

THE SIAAP'S STRATEGY FOR AN ECOLOGICAL TRANSITION TOWARDS SUSTAINABLE DEVELOPMENT

SIAAP
Service public de l'assainissement francilien

REDUCING THE ECOLOGICAL
FOOTPRINT OF THE SIAAP
BY CONSERVING
ECOSYSTEMS AND NATURAL
RESOURCES

COMBATING
CLIMATE DISRUPTION
AND REDUCING
GREENHOUSE GAS
EMISSIONS

RESPONDING
TO THE EXPECTATIONS
OF WOMEN
AND MEN FROM
THE TERRITORY



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THE SIAAP (GREATER PARIS SANITATION AUTHORITY) CONTRIBUTES TOWARDS IMPROVING THE QUALITY OF THE SEINE AND THE MARNE IN METROPOLITAN PARIS

This constant development in the quality of the water is the result of a strong desire from the authority to act concretely in favour of the conservation of the natural environment and biodiversity.

Urban, demographic and economic growth and the construction of Greater Paris, as well as the territories of the city have ecological effects which must be understood, reduced, compensated for, or neutralised. The challenge is to create the sustainable city of the future together, in harmony with its environment, encouraging peaceful coexistence without mortgaging the future.

Contributing to the sustainable development of the city means acting as an environmentally responsible public utility. In other words, ensuring its mission to transport and purify water, while aiming for a minimal ecological footprint in terms of its industrial tool. Carefully designing and operating the plants and networks by reducing energy consumption and reagents, is at the heart of the SIAAP's missions. An environmentally responsible public utility has an ecological duty which consists of preserving the biodiversity of aquatic and land environments by re-establishing habitats and ecological continuities, therefore allowing for the re-establishment of the dynamic balances within ecosystems.

The SIAAP, as an environmentally responsible public utility, intends to position the women and men of the initiative and the territory at the heart of its strategy, by promoting social and societal innovation, even beyond borders, by developing solidarity via international cooperation. Staff from the SIAAP themselves, as citizens, are stakeholders of the territory's public policy.

The SIAAP is a leading economic stakeholder: within its territory, where it contributes to local employment and encourages technological innovation; internationally by contributing to the implementation of new sanitation services for the population, in particular in developing countries.

It is also a responsible economic stakeholder, aware of the direct impact of its activity on the price of water, on the need for a high performing management, which is economical in its operation, simple and efficient in its investments, within a restrictive environment faced with the lack of financial resources. The SIAAP is therefore seeking to offer the best service at the best price.

With the updating of its sustainable development strategy, the SIAAP is re-affirming its commitment to continue its action in favour of a public, industrial and civic company relying on two drivers; technological innovation on the one hand, and social and societal innovation on the other.

Since 2009, the existence of the sustainable development commission, created within the board of directors, confirms and directs the commitment of the SIAAP as a public company at the service of citizens.

In changing the national and European urban legislative context, the SIAAP wanted to align its sustainable development strategy with its long term «SIAAP 2030» strategic project.

Therefore the SIAAP's sustainable development policy is developing and being structured around a strategy based on 3 aims:

→ **REDUCING THE ECOLOGICAL FOOTPRINT OF THE SIAAP BY CONSERVING ECOSYSTEMS AND NATURAL RESOURCES**

→ **COMBATING CLIMATE DISRUPTION AND REDUCING GREENHOUSE GAS EMISSIONS**

→ **RESPONDING TO EXPECTATIONS OF WOMEN AND MEN FROM THE TERRITORY**



AIM N°1:

REDUCING THE ECOLOGICAL FOOTPRINT OF THE SIAAP BY CONSERVING ECOSYSTEMS AND NATURAL RESOURCES

The protection of biodiversity and preservation of natural resources includes an increased consideration of ecosystems and a restrained use of them in the sanitation policy.

The SIAAP's action to improve the quality of the Seine and the Marne is its first contribution to the improvement of biodiversity and, more specifically, to the development of aquatic life, notably fish. In a complementary way, the preservation of biodiversity also includes the protection and development of natural land heritage.

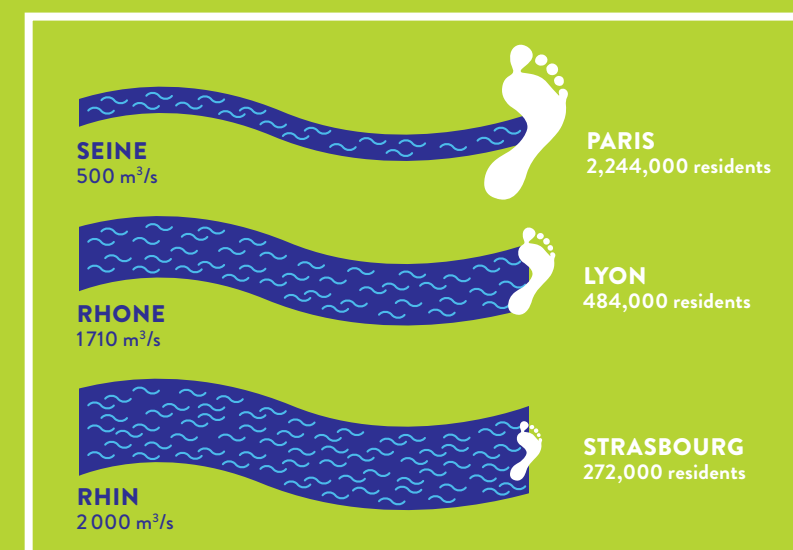
The SIAAP plants, based on the banks of the river, participate in the regional scheme of ecological coherence. These sites house diverse habitats such as spawning grounds, riparian woodland, wetlands, grasslands and forest habitats, which are refuge areas in the heart of the urban area. They constitute living environments essential to the development of species, where it is necessary to successfully manage actions aiming to both re-establish ecological continuities and to effectively manage industrial heritage. These environments are extremely important to the fauna and flora; they work as a network and

their preservation makes the movement of wild fauna easier and allows for the re-establishment of dynamic balances within these eco-systems.

In order to further protect these eco-systems, the SIAAP has a duty to ensure its public sanitation utility mission, while minimising its ecological footprint. Therefore, the SIAAP is developing the recycling and reuse of waste water, by considering waste as a secondary raw material.

As a leading public procurer, it holds a powerful driver to modify the production and consumption methods.

To this end, it is integrating life cycle concepts for its chemical products, equipment and treatment processes into its purchasing policies. It takes into account the impacts of its choices upstream (suppliers, products, etc.) and downstream (officers, operators, etc.), it is attentive to the integration, by its suppliers, of the sustainable development principles.

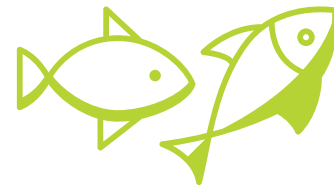


THE ANTHROPIC PRESSURE ON THE SEINE IS VERY HIGH IN COMPARISON TO THE TWO OTHER MAJOR FRENCH RIVERS. IT IS THEREFORE ESSENTIAL TO REDUCE THE ECOLOGICAL FOOTPRINT.



RESTORING THE QUALITY OF THE SEINE, THE MARNE AND NATURAL AREAS

The SIAAP's main mission is to process the waste water from the Paris urban area to contribute towards reaching the good condition targeted by the framework directive on water (DCE). The achievement of this mission can be realised with an optimal exploitation of the facilities, adapted to the capacity of the Seine to accept larger or smaller quantities of pollutants, notably depending on its flow. To optimise the quality of the purification of the water produced, the SIAAP is developing and implementing a quality prediction model for the Seine.



33
SPECIES OF FISH
RECORDED
IN THE SEINE
COMPARED TO 3 IN 1970

RE-ESTABLISHING THE HABITATS AND ECOLOGICAL CONTINUITIES TO ALLOW NATURE TO TAKE BACK ITS RIGHTFUL PLACE

This aim is being pursued via the development of opportunities to improve and preserve the establishment of common plant and animal species, as well as via maintaining existing habitats which house rare and/or protected species, and the creation of new habitats in order to maintain, and even increase biodiversity.

The assessment of the specific diversity, the heritage interest and the effectiveness of the protection measures implemented is necessary in order to better understand and promote the SIAAP sites and their potential.

The SIAAP is already proceeding with inventories of aquatic and land-based flora and fauna, aquatic and land-based habitat management plans and green spaces. This ecological monitoring is worth being expanded in order to study the potential contribution of the SIAAP plants towards the safeguarding, restoration and development of biodiversity and local habitats.

The SIAAP must continue to take into account biodiversity in its development projects, while preserving the biodiversity «reservoir» areas and re-establishing ecological continuities.



2016
14
REMARKABLE
PLANT SPECIES
IN THE REGIONAL NATURE
RESERVE INCLUDING
THE MARSH SPIKE-RUSH

69
SPECIES RECORDED
INCLUDING 16 HERITAGE SPECIES
LIKE THE EURASIAN KINGFISHER

2015
RETURN
OF THE COMMON MIDWIFE TOAD

DEVELOPING RECYCLING AND THE REUSE OF MATERIALS COMING FROM SANITATION IN THE CONTEXT OF THE PRINCIPLES OF THE CIRCULAR ECONOMY

The treatment of waste water is a source of secondary raw materials. The sand, ashes and sludge produced can play a part in the production of construction materials, taking the place of traditional raw materials.

The SIAAP is carrying out studies to innovate and find long-lasting recycling procedures.

At the same time, materials like sludge are already partially re-used in spreading and compost, therefore allowing for the re-establishment of nitrogen and carbon cycles.

Another route for technological and societal innovation is the selection of urine at the source, which could eventually allow for the recovery of phosphorus, a natural element in shortage.

FROM ECO-DESIGN TO ECO-CONSTRUCTION: CONTINUING WITH THE SIAAP'S EFFORTS FOR GREATER CONSIDERATION IN ITS PROJECTS

The construction of works requires a great quantity of raw materials. In order to reduce its ecological footprint, the SIAAP is developing, within its projects, the use of renewable materials and the re-use, on-site or elsewhere, of materials coming from deconstruction.

Where required, it uses materials respectful of the health of man and the environment. By pursuing this objective, the SIAAP is contributing to making the city sustainable, notably via the quality of its buildings and the integration of its sites with the countryside.



MARNE AVAL



SEINE MORÉE



SEINE GRÉSILLONS

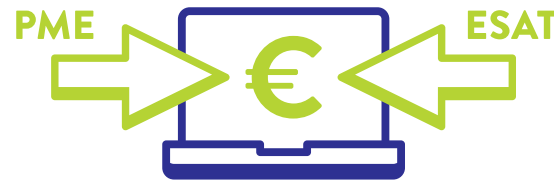
RESPONSIBLE PURCHASING POLICY: INVOLVING THE SUPPLIERS IN AN ECOLOGICAL, SOCIAL AND SOCIETAL INTEGRATION APPROACH

The exploitation of our industrial tool requires a significant consumption of reagents and leads to the production of a large amount of waste. It is essential to adopt eco-responsible management of these flows in order to preserve the environment and guarantee greater economic efficiency.

The SIAAP is a significant purchaser. It has a considerable driver to pursue the development of sustainable public procurement via the introduction of its environmental and social clauses into its specifications for a responsible management of flows.

The consideration of life cycle analysis in the SIAAP's purchasing policy is another decision making driver.

As an exemplary public company, the SIAAP therefore continues to deploy its responsible and inclusive purchasing charter and support its suppliers and key stakeholders in a responsible purchasing approach.



DEVELOPING THE URBAN AND SOCIAL ECOLOGY OVER THE TERRITORY



The SIAAP is part of a new movement of territories integrating technological, social and societal innovation. It is participating in this fully by developing the urban and social ecology of the small water cycle via the preservation of biodiversity, landscape integration and urban and social agriculture.

Its action includes occupational integration, local employment via the participation in employment forums and even the partnership with Cap Emploi; the implementation of conventions with different key stakeholders like colleges, universities and *grandes écoles*.



SEINE AMONT



AIM N°2:

COMBATING CLIMATE DISRUPTION AND REDUCING ITS GHG* EMISSIONS

The fossil fuel reserves are limited and are constantly shrinking; consumption continues to grow, as well as inherent emissions of greenhouse gases. Using resources in a reasonable and careful way is therefore essential. Further optimising our fossil fuel consumption allows us to limit our greenhouse gas emissions and participate in the fight against climate disruption.

The SIAAP is a significant energy consumer. It calls on self-generated energy and imported energy, like natural gas, fuel oil and electricity. To contribute, on its level, to combating climate disruption, it has two main drivers: reducing its overall energy consumption and increasing its share of renewable energy and notably self-generated energy, mainly biogas.

The SIAAP is also, in the context of its water treatment activities, a significant consumer of chemical reagents, which greatly contribute to greenhouse gases emissions. The control of their consumption is both an economic challenge and one in the fight against climate disruption.

In a complementary manner, the SIAAP wants to promote the concept of urban ecology by highlighting the local synergies aiming to promote the thermal potential of effluents and the fuel supply coming from biomass, such as the production of green electricity or even the injection of biogas into the natural gas network.

* Greenhouse gases



PROMOTING A RESTRAINED USE OF ENERGY AND REAGENTS FROM OUR INDUSTRIAL TOOL

Within a circular economy rationale, the SIAAP is seeking to optimise its energy and reagent consumption by developing recycling and energy recovery from by-products of its activity and, more widely, from its waste.

The treatment of waste water and energy cannot be separated:

- energy is essential to treat water;
- waste water represents a significant energy potential via the organic matter and heat that it contains.

Reagents are necessary in the treatment of water and sludge. However, even though they do not use scarce raw materials, they emit a great deal of greenhouse gases. Reagent savings therefore contribute directly to their reduction.

In order to measure the impact of its action, the SIAAP is implementing measuring and performance indicator monitoring tools.



**EMISSIONS
REDUCED BY
822 000
EQUIVALENT
CO₂ TONNES**
THANKS TO
THE OPTIMISATION OF
BIOGAS PRODUCTION THIS
MEANS AS MUCH FOSSIL
FUELS THAT HAVE NOT BEEN
CONSUMED SINCE 2008



DEVELOPING MULTI-STAKEHOLDER SYNERGIES

Over the few last years, the sharp increase in the frequency and intensity of bouts of rainfall, as well as the awareness of the need to preserve resources, have led to a marked variability in the load on the sanitation network and a simultaneous increase in the concentration of effluents.

Furthermore, in view of the growing pressure on the resource, there is a need to adapt the quality of the water used to the use made of it.

The SIAAP, via its sanitation activity, wants to invest in the development of synergies with local stakeholders, aiming to better manage the resource with a view to making the territory more resilient to climate disruption.

It is committed to the development of projects:

- to exchange knowledge and consult with local stakeholders;
- to manage run-off water by promoting the desaturating of the ground and encouraging infiltration on plots or the local reuse of water;
- to use quality water, adapted to industrial uses.

The long-term aim is to promote an integrated and controlled management of the water cycle and develop optimal and sustainable solutions to support the developments in the demand and use of water

ENCOURAGING TECHNOLOGICAL AND SOCIAL INNOVATION

Adapting to climate change also includes the development of technological and social innovations.

Forming and maintaining external partnerships with laboratories, research institutes and universities is a driver allowing SIAAP to favour the arrival of new innovative concepts. In particular, the authority promotes innovations in the recycling sector, reusing materials from sustainable and «smart» technologies.

Furthermore, it continues to invest in national and international exchanges via benchmarking in order to discover, promote and integrate the best practices in terms of sanitation.



ENCOURAGING THE ECO-RESPONSIBLE BEHAVIOUR OF SIAAP OFFICERS ON A DAILY BASIS

The SIAAP suggests to its officers that they participate in the application of the sustainable development strategy by providing them with the tools and the environment favourable to the emergence of actions encouraging its approach.

For example, the SIAAP is encouraging its employees to use public transport or clean transport methods (bikes and electric cars) and to swap their journeys for other solutions (conference calls, video-conferencing) when they are compatible with professional interests.

Similarly, an approach in favour of recycling waste was proposed over all of the SIAAP's facilities.



**74
ELECTRIC
VEHICLES
IN 2017**
OR NEARLY 20% OF THE SIAAP
FLEET (ZOÉ, GOUPIL, KANGOO)



AIM N°3: RESPONDING TO THE EXPECTATIONS OF WOMEN AND MEN FROM THE TERRITORY

The urban densification of the Paris area affects natural environments as well as the living conditions of their inhabitants. Their preservation and their improvement require the creation of partnerships and spaces encouraging dialogue and discussions, but also listening to, and the consideration of, the individual and collective needs of people and communities.

The citizen is at the heart of the SIAAP's sustainable development approach. As a responsible territory stakeholder, it is committed to

ensuring the health quality and living conditions of users, as well as ensuring the preservation of the health and safety of its officers in the context of the operation of its industrial tool. As a sanitation operator at the level of the Parisian watershed, the SIAAP raises awareness among, and involves, the territory stakeholders and residents in the challenges of the urban water cycle.

Sharing knowledge and experience with its counterparts is a part of the search for operational excellence and encourages technological, social and societal innovation.

DEVELOPING A CONCERTED SANITATION POLICY IN THE PARIS REGION

The cooperation between the different water stakeholders has proved vital in facing the challenge of the integrated management of the water cycle within a complex reality, with numerous stakeholders and in a developing regulatory environment.

Therefore, the SIAAP is contributing actively to a concerted sanitation policy, notably in favour of improving the selectivity of the networks; and greater control of run-off water, waste discharge and pollutants at the source.

INFORMING AND RAISING AWARENESS AMONG RESIDENTS AND TRAINING PROFESSIONALS

Guaranteeing a resilient and sustainable management of water resources requires continual improvement of professionals' skills. The SIAAP continues to affirm its leading training role in water and sanitation, via La Cité de l'Eau et de l'Assainissement (LCDEA). In this site, the SIAAP offers quality professional training to its officers and their counterparts.

The SIAAP must allow everyone to become aware of the challenges linked to water and to develop behaviour towards more environmentally responsible action,

by providing the keys to understanding and participating in the sustainable development of our planet. LCDEA therefore welcomes academics, residents and users.

The SIAAP is also committed to pursuing its efforts in terms of transparency by making its data accessible. Furthermore, it wants to widen its digital communication via its digital training platform (ecole.siaap.fr) and social networks to reach a wider audience.



2,231
OFFICERS TRAINED IN 2016
AT LA CITÉ DE L'EAU
ET DE L'ASSAINISSEMENT



2,300
PARISIEN STUDENTS
IN SCHOOL WORKSHOPS
EVERY YEAR



CONTRIBUTING TO THE IMPROVEMENT OF LIVING CONDITIONS

The densification of the Paris urban area is increasing the anthropic pressure on the aquatic and land environments.

At the same time, the relationship between the residents and water in the city is evolving. The quality of environments is progressing, water is richer in terms of biodiversity, and uses are diversifying: nautical, fishing and pedestrian activities along the waterside facilities, and bird watching.

The SIAAP is contributing towards making the Paris area more resilient via the development and control of health and environmental risks associated with its activity. It is invested in research on emergent pollution affecting the biology of the environments in the water cycle.



25
FLOATING
BARRIERS WITH
RUBBISH TRAPS
(1,500 TO 2,000 TONNES / YEAR)



GUARANTEEING HEALTH AND SAFETY AT WORK

It is a development measure for our safety culture which has been triggered. It relies on several stakeholders:

- all levels of responsibility play an essential role in developing our practices and contributing to our shared safety culture.
- the health, safety and working conditions committee.

The SIAAP details its safety policy in its annual programme on the prevention of professional risks and the improvement of working conditions devised according to a set of priorities and actions to undertake over the course of the year.

In order to promote well-being at work, the SIAAP aims to improve the prevention of occupational stress by involving the management in the management of teams, recognition and the meaning of work, etc.



ENCOURAGING THE DEVELOPMENT OF SKILLS AND THE QUALITY OF LIFE AT WORK, ALL THE WHILE PROMOTING EQUAL OPPORTUNITIES, EQUAL TREATMENT AND DIVERSITY

Encouraging an environment of trust and respect where social dialogue is present contributes to staff development and the improvement of the quality of life of officers.

The SIAAP aims to enable professional development, the first stage being that each officer finds their place within the company. To do this, it deploys a provisional management system of staff, jobs and skills.

The knowledge provided by this monitoring tool allows the SIAAP to develop skills, attract new talent, and develop partnerships with schools and universities to anticipate and respond to the needs of the future.

The SIAAP continues to deploy its inclusive and high performing disability policy in order to ensure personalised support with all of the key stakeholders.

The SIAAP is committing to promoting equal opportunities, equal treatment and diversity.

Moreover, in order to facilitate access to sporting and cultural practice, the SIAAP is offering events and activities, internally and in partnership with the social welfare committee. All of these actions contribute towards the well-being of staff, which makes the SIAAP an attractive employer.

→
THE 78 SIAAP CAREERS
NEXT PAGE

PUBLIC PROCUREMENT

Expert in engineering procurement • Public Purchasing manager • Public procurement officer • Public procurement manager.

GENERAL AFFAIRS

Archivist, Filing clerk • Resource Manager • Administrative assistant.

LEGAL AFFAIRS

Legal expert • Legal manager • Real estate and property officer.

COMMUNICATION - CULTURAL MEDIATION

Cultural mediation officer • Development and cultural action manager • Cultural production officer • Communication project manager • Webmaster • Communication assistant.

CREATION AND STEERING OF POLICIES

Functional director • Operational director • Managing director • Inspector general • Adviser • Associate of the chairman.

MAINTENANCE / LOGISTICS

Asset manager • Head of asset management • Logistics manager • Stock manager • Driver • Waste centre manager • Mechanic.

STUDIES AND EXPERTISE

Project manager • Expert, market researcher • Research/expertise or project manager.

THE 78 SIAAP CAREERS

OPERATIONS

Production manager • Operation coordinator • Operation officer • Sewage worker • Operations manager • Regulator • Operational method officer • Operator • Unloading officer.

FINANCE

Head of budgetary and financial management • Financial and budgetary management officer, or accountant • Financial controller.

HOSE - WORKING CONDITIONS

QSE Officer • Safety officer • HSQE Manager • Socio-educational assistant • Nurse • Prevention doctor • Health and working conditions manager • Ergonomist • Intervention officer.

MAINTENANCE

General maintenance officer • Electrical engineer/industrial electrician • Maintenance method officer • Electrical/industrial mechanic • Technician • Maintenance manager • Maintenance instrumentalist • Industrial computer scientist • Metal worker/Assembler • Boilermaker • Greaser.

LABORATORY

Laboratory manager • Laboratory technician • Sampler • Laboratory instrumentalist.

INFORMATION SYSTEM

Functional application administrator • Information system and ICT Manager • System and ICT network Administrator • Information system operation officer.

HUMAN RESOURCES

Human Resource Manager • Human Resources Officer.

WORKS

Works manager • Internal prime contracting officer • Project ownership officer • Designer/Draughtsman.

PROMOTING INTERNATIONAL COOPERATION

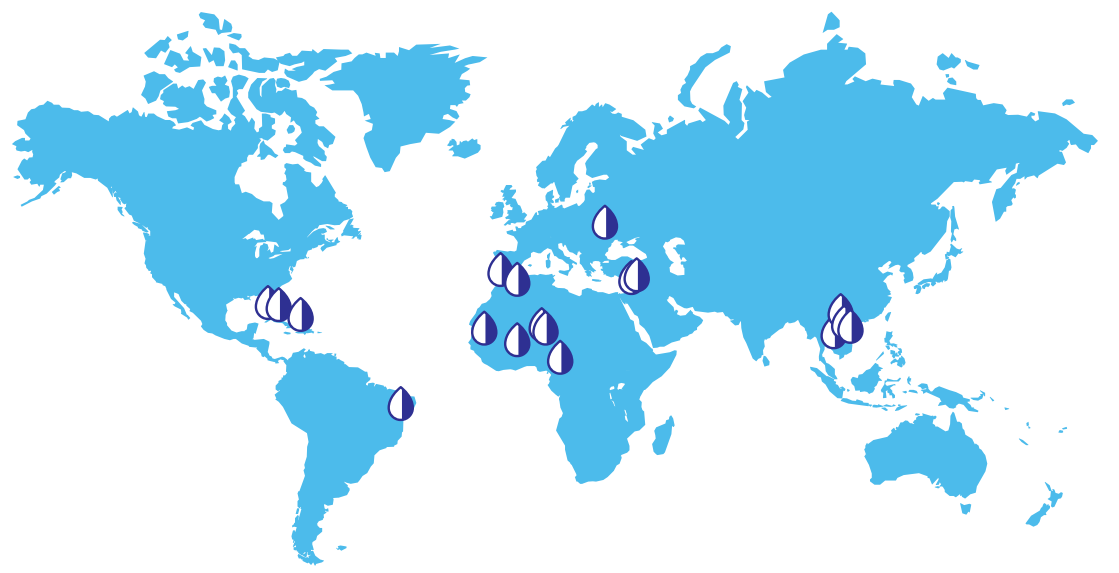
The SIAAP traditionally participates in international initiatives aiming to ensure sustainable management of water resources and encourage access for all to water and sanitation. This cooperation includes operational initiatives, awareness raising, the implementation of South-South cooperation and the sharing of knowledge in developing countries.

The SIAAP is also renowned internationally as an exemplary stakeholder in the water sector, notably during its participations in global events like COP, the World Water Forum or the GWOPA.

It participates in the sharing of experience with megalopolises and large urban areas seeking to develop best practice and transferable innovations.

The SIAAP also establishes institutional relationships internationally, such as assistance establishing sanitation master plans with the assistance of other stakeholders from emerging countries and even via training and technical discussions between the plants and laboratories.

24 PROJECTS IN 16 COUNTRIES



CONCLUSION

THREE ACTION PRINCIPLES TO SHARE A COLLECTIVE APPROACH

1. A PARTICIPATIVE APPROACH FOR ITS CREATION

→ Bringing together all of the partners, elected representatives, officers and experts to create our sustainable development strategy and our Agenda 21.

→ Strengthening the approach internally and with SIAAP stakeholders, notably with environmental protection associations and urban water cycle management partners.

2. INVOLVING EVERYONE, STRUCTURED VIA AGENDA 21

After nine years deployment, the SIAAP wants to reaffirm its commitment in favour of a strong and structuring sustainable development policy. A real roadmap for its strategy, Agenda 21 from the SIAAP, divided into annual action plans, is an updating of its involvement in the sustainable development of the Paris area. This provision ensures the monitoring and longevity of collective and individual environmentally friendly actions according to the urban, regulatory and societal context.

3. A REGULAR ASSESSMENT OF THE RESULTS AND THE STRATEGY

→ Measuring the added value of the strategy implemented and its effect over the entire territory, relying on the shared indicators, linked to the results obtained.

→ Conducting regular assessments of the strategy to take into account the results and its developments and implementation.

→ Continuing to refine the assessment of the strategy and the one deployed to assess the annual action plans of Agenda 21 by drawing out global sustainable development indicators.



SIAAP
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AND CREATION: SUSTAINABLE
DEVELOPMENT MISSION HEAD

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