

Thematic consultation on Smart Cities in Asia and the Pacific

10 July 2018

Marina Bay Sands Expo & Convention Centre, Singapore

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The Future of Asia and Pacific Cities 2019:

Urban Opportunities to deliver the 2030 Agenda for Sustainable Development



CENTRE for
LiveableCities
SINGAPORE



ASIAN DEVELOPMENT BANK



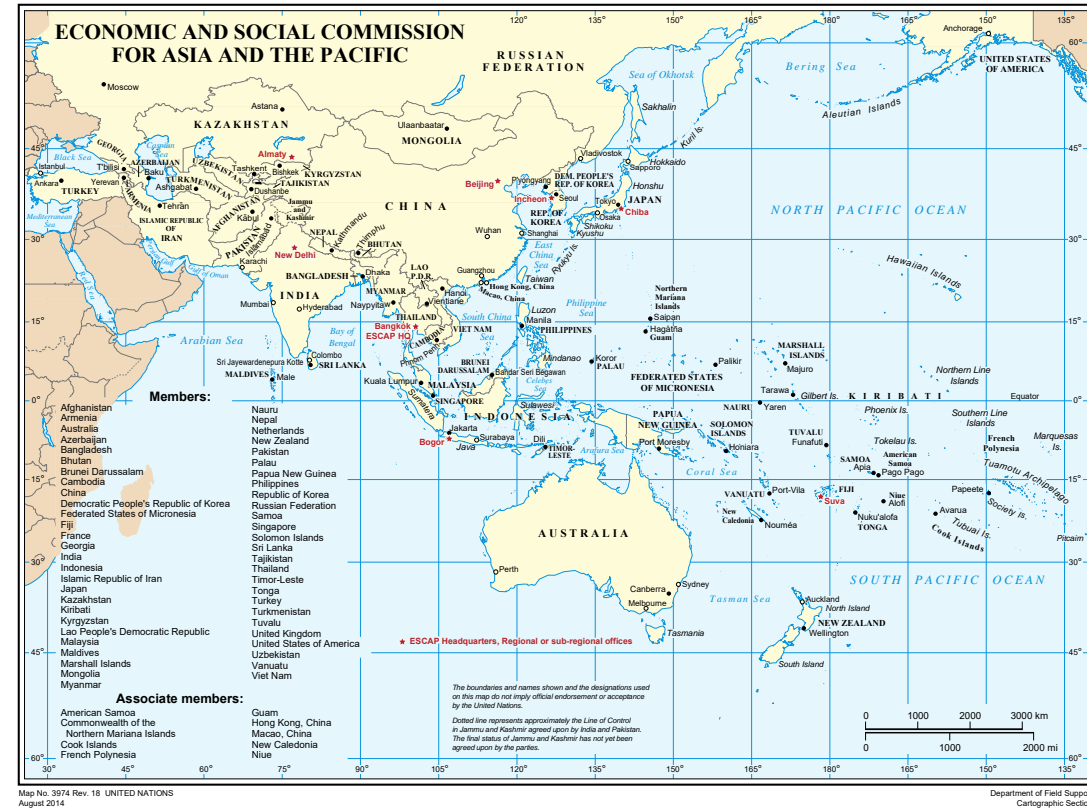
The
**ROCKEFELLER
FOUNDATION**

UN HABITAT
FOR A BETTER URBAN FUTURE

 UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

United Nations ESCAP

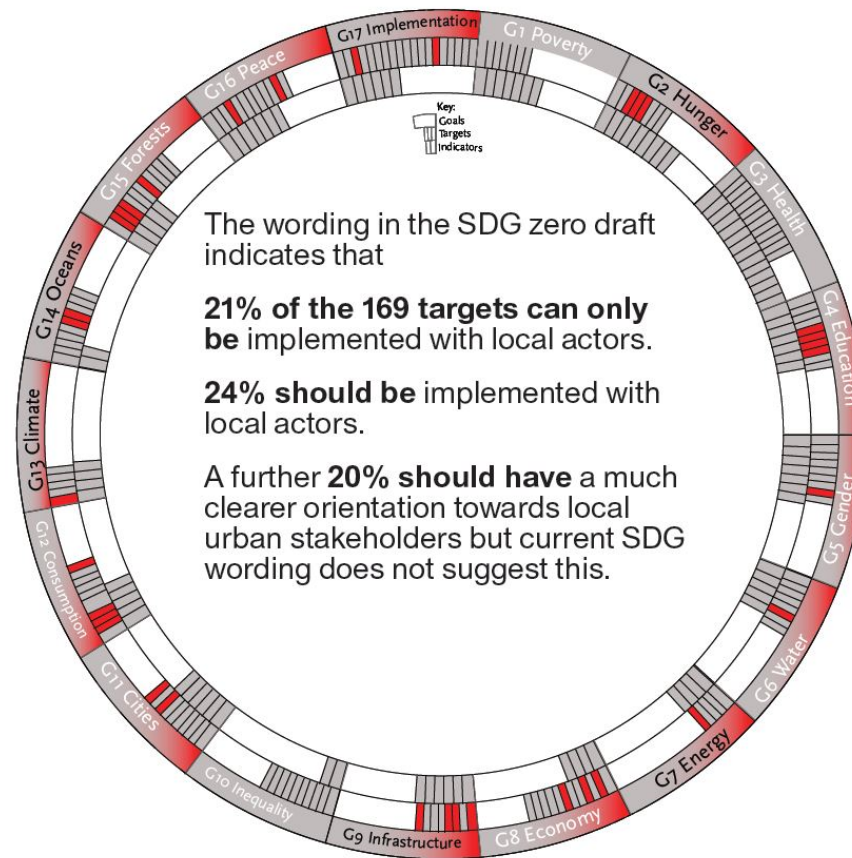
- Part of the UN Secretariat
 - 53 member States, 9 associate members, from Turkey to Tonga
- ESCAP covers the world's most populous region – two thirds of humanity
- Based in Bangkok, with 4 subregional offices
- ESCAP fosters:
 - regional cooperation through an intergovernmental platform to promote social and economic development
 - normative, analytical, and technical cooperation at the regional level
 - a platform for South-South dialogue and exchange of practices
- Interdisciplinary expertise from urban to environmental issues, to energy, science and technology, trade and transport



The outlook for Asia and Pacific cities

- Asia-Pacific is rapidly urbanizing
- this high urban growth has been accompanied by widening social and economic inequality and environmental degradation
- the sustainability of Asia-Pacific's cities will determine both the future of the region and the prospects for shared prosperity for all
- it is a source of optimism that Asia-Pacific is where many of the innovations, especially in smart technologies, are being explored

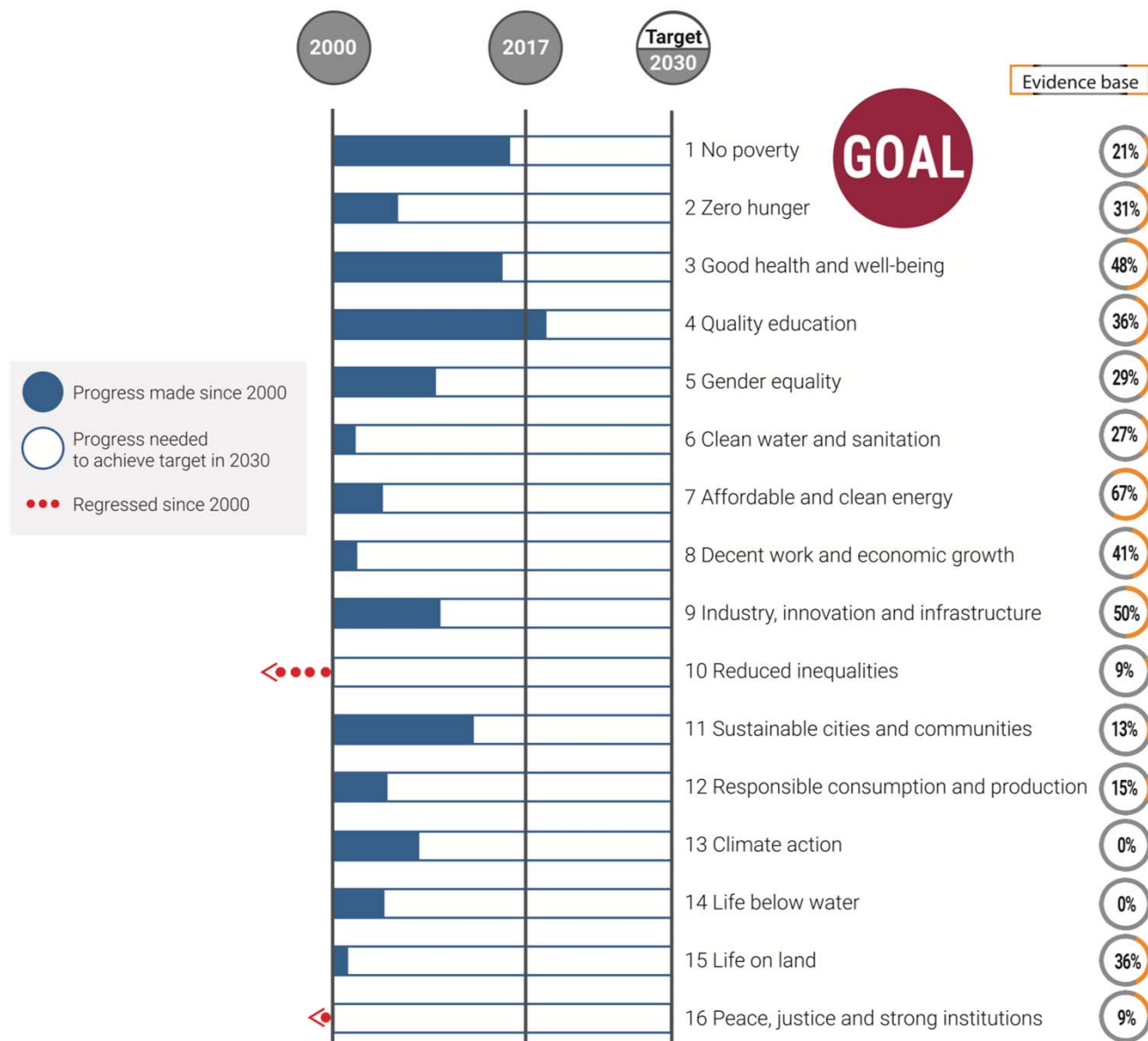
The 2030 Agenda and cities



Cities well positioned for the implementation of Global Development Agendas



Source: Otto, UN Environment, Cities Unit

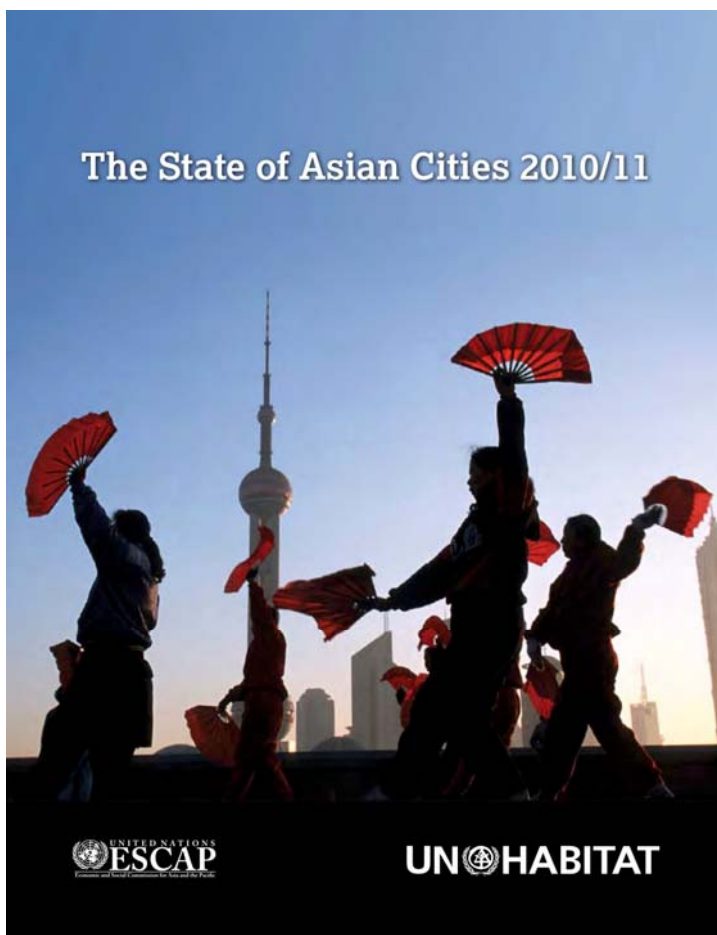


GOAL 1	International poverty	National poverty	Spending on essential services			
GOAL 2	Prevalence of undernourishment	Prevalence of stunting	Prevalence of malnutrition	Agriculture orientation index		
GOAL 3	Maternal mortality	Births attended by skilled personnel	Under-5 mortality	Neonatal mortality	HIV infections	Tuberculosis incidence
	Malaria incidence	Mortality from NCDs	Suicide mortality	Road traffic death	Unintentional poisoning (mortality)	Health worker density
GOAL 4	Organized learning (before primary)	Inequality indices for education	Organized teacher training			
GOAL 5	Women in parliaments & local governments	Women in managerial positions				
GOAL 6	Safely managed drinking water	Safely managed sanitation				
GOAL 7	Access to electricity	Reliance on clean energy	Renewable energy share	Primary energy supply		
GOAL 8	Real GDP per capita (growth)	Commercial bank & ATM	Real GDP per employed (growth)	Material footprint	Domestic material consumption	Unemployment rate
GOAL 9	Manufacturing value added	Manufacturing employment	CO ₂ emissions intensity	R&D expenditure	Medium & high-tech industry VA	Mobile network coverage
GOAL 10	Gini coefficient	Labour share of GDP				
GOAL 11	Urban slum population	Economic loss from disasters				
GOAL 12	Material footprint	Domestic material consumption				
GOAL 13	GHG emissions	CO ₂ emissions per manufacturing VA				
GOAL 14	Ocean Health Index					
GOAL 15	Forest area (% of land)	Terrestrial & freshwater biodiversity	Mountain biodiversity	Red List Index		
GOAL 16	Intentional homicide	Corruption Perception Index				

- Current rate of progress needs to be MAINTAINED to meet the target
- Need to ACCELERATE current rate of progress to meet the target
- Current trend needs to be REVERSED to meet the target

What are the effective *means of implementation* of the global agendas at the local municipal level to achieve sustainable urbanization?

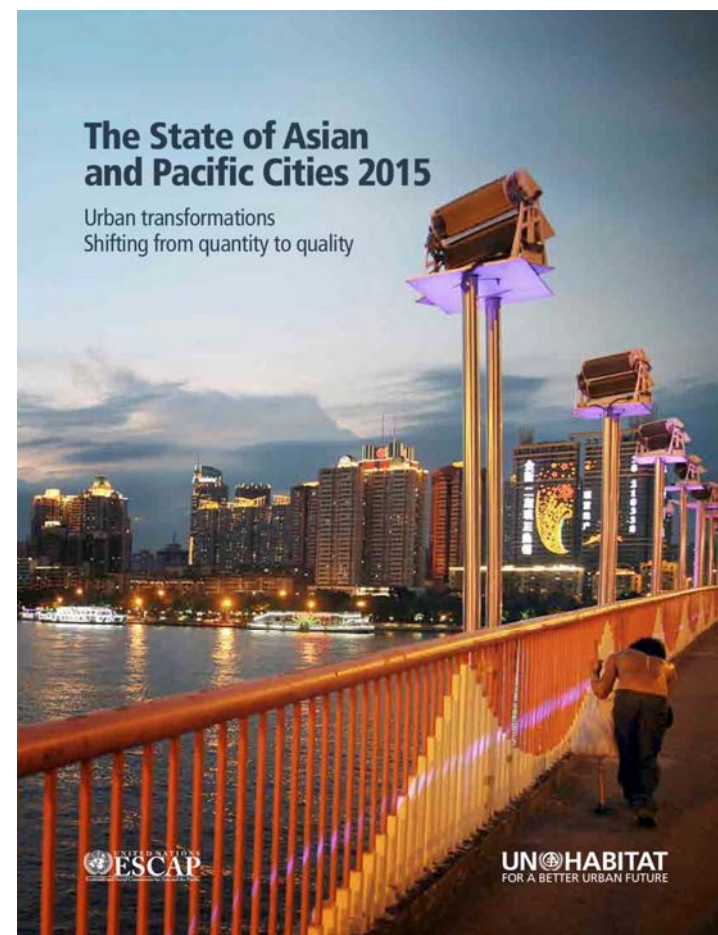
The State of Asian Cities 2010/11



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The State of Asian and Pacific Cities 2015

Urban transformations
Shifting from quantity to quality



UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

The Future of Asia and Pacific Cities 2019:

Urban Opportunities to deliver the 2030 Agenda for Sustainable Development



To create a ‘**possibility space**’ to re-imagine the future of built/natural environments in Asia-Pacific cities, with the aim to further *support the localization and implementation* of global sustainability agendas, and guide the development of prosperous, resilient, and inclusive cities for all

A moment of opportunity for Asia-Pacific cities

- decisions made now will have **long-term impacts**, and Asia-Pacific cities have an opportunity to set themselves on **more sustainable and inclusive trajectories**
- for example, most urban infrastructure investments, especially environmental ones, are **capital intensive and long-term**
 - e.g. water and sewer mains need to be replaced once in 30 years
- poor investment choices can create a **lock-in effect** and increase the challenge to establish sustainable development trajectories, especially in the energy sector

- will be a **major Report** on cities in the Asia-Pacific region
- will be a **policy advocacy Report** for **national and local governments** in the region
- will provide a **conceptual framework** to localize the **global agendas** in Asia-Pacific cities
- will critically assess and provide **knowledge** and **best practices** of the **means of implementation** across a range of urban sustainability areas
- will be launched at, and inform the thematic areas and structure of, the **7th Asia-Pacific Urban Forum** during Q3 2019

– Introduction

1. The Future of Urban Governance and Capacities for Resilience
2. The Future of Urban Finance
3. The Future of Smart Urban Data and Technologies
4. The Future of Urban/Territorial Planning

– Conclusion

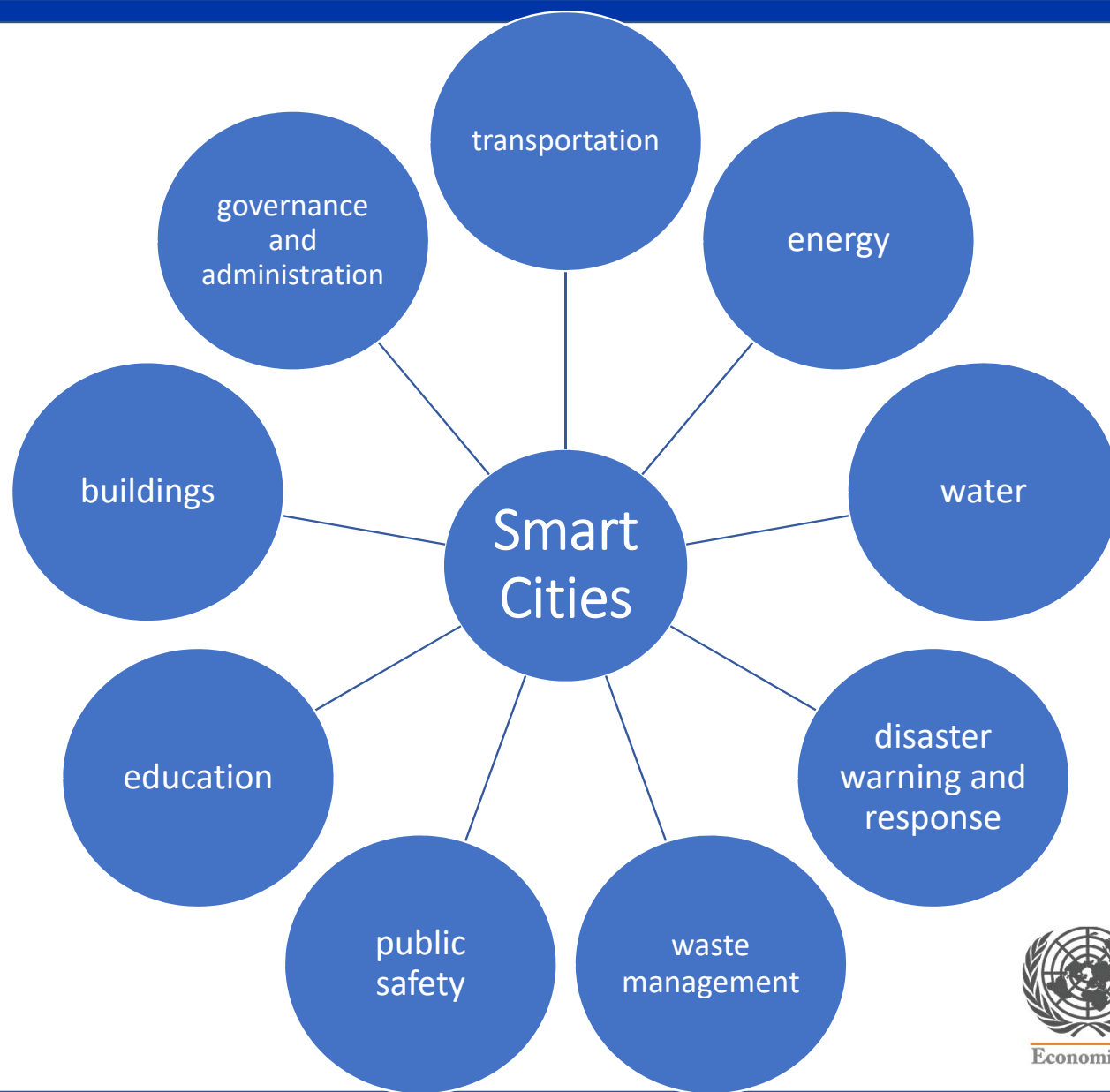
Selection of themes was influenced by:

- the ESCAP – UN-Habitat Regional Partners Forum held in November 2017
- the Regional Report for Habitat III

Chapter 3

The Future of Smart Urban Data and Technologies

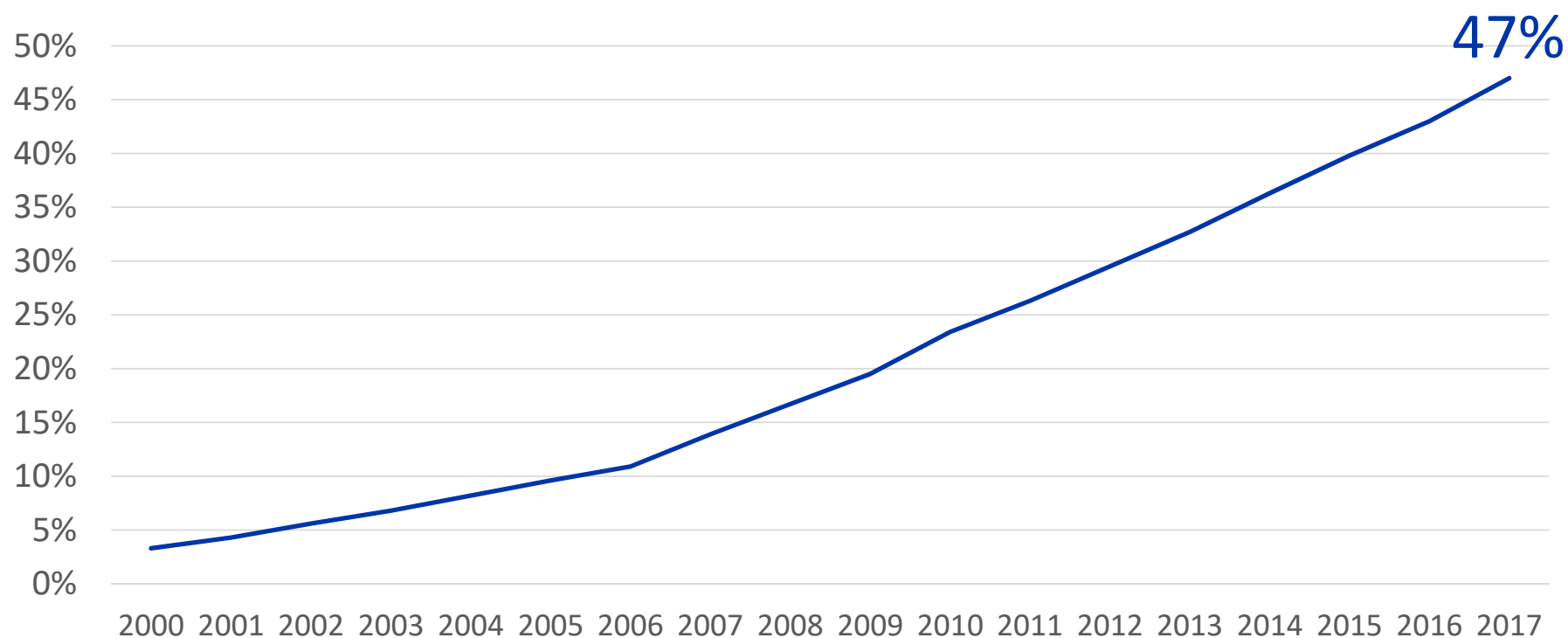
an approach where 'Smart' provides the means to realizing the end goal of equitable and sustainable cities



Examples of Smart City initiatives in Asia-Pacific

- **Republic of Korea**
 - Songdo International Business City is the largest private real estate venture ever and is set to cost around US\$ 33 billion
 - has the highest number of Internet of Things devices per capita
- **China**
 - has about 500 Smart City pilot projects, the highest number in the world, including Beijing, Shanghai, Guangzhou, and Hangzhou
 - over 90% of China's provinces and municipalities have listed Internet of Things as a important industry in their development plans
- **Japan**
 - accelerated deployment after the 2011 Fukushima disaster
 - focus on smart energy systems and disaster resilience
 - emphasize building up from the micro as opposed to bolstering the macro-grid
- **ASEAN Smart Cities Network**
 - 26 initial pilot cities
 - First ASEAN initiative to engage directly with cities
 - Facilitating Smart City Action Plans

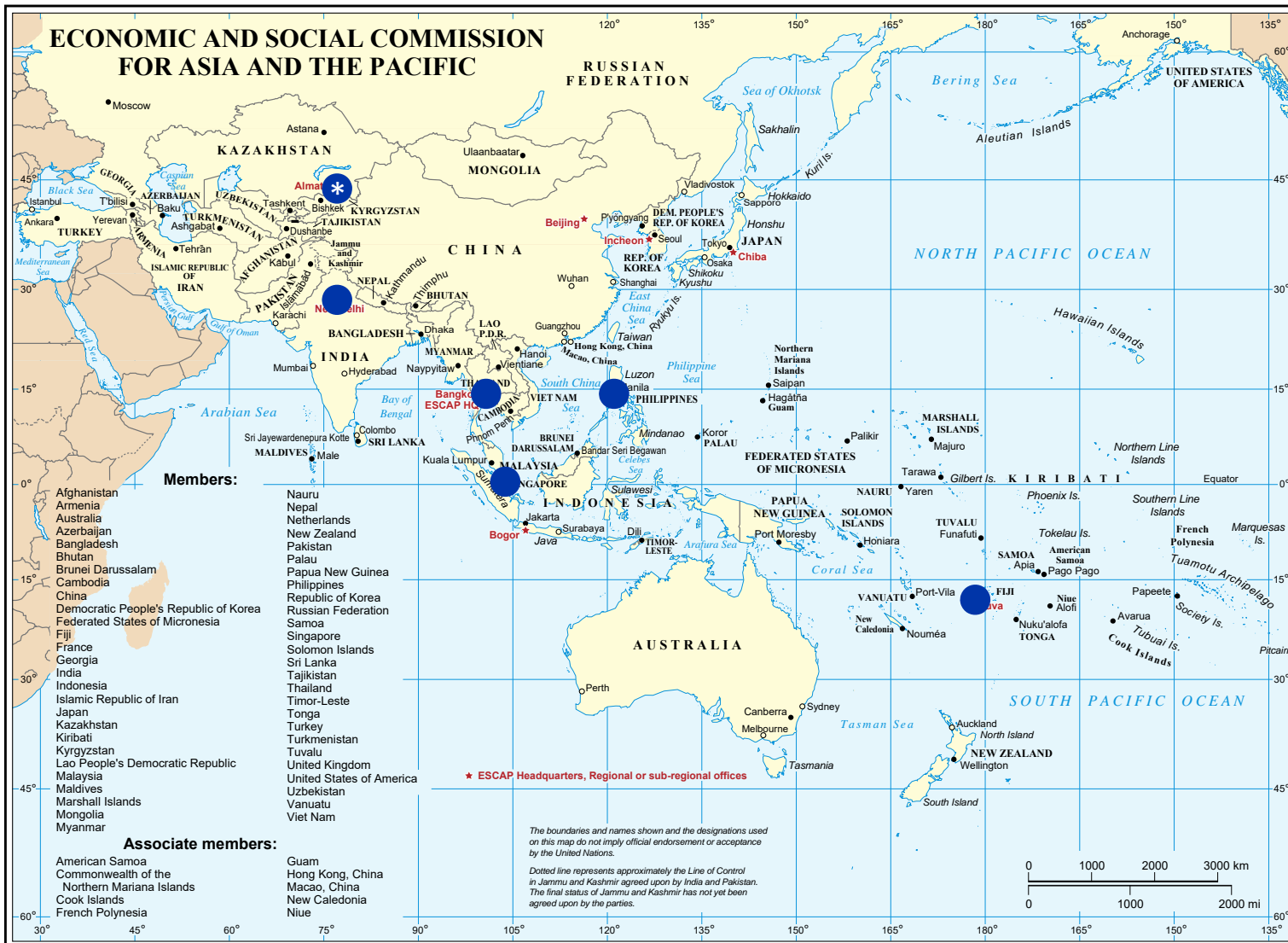
Internet users in Asia-Pacific (combined mobile and landline)



Chapter 3

The Future of Smart Urban Data and Technologies

- what are the new policy and project options to strengthen systems for Smart City initiatives, improve public service delivery, increase public satisfaction and strengthen democratic and participatory processes?
- what private sector initiatives/actions and national level policies can drive Smart City initiatives?
- how can cities close the technical capacity and skills gaps to be able to make decisions on which technologies are appropriate for their contexts, and to be able to implement and run Smart systems?
- how can municipal governments reduce the digital divide?
- what kinds of data to cities require for Smart City initiatives, and how can they collect it?
- how can cities ensure that data is used transparently, accountably, and securely, and that citizens' rights to privacy and political activity are respected?
- what are the trade-offs or intersections between investments in Smart City initiatives and the large numbers of people employed in the informal sector in Asia-Pacific cities?



Consultative Meetings

- **Subregional Pacific meeting**
4 July 2018, Suva, Fiji
- **Thematic consultation on Smart Cities in Asia and the Pacific**
10 July 2018, Singapore
- **Subregional consultation for South and South West Asia**
September 2018 TBD, New Delhi, India
- **Expert Group Meeting on Municipal Finance**
September/October 2018 TBD, Manila, the Philippines
- **Subregional consultation for North and Central Asia**
October TBD, Geneva, Switzerland
- **6th Asia-Pacific Forum on Sustainable Development (APFSD)**
March 2019 TBD, Bangkok, Thailand

Thematic consultation on Smart Cities in Asia and the Pacific

Objectives

1. **Review the overall issues** and assess the sustainability of smart cities in Asia and the Pacific, and **develop recommendations** for public, private and civil society organisations for future urban data and smart cities initiatives
2. **Broaden the knowledge base** regarding smart cities through the elaboration of international good practices and knowledge partnerships
3. **Build ownership** for the Report and encourage participants to become **champions**, to take its knowledge and recommendations forward, and to **disseminate, and raise awareness** within their networks

Expected outcomes

1. Validation of the overall narrative and structure of the Report's focus on Smart Cities, data and technology
2. A more granular and regionally-specific understanding of the challenges and future opportunities of Smart Cities in Asia and the Pacific, to generate examples of best practices and case studies that can feed into the Report, including empirical evidence on what Smart City strategies have and have not worked
3. Confirmation of timeline and thematic working group for the Report on Smart Cities, technologies and data

Programme

- Smart cities in Asia and the Pacific (presentation from CLC)
- Smart city applications and financing in Asia and the Pacific (presentation from ADB)
- Discussant's reaction (from ICLEI)
- Plenary discussion

Coffee break

- Breakout group discussions on five key questions around smart cities in Asia-Pacific
- Presentations of recommendations by each group in plenary
- Next steps and closing remarks from ESCAP and CLC

Key questions

- a) How will smart applications of technologies and data in the region change the built form, environment, and socio-economic fabric of cities in future?
- b) How can smart solutions be scaled up - recognizing different challenges within cities, across countries and sub-regions?
- c) What are current good practices and emerging examples of smart cities in the region which address sustainability, taking into consideration compatibility with current systems, greater flexibility and openness, the capacity of stakeholders (such as municipal workers and the public), and the technology's appropriateness to the city?
- d) How can smart city strategies and initiatives be localized through participatory and multi stakeholder processes? What policies and technologies can provide robust ICT infrastructure to help overcome the digital divide and ensure that no one is left behind in making cities smarter?
- e) Who are the different 'smart city champions' that can help distill guiding principles and promote good practices at the city level?

Topics for group discussions on the 'smart solution's for means of implementation

Group 1: Facilitator – Paula Hargrave (UN-Habitat)

How will smart applications of technologies and data in the region change the built form, environment, and socio-economic fabric of cities in future?

Group 2: Facilitator – Group 2: Facilitator - Lara Arjan (ADB)

What are current good practices and emerging examples of smart cities in the region which address sustainability, taking into consideration compatibility with current systems, greater flexibility and openness, the capacity of stakeholders and the technology's appropriateness to the city?

Groups 3: Facilitator – Teng Leng (CLC)

What policies and technologies can provide robust ICT infrastructure to help overcome the digital divide and ensure that no one is left behind in making cities smarter?

Group 4: Facilitator – Taimur Khilji (UNDP)

How can smart solutions be scaled up - recognizing different challenges within cities, across countries and sub-regions?

Group 5: Facilitator – Emani Kumar (ICLEI)

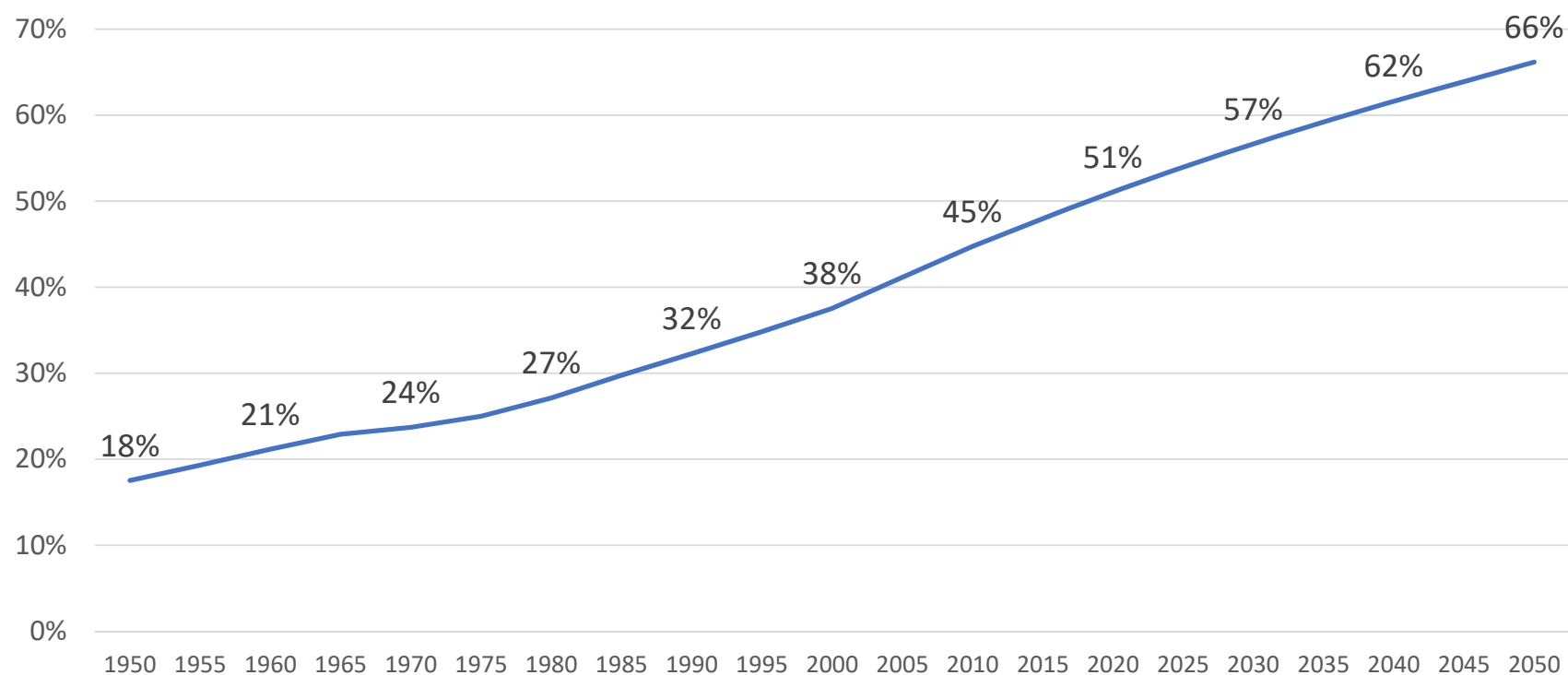
Who are the different 'smart city champions' that can support an enabling environment and promote implementation at the city level?

Annex

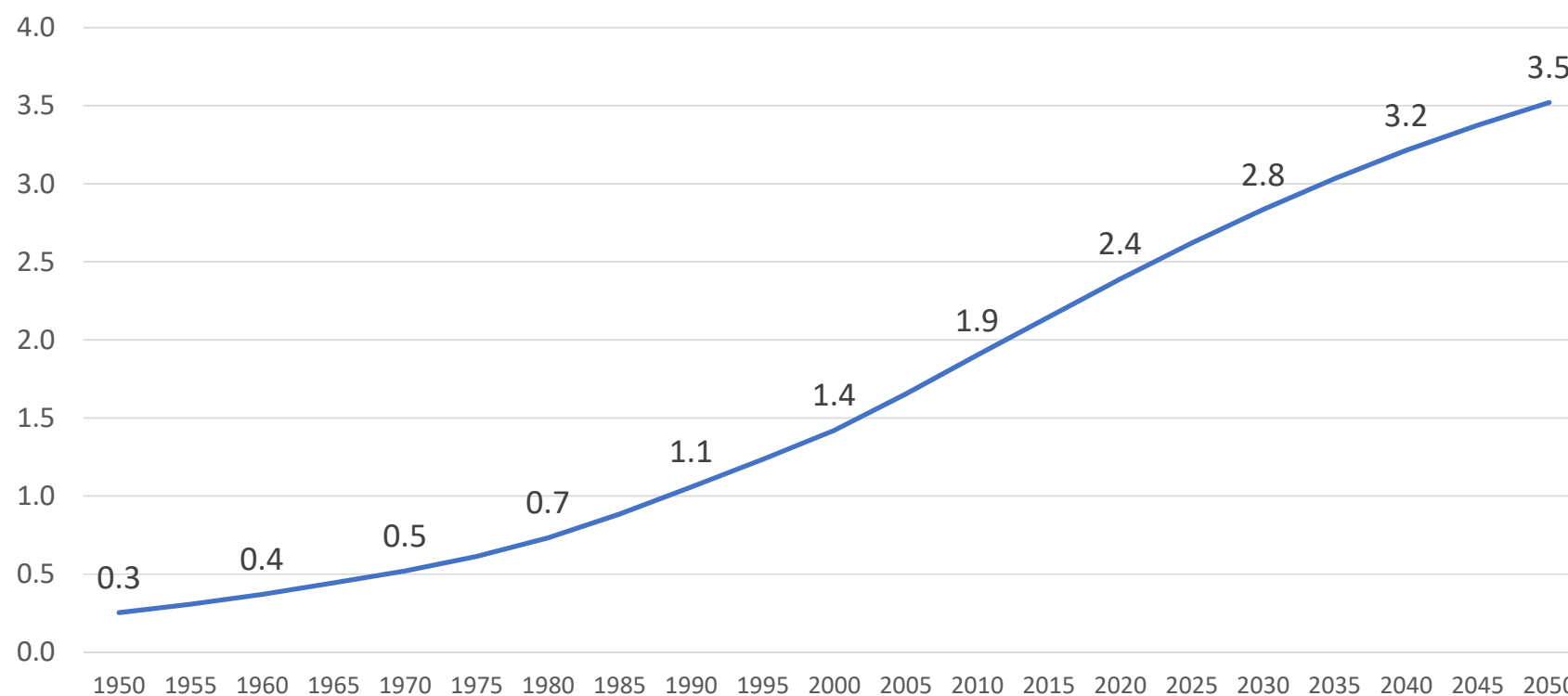
The outlook for Asia and Pacific cities

- Asia-Pacific is rapidly urbanizing

Percentage of population residing in urban areas in Asia



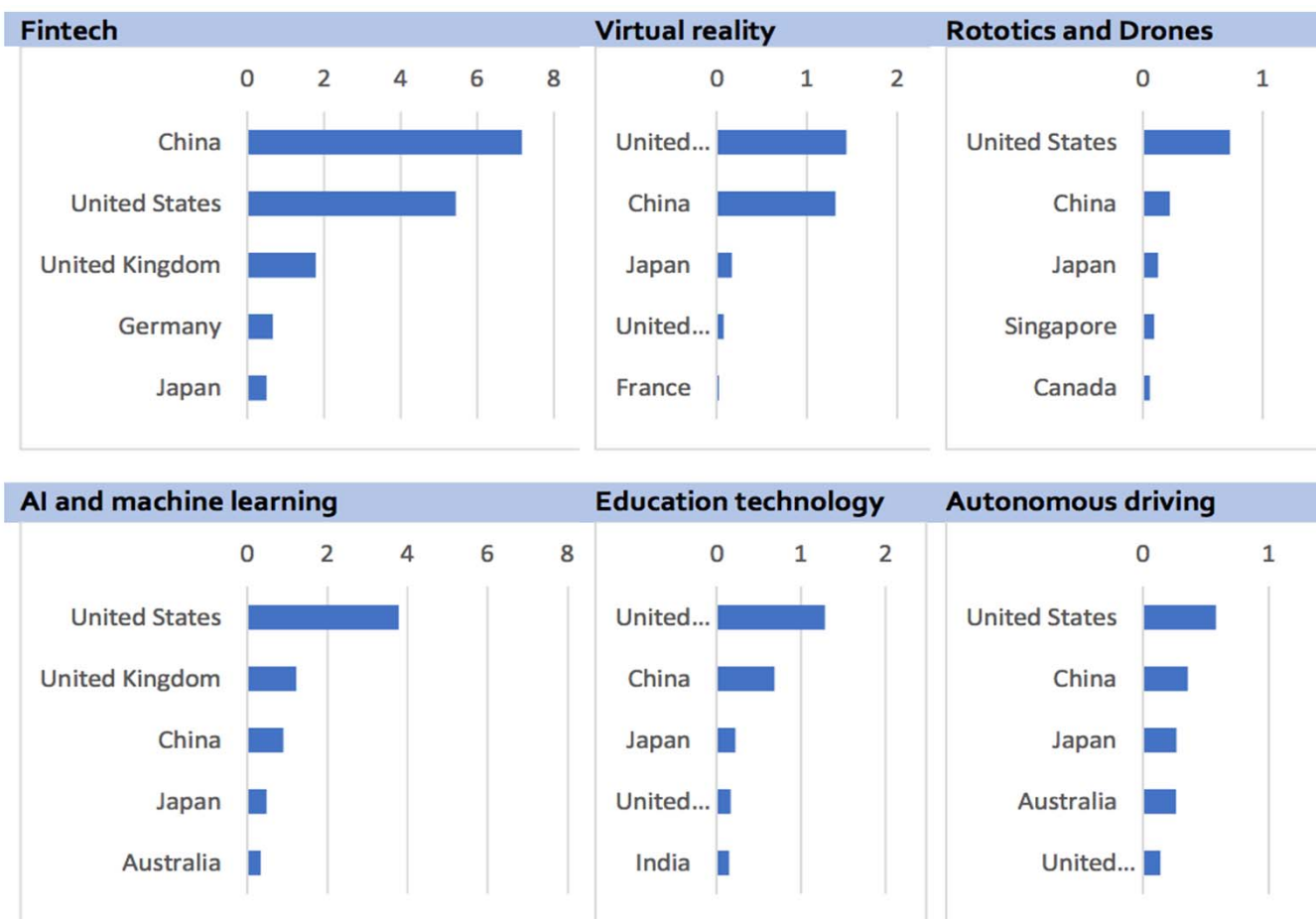
Urban population in Asia-Pacific (billions)



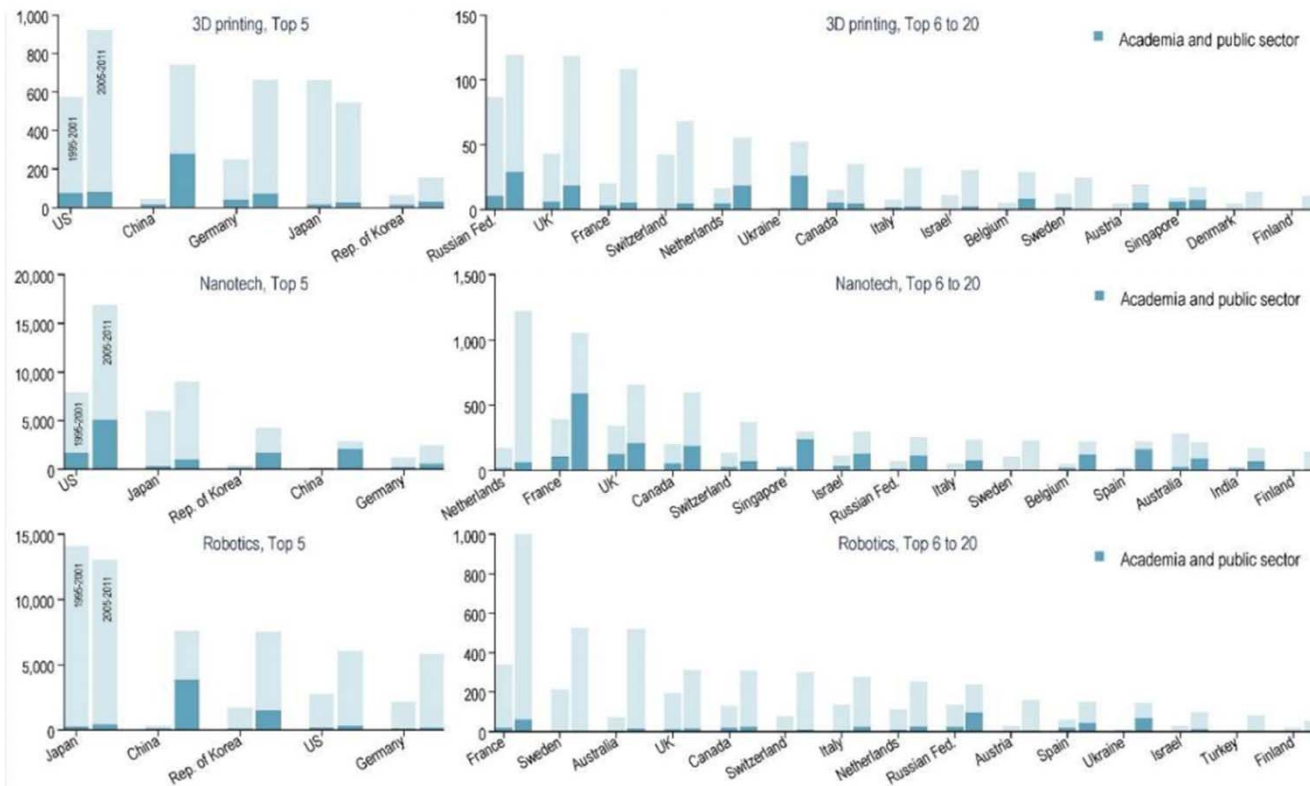
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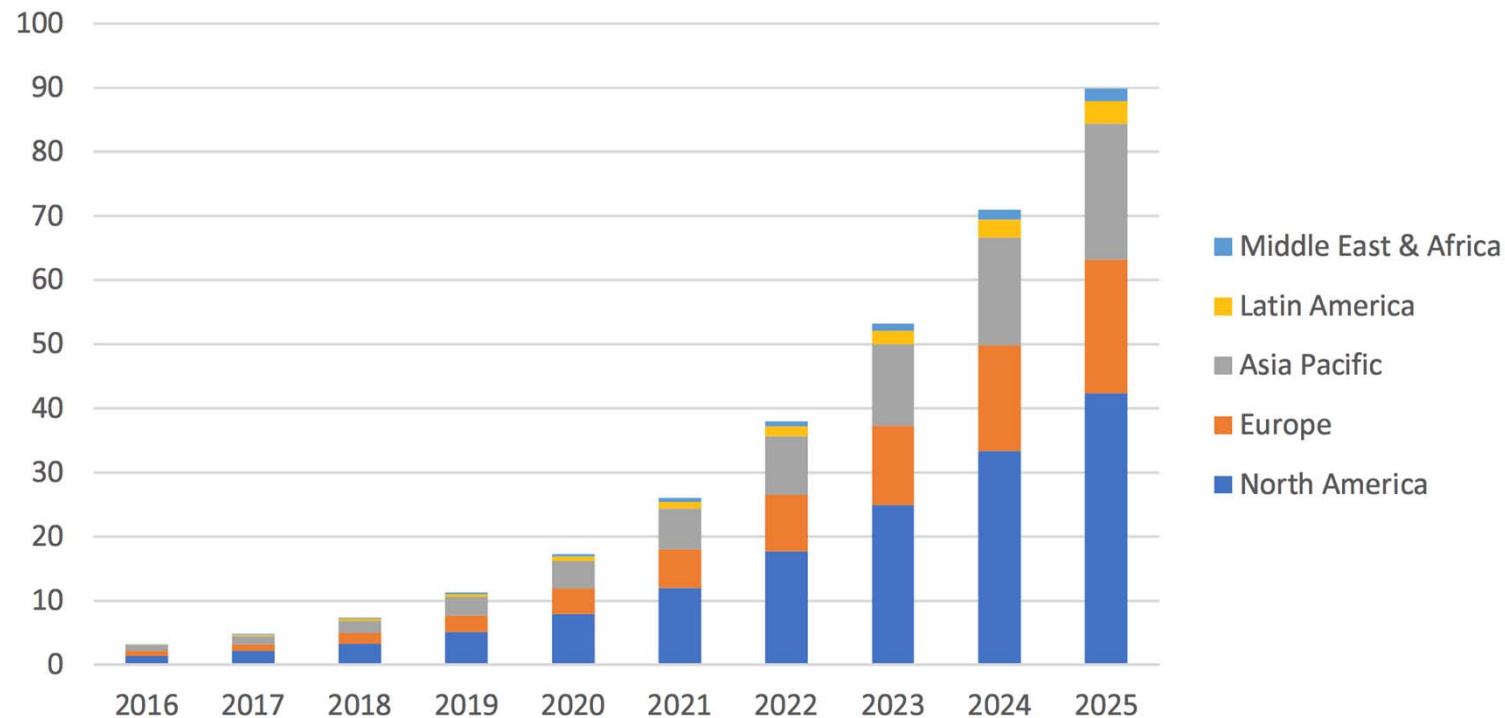
Venture-capital investment by technology (billions of US dollars)



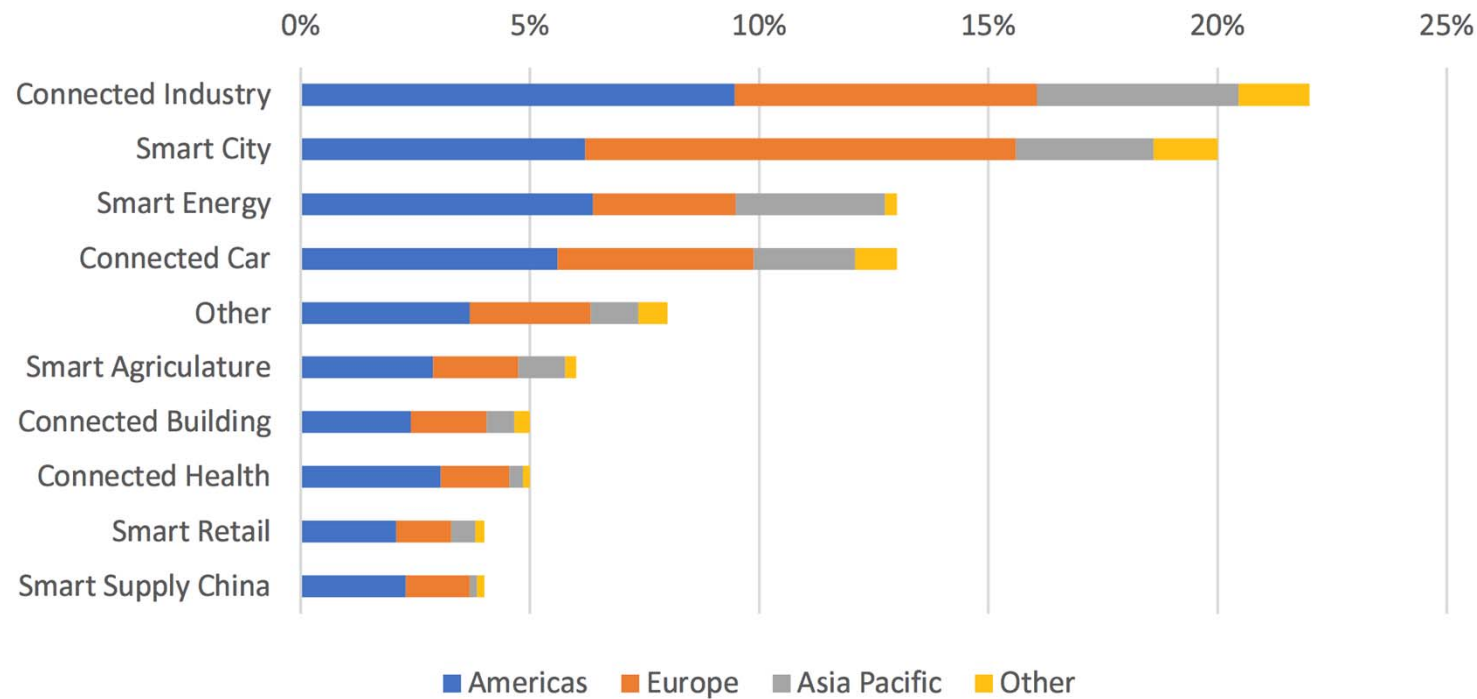
Countries drive patenting in 3D printing, nanotechnology, and robotics (numbers of first patent filings)



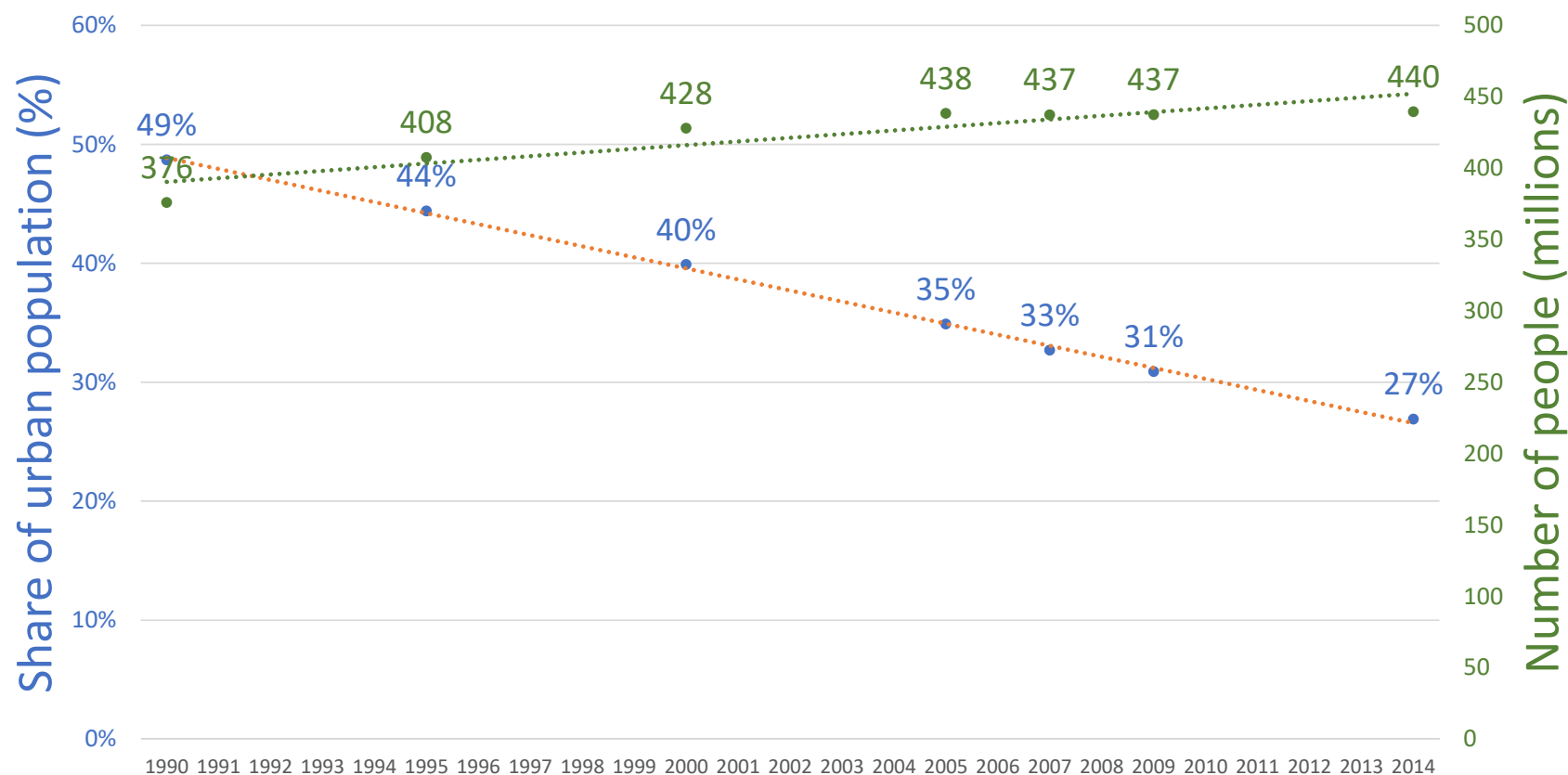
Artificial intelligence software revenue, world markets, 2016-2025 (billions of United States dollars)



Implementation of Internet of Things related projects



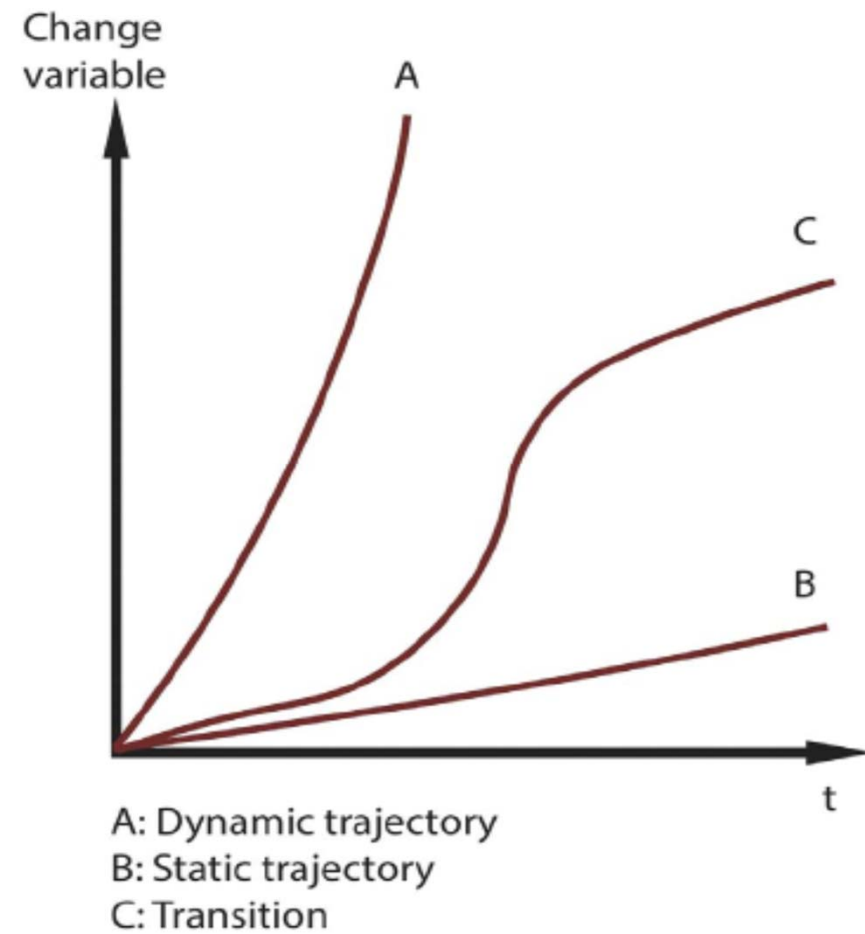
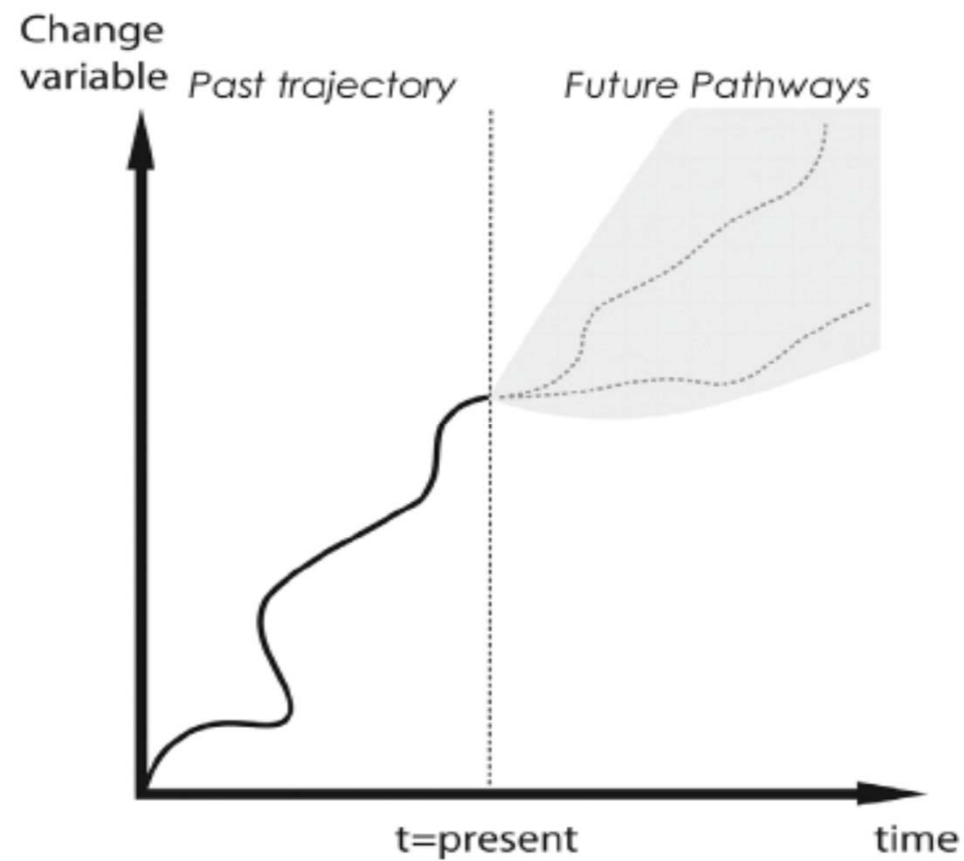
Slum population in Asia-Pacific, 1990-2014



Environmental degradation

- 60-70% of plastic in the ocean comes from Asia-Pacific
 - at the current rate, the oceans will carry more plastic than fish by 2050
 - there are 51 trillion microplastic particles in the oceans; 500 times more than there are stars in our galaxy
- 70% of all air pollution related deaths occur in Asia-Pacific
- Asia accounted for 33% of all global greenhouse gas emissions in 2014, more than the European Union and the United States combined

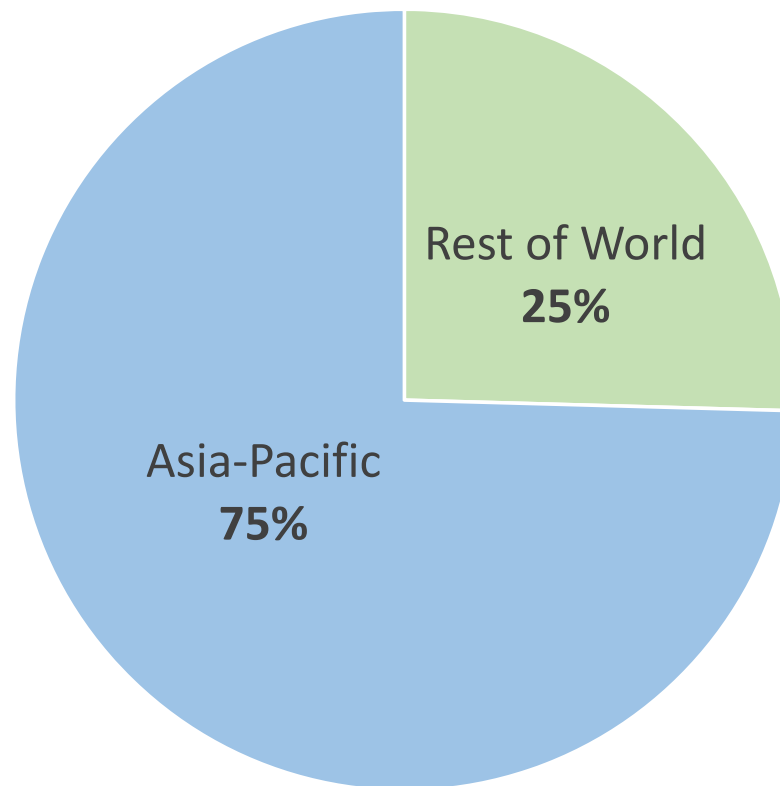
Urban trajectories



Chapter 1

The Future of Urban Governance and Capacities for Resilience

Disaster fatalities, 1970-2011



Chapter 1

The Future of Urban Governance and Capacities for Resilience

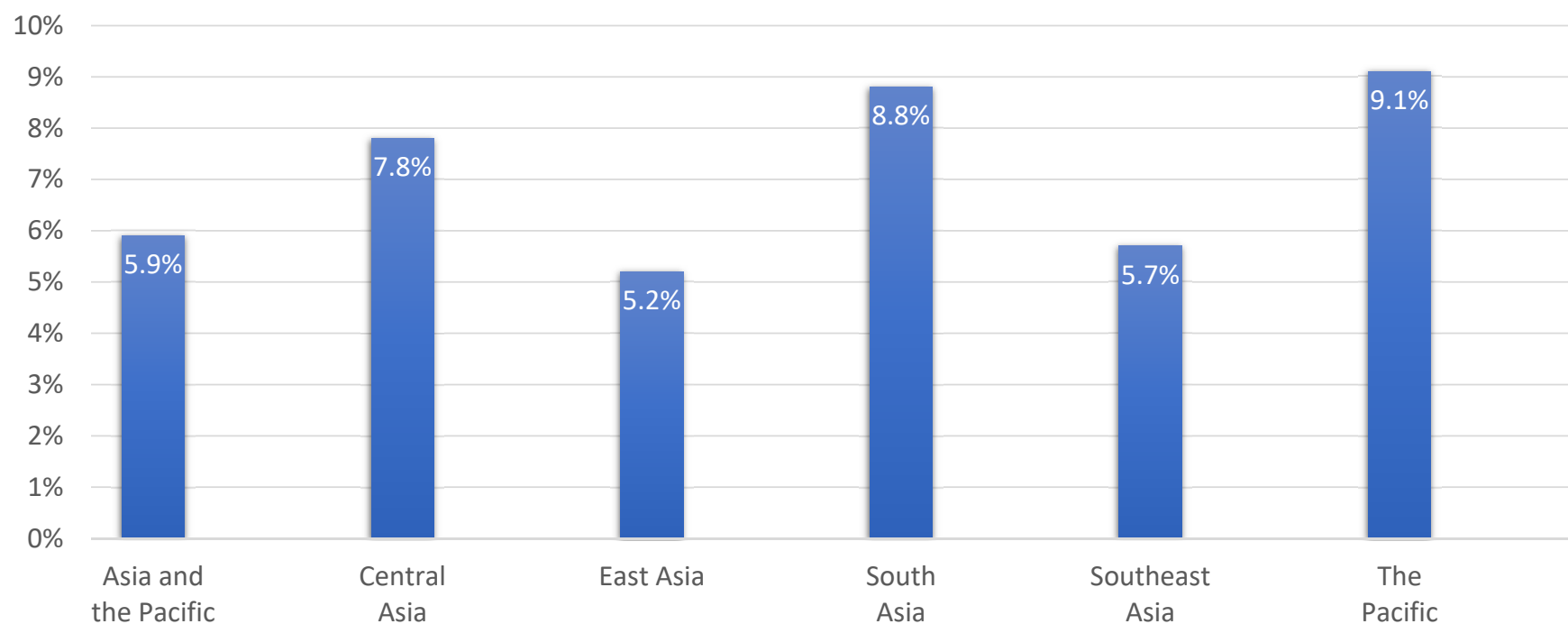
- how can cities leverage frontier Smart technologies to facilitate more effective local governance in order to address the multidimensional urban impacts of social, economic, and environmental shocks and stresses, including from disasters and climate change?
- how can Smart City initiatives increase the capacities of the most vulnerable segments of society in particular?
- how can Smart City systems themselves be made more resilient?
- how can Smart technologies and innovative applications of data be used to identify the means to curb systems that are resilient but not sustainable, or which hinder development efforts in Asia-Pacific cities?

Chapter 2

The Future of Urban Finance

Investment Needs as percentage of GDP

Climate-adjusted estimates, 2016-2030



Chapter 2

The Future of Urban Finance

- what financial mechanisms can Asia-Pacific cities leverage for Smart City initiatives?
- how can Asia-Pacific cities finance the necessary infrastructure investments in information technology in order to reduce the digital divide?
- how can Smart systems reduce the cost of closing the infrastructure gap in Asia-Pacific cities (e.g. through demand management and Smart appliances)?

Chapter 4

The Future of Urban/Territorial Planning

Urban expansion



Da Nang
VIETNAM



Can Tho
VIETNAM



Pune
INDIA



Melaka
MALAYSIA



Haiyan
CHINA



Deyang
CHINA



Mandalay
MYANMAR



Chapter 4

The Future of Urban/Territorial Planning

- what kinds of geospatial, population, resource and material use, and other kinds of data do municipal governments need in order to make inclusive and sustainable planning decisions, and how can Smart technology and sensors help collect this data?
- how can cities ensure that Smart systems are not siloed by sector in order to facilitate integrated and inclusive planning processes?
- how can cities ensure the selection of Smart City technologies is transparent and demand-led?