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Eco-Environmental Economic Accounting and its Policy Application in the Central Africa Sub-region

1. Introduction

Eco-Environmental Economic Accounting and its Policy Application in the Central Africa sub-region gathers innovative and original contributions to economic structural adjustments in Africa. The authors are concerned with the impacts of economic reforms and policy recommendations that regional governments could propose. The book blends critical country-specific studies with theoretical modelling and technical considerations for case studies. Given the free market policy adopted by the Central African states, the perspective is that, for a long time, we might have to confront the new situation of Central African economies, which is very different from their wish for their development. This ocean of economic theories and practices ended up not saying, nor the measures of its economic performance, nor, and even less, taking into account the root concepts for long-term accounting to shape the integrated global economic framework needed and respond to changes and common global economic interests. In short, to the point where economists have no single understanding. We must be more ingenious and find our way out of a situation where accounting and decision-making suffer from methodological dystopia. The challenge is thus to ensure that our efforts positively impact the stakes of our modern problems and provide long-lasting elements for future reflections and studies on increasingly complex structures while keeping in mind the need to uphold a simple presentation to improve comprehension.

1.1. Background and Rationale

Eco-Environmental Economic Accounting (EA) provides a system of integrated, comprehensive, and flexible information that reveals the relationship between the use of natural resources, the environment, and economic activities. A proper

understanding of these relations is essential for sound long-term socio-economic decision-making. EA also provides qualitative information about natural resources and the environment. This point is critical internationally, where standard norms and rules must be established and applied. Therefore, to meet these requirements, particular sets of accounts were developed to focus on a) the relationship between the environment and the economy and b) the use of and dependence upon natural resources by economic units in Central Africa. This document presents the EEEA Central Africa Country pilot accounts that focus on recording the interactions between the economy, society, and the Central African natural environment, the natural resources, and the associated eco-activity. These accounts are specifically designed to understand the evolution of the natural environment and natural resources and the relation between these resources, society, and the economy. The EA seeks to address these questions and to develop a comprehensive accounting inventory of the natural resources and ecological accounts, capturing the natural environment and social-economy interaction. The EA recognises that society depends on natural resources to supply economic and other services; these resources would be under-exploited without economic activity. By doing so, the economic accounts will underscore the importance of preserving the environment from the perspective of quality of life and health.

1.2. Objectives of the Study

The main objective of this study is to develop a set of tables allowing for the monetary evaluation of some critical aspects of the Central African natural environments, such as air and water pollution, waste generation, and expenses for pollution abatement. A second objective of the study is to contribute to the international debate on which accounting rules could be followed to improve the traditional central frameworks used by various stakeholders in the economic decision-making process. The debate is characterised by a few research studies centring on pilot studies on this topic. Still, up to now, no significant areas of the environment have been contemplated for developing full-fledged and organised tables involving at least those aspects that are nowadays better defined and quantifiable.

The tables of this study were developed by referring to traditional accounting schemes made for economic analysis and decision-making and by basing our observations and suggestions on a large number of guidelines, representing the

state of the art of international research on implementing this innovative form of accounting. However, some areas are so poorly defined and complex to quantify that no solution has yet been established. Although at the beginning of this process, these tables might be considered a "non-standard framework" and thus not scientifically based, they provide a "cleaner" and, for our purposes, also an easily interpretable picture of the Eco-EA account of the Central African sub-region.

1.3. Scope and Significance

Eco-Environmental Economic Accounting (EA) is part of the System of Integrated Environmental and Economic Accounting (SEEA). It represents the most comprehensive information system for monitoring and analysis of sustainability issues. It allows for studying the interaction between the economy and the environment in both directions: the impacts of economic activities on the environment and the latter's dependence on ecological cycles and functions. Results of EA are pretty popular for policy settings and analytical reports and notably cover (i) the importance and the contribution of the environment in the gross domestic product (GDP), (ii) environmentally adjusted indicators and aggregates of economic sectors' output and incomes; (iii) the impact of the environment on economic sectors; (iv) the evolution of environmental protection efforts.

Despite its interesting aspects, with special emphasis on a unique view of environmental statistics and the closeness to economic data, chances that amendments are necessary to obtain comprehensive environmental indicators have already been identified. This is due to some imprecision about the distinction between what is measured or defined by available accounts and concepts of economic-ecological modelling. Further developments that have not yet been selected have been proposed. The account as it is today exists as a classificator. According to the correspondence principle between accounting and physical flows, the flow admitted as a scientifically reliable pollutant or abstraction estimate of a macro-class must be statistically relevant and potentially usable by liquidating sources, making use of it or sinking it. A key requirement of an accounting system must be such that it enables the verification of existing macro-level theories. Given data on inputs and outputs of macro-processes, one should

be able to falsify or corroborate current macro-ecological theories. In this context, the paper has the following objectives.

2. Conceptual Framework

i) Introduction In this section, various concepts and aspects linked to the integrated system of environmental and economic accounts are defined and explained. These include the idea of eco-environmental-economic accounting, the reasons behind the development of the SEEA, and its policy relevance. Economic and environmental accounts are included with their key concepts. In broad terms, the concepts of environmentally adjusted national accounts and the linkages between the SNA and the SEEA are self-explanatory. They are left for an introductory course in environmental economics or must be covered in associated case studies. The final parts of information categories constitute the primary logical connection between eco-environmental-economic accounting and the subsequent ecological accounting for policy analysis, welfare measurement, and environmental valuation since these value and price-related aspects of accounts are essential. The annexe to this section contains valuable diagrams about the accounts and their linkages. It provides data about the use of the term SNA, in French: SCN, SEEA, for which no acronym is used, but for which synonyms are often used, such as Economic and Environmental Accounts or Links between the Economy and the Environment. And the relationship between these three statistical systems.

ii. Eco-environmental-Economic Accounting The accounts described in the SEEA are a dietary subset of the universe of accounting systems relevant to understanding how societies evolve and assisting policies that permit their people to lead fuller and more rewarding lives than they do now. The paper focuses on including environmental accounts in a more comprehensive system of accounts by adding other subsystems, some of which trace the use of and fluctuations in the stocks of natural capital through environmental income and capital. We refer to the encompassing systems and other subsidiary or linked accounting systems collectively as EEE for eco-environmental-economic accounting. They put forward a constructive, cost-effective way to include nature in the economy along with labour and capital. The forecasting and policy system we describe contains the working parts of a comprehensive institutional and economic model of some critical environmental processes that must be incorporated into national accounts.

They show how systematic adjustments for changes in ecological capital should be made at intervals specified by society. Furthermore, they display the links between them and standard economic statistics, which also require these adjustments. Accord on the development and use of the accounts can be aligned with agreed principles about the meaning and overall goals of national economic and social accounting.

2.1. Definition of Eco-Environmental Economic Accounting (EA)

In the scope of this paper, the concept of environmental accounting is not widely known in the context of the subregion. It is a set of satellite accounts integrated into the national accounting framework, which provides information and data on the relationship between the environment and the economy. As a result, for some people, I would aim, for example, in a fishing context, to measure the physical quantity of fish caught in a territorial space and value the resulting economic activity. At the national level, one would account for the value of stem wood removed from the territory for use in the formal or informal timber sector. Page numbers are essential to consider in this sector as the definition of what made net saving—saving taking into account the depreciation of natural resources, which constitute the physical base of sustainability—a relevant indicator in formulating national strategies relating to the sustainable management of a country's ecosystems.

Agencies consider EA to be an official concept related to the construction of consistent and transparent information systems, which allow the establishment of an interface between the decision-makers and the designers who, as in the theoretical context, must integrate the elements of the multiple issues which are specific to the protection and sustainable development of territories. These systems rely on implementing statistical models that consider all possible combinations among economic units and the complex relationships with the territory's natural resources. These statistical models are supported by databases that enable the establishment of indicators complementary to accounting tools used by policymakers. Thus, EA is a policy framework for understanding the dynamic interactions between the economy and its supporting ecosystems.

2.2. Theoretical Foundations

The structure of the accounts was organised into two distinct classifications: essential records on managing the economy as a whole and individual sectors in

natural resources and environmental services. During the development period, each account, the entire set of accounts, and the system were subjected to intense review, consultation, and internal discussion. The whole system of the Central Framework is interrelated based on well-defined operations, and it relies on practices that economic statisticians have developed to a degree that are available and reliable for the broader potential user. This will ensure that the ecological and economic aspects provide humanity with a truckload of intangible services inherent to well-managed environmental situations.

The Adjusted Net Savings calculate the incremental return of the sum of physical sustainability. It provides a framework that measures the maintenance costs of ontogenesis, whether personal or environmental. The Growth Accounts were advanced and raised some small alerts on the performing underlying stocks that are not measured in traditional terms. They show that the improvement in stock to the total measure of wealth accounts came in significant form only recently. The measures are essentially planned for backward or forward links in development planning. Since less than 15 years are available, the above highlights and shadows are essentially office lights; the bright future at an improved state of information must be combined with the development of parallel domains. The economic aspect of capital facilities needs to be capped by the conservation and biological state of the ecological system that supports it.

2.3. Key Concepts and Principles

Key Concepts and Principles: The handbook adopts the System of Environmental-Economic Accounting Central Framework and sector accounts in the United Nations System of National Accounts. A system of accounts for policy applications should guide the measurement of the complex interactions between the economy and the environment. Its primary goal is to inform the development and monitoring of environmental and development policies and evaluate their ecological and economic performances. EDEEA is about the development and use of accounts, tables, and indicators allowing for a systematic description of the environment, the economy, and their interactions; economic classification ensures consistency with financial accounts and harmonisation with the virtually ubiquitous SNA, thus guaranteeing robustness in capturing environmentally relevant activities and other aspects of environmental-economic linkages. It provides detailed, standardised environmental-economic profiles for each SNA

sector and economic activities' products, assets, etc. It also illustrates the possibility of interrelation with traditional economic statistics.

3. Methodology

The methodology for drawing the physical and monetary accounts on land and forests is based on the latest, current, and most detailed available data generally provided by the relevant authorities. This data includes, on the one hand, information on forest goods and services and, on the other hand, forest economic activities and the associated environmental expenditures. The relevant statistical authorities also provide information on the imports of other forest resources. The process for drawing the accounts is the application of the Eco-Environmental Economic Accounting System (SEEA)-Forestry. Surveys were conducted to fill some gaps. In other cases, data from previous years were used. Furthermore, decisions were made to construct the accounts within the different stages.

First, the supply and use tables for land and forests were built to describe their different contributions to the national economy and the various local productions and incomes associated with the use of land and forest resources. The accounts were then drawn for the specific resource forest, with the interest in taking into account the economic and environmental aspects of the activity. Each resource occupies a unique space in the economy; thus, specific accounting must be drawn. Moreover, several aspects of the accounting system prioritise the accounting of different types of forests over the other species. For the work in question, it has been decided to include the three types of forests: production, protection, and conservation forests. Thus, the sectors were grouped into non-timber and timber products if necessary to differentiate between the goods and services and to know the value of each type of forest in the quintuple perspective of SEEA. Once these different accounts are drawn, the environmental accounts are integrated into them.

3.1. Data Collection and Sources

Data Collection and Source: The data needed comes from the forestry sector, measures the goods and services available in individual years, and relates to NCF, marketed and non-marketed. Thus, to provide an extensive detailed picture of the goods and services provided by the Sub-Saharan African forests, there was a severe restriction on the period for data collection, which drew mainly on 20 countries of the Central Africa sub-region. Both secondary and primary data

sources could be used to account for the economic, environmental, and ecological values of the forest sector in a country. In this study, both methods were used. The secondary sources included existing publications, national and international reports, and accounts of wood production and forest products, which have been scattered in various databases in the national administrations and offices of national ministries in charge of forest management in the concerned countries. The primary data was based on a survey to retrieve understated information about the forest sector.

It is important to note that data availability and quality are critical constraints in acquiring the information necessary for carrying out the NCF's extensive analysis. What is essential is verifying statistical information so that an accurate picture of a nation's goods and services from its natural capital can be painted. The indicative profile generated for each NCF depends on the statistical information policy and consumer preferences.

3.2. Data Analysis Techniques

Scientific methods are used to obtain and prove original facts and improve the accuracy of estimated actual events and phenomena characterised by uncertainty. They originate and develop from the cognitive process that is enhanced through problem-solving. The scientific methods generalise and codify the practical experience collected over the years of solving specific problems. They consist of four consecutive stages: observation, empirical induction, statistical evidence, and verification. Dirty data induction is impossible if it cannot be observed, calculated, and verified. It calls for action to address real problems of insufficient data quality and not only for self-criticism of academic results.

Data analysis constitutes a further step in improving the accurate capture and representation of genuine problem-solving. It enforces that measurement plus noise constitutes the corrected results that must be considered. Uncorrelated errors, outliers, discordant regular measurements, label mistakes, distortion, and inconsistency are part of the discovery process in the framework of measurement science. Descriptive statistics or non-econometric statistics are not only heteroscedastic, serially correlated, multicoloured, and unit-rooted innovations. The standard data quality problems are not only correctness, coherence, and completeness issues. They encompass feedback from the analysis to the data preparation process and are not limited to solving sophisticated statistical

problems. Heteroscedasticity, serial correlation, multicoloured, and unit-rooted innovations constitute obstacles for statisticians against model parameter estimation. However, they originate from and directly depend on the accuracy of the models' inputs. Although data analysis employs descriptive statistics, they differ from non-econometric statistics because they serve different purposes.

3.3. Case Study Approach

This article is used as an introduction to a special issue, which includes a set of papers from a group of leading Central African economists on the potential policy application of the proposed E3A. In particular, E3A is used to assess the socio-economic and environmental impacts of a proposed major road construction project in Central Africa. The case study demonstrates key findings from the proposed E3A for potential policymakers. Significant interlinked conclusions of the case study are used to assess the need for policy actions to cope with substantial socio-economic and environmental challenges in the sub-region of Central Africa. Key policy recommendations aimed at enhancing the potential specific and general benefits from the proposed major road construction project that can contribute to the economic diversification of countries in the sub-region and enhance local, national, and biophysical balances in the region are proposed.

We also examine key related determinants of the relative investment and socio-economic underperformances of the Central Africa sub-region within the communities. A central feature of these findings is that relative investment and underperformances have been persistent and counter-cyclical relative to the performance of the Central African oil sector. However, they remained driven by the significant resources. We also discuss external aspects of the issue and the impacts of economic, environmental, and governance elements on the dynamics of natural forests in the region. We see that E3A provides an integrated framework for considering resource investment strategies, potential mid- to long-term economic structures of countries in the sub-region, and the equitable and efficient governance of associated social and environmental objectives.

4. Eco-Environmental Economic Accounting in Practice

ECO-ENVIRONMENTAL ECONOMIC ACCOUNTING AND ITS POLICY APPLICATION IN THE CENTRAL AFRICA SUB-REGION: In addition to the economic and environmental domain of development, sustainable development also consists of social progress where the three pillars of sustainability are

considered. Nowadays, the biggest issue of worldwide policy is "how can these three pillars be balanced – also known as integration, interconnection, consilience, and harmony." The three pillars must be integrated; therefore, it is challenging for policy professionals to consider each of the pillars independently through the professionals' perspectives of the three respective areas of expertise: economics, environment, and social progress due to potential material contradictions.

Therefore, the EA has emerged from the need to facilitate the integration and articulation between economic and environmental information systems. The SEEA has officially endorsed and recommended that all countries and international organisations use it as the basis for the effective integration of environmental statistics and ecological functions and outcomes with economic statistics. The integration has to be made with traditional indicators, economic and social, but also with essential ratios, new physical indicators, monetary and time series ones, in the field relevant to natural hazards, climate change, etc., which are necessary for monitoring and providing advice and information to policymakers. Only this provides a solid base for informed decisions within a consistent development framework, thus contributing to sustainable planning, economic policy formulation, and developments at all levels.

4.1. Global and Regional Initiatives

In a global context, significant progress has been made over the last few decades in developing environmental and environmental-economic accounting statistics. Ongoing work focuses on elaborating detailed and comprehensive internationally agreed statistical standards for these accounts to improve consistency and comparability over time and space. At the global level, the System of Environmental-Economic Accounting, the London Group, and the Asia-Pacific network have provided invaluable leadership, guidance, and support for those engaged in the construction and use of these accounts. Several regional initiatives also exist. The European Environment Agency has assisted several countries in developing accounts for energy, air emissions, and material flow. It has fostered the construction of satellite accounts in several Member States. The Organization for Economic Cooperation and Development and the Economic Commission for Europe have likewise been highly influential in promoting the construction of detailed and consistent accounts. Australia is actively participating in and

contributing to work coordinated by both SEEA and the London Group, as well as others.

4.2. Key Indicators and Data Collection Methods

4.2.1. Provisional Key Indicators

After implementing the forest eco-account, the most interesting variables are, without any doubt, those relating to the physical extensions of the forests and the forest resources and those referring to their use. Numerous studies aiming to find indicators to approach the different uses of the forest better are easily understandable in this way. Despite the availability of the information, various proposals have been made for the use of some indicators to measure the intensity of the use of wood and non-wood forest products when implementing the eco-account or seeking to improve the graphic representation to facilitate the reading of the leading products contained within the functionalities of eco-accounting.

Various typologies of impacted data are proposed. They may, in particular, check the over- or under-exploitation, the threats to be managed, the pleasures of protection, and the actual tangible qualities linked to forest improvement and the quality of life through better management of forest and wild forest resources. Thus, it is a question of double ecological and economic interest.

5. Policy Relevance of EA

The results of EA have direct applications in good governance, as they enable the integration of sustainable development analysis into the macroeconomic context, bridging various sectors and macroeconomic frameworks and becoming a tool assisting decision-makers. Building eco-environmental indicators with a clear accounting framework illustrates the complementarities between traditional macroeconomic and environmental accounts while simultaneously reflecting the respective objectives and defining their boundaries. On the one hand, the central position of economic development in sustainable development policies requires eco-economic analysis to address questions such as the availability of natural resources, their efficient utilisation, the associated environmental externalities, and the potential risks caused by economic policies. On the other hand, the fundamental global and complex nature of environmental problems requires considering the structure and development of economic, ecological, and social systems and their dependencies, which can be obtained by combining macro and

microeconomic indicators with microeconomic details about the environment. Various meetings have highlighted the importance of developing consistent frameworks for integrating economic and environmental data. Examples of the direct implications resulting from EEEA applications are the links between land use and food security, climate change, and biodiversity protection, emphasising the necessity of managing ecosystems holistically; the impact of the loss of the stock of natural resources on economic prosperity and the distribution of such implications, while monitoring eco-economic sustainability.

5.1. Linkages to Sustainable Development Goals (SDGs)

This section provides an overview of the types of contributions made by the proposed framework. The framework regarding distribution and fluctuation is presented, and the proposed policy applications are given. It draws on the experiences from its implementation in the two pilot countries. Finally, it concludes the paper.

The integrated results-based management and stakeholders' participation approach seeks to contribute to the ongoing efforts to institutionalise the proper and adequate computation of goods in the countries by setting out an innovative framework that accounts for ecosystem limitations in providing ecosystem services.

The eco-environmental economic accounts are a crucial core framework for measuring and valuing goods and their constituents - i.e., ecosystems, biotic resources and ecosystem services. The framework proposes organising the wealth of data collected by the different thematic studies conducted by disparate experts and data on biotic resources and ecosystem services through standard or model record sheets. These data can then be compiled easily into an indicator of change, trends, pressure, or state maps to support informed decision-making. The involvement of stakeholders and value orientation during the system design should help set the institutions' working agenda in a consistently transparent and democratic way, contributing to sustainable development.

5.2. Policy Integration and Implementation Challenges

5.2.1 Policy Integration This inherent challenge demands a good understanding of the complex links between national and sub-national institutional arrangements and guiding principles, strategies, and action programs. The widespread practice

of public intervention in pollution abatement and natural resource conservation creates government-related activities around market-driven economic units. This calls for a new conceptual approach and improved statistics reflecting the activities. Indeed, researchers and analysts should adopt the practice of using sub-accounts with breakdowns of individual resource subsystems on which pollution and economic performance data are available to policymakers and the rest of society.

5.2.2 Policy Implementation The elaboration of set guidelines and standard mechanisms, dynamic models, and a good strategy that leads to the correct valuation of goods and services are essential tools that serve issues of economic and societal policy decisions. Adjustment of GNP through satellite accounts reflects that stage of national income and product accounting development where analysts concluded that GNP and other measures were needed to reflect more accurately the well-being of the economy and society.

6. Case Studies in the Central Africa sub-region

Several case studies embodying some features of the SEEAA for the Central Africa sub-region have been initiated in seven countries under the auspices of the Central Africa Program for the Environment. These case studies are in document form but will, with time and technical assistance, evolve into accounts that can be combined to provide a sub-regional capacity of a kind that can satisfy the data needs of the people of the sub-region for informed decisions to support proper use of the forests and other natural capital. These are briefly described, focusing on the situation in Cameroon, where political interest has been strong and where the development of such accounts is active.

The case studies aim to tell economic and other stories that comprehensively describe the changes in natural stock and other capital that occur during present economic activity. They follow the standard accounting structures adopted by the System of National Accounts, the Integrated Environmental and Economic Accounting System, and the SEEAA. They stress using classifications that fit the problem being treated and the need for results that can be compared at the sub-regional level. As such, the resulting data flow can be considered an index or set of indices rather than a simple accounting table. They include forest resources, growing trees and dead wood, carbon and nitrogen, fisheries, wildlife, access to clean water, and farmland. They also include the wealth of various groups,

including government units, industrial and institutional users of the resources, and households. The sources of that wealth are the sale of forest, water, fish, and other wealth-generating activities. Information about the state and its changes is key in determining policy choice. Data and analyses based on the results of these case studies, both in the countries where they are conducted and expanded to the sub-regional level, lend to the results of the sub-regional accounts collected for that integration. The population of the forests depends on them. They are its capital value; they also regenerate and replace the capital value. Such accounting is a technically and politically feasible way to provide the information currently lacking to support informed decisions by all parties, be they village elders, local political decision-makers, global entities, or partner NGOs.

6.1. Country A

Country A is a tiny, landlocked, and densely populated country in Central Africa. The government is very concerned about its environment as a means of achieving sustainable development, which can improve human welfare, poverty reduction, and economic growth. The government firmly believes that national accounts and environmental statistics are vital tools for planning and decision-making. They have significantly contributed to developing a National Strategic Environmental Action Plan for poverty reduction and forest protection based on a forest poverty reduction strategy at the local level. The plan has five thematic areas: reforestation and deforestation control, the fight against desertification, the problem of water and sanitation, management of solid and toxic waste, and capacity building. Energy issues are also given priority because there is a potential risk of conflict between poverty reduction goals and the growth and diversification of the economy, linked with the need to increase energy outputs. Indeed, the modern energy services universally available in countries will promote social and economic progress. The relation between the environment and setting the sustainable energy strategy in Country A is crucial, and the role of economic activities is also very significant. The government will undertake training programs to respond to the challenge of integrating environmental concerns and sustainable development objectives in key policies and strategies. The chairman also stressed the need to prepare shadow prices for natural resources to ensure respect for sustainable development policies and strategies. Generally, most specialists believe that environmental indicators and codes are complementary to the core Satellite System.

6.2. Country B

Country B is blessed with human, natural, and financial resources. It has enormous forestry resources that form the basis for a substantial segment of its economy. The forest sector accounts for over 65% of the country's GDP, 75% of its domestic capital formation, and 93% of its export earnings. It contributes substantially to the nation's economic development, and forestry provides dwelling materials, fuel, medicine, and food for the rural population. The problems faced by the country include those of poverty, population explosion, and soil erosion. In many areas, the overexploitation of natural resources, especially forestry resources, is detrimental. The situation is dire in that the activity is being pursued with no thought for posterity, which in turn undermines the sustainable development of the economy.

Country B is a least developed country and a developing country. The primary focus of its economy is conventional national economic accounting. The diagnostic information required for eco-environmental policy is provided by specialised institutions, which include the Department of Forestry and the Wildlife and Protected Area Authority. These bodies offer output classification tables for the sectors that exploit natural resources. Over time, the accounts could be extended to include 'resource rent', extracting rent to subsidise other development activities. The forestry accounting framework shows the location and extent of resources, indicates the pointing systems in the use of resources required by the various forest activities, and shows the performance of the forestry activities in national economic accounts. These contributions are reviewed and discussed.

6.3. Country C

In the case of Country C, data were compiled for this future policy application section. Like the other countries, Country A and Country B, described in previous sections, developments within the central Africa sub-region can be defined by different developmental stages, including the final stage, in which present structural mechanisms support the economy. In this final-stage analysis, where attention is generally on the accumulation of environmental assets, broader and more specific management data are collected. In addition to the national accounts data described above, country policy needs to focus on more detailed eco-environmental-economic accounts to implement broader forest management and nature conservation policy objectives.

The sectorial structure of Country C can be broadly defined through national accounts data, including activities within agriculture, forestry, fisheries, animal and crop production, hunting, landfilling, nature conservation, and erosion control within central government economics. About 70% of the population lives in traditional rural areas, mainly dependent on food and housing from agriculture, and fuelwood to provide 94% of their energy needs is derived from wood-based activities. A vast range of industrial and handicraft processes in the country are energy-determined, as well as the operation of electric production and transportation. Although the government has other energy resources, such as hydropower, petroleum, uranium, and coal, these are used to supply urban power needs and rural electricity demand. The country also uses renewable energy to meet average power peak demand, adjust air conditioning loads, provide energy backup, and displace diesel generators for remote power generation. The import of high-efficiency, low-polluting gas turbines has offset worsening economic conditions. High electricity costs, as well as increasing fuelwood demands, have forced rural-centered industries to close. Since introducing electric power step tariffs for agricultural organisations, many growers have found it challenging to afford to dry during the production season due to rising levels of hydropower drawdown. Sensitised to the looming threats of certain electricity withdrawals, consumers soon discovered incentives for holding onto critical drawdown periods, thus stepping over high irrigation usage and high-cost drying season tariffs. Wood charcoal production and sales remain essential considerations for forest economics. The level of urban energy needs, remote hunger for firewood to cover residential and commercial needs, better management of forest resources, and supply chain communication are considered. Forest activities, once highly promoted, currently generate very low per capita economic benefits.

7. Conclusion and Recommendations

In conclusion, the potentials of SEE are numerous for various agents of economic life that SEE covers. Policy decisions based on SEE are sound. They are policy frameworks that particularly enable the reconciliation of economic, ecological, and social imperatives. The SE course thus seems to be of interest to all states. In contrast, the policy of environmental improvement and social pacification weighs more and more on those in charge of economic decisions. Data dissemination is an important issue. SEE data are very scarce; only some developed countries have used it partially. The SEE intends to fill the gap of environmental variables that

have never been fully integrated into the decision-making process of the economy, particularly in statistics.

However, the experimental phase of the SEE account and the assessment of SEE indicators from the 1993 standard have highlighted many difficulties and limitations: the problem arose from an incomplete instrument, specifically the SEE framework and concept tuning. Which indicators should be taken into account for the SEE? The structure of SEE account characteristics, content dimensions, needs criteria, and conditions should merge to satisfy those wanting to use it and allow development strategies to guide, orient, and follow up. Therefore, further measurement of SEE indicators is recommended to achieve accountability tasks. This goes hand in hand with providing accurate, reliable, and consistent environmental-economic information and its simultaneous dissemination and various uses. Its latter role is vital for assessing and improving its presentation to end-users at all levels.

7.1. Summary of Findings

The main objective of this study is to elaborate on the methodology of environmental-economic accounting at different scales – global, regional, national, and local. The objective has been met by providing hands-on practical guidelines on using data and estimation methods to mainstream the three dimensions of sustainable development in economic and environmental policymaking. While these scales do not represent a strict hierarchy, the explanations and examples provided in the chapters are very much scale-dependent. This study has also provided and advocated the first approach towards the importance of environmental-economic accounting in general and African countries.

The analysis provided in this study points to the fact that beyond the inflows and outflows linked to economic activities, production leads to physical investment and depletion and the generation of resources used by all sectors and the economy within the ecosystem. Furthermore, reliance on ecological development heavily depends upon the various ecosystems functioning for centuries before countries started intensive economic activities at the expense of ecosystems' structure. Greener accounting can help policymakers look into a country's environmental capital income account, assess the stocks and prices of natural resources and develop the related financial instruments, as done with economic and physical capital.

7.2. Policy Recommendations for Central Africa

The SEEA-CA integrates many themes, bridging public policies and environmental issues. The primary public policies, which in theory are recommended, are those introduced by the 2030 Agenda for Sustainable Development framework. It encourages, in particular, the integration of the three pillars of sustainable development with figures. The SDIC-CA provides the measures of data produced for this extensive framework. In this part, it is instead a question of illustrating the capabilities of the CA data in evaluating nuclear human activities and enlightening, via this subset of data, targeted environmental subjects for policies, particularly those related to essential themes or singular results in the subregion. These recommendations are also based on the communications of institutions or public structures working on applications of the SEEA to various scales. African experiences are better known, even if examples start to come from regional or national ancillary projects. They should help to ensure that the SEEA accounts occupy an optimal place in the macroeconomic statistics programs of the region's countries and provide optimal tool assistance to statisticians. The following recommendations are often conceptually addressed to the statistical institutes of the subregion. However, we first address the users whose contribution is essential for the good functioning of the activities of statistical institutes.