Insight 8

ジル・シオン

東京大学大学院　新領域創成科学研究科附属
サステイナブル社会デザインセンター
特任講師

Future Earth 日本ハブ

10 NEW INSIGHTS IN CLIMATE SCIENCE

2024/2025

Insight No.8

都市における気候回復力を備えた開発のための新しいフレームワークは、意思決定者に共同利益を生み出すためのアイディアを提供する

New frameworks for
climate resilient development in cities

都市における気候回復力を備えた開発のための新しいフレームワーク

共著者: Ursula Eicke, Zeenat Niazi, Wan-Yu Shih, Tischa Muñoz-Erickson, Ayyoob Sharifi, Giles B. Sioen

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2024/2025

- Few cities include effective mitigation and adaptation strategies in their action plans, even though climate-related risks are predicted to impact billions living in cities.

都市における気候変動に関連したリスクが何十億もの人々に影響を及ぼすと予測されているにもかかわらず、効果的な緩和および適応戦略を行動計画に含めている都市はほとんどありません。

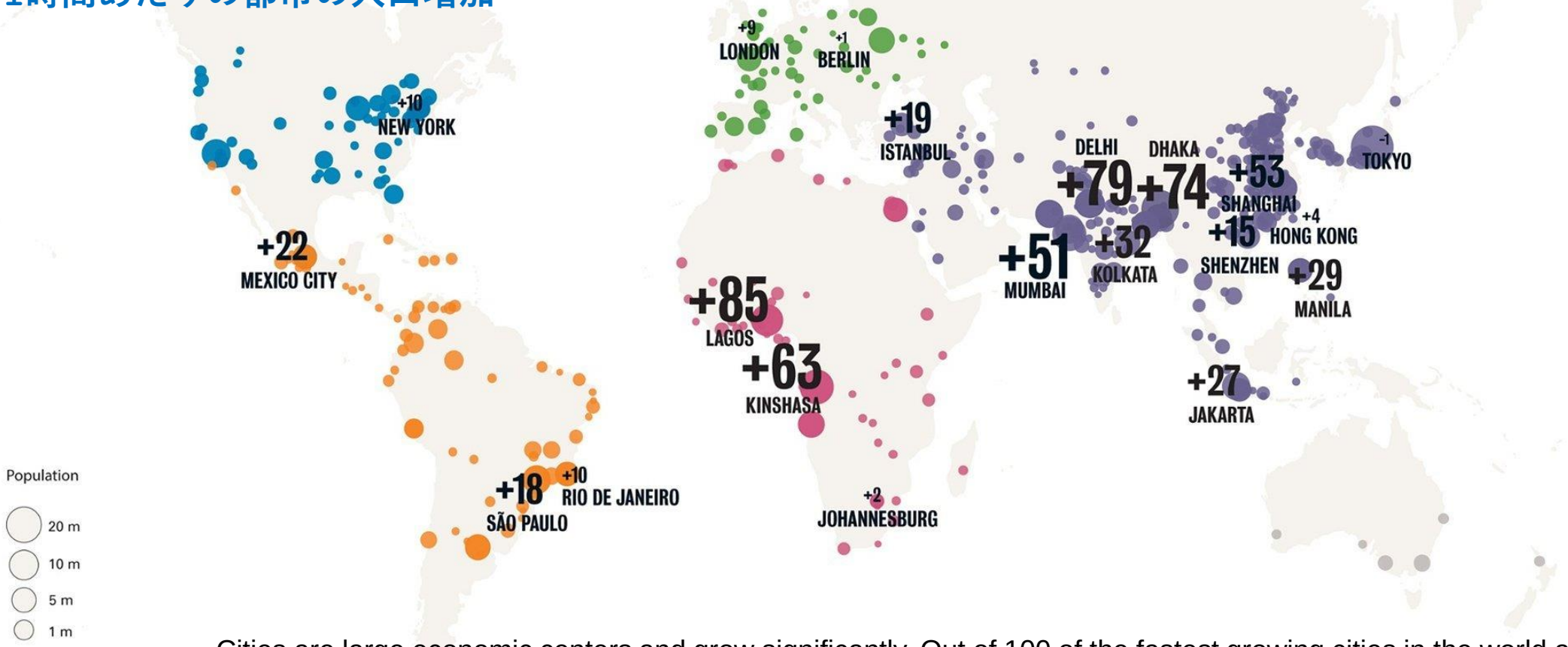
- Climate-resilient development can be operationalised more effectively with a social-ecological-technological systems (SETS) approach. Smart solutions and technologies can facilitate the adoption of the SETS approach, ensuring co-benefits and minimising trade-offs.

気候回復力を備えた開発は、社会-生態-技術システム（SETS）アプローチを用いることで、より効果的に実現可能です。スマートソリューションや技術は、SETSアプローチの採用を促進し、それぞれの利益を確保しつつトレードオフを最小限に抑えることができます。

- Cities in various stages of development – emerging, rapidly growing, established, and shrinking – face distinct challenges posed by climate change, requiring tailored development strategies for each context.

発展段階が異なる都市（新興都市、急成長している都市、確立された都市、縮小中の都市）は、それぞれが気候変動による特有の課題に直面しており、各状況に応じた開発戦略が求められています。

URBAN GROWTH PER HOUR
1時間あたりの都市の人口増加

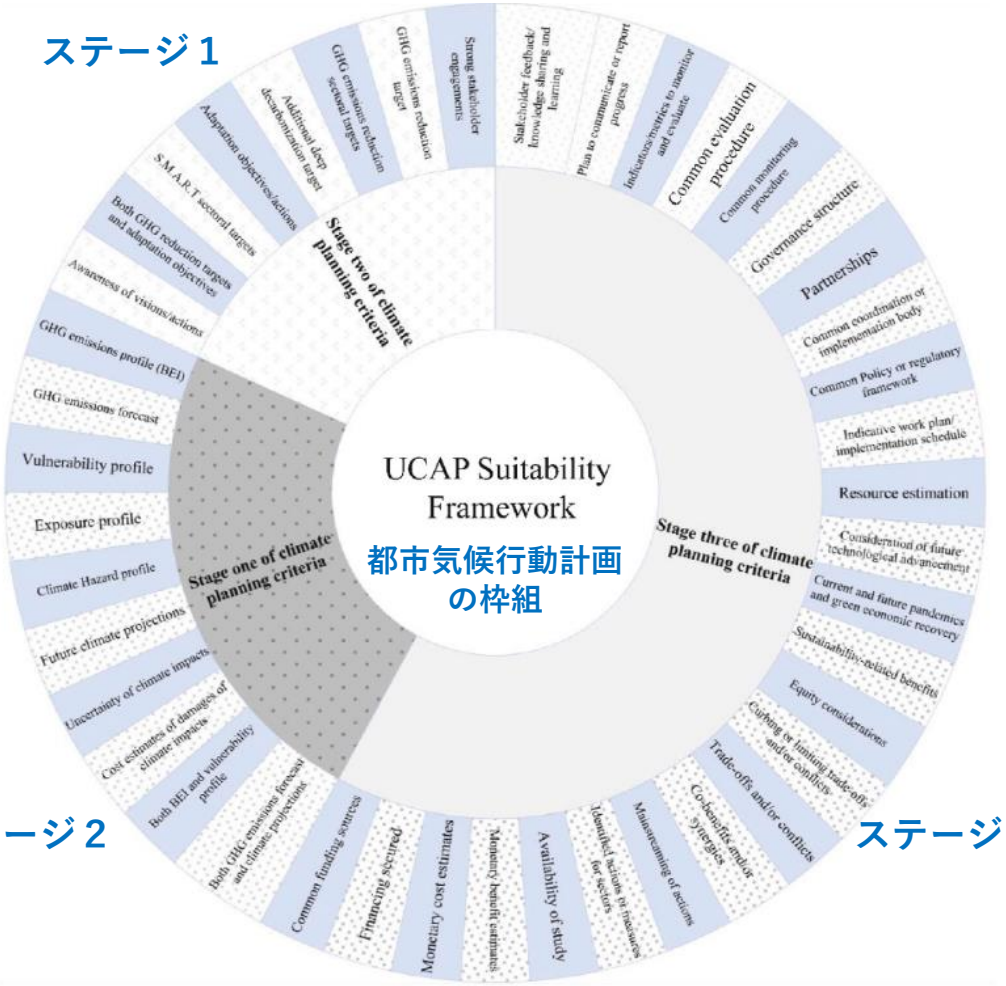


Cities are large economic centers and grow significantly. Out of 100 of the fastest growing cities in the world already classified to be at “high risk”, 80 are in Asia and Africa (commercially important cities such as Jakarta, Lagos, and Addis Ababa are in top 10).

Image: Visual Capitalist, 2015

都市は大規模な経済拠点であり、著しく成長しています。
すでに「高リスク」と分類されている世界で最も急成長している100の都市のうち、80はアジアとアフリカに位置しています。
（ジャカルタ、ラゴス、アディスアベバなどの商業的に重要な都市がトップ10に含まれています）

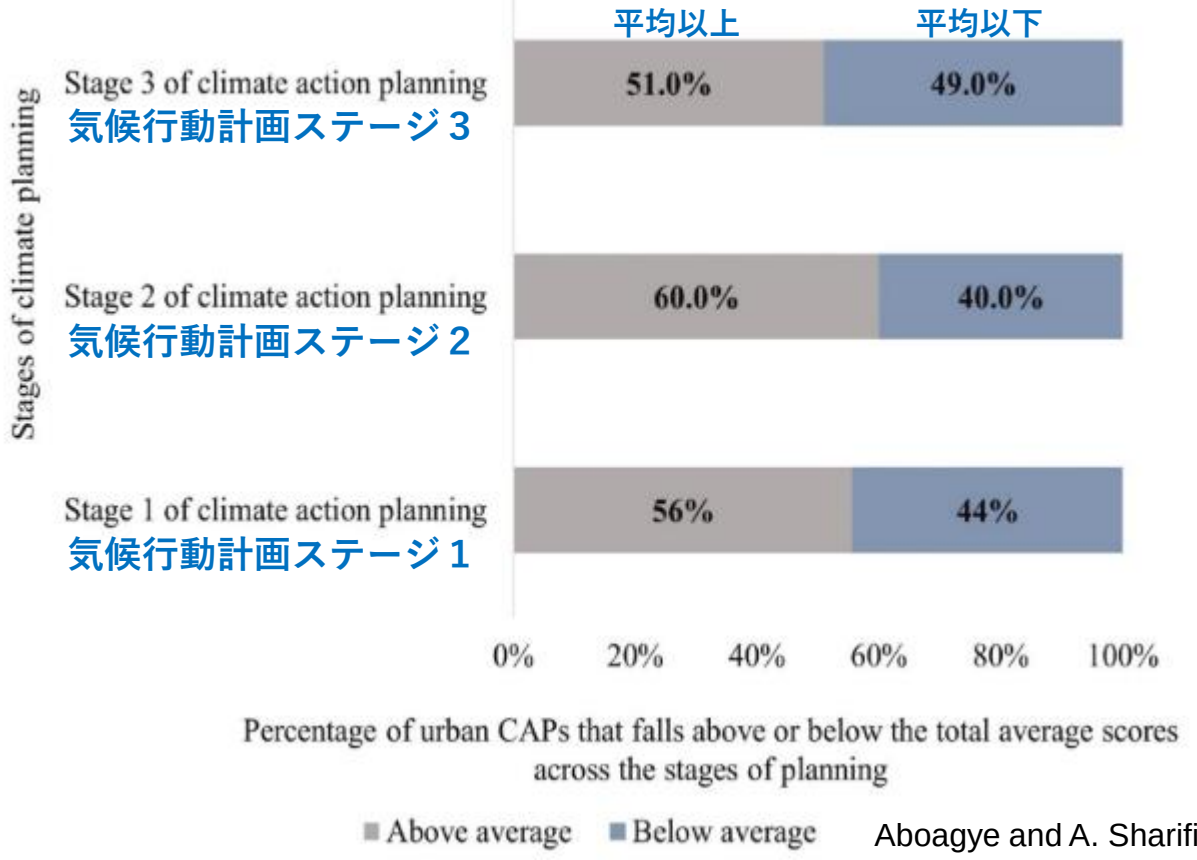
ステージ１



ステージ２

ステージ３

気候行動計画のステージ別合計平均スコア

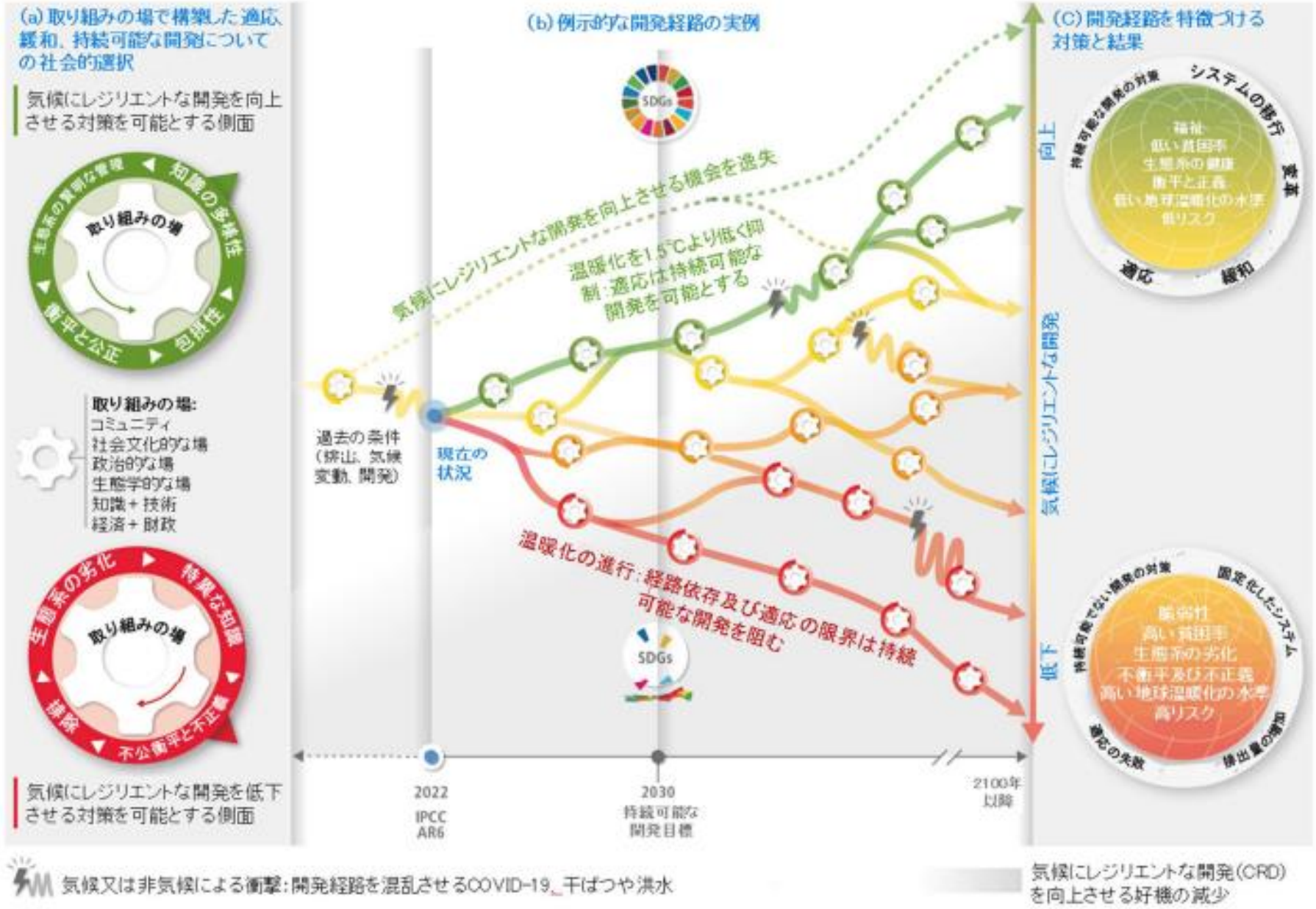


Aboagye and A. Sharifi, 2024

The urban climate action planning (UCAP) framework stages and criteria on the left and the extent to which sampled urban CAPs fall above or below the total average scores of the three stages of climate planning on the right.

都市気候行動計画（UCAP）フレームワークの段階と基準が左側に、サンプル調査された都市の行動計画（CAP）が気候計画の3段階の平均スコアを上回るか下回るかの程度が右側に示されています。
都市の規模が大きいほど結果が良好であり、平均して小規模な都市よりも準備が整っていることを示しています。

気候にレジリエントな開発を可能とする好機は急速に減少している

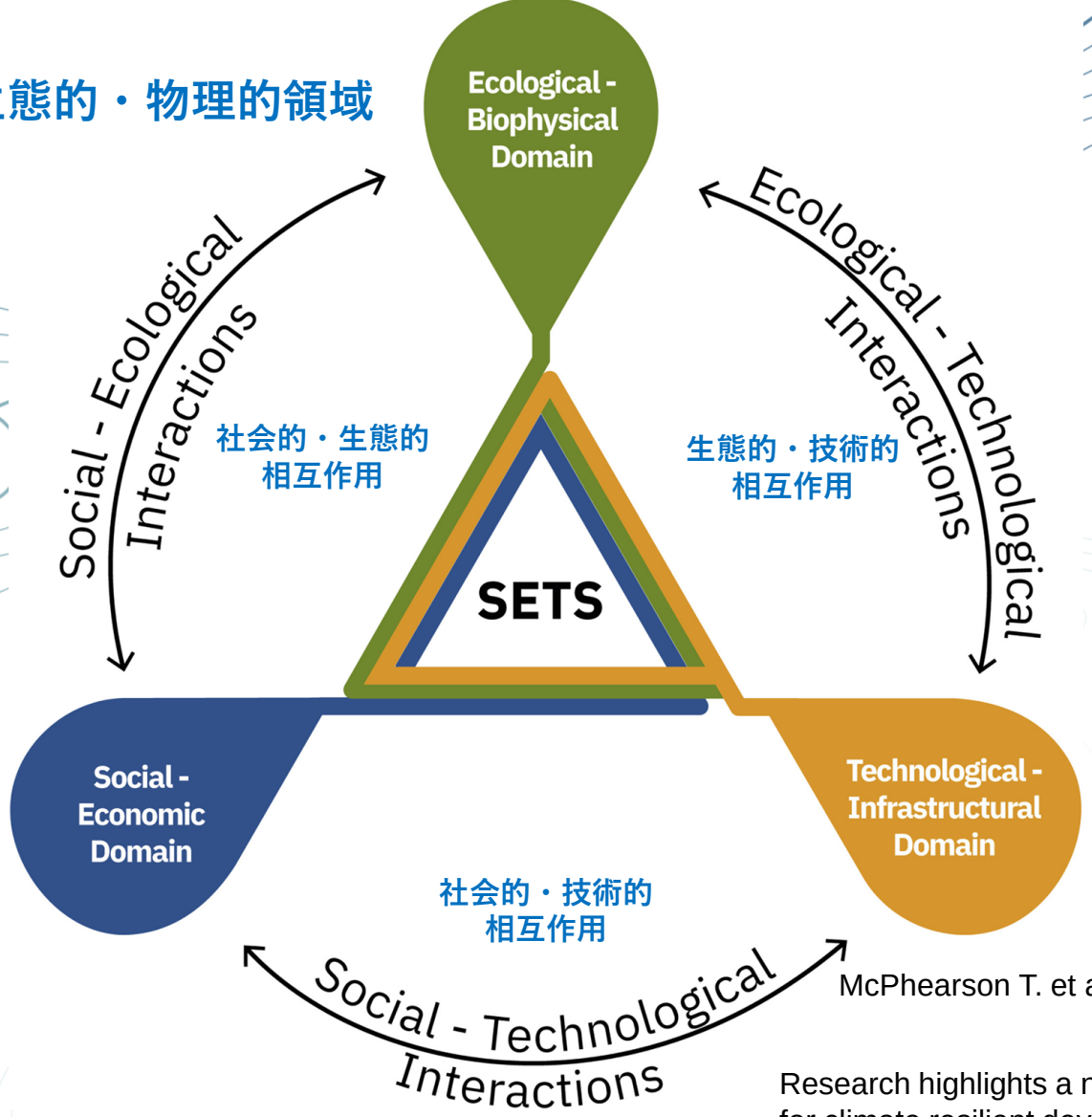


The IPCC brought forward this conceptual scenario planning visual where we can see what engagements are needed to design pathways that will bring us either to higher or lower climate resilient development.

IPCCはこの概念的なシナリオ計画を視覚的に提示しました。ここでは、気候回復力を備えた開発をより高めるか、または低めるかの道筋を設計するために必要な取り組みが何であるかを見ることができます。

「IPCC AR6 WG2　政策決定者向け要約」環境省による確定訳【2023年8月】（https://www.env.go.jp/content/000138044.pdf）

生態的・物理的領域



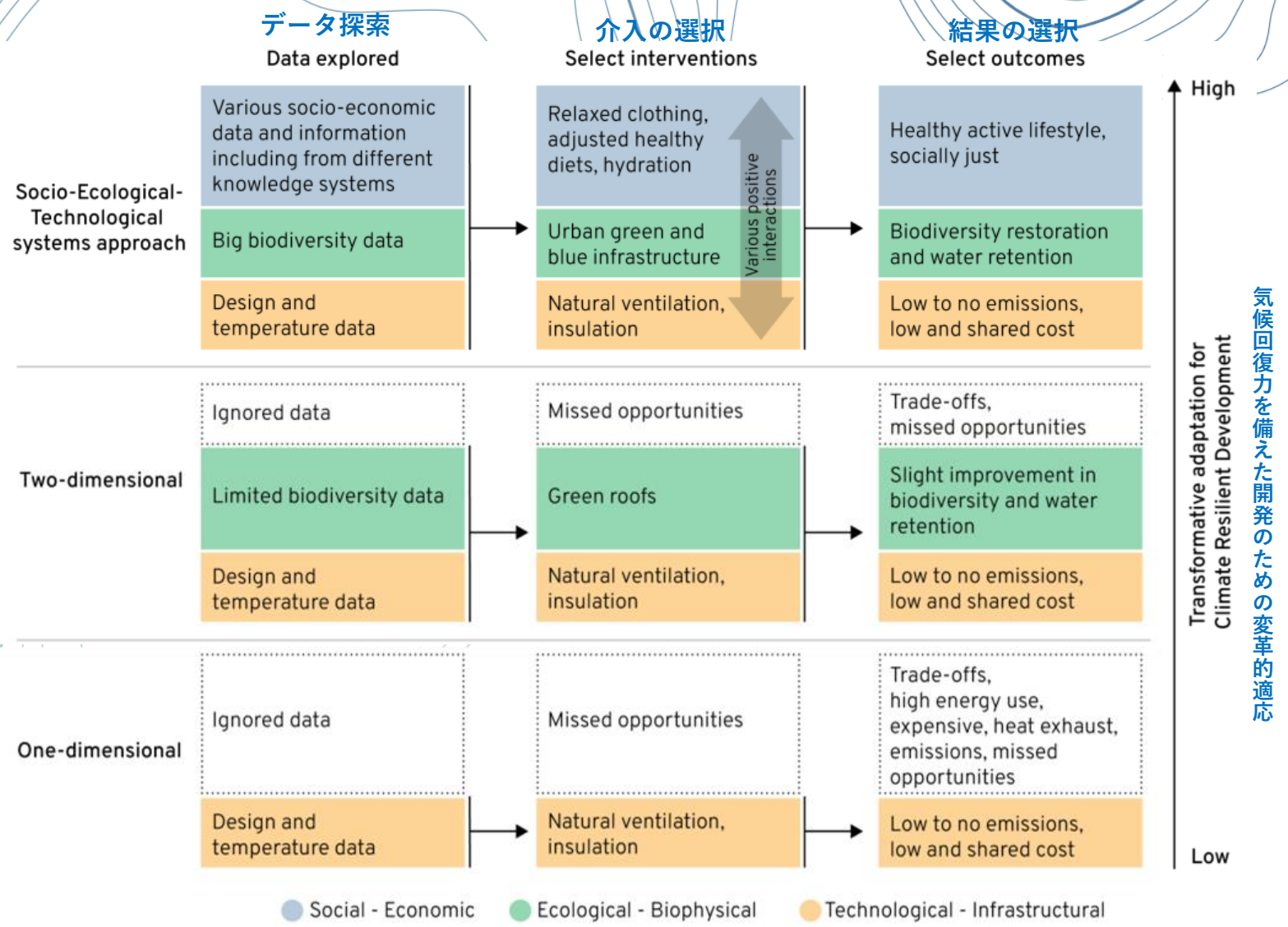
社会経済的領域

技術・インフラ領域

McPhearson T. et al. 2022

Research highlights a need to facilitate transitions for climate resilient development with an open and dynamic Socio-Ecological-Technological Systems (SETS) approach.

研究は気候回復力を備えた開発への移行を促進するために、
オープンかつ動的な社会–生態–技術システム（SETS）アプローチが必要であることを強調しています。



10 New Insights in Climate Change2024/2025 (p.35 Fig.8)より発表者改編

私たちは、一面的な行動から、社会–生態–技術システム(SETS)アプローチを採用することで、より複雑性を受け入れるべきです。このアプローチは複数の側面を組み込み、相互にポジティブな関連性を持つ共益を生み出し、トレードオフを最小限に抑えることを可能にします。

POLICY IMPLICATIONS

- Momentum for a more central role of cities in global climate action has been growing since COP26. At COP28, the Coalition for High Ambition Multilevel Partnerships (CHAMP) and the Joint Outcome Statement on Urbanization and Climate Change focused on empowering cities and local governments to strengthen climate action through multilevel collaboration. In particular, these efforts push for the incorporation of stronger urban content into Nationally Determined Contributions (NDCs).
- An integrated social-ecological-technological systems (SETS) approach can serve as a guide for operationalising urban climate-resilient development, enhancing co-benefit and prioritising synergistic solutions that enable local adaptation to climate change impacts while contributing to global efforts to reduce GHG emissions. This resonates strongly with the COP29 Presidency initiative on Multisectoral Actions Pathways (MAP) Declaration for Resilient and Healthy Cities. Intervention highlighted in the literature include:
  - Green infrastructure and solar passive building designs coupled with new behavioural norms on dress codes, for example, reduce heat stress, as well as GHG emissions from building operations.
  - Urban planning and governance supported by big data analytics and AI tools to maximise co-benefits and minimise trade-offs. AI-supported decision-making enables far more powerful assessment of multiple interactions across various social-ecological-technological components of the urban system.
  - Invest in improved capacities for adaptive governance and transformative urban planning.
  - Build innovative institutional partnerships that include local communities and the private sector to improve implementation and management of urban infrastructure and services.
- Interventions for managing climate risks must be designed to respond to the specific ecological and vulnerability contexts of the city. Strategies and solutions must be tailored to the unique challenges faced by cities at different stages of their development, whether emerging, rapidly growing, established, and/or shrinking.
- Policy interventions must recognise and address socio-economic inequities and entrenched vulnerabilities because of past urban planning legacies, present informal settlements at high-risk areas, and new policies leading to green climate gentrification. This will prevent reinforcements of injustices and maladaptation.
- Multi-level and multi-actor capacity development strategies and programmes that address the need for adaptive local governance in the context of growing uncertainties and rapid urbanisation are needed, particularly in low- and middle-income countries.
- Build innovative institutional and partnership strategies that include local communities and the private sector to improve implementation and management of urban infrastructure and services.

10 New Insights in Climate Change2024/2025 (p.36)

このインサイトの政策的意義についての概要、その中から2つを取り上げます。1つ目は、

• An integrated social-ecological-technological systems (SETS) approach can serve as a guide for operationalising urban climate-resilient development, enhancing co-benefit and prioritising synergistic solutions that enable local adaptation to climate change impacts while contributing to global efforts to reduce GHG emissions.

統合的な社会-生態-技術システム（SETS）アプローチは、都市の気候回復力を備えた開発を実現するための指針として機能し、それぞれの利益を高め、気候変動の影響への地域適応を可能にする一方で、温室効果ガス（GHG）排出削減のためのグローバルな取り組みに貢献する相乗効果のある解決策を優先します。

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• Interventions for managing climate risks must be designed to respond to the specific ecological and vulnerability contexts of the city.

気候リスクを管理するための介入策は、その都市の特定の生態学的状況や脆弱性の文脈に対応するように設計される必要があります。

Thank you