

I am Sébastien Clément, landscape designer, teacher at the School of Architecture of La Réunion and third year doctoral student.

Thank you for giving me the opportunity to speak and thank you to the organizing team. I would also like to thank Karine Dupre, Griffith University, with whom I collaborated and co-wrote this intervention. Unfortunately, she cannot be with us today.

This research work focuses on the practices and knowledge of gardening in tropical environments, on the evaluation of their contribution to biodiversity, their transmission, their evolution and their renewal. This approach is an original way of approaching the theme of biodiversity from both a scientific and cultural angle. The project is located on the island of La Réunion, which is one of the world's biodiversity benchmarks.

Recognized for the exceptional diversity of its landscapes, the Reunion National Park was included in the UNESCO World Heritage List in twenty ten for its exceptional landscapes and biodiversity.

Based on the hypothesis that there is today a loss of traditional knowledge and know-how related to gardening, consubstantial with an evolution of lifestyles in the island, this research seeks to know if the gardeners of Reunion Island contribute to the preservation of the biodiversity of the gardens, by sharing knowledge and the evolution of their practices.

Faced with these issues, this research raises the question of the evolution of our relationship with life and biodiversity in the action of gardening. What relationship do gardeners have with biodiversity? How do their interventions interact with the evolution of living things?

In short, the central question is: "Do gardeners, through the transmission of knowledge and the evolution of their practices, contribute to the preservation of biodiversity in gardens?"

This presentation is divided into four sections.

But first of all, what is biodiversity?

Biodiversity is by definition, the diversity of living species (micro-organisms, plants, animals) present in an environment. This polysemous term is recent. It has gradually led to the emergence of a new paradigm on the relationship between man and nature. It has various facets and thus it is difficult to define, like the landscape.

There is a diversity of approaches according to the disciplines researching biodiversity: structural, biological, genetic, cultural, functional diversity of the living, but also of interdependence, of knowledge and know-how... Mentioning biodiversity is perhaps questioning a diversity of biodiversity?

In order to study this relationship with the living in this insular context, I have chosen a site and an agent: the garden and the gardeners. The garden is potentially a place of cultural integration. A place where one can "cultivate" biodiversity, participate in its protection and enrichment.

In the tropics, the term "Creole Garden" reveals a great diversity of gardening forms. These gardens combine the contributions of populations from different regions of the world in different ways. In Reunion Island : Malbars, Madagascans, Creoles, Yabs, Z'oreils, Chinese, Indians, Z'arabs, have contributed to forge the identity of the Reunionese Creole garden.

Organized around the three essential functions that it must assume - feeding, healing and recycling - these gardens are characterized in their traditional form by a codified ordering of space. This spatial

organization is based on the meanings and roles attributed to the plants. The result is an abundance of plants.

In the garden, the gardeners are the main agents of biodiversity evolution on a limited surface area. They conceive it, model it, manage it throughout time with a particular relationship to the species that are around.

The methodology used is oriented on both basic and experimental research. There are three streams.

The first stream concerns the collection of qualitative data through a series of interviews aimed at collecting testimonies from gardeners from all over the island. This approach allows a better understanding of the relationship gardeners have with biodiversity and how their practices have evolved over time. The sample of twenty-three people across the island allows us to study their representations and the transmission of knowledge. The meetings with the gardeners in the heart of their garden provide the ground to evaluate their relationship with biodiversity, the way they produce and garden. This social approach gives clues on the exchanges between gardeners on the island.

The second stream concerns the creation of an experimental garden, in order to document not only the process itself but also the results in terms of biodiversity.

The main objective is to evaluate the capacity or not of a community of gardeners from all walks of life to build and manage a garden over time. Originally a wasteland, the site is now a garden in the making... The project is based on the imagination of a group and on the will to develop collectively an original approach. At the same time, a comparative study is conducted, since the original plot has been divided into two sections: one for the experimental garden, the other section left as it is to measure changes over time. Both quantitative and qualitative data are collected and analyzed.

The process included four main steps as follows: open call to recruit participants to engage in the experiment in small groups each week, inventory of existing insect biodiversity on the plot before a new planting, collective design of the experimental garden, keeping a logbook throughout the project to document the processes and knowledge sharing.

Finally, the third stream draws on the experience of the Planetary Garden School that I have been leading since its creation in twenty thirteen. This structure is inspired by the concept of Gilles Clément, landscape designer, for whom "The planetary garden is our planet and the planetary gardener is each of us".

To study the impacts of the seven years of activities of this school, a survey of sixteen thousand participants was conducted, investigating potential changes in behavior and practices in gardening. Have these citizen gardeners changed their relationship with biodiversity? Did they change their gardening practices?

The three research streams undertaken for this work are linked to both the relationship to biodiversity that gardeners maintain. They are also linked to a cultural biodiversity that evolves over time on this territory.

For this communication, I have chosen to present the progress of the work carried out on the three streams.

The analysis of the interviews of the gardeners has just been started, it is still delicate to draw conclusions but it suggests a real richness of approaches to gardening and biodiversity. The first result is that various themes regularly emerged in the comments made. There is: the representation of the

garden, biodiversity in the broad sense, the transmission of knowledge, the relationship to time. There are also practices and evolution between gardening, preservation of biodiversity and finally the contribution of the garden studied.

For the second stream, although the research is not yet completely finished, there are mainly three results concerning the research stream on the experimental garden. The first concerns the level of engagement of the gardeners within the island. Although the initial goal was to have a minimum of fifteen participants, there has been a steady and growing interest in the project since its launch in August twenty twenty. With twenty participants at the start, there are now sixty-five gardeners involved, and about five or six of them (not always the same ones) come to the garden every Friday morning. So overall, this result shows the relevance of the project. Although some said they came out of curiosity, the majority of them really wanted to share and discuss, which confirms our hypothesis that knowledge sharing is necessary.

The second finding about the experimental garden concerns biodiversity. The initial inventory of the garden identified thirty-six different plants and over four thousand insects. Two trends were then observed: first, both populations decreased in number during the creation of the experimental garden; second, the insect population not only recovered after the planting of endemic species but new species appeared. In terms of plants, fifty-six new species were cultivated by the gardeners, while the uncultivated area showed twelve new species. Despite the relatively short time frame, gardening seems to enrich biodiversity, both in quantity and diversity, demonstrating its positive role.

The third result under this stream concerns the processes of knowledge-sharing, which is mainly done orally, by showing the actions to be carried out, while reproduced by others. Discussion topics are very broad, from food to health and well-being. Therefore, not only gardening practices were transmitted but also an art of living. Furthermore, the small scale of the project (two hundred square meters), similar to the average size of private gardens on the island, demonstrates what could be achieved if this was duplicated by garden owners

For the third stream, regarding the survey conducted among the participants of the Planetary Garden School, the one hundred and thirty-eight responses give interesting and rather positive results. Although the analysis is ongoing, positive results can already be identified. Seventy six percent of the participants think they received important or interesting knowledge in the activities they undertook.

Some of the people involved with the school have become professionalized, such as Nadine Fonet, a former nurse who after a few workshops in twenty seventeen created her own structure teaching.

Other results of the survey show a real enthusiasm for this kind of approach: seventy-three per cent of the participants have changed their gardening practices. Fifty-eight per cent of the participants have changed their relationship with living things. Eighty-six per cent of the citizens who participated in the activities think that a school of this kind is useful to preserve biodiversity. Ninety-six per cent think that other similar schools should be created. This demonstrates the usefulness of this kind of educational and garden-oriented structure. Finally, ninety-eight per cent of the respondents recommend the school to the residents. This shows that participants are quite satisfied with the energy invested during all these years. The concept is completely reproducible and transferable.

Once the analysis of the results from the three streams will be finalized, a triangulation and a cross-checking of the results will be carried out to try to answer the central question of this research. "Do gardeners, through the transmission of knowledge and the evolution of their practices, contribute to the preservation of garden biodiversity?"

As of today, although this is not yet fully completed, the answer is a strong yes.

In addition to the thesis, the creation of a short film will also be produced to thank the various gardeners who contributed to this work, but also to disseminate the results.