

Dear Raju e Susan,

I apologize for the wait.

Here is the information:

- 1. A description of which project participants will serve as a source of scientific knowledge, such as CEIVAP or AGEVAP (I would recommend that the relevant organization be included as a cooperating organization in the global grant application).**

CEIVAP Description:

1. Created by Federal Decree No. 1,842, of March 22, 1996, CEIVAP, or Committee for the Integration of the Paraíba do Sul River Basin, had its area of coverage and nomenclature changed by Federal Decree No. 6,591, of October 1, 2008. From then on, CEIVAP was renamed the Paraíba do Sul River Basin Integration Committee, with 4 municipalities included in the basin, thus adding up to 184 cities in the states of Minas Gerais, Rio de Janeiro and São Paulo;
2. The Committee was created with the aim of promoting, in the context of water resources management, the technical and economic-financial feasibility of investment programs and the consolidation of urban and regional structuring policies, aiming at the sustainable development of the Paraíba do Sul river basin, and interstate articulation, ensuring that regional study initiatives, projects, programmes and action plans are complementary, integrated and in line with the guidelines and priorities established for the Basin;
3. Assignments:
 1. Approve the Water Resources Plan for the Paraíba do Sul Basin and monitor its execution;
 2. Monitor and direct the actions of AGEVAP, which is the legal figure and the executive arm of CEIVAP, among others.
1. The Program of Actions to be executed by CEIVAP, a management instrument of the Integrated Water Resources Plan of the Paraíba do Sul River Basin (PIRH-PS), is composed of 6 (six) Agendas that comprise the macro themes: (1) Water Resources Management Agenda; (2) Water Resources Agenda; (3) Urban and Rural Sanitation Agenda; (4) Green Infrastructure Agenda; (5) Knowledge Production Agenda and (6) Communication and Environmental Education Agenda;
2. Within the scope of the "Agendas", the CEIVAP Watersheds Working Group was created in 2019, the Watersheds Program, which aims to promote water security in public supply sources of the Paraíba do Sul river basin through the increase of environmental services in micro watersheds. The Program is in force until 2035, being implemented in cycles of 5 years each. Each cycle includes the selection of target micro-basins; preparation of Participatory Projects for the Enhancement of Environmental Services in the Target Watershed (PRISMAs) and execution of interventions-works and recovery and conservation services-in these micro-basins;
3. Area of Expertise:
 1. The hydrographic basin of the Paraíba do Sul River has more than 6,000 km² of extension, covering the area of the states of SP, MG and RJ. Recovering and conserving the existing springs in this basin is a great technical, social and economic challenge;
 2. To this end, the Watersheds Program has a methodology for defining priority micro-basins developed by the Secretariat of the Watersheds Program in partnership with the Hydrographic Basin Committees of the tributaries of the Paraíba do Sul River (CBHs);
 3. For the 1st cycle of the Watersheds Program (2020 to 2024), 7 (seven) microbasins were selected, as shown in the map below.

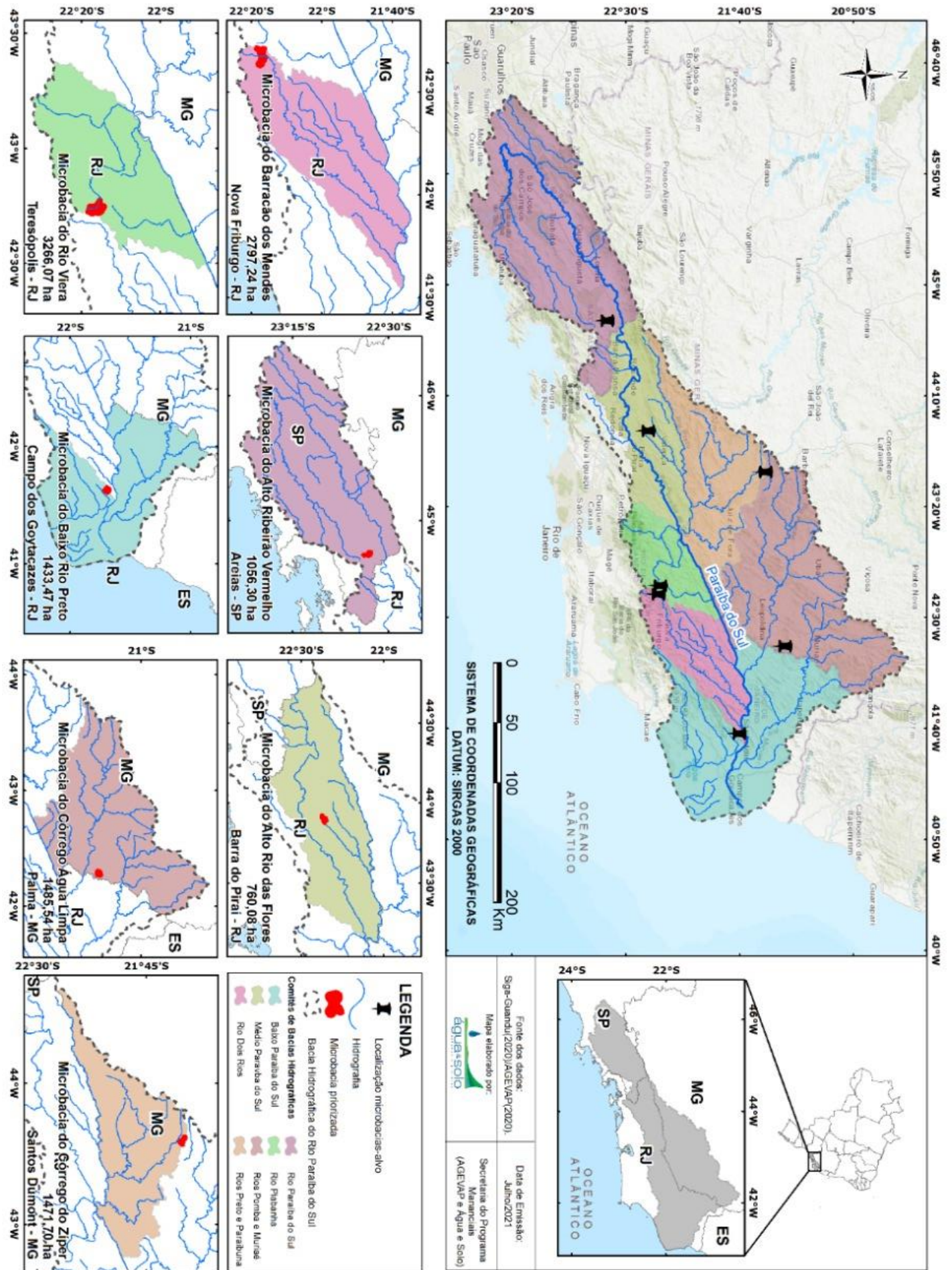


Figure 1: Paraíba do Sul River Basin and Tributary River Microbasins. Source: CEIVAP

1. Actors of the Springs Program:

1. The "Program" is made up of people who, acting collaboratively, promote joint actions for conservation and recovery in the watersheds contemplated by the Watersheds Program. Among these people:
 1. The Secretariat of the Watersheds Program: Formed by AGEVAP and supported by companies hired through public bidding. Its function is to plan and coordinate the implementation of the Watersheds Program, preparing the PRISMAs;
 2. The Collective of Landowners: Collective of landowners, squatter families, rural producers, families settled by agrarian reform, traditional communities, residents, vacationers, etc.; that constitute the community of the microbasin that acts voluntarily in the preparation of the PRISMAs, in the monitoring of the execution of the interventions, evaluation of the results and in the engagement for the continuity of the actions;
 3. The partners and supporters of the Project: which bring together the formal partners of the local implementation of the Watersheds Program such as the Technical Assistance and Rural Extension agencies, Universities and teaching and research centers, NGOs, private companies, etc. Which directly support the implementation of the Watersheds Program in the microbasin.

1. Prisms:

1. The Participatory Projects for the Enhancement of Environmental Services in the PRISMAs Target Watershed are the main instruments of CEIVAP's Watersheds Program. They consist of projects at the executive level, prepared in a participatory manner with the community, for diagnosis and prioritization of interventions in the contemplated watersheds.
2. The PRISMAs contemplate interventions – works and services to be carried out in the target micro-basin – such as:

Water monitoring



Isolation of areas for planting



Figure 2: Example of Monitoring Campaign. Source: CEIVAP and AGEVAP.



Tabela 14 – Resumo das vazões obtidas durante a 1ª, 2ª, 3ª, 4ª, 5ª, 6ª, 7ª, 8ª, 9ª, 10ª, 11ª e 12ª campanhas de monitoramento quantitativo de Barracão dos Mendes. Fonte – Azevedo Consultoria Ambiental e Energética LTDA (2023).

| Pontos de Coleta | Vazões Calculadas (m³/s) – Campanhas de Monitoramento | | | | | | | | | | | |
|--|---|------------------|--------------|--------------|--------------|--------------|--------------|---------------|-----------------|----------------|-----------------|-----------------|
| | Janeiro (2023) | Fevereiro (2023) | Março (2023) | Abril (2023) | Mai (2023) | Junho (2023) | Julho (2023) | Agosto (2023) | Setembro (2023) | Outubro (2023) | Novembro (2023) | Dezembro (2023) |
| P-01 – Jusante da Associação Serra Nova | 0,058 | 0,041 | 0,050 | 0,087 | 0,113 | 0,022 | 0,037 | 0,015 | 0,014 | 0,029 | 0,004 | 0,002 |
| P-02 – Jusante da Associação Serra Velha | 0,035 | 0,014 | 0,085 | 0,063 | 0,033 | 0,018 | 0,010 | 0,007 | 0,005 | 0,009 | 0,013 | 0,006 |
| P-03 – Jusante da comunidade de Florândia da Serra | 0,050 | 0,014 | 0,038 | 0,038* | 0,052* | 0,054 | 0,045 | 0,014 | 0,012 | 0,009 | 0,010 | 0,021 |
| P-04 – Ponto de Referência – Área focal 1 | 0,026 | Não previsto | Não previsto | 0,016 | Não previsto | Não previsto | 0,005 | Não previsto | Não previsto | 0,004 | Não previsto | Não previsto |
| P-05 – Encontro dos córregos Córrego das Serras e Rio Grande | 0,326 | Não previsto | Não previsto | Não previsto | Não previsto | Não previsto | 0,101 | Não previsto | Não previsto | Não previsto | Não previsto | Não previsto |
| P-06 – Jusante do Alto Barracão dos Mendes 1 | 0,135 | 0,087 | 0,068 | 0,103 | 0,092 | 0,019 | 0,064 | 0,022 | 0,034 | 0,020 | 0,044 | 0,033 |
| P-07 – Jusante do Alto Barracão dos Mendes 2 | 0,381 | 0,190 | 0,154 | 0,047 | 0,107 | 0,049 | 0,053 | 0,029 | 0,034 | 0,014 | 0,053 | 0,031 |
| P-08 – Exutório da Área Focal 2 | 0,545 | Não previsto | Não previsto | 0,230 | Não previsto | Não previsto | 0,144 | Não previsto | Não previsto | 0,103 | Não previsto | Não previsto |
| P-09 – Ponto de Referência – Área Focal 2 | Não previsto | Não previsto | Não previsto | Não previsto | Não previsto | Não previsto | 0,014 | Não previsto | Não previsto | Não previsto | Não previsto | Não previsto |

*Utilizada a metodologia de Medição da Vazão em Rios pelo Método do Flutuador.

Figure 3: Quantitative Monitoring (Flow) – Barracão dos Mendes Watershed – Year 1 – 11th month/2023.

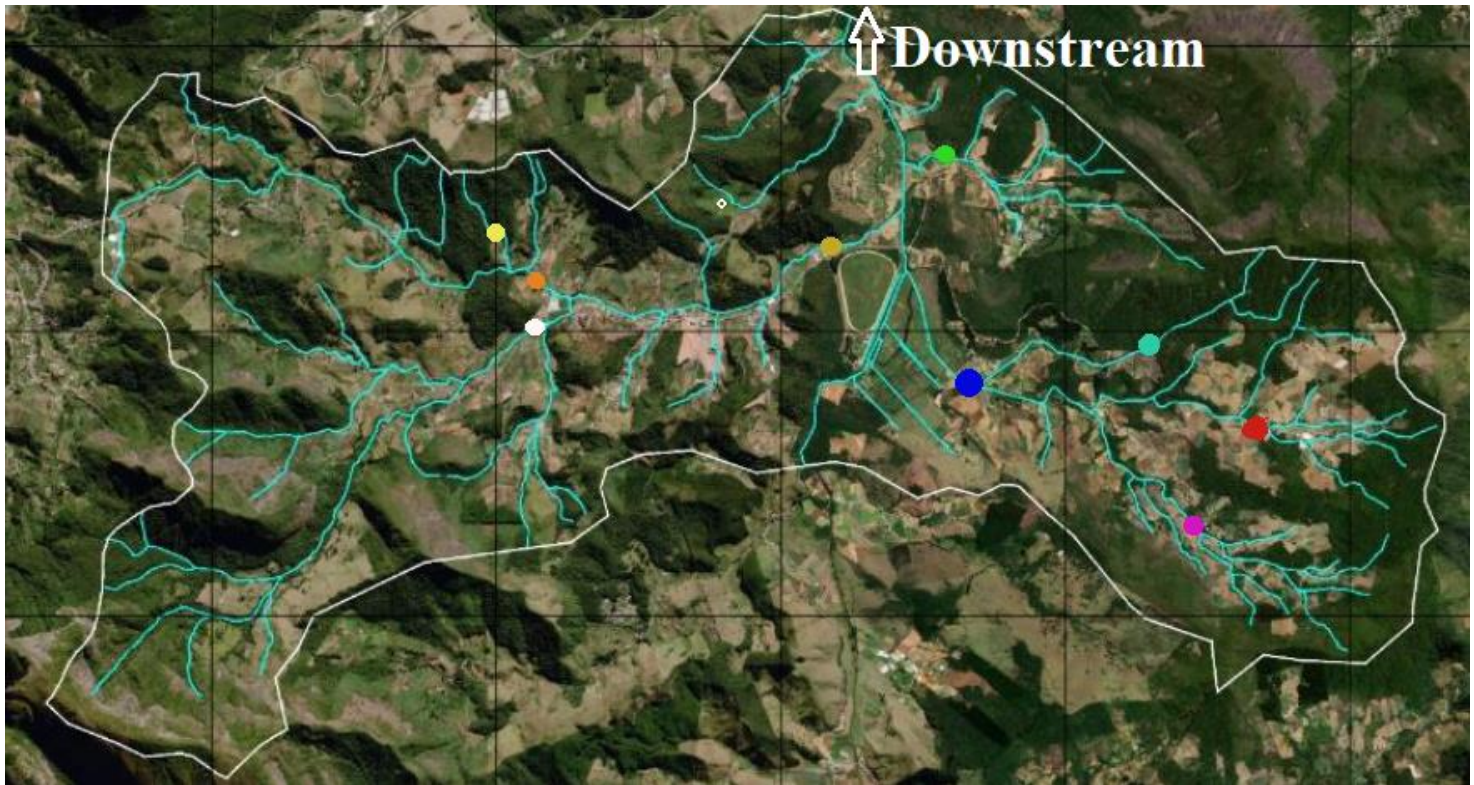


Figure 4: Example of Quantitative Monitoring (Flow) Microbasin. Source: CEIVAP and AGEVAP.

AGEVAP Description:

1. Associação Pró-Gestão das Águas da Bacia Hidrográfica do Rio Paraíba do Sul - AGEVAP, created on June 20, 2002, has the legal personality of a private law association, with non-economic purposes. It was initially constituted to exercise the functions of Executive Secretariat, and currently performs the functions defined in Article 44 of Federal Law No. 9,433/97, Article 59 of Rio de Janeiro State Law No. 3,239/99 and Article 38 of Minas Gerais State Law No. 13,199/99, which deals with the competencies of the so-called Water Agencies, or Basin Agencies.
2. The AGEVAP Agency, as a delegate entity of the River Basin Committees, has several obligations in the field of water resources management. EVAP's main obligations include:
 1. Execute the "Water Resources Plan" of the basins where it operates, following the guidelines and goals established by the River Basin Committees;
 2. Provide "Administrative and Technical Support" to the Basin Committees where it operates, ensuring that these bodies can function properly and make informed decisions about the management of water resources;
 3. Perform the "Monitoring" of the quality and quantity of water resources in the basin where it operates, in addition to "Monitoring" compliance with the rules and resolutions established by the Basin Committees and the management bodies;
 4. Prepare and contract the "Studies and Projects" that contribute to the sustainable management of water resources, according to the needs identified in the Plans of the basins where it operates;
 5. Promotion of "Educational and Awareness Actions" on the importance of preserving and rational use of water resources, among others.

These obligations are essential to ensure efficient and sustainable management of water resources in the Paraíba do Sul River Basin and in other basins where AGEVAP operates.

1. **An explanation of how the payment for environmental services (PES) process will work in the Paraíba do Sul River basin, for example: the source of funding for the payments, who the PES providers are and how they are selected, the licensing process, and how long payments will be issued to PES providers.**
 1. Payment for Environmental Services – PES, is an economic incentive policy aimed at environmental preservation. The central idea of PES is to recognize, value, and financially reward landowners or users who adopt practices that conserve or recover environmental services, such as the protection of springs, maintenance of forest areas, and soil erosion control;
 1. The definition of "Environmental Services" includes a wide range of benefits provided by ecosystems, such as: (1) Climate Regulation: Forests and other ecosystems help regulate the

climate by sequestering carbon and influencing precipitation patterns; (2) Water Purification: Natural areas contribute to water purification by filtering pollutants before they enter water bodies; (3) Erosion Control: Vegetation, especially forest, plays a crucial role in preventing soil erosion and (4) Biodiversity Conservation: Forests and other natural habitats maintain a rich diversity of species, which is essential for the health of ecosystems.

2. PES Operation: (1) Identification of Environmental Services: First, it is identified which environmental services are provided by a given area (such as the protection of water sources or the preservation of biodiversity); (2) Definition of Payments: Establish criteria and values for the payments that will be made to the owners or managers of the land, depending on the environmental services they maintain or recover; (3) Monitoring and Evaluation: The areas benefited by the PES are monitored to ensure that environmental services are being effectively maintained or improved and (4) Distribution of Payments: Based on monitoring, payments are made to the beneficiaries of the program.
3. Benefits of PES: (1) Environmental Conservation: PES encourages the conservation of natural ecosystems and the recovery of degraded areas; (2) Economic Valorization of Preservation: Transforms environmental conservation into an economically viable activity for rural landowners; (3) Water Sustainability: Improves the quantity and quality of available water, benefiting both human populations and ecosystems and (4) Community Engagement: Promotes the involvement of local communities in the conservation of natural resources.

The Payment for Environmental Services Program - PES Hidro is a strategy developed to encourage the protection and recovery of areas that have a direct impact on the quality and quantity of water resources. The program works through financial compensation for rural landowners, communities, and other actors who adopt environmental conservation practices, such as the recovery of riparian forests, sustainable soil management, protection of springs, and other actions that favor the preservation of water resources.

The Paraíba do Sul River Basin Agency – AGEVAP, played a key role in the implementation of the Water PES through the execution of several "pilot projects" in its area of operation. These projects, which began in 2015 and concluded in 2020, aimed to test and demonstrate the feasibility and effectiveness of the payment for environmental services model, promoting the conservation of natural resources and the sustainability of water uses.

Some of the pilot projects carried out by AGEVAP include:

1. Water and Forest Producer Project - PPAF: Aimed at the recovery of degraded areas and protection of springs in the Paraíba do Sul River basin, this project seeks to promote water sustainability through soil conservation and reforestation practices;
2. Water Conservation Project - PCA: Executed in partnership with municipalities and rural landowners, this project aims to protect springs and riparian forests, thus ensuring the quality and quantity of water available for supply;
3. Degraded Areas Recovery Project - PRAD: Focused on the recovery of deforested or degraded areas within the watershed, with the objective of restoring environmental balance and improving water infiltration into the soil.

The PES Pilot Projects, focused on water resources, inaugurated a new paradigm for the integrated management of water resources in the Paraíba do Sul river basin, inserting the "conservator-receiver" to the National Water Resources Policy (Federal Law 9.433/1997). The projects shared the common objective of disseminating the use of the PES tool as a municipal territorial management strategy in the conservation and restoration of water sources. Conserving 718.63 ha of forests and restoring 188.58 ha of degraded areas with 84 owners entitled to receive Payments for Environmental Services - PES.

According to Flavio The Ribeirão das Couves Hydro PES project, the only project executed by a municipal government, was the one that presented the best performance in efficiency and effectiveness and, consequently, the best overall performance among the projects. The savings with structuring activities (mobilization, dissemination, selection and hiring of providers) and structural activities (isolation of areas, planting and maintenance) by the performance of municipal employees and public bidding represented savings in resources and the partnerships formed with other institutions were key factors for the success in effectiveness of the project. The Rio Sesmaria Hydro PES Project, executed by an NGO in the municipality of Resende/RJ, achieved the best effectiveness among the projects, obtaining outstanding results from field actions, with perennial activities avoiding the demobilization of providers and being classified as the 2nd best project of the program.

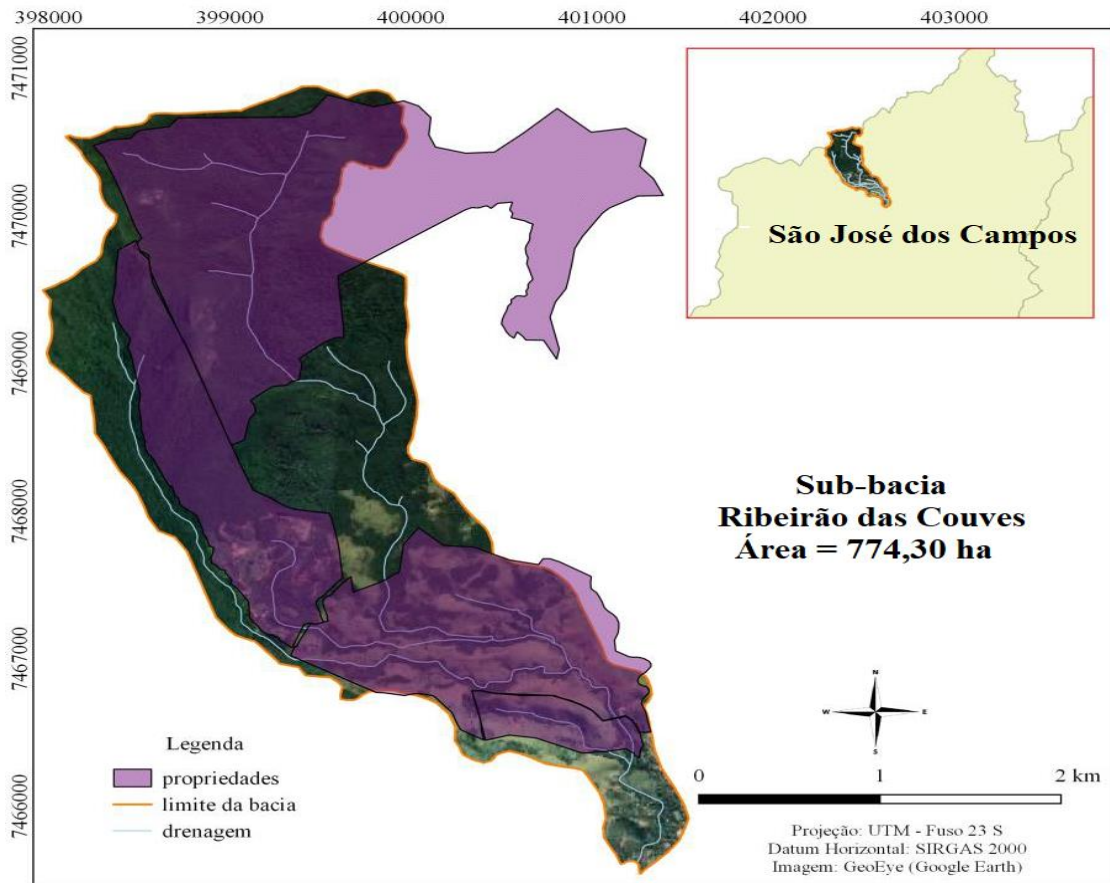


Figure 5: Distribution of properties contemplated in the Ribeirão das Couves Hydro PES project in the Ribeirão das Couves sub-basin in the municipality of São José dos Campos/SP.

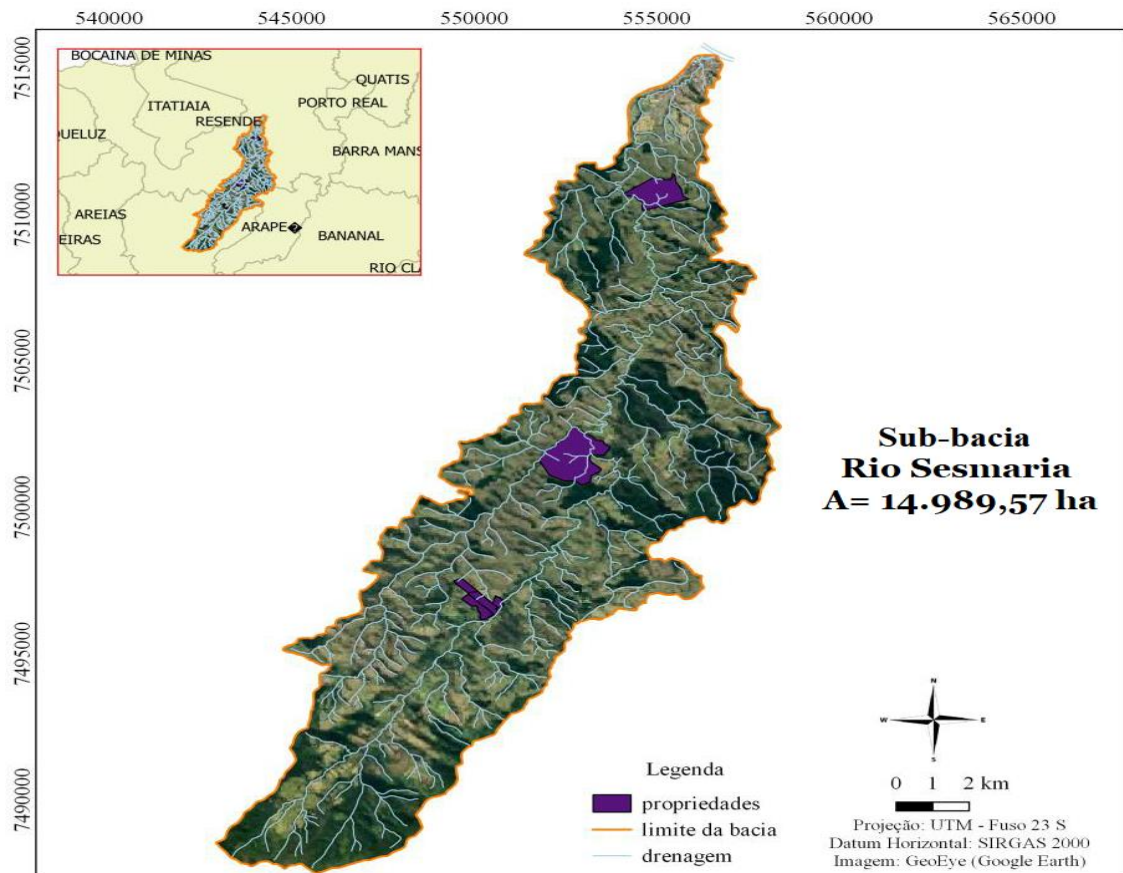


Figure 6: Distribution of properties contemplated in the Sesmaria PES-Hydro project in the sub-basin of the Rio das Couves in the municipality of Resende/RJ

Based on the experiences obtained with the implementation of the PES-Water Pilot Projects and aiming to contemplate a comprehensive and structured scope of action, CEIVAP prepares the reference document entitled "Investment Program in Environmental Services for the Conservation and Recovery of Water Sources in the Paraíba do Sul River Basin - CEIVAP Water Sources Program".

As provided for in CEIVAP normative deliberation No. 264/2018, the Watersheds Program was previously presented to the Technical Consultative Chamber - CTC of CEIVAP during the CTC meetings held on September 19 and October 10, 2019. On October 10, 2019, the CTC prepared the draft deliberation for the creation of the Watersheds Program, which was submitted for consideration by the members of CEIVAP.

At the plenary meeting held on November 12, 2019, CEIVAP approved CEIVAP's Watersheds Program, according to resolution 276 of November 12, 2019. With the approval of the Program and the expected completion of CEIVAP's PES-Hydro projects in April 2020, CEIVAP is experiencing a moment of transition between the programs for the consolidation of an investment policy in environmental services.

This entire improvement process was based on the experiences accumulated with the implementation of the PES projects Contributing to risk prevention, maximizing results, and affirming CEIVAP's policy of investment in environmental services.

1. Source of Financing for Payments for Environmental Services – PES: Considering: (1) CEIVAP has the function of promoting the technical and economic-financial feasibility of investment programs and the consolidation of urban and regional structuring policies, aiming at the sustainable development of the hydrographic basin of the Paraíba do Sul River, in an integrated manner with the basin committees of the tributaries of the Paraíba do Sul River (ANA, 2011); (2) With the establishment of the charge for the use of water in the hydrographic basin of the Paraíba do Sul River, the granted users compensate the community for the use of this resource or indemnify the community for the reduction of the quality of water resources after their use. The resource is then invested by CEIVAP in actions that somehow improve the quality and availability of this resource in the watershed, and (3) It is then up to the watershed committee - CBH, and its respective agency (AGEVAP), the mission of implementing policies to recognize the essential role of the "conservator/provider" of environmental services in improving the quality and availability of water in the basin, investing part of the funds collected from charging for the use of water in increasing the supply of environmental services (Figure 3).

Considering the soil-water-forest relationship, the provision of environmental services related to hydrological services involves the management of land use and occupation in the watershed.

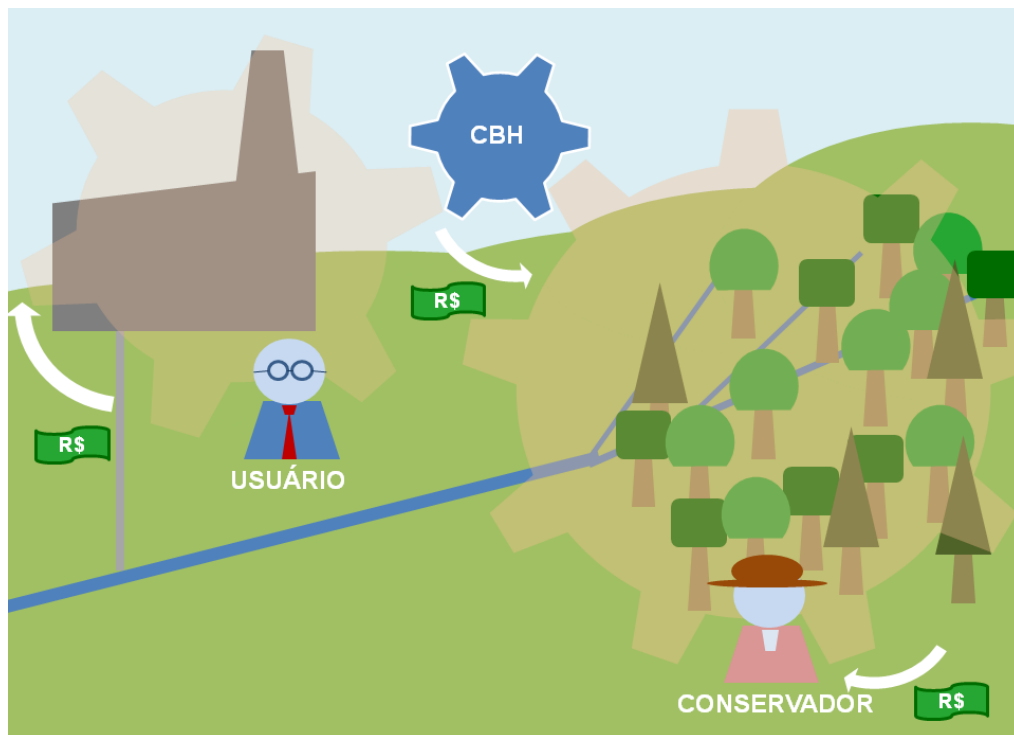


Figure 7: Schematic representation of the integrating role that a River Basin Committee (CBH) plays when formulating policies to recognize the "conservator/provider" of environmental services for the management of water resources in the river basin, enhancing the National Water Resources Policy that only recognizes the figure of the "user/beneficiary-pays": Source: CEIVAP and AGEVAP.

1. Who are the Providers (conservator/provider) in the PES program and how are they selected: PES arrangements are contractual transactions, voluntarily agreed between the parties, whereby a

payer, for example Rotary, who is also a beneficiary or user of environmental services, transfers to a provider of these services financial resources or other form of remuneration, under the conditions previously agreed upon and in compliance with the legal and regulatory provisions related to this transaction. Thus, the environmental service provider is the individual or legal entity, public or private, family or community group that, once the eligibility criteria are met, duly selected and with the corresponding obligations, is hired by the beneficiary of environmental services to conserve, maintain, recover or improve the conditions of ecosystem services in the target watershed. Providers are selected by participating in the stages:

1. Mobilization and engagement of owners or possessors of rural properties: definition of communication strategies, awareness for the mobilization and engagement of new PRISMA actors;
2. Elaboration in a participatory and collaborative way with the collective of owners or possessors of rural properties in the target micro-basin, in the construction of PRISMA. Thus, the interventions will be planned by the collective, engaging the actors in achieving goals and seeking to list practices that are favorable to all;
3. Identification of the impacts and expected results for each intervention in the proposed landscape. Based on cost/benefit, the proposed interventions will be hierarchized, thus defining which are the priority interventions capable of generating tangible results throughout the period of execution of the field actions (< 3 years). PRISMA should list the indicators and the monitoring methodology, allowing the evaluation in process of the effectiveness of the interventions adopted and justifying the investment with funders and partners, among others.
4. Licensing Process: In this sense, CEIVAP's Water PES Pilot Program was presented as an integrating program, using instruments from other public policies, such as: (1) Rural Environmental Registry – CAR; (2) Environmental Regularization Program (PRA) and (3) Environmental Commitment Agreement (TCA), especially with regard to the contractual instruments established with the environmental service provider. It is believed that the use of these instruments in future projects can be strategic to reduce the risks of loss of investments after the termination of contracts for the provision of environmental services.

1. Informações sobre a altitude aproximada do local do projeto e os tipos de habitat.

- a) The Paraíba do Sul River basin presents a great variation in altitudes due to its wide geographical extension and the diversity of reliefs that compose it. Altitudes in the basin range from areas close to sea level, at the mouth of the river, to mountainous regions in the mountains that form its headwater. Below is a description of the altitudes found in the basin: (1) Foz Region: between 0 and 20 meters above sea level. This area is characterized by coastal plains, mangroves and sandbanks; (2) Plains and Low Hills (200 to 500 meters). Much of the middle course of the Paraíba do Sul River. This area is made up of river plains, farmland, and gently rolling hills; (3) Highlands (500 to 1,000 meters): Serra do Mar and Serra da Mantiqueira: Altitudes increase significantly as you approach the Serras do Mar. Rugged reliefs and areas covered by Atlantic Forest. These highlands are important for water abstraction and the formation of rivers that feed the basin and (4) Regions of the Serra da Mantiqueira: The highest altitudes of the Paraíba do Sul River basin are located in the highest parts of the Serra da Mantiqueira, where the relief is quite rugged, covered by Atlantic Forest. Altitudes in these areas can exceed 2,000 meters, as in Pico das Agulhas Negras (2,791 meters), one of the highest points in the basin and in Brazil.

These variations in altitude directly influence the climate, vegetation, hydrology, and soil types present in the basin, creating a great diversity of ecosystems and landscapes. In addition, the areas of higher altitude, especially in the mountains, are fundamental for the recharge of aquifers and the formation of springs that feed the Paraíba do Sul River and its tributaries.

- b) The Paraíba do Sul River basin, located in southeastern Brazil, covers parts of the states of São Paulo, Minas Gerais, and Rio de Janeiro. This region is known for its diversity of habitats, which vary according to altitude, climate, vegetation and land use. The main habitat types found in the basin include: (1) Atlantic Forest: A large part of the Paraíba do Sul River basin is covered by the Atlantic Forest, one of the most biomes in biodiversity in the world. This rainforest is characterized by tall trees, dense vegetation, and a wide variety of species of plants, animals, and microorganisms. Within this biome, there are different types of forests, such as the dense ombrophilous forest and the semideciduous seasonal forest; (2) High-altitude grasslands: Located in the higher areas of the basin, mainly in the Serra da Mantiqueira, high-altitude grasslands are habitats with undergrowth and shrubs, adapted to cold conditions and strong winds. These grasslands are home to endemic species and are areas of ecological importance for the conservation of biodiversity; (3) Mangroves and Restingas: In the coastal region of the basin, especially at the mouth of the Paraíba do Sul River, there are mangroves, which are coastal ecosystems of transition between terrestrial and marine environments. These habitats are critical for the reproduction of various species of fish, crustaceans, and birds; (4) Riparian Forest Areas: Riparian or riparian forests are plant formations that occur along the banks of rivers and watercourses, playing a crucial role in protecting rivers against erosion, in addition to serving as ecological corridors for fauna

and (5) Anthropogenic Areas: Much of the Paraíba do Sul River basin has been modified by man for agriculture, pasture and urbanization. In these areas, natural habitats have largely been replaced by agricultural crops such as sugarcane, coffee, and livestock pastures, which has significantly impacted the original biodiversity. These habitats are interconnected and depend on each other to maintain the ecological balance of the basin. The preservation of these different ecosystems is essential for maintaining the quality of water resources and biodiversity in the region.

2. A map of the region with the conservation and reforestation areas marked.

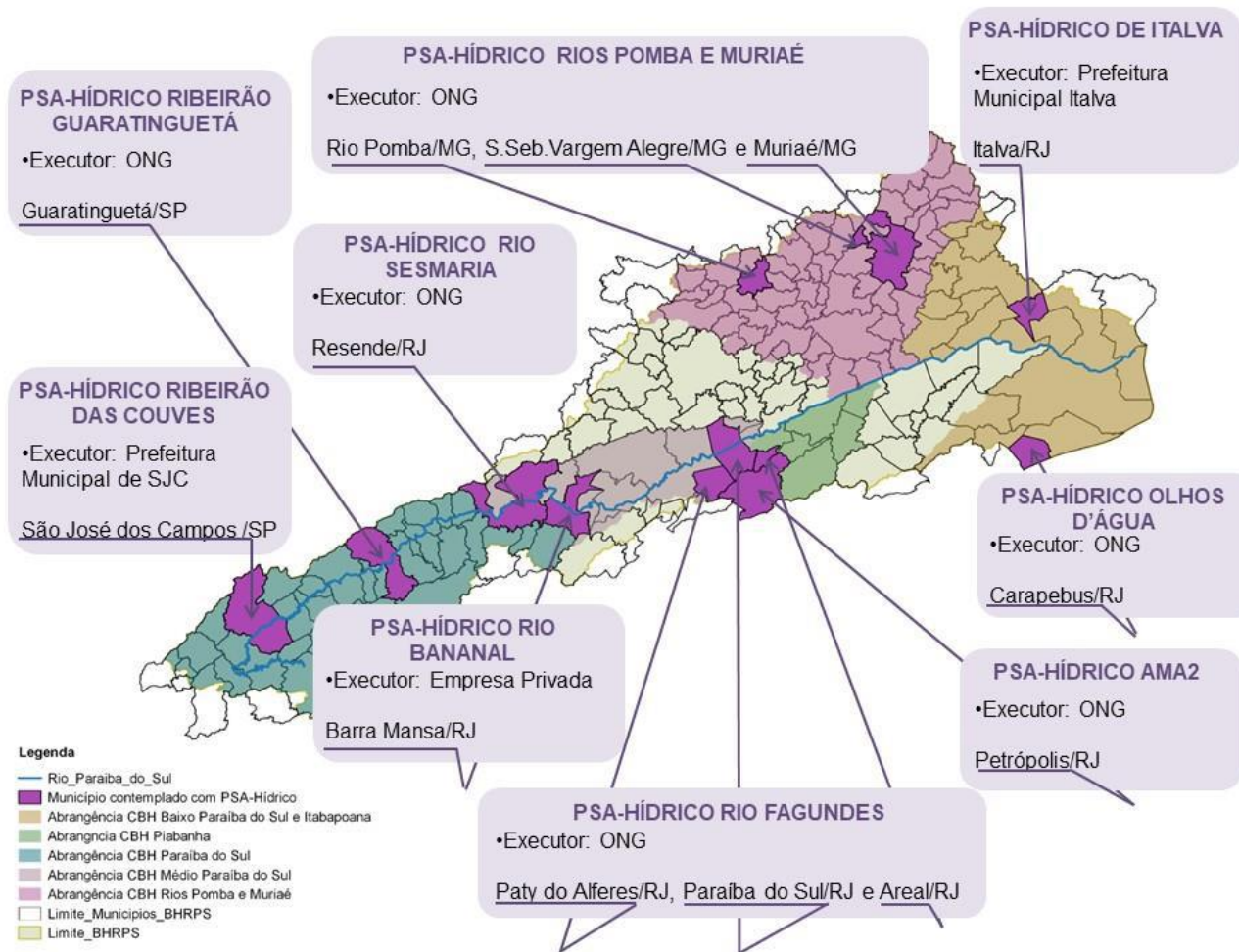


Figure 8: Distribution of CEIVAP's Payment for Environmental Services projects focused on Water Resources in the Paraíba do Sul river basin. Source: CEIVAP and AGEVAP.

3. Have you identified the areas for conservation and the landowners who would be involved?

Answer: Positive!

Only with the conclusion of the Executive Restoration Projects (PERs), it was possible to point out physical goals and effective strategies for the restoration of 246.25 ha and 320.73 ha of conservation. In terms of global goals, however, the pilot program reached 188.58 ha of areas in the process of forest restoration, which represents 41.91% of the restoration and conservation goals, foreseen for the Pilot Program of Payment for Environmental Services with a focus on Water Resources - PES-Hidro of CEIVAP. In other words, there are still close to 58% of areas for restoration already with landowners who were involved and not served.

4. The monitoring and evaluation plan, with baselines (e.g., % of forested area, number of native species present, % of invasive/non-native vegetation, turbidity, and water volume) and measurable objectives on how the baselines will improve.

For each source, the problems to be solved will be identified and described, justifying the need and purpose (objectives and goals) of the initiative and justifying the choice of proposed measures to achieve the expected results and impacts. In the context of monitoring and evaluating the

increase of water Environmental Services in the target watershed, the methodology is: (1) to characterize the initial situation of the quality of water resources in the target watershed (ground zero, % of forested area, number of native species present, % of invasive/non-native vegetation, quali-quantitative monitoring "turbidity and volume" of the waters); (2) monitor how the "baselines will improve" the water effects of the implementation of the interventions proposed in PRISMA (AGEVAP) of the watershed; (3) to provide subsidies for the management and dissemination of knowledge and lessons learned, contributing to the process of continuous improvement of the CEVAP Watersheds Program and (4) to provide elements for the correction of directions.

In order to define the general scope of monitoring and evaluation, the following aspects will be considered: (1) Definition of the monitoring points for the quality of surface water; (2) Definition of quality indicators that have a direct relationship in the areas of intervention; (3) Periodicity of monitoring that should be associated with the evolution of the works and climatic seasonality (dry and rainy periods); (4) Application of collection methodologies and in situ analysis as established at the international level; and (5) Processing of results and preparation of easy-to-understand reports at the different levels where they will be made available.

Monitoring will also be done to assess the effectiveness of interventions and the action strategy, to justify the investment with partners, among others.

5. A description of what will happen to the newly reforested areas after the donation is complete: How will the community or other partners ensure that the reforested areas are not degraded again?

As it is a complex process that considers a horizon for planning and executing actions that reach the long term (for forest restoration, for example, the execution horizon is rarely less than 5 years), these actions require co-responsibility of the owners or possessors of rural properties to ensure that investments in these actions are not wasted. Therefore, the recomposition of native vegetation will be adopted, preferably, in Permanent Protection Areas (APPs) and Legal Reserve (RL) located in riparian zones, which include Variable Inflow Areas (AVAs) or Hydrologically Sensitive Areas (AHSS). On the occasion that the forest restoration meets the environmental adequacy of the rural property for the purpose of recovering the source located in the target micro-basin, **Environmental Adequacy Commitment (TCA) Agreements** must be signed, as provided for in Federal Law 12,651/12, in order to ensure the co-responsibility of the rural owner with the restoration of these areas.

Therefore, the planning of these actions must be properly prepared and agreed with the partners, favoring the selection of viable practices, models and techniques with less investment.

The following can be listed, among others, as techniques for the recovery of native vegetation: (1) Conducting natural regeneration and (2) Planting seedlings.

These techniques can be used in association or not in models of area recovery, namely: (1) Nucleation; (2) Random planting; (3) Total Planting; (4) Enrichment planting and (5) Agroforestry Systems (AFS).

6. A description of the species that will be used for reforestation (they must be native to the region).

The publication "List of species indicated for ecological restoration for various regions of the state of São Paulo" will be used to survey and define the various native species of the Atlantic Forest biome with an ecological-structural purpose for planting. Thus, it is an indispensable tool for qualified reforestation, based on an exemplifying list of regional native plant species, occurring in forest and grassland environments, indicated for planting and/or maintaining biodiversity.

The methodology used in the preparation of the (List of species indicated for ecological restoration), as for the functional group, for the tree species, the concept of fill species was adopted, those that have fast growth and good canopy cover, providing, with these characteristics, a quick and effective shading of the area. For the other forms of life, the concept of fill species was based on rapid soil cover. Diversity species are characterized by having slower growth, with little canopy cover, but which are essential for the perpetuation of reforestation, as they will be the species that will gradually replace the filling species, when they enter senescence.

The classification of species according to the degree of threat of extinction in the state of São Paulo, highlighted in the tables, followed the criteria adopted by the Resolution of the State Secretariat for the Environment-SMA: 57, of 06-05-2016, and the problems with species of doubtful occurrence were solved through consultations with specialists from each taxonomic group.

ARBÓREAS

| FAMÍLIA / ESPÉCIE | NOME POPULAR | ALTURA (m) | CL. SUCESS. | GRUPO FUNCIONAL | SÍNDROME DE DISPERSÃO | BIOMA - ECOSISTEMA / REGIÃO |
|---|---|------------|-------------|-----------------|-----------------------|---|
| ▲ <i>Sloanea petalata</i> D.Sampaio e V.C.Souza | | 15 | NP | D | ZOO | Mata Ciliar/ Cerrado |
| ERICACEAE | | | | | | |
| <i>Agarista eucalyptoides</i> (Cham. & Schltdl.) G.Don | criuva, urze | 8 | P | D | ZOO | Floresta Altomontana/ Floresta Estacional Semidecidual/ Mata Ciliar/ Cerrado |
| ERYTHROXYLACEAE | | | | | | |
| <i>Erythroxylum cuspidifolium</i> Mart. | fruta-de-pomba | 0,6-8 | NP | D | ZOO | Floresta Ombrófila Densa |
| <i>Erythroxylum deciduum</i> A. St.-Hil. | fruta-de-pomba | 2-10 | NP | D | ZOO | Floresta Ombrófila Densa/ Floresta Altomontana |
| <i>Erythroxylum pulchrum</i> A.St.-Hil. | arco-de-pipa | 2-10 | NP | D | ZOO | Floresta Ombrófila Densa |
| <i>Erythroxylum vacciniifolium</i> Mart. | fruta-de-pombo, fruta-de-juriti | 10 | P | D | ZOO | Floresta Altomontana/ Floresta Estacional Semidecidual/ Cerrado |
| EUPHORBIACEAE | | | | | | |
| ☘ <i>Alchornea glandulosa</i> Poepp. & Endl. | tanheiro, tapiá, tapieira | 25 | P | P | ZOO | Floresta Ombrófila Densa/ Floresta Estacional Semidecidual |
| <i>Alchornea sidifolia</i> Müll. Arg. | tapiá-guaçu | 10-20 | P | P | ZOO | Floresta Ombrófila Densa |
| ☘ <i>Alchornea triplinervia</i> (Spreng.) Müll. Arg. | pau-jangada, tapiá, tapieira | 15-30 | P | P | ZOO | Floresta Ombrófila Densa/ Floresta Altomontana |
| <i>Aparisthium cordatum</i> (A. Juss.) Baill. | pau-taquara | 3-15 | NP | D | AUT | Floresta Ombrófila Densa |
| <i>Croton celtidifolius</i> Baill. | marmeleiro, pau-de-sangue | 6-15 | P | P | AUT | Floresta Ombrófila Densa/ Floresta Estacional Semidecidual/ Mata Ciliar |
| ☘ <i>Croton floribundus</i> Spreng. | capixingui | 6-15 | P | P | AUT | Floresta Ombrófila Densa/ Floresta Estacional Semidecidual |
| <i>Croton macrothyrsus</i> Baill. | pau-sangue | 5-20 | P | P | AUT | Floresta Ombrófila Densa |
| <i>Croton salutaris</i> Casar. | caixeta | 5-12 | P | P | AUT | Floresta Ombrófila Densa |
| ☘ <i>Croton urucurana</i> Baill. | sangra-d'água | 7-14 | P | P | AUT | Floresta Ombrófila Densa/ Mata ciliar |
| <i>Joannesia princeps</i> Vell. | fruta-de-cotia, cutieira, fruta-de-arara, purga-dos-paulistas | 12-20 | NP | P | AUT | Floresta Ombrófila Densa/ Floresta Estacional Semidecidual |
| <i>Maprounea guianensis</i> Aubl. | bonifácio | 4-12 | NP | D | ZOO | Floresta Ombrófila Densa |
| <i>Pachystroma longifolium</i> (Nees) I.M. Johnst. | canxim, espinheira-santa | 12-18 | NP | D | AUT | Floresta Ombrófila Densa |
| <i>Sapium glandulosum</i> (L.) Morong | pau-de-leite, leiteira | 5-20 | P | D | ZOO | Floresta Ombrófila Densa/ Floresta Altomontana |
| <i>Gymnanthes klotzschiana</i> Müll. Arg. | branquilha | 5-12 | P | D | AUT | Floresta Ombrófila Densa |
| FABACEAE | | | | | | |
| <i>Abarema langsdorffii</i> (Benth.) Barneby & J. W. Grimes | raposeira-branca, timbuva, olho-de-pomba | 3-10 | NP | D | AUT/ZOO | Floresta Ombrófila Densa |
| <i>Albizia edwallii</i> (Hoehne) Barneby & J.W.Grimes | farinha-seca | 25 | NP | D | AUT | Floresta Ombrófila Densa/ Floresta Altomontana/ Floresta Estacional Semidecidual/ Mata Ciliar |
| <i>Albizia pedicellaris</i> (DC.) L.Rico | juerana-branca | 4-20 | P | D | AUT | Floresta Ombrófila Densa |
| <i>Albizia polycephala</i> (Benth.) Killip. ex Record | albizia, angico-branco | 8-14 | NP | D | AUT | Floresta Ombrófila Densa |
| <i>Anadenanthera colubrina</i> (Vell.) | angico-branco, angico-branco-da-mata, angico | 10 | NP | D | AUT | Floresta Ombrófila Densa |
| <i>Andira anthelmia</i> (Vell.) Benth. | garacuí, angelim-amargoso, baga-de-morcego | 14-18 | NP | D | ZOO | Floresta Ombrófila Densa |

Siglas utilizadas na lista

| Classe Sucessional | P | Pioneira | Síndrome de Dispersão | ANE | Anemocórica |
|--------------------|----|---------------|-----------------------|------|-------------|
| | NP | Não Pioneira | | AUT | Autocórica |
| Grupo funcional | P | Preenchimento | | HIDR | Hidrocórica |
| | D | Diversidade | | ZOO | Zoocórica |

LEGENDA

- ▲ Espécies Ameaçadas ☘ Espécies especialmente indicadas para o rápido recobramento e ou preenchimento da área

Figure 9: Example of the species that will be used for reforestation (native to the region). Source: SMA/SP

2. **A more detailed budget, especially for the tree-planting line item (\$35,954); Additionally, you may want to include a line item for contingencies (up to 10% of the project budget).**

The budget indicated expenses in the amount of USD 3,849 per hectare, most of which was allocated to labor and the acquisition of seedlings, according to the tree planting budget (Table 1).

| Operations | Execution Mode | Value (USD) |
|----------------------------|-----------------------|--------------|
| Soil Preparation | Mechanized and Manual | 360 |
| Hole Drilling | Semi-Mecanized | 365 |
| Fertilization and Planting | Manual | 137 |
| Biológico Control | Manual | 120 |
| Inputs | | |
| Seedlings (native trees) | 280 units | 1500 |
| Seedlings (forage) | 750 units | 920 |
| Limestone | kg | 22 |
| Organic Fertilizer | kg | 75 |
| Machinery | | |
| Coastal Mower | Machine Rental | 170 |
| Hole Driller | Machine Rental | 180 |
| Total USD | | 3,849 |

Table 1: Budget for Tree Planting.

| Operações | Modo de Execução | Value (USD) |
|-------------------------|------------------|--------------|
| Post Hole Auger | 1 unit | 13 |
| Eucalyptus Post 10x2,2m | 63 units | 230 |
| Eucalyptus Post 14x2,2m | 7 units | 45 |
| Wire Tensioner | 30 units | 48 |
| Balancin Spacer | 200 units | 150 |
| Oval Wire | 4 rolls | 463 |
| Labor | 12 days | 320 |
| Total USD | | 1,305 |

Table 2: Fencing Budget for 200 linear meters.

1. **How you will promote reforestation with native species and erosion prevention, as well as provide other environmental education to help expand the project's impact on the community.**

The global grant request: Planting Trees Harvesting Water - Paraíba do Sul River Basin - Environmental Services Payments - PES, includes, in partnership with AGEVAP/CEIVAP, the realization of activities and training events for technicians from rural producers to disseminate the practices of water and soil conservationists supported by the project, such as:

1. Training activities carried out with the objective of demonstrating practices supported by CEIVAP's Water Sources Program for the purpose of replication and dissemination in the context of the local reality, and should contribute to solving problems of relevance to the water security of the source;
2. The owners or possessors of rural properties must be available to receive visitation, transfer knowledge and carry out receptive;
3. For areas of relevant ecological interest located in the target watershed of private property, the strategies for the creation of Private Environmental Heritage Reserves (RPPNs) and Management Plans of these UCs will be supported. To this end, the following actions may be financed:
 4. Technical consultancy to support the legal process of creating the RPPN;
 5. Technical consultancy for the creation of the RPPN Management Plan.
 6. Products Certification:
 7. Support for the certification of agroforestry, agroecological and organic production products from properties that adopt good soil and water management practices on the rural property;
 8. The certification will necessarily aim at the adoption of good soil and water management practices, thus being a direct investment to increase environmental services in the target micro-basin and not an instrument for agricultural promotion;

9. In order to grant product certification, the means for maintaining the certification seals must be made possible after the end of the project's funding contribution. Therefore, the arrangements for certification must have a business plan and an environmental sustainability plan for a permanent increase in the supply of ecosystem services in the target watershed.

Kind regards,

Dante Bachi Junior

GDI 2026-27 - D 4571

Chair of the District International Services Committee and CADRE D 4571 - 2024-25