shock or stress while maintaining its essential functions, structures, and identity as well as adapting and thriving in the face of continual change. Building resilience requires identifying and assessing hazard risks, reducing vulnerability and exposure, and lastly, increasing resistance, adaptive capacity, and emergency preparedness.

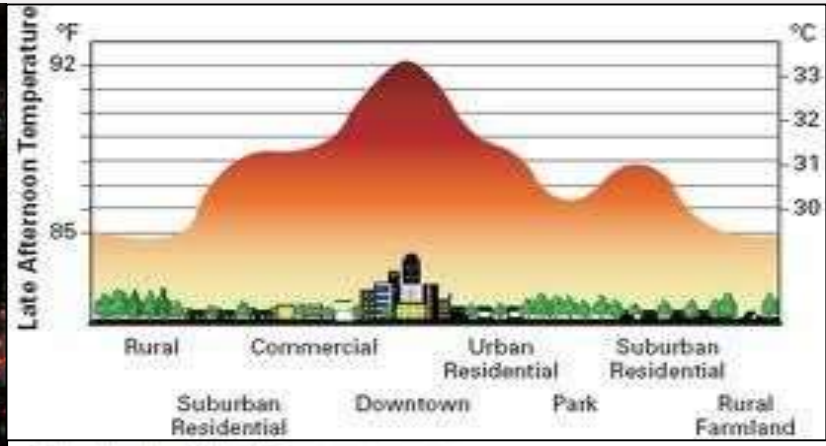
Source:
https://resilientcities2019.iclei.org/

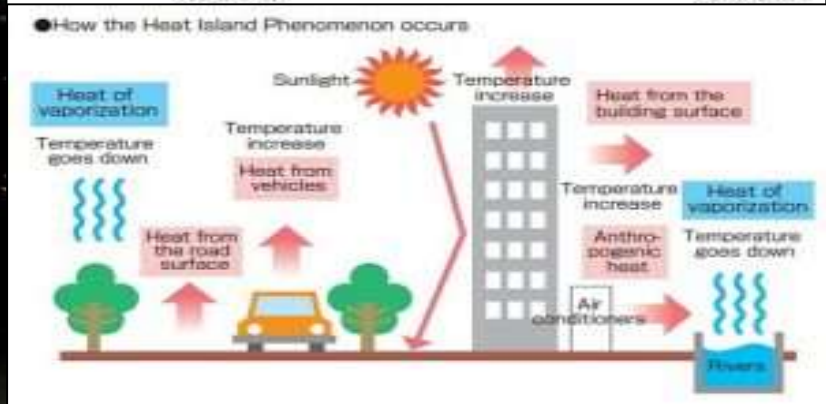

Urban
Climate
Change

Issues : The Urban Climate

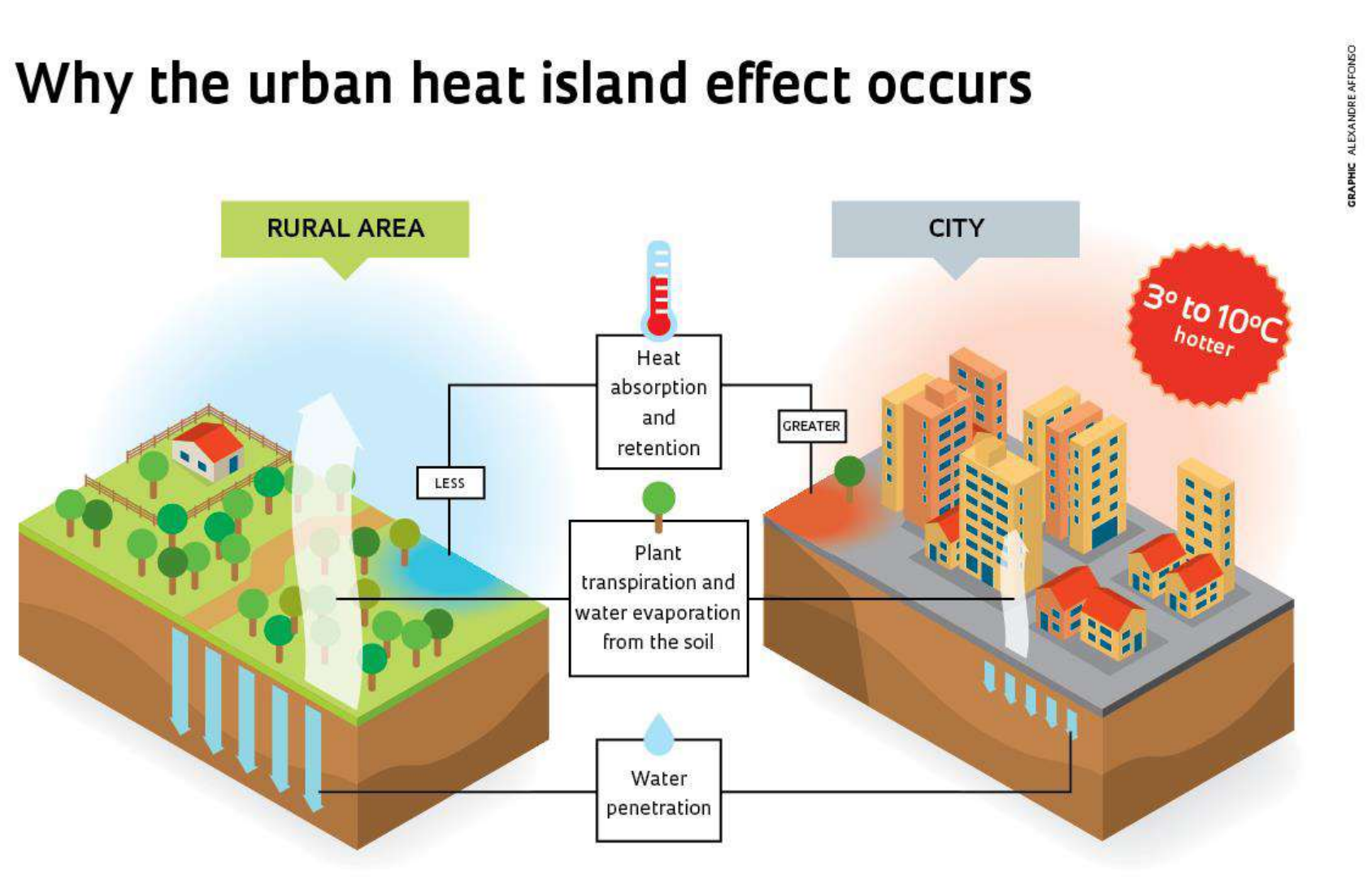
HOW MUCH IT AFFECT OUR DAILY LIVES ?

Urban Climate :
Urban Heat Islands Situation

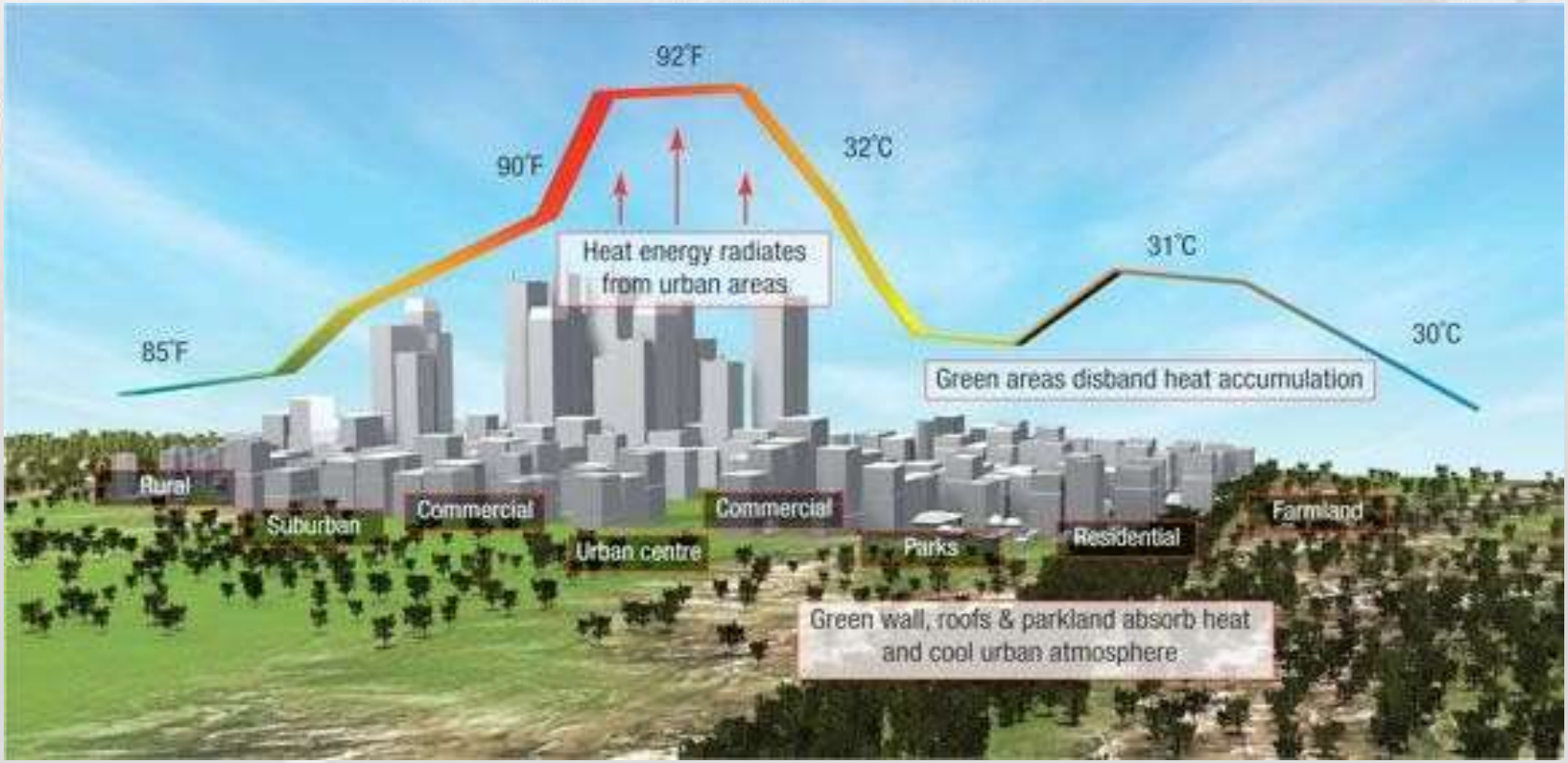




Rural to City



Urban Climate Changes



4 AREAS THAT DRIVE RESILIENCE

Governance

- Clear leadership and management
- Strategic and integrated approaches are taken by leaders
- Public sector has the right skills
- Government is open and transparent

Economy

- A diverse number of industries
- A dynamic economy to generate growth
- Conditions allow innovation to take place
- People have access to employment, education, services, skills training

Environment

- Ecosystem is sound and diverse
- Infrastructure can meet basic needs
- Adequate natural resources are available
- Coherent policy towards land use

Society

- Society is inclusive and cohesive
- Citizens' networks in communities are active
- Neighbourhood is safe
- Citizens enjoy healthy lives

Source:https://www.oecd.org/cfe/regional-policy/resilient-cities.htm

thelocalspain

Four

At least four people died during the he... as death toll mounts.

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Three people have died after getting into difficulty while attempting to cool off. Spencer Hurst, 15, died on Tuesday evening after failing to resurface when swimming in a lake near Walsall. On Monday, another teenage boy drowned in a reservoir outside Rochdale, Greater Manchester, and a woman in her 80s died after being pulled from the sea at East Wittering beach in West Sussex.

Thegurdian.com 21 Jun 17

Inc

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Amrit Dhillon *in Delhi*

Mon 17 Jun 2019 12.23 BST

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Japan heatwave declared natural disaster

Share

The public are being advised to take every precaution to avoid the extreme heat

Japan's weather agency has declared a heatwave sweeping the country a natural disaster, with at least 65 deaths recorded in the past week.

An agency spokesman warned that "unprecedented levels of heat" were being seen in some areas.

More than 22,000 people have been taken to hospital with heat stroke, nearly half of them elderly, officials say.

On Monday, the city of Kumagaya reported a temperature of 41.1C (106F), the highest ever recorded in Japan.

n 2003. As
taking no chances.

g a raging heatwave which led to the

re than 100 hospitalised in the
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n Saturday, triggering a raging

d that 27 people died due to
different hospitals," he said.

d from the region while
extreme
heatwave

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CLIMATE CHANGE ADAPTATION

Adaptation means anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause, or taking advantage of opportunities that may arise. It has been shown that well planned, early adaptation action saves money and lives later.

Climate change adaptation helps individuals, communities, organisations and natural systems to deal with those consequences of climate change that cannot be avoided. It involves taking practical actions to manage risks from climate impacts, protect communities and strengthen the resilience of the economy. Adaptation can involve gradual transformation with many small steps over time, or major transformation with rapid change.

EXAMPLES

THIRD NATURE releases a groundbreaking solution to major cities' challenges with flooding, parking and lack of green spaces. By stacking water reservoir, parking facility and urban space, the project POP-UP solves three challenges at once. As heavy rain falls, stormwater fills the underground reservoir and the parking structure will pop up in the cityscape, highlighting the adaptation to the forces of nature.

Climate Change Adaptation

EXAMPLES

Amanda Lawrence, Local Emergency Management Officer at Wingecarribee Shire Council, talks about how her council is helping elderly residents to prepare for climate change.

In Wingecarribee Shire, we run an **Extreme Weather Workshop to help seniors prepare for extreme weather** resulting from climate change. Our "Fire and Ice" **workshop held during Seniors Week, helps older residents understand how forward planning can mean peace of mind when extreme weather hits,** who to call and where to get help.

BUILDING RESILIENT COMMUNITIES: RELATIONSHIPS, RESOURCES, AND RE-IMAGINATION

I. For city-wide resilience, urban umbrellas are needed.

Ii. Building neighbourhood resilience one food forest at a time

Kensington Village Association in action on May 21, 2015 when over 75 residents came together to plant a food forest in one of London's smallest parks, Wood Street Park. The day, which started as a tree planting activity, organically turned into a community celebration with potluck lunch, children's activities and musical performances by local musicians. Photo by G. Sass.

Why lack of communication and engagement is a problem

One reason lies in the nature of the climate change issue itselfFor more than a decade, a field of climate change communication science has been building alongside a community of practice attempting to bring home – to policy-makers and the public – the urgency, magnitude, complexity, and uncertainties of climate change.

The inherent difficulties are made even more difficult to communicate by concerted efforts at misinforming the public, growing political and cultural polarization around the issue, low levels of scientific literacy and education, inadequate media coverage, and lack of political leadership.

At the same time, the on-the-ground realities of climate disruption are leading to increasing effects regardless of the political and communication challenges, and people increasingly have visceral experiences of changes in their local environ- ment – both from extreme climatic events and from gradual changes

If the nature of the problem, the political context and the psychological responses were not difficult enough, the lack of communication and engagement capacity is a classic problem

1

Close to 25% of Climate Access members are from the government sector including federal, state, regional, county, and municipal leaders. The majority of these mem- bers are based in the United States, followed by Canada although Climate Access membership spans 50 countries.

2

Over the past several years, we have reached more than 2000 practitioners through these workshops yet given how far-reaching and multi-faceted climate disruption is we have only begun to meet the needs of the many practitioners that must now consider and communicate the role of climate impacts in decision-making.

3

While valuable, the available online resources, communication guides, and webinars are not yet at scale to meet the growing capacity needs. The efforts are simply not enough given the rapidly changing climate change risk and adaptation landscape, as well as communication technologies and practices.

Valuable, but insufficient capacity building efforts

Meeting the communication and engagement capacity needs

IDENTIFYING AND ENGAGING POTENTIAL TRAINERS TO BUILD A LARGER COHORT OF CLIMATE COMMUNICATION

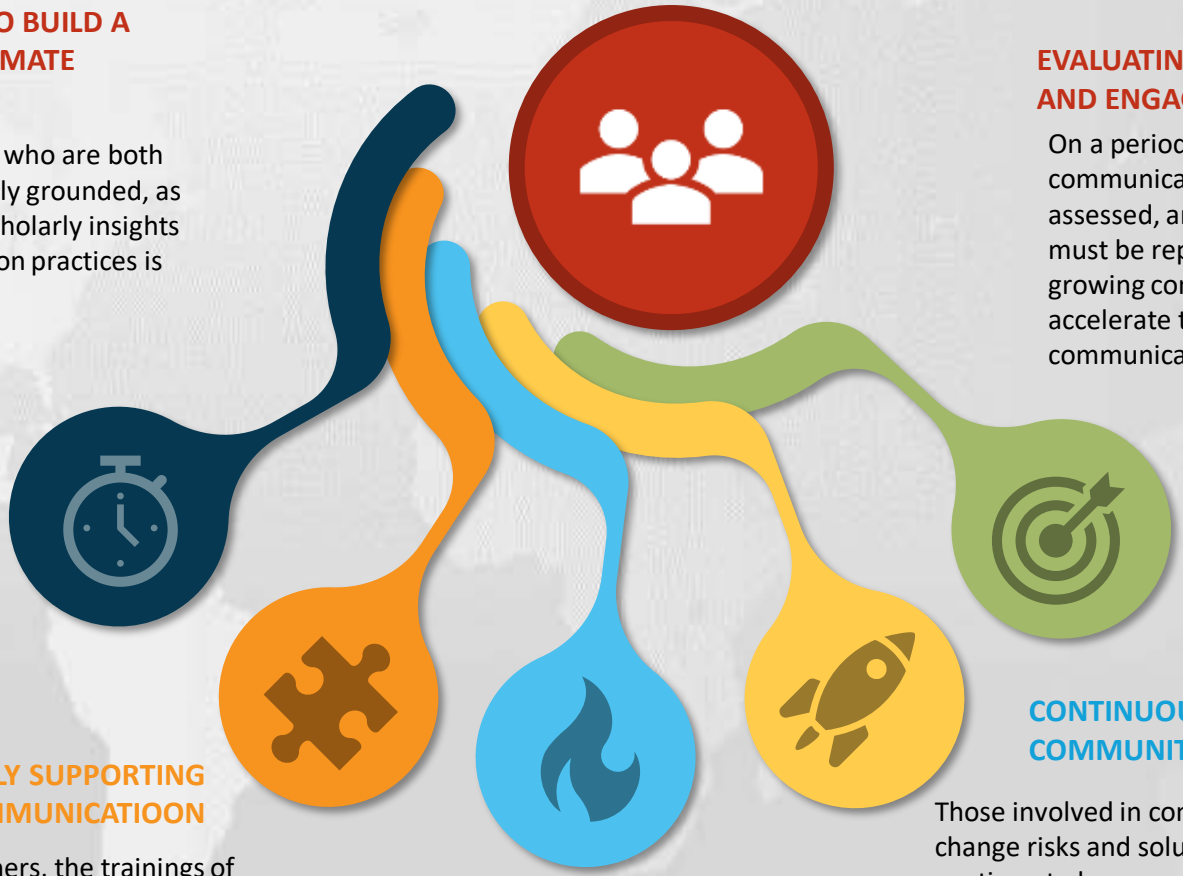
The number of individuals who are both academically and practically grounded, as well as able to translate scholarly insights into real-life communication practices is rather limited to date.

TRAINING THE TRAINERS

Coming from different fields and sectors, those willing then need to be trained and enabled to teach others the relevant communication and engagement skills.

FINANCIALLY SUPPORTING COMMUNICATIOON

The trainings of trainers, the trainings of communicators and engagement specialists, as well as the communication aspect of local adaptation efforts need to be financially sup- ported



EVALUATING COMMUNICATION AND ENGAGEMENT EFFORTS

On a periodic basis then, the communication efforts must be assessed, and the lessons learned must be reported back into the growing community of practice to accelerate the learn- ing and improve communication practice.

CONTINUOUSLY BUILDING THE COMMUNITY OF PRACTICE

Those involved in communicating climate change risks and solu- tions must be networked, continue to be supported by communication and engagement experts with the latest science, and thus maintain, update, and continue to build their practical expertise and grounding in communication and adapta- tion science.

COMMUNITY RESILIENCE

Community resilience is a measure of the sustained ability of a community to utilize available resources to respond to, withstand, and recover from adverse situations.

https://www.rand.org/topics/community-resilience.html

"PUBLIC PARTICIPATION, CIVIC CAPACITY AND CLIMATE CHANGE ADAPTATION IN CITIES"

PUBLIC PARTICIPATION

Participation has been alternatively termed

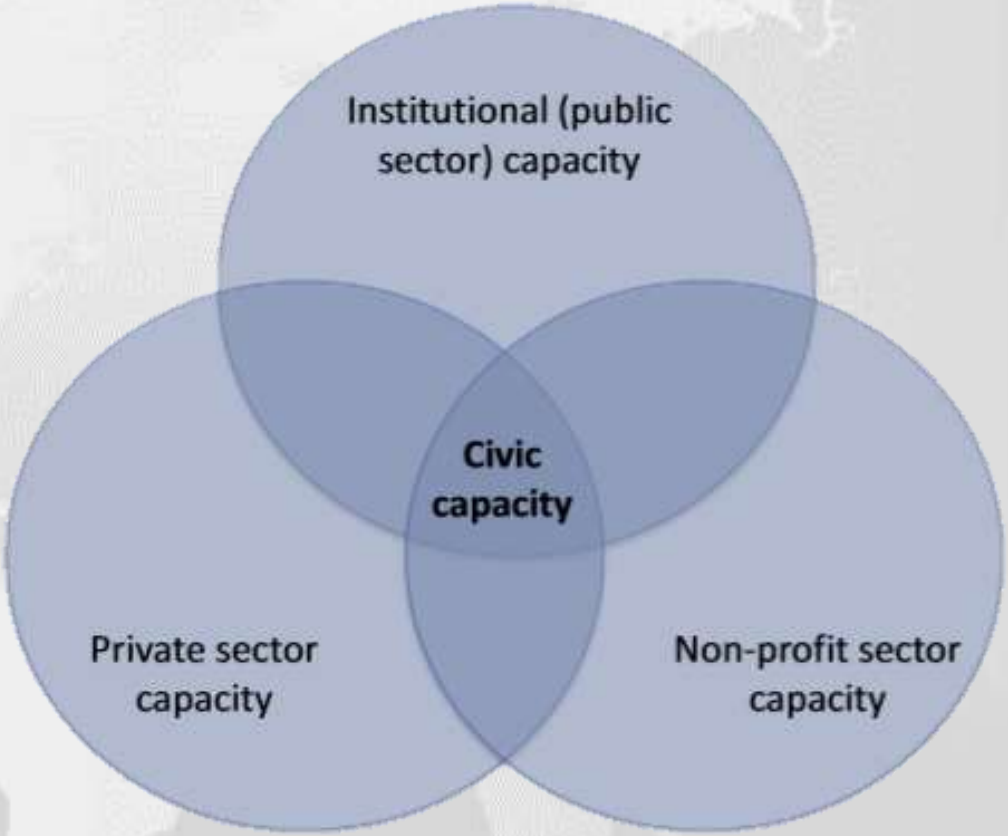
1) Citizen participation
2) Stakeholdersmengagement
3) New Public involvement
4) Community Engagement
5) Civic Management

3 Element Of Participation

- Could be anyone invested with legal authority to make public decision and who are interested in decision making process
- Indicates when stakeholders participate in governance process
- Includes what happens when stakeholders participate

GOVERNANCE

- Governance is one factor among many thought to influence the effectiveness of climate adaption
- Governance capacity to address public problems may spread into private, non-profit sectors and into civil society
- At local level, and particularly for cities, participation is the theoretically a part of good urban governance for climate change adaption.



Simple depiction of the overlapping public,private and non-profit sector spheres influence generated 3 forms of **governance capacity**.

TRADITIONAL GOVERNMENT-LED CLIMATE PLANNING

Government-led climate initiative are common form of climate adaptation planning and action.

Some government-led initiatives solicit the help of experts in identifying adaptation options or assessing costs and benefits without opening the process up to broader-scale participation

Government-led initiatives vary in the extent to which they engage with the public during adaptation planning or plicy development, although when participation occurs, it tends to be limited in duration, intensity and influence and pursue instrumental goals.

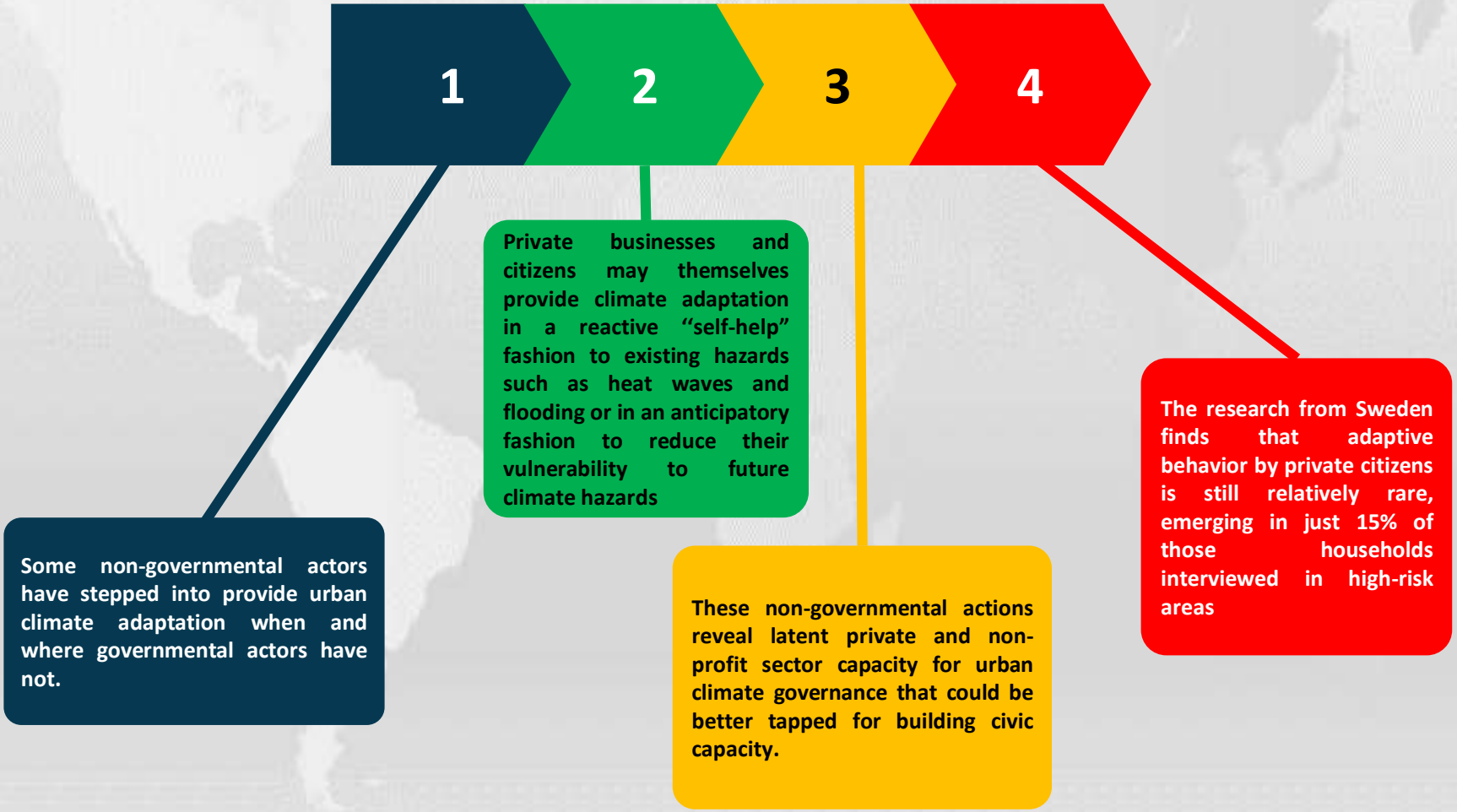
Local government collaborated with university researchers and other governmental bodies in developing hazard and vulnerability

A challenge remains in translating the result of participation in non-governmental-led planning efforts into formal governmental processes.

Similar non-profited-led participatory research and public visioning initiatives in Silicon Valley,California and UK aimed to improve the information available to government planners and spur governmental action

In some cases, NGOs led climate adaptation planning efforts with minimal governmental involvement,to pursue a broader scope of participation and intrinsic goals than with traditional government-led planning

NON-GOVERNMENTAL PROVISION OF URBAN CLIMATE



Co-production of Urban Climate Adaptation

Government and community participants are involved intensively in the implementation of adaptation response, not just in planning, and that all actors contribute substantive resources to the effort.

Citizens and non-governmental organizations (i.E., Environmental groups such as trout unlimited) were actively involved in water and fish monitoring, habitat restoration, and water conservation as key elements of the climate adaptation response

Efforts to better align national policy priorities and local initiatives were underway in the mid-2000s under the heading of "civil society alliances" (Thomalla et al., 2005) and have since been taken up by the Asian Cities Climate Change Resilience Network (ACCCRN).

Partnership

01

A more collaborative and sustained governance response involves the formation of public–private partnerships (PPPs) to coordinate and implement specific urban climate adaptation actions

02

The partnership form of governance has been praised and criticized nearly in equal measure.

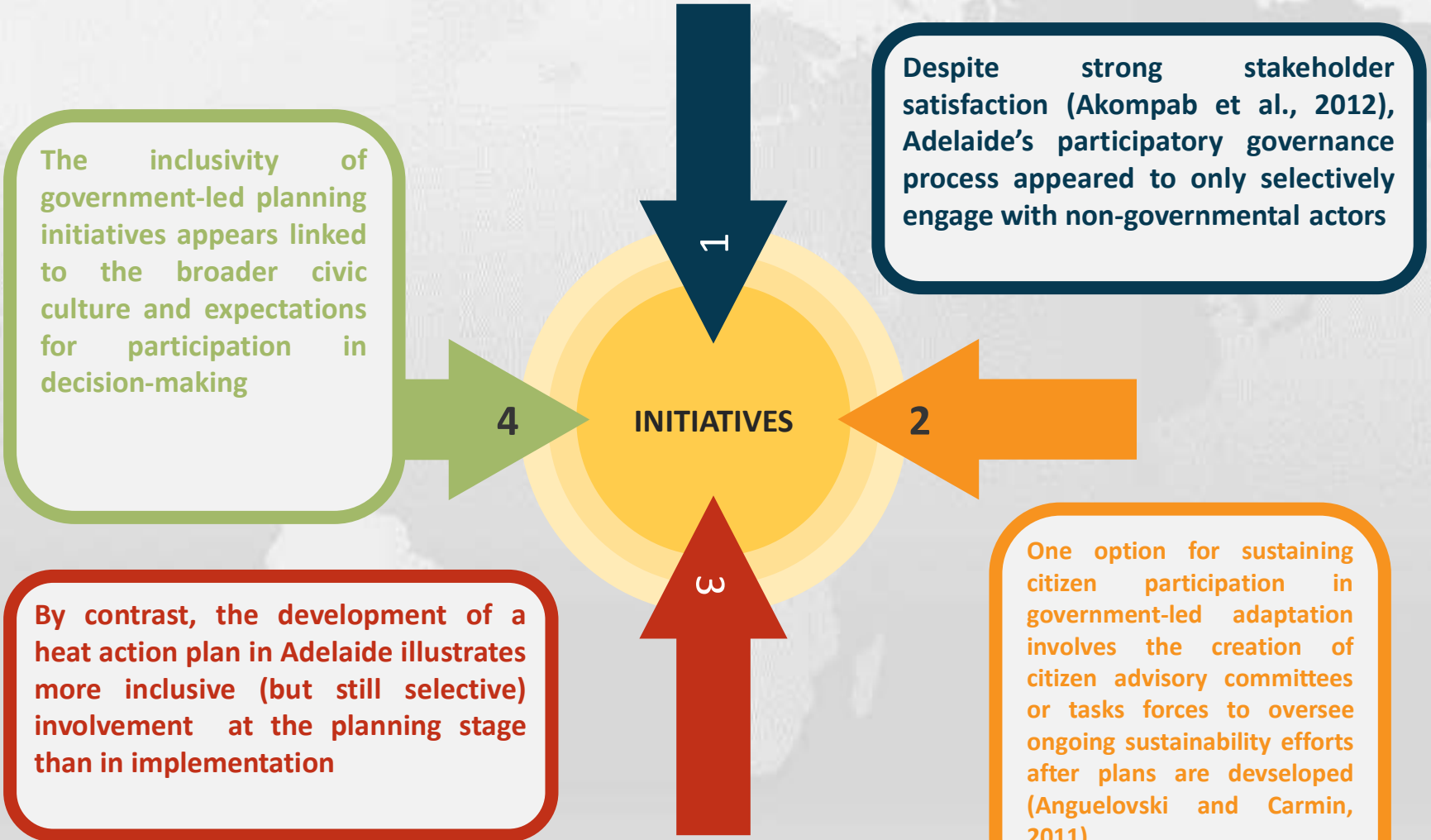
03

Additionally, despite the participation of multiple sectors, the degree of private citizen involvement tends to be minimal in these instances and limits the civic capacity that might be realized

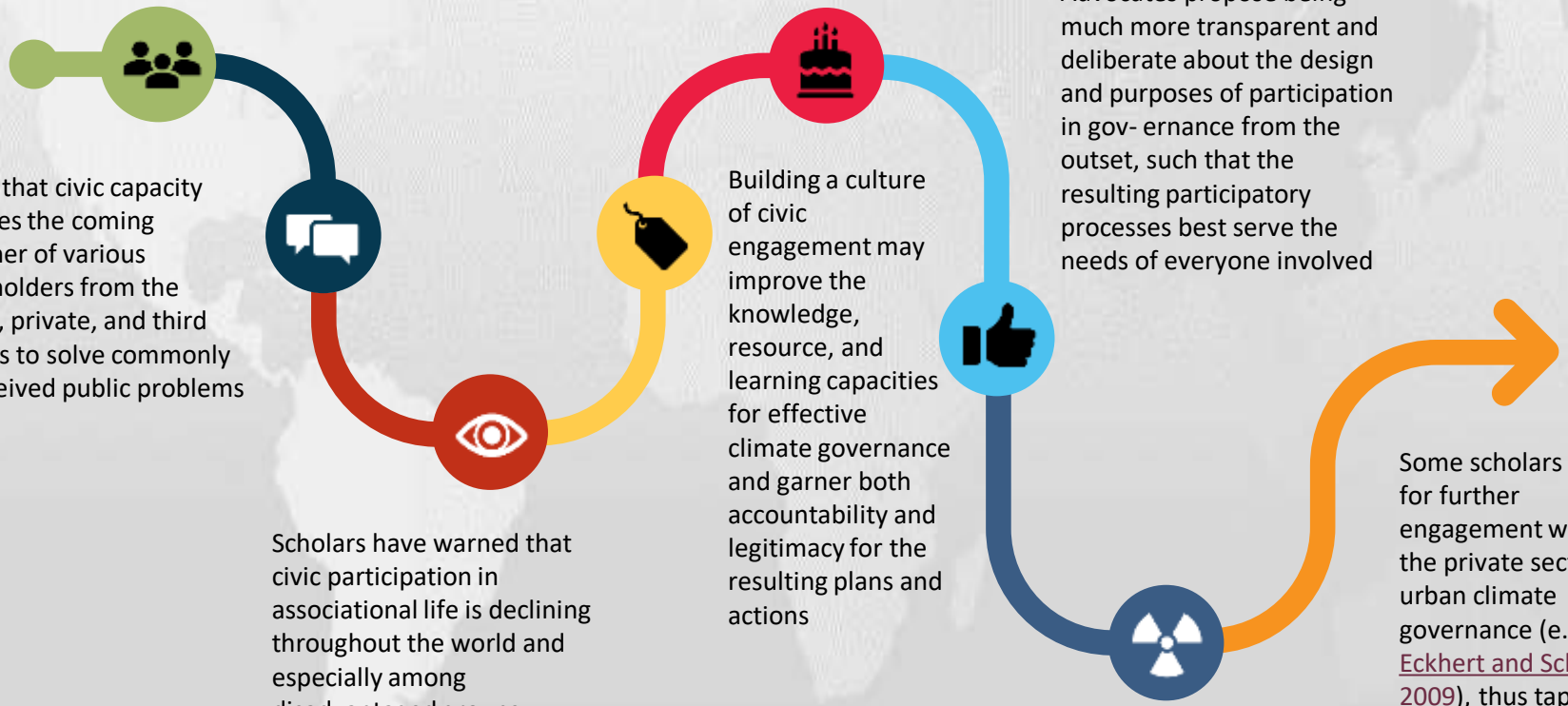
04

In New York City, an extensive ongoing collaboration between the local governments, university researchers, private sec- tor representatives (especially from the insurance industry), and a non-profit foundation funder has helped to identify the risks and vulnerabilities facing the metropolitan region and options for ‘‘mainstreaming’’ climate science into mitigation and adaptation-related planning and policy decisions

MORE INCLUSIVE CLIMATE PLANNING INITIATIVES



CIVIC CAPACITY



Recall that civic capacity involves the coming together of various stakeholders from the public, private, and third sectors to solve commonly per- ceived public problems

Scholars have warned that civic participation in associational life is declining throughout the world and especially among disadvantaged groups relative to their advantaged peers, resulting in a perceived decline in social capital at the community-scale

Building a culture of civic engagement may improve the knowledge, resource, and learning capacities for effective climate governance and garner both accountability and legitimacy for the resulting plans and actions

Advocates propose being much more transparent and deliberate about the design and purposes of participation in gov- ernance from the outset, such that the resulting participatory processes best serve the needs of everyone involved

Some scholars call for further engagement with the private sector in urban climate governance (e.g., Eckhert and Schinkel, 2009), thus tapping into latent private sector capacity

A new report from the Urban Land Institute outlines bold steps for public sector leaders and the private real estate sector to proactively address climate change, economic stressors, and other risks.

https://facilityexecutive.com/2018/03/ten-principles-building-resilient-communities/

Community Resilience Framework™

Big Future Vision

"No Challenge poses a Greater threat to future generations than Climate Changes"

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"HUMANITY BEYOND BOUNDARIES"

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

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