

Arequipa, Peru

Partner city

Status of the project: Ongoing Sustainable Urban Mobility Plan



Basic Information

Urban area: 3,700,00 km²

Population: 910,000 | Growth rate: 1.09%

Region capital city

GDP per capita: USD 10,277

Modal Share:

Formal public transport: 46%

Private cars: 18%

Taxis: 13%

Walking: 17%

Cycling: 1%

Private motorbikes or 2-wheelers: 1%

Other: 4%

National GHG emissions per capita: 2.82 (tCO₂eq)

Exposure to climate change: HIGH

Context

Urban mobility in Arequipa represents an issue according to transport data in 2016, reporting 52,877 infractions, 5,410 accidents, 128 fatalities and 5,282 non-fatal victims. In 2008, public buses' modal share was 63% and walking 16.6%. By 2017, on the main north-south and south-north axis of the city, which crosses the historic centre, 47% of journeys were made by public transport, 30% by private vehicle and 23% by taxi.

Several factors explain the modal choice, including the following:

- Growth of the vehicle fleet without considering the type of service and demand; as of 2016, there are 261,600 vehicles (25% taxis and 46% private cars).
- Low quality of the public transport service. Users perceive public transport as unsafe due to the 4,000 low capacity, poor maintenance units with an age of over 20 years operating 240 routes.
- Disarticulated urban infrastructure between the activity centres, road discontinuity and the variation of sections in continuous corridors. The superposition of the urban centrality and the historic centre aggravates urban mobility challenges.

Transport and mobility challenges in Arequipa were the key elements to catalyse the elaboration of the SUMP. The fact of not having an integrated and agreed vision on mobility in the city has harmed the system's quality and its coverage, generating isolated actions and large investments in infrastructure without significant returns for Arequipeños' quality of life.

Developing Arequipa's SUMP implied an essential step toward improving mobility in the metropolitan region. This process included fundraising activities to achieve its implementation and cooperation efforts of the municipality with various institutions to develop and implement sustainable urban mobility measures with a comprehensive vision.

In this context, the National Government and the Provincial Municipality of Arequipa have executed technical cooperation agreements to improve mass public transport and sustainable urban mobility in an integral and consensual manner. First, between the Ministry of Transport and Communications (MTC), the Agence Française de Développement (AFD) and CODATU, with the Provincial Municipality of Arequipa (MPA, for its acronym in Spanish) as one of the primary beneficiaries of the project. Another agreement exists between the MTC and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to implement the project 'Sustainable Urban Transport in selected cities in the north and south of Peru' (DKTI). The third agreement is between the MPA and the MTC to finance Arequipa's Integral Transport System (SIT) project.

AFD has been working with the MPA since 2016 in urban mobility within the framework of the AFD-MTC-MPA Cooperation Agreement. In recent years, AFD worked with the MPA on direct cooperation and joint work projects, including developing Arequipa's Sustainable Urban Mobility Plan - SUMP (2020-2022). Arequipa did not have a SUMP or a comprehensive policy strategy on urban mobility for the metropolitan area, making it challenging to implement actions with a shared vision.

Arequipa has no mass rapid transit system, but the city has planned a first light rail on the central 15 km long NW-SE corridor. Currently, its public transport system relies on non-integrated bus lines. There is an existing transport master plan or similar document (Route regulatory plan 2016).

The Municipality of Arequipa, the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It does not have the authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban transport.

This SUMP project aims to develop a city model that promotes more sustainable travel modes (walking, cycling, and mass public transport). The main expected results are:

- Improve the urban mobility system and incorporate new technologies reducing travel times and road accidents and implement the Integrated Transportation System
- Reduce the effects of transport on climate change and, as well as the consumption of non-renewable energy
- Improve urban social equity, ensuring universal accessibility while promoting alternative use of the road system and promoting healthier modes
- Develop institutional capacities for the different stakeholders involved in urban mobility issues

The technical assistance provided to Arequipa contributes to institutional strengthening by regulating sustainable urban mobility management, promoting projects to be executed by the municipality and financing mechanisms for infrastructure, equipment and monitoring systems.

Support from the Partnership

Technical assistance: Sustainable Urban Mobility Plan (SUMP)

Funded by: European Union

Funding amount: EUR 500,000

Implemented by: AFD through the EUROCLIMA+ Programme

Local counterpart: Municipality of Arequipa, Municipal Planning Institute (IMPLA)

Supported activities:

- Development of the integrated public transport network
- Strategic programmes and projects to optimise the operation of freight transport and urban logistics
- Implementation plan
- Monitoring system

Status of the SUMP process

Project start date: November 2020

SUMP adoption projected date: 2023 Q2

Completed outputs:

- Forum on challenges and opportunities for Sustainable Urban Mobility
- Participation plan
- Communication plan
- Expectations survey
- Diagnostic workshop
- Mobility diagnostic
- Vision, strategic objectives and construction of scenarios defined
- An action plan, budget and financing
- Follow-up, reporting and accompaniment to the implementation

Next expected outputs:

- SUMP adoption
- Publication

SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

Measure	Cost Estimate
1. Promote greater participation in Pedestrian and Bicycle Mobility	USD 170,088,068.32
2. Promote a transformation of public transport towards a massive, integrated and multimodal system	USD 885,787,428.01
3. Promote more rational and efficient use of private transport	USD 427,779,033.66
4. Promote more sustainable management of freight transport and urban logistics	USD 8,703,246.07
5. Promote intelligent traffic management for regulation, monitoring and control	USD 39,248,638.74
6. Promote a reduction in the environmental impacts of mobility and traffic crashes	USD 37,150,133.09
7. Promote an improvement in universal accessibility, inclusion, equity and gender	USD 145,920,411.78
8. Promote institutional strengthening, governance and civic culture	USD 6,188,481.68
9. Promote a financial sustainability scheme for sustainable mobility	USD 1,842,931.94
10. Promote a mobility model that supports sustainable urban development in the metropolitan area	USD 0.00

Core impact indicator baselines

Indicator	Baseline – 2019-2021
Total annual GHG emissions (Mt CO₂eq)	1.93996 Mt CO ₂ eq
Annual transport related GHG emissions per capita (kg CO₂eq)	1923.6 kg CO ₂ eq / capita
Access Increase of the proportion of the population living 500 meters or less of a public transport stop	74%
Air pollution Decrease in mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations	9 µg/m ³ of PM2.5
Road safety Decrease of traffic fatalities in the urban area, per 100,000 inhabitants	0.87 fatalities / 100,000 hab
Affordability of public transport Percentage of disposable household income spent on public transport for the second quintile household income group	12%

Perspectives for implementation

The developed SUMP moves forward to secure funding for its implementation

The SUMP is considered by plenary councillors, corresponding to its approval by the Municipal Council through a Municipal Ordinance. The transition towards sustainable urban mobility systems will require both initial financing for capital investments and constant sources of income over time to guarantee the system's sustainability in the long term.

The high degree of infrastructure endowment requirements will require financial contributions, not only from the State but also from other sources. The participation of each financing source over the total will ultimately depend on the technical feasibility, the inclusion of the projects in the Multiannual Investment Programming (meeting their requirements), and the alignment of the SUMP objectives with the Development Plan. Metropolitan, Master Plans and other technical instruments. The final aim is that the SUMP becomes a comprehensive mobility planning tool with a sustainability approach. The primary sources of financing, classified into central and complementary sources, are developed by program, implementation horizon, and possible source of financing.

Insights from practice: lessons learned from the SUMP process

SUMPs provide an opportunity to prioritise limited resources based on an agreed long-term perspective

Addressing urban mobility from a sustainable approach in the context of intense problems in the transport sector and limited resources requires a strategic roadmap with a long-term view. Arequipa's SUMP leaves a proposal for ordering and prioritisation with robust opportunities for change.