



# Green and biodiverse schoolyards through community participation

The Breathe/Respirar Program (BRP) is a research and action project in Buenos Aires, Argentina, on Nature-based Solutions (NbS) in schoolyards and their impact on the general well-being and learning process of children. To reach its objectives, the program builds on the collaboration between multiple people involved from various fields.



**500<sup>+</sup>** Volunteers  
to naturalize  
the schoolyards

**2000<sup>+</sup>** native and  
phytoremediation  
plants

**15 workshops**  
with school communities,  
teachers &  
young students

#### Nature-based Solutions Benefits



#### Challenges

Developing a culture  
of implementing  
good practices

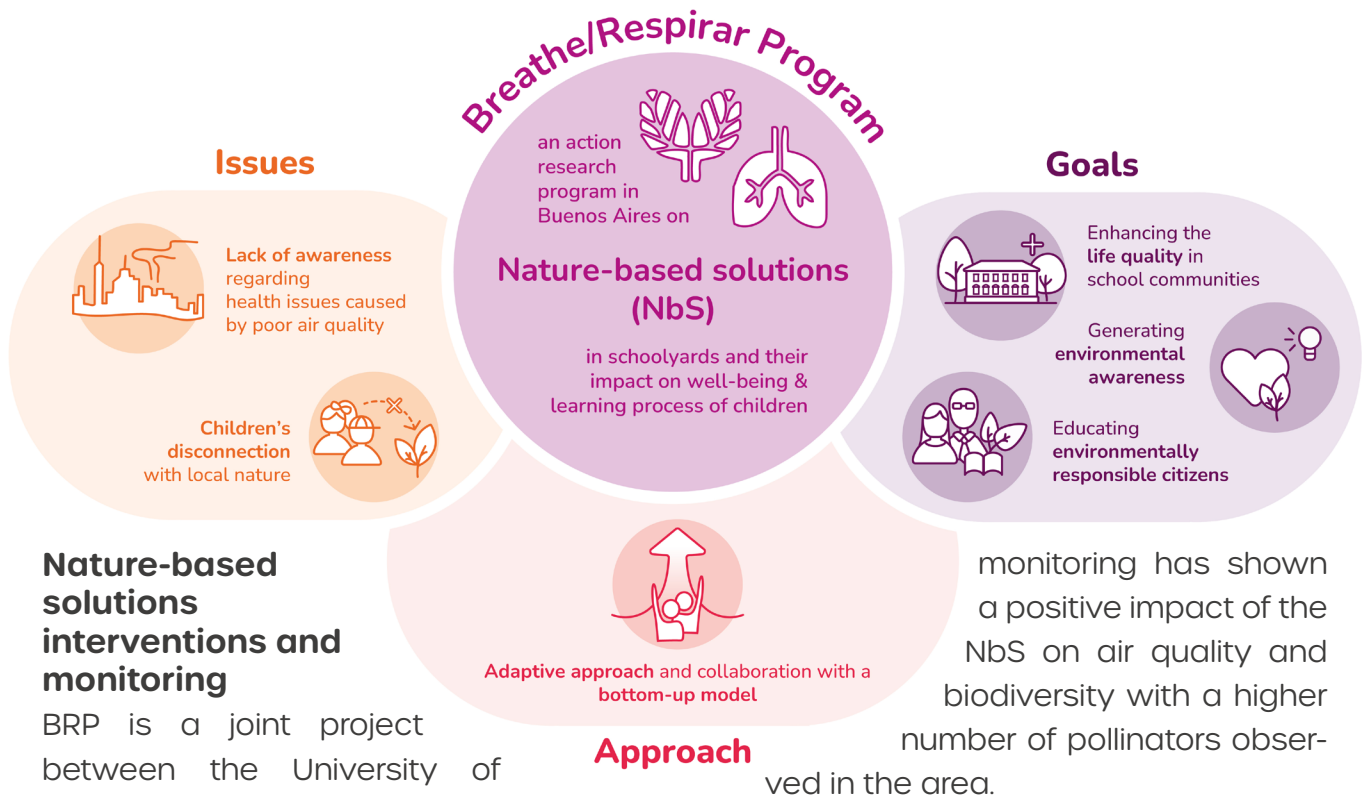
Creating of a network  
of green schoolyards

Promoting data production  
in the local context

## Background

Buenos Aires is a highly urbanized city with poor air quality, which causes harmful health effects. Children are the most affected by air pollution, because they are shorter and have a faster respiratory rate. Consequently, they are more likely to inhale a greater amount of pollutants. In addition, there is biodiversity loss and a lack of green spaces resulting in a decrease in the benefits of ecosystem services. Meanwhile, urban communities do not associate green spaces with improvement of quality of life and well-being. The BRP aims to protect the health of children and provide knowledge to improve childrens' environmental awareness. Schoolyards are a logical starting point, because children spend many hours there. Moreover, the size of a schoolyard can meet multiple needs, while making it more likely to be managed on its own by the educational staff. Such micro-spaces contribute to creating a sense of community, while achieving psycho-socio-environmental improvement. Ultimately, the vision is to establish a network of landscaped schoolyards with participation from the bottom to the top.





### Nature-based solutions interventions and monitoring

BRP is a joint project between the University of Sheffield and the University of Buenos Aires (UBA) in collaboration with four schools and local communities. The program aims to establish a direct link between nature and educational environments, resulting in positive impacts on air quality, biodiversity and the learning process through NbS, such as green fences, edible gardens, and green classrooms. In total, over 2,000 plants, mainly native species, and species with a phytoremediation function, were incorporated in two of the four schoolyards.

Alongside creating NbS, the aim is to assess the impact of the NbS on aspects, such as air quality, biodiversity, and the psycho-social-environmental well-being of the community. For example, air quality measurements are carried out to quantify the levels of nitrogen dioxide and particulate matter before and after planting to determine the situation in each school and the effect of NbS on them. The

monitoring has shown a positive impact of the NbS on air quality and biodiversity with a higher number of pollinators observed in the area.

Psycho-socio-environmental data was collected by the Faculty of Psychology at UBA, through surveys and workshops within the educational community. The qualitative reports showed a desire to spend more time in the schoolyard and increased nature-based learning opportunities. Furthermore, the edible gardens allow for interplay between ornamental and functional gardening; and incorporate knowledge about food production in a playful way, removing the negative association between edible gardens and vulnerable classes. In conclusion, we can affirm that the NbS also significantly promote environmental justice.

### Adapt to schools' needs

The project focuses on adaptability and incorporates the bottom-up model to address the specific needs of each school. The green schoolyards were co-designed with the school and academic

community including teachers to address their specific concerns, needs, and desires. By co-designing greener classrooms and schoolyards with teachers and building their knowledge on environmental factors it was possible to provide healthier spaces and improve the syllabus, as children can learn about nature within green classrooms. To implement the environmental and NbS study programs, the BRP was aligned with the institutional requirements and teaching processes of the schools.

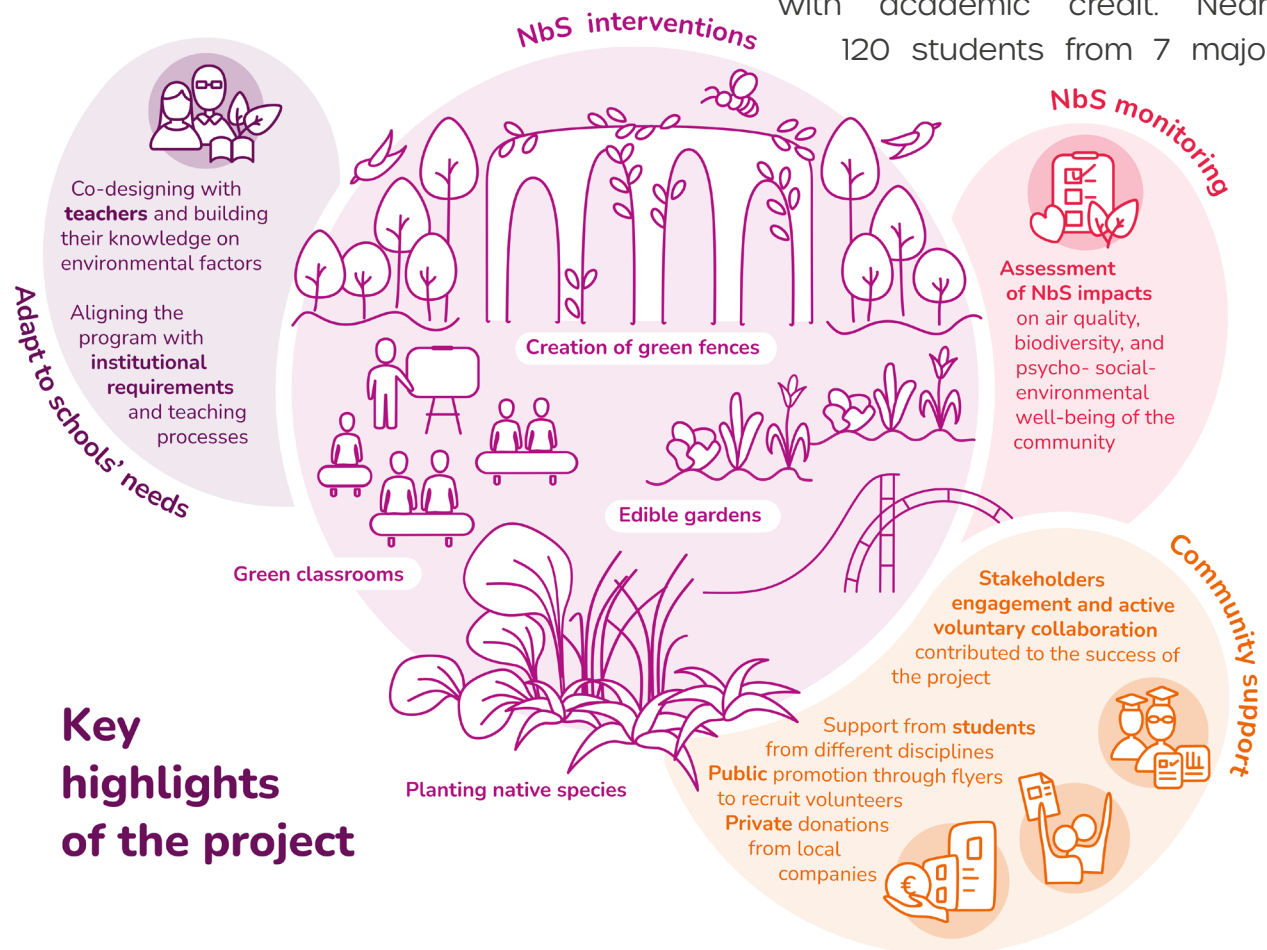
### Community support

Community building has been a cornerstone of the project, together with active voluntary collaboration and participation of a diverse stakeholder network. The involvement of civil society, local

government, academia, and the private sector was essential to achieve the NbS interventions. Public communication of the actions and measured benefits of the project helped to establish a community of more than 500 volunteers.

Regarding governance, the corresponding team in the Ministry of Education of the Government of the Autonomous City of Buenos Aires was enthusiastic about the BRP, but presented limitations at the time of implementation. Fortunately, this was compensated by the great support of the General Directorate of Urban Anthropology.

The success was also reflected in the UBA Faculty of Architecture, Design and Urban Planning. More than 70 students enrolled in interdisciplinary internships with academic credit. Nearly 120 students from 7 majors







participated in the Respirar+ workshops. Students and professionals from Image and Sound Design, Graphic Design, and Industrial Design majors contributed their knowledge to create informative videos, communication materials and a pollution traffic light. 40 students from the Bachelor's Degree in Landscape Design and Planning voluntarily participated in designing of and planting in the school playgrounds.

The private sector also contributed. The Henkel company provided financial support and Green Horses Argentina donated an irrigation system. This strong commitment is crucial to overcoming challenges and ensuring long-term sustainability of the project.



## Related Projects

-  Website Breathe/Respirar  
<https://breatherespirar.ar>
-  Linktree  
<https://linktr.ee/breathe.respirar>
-  Medone School Plantation  
<https://youtube/7EOtSYndy-Go?si=YCJtgpzcMDMtkc4u>
-  Breathing Infrastructures Project  
<https://comunica.fadu.uba.ar/cer-cos-verdes-que-mejoran-la-calidad-del-aire-y-el-bienestar-social/>

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## Key messages



1. Communicating generated data can foster new stakeholder engagement
2. Key stakeholder engagement is crucial for developing a successful project
3. The bottom-up model promotes involvement of key stakeholders and sustainability
4. Motivating students to participate in research in real settings generates greater commitment and interest



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## City Partners

