Sustainable mobility: challenges for Argentina

Executive Summary

The rapid process of urbanization that begun worldwide during the second half of the 20th Century brought, as a result, an unprecedented increase in the number of cities and their inhabitants, as well as, multiple challenges, urban mobility among them. In Argentina, the process of urbanization reaches especially high values, with 92% of the population in urban areas.

In modern cities, pathways of circulation encourage private transport, private vehicles being the central instrument of the mobility system. This evolution of urbanization and urban mobility has brought about serious environmental and social consequences: health problems due to poor air quality and noise, use of public space, access problems, energy consumption and, of course, gas emissions that contribute to the climate crisis.

Rethinking urban mobility in order to take action requires approaching these problematics. To achieve it, it is necessary to redefine the concept of mobility. Mobility is about the harmonious movement of people and goods, not necessarily with participation of motor vehicles. Therefore, the needs of women, children, senior adults, disabled people, migrants from diverse cultures, automobiles passengers, public transport users and cyclists emerge strongly. Thus, the differentiated needs of a multitude of subjects are revealed, subjects who participate in and need mobility to shift within and between cities.

When we talk about mobility, we also refer to a set of rights linked to the circulation of people, understood as an aspect of human freedom. In consequence, the social responsibility of the State plays a major role in guaranteeing everyone a dignified circulation appropriate to the needs of each sector, beyond social differences and inequalities. With mobility a group of economic and social rights are at stake, fact which requires the application of active public policies, in order to be satisfied.

Beyond the role of the State, citizens have a lot to reflect on and have a lot of individual and collective changes to initiate. Reflection has to do, on the one hand, with conducts and the following of norms and, on the other, with citizen participation.

Reaching an urban mobility system that can be considered sustainable requires simultaneously achieving a wide range of diverse objectives:

- Protecting nature as well as human health
- Being an integral part of a sustainable economy
- Being affordable for all
- Creating more attractive and healthier urban spaces
- Promoting greater social equity
- Generating sustainable and healthy jobs
- Facilitating access and opportunities for all
- Facilitating circular economy

In Argentina, urban mobility faces a high concentration of population in several urban areas, of which the Metropolitan Area of Buenos Aires (AMBA for its acronym in Spanish) stands out greatly, with over a third of the country's population.

Policies aimed at the transport management are today framed within the National Action Plan for Transport and Climate Change, which represents a group of initiatives that Argentina envisions to contribute to GHG emission reduction. In order to do this, the Plan determines the strategy to be followed, the measures to be implemented and the concrete guidelines to reach the objectives.

However, it is not a matter of just looking at the GHG emissions. The transport sector in Argentina is the biggest final energy consumer in the country, with almost 31% of total primary energy in 2017. This energy is based on the consumption of oil derivates (gasoil, petrol and jet fuel), compressed natural gas and biofuels (biodiesel and bioethanol). The consumption of these fuels is directly linked to the GHG emissions of the sector, which represent almost 14% of total national GHG. Road transport, mainly trucks and private vehicles, represents over 90% of these emissions.

Besides energy and emissions, one of the most terrible impacts of a deficient transport system is the amount of accidents and other damages that it generates on human health. Argentina has a record in fatal accidents that should worry the authorities.

Considering that electromobility is a part of the measures within the National Action Plan for Transport and Climate Change, as part of this work, different scenarios have been elaborated which include, on the one hand, the modal change from car to bus and, on the other, different penetration levels of electromobility in Argentina's automotive park, with the aim of evaluating the impacts on energy consumption and GHG emissions.

Results show significative impacts in terms of energy consumption reduction and GHG emissions only when modal change is combined with high levels of electric vehicles penetration, accompanied by an energy matrix with high penetration of renewable energies.

These results open up other questions about the role of technologies and natural resource exploitation. Indeed, batteries in electric vehicles, with the current technology, require lithium for their fabrication. This mineral is found in salt pans in the Argentinian, Chilean and Bolivian Puna. Currently, with only two projects operating, Argentina is the third biggest lithium producer in the world, behind Australia and Chile, and there are several projects at operation and production, construction, feasibility and initial exploration stages.

All of this generates the need to discuss lithium use from a sustainable development perspective, analyzing its economic, environmental and social implications on an equal stance. Despite lithium being a very valuable resource because of its qualities, it is paramount not to make the mistake to concentrate all efforts on the development of a single resource or technology, which creates strong dependencies on a specific natural resource or technological development. Energy transition is necessary and unavoidable, but it is not just a technological matter. Humanity's consumption patterns need to be put up to discussion.

The transition to a sustainable mobility system in 2050 will not happen on its own; it requires a wide range of public policies. There is more than one approach possible to do this, but all of them should include at least a combination of measures centered on user behavior, on the one hand, and on technological change and innovation, on the other. The role of the State, at all its different levels, is fundamental in order to design a strategy for reaching sustainable urban mobility. Such a strategy must contain a series of elements, among which:

- Making sustainable mobility the most attractive, affordable and obvious option
- Letting go the false "technological neutrality" and pushing for those technologies that contribute the most to reaching the objective
- Evaluating profitability in a wider context, integrating social and environmental dimensions
- Assuring greater citizen participation
- Using regulations to guarantee and accelerate change

The implementation of a strategy in this sector will face barriers that will be hard to beat. In many cities, there is still resistance to reach an equilibrium in public space use; cultural heritage that reflects a model of life, production, consumption and transport that has not been overcome, and that encourages an unlimited economic and material growth. Furthermore, from the political side, there is a tendency to avoid taking up responsibility for the conflicts that all of this creates. Fortunately, movements and groups of people are appearing and are starting to demand a healthier, quieter and more friendly setting for cities.

Therefore, participatory tools are crucial for the collaborative achievement of strategies and they should be financed with a budget enough to develop the technical work needed for their implementation and monitoring.

City life requires appropriate policies for public space use and for infrastructure and service design, of which, mobility is our focus. Knowing the relationship between the city and its surroundings, evaluating it with an integrated approach and analyzing it from the viewpoint of its relationship with natural resources is key to anticipate local and regional socio-environmental problems, and to generate urban mobility systems that foster cohabitation and common wellbeing.