

GREEN CITIES, INFRASTRUCTURE AND ENERGY PROGRAMME (GCIEP)

Embedding Liveability within Urban Growth: Co-Benefits of GCIEP's CN&E Mainstreaming

Across more than 35 low-and middle-income countries, in over 55 cities, GCIEP has worked to integrate Climate, Nature, and Environment (CN&E) considerations into how partner governments plan, design, and finance urban infrastructure. A key takeaway from three years of programme delivery is that even where CN&E objectives are not the primary motivation for an investment in urban settings, mainstreaming CN&E considerations reliably improves outcomes related to sustainable economic growth, enhanced public health, and wellbeing, the financial bankability of projects, and – above all – better liveability in cities.

The inherent linkage between CN&E objectives and priority socio-economic objectives has been realised in practice across GCIEP's portfolio. GCIEP has demonstrated that CN&E mainstreaming is best understood not as a competing priority or an added cost to urban growth, but as a multiplier of value, boosting a range of desired development co-benefits. Nested within this overarching learning are a spectrum of insights, showcased below.

Thematic Lessons from GCIEP's CN&E Mainstreaming

Integrating CN&E is a multiplier of value, not a trade-off

A clear pattern across GCIEP is that pursuing CN&E goals adds value even when the problem area that governments are trying to tackle seems distinct from a CN&E-driven issue. For instance, in Wa, Ghana, GCIEP's support to expand the municipal water distribution network was driven by our partner government's desire to improve access and meet service needs, rather than by purely a climate

adaptation motivation. Nevertheless, integrating CN&E considerations ensured the solution would remain resilient to expected future climate change, at little additional cost. In Sekondi-Takoradi, Ghana, where recurrent flooding damages homes, undermines roads, and spreads water-borne disease, GCIEP helped design projects that pair conventional drainage with nature-based solutions (NbS) to adapt to rising seas and protect the city while providing essential drainage functions. GCIEP's support to mobilise finance – and the CN&E integration that was built into this – ensured the investments were

climate-informed and future-proofed.

CN&E mainstreaming makes cities and their residents healthier

Low-carbon, climate-resilient urban development is, in practice, a public-health and quality-of-life agenda. Cleaner transport and energy cut air pollution and its disease burden; NbS help cool cities and manage water; resilient design reduces exposure and vulnerability to harsh climatic conditions and hazards. The health co-benefits of climate mitigation solutions, such as clean energy, are well evidenced and frequently exceed the cost of the action that produces them.¹ In Indonesia, GCIEP helped develop a standardised Sustainable Urban Mobility Plan appraisal framework and supported new electric-bus schemes that improve accessibility while cutting emissions and roadside pollution. Internal estimates suggest the two planned schemes alone could save over 300,000 tonnes of CO₂ and support more than 2,500 jobs.²

Support in unlocking transit-oriented development (TOD), including via GCIEP's technical guidelines for Ho Chi Minh City, similarly improves accessibility and liveability while shifting travel to lower-carbon modes.³ In Ghana, GCIEP strengthened the geospatial and multi-hazard risk-mapping capability that government now deploys for climate-resilient urban planning,⁴ and in Beira, Mozambique, a GCIEP-supported urban plan integrating NbS (dune management) for coastal protection pairs flood resilience with

healthier, safer, more liveable public space.

Nature-based and integrated solutions deliver several co-benefits at once

Amongst the clearest illustrations of the co-benefit flows are NbS and integrated solutions, which efficiently advance mitigation, adaptation, economic, and environmental goals simultaneously. In Tanzania, the Dar es Salaam Urban Resilience Project showed how improved solid waste management can both cut greenhouse gas (GHG) emissions (mitigation) through biogas capture and strengthen community resilience to flooding (adaptation), as waste often blocks drainage channels.⁵ In the Philippines, early engagement with Baguio Water District surfaced strong demand for nature-based approaches to protect water supply from climate and urbanisation pressures.⁶ The programme learned that introducing well-articulated NbS early, with clear and persuasive explanations about their efficacy, widens interest among development partners and financiers and multiplies the value of an investment, even when natural measures were not the driver of the investment.

Electrification and the productive use of renewables anchor the energy transition

In fast-growing cities in the developing world, reliable, low-carbon power is the foundation of urban economic resilience

and a precondition for the wider energy transition. Over 650 million people still lack electricity access globally, with the vast majority of them living in the world's lower-income economies.⁷ Decentralised renewables and productive end-uses of renewable energy are central to closing the gap. GCIEP's energy work consistently links decarbonisation to economic development. In Zambia, where lengthy and frequent power outages (load-shedding) can cut peak-period manufacturing output by 20-30%,⁸ and where such lack of reliable power supply drives reliance on high-polluting diesel generators, GCIEP helped government fast-track procurement of solar projects and operationalise a one-stop service for energy developers. It is estimated that this will save over 500,000 tonnes of CO₂ a year,⁹ while strengthening a drought-exposed, hydro-dominated grid.¹⁰

In Ghana, GCIEP trained national energy agencies to integrate variable renewable energy onto the grid;¹¹ in Ethiopia it is building the evidence base for electric-vehicle financing and helping reduce the national-security risk of fuel dependence;¹² and in Senegal GCIEP co-developed the monitoring framework for the Just Energy Transition Partnership (JETP).¹³ Across the board, such efforts to increase the availability of and access to clean energy, and to accelerate the productive end-use of such low-carbon electricity (across transport,



industry, services), provide an impetus to urban productivity and job creation.

A combined approach to inclusive and resilient urban growth advances equity and benefits women and girls

Infrastructure is not, in its default condition, gender-neutral. Conscious action is required to ensure infrastructure design, build, and operations take women's needs, priorities, and perspectives into account. Done right, urban infrastructure can be an enabler of gender equity. For instance, safe, affordable, accessible transport and services expand women's mobility, opportunity to seek livelihoods, and access to education and healthcare. Infrastructure planning, design, and operation must also recognise that climate shocks fall hardest on those with the least capacity to absorb them, and that making infrastructure work for at-risk groups helps reduce their vulnerability.

Embedding CN&E and inclusion considerations in together amplifies the reach of the infrastructure's intended benefits. GCIEP's interventions have greatly increased the likelihood that millions of passenger-trips in partner countries will be on low-emission transport that also implements a gender-sensitive design.¹⁴ In Vietnam, an inclusion specialist was embedded from the outset of the TOD work in Hanoi and Ho Chi Minh City, ensuring Gender Equality, Disability, and Social Inclusion (GEDSI) shaped the policy foundations of these infrastructure projects rather than being retrofitted. In Indonesia, GCIEP trained national planners in Bappenas on integrating positive social-impact measures into infrastructure investment,¹⁵ and the programme's GEDSI Lens Toolkit¹⁶ has now been used repeatedly by developers and investors.

CN&E capability is a UK comparative advantage and an opportunity for UK expertise

The depth of the UK's CN&E knowledge, methodologies, tools, and professional services is a notable asset that can improve the sustainability and bankability of infrastructure projects in many partner countries. GCIEP turns that asset into shared value. Access



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to the technical methodologies and standards applied by Ofgem, Transport for London, Crossrail International and similar UK institutions has bolstered knowledge transfer linked to CN&E. For example, in Egypt, Ofgem's advice on fair, transparent grid charges for renewable energy producers is anticipated to help unlock an estimated hundreds of millions of pounds in potential investment from UK companies. In Vietnam, improving the TOD enabling environment, with support from Crossrail International and TfL, is expected to catalyse billions of pounds downstream investment by 2030 and beyond. The UK is consistently ranked the world's leading green-finance centre,¹⁷ and its 2023 Green Finance Strategy explicitly positions UK financial and professional services to support transitions in emerging and developing economies. As UK approaches and tools are adopted, UK firms are well placed to compete for and deliver the work that follows.

Embedding CN&E and safeguards improves the investment pipeline and unlocks climate finance

Finally, funders (development

banks, DFIs, and climate funds) increasingly require climate-risk integration, environmental and social safeguards, and credible low-carbon options as a condition of eligibility. Building these in early, at the upstream stages where GCIEP operates, therefore does two things at once: it raises the technical quality of the project (which is a desired outcome in itself), and widens the pool of finance available, particularly the green and climate finance that remains scarce for the countries that need it the most.¹⁸ GCIEP has mobilised an estimated £988 million for climate-informed infrastructure, all of which has incorporated high standards relating to CN&E.

In Ghana, early engagement with the EU and European Investment Bank around climate-aligned feasibility work could unlock around £26 million for water and flood-resilience investments;¹⁹ in Mozambique, GCIEP's enabling-environment support has focused squarely on making infrastructure investable,²⁰ and in Indonesia a GCIEP-designed funding-and-financing framework helps the national development planning ministry, Bappenas, match prioritised projects to appropriate

capital.²¹ In India, GCIEP's design of the Project Support Facility for the National Bank for Financing Infrastructure and Development embedded climate-resilience criteria (via 'Green Guidelines') as a precondition for city investment, institutionalising climate-informed design and enhancing access to international climate finance, especially for smaller, lower-capacity municipalities.²² Across these cases, CN&E rigour has been a crucial and necessary contributor to what makes investment pipelines bankable.

Operational Lessons from GCIEP's CN&E Mainstreaming

In addition to learnings from GCIEP about the importance of CN&E in advancing and facilitating other developmental priorities high on governments' agendas, GCIEP has also identified programme delivery lessons about how to make CN&E mainstreaming more powerful in potential future endeavours.

International climate finance is a powerful, under-used motivator

A large majority of GCIEP's spend

is classified as UK International Climate Finance (ICF) – distinct from general development finance in that it presupposes explicit, intentional climate change mitigation or adaptation benefit. Where ICF is deployed, climate considerations are not optional add-ons; they are central to the rationale for the investment. There is scope, programmatically, to communicate this more deliberately to partner governments and beneficiaries, to enhance buy-in to pursuing climate action-linked outcomes. The ICF designation itself could be used more emphatically as an incentive that helps partners fully support the importance of climate-driven and climate-informed elements of a project.

Give the "green" its full weight across the lifecycle

GCIEP is, by design, a 'green' programme. Yet the balance of day-to-day emphasis can naturally tilt towards the broader urban growth, infrastructure, and finance agenda. The programme's own experience with embedded GEDSI experts is instructive: where dedicated specialists are resourced and

empowered to engage consistently, inclusion ceases to be an add-on and becomes integral to design. The same holds for CN&E. A well-resourced CN&E function, with the capacity to be deeply and continuously involved across the full lifecycle of each intervention and work package, can make CN&E outcomes more explicit, substantive, and measurable.

Mainstream CN&E as early as possible

CN&E components are strongest when they are central to an investment's design from the very beginning, rather than considerations introduced once an intervention or work package is already under way. Embedding CN&E goals, principles, and guidance at the concept-development and Terms of Reference stages (and referencing them explicitly in work-package design) makes stronger, more visible, and more measurable CN&E outcomes far more likely. Prioritising CN&E up front in programme design is the single most reliable route to substantive CN&E delivery downstream.



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Endnotes

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GCIEP is a demand-driven initiative focused on sustainable green cities and climate-resilient infrastructure in lower-income countries. As the flagship programme of the UK's Centre of Expertise for Green Cities, Infrastructure and Energy, GCIEP supports the UK Government's mission to accelerate investment in, and delivery of, infrastructure and urban development that is responsible, reliable, inclusive, low-carbon and climate-resilient.

A significant proportion of GCIEP's work is carried out in seven priority countries: Ethiopia, Ghana, Indonesia, Philippines, Mozambique, Vietnam and Zambia, where a Deep Offer programme provides long-term, systemic interventions focused on transformative change and infrastructure financing.

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The UK's Green Cities, Infrastructure and Energy Programme accelerates the delivery of sustainable green cities and climate-resilient infrastructure – tackling climate change and extreme poverty.