



Executive summary  
**Implementation of the ESGAP framework in  
New-Caledonia**

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## Executive summary

The actors responsible for implementing public policies on development and environmental protection need to monitor the state of the environment in order to evaluate the effectiveness of their actions, prioritize policies and management measures, and thus objectively establish their contribution to the conservation of biodiversity and natural capital.

- **The ESGAP, for Environmental Sustainability GAP, is a synthetic indicator based on a dashboard that makes it possible to monitor the state of the environment from a strong sustainability perspective, adopting stringent criteria on the maintenance of natural capital and preventing its substitution to other forms of capitals (physical or otherwise) in a given territory or country.** Its primary objective is the monitoring of the state of environmental functions, focused on the gap between the trends in this state and environmental standards or reference levels to be reached for each function.
- Four environmental functions support the ESGAP: sustainable use of natural resources (1), critical pollution loads of ecosystems (2), biodiversity (3), and human health and well-being (4).

Two quantitative composite indicators are used to measure the ESGAP:

- a composite indicator called SES (Strong Environmental Sustainability) which reflects the level of good environmental status to be maintained in relation to objectives defined by science or public policy;
- a composite indicator called SESP (Strong Environmental Sustainability Progress) that measures the gap between the current trajectory and a sustainable trajectory, with respect to the environmental objectives set out in the SES.

Supported by the AFD and WWF France, **this project on the implementation of the ESGAP dashboard in New Caledonia aims to assess the feasibility of developing this tool** in territories where data on the state of the environment, and the pressures on it, are often fragmented. This evaluation was carried out by the Ecological Accounting Chair, hosted by CIRED and AgroParisTech. This study is based on the work being carried out on several sites, by a team led by Paul Ekins at University College London<sup>1</sup>.

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<sup>1</sup> Ekins, P., B. Milligan and A. Usubiaga-Liaño (2019), "A single indicator of strong sustainability for development: Theoretical basis and practical implementation", AFD Research Papers, No. 2019-112, Revised draft, 21st December 2019.

## Methodology

An initial bibliographical desk work allowed to identify the scientific stakes on environmental functions as well as the important actors to be consulted in New-Caledonia. Given the large number of dimensions covered by the ESGAP, local actors were an essential source of information to carry out this project. About thirty environmental stakeholders (including decision-makers, managers, research centers, NGOs, and the private sector) were interviewed in order to discuss the development of the ESGAP for New-Caledonia, and to adapt the environmental functions, the environmental objectives, and the indicators associated with New Caledonian specificities. These meetings also enabled us to collect data for the construction of the indicators. Statistical analyses and spatial statistics using geographic information systems were finally carried out to develop the composite SES and SESP indicators from the databases collected.

## Results on the feasibility of setting up the ESGAP in New-Caledonia

**Result 1:** It is not feasible to construct all 22 indicators of the ESGAP conceptual framework in New Caledonia, given available datasets and time constraints (Figure 1).

- 12 of the 22 ESGAP indicators could be constructed for the SES, including 4/5 for the sustainable use of resources function, 2/9 for the critical pollution load function, 2/3 for the biodiversity function, and 4/5 for the health and human well-being function. **At least one dataset per function could therefore be mobilized.**
- 7 of the 22 ESGAP indicators could be completed for the SESP, while the datasets for five of the indicators completed for the SES, did not have time series available.
- 1 indicator has been added to SES and SESP, the area of trees and shrubs burned per year, in the critical loads of ecosystems function.
- 2 of the 17 international databases identified by the University College London team have been mobilized here, the UNESCO State of Heritage Report and the global Biodiversity Intactness Index for the terrestrial biodiversity indicator. 3/17 other databases could have been mobilized but better quality local data were favored (wood resources, soil erosion, drinking water).

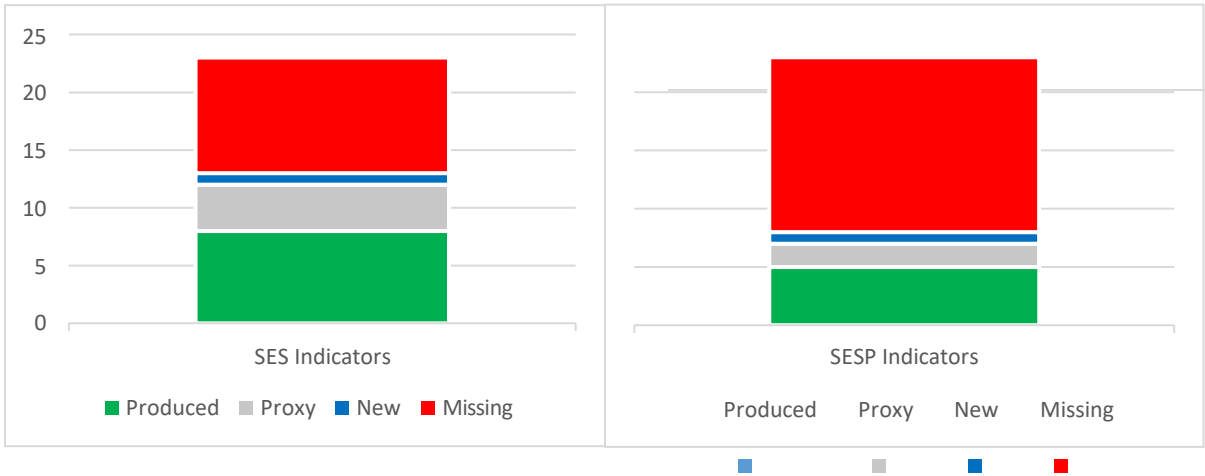




Figure 1: Status of ESGAP SES and SESP indicators constructed in New-Caledonia

**Result 2:** Particular attention to defining environmental standards or norms is required to implement the ESGAP.

Indeed, while environmental objectives are mentioned in many legislative or political texts in Europe, this is not the case in New-Caledonia. Some standards already exist for functions relating to human health and well-being (e.g. bathing water quality or the status of UNESCO heritage sites), but this is not the case for resource use, pollution and biodiversity.

In addition, several environmental standards need to be tailored locally as their definitions in the European ESGAP is not appropriate in New Caledonia. Acceptable rate of soil erosion needs to be set based on local climatic and geologic conditions which differs between Europe and New Caledonia. However, the use of locally appropriate environmental standards does not allow for complete comparability across countries. For several other indicators, including sustainable use of fish resources or air quality, international standards based on scientific recommendations do exist and have been used here. In other cases, such standards are under development and are not yet available, including heavy metal loading of freshwater ecosystems for example. Other standards are not available all together for New Caledonia, including the definition of a good ecological status for freshwater ecosystems, which have been defined in Europe. Several objectives appear to be out of reach anywhere, including good ecological status of terrestrial ecosystems or greenhouse gases emissions. Defining these standards are under debates at every level of decision for the time being.

**Result 3:** Implementing the ESGAP indicators fills the gap of providing an integrated reporting system on the maintenance of natural capital, which can be used to guide environmental management locally. It provides a holistic view on the sustainability of natural capital that was previously lacking due to the large number of actors responsible for environmental management and decision making across space (three provinces and the exclusive economic zone) and six levels of decisions (local authorities, customary institutions, provinces, government, State, and international institutions such as UNESCO). This institutional mosaic leading to the fragmentation of monitoring systems and definition of standards.

## Recommandations pour la mise en place de l'ESGAP dans d'autres territoires

L'expérience de l'application de l'outil ESGAP dans le cas de la Nouvelle-Calédonie permet de tirer trois recommandations concernant l'implémentation de l'ESGAP à d'autres territoires, en particulier du Sud.

- Premièrement, et de manière assez évidente, l'utilisation de ressources bibliographiques, d'entretiens, et de statistiques (dont des statistiques spatiales) sont nécessaires pour couvrir le panel très large d'enjeux environnementaux, afin de pouvoir construire des indicateurs dans les quatre dimensions de l'ESGAP.
- Deuxièmement, les objectifs environnementaux doivent être définis selon l'usage prioritaire qui est envisagé pour l'ESGAP : un outil permettant des comparaisons entre pays ou un instrument visant à appuyer une gestion stratégique de l'environnement dans un territoire spécifique. Ces choix peuvent également être orientés selon que les objectifs définis sont scientifiquement bien renseignés et défendus politiquement.
- Troisièmement, la phase de consultation est importante à plusieurs titres, pour s'assurer la pertinence de l'approche, récolter des données de qualité (qui ne sont pas nécessairement accessibles dans le domaine public), et permettre une appropriation par les acteurs locaux. Cette appropriation peut se faire à travers le questionnement de leur besoin, de leur capacité à porter un tel outil, des stratégies et législations existantes, et des enjeux environnementaux spécifiques aux contextes nationaux et locaux.

## Results on the sustainability of New Caledonia

The SES index score is 43%. This value is mainly driven by the low sustainability of the critical pollution load of ecosystems function (10%), linked to high greenhouse gases emissions and the impact of fire on ecosystems in New Caledonia. The other functions of the ESGAP are relatively sustainable. The most sustainable one is the biodiversity function (73%), followed by the resources function (68%), then health and well-being (67%), and finally critical load in pollution.

Of the 7 indicators selected for SESP (Figure 2), two have reached their environmental standard. These are fish resources, as the tuna fisheries in the occidental and central Pacific are considered sustainable by the Pacific Community, and outdoor air quality that does not exceed thresholds for particulate matters (PM10, PM2.5) over the past few years. One indicator, the state of marine ecosystems, has not reached its environmental standard and its trend is positive but insufficient to reach a sustainable level by 2030. One other indicator, the state of the UNESCO world heritage site, has not reached a sustainable level and is not progressing towards it, as its status is reported as "good with some concerns".<sup>1</sup> has not reached the objective and is not progressing (state of UNESCO heritage). Lastly, three indicators, greenhouse gas emissions, burnt areas of terrestrial ecosystems, and bathing water quality, have trends that are moving away from the environmental standard.



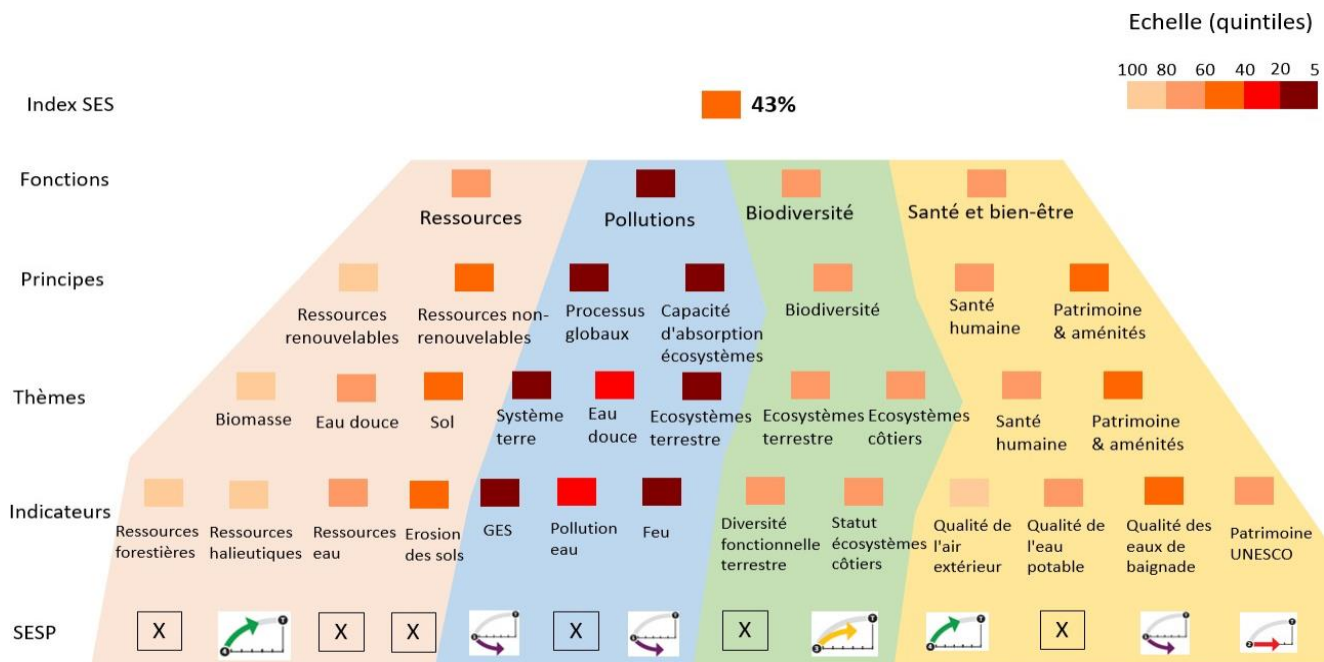


Figure 2: SES indicator scores at different levels of aggregation and SESP indicator scores

### There are clear linkages between the ESGAP and other comprehensive policy and scientific frameworks for reporting environmental indicators.

- ESGAP indicators can feed into or be fed by indicators of the Sustainable Development Goals (SDGs), particularly for Goals 6, 9, 11, 13, 14 and 15. Among the indicators to report on these goals, eight can be directly linked to the ESGAP indicators, particularly on the functions source and sink. Five SDG reporting indicators can be linked in an indirect way, on the functions biodiversity and human health & welfare. Only the ESGAP indicator linked to the good ecological status of marine biodiversity does not relate to any SDG reporting indicator.
- The ESGAP framework is built on reaching environmental standards, proposed by the scientific literature or public policy documents that are becoming more available and gaining momentum, notably given the negotiations on a post-2020 framework for biodiversity conservation. Indeed, the set of indicators that may be proposed to monitor progress towards achieving this new set of targets may be more focused to the state of ecosystems than the SDG reporting indicators are.
- The ESGAP framework is more operational at various scales of decision making than the planetary boundaries framework. It is structured around a dashboard of indicators that are readily communicated to a wide audience. The development of a “Years to Sustainability” indicator on the trajectory to reach sustainability of natural capital would be a useful and simple way to communicate on the framework, and would give complementary information to the “Earth Overshoot Day” calculated using the ecological footprint framework. The ESGAP framework also allows to calculate the cost to reach the environmental standard, monetary ESGAP (or M-ESGAP). This approach is similar to the concept of unpaid ecological cost developed in national accounting. It has been tested in New-Caledonia on the topic of terrestrial ecosystem, where the cost of habitat destruction is estimated at 63.6 billion XP.