

Country Niger



Implemented by





REPUBLIQUE DU NIGER REGION DE NIAMEY VILLE DE NIAMEY

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### Contributions to SDGs



Implemented by



artner in development

Can digital social innovation strengthen the resilience of cities for sustainable and inclusive urban development, how and in which context?

# **PROJECT OVERVIEW**

#### Reason

Climate change projections point towards increasingly devastating heatwaves occurring in Africa in the decades to come. In cities, exposure to extreme heat is exacerbated by the phenomenon of **urban heat islands** and **poor housing conditions**, impacting health and affecting vulnerable populations in particular.

In Niamey, population projections predict an even bigger urban stress. Yet, public and civil actors lack solid and data-driven evidence of the heat trends and climate future. The formulation of **effective climate resilience measures** is strongly hampered by this lack of suitable and accessible urban climate information.

#### **Digital Social Innovation**

The objective of u-CLIP was to meet this data need in the urban agglomeration of Niamey in order to **increase awareness** with respect to the projected impacts of climate change on future extreme urban heat stress, and to highlight the need for **early-stage** and **structural mitigation measures**. The project also intended to support the formulation of adequate resilience measures by policy makers and other stakeholders.

To reach its ambition, u-CLIP organised **several measurement campaigns** and developed a web-based (and soon cloud-based) **open data urban climate change information** (u-CLIP) platform for Niamey. The project dedicated the first stage of the project to users and users' needs identification: mainly **citizens**, **Civil Society Organisations** (CSO) and **local authorities**. Subsequently, it organised participatory data collection exercises in 5 districts of Niamey, closely involving and mobilising citizens, students, CSOs, local leaders and young environmentalists. These measurement campaigns of thermal stress used **wet bulb globe temperature** (WBGT) measurement devices. These campaigns included, among others, comparative measures between sun-exposed and tree shadow areas with the aim of producing evidence of **tree planting** as an adaptative measure.

The data fed the urban climate information platform, using the **GeoDynamix** (urban growth scenarios) and **UrbClim** (urban climate) software. The platform itself was designed based on the users' requirements, using the GeoView software. The idea was to keep the platform accessible,

### From the perspective of the human rights-based approach (HRBA)

The u-CLIP project provided **citizens** and CSOs (**rights holders**) with the necessary information to feel concerned and hold the **authorities** (**duty bearers**) accountable regarding the mitigation of risks related to extreme heat in urban contexts.

The u-CLIP platform also provided the **City of Niamey** (**duty bearers**) objective data on temperature and on the direct impact of greening to support their climate actions and the further formulation of adequate resilience measures.



# **KEY MESSAGES**

U-CLIP, by providing objective data on temperature and on the direct impact of greening, has demonstrated the urgency to tackle the **heat wave problem** and has given a **scientific character** to the solutions that were already being considered by the City of Niamey and the districts, mainly tree planting.

Unlike conventional weather data, u-CLIP can compare temperature readings (especially sun/ shade effects caused by trees). On the one hand, it can establish a direct link between **heat** and **adaptation measures**, on the other hand, it has initiated discussions about thermal comfort and health.

The availability of data and scientific evidence have led to several concrete actions:

- The City of Niamey provided additional human resources to the Environment and Landscaping Department.
- The consortium members (VITO, ACMAD, City of Niamey) capitalised on the Wehubit project and developed **strong advocacy** that leveraged other programmes and funding, including the Niamey Climate Forest project.
- The consortium as well as other civil society actors used the data to feed and enhance awareness campaigns regarding heatwaves and possible solutions to tackle them. Awareness was raised through u-CLIP measurement campaigns, for communities (including local leaders, school teachers and pupils, and young environmentalists).

Technicians (ACMAD, engineers from the City of Niamey...) had the right language and
tool – i.e. shared data - to address the politicians directly, triggering rapid consideration and decision-making.

The inclusive and participatory approach of the u-Clip project allowed the consortium and specifically ACMAD – as regional climate centre with continental coverage working with 54 National Hydrometeorological Services in Africa- to better understand the **local climate challenges**, to refine the understanding of very specific **realities** and listen to the needs and experiences of the inhabitants, local authorities, young people...

The data measurement campaigns brought together **young people** around the common issues of global warming and climate resilience. This network of cognisant and dynamic young people became a key actor in the climate action of the City of Niamey.

The measurement campaigns – that are as much about measurement as awareness – build **bridges** and **open up communication** between communities and the climate actions of the City of Niamey.

The u-CLIP project has strengthened the VITO-ACMAD-City of Niamey consortium and facilitated **bilateral technology exchange** and transfer.





Model of the u-CLIP platform, showing the access page with selection options (climate scenario, time horizon, selected indicator, etc). The central image shows the urban heat island of Niamey.

Young volunteers collecting datas.



Contrasting greenery between neighborhoods in Niamey. Although some neighborhoods benefit from abundant vegetation (top figure, showing a neighborhood near the city center), leading to a reduction in extreme heat, other neighborhoods are completely devoid of greenery.

The former Belgian Minister for Development CooperationMeryame Kitir visited the African Climate Center ACMAD in Niamey.

## Do you want to read other stories from the project?





# LESSONS LEARNED AND PERSPECTIVES

One important result of the u-CLIP project is the **strengthened collaboration** between a Belgian research centre – VITO –, an international agency – ACMAD – and a public actor – the City of Niamey. In addition, the national meteorological institution of Niger was closely involved in the process. Throughout implementation, the consortium followed an **inclusive** and **participatory** approach, considering all stakeholders: communities, local leaders, young people, CSO's, public authorities, international actors and other relevant institutions. The reflections held within the consortium and with other actors have led to the identification of possible future actions to improve the approach and expand the use of the platform.

#### Awareness

Raising awareness was, thus far, organised around measurement campaigns, as a means to make the communities understand and accept the activity itself. These campaigns have raised a lot of interest.

In the future, awareness raising should be **more comprehensive** (not only during measurement campaigns) and **more concrete**: citizens should be supported in taking climate action at their level with dedicated follow-up.

**Supporting** the **communities** to take sustainable climate action at their level would be a key element in building more urban resilience. It would contribute to the creation of an informal "climate network".

Awareness raising could focus more on the **personal**, **sensory experience** of **citizens**. Campaigns should clarify what climate change and heat waves concretely mean for communities.

**Schools** should be **targeted** for future measurement and awareness campaigns and the **mapping** should be **inclusive** (public and private, with a comprehensive geographic coverage). Students represent very good climate ambassadors towards their families and neighbours.

The consortium can capitalise on the collaboration with **young volunteers**: young environmentalists involved in measurement campaigns have further extended their knowledge on heat wave issues, as well as the means to measures heat. Among the pool of trained young collectors, the consortium could identify **focal points** who could be quickly mobilised for measurement/awareness-raising activities. These young people could also be more involved in monitoring and supervising communities in their actions.

#### Inclusion and participatory approach

**Interaction with end-users/beneficiaries** should be maintained and strengthened in order to consistently adapt and improve. For example, feedbacks already collected indicates the need to organise measurement campaigns on markets and to take hospitals into account if the u-CLIP platform extends to encompass other issues, such as floods.



The consortium could try to support and/or collaborate with **researchers** to strenghten scientific evidence, e.g, the correlation between heat and mortality rates. However, it is important to acknowledge that data is very difficult to obtain and use.

### **U-CLIP Platform**

The creation of the u-CLIP platform as such took some time, as it is based on users' needs and inclusive measurement campaigns. In the future, the consortium and project stakeholders need to promote the platform even more to the **different user groups**.

The link between the **platform**, **awareness raising**, and **adaptation measures** needs to be better **clarified** if the consortium wishes to enhance the platform's sustainability. For the data to be used beyond awareness raising, towards concrete and targeted adaptation measures, there is a need for **long-term** and **systematic data collection** in the different geographical areas.

The platform could be complemented with other climate issues such as **water management**, **droughts** and **floods**. However, working on these elements will require new partnerships.

The platform should be made **available** on **smartphones**, with a specific interface, for better accessibility.

The platform should make it possible to visualise not only the impact of greening, but **any type** of **climate action**.

This learning sheet has been developed in the framework of the Wehubit Knowledge Exchange Network in collaboration with Koen De Ridder (VITO) and Godefroid Nshimirimana (ACMAD) April 2023

