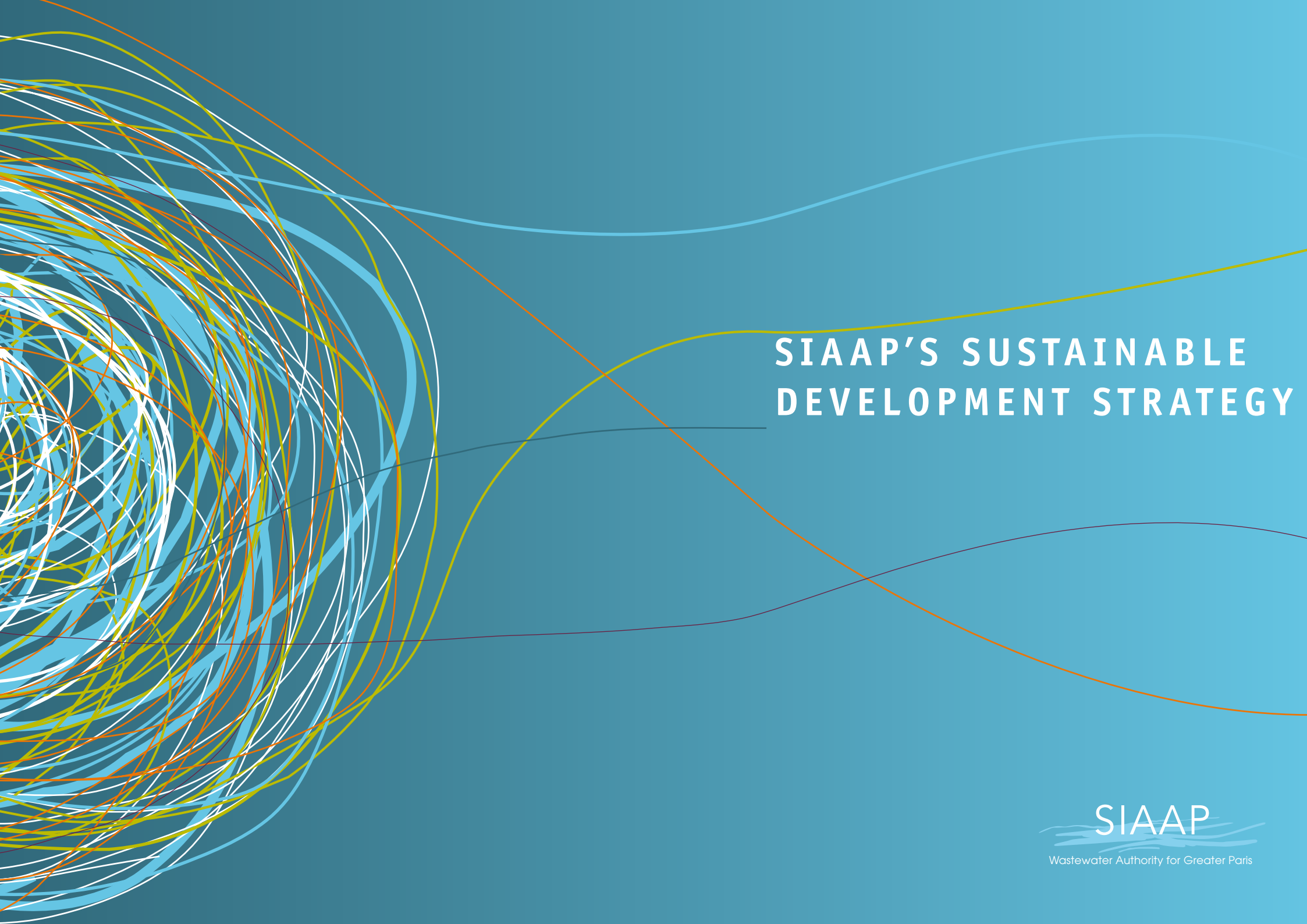
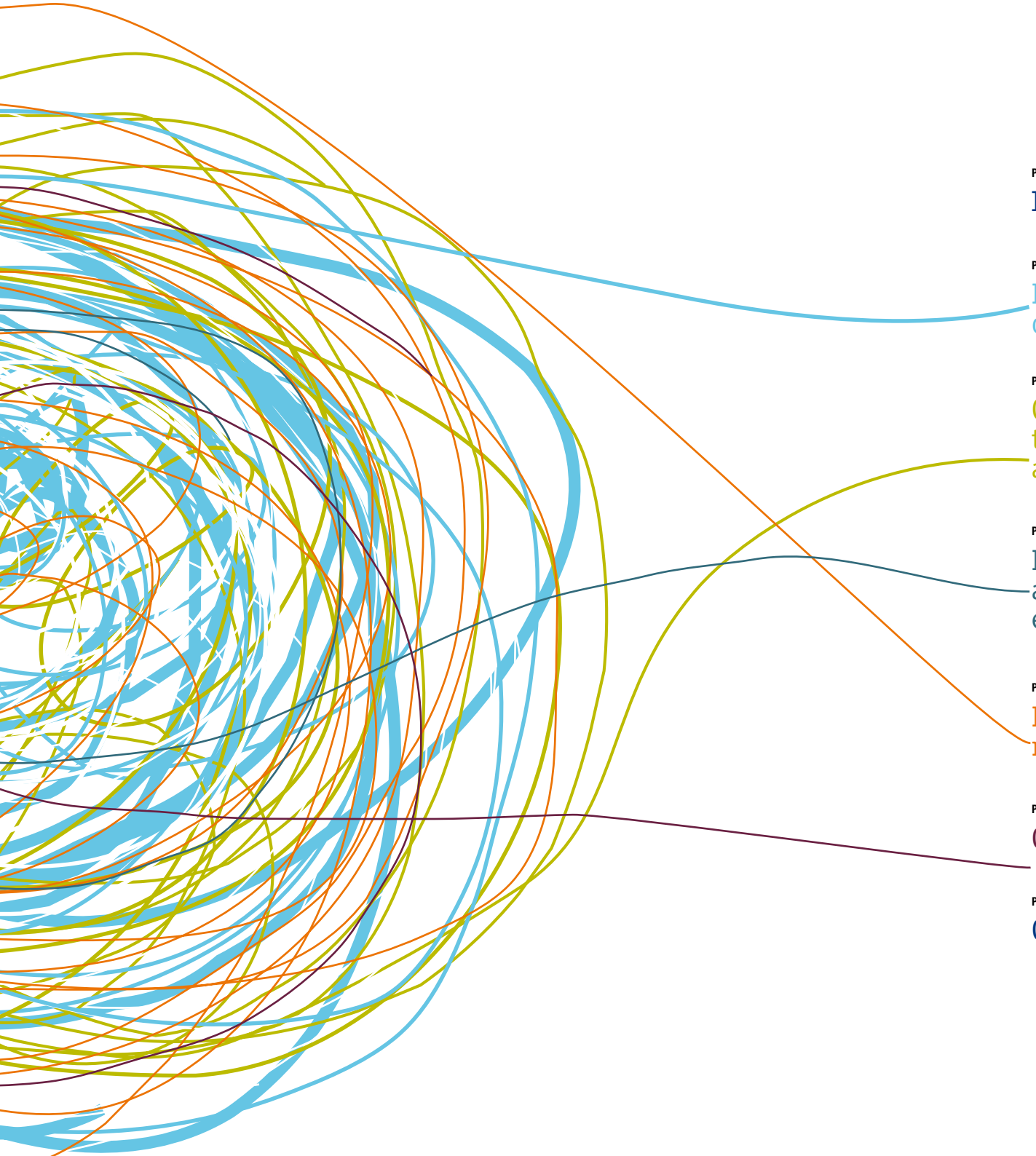


SIAAP'S SUSTAINABLE DEVELOPMENT STRATEGY

SIAAP

Wastewater Authority for Greater Paris



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SIAAP has contributed significantly to improving the quality of the Seine River as it passes through the Paris region. The improvement in water quality has been achieved thanks to SIAAP's concerted commitment to taking concrete steps to protect the natural environment and develop biodiversity.

The urban, demographic and economic growth of the Paris region recognized by all political and institutional stakeholders will necessarily have consequences for the environment. It is for this reason that sustainable development must be seen as the only way forward for the country's capital and its region. With this as the goal, SIAAP's role will be to safeguard the river for future generations by guaranteeing to protect its water along with that of the Channel and the North Sea. It will achieve this by controlling the region's discharge of pollutants into the Seine.

SIAAP will contribute to the city's sustainable development by acting as an eco-responsible industrial public utility. This means, perform its task of treating wastewater while making sure its industrial facilities have the smallest ecological footprint possible. Indeed, designing and operating plants and networks that consume as little energy and reagents as possible form the core of SIAAP's business.

An eco-responsible public utility must also ensure its employees' health, and protect and develop the biodiversity of aquatic and land environments. SIAAP is a state-owned industrial authority with a focus on being a good eco-citizen. It strives to be exemplary in its relationship with the environment as should all eco-citizens, while remaining attentive to employee issues within the company and to developing solidarity through decentralized cooperation.

Finally, the issue of future financial costs arising from investment and operation budgets cannot be overlooked in this sustainable development approach.

With the implementation of the Agenda 21 Commission, SIAAP's Board of Directors has reasserted its commitment to continuing its action in favor of this state-owned, industrial and good citizen utility.

Reflecting this aim, SIAAP's sustainable development policy is based on five main goals:

Participate in the sustainable development of the Paris region;

Contribute to improving the living environment and health;

Remain attuned to social and societal expectations;

Protect natural resources; and

Combat climate change.

Participate in the sustainable development of the Paris region

The Paris region is destined to experience considerable growth in the coming years.
Population growth and **urban densification in SIAAP's area will result in greater anthropogenic[1] pressure on the Seine.**
The need to improve the water quality of the Seine River, from its estuary to the North Sea is therefore a major objective for the sustainable development of the Paris region. SIAAP, a leading stakeholder in wastewater treatment in the Ile-de-France (Greater Paris) region will contribute to achieving this goal.

[1] **Anthropogenic:** due to the existence and presence of humans.

STRATEGIC OBJECTIVES	WHY?	HOW?	
Boost local synergies	Operating downstream in the collection system, SIAAP is not able to act alone in taking up the challenges of the future. Our collective success will depend on the cooperation it is able to build with its partners: *départements*, inter-municipal authorities, towns and industry.		Environment Economy Society
× **Promote surface runoff management at the source in cooperation with local authorities upstream**	Urban growth results in increased hard ground cover and so to greater quantities of surface runoff and its attendant pollution which SIAAP will have to treat. SIAAP is working closely with local communities to make surface runoff management an integral part of all building permits.	• Draw up agreements with local communities for the coordinated implementation of provisions defining the acceptable quantity of surface runoff water.	Environment Economy Society
× **Manage waste discharge and pollutants, especially the most hazardous**	To achieve the quality stipulated in the water framework directive, it is necessary to manage the input of hazardous substances at the source, that is, in industrial facilities and in the home. Only coordinated work by all the various local communities targeting all wastewater system users will enable us to run awareness campaigns for managing this type of waste.	• Jointly develop a policy of authorizations for industrial facilities to discharge waste into the wastewater system. • Run user awareness campaigns. • Promote the selective collection of hazardous substances.	Environment Economy Society
Inform and consult citizens	All SIAAP's infrastructure projects involve consultation with the population neighboring its plants. The project to upgrade the Seine Aval site is typical of the importance given to informing and involving the local population.	• For the project to upgrade Seine Aval, SIAAP was able to assess the importance of consulting the local population. All future projects must learn from this experience. Consulting the local population and partners needs to be ongoing for Seine Aval, and other new projects, such as, Clichy must use the approach as the model to adopt.	Economy Society
Ensure sustainable and equitable wastewater finance	SIAAP will finance its works program partially through loans. However, the weight of its debt must not be allowed to exceed certain levels and remain acceptable for future generations. The same applies to SIAAP's operating expenses. Many stakeholders have their say in the price of water and the increases that will necessarily occur in the years ahead. It is essential to ensure a degree of consultation between these stakeholders to obtain a global vision of how prices will evolve.		Economy Society

Contribute to improving the living environment and health

Risk prevention is one of the main avenues for ensuring an environment that is safe for SIAAP employees and the local population.

Adapting work tools and systems to employees and ensuring their safety are real challenges.
This implies consultation and training to match today's changing technology.
Contributing to the living environment also involves making sure that our facilities are better integrated into the environmental context.

SIAAP also works abroad in the area of the living environment and health through its International Relations Mission.

STRATEGIC OBJECTIVES	WHY?	HOW?	
× **Guarantee safety and health**	SIAAP's activity must not cause any accidents or illnesses. The plants and equipment must be the safest and most reliable possible. The working methods must incorporate the highest level of respect for the safety of our employees and the environment.	• Work on developing a safety culture at SIAAP. • Continue to identify, assess and manage workplace risks.	Society
× **Work toward zero nuisances from SIAAP's activity**	SIAAP has rolled out major programs to manage the odor, noise and visual impact of its plants on the living environment of the local population. Even so, issues remain around some of SIAAP's industrial facilities and require reviews of the current status of the living environment.	• Acquire efficient measurement tools and tracking systems to make management of these issues a priority in the operation of these structures and the network. • Take into account the impact on the natural and living environment in all SIAAP's project specifications.	Environment Economy Society
× **Assess the health risks from SIAAP's activity**	SIAAP is a responsible organization. It is working on expanding the knowledge needed to provide clear information about risks and prevention systems.	• Additional research on health risks at plants and in the wider environment.	Society Environment
× **Enable safe and innovative management of treatment by-products**	Water treatment results in the production of waste, grease and sludge. Their disposal, in accordance with regulations, is a major challenge for SIAAP. The organization focuses on identifying innovative systems based on the latest technological progress to ensure safe disposal with the best possible outcome for the environment.	• Develop systems for the manufacture of products with quality levels guaranteed and recognized by specific certifications. • Promote material and energy recovery.	Environment Society
× **Contribute to improving knowledge about emerging forms of pollution in the water cycle**	SIAAP is the last link in the chain and receives these various emerging types of pollution in its plants. Management at the source of these pollutants is essential if SIAAP is to fulfill its mission. There are numerous research programs on emerging pollutants derived from man-made molecules that are suspected of having biological effects in the environment (determination of the sex of species, increasing antibiotic resistance, etc.). SIAAP's teams contribute to this research, as some of these molecules transit through SIAAP's wastewater networks.	• Develop knowledge about the diffuse and dispersed presence of hazardous substances. • Research programs to be developed.	Environment
× **Continue decentralized cooperation**	SIAAP is involved in decentralized cooperation actions.	• SIAAP is involved in three types of actions: contribution of logistics and equipment; technical expertise and support for contracting owners; and employee training for wastewater services.	Environment Economy Society

Be a public service attuned to social and societal expectations

Sustainable development also entails meeting social and societal expectations, whether external (users, local population and communities, and partners), or internal (employees).
SIAAP must make sure everyone is clearly aware of the challenges facing our planet and able to make the necessary behavioral changes toward becoming better eco-citizen. It must also provide the keys to understanding the challenges and aims of sustainable development.

SIAAP, a public entity that issues contracts, is also an economic stakeholder. In this respect, it contributes to creating employment at its construction sites. SIAAP is also a direct employer that must react, in a context of rapid change, to its employees' expectations, especially with regard to training and adapting its industrial plant through consultation between management and employees.

STRATEGIC OBJECTIVES	WHY?	HOW?	
× **Boost awareness and work with the population to protect human health and the environment**	The responsibility of every individual is essential in managing pollution. This is why SIAAP, through the knowledge it has acquired about environmental issues and sustainable development, participates in educating the younger generations. Educating about biodiversity is also important, as the need to maintain biodiversity must be explained if it is to be successfully protected.	•Increase the number of comprehensive sustainable development education programs in schools. •Train the teachers involved in these education programs by developing "water classes" with other institutions, such as Water Authorities. •Develop the "Downstream Seine Environment House" into a learning center for the environment.	Society Environment Society Environment Economy
× **Inform the local population and users of the wastewater challenges we face and the accompanying major projects**	SIAAP is involved in large-scale construction projects and is committed to informing users and the local population so they understand the issues surrounding the projects it manages.	•The public discussion about the upgrade of Seine Aval revealed the importance of consultation that must be maintained for the duration of the works program.. •Organize site visits.	 Society
× **Promote local employment**	SIAAP is a substantial contractor. The size of its construction projects creates unique opportunities to generate local employment and to provide the necessary upstream training.	•The recent nitrification project, the upgrade of Seine Aval (UWWTD) and the Valenton plant's compliance upgrade are all examples where local employment opportunities have been successfully created.	Society Economy
× **Foster employee development**	Today, the rollout of new water treatment technology and changing regulations demand constant upskilling for employees if they are to work effectively. This is based on the training needs expressed by employees, and assessing and utilizing employee's skill sets.	•People at the heart of the process; develop, assess and make the best use each person's skills. •Maintain the objective of five days' training per year for each employee. •Implement and promote dialogue between management and the employees.	 Society
× **Involve employees in the early stages of projects to improve ergonomics, working conditions and safety**	Who better than the employees to define the needs or requirements to be included in the specifications for new facilities SIAAP needs to install to improve ergonomics, working conditions and safety?	•Continue to involve employees in the early stages when authoring specifications and developing contracts as was done for Grésillons 2 and the upgrade for Seine Aval.	Society

Protect ecosystems and natural resources

Protecting natural resources means ensuring their sustainable use and conserving biodiversity.
SIAAP's action to improve the quality of the Seine and Marne rivers is its prime contribution to improving biodiversity, and especially the development of fish life. However, the preservation of biodiversity also involves protecting and developing the natural land heritage. SIAAP's plants are located on the banks of rivers and contribute to France's regional plans for ecological continuity. These sites are home to diverse habitats, such as riverside vegetation[2], forest habitats, wetlands, spawning grounds, prairies and even former gravel pits and refuge areas in the center of urban areas. These spaces are important living areas because of the presence of water and plants. These environments are of major importance to fauna and flora; they operate as a network and their conservation makes it easier for wildlife to travel.
At another level, **SIAAP, as a public sector buyer, is able to significantly influence production and consumption habits.** This influence can include the impact of choices made upstream (suppliers, etc.) and downstream (employees, operators, etc.); the concept of life cycle taken into account when selecting chemical products, equipment and treatment systems; and sustainable development included in the weighting criteria for public contracts.

[2] **Riverside vegetation** includes all trees, **shrubs** and **grasses** growing along the banks of a watercourse

STRATEGIC OBJECTIVES	WHY?	HOW?	
× **Develop and ensure optimum use of its industrial facilities to improve the quality of the Seine and Marne rivers**	SIAAP's prime task is to treat the region's wastewater to contribute to achieving the quality stated in the water framework directive. This task can be achieved through the optimum operation of facilities adapted to the Seine's capacity to accept more or less significant quantities of pollutants, in particular depending on the river's flow rate.	Develop and implement a quality prediction method for the Seine in order to optimize the treatment quality of the water produced by SIAAP.	Environment Economy
× **Manage flows and support activities economically, ecologically and responsibly**	Plant operation generates significant flows of water and waste, so it is essential to adopt eco-responsible management for these flows in order to protect the environment and ensure the best possible economic outcome. The support activities involve the use of consumables for which eco-responsible approaches can be developed. SIAAP is a significant contractor and as such has considerable leverage to develop sustainable public purchasing.	• Introduce sustainable flow management clauses in our specifications. • Promote the use of consumables that are less harmful to the environment. • Include environmental and social clauses in public contracts.	Environment
× **Recover treatment byproducts to replace natural raw materials**	Wastewater treatment yields considerable raw material resources. The sand, ash and sludge from the treatment processes can be used to produce building materials to replace primary raw materials.	• Use treatment sludge in cement works, sand for backfill, etc. • Develop research.	Environment
× **Boost the eco-design component in projects and construction**	Facility construction requires a large quantity of raw material. To reduce its ecological footprint, SIAAP must increase in its projects the use of materials recovered on-site or recovered from off-site deconstruction projects, or when this is not possible, preference should always be given to materials that are safe for human health and the environment.	• Use renewable materials. • Give preference to recovering material from deconstruction sites. • Use finishing material that is safe for human health and the environment.	Environment Society
× **Develop knowledge and improve the biodiversity of land and aquatic environments impacted by SIAAP's activity or present at its various sites**	The goal in this instance is to develop opportunities to improve and protect the habitat of flora and fauna, even common species. This means preserving existing habitats that are home to rare and/or protected species, and creating new habitats to avoid the loss of biodiversity. It is necessary to assess the specific diversity, heritage interest and effectiveness of the protection measures implemented to gain a more detailed understanding of the territory of SIAAP's sites and their potential. This ecological supervision of the flora and fauna at SIAAP's sites would gain from being extended to include the neighboring environment in order to determine to what extent SIAAP's facilities might contribute locally to saving, restoring or developing the local biodiversity and habitats.	• Land and aquatic flora and fauna inventories. • Introduction of biodiversity quality and quantity indicators. • Management plan for land and aquatic habitats and green belts. • Factor biodiversity into all development projects. • Protect biodiversity "reservoirs" and recreate ecological continuity.	Environment

Combat climate change

Fossil fuel reserves are limited and are continuing to be exhausted, but their consumption is still increasing.
We need to take urgent steps to use them more rationally. **Optimizing our consumption of fossil fuels will limit our greenhouse gas emissions and help combat climate change.**
SIAAP is major energy consumer and uses both energy it generates at its sites and imported resources.
In this area, SIAAP has two main levers it can use to help combat climate change: reduce its overall energy consumption and increase the share of energy its produces at its sites.
Similarly, the reagents used to treat the water contribute to greenhouse gas emissions. Managing the consumption of these reagents is another way of helping combat climate change.
SIAAP would also like to promote the concept of urban ecology through local synergies aimed at recovering the thermal potential in wastewater or supplying fuel of non-fossil origin to local electricity generation plants.

STRATEGIC OBJECTIVES	WHY?	HOW?	
× **Seek the lowest possible energy consumption when designing and operating plants**	It is impossible to separate wastewater treatment from energy: •The energy is needed to treat the water; •The wastewater represents a significant energy resource in the form of the organic matter and heat it contains. The aim is, on the one hand, to design and operate plants as best possible to reduce their energy consumption and, on the other, to recover as best possible the energy potential. In this way, the overall consumption of primary energy can be reduced while producing energy from renewable sources, especially from the anaerobic digestion of the sludge produced by the wastewater treatment process. Reagents are needed to treat both the wastewater and the sludge. While they do not include any rare raw materials, they are responsible for the emission of substantial quantities of greenhouse gases. Any saving in the quantity of reagents used will therefore have a positive effect on emissions.	•Heat recovery from wastewater. •Hydraulic power recovery from drops in water altitude. •Treatment sludge used as fertilizer or for heat recovery in incineration plants. •Systematically apply a Bilan Carbone® (carbon assessment) in project design phases.	Environment Economy
× **Develop energy savings in SIAAP's support activities**			Environment Economy
× **Recover the agricultural or energy potential from treatment byproducts to replace products derived from carbon fossil sources**			Environment Economy
× **Design and operate facilities in a manner aimed at reducing chemical reagent consumption**			Environment Economy
× **Promote an urban ecology with a focus on energy recovery by leveraging local synergies**	The raw or treated water is a source of heat the recovery of which should be considered in the light of any local opportunities.	•The future Seine Morée plant with a heat exchanger supplying a district heating system for low-cost housing.	Environment Economy Society

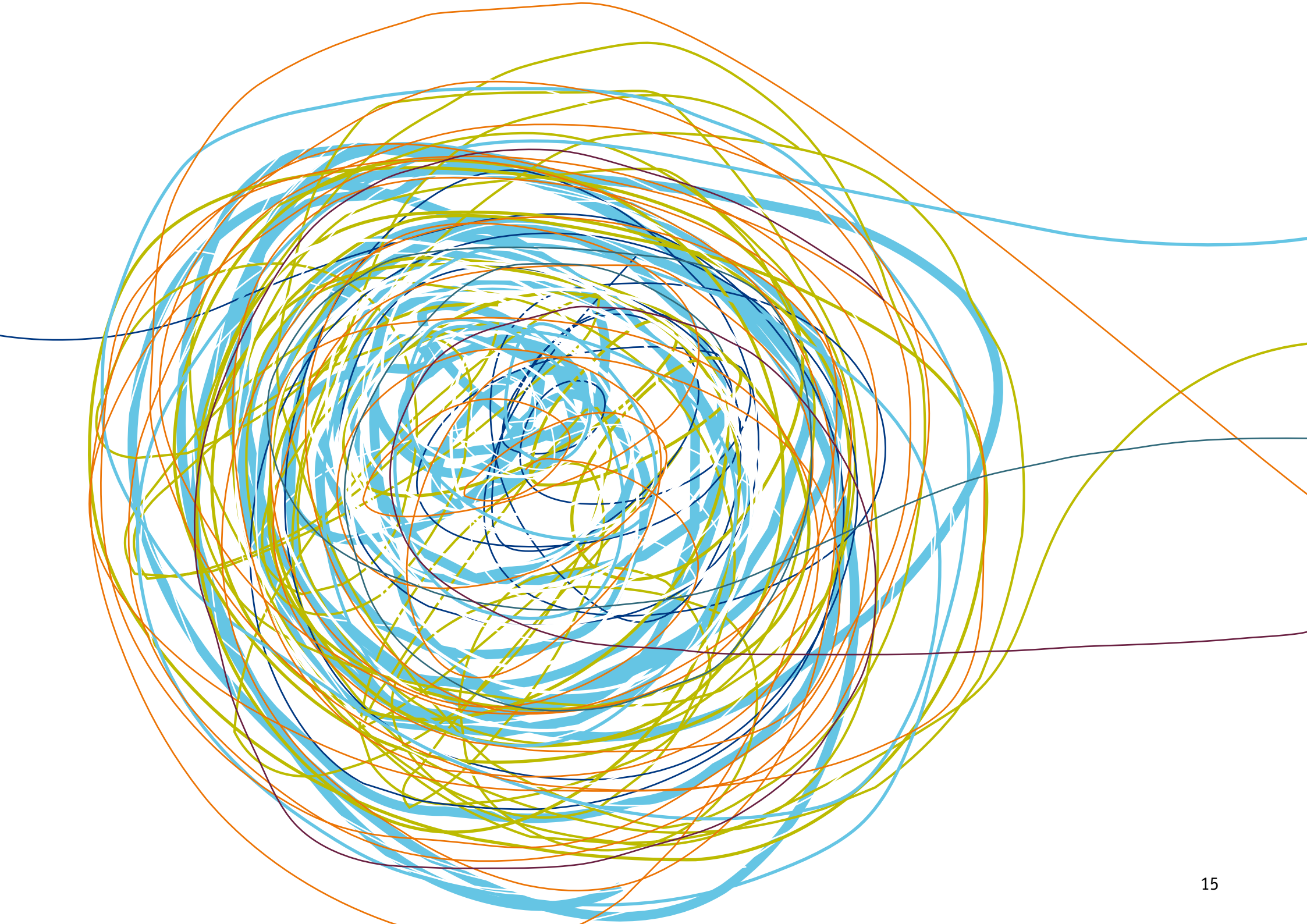
A concrete and engaging approach

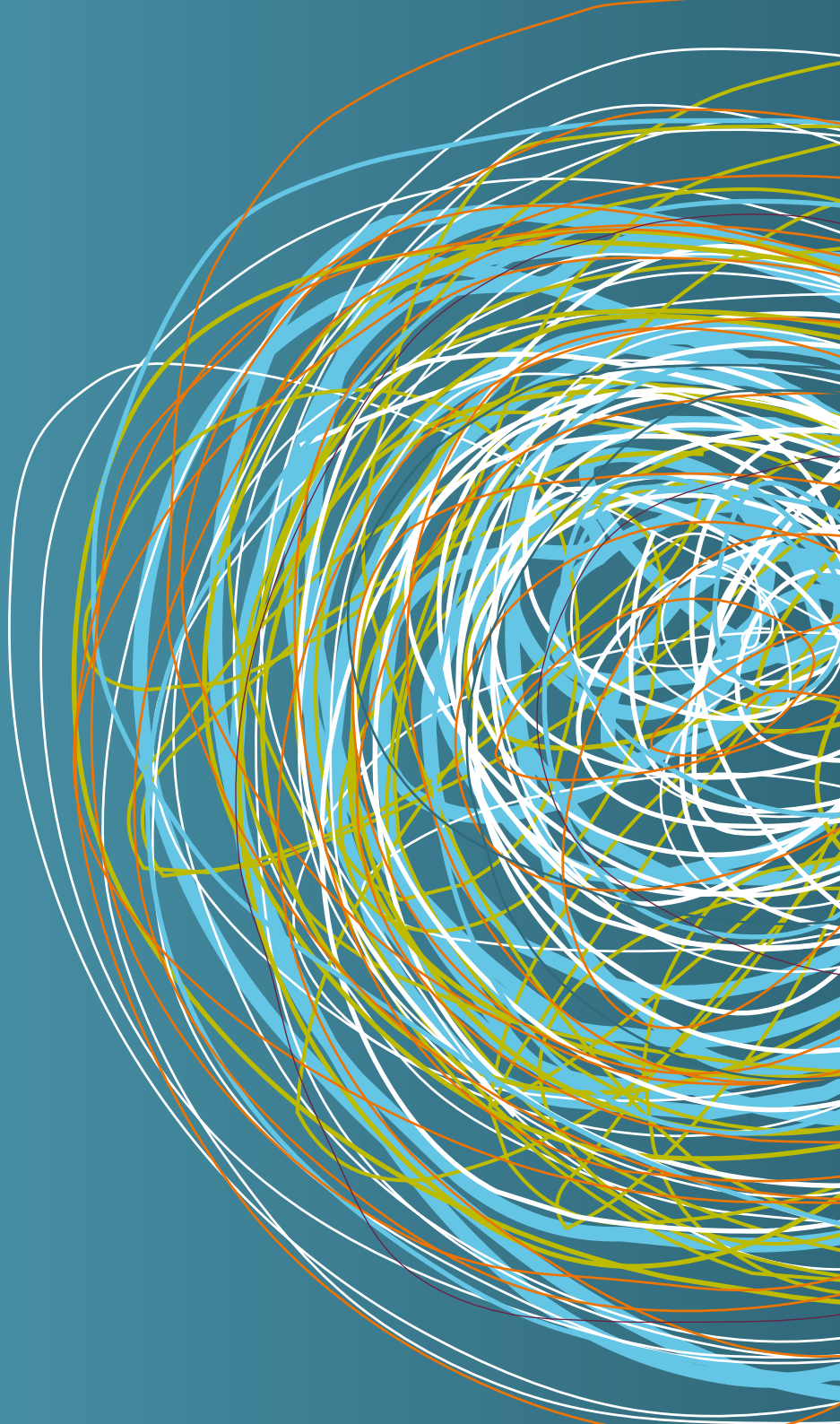
The three principles of action to ensure the approach is shared by all:

- **A participative approach for its development**
  Bring together all the stakeholders: partners, elected representatives, employees and experts to compile the Agenda 21 approach.
  Test the approach internally and externally, in particular with environmental protection associations.

- **Across-the-board involvement structured by the Agenda 21 approach**
  Define the annual Agenda 21 actions based on SIAAP's sustainable development strategy in order then to set out the policy directions and everyday activities that will promote eco-responsible behavior at the individual and collective levels.

- **Regular assessment of the results and strategy**
  Measure the added value of the strategy implemented and its impact across the entire region, using global indicators tied to the results obtained.
  Perform regular strategy assessments to report on the approach's implementation, results and changes.
  It is necessary to implement a strategy assessment and to refine the strategy rolled out in order to assess the annual Agenda 21 action plans, while in particular highlighting global sustainable development indicators.





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SIAAP

Wastewater Authority for Greater Paris