Implementation of the SNA: Starting the 2008 SNA and Pursuing the 1993 SNA

Achille Pegoue, National Institute of Statistics, Cameroon

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By Achille PEGOUE, NIS-Cameroon

Abstract

The purpose of this paper is to document the whole process of the Cameroon national accounts based on 2005 benchmark year effective in 2008.
In order to compile this benchmark year, three methodological challenges were identified: implement some aspects of the SNA1993 regarding households, take into account recommendations of the SNA2008 relevant to our economy, and upgrade some classifications mainly based on the ISIC revision 4. Data challenges were the integration of the 2005 population and housing general census, the 2005 employment and informal sector survey, the 2007 standard living survey, and the 2009 general enterprise census. Dealing with these challenges resulted to an overall 14.7% change in the GDP, with -0.2% accounting for the SNA2008 improvement, 0.4% accounting for the SNA1993 improvement, and 14.6% accounting for data improvement This lead to an increase of GDP by 21% Compared to the 2005 provisional accounts
Specifically, the expectation approach recommended by the SNA2008 was implemented to compute the output of non-life insurance sector by adjusting the estimated claims incurred through exponential smoothing and Box & Jenkins techniques. The Cameroon-Airlines Combi crash in 2000 was an interesting case with huge claims incurred and high discrepancy between the former SNA and the new SNA output estimates. Following the SNA2008, The FISIM was broken down into sectors and industries, which result in 0.2% decrease of the GDP. The SNA2008 recommendation regarding the inclusion of military weapon systems in government GCF was already adopted in former series since Government weapon systems were never split into civil and military use. Likewise, the production of the central bank regulatory services was not incorporated because the Central bank (BEAC) is an extraterritoriality. Going back to the implementation of the SNA1993, the estimates of non-market production of households in fetching water was performed. Our main finding is that final consumption expenditure in water should be doubled based on the 2007 standard living survey. Likewise, the estimates of the GFCF on construction of owner-occupied were improved. We found that half of the 2005 old GFCF for construction should be added when taking into account the 2005 population census. In terms of the SNA central framework and data quality, two major improvements were done: the compilation of financial account and the allocation of the GFCF to industries.

Résumé

Cet article est relatif à la mise en place de l'année de base 2005 au Cameroun qui a débuté en 2008. Trois enjeux méthodologiques furent identifiés : achever d'appliquer certains aspects du SCN1993 relatif aux ménages, intégrer les recommandations du SCN2008 en relation avec l'économie camerounaise et mettre à jour les nomenclatures affectées par la sortie de la CITI révision 4. Les défis statistiques étaient la prise en compte des résultats

du recensement général de la population de 2005, de l'enquête sur l'emploi et le secteur informel de 2005 et de la troisième enquête auprès des ménages de 2007 ; en plus, un recensement général des entreprises était planifié pour l'année 2009. Ces changements ont conduit à un PIB de 2005 14,7% plus élevé que son niveau selon le SCN1993, dont -0,2% comptant pour les changements du SCN2008, 0,4% pour les améliorations du SCN1993S et 14,6% au titre de l'amélioration de la qualité des données. Dans l'ensemble, le PIB est en hausse de 21% comparé aux comptes provisoires 2005.

De façon spécifique, l'approche anticipative recommandée par le SCN2008 a été mise en œuvre pour le calcul de la production de l'assurance non-vie en ajustant les indemnités dues par le lissage exponentiel et la modélisation de Box&Jenkins. Le crash du Combi de la Cameroon Airlines en 2000 présentait une situation d'indemnités dues élevées et de grand écart entre les anciennes données et les estimations selon le SCN2008. En suivant le SCN2008, le SIFIM a été partagé entre le secteur et même aux activités ; l'impact de cette répartition a été une baisse de 0,2% du PIB. La recommandation du SCN2008 d'inclure les systèmes d'armement militaire dans la FBCF était déjà appliquée dans les anciens comptes face à la difficulté de séparer les systèmes à usage civil de ceux à usage militaire. De même, la production de service de régulation de la Banque centrale n'a pas été estimée du fait de l'exterritorialité de la BEAC. Poursuivant la mise en œuvre du SCN1993, la production non marchande des ménages en recherche d'eau de consommation a été estimée à partir des données d'ECAM2007, ce qui a conduit à un doublement de la dépense de consommation finale des ménages en eau. De même, une estimation de la FBCF des ménages occupant leur propre logement en construction a été réalisée ; ainsi, en utilisant le RGPH de 2005, la moitié de la FBCF en construction de 2005 doit être rajoutée dans la nouvelle campagne 2005. S'agissant du cadre central du SCN et de la qualité des données, deux améliorations majeures ont été opérées : l'élaboration des comptes financiers et la décomposition de la FBCF par activité.

Implementation of the SNA: starting the SNA2008 and pursuing the SNA1993[1]

By Achille PEGOUE, NIS-Cameroon

A long process for national accounts data improvement was launched in Cameroon in 2008. The first target of this process was to renew with compilation of more detailed accounts and the integrated economic accounts describing institutional sector transactions. This target deals with the long sequence of provisional accounts which started in 2002 when financial statements shifted from budget to civil calendar. Although there was no formal strategy, a set of activities to be carried out was adopted

This paper is organized as follows. The first section reviews the implementation of the SNAs in the Cameroon and concludes on necessity to carry out a back casting exercise to provide consistent series based on the SNA2008. The second section focuses on major steps which lead to a consistent GDP during the compilation of the 2005 base year. The third and four sections assess the work done in the 2005 benchmark year by reviewing data improvements and methodological efforts undertaken to implement the SNA2008 and its former version. The last section provides concluding remarks.

The contribution of this paper is threefold:

- Overview the work done, since the years 1950s, by technical assistants and national accountants to describe the national economy through national account by applying recommended compilation policy;
- Recall the requirement of a national implementation strategy of the SNA2008 involving the entire national statistical system
- Request international assessment to check if the developed and applied methodology for the 2005 benchmark year is on track.

I. Status of the national accounts in Cameroun since 1951

I.1. National accounts from 1951 to 1970: the Courcier methodology

The first experience of details accounts in Africa French spoken area was attempted by Mr Leveugle of INSEE for the year 1951. Based on this work, completed by Christol's works on the year 1956 and Vesse's work on the year 1957, the very first available series on national accounts is 1951, 1956, 1957 and 1959 compiled by Jean-Pierre Allier and Nicolle Etienne from October 1961 to April 1962. These series were related to the Oriental Cameroon. In 1964, Allier and Etienne, on the behalf of the CIDEP (Centre d'Information, de Documentation et d'Etudes et des Plans) compiled the 1959 accounts of the Federation by adding the 1959 national accounts of the Occidental Cameroon

[1] *Note*: The author would like to thank Morten Jerven and Liv Hobbelstad Simpson for reviewing the paper. Thanks to Nguimkeu Evariste, Tafalong Ernest and Dongmo Valery for their contribution to improve the quality of the paper. Many thanks to the Cameroon national accountants team who compiled the 2005 benchmark year. Final thanks to the organizers of the IARIW conference in Cape Town, South Africa, 2011 for supporting the costs of attendance.

compiled by Dr Snipper. This data concatenation was also done for the years 1962/63. A full account was finally compiled for the year 1963/64 used as benchmark year of the five years plan. The 1962/63 accounts were revised during the compilation of the 1963/64 accounts and a technical note was written by Oleg Arkhipoff in « Méthodologie des comptes 1964/65 (Cameroun Fédéral) » in Etude Spéciale N°3. The methodology described in the document was still in use by the Department of General Statistics and Economics Accounts till the compilation of 1971/1972accounts. This methodology stemmed from the French system of national accountancy and labeled the Courcier system.

I.2. National accounts from 1970/71 to 1990/91 the 1968SNA

The 1968SNA was used by the Department of Statistics and national Accountancy since 1975 and the first series were the transcription of the 1970/1971 and 1971/1972 accounts formerly compiled with the Courcier System. The 1968SNA series of national accounts end in 1990/91 with the implementation of the SNA1993.

I.3 National accounts from 1989/90 to 2001/02 and 1993 to 2009: the SNA1993 (ERETES)

ERETES software was introduced in Cameroon in the middle of the 1990s after the issue of the SNA1993. Based on availability of data and time constraint, two major decisions were taken. The first was to select 1989/90 as the benchmark year of the new series of accounts; this choice was motivated by the 1987 population and housing census, the 1991 standard living survey, the informal sector and employment survey of 1993/94, the 1986 manufacture census, the annual survey on manufactures which began in 1990. The second decision was to save time by skipping two years and taking the 1992/93 accounts as the following campaign. The implementation of the SNA1993 was concomitant to adaptation of ISIC revision 3 and the first compilation of accounts in volume terms. Until 2001, three series were issued including definitive, semi-definitive and provisory accounts; in addition, a methodological document (presenting data sources, classification, compilation methods and special development such as chain-product) was issued. In 2002, shifting from the budgetary calendar (July to June) to the civil calendar (January to December), lead to a break in the series of definitive accounts. Therefore, provisory accounts were issued for the year 2005 to 2009. The issue of the SNA2008 and decision to compile the 2005 benchmark year were considered as great challenge to renew with the compilation of definitive accounts.

I.4. The case of the 2005 base year

A new benchmark year was expected to replace the old 1989/90 benchmark year. The procedure of selection of this benchmark should take into account major statistical events such as (i) the 2005 general population census, given that the former was carried out in 1987; (ii) the 2007 standard living survey, given that the former was undertaken in 2001; (iii) the 2008 general enterprises census, given that the former was carried out in 1986 (iii) the issue of the SNA2008 and ISIC Rev. 4. In addition, the benchmark year should extend the central framework of the integrated economic accounts. (IEA) from capital to financial accounts. Therefore, the decision was taken in 2008 to compile the 2005

benchmark year and to take into the most relevant changes of the SNA2008 and all data available.

To conclude this section, some major remarks worth noting Actually, four series of national accounts based on four different methodologies of compilation are in use; moreover, some of these series are in budgetary calendar while others are in civil calendar; besides, overlapping periods can be found between some series. These facts involve carrying out a back-casting exercise to improve comparison across time and space. The new series will start from 1959 or 1951 and will be based on the SNA2008 as the standard methodology and the 2005 national accounts as the benchmark year. The following sections focus on computational steps of the implementation of the 2005 benchmark year and methodological efforts carried out to set the new series.

II: Major compilation steps of the 2005 benchmark year

II:1. Scope and compliance measures for the 2005 benchmark year

The scope of the old series based on the SNA1993 was:

- the supply and use table (SUT) for 43 industries and 43 products supplemented by an industry vector of employment; the classifications were derived from the ISIC rev.3 and CPC version1; in this classification, the 43th industry was devoted to record intermediate consumption of FISIM; in the table of supply at purchaser's price, trade and transport margins are merged;
- the integrated economic accounts (IEA) till the capital account for the rest of the world and the national economy divided into non financial corporations, financial corporations, Government, household including informal sector and nonprofit institutions serving households
- in addition, value added tables are issued by institutional sectors cross industries, and by industries of the informal sector

The 2005benchmark goes beyond this scope:

- in the SUT, the industry and products classifications are derived from the ISIC rev. 4 and trade and transportation margin are not merged;
- the IEA is extended to the financial account

Relevant compliances to the SNA2008 fulfilled are:

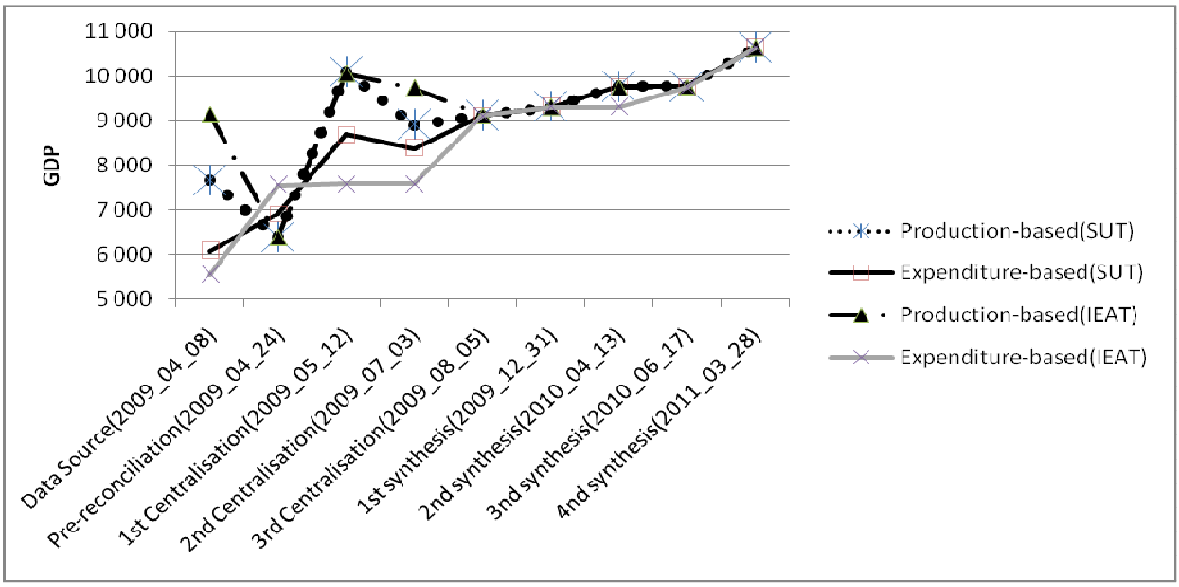
- inclusion of Government expenditures on weapon system for civil and military uses in the gross fixed capital formation (GFCF): this was already done in the old series since national accountants were unable to split these expenditures into civil and military categories;
- inclusion of the natural growth of harvested forests in output and in GCF;
- computation of FISIM based on loan and deposit and its break down by industries and institutional sectors;
- improvement of the coverage of the household output;
- output of the non-life insurance service base on adjusted claims;

- inclusion of premium supplements in the estimate of non life and life insurance;
- inclusion of the reinvested earnings in the rest of the world account; and
- inclusion of foreign workers' remittances in miscellaneous current transfers.

II.2. Major computational steps

Major computational steps proposed by the ERETES software and implemented are: data source processing, pre-reconciliation of data, decentralization and centralization and synthesis. Graph 1 below displays changes of the GDP during each step regarding two bases (production and expenditure; income-based is not illustrated since operating income is treated as a balancing item) and two approaches (goods & services in the SUT and institutional sectors in the IEA). Details of the two approaches and the three GDP computation bases are provided in Table 3 to Table 8.

Graph 1 : Evolution of the GDP during data processing



Data source processing aimed at gathering data from various sources such as administrative records, external trade, balance of payments, household and establishment survey, financial statement, etc. Indeed, date sources are managed for future integration in the database. Hence, the scope of the data source is of great interest when selecting which approach of the national should be considered between goods and services for the SUT or institutional sector for the IEA, which explains discrepancies between the GDP compiled in the SUT and the IEA, based only on data sources. In addition, data source processing does not address redundant information that is done in the next step.

The aim of pre-reconciliation of data is to validate each transaction based on all available data and provide estimates by breaking down data if needed. This can be illustrated by taxes that may be available as total amount received by Government or paid companies but may still need to be allocated to product, industry or institutional sector. Likewise, redundant information can be illustrated with the partial payments available in the database through household surveys and administrative records.

Many decentralizations & centralizations were implemented during the compilation process. The decentralization consists of splitting the database according to the division of tasks between the team of national accountants. During decentralization, supply and use balance (SUB), industry account (IA) and from whom to whom matrices are performed. The centralization consists of gathering the databases into a central database to assess the work done during decentralization and decide whether further decentralization is required or the synthesis stage can be started. During centralization, economic ratios are computed for behavior validations purposes, explanations of changes are drown and validated, accounting equations are checked, and comparison between industries, products and institutional sectors is carried out on transactions belonging to SUT and IEA.

The general synthesis consists of the reconciliation of the intermediate use matrix (IUM) in the SUT followed by the accounting consistency and economic check of the IEA.

In fact, the procedure is iterative and subject to substantial changes according to the ongoing process. Work on the 2005 benchmark year has started in 2008. Although data sources were loaded on the database in April 2009, new data sources were still included till the end of the process. For instance, the 2005 population and housing general census (PHGS) was issued in 2010. Therefore, output and gross fixed capital formation for owner occupiers dwelling (derived from the housing census) were included in the 2011 synthesis as shown in the Table 4 and Table 7. Likewise, data of the NPISHs sector expected from the enterprises census since 2009 were finally included during the 2011 synthesis. Due to lack of data, estimates of the informal NPISHs were not considered in the campaign. Different changes in methodology were also included along the process. For instance, the first FISIM computed based on the SNA2008 was constrained be equal to the SNA1993 based FISIM while the last synthesis finally kept the SNA2008 value. Similarly, data source processing has started before the issue of the ISIC revision 4 and the SNA2008. In addition, news changes were not well managed due to lack of time required to validate the bridge tables in order to update the database. Hopefully, the tool "change classification" of the ERETES software was very useful to achieve this goal. The extension of the scope could also justify repeated steps such as the synthesis; for instance, splitting margins into trade and transportations was a great challenge. In fact, while treatment of trade margins is well known by the team, treatment of transportation margins and its impact on industry of transportation was definitely set up through syntheses with inclusion of pipeline export (which was not included in the BoP in the beginning of the campaign), validation of household final expenditures and intermediate consumption of industry of trade in margin. The letter has peaked the output of transportation and warehouse in the last synthesis.

III. Data improvements in the 2005 benchmark year

The drafted rough implementation strategy of the 2005 benchmark year has identified four major challenges regarding data sources: the 2005 population and housing general census (RGPH) issued in 2010, the 2005 employment and informal sector survey, the 2007

standard living survey issued in 2009, and the 2008 general enterprise census issued in 2010. Furthermore, all data sources available should be reviewed in order to provide information to financial accounts.

III.1. The 2005 population and housing general census (RGPH2005)

The major data improvement expected from the RGPH2005 is basic data on own-occupied dwellers in order to estimate their output and gross fixed capital formation in construction. The implemented methodology is summarized in three major steps. Based on the RGPH1987, the estimates of average annual growth rates by kind of houses and area are computed. These average annual rates are back casted to the 2005 number of own occupied dwelling to provide the number of new houses. Finally, unit costs are applied to afford the value of non market output and GFCF of own-occupied dwellers in construction which is 491 billions of F CFA. This value contributes to 5%of the GDP change. Although the estimates of services of owner-occupied dwellings were included in SNA1993 series, it is likely that these series have overlooked the estimate of own occupied dwelling.

III.2. The 2005 employment and informal sector survey (EESI 2005)

This source released data on employment and the accounts of the informal sector. Employment is useful in industry accounts to validate ratio such as productivity (output and value added per unit of labor), per capita salaries and operating or mixed income per unit of labor.

In the EESI2005, activities of the primary sector were excluded from the scope of the informal sector. Taking into account the 2005 survey has increased the size of the informal sector by 57 billion which contributes at 0.7% in the increase of the new GDP compared the old 2005 value. The survey has also highlighted some informal economic activities overlooked by the SNA1993 series such as resell of water and electricity. Moreover, the ISIC revision 4 has updated the classification of some informal activities such as reseller of telecommunication products. Besides, the survey provides trade margin rate based on sales and purchases of the traders which were in the SUB.

III.3. The 2007 standard living survey (ECAM 2007)

The purpose of taking into account the ECAM2007 has threefold:

- compiling the household final consumption expenditure vector;
- Allowing room for industry account of the primary sector;
- Computing the household output and final consumption expenditure estimate in fetching water;

Based on the ECAM2007, the 2005 household final consumption expenditure vector is obtained by back casting. Rough assumptions, such as average population growth rate, were used as proxies of volume indexes. Price indexes were provided by the household consumption price statistics. The ECAM2007 does not help identifying household partial payments to Government (the estimate is 32 billion F CFA) that are released in

administrative records and shifted from market to non market household final expenditure. On the whole and after reconciliation, the SNA2008 household final consumption of the year 2005 increased by 788 billion compared to the SNA1993 value.

Regarding the primary sector activities, only the estimates of non market output and employment (assumed to be self employed persons and family workers) were performed. The estimate of the 2007 output is back casted to obtain the 2005 value using volume and price indices from other data sources. Although the estimates of picking products were improved, the SNA2008 household value added of the primary sector dropped by 94 billion compared to the SNA1993 value.

III.4. The 2008 general enterprise census (RGE2008)

Only data regarding the NPISHs were extracted from this *RGE2008* database. Around 1 900 NPISHs were identified in the census. Data gathered are compensation of employees and intermediate consummation which are enough to compile the production account. The estimate of the 2005 new value added is 244 billion and it contributes to 2.5% of the increase in the SNA1993 based GDP.

Addressing these data challenges leads to an overall 14.6% increase of the 2005 GDP figure based on the SNA1993 as given in Table 1.

Table 1 : Contribution to the change of the 2005GDP based on the SNA1993

Source of change	Absolute change	Relative change (%)(*)
SNA2008	**-17 948**	**-0,21**
Insurance	-176	
FISIM	-20 949	-0,24
Database	3 177	0,04
Central Bank		
Gov GFCF		
Capital service		
SNA1993	**31 090**	**0,36**
Fetching water	31 090	0,36
Data improvement	**1 276 679**	**14,59**
Services of owner-occupied dwellings	433 130	4,95
Construction of owner-occupied dwellings	491 282	5,61
NPISH (VA)	215 321	2,46
Cost transfer	80 142	0,92
Informal sector (without primary sector)	56 804	0,65
Overall identified changes	**1 289 821**	**14,74**
Overall changes	**1 840 252**	**21,03**

(*)*Relative change=absolute change/GDP base on the SNA1993*

IV: Methodological effort to implement the SNA

IV;1. Pursuing the implementation of the SNA1993

Three issued were solved regarding the SNA1993: improve the estimate of household final consumption expenditure by including activities such as fetching firewood, improve the

treatment of margins by splitting trade and transportation margins, and compile financial account.

Fetching firewood was included in the non market household final consumption of the ECAM2005 but not fetching water. For instance, 22% of household in urban area and 83% in rural area have no expenditure in water in the survey. To estimate the household expenditure in fetching water, some strata are considered: each of the 12 regions was divided into two areas. In each stratum, two groups were formed: the first consists of households with expenditure in water and the second is the other households. We assume that any household of the second group is similar to the average household of the first group and therefore consumes the average water expenditure of this stratum. After back casting the result, this leads to a 31 billion non market household expenditure in water to be added to the 39 billion market expenditure. The estimate of output in fetching water (equal to the final consumption expenditure) contributes to an increase the SNA1993 based GDP by 0.4%.

In the SNA1993 series of national accounts, transportation margins were merged to trade margins. The drawback of this methodology is that the output of trade activities is overestimated while the transportation output is underestimated. Splitting of margins is based on two data sources: the 2005 informal sector survey which provided sales and purchases of traders by goods and the 2003 survey on items contributing to set prices of thirteen crops which provided trade and transportation margin rates. Split margins and new margin rates increases the margin value by 11.1% but the impact on the value added is less significant. Specifically, the value added of trade activities decreases by 13% while the one of transportation activities increases by 68.6%. A full documentation is available in the NIS of Cameroon on the computation of trade and transportation margins and output in the 2005 benchmark year.

IV.2. Considering relevant changes in the SNA2008

Decision to compile a new benchmark year was coupled with the release of the SNA2008. With respect to national statistical system and local capacity, five major challenges were considered: output of non-life insurance by considering the computation of adjusted claims, computation of the FISIM based on loans and deposits for institutional sectors and reference interest rate, inclusion of Government military weapons system in the GFCF, non market production of the Central bank and inclusion of database, software and relating intangible products in the GFCF.

Expectation approach was used to compute the adjusted claims incurred to be used in the compilation procedure of the non-life insurance output. Peaks over mean function was used to find the threshold of claims in view of identifying extreme values. Extreme values were typical for the years 2000 and 2001 due to the 2000 Cameroon-airlines Combi crash. In fact, although many catastrophic events did happen within the considered period (like the Lake Nyos gaz outbreak causing 2 000 deaths, the wagon kerosene crash of Nsam and

fires in many markets), the insurance market plays a little role with an entry rate below 1%. The difference between the extreme value and the threshold should be allocated to the next following ten years after smoothing the normal series (series with value below the threshold). The Box & Jenkins smoothing was chosen over the exponential smoothing according to the minimum variance of the residuals criteria. Change between the new estimate of the non-life insurance output and the former value is 176 million CFA.

Following the SNA2008, The FISIM was computed for each institutional sector. The first attempt was to derive interest based on loans and deposits available in the monetary statistics issued by Central bank and interest rate of sector. Unfortunately, only ceiling interest rate on loans and floor interest rate on deposits are issued by the Central Bank. Discussions with bankers' enabled us to come up with an alternative for sector applied interest rate on loans. The FISIM computation of these statistics was very huge (the scaling coefficient is about 3) compared to the difference between interest on loans and interest on deposit. It was therefore decided to rely on statistics on interest of each sector to settle its loans and its deposits. The reference rate was applied to these loans and deposits to obtain the reference interest by institutional sector. The total FISIM computed by this method was still higher than the SNA1993 FISIM but the scaling falls to 1.3. To compute the imported FISIM, the following assumption was made: investment income of financial corporations is used to compute the exported FISIM while investment income of Government and non financial corporations is used to derive the imported FISIM. Details of these computations on SUT are provided in Table 2.

Table 2 : Impact of the new FISIM computation on the SUT (in million F CFA)

	FISIM based on SNA2008	Change on non market SUT	FISIM based on SNA1993	Gap between SNA2008 and SNA1993	Impact on SNA1993
Output	71 513	90 608	55 811	106 311	0,8%
Import	130 753			130 753	7,0%
Total supplies	**202 266**	**90 608**	**55 811**	**237 064**	
Intermediate consumption					2,2%
Fictive sector			55 811	-55 811	
Non Financial corporation's	89 696			89 696	
Financial corporation's	2 130			2 130	
Government	90 592			90 592	
Household	636			636	
NPISH	17			17	
Final consumption expenditure					2,8%
Household	16 302			16 302	
NPISH		17		17	
Government		90 592		90 592	
Exports	2 893			2 893	0,2%
Total uses	**202 266**	**90 608**	**55 811**	**237 064**	
Change on the GDP				-20 949	-0,2%

On the whole, while the SNA2008-based computation of the SIFIM has a negative impact on the GDP (contribution of -0.2%), it increases the GNI (necessary amount to support the final consumption expenditure created). A full documented methodology is available in the NIS of Cameroon on the FISIM computation in the 2005 benchmark year based on the SNA2008 and its impact on aggregates (GDP, GNI, saving and balance of transaction with the rest of the word).

Data relating to research and development, patent and license are available in the financial statements of companies. In the document, these data (including software and database) are included in fixed assets, implying an implicit assumption that these data are indeed fixed assets. The estimated amount contributed to increase the GFCF by 0.2% and the GDP by 0.04%.

The remaining issues relevant to our economy don't alter our results for the following reasons: The SNA2008 recommendation regarding the inclusion of military weapon systems in government GCF was already adopted in previous series since Government weapon systems were never split into civil and military use. Likewise, the production of the central bank regulatory services was not integrated because the Central bank (BEAC) is an extraterritoriality. Nevertheless, the output of the Central Bank remains an unanswered issue.

As shown in Table 1, the overall contribution of recommendations regarding the SNA2008 is -0.2% mainly due to import of the FISIM while the inclusion of the household output in fetching water following the SNA1993 is 0.4%. Seemingly, using new data sources has increased the GDP by 14.6% stemming from both construction and services of owner-occupied dwelling. Other changes, accounting for 6.7%, could be ascribed to changes in classification (implementing the ISIC revision), data improvement, new computation method (splitting the margins). But the specific contribution of this change cannot be disentangled.

Other issues which are relevant in terms of statistical improvement but cannot be classified are the compilation of financial account and the allocation of the GFCF to industries. To compile the financial accounts, data sources were considered to include financial assets; a major challenge was to reconcile gross borrowing from capital and financial accounts; this reconciliation was finally achieved after three syntheses. To allocate GFCF to industries, information provided by data sources were used as benchmark and RAS method was implemented in the final stage of the allocation with products in rows and sectors cross industries in columns. The margins of the RAS method were compiled in two steps: the first step provides GFCF for each product extracted from the SUB, the GFCF of each sector extracted from the IEA is allocated to industries based on information provided by data sources. Two documents are available in the NIS to

describe the methodologies implemented in the compilation of financial account and the allocation of the GFCF to industries.

V. A way forward: Implement the SNA2008 in the framework of a formal strategy, try to meet the minimum requirement data set (MRDS), assess the Data ROSCs and works on progress related to the 2005benchmark year

Although the targets and the actions were clearly identified, the 2005 new benchmark year was not implemented in the framework of a formal strategy. Specifically, actions to be undertaken on data source were not ascertained. Hence, the link between the new SNA and others systems such as the BoP Manuel is new and was not clearly assessed during the compilation. Moreover a base-line study combined to an evaluation of national accounts implementation in Cameroun was not carried out to point out factors of success and failure, to know the strength and weakness, and the opportunities and threat (SWOT analysis). Obviously, a clear strategy of the SNA2008 implementation is clearly needed. Such a strategy should involve all stakeholders of national accounts and specifically suppliers of data sources and users of national accounts.

Some specific issues need to be fully addressed: (i) the non market output of the Central Bank needs to be more clarified regarding the context of sub-regional Central Bank; (ii) reconciliation between the FISIM based on the SNA2008 and the SNA1993; (iii) the estimate of capital service and its impact on transactions and aggregates should be carefully considered before its implementation in Cameroon national accounts; (iv) other aspects of goods and services produced by households for own final use not yet included in the production boundary; (v) the estimate of capital cost to be included in the non market output.

In addition, extension of the scope should be considered to include sectorial balance sheets and other changes in assets accounts. Project of the compilation of quarterly accounts has already started and the first release is expected in 2012. The first step of the project involves the compilation the SUB and industry accounts for 43 divisions of the product and activity classification respectively. The next step will extend the scope of the quarterly account to IEA from production to financial account.

On the implementation milestones of the IMF, the compilation of the 2005 benchmark year posts Cameroon in Milestone 5. Nevertheless, as mentioned by the report, these milestones do not assess conceptual and quality issues. As a matter of facts, a mission to assess statistical system for inclusion in the Data ROSCs (Reports on the Observance of Standards and Code) is advisable. Such a mission was once carried out to assess the implementation of the SNA1993. Besides, suggestions and remarks from any reader are welcome for further enhance the methodology implemented.

Some related works regarding extension of the SNA central framework have already started based on the work done in the 2005 benchmark year. A major related issue is the compilation of a social accounting matrix (SAM). The scope of this SAM is: 43 activities divided into formal and informal, 43 products divided into locally produced and imported; household income and consumption are broken down into 56 accounts to capture poverty status (poor and non poor), area (urban and rural) and social-economic group (14 strata including jobless and disabled persons, employees, employers and own-account workers). It is foreseen that two SAMs may be compiled: the first will be based on the SUT while the second will be preceded by a compilation of an Input-Output Table. A full documentation regarding the SAM implementation will be soon available.

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Annexes

Annexes 1: Data processing of GDP in the SUT

Table 3 : Changes in items of the production-based (SUT)

	Data Source (2009_04_08)	Pre-reconciliation (2009_04_24)	1st Centralisation (2009_05_12)	2nd Centralisation (2009_07_03)	3rd Centralisation (2009_08_05)	1st synthesis (2009_12_31)	2nd synthesis (2010_04_13)	3rd synthesis (2010_06_17)	4th synthesis (2011_03_28)
Production-based(SUT)	**7 663**	**6 397**	**10 090**	**8 907**	**9 124**	**9 313**	**9 774**	**9 774**	**10 590**
Output	*11 839*	*9 669*	*13 397*	*13 245*	*15 613*	*15 851*	*16 379*	*16 379*	*17 382*
Intermediate consumption	*4 181*	*3 974*	*4 074*	*5 119*	*7 256*	*7 240*	*7 333*	*7 333*	*7 519*
Value added	*7 658*	*5 696*	*9 323*	*8 126*	*8 357*	*8 611*	*9 047*	*9 047*	*9 863*
Taxes on products	*5*	*715*	*781*	*794*	*780*	*716*	*741*	*741*	*741*
Subsidies on product	*0*	*-14*	*-14*	*-13*	*-13*	*-14*	*-14*	*-14*	*-14*
Output of trade	81	81	81	81	2 182	2 119	2 106	2 106	2 054
Trade margins	0	0	1 457	1 553	2 160	2 099	2 085	2 085	2 085
Output of transportation and warehouse	361	379	379	393	393	397	397	397	1 030
Transportation margins	0	0	59	59	150	148	150	150	150

Table 4 : Changes in items of the expenditure-based (SUT)

	Data Source (2009_04_08)	Pre-reconciliation (2009_04_24)	1st Centralisation (2009_05_12)	2nd Centralisation (2009_07_03)	3rd Centralisation (2009_08_05)	1st synthesis (2009_12_31)	2nd synthesis (2010_04_13)	3rd synthesis (2010_06_17)	4th synthesis (2011_03_28)
Expenditure-based(SUT)	**6 077**	**6 918**	**8 694**	**8 383**	**9 124**	**9 313**	**9 774**	**9 774**	**10 590**
Final consumption expenditure	*5 280*	*6 349*	*7 539*	*7 226*	*7 552*	*7 782*	*8 109*	*8 109*	*8 592*
Government	*24*	*1 094*	*1 320*	*983*	*976*	*1 164*	*1 050*	*1 075*	*1 154*
Household	*5 256*	*5 255*	*6 219*	*6 242*	*6 570*	*6 611*	*7 053*	*7 028*	*7 073*
NPISH	*0*	*0*	*0*	*0*	*6*	*7*	*5*	*5*	*364*
Gross fixed capital formation	*812*	*679*	*1 303*	*1 325*	*1 519*	*1 519*	*1 714*	*1 714*	*2 189*
Change in inventories	*0*	*0*	*34*	*34*	*36*	*41*	*41*	*41*	*41*
Export	*1 509*	*1 895*	*1 969*	*1 998*	*2 299*	*2 347*	*2 259*	*2 259*	*2 246*
Import	*-1 524*	*-2 006*	*-2 150*	*-2 199*	*-2 282*	*-2 376*	*-2 349*	*-2 349*	*-2 478*

Table 5 : Changes in items of the income-based (SUT)

	Data Source (2009_04_08)	Pre-reconciliation (2009_04_24)	1st Centralisation (2009_05_12)	2nd Centralisation (2009_07_03)	3rd Centralisation (2009_08_05)	1st synthesis (2009_12_31)	2nd synthesis (2010_04_13)	3rd synthesis (2010_06_17)	4th synthesis (2011_03_28)
Income-based(SUT)	**7 663**	**6 411**	**10 104**	**8 920**	**9 137**	**9 327**	**9 774**	**9 774**	**10 590**
Compensation of employees	*1 600*	*1 203*	*1 203*	*1 560*	*1 816*	*2 066*	*2 103*	*2 103*	*2 283*
Taxes on production	*174*	*756*	*827*	*846*	*837*	*757*	*781*	*781*	*782*
Subsidies on production	*-6*	*-4*	*-5*	*-4*	*-4*	*-4*	*-18*	*-18*	*-21*
Operating income (balancing)	*5 895*	*4 456*	*8 078*	*6 518*	*6 488*	*6 508*	*6 908*	*6 908*	*7 545*

Annexes 2: Data processing of GDP in the IEA

Table 6 : Changes in items of the production-based (IEA)

	Data Source (2009_04_08)	Pre-reconciliation (2009_04_24)	1st Centralisation (2009_05_12)	2nd Centralisation (2009_07_03)	3rd Centralisation (2009_08_05)	1st synthesis (2009_12_31)	2nd synthesis (2010_04_13)	3rd synthesis (2010_06_17)	4th synthesis (2011_03_28)
Production-based (IEA)	**9 150**	**6 397**	**10 058**	**9 735**	**9 124**	**9 313**	**9 749**	**9 774**	**10 590**
Output	*11 839*	*9 669*	*13 330*	*13 517*	*15 613*	*15 851*	*16 379*	*16 379*	*17 382*
Non financial corporations	*3 860*	*3 776*	*5 379*	*5 716*	*7 101*	*5 652*	*6 086*	*6 086*	*6 106*
Financial corporations	*258*	*258*	*267*	*267*	*258*	*297*	*228*	*228*	*244*
Government	*1 550*	*1 011*	*1 308*	*1 046*	*1 037*	*1 225*	*1 112*	*1 112*	*1 191*
Household	*6 172*	*4 625*	*6 376*	*6 488*	*7 211*	*8 671*	*8 949*	*8 949*	*9 474*
NPISH	*0*	*0*	*0*	*0*	*6*	*6*	*5*	*5*	*367*
Intermediate consumption	*4 181*	*3 974*	*3 982*	*4 492*	*7 256*	*7 240*	*7 333*	*7 333*	*7 519*
Value added	*7 658*	*5 696*	*9 348*	*9 025*	*8 357*	*8 611*	*9 047*	*9 047*	*9 863*
Non financial corporations	*1 593*	*1 506*	*3 109*	*3 281*	*3 321*	*2 454*	*2 728*	*2 728*	*2 732*
Financial corporations	*205*	*205*	*214*	*214*	*162*	*244*	*166*	*166*	*180*
Government	*896*	*568*	*865*	*604*	*611*	*809*	*655*	*655*	*661*
Household	*4 963*	*3 416*	*5 159*	*4 926*	*4 258*	*5 102*	*5 496*	*5 496*	*6 045*
NPISH	*0*	*0*	*0*	*0*	*4*	*3*	*1*	*1*	*244*
Taxes less Subsidies on products	*1 492*	*701*	*709*	*710*	*767*	*702*	*702*	*727*	*727*

Table 7 : Changes in items of the expenditure-based (IEA)

	Data Source (2009_04_08)	Pre-reconciliation (2009_04_24)	1st Centralisation (2009_05_12)	2nd Centralisation (2009_07_03)	3rd Centralisation (2009_08_05)	1st synthesis (2009_12_31)	2nd synthesis (2010_04_13)	3rd synthesis (2010_06_17)	4th synthesis (2011_03_28)
Expenditure-based (IEA)	*5 281*	*6 964*	*6 964*	*6 964*	*7 552*	*7 782*	*7 782*	*8 210*	*8 592*
Final consumption expenditure	*24*	*1 094*	*1 094*	*1 094*	*976*	*1 164*	*1 164*	*1 592*	*1 154*
Government	*5 257*	*5 870*	*5 870*	*5 870*	*6 570*	*6 611*	*6 611*	*6 611*	*7 073*
Household	*0*	*0*	*0*	*0*	*6*	*7*	*7*	*7*	*364*
NPISH	*363*	*680*	*734*	*734*	*1 519*	*1 519*	*1 519*	*1 519*	*2 189*
Gross fixed capital formation	*300*	*301*	*301*	*301*	*944*	*955*	*955*	*955*	*1 193*
Non financial corporations	*17*	*17*	*33*	*33*	*17*	*17*	*17*	*17*	*16*
Financial corporations	*1*	*318*	*355*	*355*	*424*	*423*	*423*	*423*	*325*
Government	*45*	*45*	*45*	*45*	*134*	*124*	*124*	*124*	*633*
Household	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*21*
NPISH	*18*	*18*	*18*	*18*	*36*	*41*	*41*	*41*	*41*
Change in inventories	*1 895*	*1 895*	*1 896*	*1 896*	*2 299*	*2 347*	*2 347*	*2 347*	*2 246*
Export	*-2 006*	*-2 006*	*-2 015*	*-2 015*	*-2 282*	*-2 376*	*-2 376*	*-2 376*	*-2 478*
Import	*5 281*	*6 964*	*6 964*	*6 964*	*7 552*	*7 782*	*7 782*	*8 210*	*8 592*

Table 8 : Changes in items of the income-based (IEA)

	Data Source (2009_04_08)	Pre-reconciliation (2009_04_24)	1st Centralisation (2009_05_12)	2nd Centralisation (2009_07_03)	3rd Centralisation (2009_08_05)	1st synthesis (2009_12_31)	2nd synthesis (2010_04_13)	3rd synthesis (2010_06_17)	4th synthesis (2011_03_28)
Income-based (IEA)	**7 660**	**6 397**	**10 058**	**9 735**	**9 124**	**9 313**	**9 749**	**9 774**	**10 590**
Compensation of employees	*1 600*	*1 203*	*1 203*	*1 366*	*1 816*	*2 066*	*2 103*	*2 103*	*2 283*
Non financial corporations	*510*	*512*	*512*	*567*	*989*	*1 088*	*1 045*	*1 045*	*1 014*
Financial corporations	*49*	*49*	*49*	*49*	*49*	*49*	*50*	*50*	*50*
Government	*916*	*517*	*517*	*517*	*517*	*517*	*517*	*517*	*488*
Household	*126*	*126*	*126*	*233*	*261*	*412*	*491*	*491*	*526*
NPISH	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*205*
Taxes less subsidies on production	*166*	*776*	*788*	*796*	*820*	*739*	*738*	*763*	*761*
Operating income (balancing)	*5 894*	*4 418*	*8 066*	*7 573*	*6 488*	*6 508*	*6 908*	*6 908*	*7 545*