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## **Tracking Government Expenditures in Agriculture: FAO application of IMF Methodology and Data.**

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### ***Abstract***

The Food and Agriculture Organization of the United Nations (FAO) is the custodian UN agency for 21 Sustainable Development Goal indicators - for SDGs 2, 5, 6, 12, 14 and 15 - and a contributing agency for a further five. As a custodian agency, FAO is responsible for: Collecting data from national sources, validating and harmonizing them, estimating regional and global aggregates and making them available for international reporting.

Given that the first “means of implementation” target under SDG 2, target 2.a., exhorts countries to increase investment in agriculture<sup>1</sup>, this paper aims to outline best practice in relation to FAO’s statistical data collection efforts pertaining to government expenditure on agriculture, forestry, fisheries and on environmental protection. In our paper, the importance of better managing the relationship with respondents, both in the design of questionnaires and methods of collection, as well as other processes of the statistical production chain, including outreach and capacity development work on data reporting for SDGs is discussed. Section 2 reviews designing questionnaires and mixed data collection modes; Section 3 discusses data collection and feedback to respondents; and Section 4 discusses data provision among UNECE countries.

In 2010 FAO and the International Monetary Fund, which maintains the world’s most comprehensive and cross-country comparable fiscal database, collaborated in articulating a Government Expenditure on Agriculture Questionnaire (GEAQ). By applying an existing and well-established methodology – based on the IMF’s Government Finance Statistics Manual, particularly the Classification of the Functions of Government (COFOG) as outlined therein – both organizations’ annual questionnaires and data collection efforts are complementary. While this complementary approach should – in principle – allow FAO to leverage the IMF GFS database, a few UNECE countries have not yet reported (or only irregularly report) COFOG category 7042 (agriculture, forestry, fishing and hunting); issues of quality and consistency have also been found in some cases.

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<sup>1</sup> Specifically, SDG Goal 2 target 2.a calls on countries to: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.

Moreover, even among countries reporting Total Government Expenditure figures (using the Economic Classification of Expenditure) to FAO and the IMF GFS Database, there are often discrepancies owing to transactions and/or institutional coverage. As such, greater convergence in our engagement strategies with non-reporters and reporters where we, respectively, have identified data quality issues will be discussed. Given the challenges countries may face in compiling and reporting high-quality, comprehensive and timely data and statistics that can support the SDGs, this paper/presentation can serve as an example of innovative approaches and best practice in international organizations' statistical data collection that can foster collaboration on other SDGs and statistical domains.

Presenting FAO's experience with applying IMF methodology will highlight the importance of better managing the relationship with respondents, both in the design of questionnaires and methods of collection, as well as other processes of the statistical production chain, including outreach and capacity development work. We look forward to the feedback received from this session and, going forward, contributing to activities related to the development of internationally-coordinated work.

# Tracking Government Expenditures in Agriculture: FAO application of IMF Methodology and Data

Substantive topic (ii) Communication with respondents and data providers

Helping countries make the right investment decisions in agriculture

## Introduction

The Food and Agriculture Organization of the United Nations (FAO) is the custodian UN agency for 21 Sustainable Development Goal indicators - for SDGs 2, 5, 6, 12, 14 and 15 - and a contributing agency for a further five. As a custodian agency, FAO is responsible for: collecting data from national sources, validating and harmonizing them, estimating regional and global aggregates and making them available for international reporting.

Given that the first “means of implementation” target under SDG 2, target 2.a., exhorts countries to *increase investment* in agriculture<sup>1</sup>, this paper aims to outline best practice in relation to FAO’s statistical data collection efforts pertaining to government expenditure on agriculture, forestry, fisheries and on environmental protection. In this paper, the importance of better managing the relationship with respondents, both in the design of questionnaires and methods of collection, as well as other processes of the statistical production chain, including outreach and capacity development work on data reporting for SDGs is discussed. Section 2 reviews designing questionnaires and mixed data collection modes; Section 3 discusses data collection and feedback to respondents; and Section 4 discusses data provision among UNECE countries.

## Section 2: Questionnaire design and data collection modes

For FAO, one of the critical success factors for the quality of statistical series underpinning all SDG Indicators is effective communication with respondents and information providers. SDG indicator 2.a.1, the Agriculture Orientation Index (AOI), which compares the government’s contribution to agriculture with the sector’s contribution to GDP is considered a Tier 1 Indicator<sup>2</sup>. This means that the Indicator is conceptually clear, has an internationally established methodology and standards are available, and that data are regularly produced by countries for at least 50 per cent of countries in every region where the indicator is relevant. However, at the inception of our data

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<sup>2</sup> See Appendix I for a Summary Methodology.

collection efforts we found that only about half the countries in the world reported on government expenditures on agriculture (GEA) in a timely, comprehensive and internationally comparable way. As such, FAO set out to leverage an existing methodology that could ensure that regularly compiled and disseminated information – data that can shed light on the government’s commitment towards agriculture – are available.

To facilitate developing these data, in 2010 FAO and the International Monetary Fund, which maintains the world’s most comprehensive and cross-country comparable fiscal database, collaborated in articulating a Government Expenditure on Agriculture Questionnaire (GEAQ). By applying an existing and well-established methodology – based on the IMF’s *Government Finance Statistics Manual*, particularly the Classification of the Functions of Government (COFOG) as outlined therein – both organizations’ annual questionnaires and data collection efforts are complementary<sup>3</sup>. In particular, FAO’s GEAQ aligns with Table 7 of the IMF GFS Questionnaire, but seeks additional detail on Agriculture, Forestry and Fisheries (AFF) as illustrated below:

<b>7</b>	<b>EXPENDITURE (=2M)</b>
<b>701</b>	<b>General public services</b>
<b>704</b>	<b>Economic affairs</b>
7041	General economic, commercial, and labor affairs
7042	Agriculture, forestry, fishing, and hunting
7043	Fuel and energy
7044	Mining, manufacturing, and construction
7045	Transport
7046	Communication
7047	Other industries
7048	R & D Economic affairs
7049	Economic affairs not elsewhere classified
<b>705</b>	<b>Environmental protection</b>
7051	Waste management
7052	Waste water management
7053	Pollution abatement
7054	Protection of biodiversity and landscape
7055	R & D Environmental protection
7056	Environmental protection not elsewhere classified

<b>7</b>	<b>EXPENDITURE (TOTAL OUTLAYS)</b>
<b>704</b>	<b>Economic Affairs</b>
<b>7042</b>	<b>Agriculture, forestry, fishing, and hunting</b>
	→ Recurrent
	→ Capital
70421	Agriculture (crops and animal husbandry)
	→ Recurrent
	→ Capital
70422	Forestry
	→ Recurrent
	→ Capital
70423	Fishing and hunting
	→ Recurrent
	→ Capital
7048	R&D Economic Affairs
70482	R&D Agriculture, forestry, fishing, and hunting
<b>705</b>	<b>Environmental protection</b>
<b>7054</b>	<b>Protection of Biodiversity and Landscape</b>
	→ Recurrent
	→ Capital
7055	R&D Environmental Protection
	→ Recurrent
	→ Capital
7z1	Other, please specify: _____
7z2	Other, please specify: _____

<sup>3</sup> The current *GFSM 2014* and its predecessor, *GFSM 2001*, uses the same version of COFOG. *GFSM 1986* also had a functional classification expenditure that included AFF, meaning that for many countries there are extensive time series.

Among the main benefits that country-based compilers and decision-makers receive by adopting this approach has been the ability of FAO to increase the availability of internationally comparable data for a key “means-of-implementation” target for SDG 2, thereby reducing the reporting burden. This is because, among the IMF’s existing pool of approximately 140 GFS reporting countries, more than 80 regularly report COFOG series for each division and each group, as relevant. Moreover, among current non-reporters of GFS and the GEAQ, we have found – through an analysis conducted over the last year – that the required source data needed for compiling COFOG at the level of detail requested by both the IMF (and by Eurostat) generally exists in the public domain. In fact, globally, over the last year, FAO has successfully developed the key expenditure aggregates needed for calculating Indicator 2.a.1 for approximately 40 countries, including UNECE member countries such as Tajikistan (see Box 3). In many cases, we have been able to derive the more disaggregated data (by classes) as requested in Table A of the GEAQ.

**Box 1 Classification of the Functions of Government (COFOG)**

The **Classification of the Functions of Government (COFOG)** aims to classify the socio-economic objectives that governments as institutional units aim to achieve through various kinds of expenditures.

The functions are classified using a three level scheme, consistent with the International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4, In particular, there are: 10 first-level, or two digit, categories, referred to as *divisions*. Within each division, several three-digit categories, referred to as *groups*. Within each group, one or more four-digit categories, referred to as *classes*.

COFOG permits **analysing trends in government expenditure** on particular functions or policy purposes over time. In addition, it is essential **for making international comparisons** because the

**Box 2 UN SDG Indicators directly related to COFOG**

**1.a.2 Proportion of total government spending on essential services** (education, health and social protection) could be estimated from GFS COFOG codes 707, 709 and 701.

**9.5.1 Research and development expenditure as a proportion of GDP** could be estimated from GFS COFOG codes 7015, 7024, 7035, 7048, 7055, 7065, 7075, 7085, 7097 and 7108.

**11.4.1 Total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage**, by source of funding (public, private), type of heritage (cultural, natural) and level of government (national, regional, and local/municipal), where COFOG code 7054 Protection of biodiversity and landscape could perhaps be considered a good proxy.

Aside from SDG 2, there are several other indicators that directly relate to COFOG and which countries can seamlessly report if they implement GFS and submit data to the IMF<sup>4</sup>.

By improving the availability and quality of data and strengthening the evidence base for targeted policy interventions, our efforts will help countries achieve SDG 2 and ultimately the 2030 Agenda as a whole. Increasing countries’ capacity to report – or the improve the quality of – these data entails : (i) routinely assessing the quality of the reported data against GFS expenditure

<sup>4</sup> Two other indicators use GFS but do not rely on COFOG series: 17.1.1 (Total government revenue as a proportion of GDP, by source; and 17.1.2 (Proportion of domestic budget funded by domestic taxes. Both are reported by IMF.

series (key COFOG aggregates); (ii) developing a data provision strategy, including tailored capacity development by FAO; (iii) gradually expanding the institutional coverage of the data, where relevant, taking into consideration country-specific circumstances; and (iv) promoting inter-agency collaboration – including with regional bodies such as the UNECE – to support improved reporting.

### Section 3: Data Collection and Feedback to respondents

The approach outlined above should – in principle – allow FAO to leverage the IMF GFS database. As shown in the example below for Albania, FAO pre-populates the GEAQ with the major aggregates available from the GFS database in an effort to ensure cross-country comparability.<sup>5</sup> The country compilers are then asked to disaggregate the pre-populated aggregates, as relevant, into the COFOG “classes” of 70421 Agriculture (crops and livestock), 70422 Forestry, 70423 Fishing as well as reporting Research and Development Expenditure related to AFF (code 70482). In most UNECE countries, the authorities have provided a comprehensive breakdown of AFF expenditure for the consolidated general government and each of its subsectors, as relevant. However, it is worth noting that although the Total Expenditure, Economic Affairs and Environmental Protection aggregates match, in reporting the GEAQ the authorities record 15% higher overall expenditure on AFF.

Figure 2 Comparison of major AFF aggregates in the IMG GFS and FAO GEA series, 2019

Albania - Consolidated General Government Lek, Millions / Fiscal Year ends December 31	2019
<b>7 Expenditure</b>	<b>488,444.2</b>
701 General public services	83,881.8
702 Defense	13,337.1
703 Public order & safety	30,908.5
704 Economic affairs	47,449.5
o/w: 7042 Agriculture, fishing, forestry, & hunting	8,675.2
705 Environment protection	3,125.0
706 Housing & community amenities	36,612.7
707 Health	51,181.8
708 Recreation, culture, & religion	7,310.0
709 Education	55,683.5
710 Social protection	158,954.4

Source: IMF GFS Ministry of Finance

TABLE A: Albania - Government expenditure on agriculture and related functions		2019
		General Government
7	EXPENDITURE (TOTAL OUTLAYS)	488,444.2
704	Economic Affairs	47,449.5
7042	Agriculture, forestry, fishing, and hunting	9,956.0
	→ Recurrent	6,012.0
	→ Capital	3,944.0
70421	Agriculture (crops and animal husbandry)	8,181.0
	→ Recurrent	4,787.0
	→ Capital	3,394.0
70422	Forestry	1,527.0
	→ Recurrent	1,111.0
	→ Capital	416.0
70423	Fishing and hunting	248.0
	→ Recurrent	114.0
	→ Capital	134.0
7048	R&D Economic Affairs	397.0
70482	R&D Agriculture, forestry, fishing, and hunting	0.0
705	Environmental protection	3,125.0
7054	Protection of Biodiversity and Landscape	14.0
	→ Recurrent	14.0
	→ Capital	0.0
7055	R&D Environmental Protection	0.0
	→ Recurrent	0.0
	→ Capital	0.0

Source (GEAQ): Institute of Statistics Albania

<sup>5</sup> Among the UNECE member countries that are also EU Member States, a long-standing “Eurostat Option” facilitates GFS data transmission to the IMF Statistics Department using an agreed SDMX DSD.

The example above highlights instances of consistency (and possibly quality) issues that have been found in time series – in this case different figures for GFS COFOG code 7042 – for a key aggregate used for calculating Indicator 2.a.1 (Section 4.1 notes specific issues by reporting country). Experience has shown that even in countries with good statistical systems, there are often discrepancies between the FAO GEA and IMF GFS database owing to transactions and/or institutional coverage. To address this we have embarked on a Capacity Development (CD) project under which:

- Direct technical assistance is provided to countries on the collection and compilation of data on Government Expenditures in Agriculture. The direct beneficiaries will be the national institutions responsible for collecting, compiling and disseminating GEA for the consolidated general government sector. This is generally the Ministry of Finance, but, depending on the country, also may involve the National Statistical Office, the Central Bank, or specific government bodies such as the Ministry of Agriculture.
- The availability of disaggregated data that can support other areas of FAO analytical work based on the structure of the GEA Questionnaire is extended. With disaggregated GEA data, what you get to see – over a time series – is the nuances in outcomes in relation to current and capital outlays. These nuances can help craft better policies in key areas under FAO’s mandate, for example in relation to initiatives pertaining to forestry and biodiversity.
- Targeted (currently virtual) training and/or hands-on technical assistance is provided to develop analytical reports on SDG indicator 2.a.1, for example, for inclusion in countries Voluntary National Reviews (VNRs).

The objective of this work is to enable partner countries to initiate (or further strengthen) their capacity for reporting on this indicator, while also supporting the AFF policy dialogue with FAO. This will allow them to design more effective evidence-based national strategies geared towards enhancing the productivity and the sustainability of the agricultural sector.

#### **Section 4: Data provision among UNECE countries**

Although international cooperation and private sector activity can be important drivers of investment in AFF, for many countries the main engine for growth in the sector has been and remains targeted government expenditure. While we find that UNECE countries are generally able to compile the data used for measuring government expenditure in agriculture at the aggregate level, many countries – particularly those with resource constraints – initially struggle. Often, such countries only report budget execution data even though substantial expenditure may take place at the sub-national level. However, with targeted assistance over time, countries can develop or improve the source data needed to report more disaggregated GEA data, providing better insight into public support for AFF and for environmental protection. An example

of progress in developing a more “granular” data series can be seen in the data for 2019 recently provided by the Russian Federation which – in comparison with the data reported in 2013 – is now able to comprehensively cover the components of AFF expenditure, including the split between current and capital expenditure.

Figure 2 GEAQ Questionnaire for Russia, data for 2019

TABLE A: Government expenditure on agriculture and related functions	General Government								
	Central Government (excluding social security funds)				Social Security Funds	State Governments	Local Governments	Consolidation Column	General Government <sup>3</sup>
	Budgetary Central Government	Extrabudgetary Units	Consolidation Column	Central Government <sup>2</sup>					
Functional classification <sup>2</sup>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>7 EXPENDITURE (TOTAL OUTLAYS)</b>	<b>18,525,487</b>	<b>2,706,901</b>	<b>-1,373,552</b>	<b>19,858,836</b>	<b>13,847,703</b>	<b>17,151,483</b>	<b>9,268,554</b>	<b>-18,702,522</b>	<b>41,424,054</b>
<b>704 Economic Affairs</b>	<b>2,422,480</b>	<b>203,232</b>	<b>-148,200</b>	<b>2,477,513</b>	<b>0</b>	<b>2,652,162</b>	<b>605,338</b>	<b>-1,192,823</b>	<b>4,542,191</b>
7042 Agriculture, forestry, fishing, and hunting	333,703	75,380	-36,277	372,805	0	354,038	20,476	-219,178	528,141
→ Recurrent	325,669	75,380	-36,277	364,971	0	352,345	20,212	-219,178	518,351
→ Capital	7,834	0	0	7,834	0	1,693	264	0	9,790
70421 Agriculture (crops and animal husbandry)	287,015	56,136	-26,484	316,667	0	282,984	19,595	-161,411	457,836
→ Recurrent	279,221	56,136	-26,484	308,873	0	281,348	19,331	-161,411	448,142
→ Capital	7,794	0	0	7,794	0	1,637	264	0	9,694
70422 Forestry	42,390	9,324	-5,790	45,924	0	71,054	881	-57,767	60,091
→ Recurrent	42,375	9,324	-5,790	45,909	0	70,998	881	-57,767	60,020
→ Capital	15	0	0	15	0	56	0	0	71
70423 Fishing and hunting	4,298	9,919	-4,003	10,214	0	0	0	0	10,214
→ Recurrent	4,273	9,919	-4,003	10,189	0	0	0	0	10,189
→ Capital	25	0	0	25	0	0	0	0	25
7048 R&D Economic Affairs	69,568	25,655	-25,655	69,568	0	859	10	-10	70,336
70482 R&D Agriculture, forestry, fishing, and hunting	4,668	4,627	-4,627	4,668	0	0	0	0	4,668
<b>705 Environmental protection</b>	<b>195,255</b>	<b>29,926</b>	<b>-26,621</b>	<b>198,560</b>	<b>0</b>	<b>74,589</b>	<b>17,044</b>	<b>-47,000</b>	<b>243,195</b>
7054 Protection of Biodiversity and Landscape	9,934	9,142	-9,142	9,934	0	23,413	1,350	-9,017	25,680
→ Recurrent	9,934	9,142	-9,142	9,934	0	23,371	1,340	-9,017	25,628
→ Capital	0	0	0	0	0	43	10	0	52

Source: Federal Treasury of the Russian Federation

Figure 3 GEAQ Questionnaire for Russia, data for 2013

TABLE A: Government expenditure on agriculture and related functions	General Government								
	Central Government				State Governments	Local Governments	Consolidation Column	General Government <sup>4</sup>	
	Budgetary Central Government	Extrabudgetary Units	Social Security Funds	Consolidation Column					Central Government <sup>3</sup>
Functional classification <sup>2</sup>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>7 EXPENDITURE (TOTAL OUTLAYS)</b>	<b>12,526,322</b>	<b>83,200</b>	<b>7,913,216</b>	<b>-4,006,952</b>	<b>16,515,786</b>	<b>7,466,561</b>	<b>3,651,951</b>	<b>-1,954,327</b>	<b>25,679,971</b>
<b>704 Economic Affairs</b>	<b>1,427,828</b>	<b>83,200</b>	<b>0</b>	<b>-2</b>	<b>1,511,026</b>	<b>1,370,117</b>	<b>324,554</b>	<b>-323,980</b>	<b>2,881,717</b>
7042 Agriculture, forestry, fishing, and hunting	237,745	0	0	0	237,745	333,065	26,759	-178,100	419,469
→ Recurrent									
→ Capital									
70421 Agriculture (crops and animal husbandry)									
→ Recurrent									
→ Capital									
70422 Forestry									
→ Recurrent									
→ Capital									
70423 Fishing and hunting									
→ Recurrent									
→ Capital									
7048 R&D Economic Affairs									
70482 R&D Agriculture, forestry, fishing, and hunting									
<b>705 Environmental protection</b>	<b>25,358</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25,358</b>	<b>21,469</b>	<b>2,587</b>	<b>-1,137</b>	<b>48,277</b>
7054 Protection of Biodiversity and Landscape									
→ Recurrent									
→ Capital									

Source: Federal Treasury of the Russian Federation

Overall, GFS reporting to the IMF by the UNECE membership is relatively comprehensive (see Appendix III) and this has enabled FAO to achieve the prescribed country coverage for UN SDGs: “data are regularly produced by countries for at least 50 per cent of countries and in every region



where the indicator is relevant". Most of the UNECE membership also reports the more disaggregated series as requested in the GEAQ to FAO. In reality, few of the UNECE countries (Andorra, Bosnia and Herzegovina, Montenegro, North Macedonia, Tajikistan and Turkmenistan) have not yet reported (or only irregularly report) COFOG category 7042 (agriculture, forestry, fishing and hunting) through either the GEAQ or the IMF GFS Questionnaire.

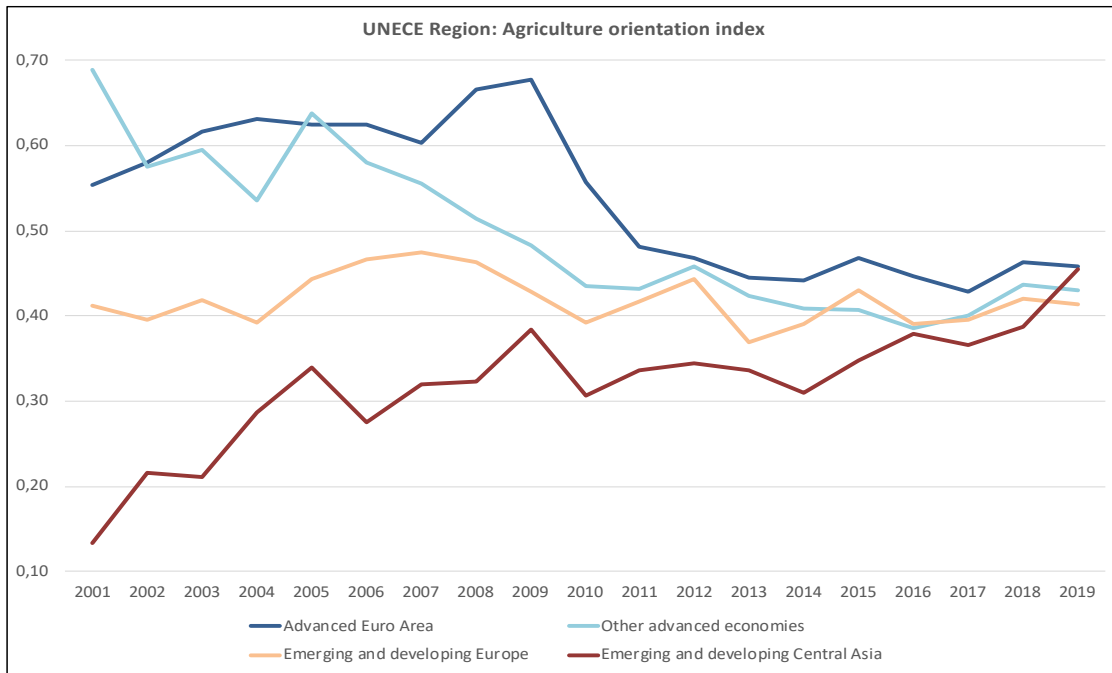
Typically, in articulating a regional engagement strategy, FAO conducts a benchmarking exercise comparing government expenditure on agriculture data in the relevant IMF and FAO databases to identify non-reporting countries under either database. For non-reporting countries, we also seek to develop time series from data disseminated in the public domain. These data are then provided to the national authorities, accompanied by a request to engage in (at the present time virtual) CD. This has been found to be helpful in the targeted countries where GFS implementation is hampered by the fact that national policy discussions are based on fiscal presentations that deviate from the GFS framework. CD can be highly effective where country authorities produce fiscal data for policy purposes based on national definitions and coverage, and therefore are not familiar with the GFS framework (or have not yet adopted COFOG).

Segregation of the responsibility for GFS data compilation in countries may compound the problem. Experience indicates that while countries are making efforts to produce GFS data at the technical level, the policy makers might not be aware of these efforts. Furthermore, there may also be some miscommunication at the technical level. For example, officials at the National Statistical Office may have begun to compile COFOG but there is not awareness of this amongst Ministry of Finance officials reporting by administrative classifications. It may also point to a need to enhance communication between data producers and data users in countries.

#### **4.1 The UNECE countries in Focus**

Overall, investment in AFF by national governments relative to its contribution to the economy has declined in most regions of the world since 2000. In the UNECE region, the AOI for advanced economies is generally higher but has declined in comparison to emerging market and developing countries. In emerging and developing UNECE countries the trends have been steadier, and there has been a slight rise in the AOI since 2010 particularly in emerging central Asian countries.

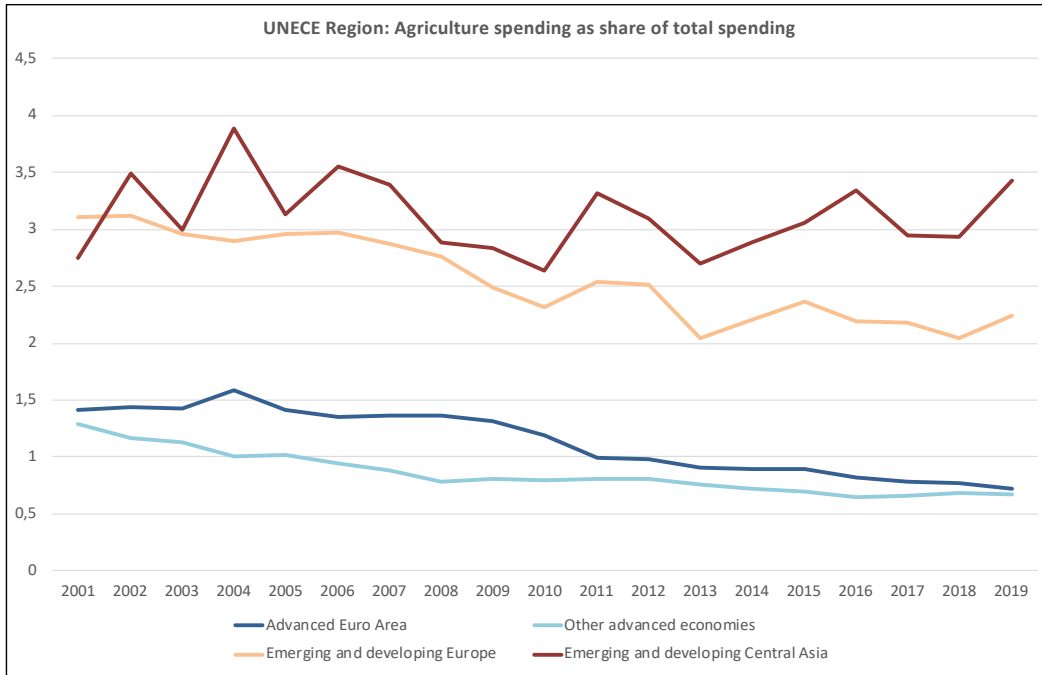
Figure 4 AOI UNECE countries, 2001 – 2019



It is interesting to note whether these trends in the AOI are due to the numerator of the AOI formula (government expenditure as a share of total expenditure) or the denominator (agriculture value added as share of GDP). Emerging and developing UNECE countries spend a much higher proportion of their budgets on agriculture compared to their advanced counterparts (as shown in Figure 5 overleaf). The AOI being higher in advanced nations indicates that these countries have lower levels of both agriculture spending and agriculture value added – the net effect reflecting a higher orientation towards the agriculture sector **relative** to its contribution to economic value-added<sup>6</sup>.

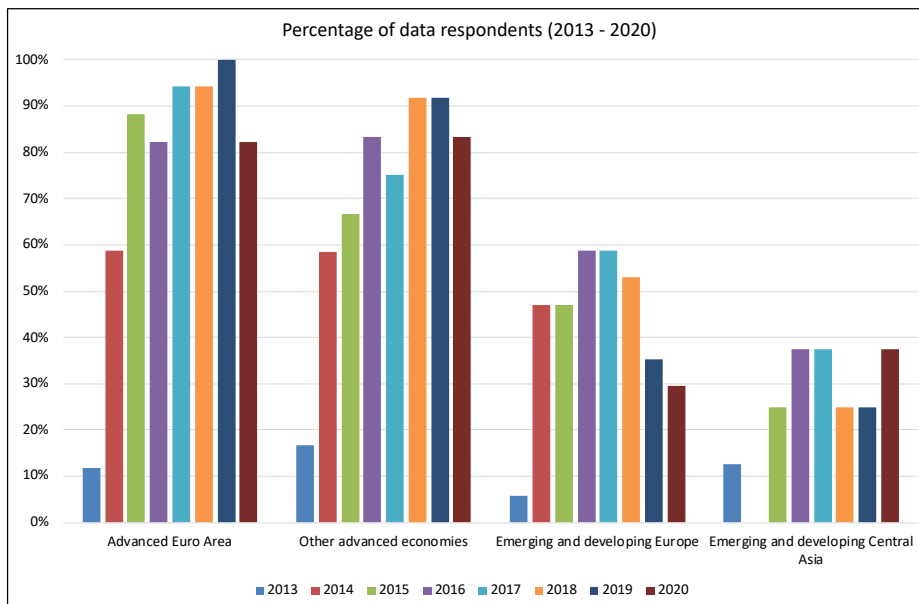
<sup>6</sup> See Appendix 4 for the agriculture value added figures for UNECE countries.

Figure 5 Agriculture expenditure UNECE countries, 2001 – 2019



When considering the AOI trends discussed above, it is important to consider that the advanced UNECE economies generally report the GEAQ to FAO on a regular basis. On the other hand, there are significant gaps in reporting when it comes to UNECE emerging market and developing economies. The graph below shows the percentage of countries that submit the FAO Questionnaire annually.

Figure 6 Percentage of UNECE respondents, 2013 – 2020





As with the case of Tajikistan, where countries do not submit their own data or where they submit it but there are signs of data quality or completeness issues, FAO will explore alternate resources such as IMF databases, regional statistical databases such as Eurostat and country budget reports. Below are some examples of data issues we've identified in the UNECE region submissions.

**Box 4 Select GEAQ data quality issues to clean up in the UNECE region**

*Poland:* All AFF expenditure has been allocated to the recurrent expenditure headings, and nothing to the capital expenditure headings.

*Serbia:* Only the agriculture expenditure figures have been provided - other categories, including the Total Expenditure needed to calculate SDG Indicator 2.a.1, are missing.

*Georgia:* Total expenditure has been provided at the general and central government levels. Agriculture expenditure is only provided in the central government column and it is unclear whether the general government figure is not available or whether that figure is the same as the central government agriculture figure.

*Czechia:* 2021 GEAQ is missing expenditure data on AFF for 2019 and 2020. In addition there are some discrepancies between data submitted to the IMF and to FAO. These figures are taken from the latest published IMF GFS and the 2021 GEAQ.

<b>CZECHIA (billions of units - national currency) general government</b>	<b>2017 IMF</b>	<b>2017 GEAQ</b>	<b>2018 IMF</b>	<b>2018 GEAQ</b>	<b>2019 IMF</b>	<b>2019 GEAQ</b>
7. TOTAL EXPENDITURE	1.990,62	1.800,16	2.194,11	2.163,84	2.371,76	2.142,52
704. Economic Affairs	294,40	301,83	320,14	320,17	352,36	357,86
7042. Agriculture, forestry and fisheries	24,45	55,19	27,22	27,22	30,15	
705. Environmental Protection	40,97	42,92	46,07	46,07	48,28	49,88

Source (GEAQ): Ministry of Finance

The above-mentioned points are the type of issues which we encounter across all regions submitting data to FAO, and which we aim to resolve by engaging with country authorities and incorporating the data they make available to us following these discussions.

## Conclusion and questions for discussion

Enhancing collaboration with the UNECE could facilitate FAO efforts to provide assistance to a number of countries to facilitate their beginning to report – or improving data provision - on government expenditures on agriculture and environmental protection in a standardized and cross-country comparable way.

Moving forward, the focus should be on optimizing the use and sequencing of available CD resources by further tailoring them to UNECE countries' specific circumstances. Building on the

CD provided to date, this would include more tailored CD in line with well-identified needs as articulated by the targeted countries. Ideally, this would lead to empowering the national authorities to make good use of the analytical value of the indicator. While in one country expanding institutional coverage may be the priority due to the size (and level of AFF related expenditure) of subnational governments, the priority in other countries may be to improve the quality of the source data used in producing budgetary central government estimates. There is also scope for reducing the reporting burden. For example, for many countries this could be addressed by adopting – and FAO and other relevant regional bodies and international organizations updating for alignment with the detailed breakdowns requested in the GEAQ – the Statistical Data and Metadata Exchange (SDMX) Data Structure Definitions under Domain 2: Economic statistics for Domain 2.5 Government finance, fiscal and public sector statistics.

Furthermore, in line with the partnerships UNECE is already fostering with other international organizations and institutions both within and outside the UN system, we would welcome the opportunity to participate in UNECE’s formal platforms of cooperation, where relevant, for SDG Indicator 2.a.1. To this end, the following questions are presented for discussion purposes:

1. Do participants see the need for a general (virtual) UNECE workshop on the status of the SDGs for which FAO is the Custodian Agency?
2. Are there UNECE member countries that would like to engage with FAO to develop GEAQ reporting?
3. Do participants support – and are there UNECE countries willing to pilot – SDMX data transmission?

## APPENDIX I – Summary Methodology for calculating UN SDG Indicator 2.a.1

UN SDG Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Target 2.a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

[Indicator 2.a.1: The agriculture orientation index for government expenditures](#)

## Institutional information

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**Organization(s):** Food and Agriculture Organization of the United Nations (FAO)

## Methodology

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**Computation Method:**

$$AOI = \frac{\text{Agriculture Share of Government Expenditures}}{\text{Agriculture value added Share of GDP}}$$

Where:

$$\begin{aligned} \text{Agriculture Share of Government Expenditure} &= \\ &= \frac{\text{Government Expenditure on Agriculture}}{\text{Total Government Expenditure}} * 100 \end{aligned}$$

Agriculture refers to COFOG category 042 (agriculture, forestry, fishing and hunting); and

$$\begin{aligned} \text{Agriculture value added Share of GDP} &= \\ &= \frac{\text{Agriculture value added}}{\text{GDP}} * 100 \end{aligned}$$

An Agriculture Orientation Index (AOI) greater than 1 reflects a higher orientation towards the agriculture sector, which receives a higher share of government spending relative to its contribution to economic value-added. An AOI less than 1 reflects a lower orientation to agriculture, while an AOI equal to 1 reflects neutrality in a government's orientation to the agriculture sector.

## References

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**References:**

FAOSTAT domain of Government Expenditure on Agriculture, <http://www.fao.org/faostat/en/#data/IG>;

IMF Government Finance Statistics Manual 2014, <https://www.imf.org/external/np/sta/gfsm/>

## APPENDIX II – UN SDG Indicator 2.a.1 in the UNECE Region 2005-2019

AOI calculated from FAO GEAQ - UNECE Region								
Countries	GL	2005	2010	2015	2016	2017	2018	2019
<b>Advanced Economies</b>								
<b>Euro area</b>								
Austria	GG	0,882	0,6853	0,6249	0,6239	0,5778	0,623	0,6302
Belgium	GG	0,1682	0,1599	0,2335	0,2589	0,2435	0,2866	
Estonia, Rep. of	GG	0,4925	0,4788	0,4547	0,6373	0,6111	0,6321	0,4442
Finland	GG	1,0219	0,7800	0,5993	0,5781	0,5653	0,548	
France	GG	0,4684	0,4666	0,2804	0,2702	0,2642	0,1936	0,2303
Germany	GG	0,6689	0,5888	0,64	0,6242	0,5741	0,7003	0,6349
Greece	GG		0,0807	0,1143	0,1412	0,1261	0,1452	0,1335
Ireland	GG	1,8162	0,8319	1,1475	1,1353	0,933	1,2377	
Italy	GG	0,398	0,424	0,2201	0,2168	0,2054	0,2135	0,2545
Latvia	GG	0,6382	0,7849	0,2705	0,3444	0,3281	0,3024	0,2917
Lithuania	GG	0,7437	0,968	0,7994	0,6907	0,5261	0,5325	
Malta	GG	1,2893	1,189	1,2188	0,9144	1,1266	1,3898	1,309
Netherlands, The	GG	0,2566	0,2701	0,1778	0,1518	0,1424	0,1543	0,1788
Portugal	GG	0,4711	0,3658	0,3441	0,2967	0,2762	0,2671	0,3044
Slovenia, Rep od	GG	0,6233	0,5503	0,5772	0,5028	0,4255	0,5048	0,6341
Canada	GG		0,8728	0,497	0,579	0,5568	0,5594	0,5509
Denmark	GG	0,1988	0,1973	0,2844	0,2926	0,2308	0,3026	0,2663
Iceland	GG	0,6387	0,3584	0,368	0,3747	0,485	0,4452	0,3994
Israel	GG	0,2542	0,2406	0,3693	0,3211	0,394	0,4339	0,4208
Liechtenstein	GG							
Norway	GG	1,1665	0,9244	0,8048	0,5734	0,5968	0,6909	0,6063
San Marino	GG							
Sweden	GG	0,3419	0,2192	0,1836	0,191	0,18	0,2191	0,2015
United Kingdom	GG	1,0235	0,6002	0,4458	0,4946	0,4948	0,4988	0,4849
United States	GG	0,8454	0,5032	0,3933	0,4499	0,4241	0,4704	0,6354
<b>Emerging and Developing Economies</b>								
<b>Europe</b>								
Albania	GG	0,1133	0,0942	0,0988	0,1485	0,1162	0,1191	0,1094
Andora	GG							
Belarus	GG	1,1501	0,8877	0,9081	0,8665	0,6577	0,6884	0,7903
Bosnia and Herzegovina	GG							
Bulgaria	GG	0,3897	0,308	1,1353	0,6096	0,6131	0,7124	0,7371
Croatia	GG	0,6761	0,8768	0,5741	0,5492	0,5923	0,6871	
Hungary	GG	0,6854	0,313	0,2803	0,2633	0,2948	0,2666	
Moldova	GG	0,3278	0,2619	0,4205	0,2427	0,2632	0,2382	0,2561
Montenegro	GG	0,111	0,0926	0,0754				
North Macedonia	GG							
Poland	GG	0,7417	0,6122	0,3695	0,3945	0,358	0,5027	0,4839
Romania	GG	0,2773	0,4065	0,4664	0,3632	0,4736	0,4341	0,4031
Russian Federation	GG	0,3124	0,4421	0,3387	0,3506	0,3736	0,4279	0,4145
Serbia	GG	0,3062	0,2832					
Turkey	GG		0,3339	0,4459	0,4549	0,5005	0,4558	0,4256
Ukraine	GG	0,2224	0,1877	0,0593	0,0512	0,1028	0,0937	0,0975
<b>Central Asia</b>								
Armenia	GG	0,2091	0,2612	0,1415	0,202	0,1662	0,1319	0,1673
Azerbaijan	GG		0,5126	0,4517	0,5465	0,4419	0,6648	0,5738
Georgia	GG	0,1153	0,0527	0,2911	0,3355	0,3132	0,2559	0,4053
Kazakhstan	GG	0,6962	0,6023	0,9404	0,9165	1,0023	0,9636	0,9673
Kyrgyz Rep.	GG		0,1058	0,1	0,105	0,1028	0,1445	
Tajikistan	GG							
Turkmenistan	GG							
Uzbekistan	GG			0,167	0,1719	0,1702	0,1664	0,1654

$$AOI = \frac{3,5}{3,5} = 1.00$$



**AOI = 1** means a **neutral orientation** of the government towards the agriculture sector relative to the sector's contribution to the economy.

$$AOI = \frac{1,25}{0,23} = 5.39$$



**AOI > 1** means a **higher orientation** of the government towards the agriculture sector relative to the sector's contribution to the economy.

$$AOI = \frac{2,72}{20,45} = 0.13$$



**AOI < 1** means a **lower orientation** of the government towards the agriculture sector relative to the sector's contribution to the economy.



## APPENDIX III – IMF GFS COFOG Reporting in the UNECE Region 2019

(Percent of Total Expenditure)

BR: Basis of recording (Cash/Non Cash); GL: Government sector

Countries	Year	GL	BR	General public services	Defense	Public order and safety	Economic affairs	Environmental protection	Housing and community amenities	Health	Recreation, culture and religion	Education	Social protection
<b>Advanced Economies</b>													
<b>Euro Area</b>													
Austria	2019	GG	AC	11.7 P	1.2 P	2.8 P	11.9 P	0.8 P	0.6 P	17.1 P	2.4 P	9.9 P	41.6 P
Belgium	2019	GG	AC	13.3 P	1.5 P	3.2 P	12.8 P	2.5 P	0.7 P	14.6 P	2.4 P	11.8 P	37.2 P
Cyprus	2019	GG	AC	18.6 P	4.4 P	4.3 P	11.5 P	0.7 P	3.9 P	9.9 P	2.3 P	13.4 P	31.0 P
Estonia, Rep. of	2019	GG	AC	9.0 P	5.3 P	4.6 P	10.1 P	1.7 P	1.0 P	13.7 P	5.2 P	15.5 P	33.9 P
Finland	2019	GG	AC	14.9 P	2.3 P	2.2 P	7.9 P	0.4 P	0.6 P	13.4 P	2.8 P	10.6 P	45.1 P
France	2019	GG	AC	9.9 P	3.1 P	3.0 P	10.8 P	1.8 P	1.9 P	14.5 P	2.6 P	9.5 P	42.9 P
Germany	2019	GG	AC	12.4 P	2.4 P	3.6 P	7.4 P	1.3 P	1.0 P	16.3 P	2.3 P	9.6 P	43.7 P
Greece	2019	GG	AC	16.5 P	4.2 P	4.4 P	8.4 P	2.9 P	0.4 P	11.3 P	1.7 P	8.3 P	41.8 P
Ireland	2019	GG	AC	11.0 P	0.9 P	3.8 P	9.3 P	1.6 P	2.7 P	19.3 P	2.2 P	12.8 P	36.3 P
Italy	2019	GG	AC	15.3 P	2.6 P	3.8 P	8.3 P	1.8 P	1.0 P	14.0 P	1.6 P	8.0 P	43.5 P
Latvia	2019	GG	AC	9.7 P	5.0 P	5.9 P	13.9 P	1.5 P	2.7 P	11.1 P	3.8 P	15.0 P	31.5 P
Lithuania	2019	GG	AC	10.0 P	4.7 P	4.0 P	8.6 P	1.0 P	1.4 P	18.0 P	3.4 P	13.3 P	35.5 P
Luxembourg	2019	GG	AC	11.8 P	0.9 P	2.8 P	12.3 P	2.2 P	1.4 P	12.0 P	3.0 P	11.0 P	42.7 P
Malta	2019	GG	AC	14.9 P	1.9 P	3.4 P	13.8 P	3.9 P	1.1 P	14.7 P	2.9 P	14.2 P	29.1 P
Netherlands, The	2019	GG	AC	9.8 P	3.0 P	4.4 P	9.0 P	3.3 P	0.8 P	18.3 P	2.8 P	11.8 P	36.7 P
Portugal	2019	GG	AC	15.7 P	1.8 P	4.0 P	8.5 P	1.4 P	1.1 P	15.4 P	2.1 P	10.3 P	39.7 P
Slovak Rep.	2019	GG	AC	12.5 P	2.6 P	5.5 P	12.0 P	1.9 P	1.2 P	18.0 P	2.9 P	9.8 P	33.6 P
Slovenia, Rep. of	2019	GG	AC	12.0 P	2.3 P	3.7 P	10.5 P	1.3 P	1.0 P	15.4 P	3.1 P	12.6 P	38.1 P
Spain	2019	GG	AC	12.6 P	2.0 P	4.4 P	9.1 P	2.1 P	1.0 P	14.4 P	2.7 P	9.6 P	42.0 P
Canada	2019	GG	AC	4.8	2.2	4.7	8.7	1.9	1.2	21.5	2.3	12.7	29.8
Czech Rep.	2019	GG	AC	10.5 P	2.1 P	4.6 P	14.9 P	2.0 P	1.6 P	18.4 P	3.5 P	11.9 P	30.5 P
Denmark	2019	GG	AC	12.2 P	2.3 P	1.9 P	6.2 P	0.8 P	0.4 P	16.7 P	3.2 P	12.7 P	43.5 P
Iceland	2019	GG	AC	13.4	0.2	3.5	11.1	1.5	1.3	18.8	7.4	17.4	25.5
Israel	2019	GG	AC	9.3	13.6	4.2	7.3	1.4	0.5	13.6	3.9	17.8	28.4
Liechtenstein	...	...	...	...	...	...	...	...	...	...	...	...	...
Norway	2019	GG	AC	9.3 P	3.7 P	2.4 P	11.7 P	1.8 P	1.6 P	16.9 P	3.6 P	10.9 P	38.2 P
San Marino, Rep. of	2019	GG	AC	9.7	...	2.3	18.7	1.5	1.3	14.3	2.2	8.9	41.2
Sweden	2019	GG	AC	13.9 P	2.5 P	2.7 P	9.0 P	1.0 P	1.4 P	14.2 P	2.6 P	14.1 P	38.7 P
Switzerland	2019	GG	AC	13.3 P	2.5 P	4.9 P	12.1 P	1.8 P	0.6 P	6.7 P	3.1 P	15.6 P	39.4 P
United Kingdom	2019	GG	AC	10.5 P	4.9 P	4.4 P	8.6 P	1.6 P	2.0 P	18.8 P	1.4 P	11.9 P	36.0 P
United States	2018	GG	AC	15.1	8.5	5.3	8.9	...	1.3	24.6	0.7	15.7	19.9
<b>Emerging and Developing Economies</b>													
<b>Europe</b>													
Albania	2019	GG	AC	17.2	2.7	6.3	9.7	0.6	7.5	10.5	1.5	11.4	32.5
Andorra	...	...	...	...	...	...	...	...	...	...	...	...	...
Belarus, Rep. of	2019	GG	CA	13.5	2.9	5.6	12.8	0.2	4.0	11.2	2.9	13.1	33.8
Bosnia and Herzegovina	2017	GG	AC	...	...	...	...	...	...	...	...	...	...
Bulgaria	2019	GG	AC	7.8 P	3.4 P	7.6 P	17.8 P	1.9 P	3.4 P	13.7 P	2.0 P	10.7 P	31.8 P
Croatia, Rep. of	2019	GG	AC	12.0 P	2.2 P	4.6 P	17.5 P	1.4 P	4.3 P	13.5 P	3.3 P	10.2 P	31.0 P
Hungary	2018	GG	AC	17.8 P	2.0 P	4.8 P	16.4 P	0.9 P	1.5 P	10.1 P	6.8 P	11.0 P	28.5 P
Kosovo, Rep. of	2019	GG	CA	12.2	2.0	8.8	23.5	0.6	2.0	10.0	2.7	15.9	22.5
Moldova, Rep. of	2019	GG	CA	9.4	0.9	6.6	10.9	0.3	2.4	13.1	2.8	18.4	35.4
Montenegro	...	...	...	...	...	...	...	...	...	...	...	...	...
North Macedonia, Republic of	...	...	...	...	...	...	...	...	...	...	...	...	...
Poland, Rep. of	2019	GG	AC	10.1 P	3.9 P	5.0 P	11.6 P	1.3 P	1.3 P	11.7 P	3.2 P	12.0 P	40.0 P
Romania	2019	GG	AC	11.7	4.6	6.2	13.1	2.0	2.9	13.8	2.9	10.1	32.7
Russian Federation	2019	GG	AC	21.8	4.9	5.8	11.4	0.6	3.2	8.9	2.6	9.3	31.6
Serbia, Rep. of	2012	GG	CA	11.0 P	3.2 P	6.4 P	13.6 P	0.9 P	3.4 P	12.8 P	2.4 P	8.7 P	37.5 P
Turkey	2019	GG	AC	14.2	5.6	6.2	10.7	0.9	2.9	15.9	1.9	11.2	30.6
Ukraine	2019	GG	AC	12.3	6.5	8.8	9.0	0.6	2.1	7.9	1.9	14.6	36.4
<b>Central Asia</b>													
Armenia, Rep. of	2019	GG	CA	17.7	18.8	8.5	7.5	1.3	1.8	5.9	2.4	10.0	26.1
Azerbaijan, Rep. of	2019	GG	CA	18.4	11.3	6.5	29.3	0.1	1.3	3.4	1.3	8.6	19.9
Georgia	2019	GG	CA	8.8	5.7	8.7	20.4	1.9	4.4	9.3	4.0	13.4	23.4
Kazakhstan, Rep. of	2019	GG	CA	9.6	7.9	4.5	6.6	1.6	7.4	10.0	3.3	19.0	30.2
Kyrgyz Rep.	2019	GG	CA	10.1	...	...	12.6	0.4	4.1	9.4	2.4	20.1	31.0
Tajikistan	...	...	...	...	...	...	...	...	...	...	...	...	...
Turkmenistan	...	...	...	...	...	...	...	...	...	...	...	...	...
Uzbekistan, Rep. of	2019	GG	CA	8.1	...	...	12.5	0.2	2.5	9.2	2.1	25.6	23.7

**APPENDIX IV – Agriculture Value Added Share of GDP (%) in the UNECE Region**

Countries	2001	2005	2010	2015	2019
<b>Advanced Economies</b>					
<b>Euro area</b>					
Austria	1,67	1,26	1,27	1,13	1,09
Belgium	1,11	0,84	0,77	0,69	0,63
Estonia, Rep. of	3,49	3,29	3,15	2,84	2,49
Finland	2,76	2,28	2,42	2,25	2,31
France	2,11	1,68	1,60	1,61	1,60
Germany	1,08	0,73	0,80	0,68	0,72
Greece	5,20	4,28	2,99	3,87	3,78
Ireland	2,00	1,03	0,95	0,90	0,92
Italy	2,49	2,03	1,78	2,07	1,91
Latvia	4,42	3,72	4,04	3,50	3,72
Lithuania	4,87	4,33	3,02	3,42	3,22
Luxembourg	0,60	0,36	0,25	0,23	0,23
Malta	2,28	1,94	1,46	1,08	0,79
Netherlands, The	2,22	1,86	1,78	1,72	1,65
Portugal	2,96	2,30	1,94	2,10	2,06
Slovak Rep.	2,12	1,62	1,67	2,62	2,47
Slovenia, Rep of	2,79	2,43	1,89	2,10	2,01
Canada	2,12	1,88	1,49	1,87	1,82
Czech Republic	3,20	2,28	1,54	2,21	1,93
Denmark	2,34	1,15	1,20	0,96	1,33
Iceland	7,48	4,75	6,29	5,29	4,21
Israel	1,49	1,61	1,54	1,20	1,05
Liechtenstein	0,15	0,13	0,11	0,11	0,13
Norway	1,59	1,40	1,57	1,54	1,93
San Marino	0,08	0,06	0,06	0,02	0,02
Sweden	1,94	1,25	1,66	1,44	1,44
Switzerland	0,92	0,81	0,66	0,62	0,66
United Kingdom	0,79	0,55	0,61	0,65	0,59
United States	0,94	0,98	0,98	1,00	0,82
<b>Emerging and Developing Economies</b>					
<b>Europe</b>					
Albania	22,72	18,85	17,96	19,78	18,63
Andorra	0,44	0,38	0,47	0,51	0,54
Belarus	10,10	8,27	8,89	6,28	6,78
Bosnia and Herzegovina	8,92	8,30	6,80	6,24	5,60
Bulgaria	10,60	7,28	4,01	4,02	3,19
Croatia	4,98	3,90	3,70	3,01	2,78
Hungary	4,91	3,73	3,04	3,79	3,36
Moldova	20,78	15,20	11,16	11,51	9,86
Montenegro	10,71	8,68	7,68	8,06	6,39
North Macedonia	9,74	9,74	10,12	9,73	8,77
Poland	3,25	2,92	2,86	2,37	2,35
Romania	13,05	8,49	5,00	4,19	4,10
Russian Federation	5,65	4,22	3,31	3,86	3,51
Serbia	14,65	6,74	6,60	6,71	5,95
Turkey	8,79	9,17	8,97	6,87	6,42
Ukraine	13,98	8,88	7,45	12,06	9,01
<b>Central Asia</b>					
Armenia	24,00	17,89	15,95	17,22	11,99
Azerbaijan	14,84	9,15	5,54	6,18	5,72
Georgia	24,34	17,15	8,45	7,81	6,22
Kazakhstan	8,72	6,37	4,51	4,71	4,47
Kyrgyz Rep.	34,53	28,48	17,45	14,06	12,09
Tajikistan	23,80	21,19	19,59	21,93	20,74
Turkmenistan	23,78	18,53	11,34	9,30	8,79
Uzbekistan	47,81	42,00	28,70	30,77	25,52