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Research Paper

EU integration of Ukraine – assessing the challenges for agri-food public authorities

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Background and rationale for the study

Despite defending against Russia's full-scale invasion for two years already, Ukraine continues to advance its European ambitions. The European Council granted Ukraine candidate status in June 2022 and eventually opened accession negotiations in December 2023. Agriculture is one of the most integrated and regulated sectors in the EU. On the day of accession, an acceding country must be able to implement the administratively complex and financially demanding Common Agricultural Policy (CAP), which itself could be a moving target. Furthermore, an acceding country should be able to implement the extensive EU 'agricultural acquis' which, together with the CAP, includes regulation of markets and standards in the areas of farming practices, animal and plant health, food safety, and environmental and animal welfare. These factors mean that Ukraine's preparations for EU accession will require substantial additional public investments in the competent authorities and their capacities to implement and enforce the EU agricultural acquis.

The scope and benefits of investing in public institutions are also quite substantial and significant for Ukraine in its current situation. The cumulative damages and losses suffered by Ukrainian agriculture since the beginning of the full-scale Russian invasion are estimated at $80 billion; reconstruction and recovery needs are estimated at $57 billion.[1] These recovery and reconstruction financing requirements are in addition to the regular annual fixed and working capital financing demands from agricultural producers that historically have amounted to $25 billion per year.[2] This means that despite substantial and continuing support from donors to help Ukraine to mobilize the necessary funds for recovery and reconstruction, Ukraine will also need to facilitate private sector investments that are essential not just for reconstruction, but also for the long-term development of the sector. From the government's perspective, it is important for Ukraine to leverage scarce public and donors' resources and undertake necessary reforms (or avoid harmful decisions) and invest in public services infrastructure to facilitate private investments that would further drive development and growth. The leverage for public investments in general service provision could even reach a factor of 4 (based on the evidence across comparable countries, such as the Baltic states or Poland), which is comparable to the leverage of concessional capital.[3] On the other hand, efficient public institutions will be able to maximize the inflow and effectiveness of donor funding and thus ensure further higher leverage for private investments.

This policy paper describes the EU agricultural institutional landscape, including the necessary CAP implementation structures, as well other institutions required to implement the extensive EU agricultural acquis. Next, this is financially benchmarked to Ukraine's agricultural institutional landscape, and the institutional and capacity gap is quantified in financial terms in order to guide further policy discussions.

Key structural facts on agriculture in the EU and Ukraine

Table 1 below contrasts the key economic characteristics of the EU and Ukraine to demonstrate the bigger picture and high-level comparisons. Agriculture plays a substantially larger economic role in Ukraine than in the EU, in terms of the agricultural land cover, share of national income, and trade. Both EU and Ukrainian sectors are predominantly crop-based, but crops dominate substantially more in Ukraine. Farms in the EU are also considerably smaller on average.

Table 1: Key indicators for the EU 27 and Ukraine in 2021

	EU	Ukraine		EU	Ukraine
Economic context			Agriculture in the economy		
GDP (billion USD in PPPs)	21,901	588	Agriculture in GDP (%)	1.6	10.6
Population (million)	447	44	Agriculture share in employment (%)	3.8	14.7
Land area (thousand km2)	3,996	579	Agro-food exports (% of total exports)	8.9	40.6
Agricultural area (AA) (thousand ha)	163,962	41 311	Agro-food imports (% of total imports)	5.9	9.5
Agricultural area (AA), % of total land	41	71	Characteristics of the agricultural sector		
Population density (inhabitants/km2)	106	75	Crop in total agricultural production (%)	61	82
GDP per capita (USD in PPPs)	48,900	14 220	Livestock in total agricultural production (%)	39	18
Trade as % of GDP	15.5	33.9	Share of arable land in AA (%)	58	80
			Average farm-size (ha)	37	514
			# of farms		40,333

Source: own presentation using OECD (2023); Nivievskyi et al. (2021); EC (2021)[4]

Defining the institutional framework: the EU food policy framework

The EU food policy framework or agricultural acquis

Together, all EU Member States (MSs) make up the Single Market, whose rules govern how goods and services are produced and marketed internally as well as with third parties, and how MSs manage their 'common space' and resources. Food systems in the EU are shaped by a complex interplay of various EU policies and pieces of legislation related to agricultural support, market integration and trade, climate, environment, food safety and public health which, together with the EU Common Agricultural Policy (CAP), constitute the **EU agricultural acquis**. This diverse setup is further complicated by the shared competences between the Union and national governments.[5]

An additional – or rather overarching – development strategy of the EU is defined by its European Green Deal (EGD)[6] that aims to make Europe climate-neutral, protect its diverse natural habitats, and transform the European economy. It consists of a set of proposals for a wide range of policies and sectors. Furthermore, the EGD's Farm to Fork (F2F)[7] and Biodiversity Strategies[8] components explicitly interact with agriculture and rural development, and contain six targets to be achieved by 2030:[9]

- reduce by 50% the overall use and risk of chemical pesticides and by 50% more hazardous pesticides;
- have at least 25% of the European Union's agricultural land under organic farming and a significant increase in organic aquaculture;
- reduce by 50% sales of antimicrobials for farmed animals and in aquaculture;
- reduce nutrient losses by at least 50% while ensuring no deterioration in soil fertility; this will reduce the use of fertilizers by at least 20%;
- bring at least 10% of agricultural area under high-diversity landscape features;
- achieve 100% access to broadband Internet in rural areas (by 2025).

This overarching development framework and the targets are constantly reflected in various legislation proposals across different policy domains, including the EU CAP, which is supposed to play a greater and more effective role in terms of achieving social, economic, and environmental sustainability in agriculture and rural development. It is unclear, however, to what extent the EGD, F2F, and Biodiversity Strategies will be implemented or reflected in the EU agricultural acquis. We should note the existence of various ambitious and important legislation proposals aimed at EGD (F2F/Biodiversity Strategies) implementation that eventually did not get anywhere, such as the Sustainable Use Regulation on pesticides,[10] Sustainable Food Framework,[11] or Natural Restoration Law.[12] With the new EU Commission entering office in the fall of 2024, there might be new priorities and new legislative proposals coming in.

The EU Common Agricultural Policy (CAP)

The EU CAP is a central policy related to farming or primary agriculture. Once the largest policy in financial terms, the CAP's share of the EU budget decreased from 65.5% in 1981 to about 23.5% in 2022.[13] In absolute terms, the total amount allocated for the CAP has not changed drastically over the last 20 years (from the time of the largest EU-25 enlargement, see Figure 1); it increased from €51.3 billion in 2005 to €55.4 billion in 2023. This reflects the implicit drive in the EU to reduce the financial scale of the CAP (especially before 2014) and to reform it so that farmers rely less on public support.[14] The CAP framework and budget are largely determined at the EU level, though there are shared competences in terms of policy measures and CAP implementation and control.

In a broad sense, the CAP is composed of two major policy domains or 'Pillars' that are financed from two different funds. **CAP Pillar 1** expenditure is financed from the European Agricultural Guarantee Found (EAGF) on market, trade, and incomes policies (Figure 1). The latter comes primarily in the form of direct payments, most of which are decoupled direct payments (67% of CAP expenditures in 2022 - see Figure 1) paid per hectare of eligible land regardless of what the farmer produces or indeed if they produce at all. The system of decoupled direct payments now in place includes the basic payment scheme (BPS), which applies to the 'old' Member States, while the new Member States who joined after 2003 use the transitional simplified regime known as the single area payment scheme (SAPS). Farmers are required to comply with a set of statutory management requirements (SMRs) set out in EU legislation as well as various standards of good agricultural and environmental practice or conditions (GAEC)[15] (a system known as **cross-compliance** in the pre-2023 CAP terminology or **conditionality** post-2023). Additional environmental conditions were embedded in the per-hectare greening payments (Figure 1; these are called echo-schemes in the post-2023 CAP terminology). Both cross-compliance and greening leave many details of design and implementation to the discretion of individual EU MSs.[16] Other per-hectare payments (on top of the BPS and SAPS) are redistributive payments supporting small and medium-sized farms, payments to young farmers, and payments for areas with natural constraints.

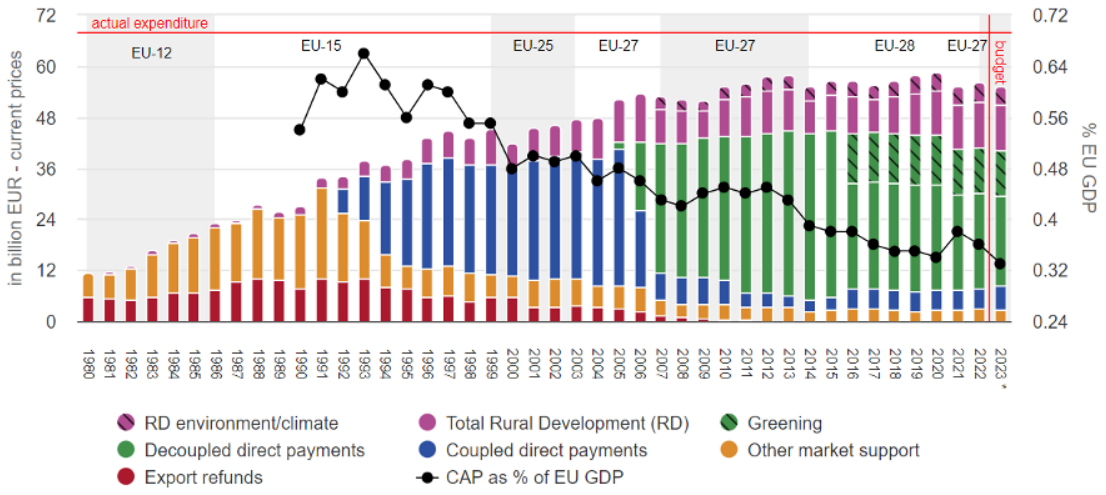
CAP Pillar 2 includes structural or rural development policies that are financed from the European Agricultural Fund for Rural Development (EAFRD) and contribute to MSs' rural development programs. In 2022, EU funding in the total public expenditures on rural development programs across the MSs made up close to 70%, while the rest was financed by MSs themselves.[17] The nature and composition of these policies is more diverse than Pillar 1 policies and differs significantly across Member States. In general, Pillar 2 policies are aimed at modernizing agriculture, rural business promotion, and agri-environment-climate schemes that compensate farmers for adopting more environmentally and climate-friendly practices that go beyond the minimum standards required under cross-compliance.[18]

The new CAP 2023-27 entered into force in January 2023. The key feature of the new CAP is the new delivery model with more flexible implementation by Member States. The CAP 2023-27 is built around ten specific objectives,[19] which form the basis for EU MSs to design their CAP Strategic Plans (CSPs).

The 28 CSPs[20] of the MSs, after bilateral consultations between the European Commission and each MS, were revised and formally approved between August and December 2022. CSPs include interventions under the two CAP pillars and are expected to devote 32% (close to €98 billion or USD 103 billion) of total public CAP funding to deliver specific environmental benefits for climate, water, soil, air, biodiversity, and animal welfare.[21]

Simplifying the complexity of the CAP outlined above, Emerson has estimated that Ukraine's agricultural receipts from the EU budget would reach €10.4 billion in 2022.[22] This is an important challenge for both parties in terms of financial resources, and in terms of implementation and management capacity. For the EU CAP budget, Ukraine's accession implies a budget increase of over 18.4%. On the other hand, Ukraine's annual public agricultural expenditures slightly exceeded €550 million in the pre-war 2019-21 period,[23] so the enormous increase to an annual (hypothetical) €10.4 billion would imply a substantial implementation and control challenge for Ukraine.

Figure 1: The evolution of the EU CAP expenditures



Source: European Commission, CAP expenditure[24]

The EU environmental, climate change and biodiversity policies

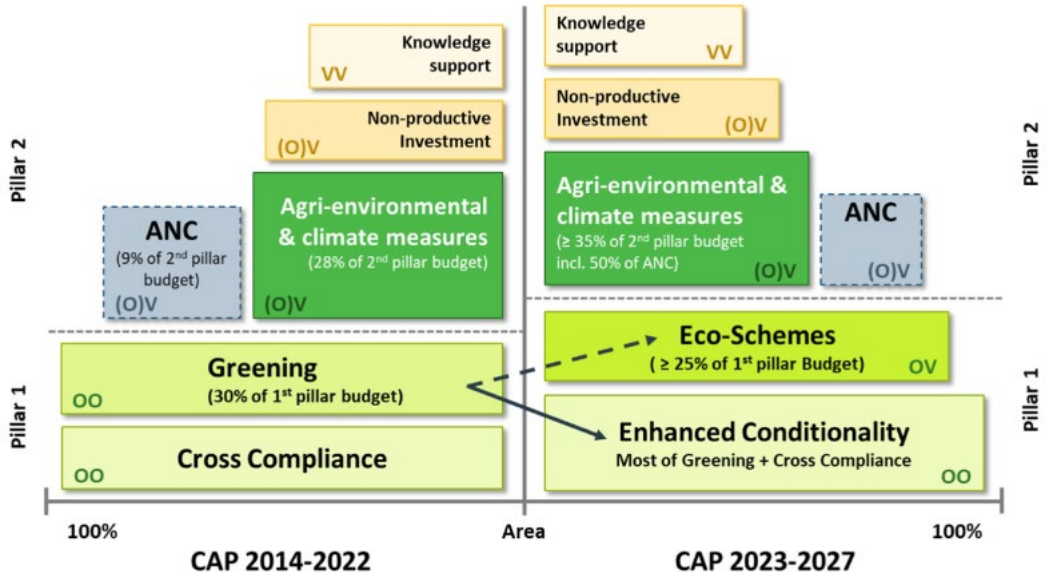
The EU's environmental and climate change policies is another policy domain that is evolving, becoming more demanding, and increasingly affecting farming and agricultural practices.[25] This policy domain is complex and includes the European Climate Law, the new Strategy on Adaptation and Climate Change, and the European Climate Adaptation Platform.[26] Specifically for agriculture and rural areas, the EU environmental and climate policy protects water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters, promotes the use of good farming practices to reduce the risks and impacts of pesticide use, ensures the conservation of particular habitats important for animal or plant species that are rare or threatened or important in their own right, improves the governance of water quality and quantity issues through an integrated river basin management approach, and limits emissions of air pollutants.[27] The EGD sets an ambitious goal for Europe to become the first climate-neutral continent by 2050 and maps out how to achieve that. Farm-to-fork and EU Biodiversity strategies are essential parts of the EGD that explicitly interact with food systems and agriculture and rural areas.

Because the new CAP 2023-27 negotiations started before the launching of the EGD, the CAP now embeds environment, climate, and biodiversity in a **Green Architecture** [28] that is composed of the three instruments: Enhanced Conditionality, Eco-Schemes, and Agri-Environment and Climate Measures (AECM). These measures allow MSs to follow the CAP's 'green' objectives and to operationalize the objectives of the F2F and Biodiversity Strategies to some

extent.[29] Figure 2 demonstrates the Green Architecture of the CAP and additionally indicates in the shades of green (forest, chartreuse, and light green) how **Biodiversity** is covered across various measures. As Figure 2 demonstrates, Biodiversity appears even more important within the CAP, since a significant share of the environment and climate measures of both pillars are linked to Biodiversity targets.[30]

Enhanced Conditionality measures combine cross-compliance requirements (SMRs and GAECs) together with the three Greening measures of the 2014-2020 CAP[31] as well as the new Eco-Schemes of the first pillar. Cross-compliance requires farmers to comply with basic rules in order to receive Pillar 1 income support direct aids, with penalties in cases of non-compliance. The statutory management requirements of the cross-compliance (SMRs) includes several EU regulations and directives, such as those on animal welfare and the use of hormones and nitrates, wild bird conservation, and the conservation of natural habitats and wild fauna and flora. Good agricultural and environmental conditions (GAEC) are established at the MS level within a framework provided by EU Regulations and include standards designed to prevent soil erosion, maintain soil organic matter and soil structure, protect biodiversity and ensure the retention of landscape features, and protect and manage water. **Eco-Schemes** aim at climate, environment, and animal welfare and reward farmers who manage land in a nature- and climate-friendly way. The CAP Regulation requires each Eco-Scheme to cover at least two areas of action for the climate (mitigation and adaptation), the environment (protection or improvement of water quality, reduction of pressures on water resources, prevention of soil degradation, soil restoration, improvement of soil fertility and nutrition management, protection of biodiversity, conservation, restoration of habitats or species, and the reduced or sustainable use of pesticides), animal welfare and anti-microbial resistance. AECM measures have much in common with Eco-Schemes, but AECMs belong to the Pillar 2 instruments and are thus co-funded by national and regional authorities.[32]

Figure 2: Green architecture of the CAP and biodiversity relevant instruments



Source: Pe'er et al. (2022).[33] Note: Box width (x-axis) reflects the relative extent of area affected by measures (not to scale). Green color intensity reflects the potential effectiveness for biodiversity. Adopted from EC communication of the new CAP, we note that the three instruments of the 'Green Architecture' (Conditionality, Eco-schemes, and agri-environment-climate-measures [AECM]) only cover the 'area-related' payments of the CAP. Other CAP instruments are relevant for meeting environmental objectives as well—summarized here in the three boxes of ANC, non-

productive investments, and knowledge support instruments. ANC = Areas facing natural or other constraints. OO = implementation obligatory for Member States, obligatory for farmers. OV = implementation obligatory for Member States, voluntary for farmers. VV: implementation voluntary for Member States, voluntary for farmers. (O)V = implementation Member states must ascertain a minimum implementation over several interventions, voluntary for farmers. AECMs also include payments for organic farming and Natura 2000 support, and in the post-2023 CAP, non-productive investments. The shares of spending for AECMs in the post-2023 CAP (30%/35%) refer to all measures.

The EU food safety and other policies

The EU food safety policy domain aims at protecting consumers, while guaranteeing the smooth operation of the Single Market and covering the entire food chain – 'from farm to fork.' EU measures on food hygiene, animal health and welfare, and plant health are set at the EU level to allow for free trade among the MSs within the Single Market and to avoid the spread of diseases, including through the import of agricultural products from third countries. Along the same lines, the EU establishes food standards to protect human health, as well as labeling and certification requirements to facilitate consumer information. Via CAP conditionality (previously known as cross-compliance), farmers are encouraged to comply with high EU standards for public, plant, and animal health and welfare. All farmers – whether they receive CAP support or not – have to respect statutory management requirements (SMRs). The SMRs include EU rules on public, animal and plant health, animal welfare, and the environment.

Other EU policy domains for food systems include trade, competition, cohesion, and digitalization polices.[34] The EU is the largest single market in the world, with full free trade and competition (including in agri-food products) across all Member States. **Commercial policy** is an exclusive competence of the EU, not a shared competence among MS national governments. In general, EU trade policies still protect agro-food products more than other goods and services: for example, the 2021 simple average applied MFN (Most Favored Nation) rate for agricultural goods was 11.7% compared to 4.1% in the case of non-agricultural goods.[35]

The European Union plays a determining role in the Single Market's **competition policy** and in **cohesion policy**. In the agri-food sector, competition policy tries to improve the position of both farmers and small and medium-sized businesses in the food supply chain by banning 16 unfair trading practices. Cohesion policy is also highly prescient since many lagging regions have a large agricultural sector.[36]

Agricultural Knowledge and Innovation System (AKIS) policy. The F2F Strategy identifies research and innovation as key to accelerating the transition to sustainable, healthy, and inclusive food systems across the EU. The AKIS aims at better connecting agricultural practice and science and boosting knowledge generation, exchange and innovation. Farmers, as the centerpiece of the AKIS, are key to fostering modernization, innovation, and knowledge flows in the agricultural sector. However, the EU AKIS is complex because it is a menu of the 27 national AKIS and their regional AKISs, with actors and initiatives operating at the EU level. Each EU Member State has developed an individual AKIS that corresponds to its particular situation, actors, and needs and is furthermore embedded in national laws, institutions, and cultures. So far, national AKISs within the European Union differ greatly from each other, for example in terms of the fragmentation and strength (invested budgets) as well as in the number of actors, the type of institutions, governance levels and systems, funding types, and characteristics of the domestic farming sector.

Infrastructure for implementation of the EU food policy framework

Common Agricultural Policy (CAP) implementation infrastructure

Implementing principles and governance of the CAP

For practical and legal reasons, most of the day-to-day implementation of the EU's agricultural policies is executed by the national administrations of the MSs. This allows for flexibility in fitting the great variety of institutional arrangements within MSs to a corresponding variety of specific political and administrative structures for the planning and implementation of CAP measures at the national level.[37] The EU's financial framework sets limits on EU spending over the seven-year period, and annual technical adjustments to the financial framework are made to take inflation and economic growth into account. Under shared management of the budget, the task of actually disbursing EU funds is delegated by the Commission to the MSs who themselves employ about 100 national or regional **paying agencies**. These agencies must be accredited by the Commission.[38] Before they can disburse money to applicants (for example direct payments), they must determine that these applicants are indeed eligible by applying checks defined in the corresponding CAP regulations. For most of the spending under the EAGF, and for roughly one-half of the spending under the EAFRD, the applicable system of checks is the **Integrated Administration and Control System (IACS)**, which covers about 94% of Pillar 1 expenditures and approximately 50% of Pillar 2 expenditures. For the purposes of controlling the disbursement of direct payments, farmers are identified in a detailed electronic database in IACS that includes information on the sizes of their holdings, past applications, and receipt of aid. Applications for direct payments are subject to administrative plausibility and consistency checks, and on-the-spot checks based either on a random sample or risk analysis. For example, on-the-spot checks can involve farm visits to count heads of animals for which aid has been claimed or to check whether a farmer is keeping adequate documentation of activities related to conditionalities (cross compliance). Conditionality checks are performed on at least 1% of the farmers every year;[39] they can also involve remote sensing using satellite or aerial photos to measure the size of land for which payments have been claimed.

Member States are reimbursed by the Commission for the payments that they make to beneficiaries. Reimbursements are subject to correction if subsequent audits find any irregularities. Independent certification agencies carry out annual checks to ensure that the national and regional disbursement agencies are providing complete and accurate accounts of their spending and control activities, and if everything is found to be in order, these agencies finally recommend that the Commission reach 'clearance of accounts' decisions. Multi-annual 'conformity clearance' checks are also carried out to ensure that disbursement has taken place in accordance with EU rules.

Integrated Administrative Control System (IACS)

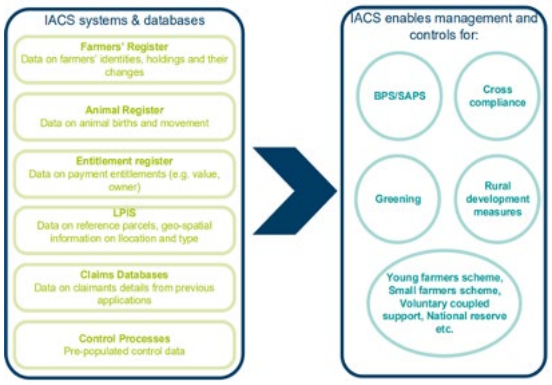
In compliance with EU regulations,[40] MS management and control of the majority of the CAP expenditures must be undertaken using IACS, which consists of databases of holdings, applications, land, and payment entitlements. MSs operate IACS to ensure that payments are made correctly, that irregularities are prevented and (if necessary) properly followed up, and that undue payments are recovered. Failure to properly implement the required key and ancillary controls can result in the EU applying financial corrections to recover sums considered to present a risk to the fund. In the financial year 2022, IACS covered 79.7% of the total CAP expenditure.[41] The remaining proportions of these funds are allocated to **non-IACS measures** (i.e. market measures, non-IACS rural development measures).

The cost and complexity of implementing IACS differs among MSs, and the EU legal framework allows MSs to choose IACS the implementation approach that best suits their needs. Usually, there are three approaches towards IACS implementation: centralized, regionalized, and multi-agency approaches.[42] Figure 3 demonstrates that the new EU MSs (former Soviet Bloc countries) all take a centralized approach, and it is most likely that Ukraine will also follow this approach. It foresees that all IACS databases and processes are managed and administered by one central agency.

Figure 3: Implementation approach of the IACS

Source: Ecorys (2019)

Figure 4: IACS and its main components



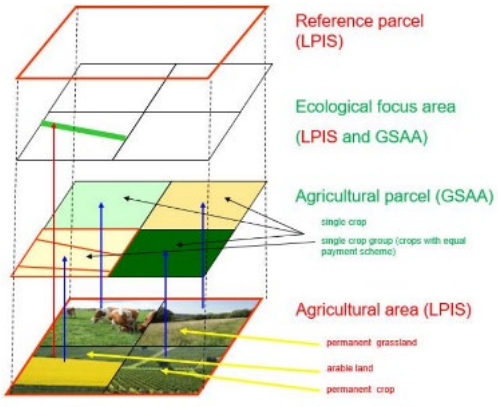
Source: Ecorys (2019)

Figure 5: Different types of reference parcels

	Agricultural parcel (Single Crop)	Farmer's Block	Physical Block	Cadastral parcel
Example				
Main features	One single crop group; single farmer; annual life cycle.	One or several crop groups; single farmer; multi-annual life cycle.	One or several crop groups; one or several farmers; semi-permanent.	Do not always match agricultural pattern; one or several farmers; object life cycle in database depending on property rights.
Source	Farmer's application	Farmer's application	Administrative classification	Cadastre, land register and farmers application

Source: Ecorys (2019)

Figure 6: IACS components: LPIS vs GSA(A)



Source: El Aydam (2022)

IACS consists of several digital and interconnected registers and databases,[43] in particular:

- **Farmers' register**. The farmers' register is a single system for recording the identity of each farmer claiming under an aid scheme administered through IACS. It covers beneficiaries, identified as 'Active Farmers', making claims for basic payments, and under other related aid schemes. The system should uniquely identify each holding and apply appropriate controls over business structures, mergers, splits and changes, in order to ensure no artificial structures are created in order to gain inappropriate benefits from EU schemes.
- **Animal register**. Identification and registration of animals (birth and movement).
- **Entitlements register**. The entitlements register is a database that uniquely identifies each payment entitlement, its value, when it was established or surrendered, and who owns or leases it.
- **Claims databases and control processes**. The claims database is an integrated database for recording each claimant's details from their aid applications, and covers at least the previous 10 years.
- **Land Parcel Identification System**. LPIS is a geographic information system that allows the IACS to geolocate, display, and spatially integrate its constituent data. At the core of the application process are reference parcels, a 'uniquely identified and geographically delimited agricultural area,' which serve as a spatial container for allocation and identification of agricultural parcel(s). LPIS contains reference parcels, for which MSs need to ensure the correct quantification of maximum eligible areas, and must check that all declared agricultural parcels for IACS schemes are properly identified within reference parcels. LPIS should also include data or layers that support a range of eligibility checks, and may also be used to assist in cross-compliance controls. LPIS is maintained using aerial or satellite ortho-photos (imagery), national mapping systems, validated farmer notifications, and results of on-the-spot controls.
- **Area Monitoring System (AMS)**. The AMS is a new compulsory element from 2022. It is a procedure of regular and systematic observation, tracking, and assessment of agricultural activities and practices on agricultural areas by Copernicus Sentinel or equivalent satellite data.
- **Geo-spatial aid application (GSAA)**. GASA is a system that allows beneficiaries to visually indicate the areas for which they apply for aid, and which, where applicable, also integrates the animal-based application system. EU MSs can choose to set up an automatic claim system using the GSA and the animal-based application system. From 2018, all aid applications are implemented vis GSAA, which should contain pre-populated and amendable geo-spatial information including the location and size of ecological focus area (EFA). As described earlier, for the purposes of administrative checks, LPIS should include data or layers allowing a range of eligibility checks to be made.

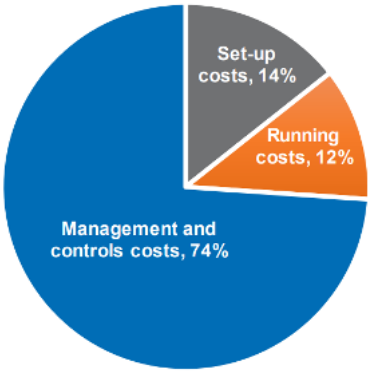
To improve the IACS data availability, EC DG AGRI, in collaboration with the EC DG JRC, has established an IACS data-sharing process to be implemented by the MSs. Thanks to the underpinning INSPIRE Directive and its infrastructure, millions of parcels of data are now becoming available. This data may be further used within climatic, environmental and soil related domains, as well as to provide additional insights together with precision agriculture data. However, to date, there is no unique usable platform providing EU-wide IACS data to improve data availability or enable further data reuse.

The administrative costs of IACS and non-IACS based measures for national and regional public authorities

The 2019 detailed study by Ecorys sheds light on the administrative costs of national public authorities (Managing Authorities and Paying Agencies). The total annual administrative costs of IACS for national and regional competent authorities are estimated to be within a range of €1.7 billion and €1.9 billion, or 3.0% - 3.3% of the total CAP budget, or 3.5% - 3.9% of CAP budget managed through IACS. It also appears that Pillar 2 or Rural Development measures are more demanding in terms of the implementation or administrative costs than Pillar 1 measures. Fährmann and Grajewski estimated in 2012 (although based on German federal lands and 2005 data) that on average, implementation costs of the Rural Development programs represent 10% of public expenditures.[44] The implementation costs of individual measures vary from less than 1% to over 80%, and unfortunately, it is difficult to distinguish clearly between IACS and non-IACS rural development measures in terms of their implementation costs burden using the Fährmann and Grajewski analysis.

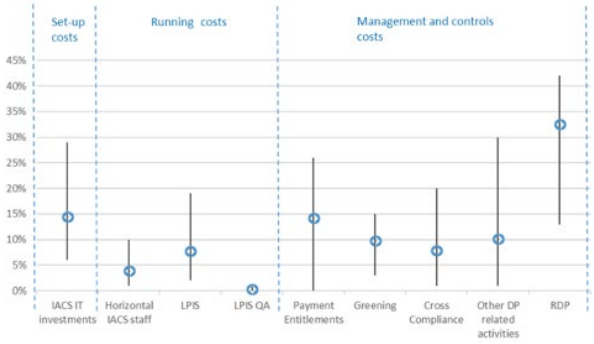
Alternatively, the average annual costs of IACS administration per country were around €65 million and or €10.47 per hectare of agricultural land. Across the EU, the annual IACS cost ranges from €2 to €208 per hectare, indicating considerable variation across MSs. Similarly, average annual IACS costs per agricultural holding are estimated at €168.61. There is, however, considerable variation across MSs, with the average annual IACS cost per agricultural holding ranging from €18 - €4,000. In particular, the data shows large differences between smaller and larger MSs, with a disproportionately high cost for smaller MSs. Administrative tasks linked to the IACS are more burdensome for smaller MSs that do not benefit from economies of scale. For example, all MSs need to implement an IACS IT infrastructure but, although the absolute cost of IACS IT infrastructure is higher for large MSs, the cost per beneficiary is lower.

Figure 7: IACS related costs components borne by national administrations



Source: Ecorys (2019)

Figure 8: Distribution of the IACS related costs components borne by national administrations



Source: Ecorys (2019)

Ecorys identifies three main types of costs for national administrations: set-up costs, running costs, and management and controls costs. The overall annual costs incurred for management and controls of the applications received through the different schemes are estimated to represent the largest share of total IACS related costs (74%), followed by set-up costs (14%) and running costs (12%).

Set-up costs represent the annualized value of the total amount of spending on IT systems for IACS after the CAP 2013 reform; unlike other cost categories, the quantification of set-up costs reflects the total amount of costs in the programming period divided by the number of years since the start of the programming period. Key cost components include: IT staff working hours, purchases of products and services associated with establishing all necessary infrastructure (hardware), applications (software), and other IT-related costs to operate IACS. Set-up costs typically constitute a one-off investment in IT, which is often outsourced. The need to develop new IT systems, or to update existing systems, is often created by the adoption of new schemes, the integration of new tools and e-solutions (e.g. GSAA), or modifications in schemes or processes. However, changes in the set-up of IACS may also be initiated by the MSs with the aim of improving efficiency, usability, and so on.

Running costs represent the total annual amount of spending for the running of IACS. These include staff working hours, purchases of products and services associated with system maintenance, monitoring and reporting, and evaluations, as well as costs associated with LPIS.

Management and controls costs represent the total spending for managing all the specific IACS-based schemes and measures (excluding the overall IACS management) directly or indirectly linked to conducting controls. These include the hours worked and purchases of products and services associated with the day-today management activities of all specific schemes, such as calculating and conducting payments, processing and selection of applications, as well as organizing and conducting checks.

The above indicative and relative IACS costs allow us to estimate how much would this system cost for Ukraine. Using per hectare indicative costs, we arrive at a total of €432 million in IACS administrative costs for Ukraine. IACS administrative costs make up 3.0% - 3.3% of the total CAP budget. If a hypothetical annual CAP budget for Ukraine reached €10.4 billion,[45] then the estimated IACS annual administrative costs would be at the level of €328 million.

Implementation of other EU food system related policies

Competent authorities of the EU MSs organize official controls systems on their territory to verify that operators comply with **food safety regulations** along the supply chain that cover the safety and quality of food and feed, plant health, and animal health and welfare. They also cover import controls on animals and goods entering the EU from third countries. The role of the EU is to ensure that the control systems at the national level are effective.[46] This implies that the **food safety policies** control infrastructure in the EU has multiple layers,[47] and its implementation and enforcement vary considerably across the MSs.[48] For example, in Romania, five competent authorities have responsibilities for control systems for food safety, animal health, animal welfare, and plant health: the National Sanitary Veterinary and Food Safety Authority (NSVFSA), the Ministry of Health (MH), the National Authority for Consumer Protection (NACP), the Ministry of Agriculture and Rural Development (MARD), and the Ministry of Environment (ME) which has responsibilities regarding genetically modified organisms.[49] In Poland, the Ministry of Agriculture and Rural Development and the Ministry of Health are the two central authorities in this policy domain.[50]

A deeper examination of how these various systems are organized lies beyond the scope of this paper, which takes a very simplified, economic approach to provide a quantified broader picture of Ukrainian public authorities' capacity gap. The complexity of this exercise has been shown by various research projects on, for example, the quantification of administrative burden of policies that usually involve large teams of experts from various fields.[51] Commissioning such granular studies may in future be useful in order to rationalize Ukraine's real needs in terms of financial and other resources needed for the public sector prior to EU accession.

Quantifying the overall accession challenge for public authorities in agriculture and rural development in Ukraine

As the first step, the OECD PSE framework[52] allows for quantifying and comparing agricultural policy support measures, their structure, and financing volumes across MSs, including public services and institutions supporting agriculture e.g. through consultancy and administration. The OECD PSE framework aggregates support various measures in agriculture into the producer support estimate (PSE), consumer support estimate (CSE), general support services estimate (GSSE), and total support estimate (TSE), which is the sum of PSE, CSE, and GSSE. PSE measures all transfers to agricultural producers individually that can accrue as a result of the market or trade measures, or as a budgetary transfer. GSSE, a primary focus of this paper, measures expenditures that benefit the primary agricultural sector as a whole. Specific general support services (GSS) categories are presented in Table 2 below. Crucially, the same methodology for support measure quantification allows for comparisons across various countries.

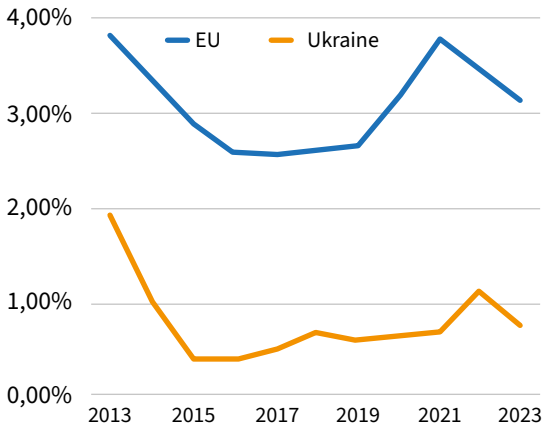
Table 2: General services support (GSS) items in the EU

General services support items	Description
General support services estimate (GSSE)	Total budgetary expenditure to support general services provided to agriculture
Agricultural knowledge and innovation system (AKIS)	
· Agricultural knowledge generation	Farm Accountancy Data Network (FADN), including expenditures on the improvement of agricultural statistic systems in the Community; management of generic resources by the public and private sectors; research to improved methods for animal friendly production; Horizon projects; Expenditures from MS on research and knowledge generation; Expenditures on European farm prices and margins;
· Agricultural knowledge transfer	Vocational training; farm advisory and extension services;
Inspection and control	
· Agricultural product safety and inspection	National expenditures on agricultural product safety and inspection
· Pest and disease inspection and control	Animal transportation controls; National expenditures on pest and disease inspection and control; expenses for veterinary and plant health inspections as laid down in the various Community rules
· Input control	National expenditures on input control
Development and maintenance of infrastructure	
· Hydrological infrastructure	National expenditure on hydrological (irrigation) infrastructure
· Storage, marketing and other physical infrastructure	National expenditure on storage, marketing and other physical infrastructure
· Institutional infrastructure	Marketing aid to producer groups in most remote regions; Producer groups EU expenditures; Support for farmers' cooperatives; National expenditure on institutional infrastructure; cadastral services
· Farm restructuring	Early retirement; National expenditure on farm restructuring; Restructuring and conversion vineyards
Marketing and promotion	
· Collective schemes for processing and marketing	Adding value to agricultural and forestry products; National expenditure on collective schemes for processing and marketing; operational funds for producer organizations in the Fruit and Vegetables sector
· Promotion of agricultural products	Cooperation for development of new products processes and technologies in the agriculture and food sector and in the forestry sector; Quality promotion measures; Aid to producer groups for preliminary recognition (fruits and veg); National expenditure on promotion of agricultural products; Promotion wine
Cost of public stockholding	National expenditures on public stockholding
Miscellaneous	National miscellaneous expenditures

Source: OECD PSE Manual (2016)[53]

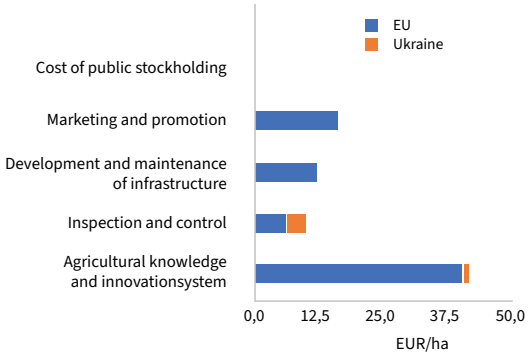
Figures 9 and 10 quantify and demonstrate the agricultural public institutions' capacity gap that Ukraine will have to close before joining the EU. These two figures demonstrate a drastic difference between the EU and Ukraine in terms of financing agricultural public goods, i.e. general support services. In relative terms, Ukraine spends much less than the EU on GSS as a share of agricultural output. Figure 9 demonstrates a varying relative scale of the GSS expenditures in Ukraine and in the EU as a share of agricultural output. In 2021, for example, Ukraine's GSS expenditures made up only 0.67% of the corresponding agricultural output, compared to 3.81% in the EU. Overall, Ukraine spent 4.3 times less on GSS than the EU over the last 5 years (2018-2022). This difference is even more striking when it comes to expenditure per hectare of agricultural land. In the pre-war year 2021, for example, the EU spent €75 per hectare of agricultural land versus a meager €5.5 in Ukraine, almost 14 times less. A more detailed comparison demonstrates the especially striking difference in support for agricultural knowledge and innovation, while there is also almost double the gap in expenditures on agricultural inspection and control infrastructure (food safety, and animal and plant health protection systems).

Figure 9: Expenditures on general support services (GSS), as % of agricultural output



Source: owns presentation using OECD PSE data

Figure 10: Expenditures on general support services (GSS), in €per ha of agricultural land



Source: own presentation using OECD PSE data

Table 3 below summarizes key calculations using per hectare costs indicators, and demonstrates that Ukraine's current financing gap is about **€3.3 billion**. This is a huge amount compared to what Ukraine used to spend before (around €600 million annually), so prioritization would be needed. Arguably, the IACS infrastructure and inspection and control (food safety and environment control infrastructure) domains would need a priority focus that together would require an additional **€548 million** of annual financing, which is equivalent to the current total agricultural financing (producers' and general services support) available in Ukraine.

Table 3: Assessing the financing gap for public authorities/capacities

	EU GSSE, €/ha (a)	Ukraine GSSE, €/ha (b)	Ukraine GSS financing gap [c]=(a)-(b), €/ha (c)	Ukraine GSS financing gap (= c*agland area), million €(d)
Agricultural knowledge and innovation system	40.3	1.5	38.7	1,598.7
Inspection and control	6.4	3.6	2.8	116.1
Development and maintenance of infrastructure	12.0	0.1	11.8	489.1

Marketing and promotion	16.2	0.0	16.2	670.9
Cost of public stockholding	0.1	0.0	0.1	4.5
Miscellaneous	0.1	0.2	0.0	0.0
IACS infrastructure				432.0
Total				3,307.7

Source: own calculations using OECD (2023) data for Ukraine and EU using 2021 as a baseline; Note: per ha figures in the table are received as a corresponding GSSE item over agricultural land area for a country in the Table 1. IACS costs in column (d) is a multiplication of the per ha costs in the EU (€10/ha) by agricultural land area in Ukraine.

Conclusions and recommendations

The agricultural and broader food system is one of the most integrated and regulated sectors in the EU. Ukraine must be able to implement not only the administratively complex and financially demanding EU Common Agricultural Policy, but also other extensive EU-wide regulation of markets and standards in the areas of farming practices, animal and plant health, food safety, environmental and animal welfare – the EU agricultural acquis. This will require substantial additional public investments in competent authorities and their capacities and overall public infrastructure to implement and enforce the EU agricultural acquis in Ukraine.

A recent European Commission Ukraine 2023 Report assesses Ukraine[54] to be in the **early stage** of preparation for accession in agriculture and rural development, and **moderately** prepared in the food safety, veterinary, and phytosanitary policy domain.[55] This implies a substantial institutional capacity gap between what is available in Ukraine now and what is needed by the time Ukraine joins the EU. The most urgent recommendations stress strengthening administrative capacity, the establishment of the administrative and control system required by the EU agricultural acquis. This paper has attempted to quantify this gap financially without delving into a granular functional analysis of EU Food systems policies implementation and control, or comparison with Ukraine, drawing conclusions on and attaching a price tag to the existent gaps. Instead, we employ a simplified economic approach, using a well-established OECD PSE methodology framework and outcomes on agricultural policy monitoring in the EU and Ukraine, complemented by a separate insight on the administrative costs of the Integrated Administration and Control System (IACS) – a key management and control system for administering CAP payments. The key results are:

- **Substantial institutional gap**. If Ukraine became an EU member tomorrow, its administrative capacity gap in agricultural financing terms would be equivalent to about **€3 billion** annually. The figure is an estimate but it does show the order of magnitude of the challenge ahead. It includes capital, human investments, and running costs of agricultural agencies and institutions.
- **Prioritizing of capacity building**. Given the huge capacity and institutional gap and the current war-time fiscal hardships, the priority is to establish IACS infrastructure and food safety and environment control infrastructure domains, which together would require an additional **€548 million** of annual financing and/or capacity boost. This is also challenging because it is equivalent to the current total agricultural financing (producers' and general services support) available in Ukraine.

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