



THE WHOLE-SCHOOL APPROACH TO CLIMATE CHANGE EDUCATION IN ACTION: A YEAR WITH PRIMARY SCHOOL NO. 12 MAR CHIQUITA

Case Study Final Report

Argentina

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The Whole-School Approach to Climate Change Education in Action: A Year With Primary School No. 12 Mar Chiquita | Argentina Case Study¹

Executive Summary

This case study features a whole-school approach to climate change education (CCE) in a rural public school located in Mar Chiquita, a small seaside village in the province of Buenos Aires, Argentina. The case study materializes in a setting that results from a CCE initiative placed in the intersection of three spaces: the Mar Chiquita Lagoon as the natural environment, the pre-existing and now relocated rural public school No. 12 as the institutional framework, and the new and rather disruptive sustainable architectural design that houses this community. In the complexity of the intersection in which this scene takes place, a new school culture is in the making. This case study looks into some of its particularities in the hope that these findings inform and inspire other CCE initiatives.

Through the lens of a place-based education approach (McKenzie, 2008; Smith, 2002, among others), we delve into the relationship between the community, environment, and space as the main driver for this CCE initiative. First, we provide an overview of the background of the current school, which was a pre-existing rural public school relocated through a coalition of multiple stakeholders that came together to address the local community's need for a new building. The new school building was built in 2018 under architect Michael Reynolds' Earthship model, which is not originally suited for a school and has entailed adaptations. This process of forging partnerships and adapting structures has not been exempt from tension, and this is also addressed in our report.

Inspired by *Whole School Approaches to Sustainability Education* (Henderson and Tilbury, 2004; Shallcross and Robinson, 2008; Eames et al., 2010; Mathar, 2014, among others, and more locally, Sabbatini and Ezcurra, 2019), we have organized our exploration around four different dimensions of school life to portray an integral picture: teaching and learning, participation and outreach, management of support areas, and strategic leadership. These dimensions are systemically intertwined. In the case study, we showcase the unique interplay between the community and the environment in this particular place where the school stands today. The portrayal of this interplay stems from on-site visits, in-depth interviews with key stakeholders, and the analysis of salient documents like the prescribed curriculum, specific unit plans and projects, and students' productions, among other inputs that have allowed us to frame this picture.

A strong public school grammar (state-owned and run, with a prescribed curriculum linked to standardized expected outcomes) shapes much of the school's life, sometimes at odds with the integral outlook that the very shape of the self-sustainable building inspires. The look of the building captures the interest of the community, even drawing newcomers willing to settle here while, at times, bewildering educational governance stakeholders. All in all, this school stands like a beacon in alluring shores, a beacon whose light is indeed worth following.

CCE Initiative

The Primary School No. 12 is a public school (state-owned and run) located in Mar Chiquita, province of Buenos Aires, Argentina, a small rural town adjacent to a coastal lagoon and UNESCO reserve, which is unique due to its biodiversity. The area was acknowledged in 1966

¹ The views in the report are not necessarily endorsed by the MECCE Project, which funded the research. This report was republished in 2025 following additional copy editing to increase the report's clarity.

as a Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization (UNESCO). A UNESCO Biosphere Reserve is a terrestrial and coastal ecosystem that aims to promote the conservation of its biodiversity and contribute to the region's sustainable development (Iribarne, 2001). This designation as a UNESCO Biosphere Reserve entails an opportunity to develop further conservation projects and contribute to environmental education at schools with a wider sustainability perspective, which partly accounts for the case study presented here.

Much more than a landmark, since the creation of Primary School No. 12 in 1962, the Mar Chiquita lagoon has been highly significant beyond being a natural reserve. For the school, the lagoon – with all its wildlife - has always been the heart of the community and the soul of the district. Thus, when the original rural school's building proved outgrown, moving closer to the shore became another driver for the move to a new building. It is fair to claim, then, that this CCE initiative aims to address the need of the community for a better-suited building to house their pre-existing rural school into a larger building and, in doing so, to provide a design that better reflects the school's pedagogical as well as physical closeness with the lagoon. In the process of bringing this new sustainable primary school to life, a new local narrative is woven by braiding together three main threads: the physical environment, the traditional public primary school, and the sustainable building that brings this educational community together.

The school was built in 2018 as a multi-stakeholder project, whereby non-governmental organizations (NGOs) and private donors partnered with the local municipality, the government of the province of Buenos Aires, and the national government to pull together the resources and volunteers for the construction process. The school was rigged up within 45 days, finishing in April 2018.



The school building has a typical "Earthship" design built under architect Michael Reynolds and uses nearly 25 tons of recycled materials like tires, beverage cans, and bottles.

The building is entirely off-the-grid: it runs on solar energy and collects rainwater. The rainwater is then filtered to make it drinkable and reused after sanitation for the vegetable gardens, where part of the food for the community is grown. The school hosts 120 students aged 6-12 in two daily shifts of 60 in its three classrooms, where learners are grouped in multigrade classes in keeping with its rural modality.

It is worth mentioning that the students and their families took part in the building process and now play a key role in the daily maintenance of the building, welcoming visitors from all over the world regularly and offering them student-led guided tours in a display of a strong sense of ownership. Thus, although the students are the direct target audience of the initiative, the community at large is also targeted here, given the participatory nature of this effort.

The school's curriculum combines the contents prescribed by the local government with specific interdisciplinary projects that focus on gaining a deeper understanding of the local wealth in biodiversity to strengthen the community's capacity to preserve it from human impact. As we shall illustrate in further sections of this report, the underlying whole-school

approach to sustainability taken by this initiative entails a strong teaching and learning component, as well as addressing other aspects of school life. The ways in which the whole school approach has been contextualized here have come hand in hand with some degree of tension – which will be further developed later in this report – arising from the adaptation of the building's design to run a traditional public school. In all, the outstanding nature of this CCE initiative results from how pedagogy interplays with infrastructure, the natural environment, the engagement of multiple stakeholders and the strategic leadership of the headmistress/principal and her team. All four dimensions of the underpinning whole school approach in action in this CCE initiative come across as tightly interconnected, making it a living example of its effectiveness.

Case Study Methods

This case study has the objective of showcasing the CCE initiative, Primary School No. 12 in March Chiquita, and its relevance for climate change education in terms of partnerships, community engagement, pedagogical innovation and potential for replicability. This case study intends to look into the initiative's potential to leverage the interplay between these local concerns and the global issue of climate change adaptation and mitigation.

What is it like at the junction where the lagoon is met by the vibrant and engaged community that has settled there, the long-standing tradition of a rural public school grammar and this new building that stands as the all-encompassing scene where this case study takes place? Accounting for the main traits of the interwoven narratives briefly outlined, what are the synergies and tensions at play? What are the enablers and barriers in a project like this?



We have attempted to address these questions by looking into school life. We arranged our data collection to explore the four dimensions of the whole school approaches to climate change/sustainability education, adapted from the cited literature. The four dimensions are to be regarded systemically, and often even overlapping:

- **Teaching and learning**, which comprises pedagogy, curriculum, and assessment.
- **Participation and outreach**, which has to do with the engagement of all stakeholders in school life and beyond it, reaching out to the larger community and spreading out to other networks.
- **Sustainable management** of support areas refers to all aspects of everyday life at school that support the core task of teaching and learning, such as the building's maintenance, provision of supplies, staffing, and administration, among others.
- **Strategic management/leadership** is the dimension that enables, drives, and propels the school's institutional project and ensures its sustainability in time. The results refer to these four areas or dimensions of school life, but they are woven together in a unified narrative, attempting to restore the integral unity of the school in its depiction for this final report.

This case study was conducted by the UNESCO Chair on Education for Sustainability and

Global Citizenship, and the Universidad de San Andrés.

This case study combined the following methods:

- **On-site visits** to obtain visual footage of the premises and the several ways in which they are inhabited. This strategy also enabled us to experience – almost as participant observers – the sense of pride and ownership that students display when leading the guided tours themselves.
- **In-depth interviews** with key stakeholders, both institutional actors and others. We have also collected a sample of recorded interviews with some of the main stakeholders: the school's principal and some of the teachers – in Spanish, which is the language spoken locally.
- **Analysis of salient documents** like the school's institutional project, the prescribed curriculum, specific unit plans and projects, and students' productions, among other inputs to provide additional context and depth.

Below, we provide information about the people involved directly in the preparation of this case study and also indirectly, being part of the target community at the Sustainable Primary School in Mar Chiquita.

School Staff

Directly involved in our research (interviewed):

- School Principal/Headmistress: María Florencia Capornio
- School teacher: Natalia
- School teacher: Roxana
- School teacher: María Jose
- School teacher: Silvia
- Parent responsible for coordinating caretaking and guided tour shifts during weekends: Leo

Not interviewed but relevant members of the studied institutions:

- Vegetable Gardening facilitators (PBL workshop): 4 teachers (all female)
- Extracurricular activities teachers: Physical Education, Visual Arts and Music (four teachers, two male and two female)

State Workers (interviewed):

- District Supervisor in Chief: Veronica Serantes
- School supervisor: Alejandro López
- Municipality officer (Tourism agency) Coordinator of tourists' visits to the natural reserve and Sustainable Primary School (liaises with school authorities): Micaela Roma

Partner Organization Members (interviewed):

- NGO Amartya, Director: Christian Tiscornia Biaus

- NGO Amartya, Education Coordinator: Gustavo Slafer
- NGO Tagma, project Coordinator: Ana Kondakjian

School Students

- Not interviewed, but some of them interacted very actively with us, showing the building around and explaining how it works.

Total Number of Participants: 140

- 20 adults
 - Female participants: 12
 - Male participants: 8
- 120 children
 - Female students: 68
 - Male students: 52

Age Range of Participants:

- School community (teachers, school principal, and supervisors): 30-50 years old.
- School students: 6-12 years old.
- Other relevant stakeholders (parents, municipality officers): 35-50 years old

Though they are not accounted for in the total number of participants reported in this section, families and the community of Mar Chiquita at large were indirect participants who played a key role in this case study. The community is an active participant in the local narrative that brought the research to life.

Case Study Findings

The key findings of this case study emerge from understanding the strong power of place in fostering authentic learning (Vander Ark, Liebtag & McClenen, 2020). 'Place' here results from the lagoon and the traditional public school housed by the sustainable building. So, let us begin by describing the importance of the lagoon for these educators. With phrases like: "We feel privileged to be able to enjoy it and take care of it for future generations," they display an enthusiastic sense of empowerment and responsibility towards its conservation. From the onset, the school's educational project has been mainly about the community's involvement in the environment, as stated in foundational documents. For example, since very early on, the school has been a formal member of a network of custodian schools of the Simultaneous Annual Bird Count that is carried out every year in the lagoon.

One of the teachers, who has been a member of the staff since before the move to the new sustainable building, expressed that becoming a custodian school was a remarkable foundational characteristic of Primary School No. 12 because it was one of the first initiatives regarding environmental education that the school had. Not only is the Mar Chiquita lagoon a unique source of learning because of its flora and fauna - but also, the birds that live in the lagoon provide evidence of what is happening in the environment since the number of birds in the reserve is an indicator of the ecosystem's health.

“The Mar Chiquita lagoon is very valuable for the school because it allows us to continue taking care of the environment beyond our building and to be able to closely observe some things that are happening there (both positive and negative) so that we can later work together to better understand the extent to which we can address them.” (Teacher)

Thus, in addition to being a source of inspiration from the beauty of the natural surroundings, the lagoon brings an opportunity for the kind of empowerment for climate action that comes hand-in-hand with knowledge. As this teacher stated, knowing the extent to which the health of the ecosystem is altered enhances awareness of what can be done to reduce detrimental impacts.

Moving on to the sustainable building itself as the third salient element of ‘place’ in this case study, it is clear that it accounts for the school’s notoriety, and we have argued that it shapes several aspects of everyday school life. These traits enforce a set of special cares in everyday life inside the building. For example, teachers pointed out that ordinary cleaning products like chlorine – a widely used disinfectant – could ruin the self-sustaining water and sanitation process. Likewise, “washing off ordinary paint from brushes after an art lesson could become a small-scale ecocide,” a teacher explained. And more complex still: feeding the students entails lots of practical challenges without a proper kitchen. These minor details have often been a source of dispute for the staff and management team, particularly with supervisors and administration officers who do not always find it easy to “bend the rules” to adapt procedures for this particular school, as it was explained by themselves in our interviews: “We try to be supportive, but at times it is difficult not to regard all these exceptions as a burden, and even a potential hazard – bearing in mind that our role also implies ensuring the health and wellbeing of the community.”

Finally, the school offers previously booked student-led guided tours, sometimes accompanied by teachers and/or parents, and the school building is open at specific extra-school hours for this purpose (including weekends and national holidays.) As part of the fieldwork for this case study, we went through this experience as visitors, and the sense of confidence and ownership displayed by the students while showing us around the premises was strikingly genuine. Experiences like this, where students take care and responsibility for a school’s space, help students develop skills and deep understandings related to *living sustainability* (EUC, 2022).

Action Learning Dimension

However, engaging in projects like this entails planning for learning *differently* from how learning is arranged in a typical rural public school. ‘Place’ in this case study is also about being an atypical public school. This comes hand in hand with having a province-based curriculum design prescription aligned with a broad national curriculum prescription that leaves only some room for each provincial state to make adaptations on the grounds of local relevance. In this particular case, the school’s curriculum includes additional workshops to those in the provincial design, specifically allocated for interdisciplinary project-based learning (PBL) (Bell, 2010), which are unique to this school and have been acknowledged by the pertaining accrediting bodies to make the most of the new building. These are two specific workshops: one about vegetable gardening, where volunteers from the local NGO Amartya work alongside school teachers on the basics of keeping both indoor and outdoor gardens, and another workshop where teachers train students to provide student-led guided tours to several visitors that the school welcomes every week (so much so that even on Saturdays there are shifts for families to open the school for students to guide tourists around the premises). While these are both very meaningful experiential learning opportunities for students, they also entail some challenges, like all of the other adjustments that have been made to state prescriptions after moving to the new sustainable building,

when, in essence, the institutional framework of the school remains the same. It must be taken into account that being a public school also implies state-defined staffing procedures, state-run maintenance, state-prescribed calendars to follow, and visits from state inspectors who can intervene in educational institutions, keep track of communications within schools and provide pedagogical advice along with other realms of state incumbency. In turn, provincial prescriptions, though decentralized from the national state's administration of education, are to some extent aligned with it as well. So, when a "disruption" to this order occurs, this can be a source of tension.

For example, unlike the other subjects taught in the school by the teachers, the Vegetable Gardening workshop is taught by volunteers from the local NGO Amartya, which has a reputation for its expertise in organic vegetable farming. The role of workshop facilitators is voluntary and rotating, which means that they do not belong to the state-run and regulated teaching body. One of the implications of this different administrative status is that, though theoretically formal in terms of commitment to the school, their position is neither paid nor regulated in any way regarding aspects of their everyday performance, such as leaves of absence, assessment, compliance with paperwork, to name a few examples. This occasionally translates into a management challenge for the school principal, who feels "like I have to be grateful to these very generous volunteers for giving up their time for us and sharing their technical expertise, but I cannot put too much pressure on them when something needs to be adjusted in their performance as part of the team."

The other PBL subject is a space where teachers facilitate a Student-Led Guided Tour project. It is a workshop where students learn the foundations of the Earthship model, figure out how to explain them, and produce infographic and visual materials like handouts and works of art, which are given to visitors that regularly come from all over the world. In this workshop, students develop several skills and draw from a diversity of knowledge disciplines: they have to learn to present orally in front of an audience of strangers, explain the history of the building, and define what sustainability is all about for them. One of the interviewed teachers stated that the phrase: "This is the school we want to see, the world we want to see," pretty much sums up the spirit of this workshop, and this comes to fruition during the visits. She added that the visits are "an asset to the school because the kids who prepare to guide the tours master the sustainability principles behind the building's design as they experience them daily. So, whenever someone walks in, they cannot help but praise their guides' eloquence and their sense of pride in belonging here."

Climate Justice

The biggest learnings involve coming together to address climate change education by putting the children first. Intergenerational solidarity is at the core of the sustainability challenges posed by climate change and a crucial angle to the idea of climate justice. So, we can hardly think of a better strategy to be compassionate and proactive in building a better future for the young than building a better school. Moreover, in a community where private means are meagre and the state is not particularly resourceful either, such beautiful and engaging facilities as those of the school in Mar Chiquita would have been unthinkable if it had not been through the joint efforts of so many stakeholders coming together: the state, private donors, NGOs, and neighbours from the local and nearby communities. All this allows us to say that this research also shows that these collaborative endeavours are effective strategies to address social justice issues, levelling out the playing field for children who would otherwise have access to far less stimulating learning environments.

Indigenous Knowledges/Participatory Methods Influences

The Mar Chiquita Primary School's process showcased in this case study has entailed fitting

a very traditionally formatted, yet environmentally sensitive school into a new building whose design spurs from different purposes to those of a typical primary school, to meet the needs of the community. Like threads that are braided into one, these narratives shape each other and blend in this setting, at times harmoniously, yet occasionally in more challenging ways than we have intended to portray here. Although there are no Indigenous Knowledges involved in this case study, the complexity of this fabric emerges from the unique and inspiring way in which local meaning is constructed.

Cultural and Regional Context Influences

Beyond the two specific workshops mentioned above, where the sustainable pedagogical project of the school explicitly materializes, the teachers and the school principal claim to strive to embed sustainability in their teaching of traditional subjects, with varying degrees of success:

"We acknowledge that it is not always easy for all members of staff to understand the underlying relations between some prescribed curriculum contents and the school's vision of sustainability. On-going training would be helpful, but capacity development is scarce and difficult to access, and distance learning is not always an option when connectivity does not help, as is often the case in our community." (Teacher)

As mentioned before, Nature here provides a privileged framework for experience-based learning of contents and complex skills (Henderson and Tilbury, 2004; Tilbury and Gavin, 2022), yet there are still perceived areas for improvement when it comes to translating this into lesson planning and assessment, according to the principal. In her words, thus, "trying to reconcile outdoor learning with student achievement testing sometimes results in a 'clash of cultures' that could be further explored and addressed more coherently, but we never seem to get round to it."

In the staff's perception, addressing curricular content through the lens of sustainability creates tension between the school's vision and prescribed content coverage to ensure that all the students of the school learn the same as all the students of the province. In the school principal's words:

"We are a public school, after all, and as such, we are expected to teach the contents of the province's prescribed curricular design. It is necessary to make sure that all our students manage to master the contents planned for each year in mathematics, Spanish, and natural and social sciences because any kid who may have to be transferred to another school in the province must have gone through those teaching situations. Otherwise, we would be responsible for him or her being in a disadvantaged position." (School Principal)

An example of clashing cultures came up related to the choice of literature texts in 2022: while the staff had drawn up a teaching plan based on carefully selected nature-based tales throughout the whole Primary School, the province's standardized tests were designed on the assumption that students had read "Goldilocks and the Three Bears" and other stories that the staff perceived as similarly "disconnected" from their environment. So, teachers had to decide against their more significant and locally engrained choices "in the name of curricular justice."

Yet, beyond all these architectural features, it is interesting to delve into how this building has had an influence on relationships, nurturing a very particular atmosphere of harmonious collaboration. The principal claimed that the building shapes an environment that invites its inhabitants to breathe this atmosphere and also to look after it to ensure it is not disrupted.

"I see sustainability imbued in the relationships built in the school and with the school, in

the way students work in the classroom, the way they are grouped, in the way they can set limits for themselves autonomously. I see sustainability in the way students pay attention to each other and engage in projects with interest, as well as in the enthusiastic contributions that they make every day. I see sustainability in the learning 'climate' prevailing in the classroom." (School Principal)

This positive atmosphere for learning unfolds in several directions, like how the community looks after its building and proudly opens it up to visitors and the number of inspiring activities that happen in this place. From award-winning student-led film productions to literary contests engaging students from other neighbouring districts, Sustainable Primary School No. 12 is undoubtedly a vibrant place where sustainability is firmly rooted in the heart of school life. "Educational technologies crammed together" would be an apt caption for this image that sums up much of the complexity of this story's coexisting and interwoven narratives.



Case Study Impacts

Internal Impacts

We had been interested in this school and the process that brought its uniqueness to life since the very beginning of the CCE initiative. During the pandemic in 2020, we had the brilliant opportunity to offer a full scholarship to the Mar Chiquita Sustainable Primary School's principal and a couple of staff members to join our online capacity development program for educators. Their participation was made possible thanks to our strategic partnership with the national branch of the UNESCO Associated Schools Network, which the Mar Chiquita Sustainable Primary School was a member of. Over those months of enriching exchange of experiences, these participants' contributions to the course only made it more evident that looking into this initiative would provide meaningful insights into CCE and that this was an enterprise we somehow had to embark upon. Thus, when the MECCE Project launched a call for proposals for quality CCE case studies, we sought this opportunity to learn more about the school and leverage its impacts by being able "to spread the word" about its power.

Before conducting this case study, our team had always been engaged in several projects to promote cross-cutting, interdisciplinary, whole-institution approaches to Education for Sustainability and Global Citizenship (ESGC), which is the broader "umbrella term" under which we have conceptually included CCE. As we have discussed in other publications, the domain of ESGC has blurry lines, and we have embraced this broad term to encompass other ways in which educational initiatives have named their response to the need to address in schools the challenges posed to humanity by the climate crisis. Thus, aligned with UNESCO's broad terminology and guidelines for action (as expressed in its latest 2020 Roadmap, for example), over the past two decades of our work, we have looked into and engaged in initiatives under labels like 'Environmental Education,' 'Sustainability Education,' 'Education for Sustainable Development,' and CCE. Despite their slightly varying approaches and focuses, at the core of their work lies a common concern for better-equipping learners to take an active role in shaping more resilient and sustainable communities in the face of a climate crisis that calls for urgent action.

One of the central premises underpinning our work has always been that embracing a whole-institutional approach to ESCG brings forth several forms of measurable educational improvement; likewise, institutions seeking to improve their pedagogy as well as their strategic management tend to contribute to Sustainable Development through their contribution to create fairer, more sensitive, and more resilient communities (Sabbatini and Ezcurra, 2019).

Conducting this case study has enabled us to gain a deeper understanding of the complexities entailed in this double-edged feedback loop between ESGC and school improvement theories and practices. For over two decades, we have been reviewing literature and also coming across some practical examples of specific sources of tension arising from the interplay between traditional school grammar and ESGC-intended innovations like the sustainable building in this case study. However, analyzing this particular initiative has provided new and deeper insights into how these tensions may be addressed.

Now that we were able to develop this case study, we feel the research process has helped us uphold our work premises more confidently, providing new evidence about the effectiveness of these holistic approaches that are accessible to our Latin-American audiences. We had been encouraging our university students to explore the vast array of experiences that proliferate around the world on the internet by way of examples and sources of inspiration about the effectiveness of school approaches and the power of partnerships. Embarking upon this case study has brought about a very concrete contribution, as now we can teach our findings from first-hand knowledge and experience, and it is a report that will feel much "closer" to our students than others in remote settings. We also expect to be able to leverage the inspirational potential of the Sustainable Primary School in Mar Chiquita by reaching out to wider audiences with the help of the MECCE Project. All of this now poses new challenges for our team regarding our role as intended facilitators of capacity development opportunities to advance ESCG, and we look forward to getting down to work to address them with the help of new partnerships stemming from this process. In this sense, we intend to further this case study together with other researchers, bringing in the notion of infrastructure with greater centrality (Easterling, 2014), which we hope will offer novel ways of unpacking how tensions play out in global education policy and practice as it becomes situated in particular places.

External Impacts

At the local level, it is clear that the case of the Sustainable Primary School in Mar Chiquita has had a powerful impact. The first and most obvious indicator is the rise in population, which reveals that this initiative has been successful in addressing an identified need in the community: although there is no available data to compare and contrast the evolution of the town's population with the student population over time, currently available data complements the staff's statements in interviews about this, with remarks like: "Before the move, enrollment had been growing, catering for newcomers that settled mostly on the district's coast, but the school back then was a few kilometres inland - not within walking distance from those settlements - so the distance, in addition to the old building's shrinking capacity, became a factor that compounded towards the demand for a new school to be built."

So it was that in 2017, the need for a larger building - and also one that would be closer to the lagoon, in line with the school's pedagogical project - was finally addressed. As the result of the joint efforts of key stakeholders like the local municipality and the NGO Amartya, a public policy project was agreed upon and enforced aimed at strengthening education and sustainable development of the Mar Chiquita district. This project was called "Environmental Education Plan of the District of Mar Chiquita in the Province of Buenos Aires, Sustainable

Argentina" (known as PLANMAR), and it aimed to cross-cuttingly address local sustainable development, strengthen local culture and environmental care and promote innovative and sustainable socio-productive models. The plan focused on capacity development, working with the community and schools, and training key political actors. Amartya propelled the work with municipal and provincial authorities, school teachers and principals, agricultural producers, other social organizations, and various economic stakeholders from the Mar Chiquita district to carry out the main guidelines of the plan.

Another relevant partner was Tagma, a Uruguayan non-profit organization that develops innovative projects focused on education and sustainability in Latin America. They have been building the first network of sustainable public schools in Latin America since the first school was built in Jaureguiberry, Uruguay, in 2016. Thus, the partnership with Amartya and the local municipality fits into the framework of Tagma's project: "A Sustainable School," intending to build the first sustainable public school in Argentina. This is also a hint of the impact that the initiative has had at the regional level.

At a global level, the case study has awakened interest, and through our partnerships with the UNESCO Chair, it has been included briefly in a recent publication by the Organization of Ibero-American States (OEI by its name in Spanish,) (Gómez Caride, Sabbatini & Barrenechea, 2022) featuring a selection of emerging experiences of ESGC in Ibero-America. Along the same lines, we intend to team up with other researchers from Australia and Canada to advance research about global education policy by drawing attention to how tensions between global, national, regional and local actors affect – and are affected by – school infrastructure and provisioning. Conceiving infrastructure not only as the 'natural' and built environment but also as 'shared standards and ideas' that shape their use (Easterling, 2014), we will look deeper into this case study, analyzing how attempts to foster a whole-school approach to sustainability education comes into conflict with the educational ideas and values held by variously situated actors.

Applicability and Scaling of the CCE Initiative

Even though building an Earthship school is not an easy enterprise and regardless of the building itself, some of the features of this case study are indeed replicable in other settings – at least in their logic, such as the private-public partnerships involved in pulling the resources together to build the school. Beyond the building in itself, these partnerships have been key in the kinds of negotiations at play here for the state to grant permission for such a disruptive innovation to occur. We are aware that the tensions portrayed here are related mainly to reconciling the demands for standardization on the part of educational systems with the peculiar pace that such tailor-made educational experiences as Mar Chiquita's may require.

The dangers are clear: in the name of curricular justice and ensuring a minimum standard, governments, through their actors in varying shapes and sizes, may have a stifling effect. The Sustainable Primary School in Mar Chiquita poses many challenges as it strives to blossom: an "outside-the-box" initiative, this Earthship-shaped school, is now blooming beside this lagoon, both of them teeming with life, a life that breeds more care for life in a virtuous circle. Yet, not too long ago, an initiative like this would have been nipped in the bud, so there is great hope in the very fact that the initiative managed to sprout its roots, nurtured by the flow of goodwill from near and far. It is remarkable that with the approval of all authorities involved, it managed to spring to life as recently as five years ago. Perhaps shedding more light on the stubbornness with which the Sustainable Primary School in Mar Chiquita clings to life through rain or hail will fertilize the ground for similar seeds to grow elsewhere.

In their strife to ensure quality education for all (SDG 4) amidst the uncertainty of a climate crisis, educational systems are now more than ever called upon to reimagine better futures

and repurpose their approaches to ensure them (UNESCO, 2021). Therefore, making room for local initiatives like the one portrayed here is a necessary path that needs to be further explored. Perhaps, then, it is only logical to suggest that especially other small towns may benefit from the lessons learnt through this case study, as scale is indeed a distinctive feature here. However, a broader reflection on the role of schools as hubs of “togetherness,” as forgers of a sense of belonging to a community, also allows us to claim that almost any school setting can learn from Mar Chiquita. This particular school is welcoming to children in many ways, as we have tried to illustrate, all of which are much aligned with global discourses of planetary wellbeing in an age of ever-growing awareness of the urgent weight of the climate crisis.

Quality education for all in this case study takes on many shapes, summed up in the idea of place-based meaningful learning. This is achieved through experiential, hands-on teaching strategies that blur disciplinary divides and engage students as the protagonists of the daily care of their special school building and the adjacent lagoon. As described in other sections of this report, signature interdisciplinary projects like the vegetable garden and the national bird count are concrete examples. Curriculum choices – where deviations are possible – are steered in this direction through the strategic vision of the teaching and management staff, who also strive to reach out beyond the special place they inhabit and enable connections with a globalized world: proof of this is activities like film and literary contests and student-led guided tours for visitors from all over the world. All in all, the climate crisis is addressed in this school by putting a love of place first and foremost in its project, and teaching about the complex looming threats of the Anthropocene comes naturally into the picture.

Thus, every region, every country, and every school with its own distinctive identities faces the challenge of acknowledging itself as part of an interconnected global citizenship that is sensitive to the collective commitments we are summoned to take on as humankind in this particular time of our history. Paraphrasing Rachel Carson's commencement address in 1962: “[Ours] is a grave and a sobering responsibility, but it is also a shining opportunity. [We educate students to] go out into a world where [hu]mankind is challenged, as it has never been challenged before, to prove its maturity and its mastery - not of nature, but of itself. Therein lies our hope and our destiny. In today already walks tomorrow”.



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