World Health Organization

Urban Health Initiative

a model process for catalysing change

Sustainable transport for health

Sustainable transport systems can protect and promote health, by reducing risks from vehicular air pollution, physical inactivity and traffic injuries, and by providing climate and environmental benefits for urban areas.

Transport is a determinant of health

Transport systems connect people socially and economically, and have environmental, social and economic impacts on the communities they serve. Transport systems can either enhance health or, conversely, increase health risks by shaping access to services and opportunities, physical activity levels, exposure to air pollutants, noise emissions, and risks of road traffic injuries.

Sustainable transport systems and compact, connected cities, featuring "15-minute self-sufficient neighbourhoods" can benefit marginalized groups and promote walking and cycling.

Active mobility improves health

Significant health benefits can be realized if travel involves physical activity such as cycling to work. However, policies and infrastructure that improve access for one type of travel, particularly cars and motorcycles, may create barriers for those travelling by other modes (bus, bicycle, on foot etc.).

The road to health equity

Transport impacts health by providing access to employment, education, health services, food choices and recreational opportunities – all of which influence health status and health equity. Women, older adults, children, persons with disabilities and lower income groups all have less access to private vehicles or public transit, and may be more exposed to certain transport-related health risks. These same groups benefit most significantly from improved public and non-motorized transport, which enhance independent mobility and access to goods, services, employment and education.

Health and climate change co-benefits

The transport sector is the fastest growing contributor to climate emissions due to rapid motorization, and growth in energy use is higher in the transport sector than any other end-use sector. Globally, in 2010, the transport sector accounted for 14% of the greenhouse gases (GHG) budget. Transport's contribution to climate change includes long-lived carbon dioxide and short-lived black carbon generated primarily by diesel vehicles.

INTERNATIONAL PARTNERS:

CLIMATE & CLEAN AIR COALITION TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

UN HABITAT FOR A BETTER URBAN FUTURE

ICLEI Local Governments for Sustainability

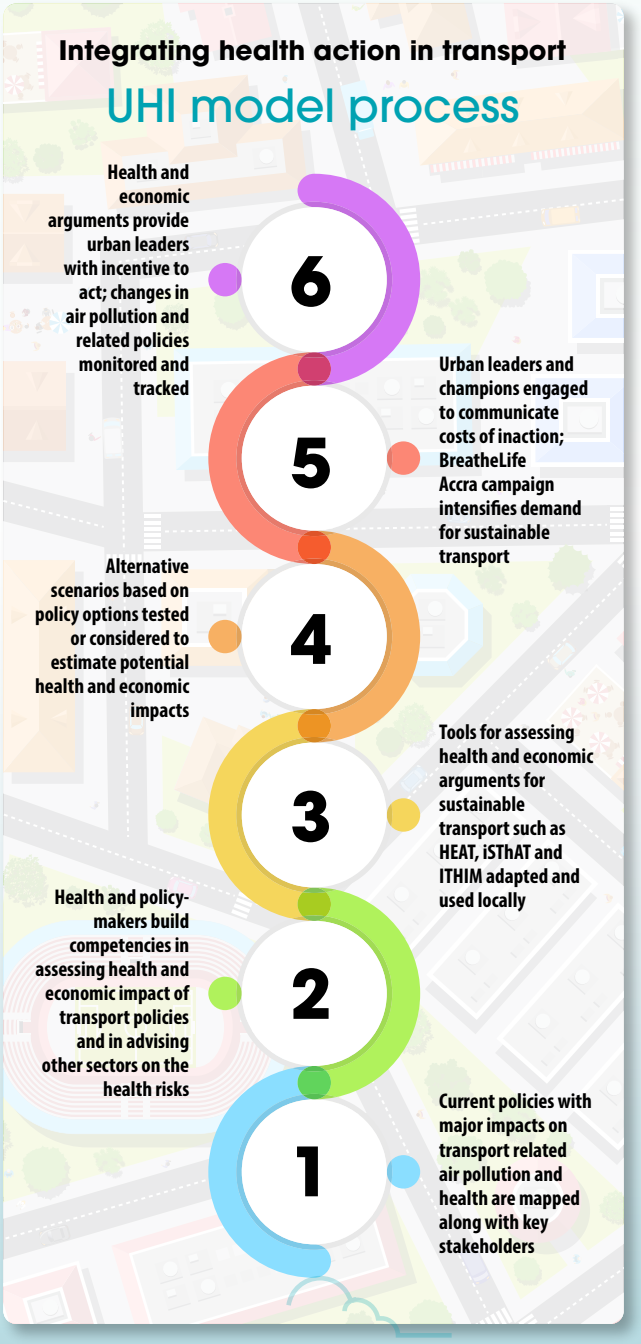
PILOT PROJECT

SUSTAINABLE TRANSPORT FOR HEALTH IN ACCRA, GHANA

The Urban Health Initiative (UHI) process in Accra assessed the health impacts of the transport sector, and potential health and economic co-benefits of transport strategies by: coordinating existing information; mapping existing transport policies; developing alternative policy scenarios; modelling the air pollution and health impacts of those scenarios; and communicating those impacts. Through this process, decision-makers can assess the potential health gains from different policy scenarios, inform action plans, and develop capacities.

Accra is one of the fastest urbanizing cities in Africa, with an annual population growth rate of around 2%. More than 4.5 million people live in the Greater Accra Metropolitan Area (GAMA), with a daily influx of 2.5 million business commuters. The GAMA population is expected to grow to 6.3 million by 2030 and 9.6 million by 2050.[1]

- Public transport in GAMA, mostly diesel buses, accounts for 48.1% passenger-km (pkm).
- Cars, motorcycles and taxis account for 13.7% of pkm. Car ownership has outpaced population growth as personal incomes have risen, with over 1.2 million cars registered in the Greater Accra Region in 2017 (60% of national registration). Compared with the base year 2015, the number of cars per 1000 population is projected to increase by 55% by 2030, and, thereafter, more than double by 2050.[1]
- An emerging health risk is the commercial use of *okada* motorcycle taxis. A 2012 ban has been difficult to enforce due to customer demand driven by increasing traffic congestion and the opportunities *okada* provide for youth employment.
- GAMA has over 7500 km of roads, of which 6900 km are urban roads with limited pedestrian and cycling infrastructure. Yet walking makes up 37.6% of all pkm – an opportunity to include and prioritize safe, active mobility in urban and transport planning.
- Tram and rail account for 0.5% of all pkm; and bicycles for 0.1% of all pkm travelled in GAMA.
- The transport sector is responsible for a large and growing proportion of urban air pollutants that impact health. Air quality data indicate that **75% of roadside samples in Accra exceed the national 24-hour mean particulate matter (PM_{10})** limit of 70 µg/m^3.[1] WHO has established an air quality 24-hour mean PM_{10} guideline limit of 50 µg/m^3 and an annual mean PM_{10} level of 20 µg/m^3; however, there are health risk associations below these concentrations.
- Transport is a major source of greenhouse gas emissions in Ghana. Sustainable transport systems in Accra can be a major step towards meeting Ghana's commitments to mitigate climate change while improving health.



[1] Essel D, Spadaro JV. Health and economic impacts of transport interventions in Accra, Ghana. Geneva: World Health Organization; 2020.

Sustainable transport planning can improve health by reducing air pollution and road injuries, while promoting physical activity.

PILOT PROJECT IN ACCRA, GHANA

CURRENT POLICIES AND PLANS

In Ghana, the **National Transport Policy** (2008) provides the broad policy framework for the transport sector. Its overall goal is to make Ghana a transport hub and gateway for the West Africa region. Strategies include:

- Development of a more efficient and sustainable public transport system.
- Promotion of extended bus rapid transit corridors.
- Development and promotion of non-motorized transport infrastructure in congested central business districts.

Implementation of the National Transport Policy could be supported by the health arguments related to the proposed strategies.

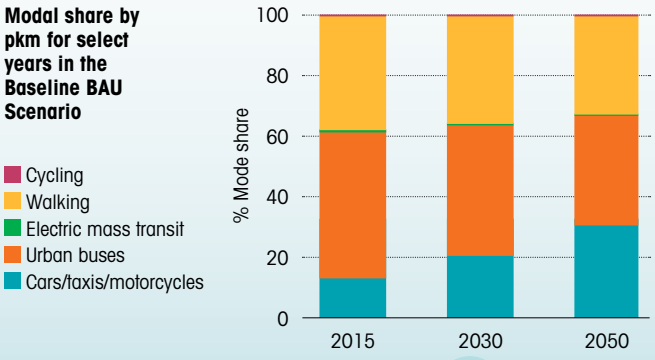
Other transport policies affect air quality in Accra. **Import penalties on vehicles** older than 10 years are in place, although substantial numbers of older vehicles are still imported. A 2010 policy to promote **bus fleet renewal** and replace older polluting mini-buses has been followed by substantial imports of high-occupancy vehicles. However, air quality benefits have been offset by an influx of used cars into Ghana coupled with poor maintenance, driving patterns and congestion.

Ghana was the first country in the ECOWAS sub-region to publish fuel quality standards in 2017. Standards aimed to **reduce sulphur levels in fuels** to 50ppm maximum are being implemented in 2020, with a waiver for local refineries until 2025. Accra's commitment to achieve a **"zero carbon" economy by 2050** includes the introduction of soot-free buses and assessment of infrastructure requirements for electric buses.

ASSESSING IMPACTS OF POLICY INTERVENTIONS

In partnership with local and international experts, the UHI Transport Working Group was formed to adapt the **Integrated Sustainable Transport Health Assessment Tool (iSThAT)** to assess the current impact of transport on health and to model (2015–2050) averted health burdens, greenhouse gas emissions and additional benefits of physical mobility from a shift to cleaner fuels and technology, via three scenarios. The scenarios suggest that increasing active transport (walking and cycling) and a shift from cars to cleaner bus use are likely to have large health benefits from reduced ambient air pollution and increased physical activity.

Modal share by pkm for select years in the Baseline BAU Scenario



Source: Essel D, Spadaro JV. Health and economic impacts of transport interventions in Accra, Ghana. Geneva: World Health Organization; 2020.

Baseline Business-As-Usual (BAU) Scenario: the demand for transport is predicted to increase three-fold, personal car ownership is expected to double, and there will be greater utilization of the public transport system.

Alternative Scenario #1: future transport demand is the same as in the BAU Scenario, though a slight decrease in passenger car use is expected due to measures outlined in the National Transport Policy. The demand for conventional buses is expected to be steady, but there is a slight shift to electrified mass transport.

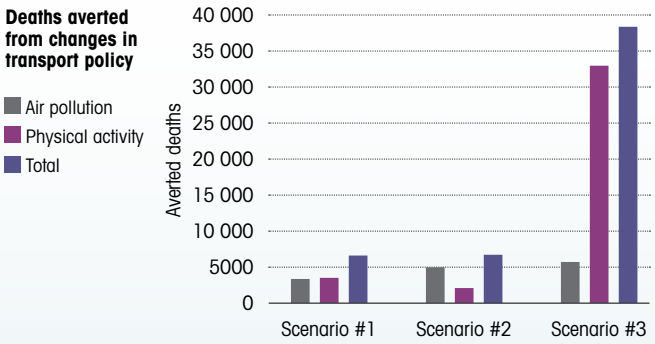
Alternative Scenario #2: a 31% decrease in transport activity is forecast due to land-use and spatial planning reforms that focus on creating secondary "hub centres" of economic and social activity closer to where people live.

Alternative Scenario #3: a significant shift from passenger cars to electrified public transport (up to 10% of transport demand by 2050) is envisaged. Further, there will be an increase in walking and cycling (up to 45% of total pkm in 2050) and a switch to hybrid cars and battery electric vehicles. These assumptions are based on current national- and city-level policy discussions.

PILOT PROJECT IN ACCRA, GHANA

Analyses of potential interventions are helping to shape policy strategies to deliver healthy, sustainable transport for Accra.

Estimates using iSThAT give 5500 averted deaths from reduced air pollution and an additional 33 000 from increased physical activity over the 35-year period in the most aggressive policy (Scenario #3), which includes increasing public transport, fleet fuel economy and infrastructure for walking and cycling, while reducing reliance on cars. **The economic value of the health gains of Scenario #3 is around US$ 15 billion.**



Source: Essel D, Spadaro JV. Health and economic impacts of transport interventions in Accra, Ghana. Geneva: World Health Organization; 2020.

Additional results using the **Integrated Transport and Health Impact Model (ITHIM)** also showed health gains from replacing private vehicles with public transport for longer trips of 10+ km (including reduced road injuries in addition to improved air pollution and physical activity). In contrast, a scenario with increased motorcycle use led to increased deaths and disability, mainly due to road injuries.

The estimates of the health and economic impacts of the transport scenarios for GAMA allow policy-makers to make data-informed decisions on whether planned transport programmes and projects are likely to prevent diseases and deliver health gains while achieving sustainability goals over the medium to long term. To mitigate the transport-related environmental and health burdens, appropriate policies, investments and incentives are needed to promote greener, more efficient and sustainable transport including:

- Technological shift away from conventional fossil fuel based transport modes to more environmentally friendly alternatives.
- Sustainable land-use planning and development.
- Increased walking and cycling infrastructure.
- Greater emphasis on sustainable public mass transit.
- Restrictions on the use of single-occupancy vehicles.
- Urban form and design for mixed land use, connected neighbourhoods and enhanced walking and cycling.

Partners in action

The UHI Working Group on Transport is bringing together

WHO and local and international participants, including UN-Habitat and ICLEI-Local Governments for Sustainability, are working together to create demand for action through the UHI