

## More than a billion motives to focus on NMT Africa - Enhancing the quality of infrastructure to improve cycling safety and cycling culture in Africa, case in Ethiopia

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### 1 INTRODUCTION

Urban quality of life is measured by how clean the environment is, how safe people feel, how close they are to green spaces, and in general by the quality of outdoor space. Good quality public spaces are spaces that reduce road accidents through managing appropriately different transport modes, especially walking and cycling [1]. Cycling is healthy, economical, and environmentally sound form of mobility that is fundamental to life. More than one billion of the people in African cities walk or cycle for more than 55 minutes every day - to reach work, home, school, and other essential services [2]. One-third of the population of the African continent uses active mobility as a daily means of transport. This reveals that there is a potential of using cycling as a daily mode of travel in Africa. However, the poor quality of infrastructure for cycling sends a message that cyclists are not welcome in the urban environment. Despite the widespread use of non-motorized modes, transport planning and the provision of infrastructure in most of the cities in Africa have become car-centered, undermining the importance of cycling and walking.

While the majority in the global south are active mobility users, they are not being respected by the public policies and experience 93% of the world's traffic fatalities and injuries [3]. Road traffic accidents are a major cause of deaths and disabilities, particularly in the global south [4]. The traffic accidents and fatalities due to road crashes are not different in Africa. The World Health Organization Global Status report on Road Safety 2018 showed that the African region had 26.6 deaths per 100,000 populations, which is the highest among all regions [5]. Sub-Saharan Africa still has the highest per capita rate of road fatalities of any region in the world. Unfortunately, in most cases, the victims of traffic casualties are primarily pedestrians and cyclists [6]. Much of that is linked to the neglect of the infrastructure needs for pedestrians' and cyclists' safety.

## 2 OBJECTIVE

The main aim of the study presented is to promote active mobility in the sub-Saharan Africa case in Ethiopia while building on existing activities and combined efforts of applied research to better understand cycling needs. The study aims to assess the existing condition of the cycling infrastructure, understand users' experiences, preferences, and perceptions towards cycling, and come up with viable recommendations appropriate to the context.

## 3 METHODOLOGY

To achieve these objectives a mixed research methodology (both qualitative and quantitative) are being used. Survey questionnaires, sidewalk bikability audits, and structured and non-structured key informant interviews are being instrumented as a data collection tool. A quantitative data survey will be conducted with 400 participants to better capture the requirements of the cyclists and to illustrate their needs using digital surveys, qualitative interviews, and a crowd mapping approach. The data collection will also take into consideration the needs of special population groups including women, persons with disability, children, and the elderly. The online quantitative survey is planned to be conducted in June 2022. Here we are going to use Addis Ababa as a case study to demonstrate how the improvement of the Non-Motorized Transport (NMT) infrastructure contributes to the improvement of the perception of safety and appreciation by cyclists. This particular case is taken as a best practice and intervention to learn from its strength, examine the existing gaps, and come up with strong approaches and interventions that can improve the safety of cyclists in a similar setting.

## 4 CASE STUDY AND PRELIMINARY RESULTS ON THE IMPROVEMENT OF CYCLING INFRASTRUCTURE IN ADDIS ABABA, ETHIOPIA

Regardless of the infrastructure challenges and lack of awareness, in recent days transport policy in Africa is starting to recognize the integral role of walking and cycling in any sustainable transport system. Increasingly, African nations and cities are adopting non-motorized transport policies that call for a safe, comfortable, and convenient environment for pedestrians, cyclists, bicycle taxis, and other forms of active transport. One example is Ethiopia's newly published national NMT strategy and the NMT strategy of Addis Ababa city. Nevertheless, there is still a need to better capture the infrastructure requirements of cyclists to demonstrate their needs. Those initiatives are motivating as a starting point to bring a paradigm shift on meeting the infrastructure needs and enhancing infrastructure investments that have been ignored. Cycling is often overlooked in infrastructure financing and cyclists are invisible in most cases.

Under the NMT Strategy for Addis Ababa, the city has dedicated itself to build 100km of cycle lanes over the next three years. The three-kilometer-long *Lebu-Jemo Cycle Corridor* was the first step in this strategy [7]. Before starting the project, a series of surveys were conducted on-site, by the Global Designing Cities Initiative and Addis Ababa Transport Bureau. The results from the survey indicated that 95% of respondents want the cycling corridor to become permanent and 96% of cyclists felt some degree of safety while riding on the interim infrastructure [7].

After the completion of the pilot project, a steady increase in daily cyclists along this corridor was observed. Training grounds are being set up at community centers and schools nearby to further encourage children and their families to cycle as users. Based on the result of the study there are possibilities of instrumenting comparable pilots to upscale similar practical case studies.

## 5 CONCLUSION

This practical case study clearly illustrates how proper cycling infrastructure can improve the perception of safety and the use of cycling as a mode. This study would like to evaluate/examine the impact of such pilot projects on the safety of cyclists and compare the data on injuries/deaths of cyclists before and after the interventions. Exploring the strengths and assessing the gaps of these projects can help to find out possibilities to scale up such pilot projects in other cities with similar contexts. The study will also help in providing an evidence-based assessment on existing pilot projects that address users' preferences to meet the need of cyclists

The preliminary analysis of the qualitative key informant interview shows that there is a serious challenge in safe infrastructure provision, especially for cycling. Cyclists are invisible due to the lack of proper infrastructure for cyclists. Besides, cyclists are vulnerable to different forms of accidents including road crash fatalities. On the other hand, there is an awareness and policy/strategy at a higher level. The challenge here is the gap on implementing the existing policy and strategies at the operational level. There is poor enforcement of the existing laws and strategies with regard to the provision of a safe cycling environment.

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