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A classification scheme based on farming practices

A tool for labelling interventions with environmental and climate-related commitments in Common Agricultural Policy strategic plans

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Contents

Abstract

The core of the current Common Agricultural Policy (CAP), which entered into force on 1 January 2023, is the CAP strategic plan, designed by each Member State (MS) according to a European legislative framework (Regulation EU 2021/2115). Within the strategic plans, Member States have designed interventions that best fit their needs and local conditions. The result is a wide range of tailor-made interventions across the European Union, with different requirements for farmers. To facilitate the reporting and the consequent evaluation and monitoring processes of the policy, there is a need to systematise the interventions in the CAP Strategic Plans (CSPs) according to the farming practices that are included in them.

This report describes the classification scheme based on farming practices developed by the Joint Research Centre to report in a systematic way the interventions defined in the Member States CSPs and to enable the extraction and aggregation of similar interventions across different MS and different CAP areas. It describes the methodological steps followed to establish the classification scheme.

The classification scheme covers farming practices related to climate and environment. It is structured in tiers where the farming practices are described with a higher level of details from tier 1 to tier 2 and 3 to meet the different level of detail the practices are described in the CAP strategic plans. The classification is composed of 45 tier 1 classes, 164 tier 2 classes and 157 tier 3 classes.

The comprehensive character of the classification scheme encourages its use beyond its original scope of reporting CAP implementation. In fact, the classification is currently used by the DG AGRI Evaluation Help Desk for the mapping of the CAP strategic plans to allow policy analysis; it is the working tool for the collection of information from the CAP strategic plans implementation to feed the CAPRI model; it is also considered as a reference in defining some new variables related to environmental and climate in the Farm Sustainability Data Network (FSDN).

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1 INTRODUCTION

The new legislation on the Common Agricultural Policy (CAP) entered into force on 1 January 2023. One of the main characteristics of the new CAP is the shift from a compliance-based to a performance-based policy. The "heart" of the policy is the CAP strategic plan, designed by each Member State according to a European legislative framework (Regulation EU 2021/2115). EU countries have the flexibility to define the most appropriate interventions according to national and regional needs and characteristics. Based on a strengths, weakness, opportunities and threats (SWOT) analysis, interventions established in the plans should deliver results in relation to EU-level objectives and also in relation to national targets indicated in the plans. An intervention is defined by the regulation as "a support instrument with a set of eligibility conditions specified by a Member State in its CAP Strategic Plan".

Thus, Member States have designed interventions that best fit their needs and local conditions. The result is a broad range of tailored interventions all over the European Union, with diverse requirements the farmers should fulfil. These interventions may differ widely between countries, according to needs and circumstances. However, when it comes to achieving certain objectives, actions may coincide. In these cases, different terminologies may be the only difference between interventions prescribing the same actions. Defining interventions based on the farming practices they support, would help simplify the complexity of national and local specificities and reporting at European level.

To facilitate the evaluation and monitoring of the policy there is a need to systematise the interventions included in CAP strategic plans based on their basic and common elements according to a European structured framework. Considering the performance-based approach of the policy, and the multiple environmental externalities that it may have, this need is particularly important for interventions that meet the CAP specific objectives related to climate change, natural resources, biodiversity and health (i.e., specific objective 4. Contribute to climate change mitigation and adaptation, including by reducing greenhouse gas emission and enhancing carbon sequestration, as well as promote sustainable energy; specific objective 5. Foster sustainable development and efficient management of natural resources such as water, soil and air, including by reducing chemical dependency; specific objective 6. Contribute to halting and reversing biodiversity loss, enhance ecosystem services and preserve habitats and landscapes; specific objective 9. Improve the response of Union agriculture to societal demands on food and health, including high quality, safe, and nutritious food produced in a sustainable way, the reduction of food waste, as well as improving animal welfare and combatting antimicrobial resistances). A classification scheme based on farming practices related to environment and climate could meet that need and enable the extraction of the contents as well as the aggregation of similar interventions across different Member States and different CAP areas. Such classification should give the possibility to label all the interventions related to the climate, natural resources, biodiversity and health, covering commitments and requirements related to conditionality, eco-schemes, rural development and sectorial interventions. This will allow a broad comparison at many observational scales, including sub-national levels.

This report presents the classification scheme developed by the JRC to report and describe interventions defined in the Member States CAP Strategic Plans by farming practices, enabling the extraction and aggregation of similar interventions across different Member States and different CAP areas. It describes the methodological steps followed to establish the classification scheme.

The comprehensive character of the classification scheme encourages its use beyond its original scope of reporting CAP implementation: the classification is currently used by the DG AGRI Evaluation Help Desk for the mapping of the CAP strategic plans to allow for deep policy analysis; it will also be the working tool for the collection of information of the CAP strategic plans implementation to feed the CAPRI model (Britz & Witzke, 2014); it will be considered for consistency in the definition of new variables related to environmental and climate in the Farm Sustainability Data Network (FSDN).

This report also includes a detailed description of the definition of the different consolidated classes of the classification scheme. This is particularly important for understanding the results obtained from the different applications in which this classification scheme is being used.

2 CLASSIFICATION SCHEME DESIGN PROCESS

This chapter describes the scope of the adopted approach and the methodological steps that have been followed to establish a classification scheme for the climate and environment-related interventions contained in the CAP strategic plans based on farming practices (FPs).

2.1 Approach to develop the classification scheme

As mentioned before, the classification of the interventions by farming practices has the following main goals:

- To define a complete set of labels or coding for environmental and climate interventions to be used in the CAP reporting system;
- To aggregate the interventions according to the farming practices contained in them so that links can be made explicit with CAP specific objectives related to climate, environment, biodiversity and health objectives;
- To allow for the comparison of the interventions as they are diversely defined by the Member States.

The definition of a label code of farming practices for each intervention is a strategic step because it will facilitate the creation of an efficient reporting system. This reporting system will allow extracting information about the area/units and the budget allocation associated to the different farming practices.

In accordance with these objectives, the classification should allow for the distinction of each of the elementary parts that constitute the interventions. The granularity of the classification (and its level of detail) should be established in order to retrieve information on the farming practices included in the intervention, taking into account the different unit amounts of the support given to farmers as a basic element to be mapped (unit amount is the amount paid to farmer for a supported practice, expressed per unit of land or of animal). But also acknowledging the level of description that a policy document provides, adapting the labels to what will be likely found in the CAP strategic plans.

As a preliminary step to design the classification, in the second half of 2021 we analysed draft CAP strategic plans to have a first view of the proposed approaches and the interventions defined by some Member States. We considered the following types of interventions:

i. Schemes for the climate, the environment and animal welfare (eco-schemes), included in the direct payments;
ii. Environmental, climate-related and other management commitments, included in rural development;
iii. Sectoral interventions.

On December 2021, only a limited number of draft CAP strategic plans were received, and the level of completeness of each plan varied among Member States. We concentrated our analysis on the draft CAP strategic plans presented by Ireland and France, as we consider them a good representation of the intervention logic proposed by Member States. They gave us an overall view of the general approach to build on the green architecture, as well as to extract information about the nature of each planned intervention.

2.2 Analysis of already applicable classifications

In order to define a classification to be applied on the interventions defined by the Member States in their CSPs, we started by analysing the structure and performance of existing thematic classifications to determine strengths and weaknesses to design the most comprehensive classification possible (Figure 1). For the selection of these classifications to be tested, we took into account various characteristics such as:

- The level of transferability of the classification in terms of interventions and operations that could be financed in the CAP
- The coverage and granularity of farming practices related to environmental and climate objectives of the CAP.

From the existing available schemes, we finally selected for examination the three thematic classifications described in the following paragraphs.

Figure 1. First steps in the design of the classification scheme of CAP interventions based on farming practices. Selection of established thematic classifications, performance analysis of these classifications on selected interventions from draft plans of France and Ireland, building on thematic classifications and further development after scanning interventions on 23 CAP Strategic Plans. The classification scheme thus obtained was presented for feedback to DG AGRI and JRC colleagues.

Source: own elaboration.

2.2.1 Rural Development Programs. JRC classification for CAP 2014-2020

This classification scheme was built on the work carried out in 2019 at the JRC to collect information on the implementation of two measures[1] from the Rural Development Programmes (RDPs): M10 "Agri-environment and climate measures" and M11 "Organic farming". These measures are intended to support farming practices that contribute to climate action and the sustainable management of natural resources. To develop the scheme, the information at sub-measure level of the RDP documents submitted by 27 Member States (all except the UK) was reviewed. The classification was

[1] According to Regulation (EU) No 1305/2013 the term measure "means a set of operations contributing to one or more of the Union priorities for rural development". In the current legislative framework for the CAP strategic plan (Regulation EU 2021/2115), the same meaning is included in the term intervention.

developed to obtain a consistent and harmonised overview of the level of implementation of sub-measures across Member States.

An initial list of farming practices was proposed to review and classify the different sub-measures contained in the Rural Development programmes. This list was progressively updated considering the feedback from the different experts throughout the review process. The resulting system was structured in 78 farming practices grouped in 19 themes: Animal welfare, Pollination, Biodiversity, Crop protection, Conservation agriculture, Crop types and crop diversity, Erosion/runoff protection measures, Feed restrictions, Fertilization, Fire prevention, Grassland and grazing management, Harvesting, Irrigation, Organic farming, Restriction of seasonal work periods or daily work hours, Soil cover/Soil conservation, Soil compaction, Sowing, Water protection. The list of the farming practices, organised by themes is reported in A 1.

2.2.2 Ecological farming practices. LIFT H2020 Farming Systems classification

LIFT "Low-Input Farming and Territories – Integrating knowledge for improving ecosystem-based farming[2]" is a research project funded under the European Union's Horizon 2020 research programme. Its goal is to identify and understand how socio-economic and policy drivers impact the development of ecological approaches to farming and assess the performance and sustainability of such approaches. The analysis takes into account different farming systems at farm, farm-group and territorial scales. As part of this project, farming practices with a relevance for the ecological performance of farming were identified through a systematic literature review (Rega et al., 2018). Subsequently these practices were classified into a consistent taxonomy to carry out a survey among European farmers on the degree of uptake of ecological farming practices in different geographic contexts and farm types (Tzouramani et al., 2019). The LIFT classification aimed to cover the whole spectrum of farming management, from the more conventional ones to more demanding ecological farming practices that could be financed by CAP Pillar II measures.

A total of 97 Individual farming practices are clustered into 11 sections or main themes: Pest and plant disease management; Weed management; Fertilisation and soil management of crops; Crop diversification and crop rotation; Livestock management (feeding, location and disease management); Manure and slurry management; Landscape features and habitats; Agroforestry; Use of machinery; Water management and Energy management. The list of the farming practices, organised by sections is reported in A 2.

2.2.3 Climate mitigation. Climate smart Farming Practices inventory for DG CLIMA

This compendium of climate mitigation actions is proposed in the framework of the report "Effective performance of tools for climate action policy-meta-review of Common Agricultural Policy (CAP) mainstreaming" (Martineau et al. 2016) delivered as part of the DG CLIMA service contract 'Support to the assessment of the climate ambition of CAP Strategic Plans'. The aim of this work is to examine the effectiveness of a range of measures that could have a positive impact on GHG mitigation in relation to agricultural management. These measures would contribute to mitigation both by reducing GHG emissions from agriculture and forestry, and by enhancing the removal of carbon dioxide from

[2] https://www.lift-h2020.eu/

the atmosphere through carbon sequestration in terrestrial carbon stores such as above-ground woody biomass and below-ground biomass in soils.

The list of potential mitigation actions in the agriculture and land use sectors is the result of a screening exercise carried out based on scientific literature and technical reports review and expert feedback. The classification scheme contains a list of 29 potential mitigation actions that have been grouped into 5 broader categories: Land use, Crop production, Livestock production, Nutrient and soil management and Energy. The list of the measures, organised by categories, used in this classification is reported in A 3.

2.3 Performance check of thematic classifications and draft plans scanning

To assess whether the different classifications selected were fit for purpose, we tested them using the interventions contained in the draft CAP strategic plans of France and Ireland (Figure 1). The idea was to assess the performance of each classification in order to construct a new scheme that would build on the strengths and address the limitations of each thematic approach. In addition to a good degree of completion at the time of this work, the French and Irish draft CAP strategic plans offered diverse approaches to intervention design that made them well-suitable for testing.

— In the French draft CAP SP, the test was performed on:

  The single eco-scheme proposed in the strategic plan and comprising four options:

  Sustainable farming practices for the reduction of pesticides, the increase of biodiversity and carbon storage, differentiated for arable land, permanent grassland and permanent crops,

  Environmental certification with different levels of ambition,

  Landscape elements and areas linked to biodiversity,

  Bonus hedgerows (the support is a top-up of option).

  Nine Agri-Environmental and Climate Measures (AECM) for the territory of Metropolitan France (France métropolitaine) addressing different environmental aspects proposed by the French CSP as Environmental, climate-related and other management commitments (ENVCLIM).

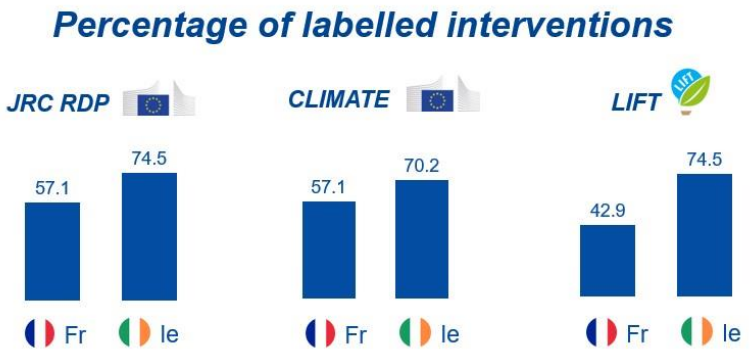
— In the Irish draft CAP SP, the test was performed on:

  A broad Eco-scheme with 7 different optional farming practices: Enhanced Crop Diversification; Extensive Livestock Production- low stocking rate; Non-productive areas and landscape features; Planting of Native Trees/Hedgerows; Soil Sampling & Appropriate Liming; Use of GPS controlled fertiliser spreaders/sprayers; Limiting Chemical Nitrogen Usage;

  A total of 30 different Agri-Environmental and Climate Measures (AECM) addressing different environmental aspects proposed by the plan as environmental, climate-related and other management commitments.

  Ten additional climate and environment-related Rural Development and Sectoral interventions as they were defined in the draft CAP strategic plan.

Figure 2. Result of the performance analysis of the considered classifications on selected interventions from the draft CAP strategic plans presented by France and Ireland in the second half of 2021. Percentage of labelled interventions by applying each scheme.



Source: own elaboration.

We tried to classify these interventions using the three available schemes and examined their effectiveness. After this performance check, we concluded that none of these classifications would meet our objectives. No scheme was able to effectively label these interventions to a satisfactory level, ranging from 42.9% to 74.5% the percentage of interventions labelled in the test (Figure 2). We acknowledged that it would be necessary to build a new classification scheme taking advantage of some of the contents and principles incorporated in these schemes. The exercise gave us the opportunity to define the main elements from which the new classification scheme should be built.

After the completion of this exercise and during the design phase of the classification, further CAP strategic plans were submitted to the Commission for evaluation. The analysis carried out on the French and Irish draft CAP strategic plans was then complemented by a review of interventions from submitted CAP strategic plans of other Member States machine translated into English. A total of 23 CAP SPs submitted by January 2022 were analysed, shallow screening 143 Eco-schemes and 325 Agri-environmental and Climate commitments (Figure 1).

All the information thus collected was used to design a first draft of the classification scheme which was presented to colleagues and potential end-users for review (Figure 1). The structure of the classification was discussed and feedbacks were received from relevant Commission Services in charge of the different topics. In particular a specific work has been carried out in the definition of the animal welfare practices with colleagues from DG AGRI in charge of the topic.

2.4 Final steps in the design of the classification scheme

The consolidated classification scheme was developed starting from April 2022. This action coincided with the evaluation phase of the CAP strategic plans by the European Commission. This provided us with the opportunity to fine-tune the scheme and immediately test the proposed classes in some of the plans submitted for evaluation. In particular, we assessed the appropriateness of the labelling scheme on environmental interventions submitted by France and Spain. We applied the classification to the eco-schemes and Environmental, climate-related and other management commitments (ENVCLIM) of the CAP strategic plans of these two Member States to assess the adequacy of the labelling system (figure 3).

This test on the Spanish and French CSPs was partly done (only on eco-schemes) in parallel with one of the end users of the classification system, the European Evaluation HelpDesk for the CAP[3]. This allowed us to verify that categories were interpreted in a consistent way by the two teams. This process demonstrated the importance of accompanying the classification with detailed definitions for each class and descriptions of how to apply the labels to the interventions.

Thus, to ensure a good applicability of the classification scheme, each class has been defined. In addition to facilitating the process for end-users, the definition of the classes ensures that the scheme can be used unambiguously, which is a necessary condition for the validity of the results of its use. As far as possible, definitions follow consolidated glossaries from reliable international bodies. When available, we include definitions of practices derived from official sources, such as Eurostat[4], FAO[5] or policy documents. Where these sources do not fit the needs, we use ad hoc definitions found in the scientific literature, including those compiled in the framework of the iMAP[6] evidence-based assessment of the impacts of agricultural practices on the environment and climate, based on a synthesis literature review.

In parallel, as the classification was being consolidated, the European Commission services became interested in using the classification for other scopes beyond classifying interventions solely for monitoring purposes within the CAP. This was followed by meetings with different potential users of the classification in the future. Particular importance was given to meetings with the CAPRI team of model developers, for whom an appropriate structure of the classification would allow for an in-depth scientific analysis of the implementation of the strategic plans into the model. The discussion and consistency check with potential end-users enriched and refined the content of the consolidated classification (figure 3).

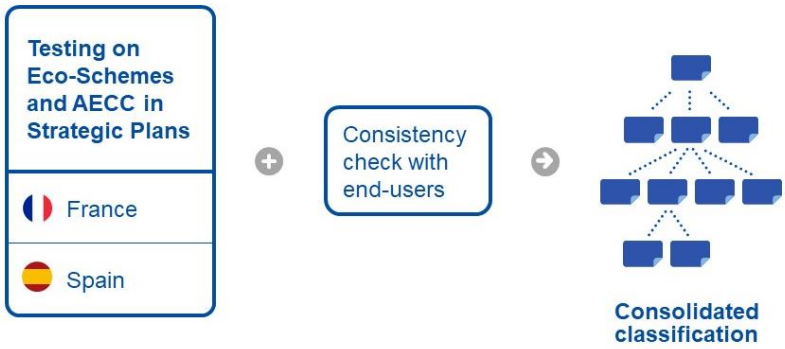
[3] The Evaluation Helpdesk is a part of the EU CAP Network and aims to enhance the effectiveness of CAP evaluations by supporting various entities such as managing authorities, national CAP networks, paying agencies, evaluators, and the European Commission. It assists in conducting evaluations, analysing CAP implementation by Member States, and sharing monitoring and evaluation practices within the EU CAP Network.

[4] The statistical office of the European Union. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Eurostat

[5] Food and Agriculture Organization of the United Nations. Definitions and Classification of Land Use, Agricultural Practices and Irrigation used in the Corporate Statistical Database FAOSTAT. www.fao.org/fileadmin/templates/ess/ess_test_folder/Definitions/Land_Use_Definitions_FAOSTAT.xlsx

[6] Integrated Modelling platform for Agro-economic and resource Policy analysis a scientific evidence provision project commissioned by DG Agriculture and Rural Development to the Joint research Centre.

Figure 3. Steps in the design of the classification scheme of CAP interventions based on farming practices. Testing of resulting classification scheme on environmental interventions of final submitted plans of France and Spain, and consistency checking with DG AGRI Evaluation Help Desk and JRC model developers to have the consolidated version.



Source: own elaboration.

The consolidated classification scheme was used in the first mapping exercise produced by the Evaluation Help Desk and published in the report "Mapping and Analysis of CAP Strategic Plans. Assessment of joint efforts for 2023-2027" (EC DG AGRI 2023) where they analysed and mapped the choices made by Member States in their CAP Strategic Plans and their potential impact. The results of this work were included in the Communication from the Commission to The European Parliament and the Council "Summary of CAP Strategic Plans for 2023-2027: joint effort and collective ambition" (COM (2023) 707 final) published on 23 November 2023.

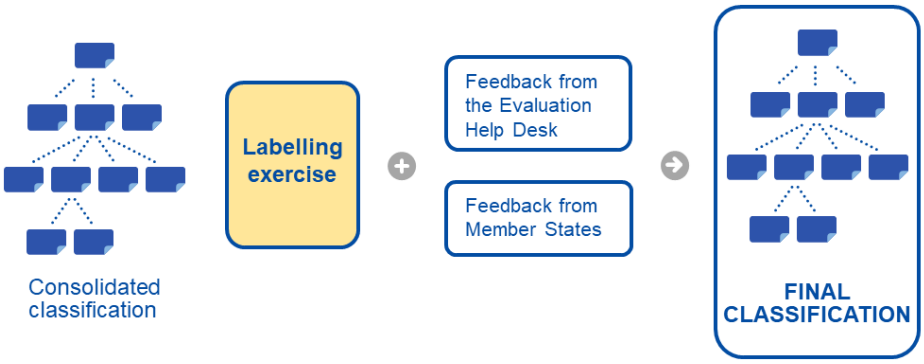
At the same time the consolidated classification has been used by the Evaluation Helpdesk and by the JRC to label all interventions related to climate, natural resources, biodiversity and health included in the CAP strategic plans of all Member States (figure 4). Results of this labelling exercise were also checked and commented by Member States. The whole process was an important test in the practical use of the classification and gave the opportunity to improve the classification design also based on feedbacks by the Evaluation Helpdesk and the Member States (figure 4). The most important improvements were related to:

- Introduction of new classes (ban or restriction of plant protection products on landscape features; ban or restrictions on grazing, mowing, or ploughing on landscape features; obligation for mowing or grazing on landscape features; cultivation of crops with the potential to attract pollinators; adoption of less water demanding crops; buffer strips against erosion etc.);
- Clarification in the description of the classes (clarifications needed to update the descriptions to take into account the new classes; specifications for the use of the classes related to wetlands and peatlands; when classes related to wildlife are to be used; type of plant protections products allowed when a ban is requested such as the ones used in organic farming etc.);

- Reorganisation of the classes across tiers (fine-tuned of classes related to crop rotation/diversification; drainage class split into four tier 3 classes; reorganisation of the tier biosecurity and hygiene measures for animals etc.).

This process led to the final classification scheme, presented in detail in the following sections.

Figure 4. Final steps in the design of the classification scheme of CAP interventions based on farming practices. The consolidated classification scheme was used for parallel labelling exercises on all MSs CAP SPs. Feedbacks from this exercise were used to build the final classification.



Source: own elaboration.

2.5 Basic principles for the classification scheme

During our analysis of the CAP strategic plans, we have observed very different levels of aggregation of the interventions proposed by the two Member States, no matter the type of intervention (i.e. eco-schemes, agri-environmental and climate commitments, sectoral). In fact, one can find very specific interventions as some of the Irish AECM (e.g. over winter stubble, brassica fodder crop or hedgerow rejuvenation coppicing). Conversely, there are broad interventions including many different practices aiming at one wide objective. This is the case of the French AECM intervention "Water quality and quantity management in arable crops", that includes a whole set of measures: preserve water quality (average), preserve water quality in multiple crops/livestock, preserve water quality and quantity, pesticides reduction and water quantity management, herbicides reduction and soil cover, pesticides reduction and soil cover, nitrogen fertilisers management, pesticides reduction and nitrogen fertiliser management. We concluded that a classification that could accommodate this diverse level of aggregation should be structured in different levels of granularity, foreseeing a tier 1 element to address the broad definition of a farming practice as well as tier 2 / tier 3 elements to differentiate this broad practices in more specific practices when the level of detail of the description of the farmers' commitments makes this possible.

In the CAP strategic plans we find interventions that are similar across Member States. This happens especially with interventions in eco-schemes or ENVCLIM that introduce a higher level of ambitions compared to the requirements established in conditionality. In this case the intervention is well defined, and it is easily recognizable and comparable among different CAP strategic plans (crop diversification / crop rotation, area devoted to non-productive features, maintenance of permanent grassland in the holding). Even if not all the classifications selected consider a class for these practices, it is fundamental to introduce practices definitions that build upon the basic level of ambition covered by conditionality.

In the analysis of the CAP strategic plans it emerged that some interventions include practices that can be quite different but have in common the fulfilment of the environmental objective of the intervention. For instance an intervention aimed at improving soils can foresee farming practices combating erosion as well as the reduction of stocking rates for livestock. This raised the issue if the classification should somehow take into account categories of farming practices linked to the CAP specific objectives and their impact (practices to reduce erosion). As the scope of the classification is not to build a link between interventions and objectives, but this will be done successively according to the type of practices embedded in the intervention, it was decided that the classification should not be biased by the scope of the farming practices. This means that we prefer to build a classification scheme that define practices based on the commitments for the farmer (linked to the farm management) and not based on the scope of the practice (i.e. to combat erosion). The approach on scope should be kept as last resort when a specific definition of the management practice cannot be determined without being too specific.

Some interventions give the option to the farmer to choose the farming practices to be implemented from a menu of farming practices. In this case the intervention will be labelled according to the different farming practices embedded in it, but this does not mean that all these farming practices will be implemented as the final choice belongs to the farmer. In some other cases the condition to be fulfilled by the intervention requires that all farming practices embedded in the intervention shall be implemented. The classification should be able to report these different conditions. In order to fulfil this goal an extra label could be used to describe, when necessary, the different situations. Extra labels shall then be introduced in the classification scheme. It was considered that extra labels could be also introduced to avoid to have too many differentiated practices according for instance to the type of animals (i.e. limiting anti-microbial use for bovine, limiting anti-microbial use for pigs etc.). In the case an extra label correlated to the type of animals will reduce the number of classes.

The number and the diversity of the farming practices introduced by the Member States in the CAP strategic plans suggests that during the application of the classification to label the intervention, the user may discover some specific farming practice that cannot be classified appropriately in any of the classes defined. Even if the classification should be designed in a way that this event should not occur, we cannot exclude some fine-tuning of the classification will be necessary when using it. It is then appropriate to consider the classification as a living document that may be exposed to slight modifications in the future.

3 THE CLASSIFICATION

In the following sections, the categories of the classification are presented with detailed descriptions of each class, as well as recommendations for consistent application.

3.1 Classification classes

The level of detail describing each requirement in the interventions of the CAP strategic plans is wide. For that reason we opted to build a classification scheme where the classes reflect a different level of details. Therefore the classification is divided in tiers where the farming practices are described with a higher level of details from tier 1 to tier 2 and 3. In order to facilitate the user in finding the farming practice to classify, the farming practices are aggregated in Sections (e.g. plant protection, fertilisation and soil amendments, soil management, grassland and grazing etc.). These 18 sections do not have other meaning in the classification than to help the user to find his way in the numerous farming practices classes described in the classification. The classification is composed of 45 tier 1 classes, 164 tier 2 classes and 157 tier classes.

3.1.1 Plant protection

Table 1. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Plant protection section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Plant protection (PX)	Non-chemical control (P1X)- this class includes interventions that specify alternative ways to control weeds, pests and diseases without using chemicals	Biological control (P11)- method of controlling pests, such as insects, mites, weeds, and plant diseases, using other organisms and/or metabolites	
		Mechanical control (P12) pest control is carried out by methods using physical means (P12)	
	Limitation in use of plant protection products (P2X)- this class includes practices where there are limitations or complete ban in the use of plant protection products (excluding on buffer strips)	Ban of plant protection products other than along water courses (P21X) - This class includes practices where the use of plant protection products is forbidden. If plant protection products used in organic farming are allowed, this class can still be used. The label should be used only if all pesticides (except those approved for organic production) are forbidden on the whole area under commitment during the whole commitment period or at least for one full season of the main crop. When the ban applies to buffer strips along watercourses, the respective class should be used. Similarly, when the restrictions apply to limited areas of the field such as landscape elements, the respective class should be used. When the ban does not cover the whole commitment period	Ban on herbicides, haulm destructors and moss killers (P211) the ban refers specifically to herbicides, haulm destructors and moss killers
			Ban on fungicides and bactericides (P212)- the ban refers specifically to fungicides and bactericides
			Ban on insecticides and acaricides (P213)- the ban refers specifically to insecticides and acaricides
			Ban on Molluscicides (P214)- the ban refers specifically to molluscicides
			Ban on Plant growth regulators (P215)- the ban

		or at least one full agronomic year (e.g. ban is limited to cover crops), the practices should be included in the class "Limitation in timing and other limitations for plant protection products"	refers specifically to plant growth regulators
			Ban on other plant protection products (P216)- the ban refers specifically to products that are not listed in the other classes
		Limitation in quantity of plant protection products other than along water courses (P22) - This class includes practices where there are limitations in the quantity of plant protection products allowed. The limitation should apply to the whole area under commitment. When limitations apply to limited part of the field such as landscape elements, the respective class should be used.	
		Limitation in timing and other limitations for plant protection products other than along water courses (P23) - This class includes practices where there are limitations in the period when plant protection products can be used on areas other than along water courses or other limitations than the ones considered in the other classes. Bans and limitations affecting only intermediate crops should be classified under this section. The limitation should apply to the whole area under commitment. When limitations apply to limited part of the field such as landscape elements, the appropriate class shall be used.	
		Bans or restrictions on the use of plant protection products on limited areas of the field other than along water courses (P24) - This class includes the ban and other restrictions of plant protection products on limited areas of the field such as when the ban is on landscape features. For restrictions along water courses the specific labels should be used.	

	Integrated production (P3X)- this class includes the practices where production is obtained adopting integrated pest management	Adoption of Integrated pest management principles (IPM) (P31) - Integrated pest management means careful consideration of all available plant protection methods and subsequent integration of appropriate measures that discourage the development of populations of harmful organisms and keep the use of plant protection products and other forms of intervention to levels that are economically and ecologically justified and reduce or minimise risks to human health and the environment	

Source: own elaboration.

3.1.2 Fertilisation and soil amendments

Table 2. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Fertilisation and soil amendments section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Fertilisation and soil amendments (FX)	Limitations on the use of fertilisers (F1X) - this class includes the practices where there are limitations or complete ban in the use of fertilisers (excluding on buffer strips)	Ban on the use of fertilisers other than along water courses (F11X) - This class includes practices where the use of fertlisers is forbidden other than along water courses. The label should be used only if all fertilizers are forbidden on the whole area under commitment during the whole commitment period or at least for one full season of the main crop. When the ban applies to buffer strips along watercourses, the respective class should be used. Similarly, when the restrictions apply to a limited area of the field such as landscape features, the respective class should be used. When the ban does not cover the whole commitment period or at least one full agronomic year (e.g. ban only limited to cover crops), the practices should be included in the class "Limitations on fertilizer timing". When the application of fertilizers is forbidden but grazing is allowed, the specific Tier 3 classes "ban on mineral fertilizers", "ban on manure application" and "ban on sewage sludge" should be used.	Ban on organic fertiliser (F111)- the ban refers specifically to organic fertilisers
			Ban on mineral fertilisers (F112)- the ban refers specifically to mineral fertilisers
			Ban on manure application (F113) - the ban refers specifically to the application of manure (note: manure deposited by grazing animals may still be allowed; only in the class "ban on organic fertiliser", see above, the deposition of manure from grazing animals is also forbidden)
			Ban on P fertilizers (F114) - the ban refers specifically to phosphorous fertilisers
			Ban on sewage sludge (F115)- the ban refers specifically to the use of sewage sludge
			Ban on slurry (F116) - the ban refers specifically to the use of slurry
		Limitation on fertiliser quantity (F12X) - This class includes practices	Max mineral fertiliser input (F121)- This class includes practices

		where there are limitations on the quantity of fertiliser allowed other than along water courses. The limitations should apply to the whole area under the commitment. Limitations put on limited area of the field such as landscape elements should use the respective class.	where a maximum quantity of mineral fertilisers is set
			Max organic fertiliser input (F122)- This class includes practices where a maximum quantity of organic fertiliser is set
			Max N surplus (F123) - This class includes practices where a maximum quantity of nitrogen surplus is defined
			Max N total input (F124) - This class includes practices where a maximum quantity of nitrogen is set
			Max P total input (F125) - This class includes practices where a maximum quantity of phosphorous is set
		Limitations on fertilizer timing (F13) - This class includes practices where there are limitations of periods of time for the application of fertilisers (including limitations only for intermediate crops, catch crop or cover crops) other than along water courses. The limitation should apply to the whole area under the commitment. Limitations put on limited area of the field such as landscape elements or along water courses should use the respective classes	
		Ban and restrictions of fertilisers on limited areas of the field other than along water courses (F14) - this class includes the ban and other restrictions of fertilisers on limited areas of the field such as when the ban is on landscape features. For restrictions along water courses the specific labels should be used	
	Fertilization practices to reduce nutrient losses (F2X) - This class includes fertilisation practices to reduce nutrient losses	Fertilisation practices with a focus on low ammonia emissions (F21X) - this class includes fertilisation practices with the main target to reduce ammonia emissions even if some of them can have also other effects	Deep placement (mineral fertilizers) or deep injection (slurry) (F211) - Deep placement of mineral fertilisers or deep injection of slurry. Deep injection is the application of liquid manure by placement in deep, vertical slots, typically about 150mm deep, cut into the soil by specially designed tines

	such as ammonia, nitrate, N_2O etc.		Split application (mineral fertilizers or manure) (F212) - the amount of mineral fertiliser or manure is provided by a distribution plan for the splitting and timing of applications in accordance with different factors such as crop growth stage, cropping season, variety used etc.
			Solid manure incorporation (within 6h) (F213) - solid manure (e.g. poultry litter, cattle manure) immediate incorporation within 6 hours
			Solid manure incorporation (within 24h) (F214) - solid manure (e.g. poultry litter, cattle manure) incorporation within 24 hours
			Solid manure band distribution (F215) - Distribution of the solid manure in bands on the land
			Slurry incorporation (within 6h) (F216) - Slurry immediate incorporation in the soil within 6 hours (for deep or shallow injection use the respective categories)
			Slurry incorporation (within 24h) (F217) - Slurry incorporation in the soil within 24 hours (for deep or shallow injection use the respective categories)
			Slurry shallow injection/placement (F218) - Slurry injection or placement is the application by placement in shallow, vertical slots, typically about 50mm deep, cut into the soil by a tine or disc. If the intervention specifies variable rate technology, only use the relevant faming practice class.
			Slurry band distribution (trailing hoses/shoes) (F219) - Distribution of the slurry in bands on the land. The application is done by a trailing shoe applicator that has got trailing shoes of special design so that it can deposit the slurry directly onto the ground. If the intervention specifies variable rate technology, only use the relevant faming practice class.

		Fertilization practices linked to irrigation (F22X) - this classes includes fertilisation practices that are linked to irrigation	Irrigation after fertilisation (F221) - use of irrigation after fertilisation
			Fertigation (F222) - Fertigation is the type of fertilization in which fertilizers are applied through an irrigation system directly to the plant roots
		Other fertilization practices to reduce nutrient losses (F23X) - this class includes fertilisation practices to reduce nutrient losses not covered by above classes	Sidedress fertiliser application (F231)- Application of the fertiliser between the rows of growing crops
			Use of nitrification/urease inhibitors (F232) - Nitrification inhibitors are part of a broader category of fertilization techniques called enhanced-efficiency fertilizers. Nitrification inhibitors are substances that, coupled to fertilizers, delay the bacterial oxidation of ammonium to nitrite for a certain period and therefore the formation of nitrate. In this way, mineral nitrogen is retained as ammonium, which is less prone to leaching than nitrate, and which cannot be lost to the atmosphere by denitrification. Urease inhibitors are enhanced efficiency fertiliser coupled to nitrogen fertilisers (both organic and mineral, excluding nitrate-containing mineral fertilisers) to delay the hydrolysis of urea into ammonium by blocking the urease enzyme binding sites. Both nitrification/urease inhibitors are combined with fertilisers in order to increase fertiliser use efficiency.
	Soil amendments (F3X) - This class includes different types of soil amendment	Amendment with Biochar (F31X) - This class is used when the material for soil amendment is biochar, as charcoal that is produced by pyrolysis of biomass in the absence of oxygen. Biochar is used as a soil ameliorant for both carbon sequestration and soil health benefits. Biochar is a stable solid that is rich in carbon and can endure in soil for thousands of years	Application of raw biochar (F311) - this class specifies when the application consists of raw biochar material
			Application of nutrients-enriched biochar (F312) - this class specifies when the application consists of nutrients-enriched biochar
		Specific amendments with sorbents (e.g. pyrite, zeolites) (F32X) - this class is used when soil amendment is done using sorbents such as pyrite, zeolites etc. to increase availability of certain trace elements and in nutritive parameters	Application of raw sorbents (F321) - this class specifies when the application consists of raw sorbents material
			Application of nutrients-enriched sorbents (F322) - this class specifies when the application

			consists of nutrients-enriched sorbents
		Amendment with Lime (F33) - This class is used when the material for soil amendment is lime. Lime refers to a material that can come in different forms, especially calcium carbonate (CaCO3) and magnesium carbonate (MgCO3). It is used to reduce soil acidity and to add calcium or magnesium to the soil	
		Amendment with Gypsum (F34) - This class is used when the material for soil amendment is Gypsum, or calcium sulfate dihydrate, ($CaSO_4 \cdot 2H_2O$). Gypsum is a neutral salt. It can be used to improve soil calcium and sulphur levels	
	Use of specific fertilizer types or manure (F4X) - this class shall be used when the use of a specific type of fertiliser or manure is requested	Use of specific mineral fertilizer types (F41X) - this class includes practices where the use of specific mineral fertiliser type is requested	Slow/controlled release fertilizers (F411) - this class includes fertilisation practices based on the use of coated or encapsulated fertilisers with inorganic or organic materials that restricts the amount of moisture contact and functions to dissolve the fertilizer particles to gradually release fertilizer over time
			Organic-mineral fertilisers (F412) - This class specifies that the use of organic-mineral fertilisers is requested. Organic mineral fertilizers are obtained by reaction or by the mixture of one or more organic fertilizers with one or more simple or compound mineral fertilizers
			Non-urea fertilisers (F413) - This class specifies that the use of non-urea fertilisers is requested
		Application of manure (F42X) - this class includes practices where manure is requested to be used as fertiliser	Application of solid manure (various types) (F421) - This class specifies that the application of solid manure is requested. Various types of solid manures can be used.
			Application of slurry manure (various types) (F422) - This class specifies that the application of slurry manure is requested. Various types of slurry manure can be used.

		Application of digestates or nutrients-rich fractions recovered from manure (F43X) - this class includes practices where the application of digestates or nutrients-rich fractions recovered from manure is requested to be used as fertiliser	Application of manure liquid fractions (F431) - This class specifies that the application refers to manure liquid fractions
			Application of manure solid fractions (F432) - This class specifies that the application refers to manure solid fractions
			Application of manure-only digestate (F433) - This class specifies that the application refers to manure-only digestate
			Application of co-digestate (F434) - This class specifies that the application refers to co-digestate
			Application of digestate solid fractions (F435) - Digestate is typically separated mechanically into liquid and solid fractions. This class specifies that the application refers to digestate solid fractions. The solid fraction consists of stackable fibrous material, rich in organic matter
			Application of digestate liquid fractions (F436) - Digestate is typically separated mechanically into liquid and solid fractions. This class specifies that the application refers to digestate liquid fractions. The liquid fraction of digestate is a pumpable liquid fraction, richer in nitrogen than digestate
			Application of manure/digestate mineral concentrates (F437) - This class specifies that the application refers to manure/digestate mineral concentrates
		Use of green manure (F44) - this class includes practices where specific plants or crops are grown to be used undecomposed as manure to improve soil quality. To that effect, plants are ploughed while green into the soil, so the incorporation into soil must be intended for this class to be applied. Use this label only if the main purpose of a crop (intermediate or main) is not the harvest but the incorporation and nutrient provision of the crop	

		Application of sewage sludge and other sludge (F45) - this class includes practices where sewage sludge and other sludge are used as fertlisers. Sewage sludge is the residual, semi-solid material that is produced as a by-product during sewage treatment of industrial or municipal wastewater	
		Use of compost (F46) - this class includes practices where compost is requested to be used as fertiliser	

Source: own elaboration.

3.1.3 Manure management

Table 3. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Manure management section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Manure management (MX)	Manure storage and processing techniques (M1X)- this class includes practices related to manure storage facilities and manure processing techniques	Manure storage techniques (M11X) - this class includes practices where requirements for manure storage facilities are set	Manure storage with additives (M111) - this class refers to manure storage with additives: physical, chemical or microbial. It covers equipment and processing costs
			Manure storage with covers (M112) - this class refers to manure storage with covers including plastic membranes, floating biomass or inert materials, natural crusts. It covers equipment and processing cost
			Storage with biofilters or scrubbers (M113) - This class refers to storage with biofilters and scrubbers technologies intercepting and treating air emissions from storage facilities
			Manure acidification during storage (M114) - this class refers to manure acidification during storage. It covers equipment and processing costs.
			Manure cooling during storage (M115) - this class refers to manure cooling during storage. It covers equipment and processing costs
			Compaction of solid manure heaps (M116)- this class refers to facilities for the compaction of solid manure heaps

			Periodical cleaning of storage tanks (M117) - This class refers to the periodical cleaning of storage tanks
			Other manure storage measures (M118) - this class covers all other manure storage measures that are not specifically listed in the above classes
		Composting (M12X) - this class includes practices where requirements for composting animal manure are set	Composting without forced aeration (M121) - this class cover specifically when composting is without forced aeration
			Composting with forced aeration (M122) - this class cover specifically when composting is with forced aeration
		Anaerobic digestion (M13X) - This class refers to practices where requirements are set for anaerobic digestion, the process through which bacteria break down organic matter, such as animal manure, in the absence of oxygen	Anaerobic monodigestion (M131) - this class specifically refers to anaerobic monodigestion processes. It covers facilities and processing costs
			Anaerobic lagoon storage with biogas recovery (M132) - this class specifically refers to lagoon storage with biogas recovery. It covers facilities and processing cost
			Anaerobic co-digestion (M133) - this class specifically refers to an anaerobic co-digestion process. It covers facilities and processing costs
		Post-treatments (M14X)- this class includes practices that refer to technologies for post-treatments of manure	Solid-liquid separation (M141) - this class specifically refers to solid-liquid separation of manure. It covers facilities and processing costs
			Drying (M142) - this class specifically refers to manure drying technologies. It covers facilities and processing costs.
			Pasteurization (M143) - this class specifically refers to manure pasteurization technologies. It covers facilities and processing costs
			Treatment with struvite precipitation (M144) - this class specifically refers to treatment of manure with struvite (magnesium ammonium phosphate) precipitation. It covers facilities and processing costs

			Treatment with ammonia stripping (M145) - this class specifically refers to ammonia stripping, a simple desorption process used to lower the ammonia content. It covers facilities and processing costs
			Membrane filtration treatments (M146) - this class specifically refers to membrane filtration treatments. It covers facilities and processing costs.

Source: own elaboration.

3.1.4 Soil management

Table 4. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Soil management section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Soil management (SX)	Tillage (S1X) - this class includes practices where requirements connected to tillage are established	Low tillage (S11) - this class includes soil management methods involving low degrees of soil disturbance (e.g., minimum tillage, subsoil tillage or non-inversion)	
		No tillage (S12) - No-tillage (or zero tillage) refers to the absence of tillage between harvest and sowing. The crop is sown directly into soil not tilled since the harvest of the previous crop. Weed control is achieved by the use of herbicides and/or appropriate mulching and stubble is retained for erosion control. For a ban of ploughing grassland the specific label in the grassland management section should be used.	
		Restriction on tillage (timing, direction in slopes) (S13) - this class includes all practices where a restriction of tillage is established. The restrictions can involve different aspect such as time (e.g.(tillage is forbidden in certain periods), direction of the tillage (e.g. tillage allowed only along contour lines).	
		Ban or restriction of ploughing on limited areas of the arable field (S14) - this class includes practices where ploughing is forbidden or limited on limited areas of the field such as on landscape elements.. When the ban or restrictions apply to the whole area under commitment, the corresponding label should be used. This applies to	

		arable fields; when the ban or restrictions apply to grassland areas, the corresponding labels should be used.	
	Soil cover (S2X) - this classes includes all practices involving the cover of the soil with crop residues, vegetative cover or other materials.	Mulching (S21X) - Mulching consists of a layer of material applied to the surface of soil. This label should only be used if the material for covering the soil is not produced on the respective field.	Mulching with pruning residues (S211) - Mulching consists of a layer of pruning residues coming from the same area
		Crop residues left on soil, leaving stubbles on the field (S22)- this class includes practices consisting in leaving crop residues on the soil such as the stubbles after harvest. This label should only be used if the crop residues of the main crop are left on the field after harvest for soil cover until the preparation of the follow up crop.	
		Cover crops (S23X) - Cover crops are grown to provide vegetative cover of the soil in the period between two main crops	Summer cover crop (S231) - Cover crops grown to provide vegetative cover of the soil in summer. Use this label if the commitment requires the cultivation of a specific crop for soil cover during the summer season, including at least 2 months from June to September, but usually from harvest to seeding in case of winter main crops
			Winter cover crop (S232)- Cover crops grown to provide vegetative cover of the soil in winter. Use this label if the commitment requires the cultivation of a specific crop for soil cover during the winter season, including at least 2 months from November to February, but usually from harvest to seeding in case of summer main crops
		No burning of crop residues (S24) - Practice involving the prohibition of burning crop residues	

		Green cover on permanent crops (S25) - Vegetative cover in orchards and vineyards. The presence of the vegetative cover can be between the rows, under the tree crowns or with other patterns decided by the Member States. This generally includes the interdiction of tillage operations and of the use of plant protection product on the cover. This label should be used for all cover crops on permanent crops	
		Crop residue incorporated into the soil (S26) - this class implies that the residues are incorporated into the soil shortly after harvesting. This label should be used for crop residues of the main crop. For obligations on landscape elements use the respective class. For green manure there is a specific label	
	Machinery use (S3X) - this class involves restriction in the use of machines other than the ones related to preserve wildlife for which an appropriate class is defined (Restriction of seasonal work periods or daily work hours (excluding mowing) for wildlife). Restrictions of mowing/tillage shall not be considered under this class	Restricted machinery usage (including timing) to avoid soil compaction (S31) - this class involves restriction in the use of machines to avoid soil compaction such the interdiction of using heavy machinery during rainy periods or when the soil is wet	
	Other practices to combat erosion (S4) - This classes includes all practices adopted to combat erosion that are not matching any other class in the section soil management		

Source: own elaboration.

3.1.5 Crop rotation and diversification

Table 5. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Crop rotation and diversification section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Crop rotation and diversification (RX)	Crop rotation or Crop diversification (R1X) - this class includes practices involving requirement related to crops, and in particular linked to crop rotation and crop diversification	Crop rotation (R11) - Crop rotation on arable land is the practice of alternating main crops grown on a specific field in a planned pattern or sequence in successive crop years, so that main crops of the same species are not grown without interruption on the same field. Crop rotation can vary in crop patterns and duration. If the rotation includes the obligation of cultivating nitrogen fixing crops, this should be labelled also using the specific class "Cultivation of nitrogen fixing crops/protein crops". If only minimum shares of specific crop types or a minimum number of crops are required this should be labelled as crop diversification	
		Cultivation of specific crops or groups of crops (R12X) - this includes practices with the obligation to cultivate specific crops or groups of crops.	Cultivation of Nitrogen fixing/protein crops (R121)- this class includes practices with the obligation to cultivate nitrogen fixing crops and/or protein crops
			Cultivation of cash crops with the potential to attract and feed pollinators (R122) - This class applies to the cultivation of melliferous crops that are used as a source of income. They are basically crops which develop flowers (e.g. rapeseed, sunflower, etc.). For flower strips the respective label should be used
			Adoption of less water demanding crops (R123) - This class considers the commitment requiring a change for less water demanding crop species. If a change of variety of the same crop is requested to reduce the use of water, the label "Cultivation of improved varieties" should be used.
		Land laying fallow (R13X) - Fallow land is all arable land either included in the crop rotation system or maintained in good	short-term fallow (R131) - arable land lying fallow for less than 5 years

		agricultural and environmental condition (GAEC), whether worked or not, but which will not be harvested for the duration of a crop year. The essential characteristic of fallow land is that it is left to recover, normally for the whole of a crop year. On land lying fallow there shall be no agricultural production. Practices where the land is sown for the production of green manure (green fallow) shall be reported in the appropriate class "green manure". If a specific requirement is associated to the land laying fallow (like for instance fallow seeded for biodiversity) this should be reported in the specific class under landscape section	long-term fallow (R132) - arable land lying fallow for 5 years or more
		Crop diversification (R14) - the practice of growing different main crop species in a given year in the same farm. The definition of crops and the conditions which apply can vary as defined by the Member States. Typically, this includes minimum or maximum shares of specific crop types, or a minimum number of crop types	
		Mixed cropping / intercropping (R15) - Mixed cropping is a system of sowing two or three crops together on the same land, one being the main crop and the others the subsidiaries. Intercropping consists of growing several crops (annual or perennial) simultaneously in the same field for a significant amount of time, each crop developing and growing according to its physiology	
		Intermediate cash crops (R16) - An intermediate cash crop is a crop grown between two main crops and it does not fit to one of the above labels	
		Catch crops (R17) - A catch crop is a fast-growing crop that is grown between successive plantings of a main crop. It scavenges the remaining nitrogen after the main crop is harvested, thereby reducing nutrient losses from leaching. Use this label, if the commitment requires the cultivation of a nutrient uptaking intermediate crop directly after the harvest until the end of the vegetation period or seeding of a winter main crop	
		Ban of some crop species (R18) - this class includes practices where for any reason the farmer is asked not to cultivate a specific crop species	
		Cultivation of improved varieties and/or certified seeds (R19X) - this class includes practices where the farmer is requested to	Cultivation of improved varieties (R191) - this class includes practices where the

		use improved crop varieties and/or certified seeds	farmer is requested to use improved crop varieties
			Use of certified seeds (R192) - this class includes practices where the farmer is requested to use certified seeds

Source: own elaboration.

3.1.6 Landscape

Table 6. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Landscape section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Landscape (LX)	Presence of landscape features (L1X)- The class identifies all practices associated to landscape features defined as features comprising small areas of permanent non-productive semi-natural vegetation embedded in farmlands, as well as anthropogenic structures such as stone walls. If the practices deals with specific landscape feature types, this shall be reported using the tier 2 class. If the practice includes either the maintenance or the retention (non-removal) or the creation of landscape features, this shall be specified in tier 3	Hedgerows/individual or group of trees/ trees in line (L11X)- this class includes practices related to hedgerows, individual or group of trees, trees in line as they are defined in the respective tier 3 category. This class is typically used when the farmer is requested to have Hedgerows/individual or group of trees/ trees in line on agricultural land without any specification if they shall be existing or new ones. If the practice includes either the maintenance or the retention (non-removal) or the creation of those landscape features, this shall be specified in tier 3	Creation of new hedges/wooded strips (L111) - creation of linear features composed of perennial woody vegetation (shrubs and/or trees). Dimension, composition and location can vary according to Member States' definitions
			Maintenance and conservation of hedges/wooded strips (L112) - practices related to the retention and/or the maintenance (such as pruning) of linear features composed of perennial woody vegetation (shrubs and/or trees). Dimension, composition and location can vary according to Member States' definitions
			Creation of isolated trees (L113)- practice related to the planting of new isolated trees. Isolated trees are non-productive trees occurring dispersed / scattered in croplands and/or grasslands, typically as legacies of historical vegetation and land uses. Dimensions and distances between trees can vary according to Member States' definitions
			Maintenance and conservation of isolated trees (L114) - practices related to the retention and/or the maintenance (such as pruning) of isolated trees. Isolated trees are non-productive trees occurring dispersed / scattered in croplands and/or grasslands, typically as legacies of historical

			vegetation and land uses. Dimensions and distances between trees can vary according to Member States' definitions
			Creation of group of trees/field copses (L115) - practice related to the planting of new small patchy areas of woody vegetation (including trees, shrubs and herbs). Dimension, composition, tree density can vary according to Member States' definitions
			Maintenance and conservation of group of trees/field copses (L116) - practice related to the retention and/or the maintenance (such as pruning) of small patchy areas of woody vegetation (including trees, shrubs and herbs). Dimension, composition, tree density can vary according to Member States' definitions
			Creation of trees in line (L117) - Planting of new trees in a row. Dimensions, species and distances of the crown and/or trunks can vary according to Member States' definitions
			Maintenance and conservation of trees in line (L118) - practice related to the retention and/or the maintenance (such as pruning) of trees in a row. Dimensions, species and distances of the crown and/or trunks can vary according to Member States' definitions
		Field margins, patches and unproductive buffer strips along water courses (L12X)- this class includes practices related to field margins, patches and unproductive buffer strips along water courses as they are defined in the respective tier 3 category. This class is typically used when the farmer is requested to have this type of landscape features without any	Creation of field margins (L121)- Creation of new field borders covered in permanent herbaceous vegetation, which are never intentionally fertilized, sprayed, or tilled
			Maintenance and conservation of field margins (L122) - practices related to the retention and maintenance of field borders covered in permanent herbaceous vegetation, which are never intentionally fertilized, sprayed, or tilled

		specification if they shall be existing or new ones. If the practice includes either the maintenance or the retention (non-removal) or the creation of those landscape features, this shall be specified in tier 3	Creation of patches (L123) - creation of new small areas, different from the surrounding areas, covered with permanent herbaceous vegetation, which are never intentionally fertilized, sprayed, or tilled. Dimensions and characteristics can vary according to Member States' definitions
			Maintenance and conservation of patches (L124) - practices related to the retention and maintenance of small areas, different from the surrounding areas, covered with permanent herbaceous vegetation, which are never intentionally fertilized, sprayed, or tilled. Dimensions and characteristics can vary according to Member States' definitions
			Creation of unproductive buffer strips along water courses (L125)- Creation of non-productive areas interposed between fields and water courses covered in semi-natural vegetation (typically grassland or woody), which are created / retained / managed in order to intercept and treat the waters leaving the cultivated land. Width of buffer strips can vary according to Member States' definition. The only Interdiction of fertilisers and plant protection products on strips between fields and water courses or the interdiction of animals on grassland shall not be registered under this class, but on the appropriate classes "Ban on fertilisation along water courses", "Ban of plant protection products along water courses" etc..

			Maintenance and conservation of unproductive buffer strips along water courses (L126)- Practices related to the retention and/or the maintenance of existing non-productive areas interposed between fields and water courses covered in semi-natural vegetation (typically grassland or woody), which are created / retained / managed in order to intercept and treat the waters leaving the cultivated land. Width of buffer strips can vary according to Member States' definition. The only interdiction of fertilisers and plant protection products on strips between fields and water courses or the interdiction of animals on grassland shall not be registered under this class. but on the appropriate class "Ban on fertilisation along water courses", "Ban of plant protection products along water courses" etc.
		Ponds (L13X)- this class includes practices related to small surface depressions covered by water, embedded in an agricultural area. Dimensions and characteristics can vary according to Member States' definitions. This class is typically used when the farmer is requested to have ponds on agricultural land without any specification if they shall be existing or new ones. If the practice includes either the maintenance or the retention (non-removal) or the creation of new ponds, this shall be specified in tier 3	Creation of new ponds (L131)- Creation of small surface depressions covered by water, embedded in an agricultural area. Dimensions and characteristics can vary according to Member States' definitions
			Maintenance and conservation of ponds (L132)- Practices related to the retention and/or the maintenance of existing small surface depressions covered by water, embedded in an agricultural area. Dimensions and characteristics can vary according to Member States' definitions
		Small wetlands (L14X)- this class includes practices related to wetlands of small dimension as defined by Member States (e.g. landscape feature). They generally consist of small transiently flooded surface depressions covered in wetland vegetation and embedded in an agricultural landscape. Small wetlands includes the remnants of	Creation of small wetlands (L141)- Creation of wetlands of small dimension as defined by Member States (e.g. landscape feature). Restoration means to restore a wetland which was present in the past and removed for agricultural purposes. Where wetlands are created where not existent in the past, the label on the creation of wetland should be used. When the restoration is large according to Member State

		historical wetland or freshwater ecosystems that can be a wildlife refuge. This class is typically used when the farmer is requested to have small wetlands on agricultural land without specifying if they shall be existing or new. If the practice includes the maintenance or the retention (non-removal) or the creation of small wetlands, this shall be specified in tier 3	definition (e.g. landscape scale such as floodplain), the corresponding label should be used
			Maintenance and conservation of small wetlands (L142) - Practices related to the retention and conservation of existing wetlands of small dimension as defined by Member States (e.g. landscape feature). Wetland maintenance and conservation should only be used where wetlands are not artificial. When the restoration is large according to Member State definition (e.g. landscape scale such as floodplain), the corresponding label should be used
		Ditches (L15X) - this class includes practices related to narrow channels that hold or carry away water. Ditches are typically created for the purpose of irrigation, drainage, and/or soil erosion prevention. Dimensions and characteristic are defined by the Member States, but generally ditches made of concrete are generally not considered as landscape features. This class is typically used when the farmer is requested to have ditches on the land without any specification if they shall be existing or new ones. If the practice includes either the maintenance or the retention (non-removal) or the creation of small wetlands, this shall be specified in tier 3	Creation of new ditches(L151) - Creation of narrow channels that hold or carry away water. Ditches are typically created for the purpose of irrigation, drainage, and/or soil erosion prevention. Dimensions and characteristic are defined by the Member States, but ditches made of concrete are generally not considered as landscape features.
			Maintenance and conservation of ditches (L152) - Practices related to the retention and/or the maintenance of existing narrow channels that hold or carry away water. Ditches are typically created for the purpose of irrigation, drainage, and/or soil erosion prevention. Dimensions and characteristic are defined by the Member States, but generally ditches made of concrete are generally not considered as landscape features
		Streams (L16X)- this class includes practices related to bodies of running water of small dimensions. Characteristics can be defined by Member States. This class is typically used when the farmer can calculate streams as landscape features area. If the practice includes maintenance works on streams, this shall be specified in tier 3	Maintenance and conservation of streams (L161)- Practices related to the retention and/or the maintenance of bodies of running water of small dimensions

		Stone walls- this class includes practices related to stone walls defined as rocky vertical surfaces with a variety of typologies. These long-standing anthropogenic structures are used since prehistory as retaining walls and/or as field boundaries. This class is typically used when the farmer is allowed to calculate stone wall as area of landscape features presence, without any specification of operations that should be made on them. If the practice includes either the maintenance or the retention (non-removal) of stone walls or the creation of new ones generally to restore the traditional landscape, this shall be specified in tier 3. (L17X)	Creation of new stone walls (L171) - Creation of new stone walls, generally to restore the traditional landscape
			Maintenance and conservation of stone walls (L172) - Practices related to the retention and/or the maintenance of stone walls
		Cairns (L18X) - this class includes practices related to cairns which are man-made pile (or stack) of stones raised for a purpose, usually as a marker or as a burial mound and currently representing a landmark. This class is typically used when the farmer is allowed to calculate the area occupied by a cairn as an area of landscape features presence, without any specification of operations that should be made on them. If the practice includes either the maintenance or the retention (non-removal) of stone walls or the creation of new ones generally to restore the traditional landscape, this shall be specified in tier 3	Creation of new cairns (L181) - Creation of cairns, generally to restore the traditional landscape
			Maintenance and conservation of cairns (L182) - Practices related to the retention and/or the maintenance of cairns
		Terraces (L19X) - this class includes practices related to terraces, anthropogenic	Creation of new terraces (L191)- Creation of new terraces, generally to restore the traditional landscape

		structures on sloping terrains created to permit or facilitate cultivation and to reduce the risk of erosion. Terraces consist of one or more “steps” (steep sections covered with permanent woody or grassy vegetation or stone walls) and “land blocks” (flat sections that are used for agricultural production, separated by the steps). The specific size, appearance, choice of construction material (i.e., earth, stone or brick), age, and land use/vegetation cover of terracing may differ across biogeographical areas. This class is typically used when the area occupied by terraces can be calculated as an area of landscape features presence. Member States generally specify what can be considered in the calculation of area and the characteristics of the eligible terraces. If the practice includes either the maintenance or the retention (non-removal) or the creation of terraces, this shall be specified in tier 3	Maintenance and conservation of terraces (L192) - Practices related to the retention and/or the maintenance of terraces
		Cultural features (L10X) - this class includes practices related to features that are not considered in the other classes, but constitute a landmark that evokes a sense of history for a specific agricultural landscape. Member States may define landscape features that can be accounted in this class such as heritage monuments, cumanian mounds, archaeological sites etc.. This class is typically used when the farmer is allowed to calculate the area occupied by a cultural feature as an area of landscape features presence, without any specification of operations that should be made on them. If the practice includes either the maintenance or the retention (non-removal) of	Creation of new cultural features (L101) - Creation, mainly linked to restoring landscapes, of features that constitute a landmark that evokes a sense of history for a specific agricultural landscape and are not included in other classes.
			Maintenance and conservation of cultural features (L102) - Practices related to the retention and/or the maintenance of features that constitute a landmark that evokes a sense of history for a specific agricultural landscape and are not included in other classes

		the cultural features or the creation of new ones, generally to restore the traditional landscape, this shall be specified in tier 3	
		Other landscape features (L1AX) - this class includes practices related to features that are not considered in the other classes. Member States define landscape features that can be accounted in this class. This class is typically used when the farmer is allowed to calculate the area occupied by these features as an area of landscape features presence, without any specification of operations that should be made on them. If the practice includes either the maintenance or the retention (non-removal) or the creation of new ones, generally to restore the landscape, this shall be specified in tier 3	Creation of other landscape features (L1A1) - Creation, mainly linked to restoring landscapes, of features that are considered by the Member States as landscape features but are not accounted in other classes.
			Maintenance and conservation of other landscape features (L1A2) - Practices related to the retention and/or the maintenance of features that are considered by the Member States as landscape features but are not accounted in other classes.
	Presence of other unproductive areas and strips (L2X) - This class identifies all practices associated to unproductive areas and strips not included in other landscape features classes. They are typically non-permanent features.	Seeded areas/strips (L21X)- this class includes practices related to the creation and or maintenance of areas intentionally sown by the farmers with non-productive plants for environmental benefits. This class shall be used also when the farmer is allowed to calculate the area occupied by seeded flower area/strip as an area of landscape features presence	Seeded flower areas/strips (L211) - this class includes practices related to the creation and or maintenance of areas intentionally sown by the farmers with non-productive flowering plants for biodiversity benefits. This class shall be used also when the farmer is allowed to calculate the area occupied by seeded a flower area/strip as an area of landscape features presence
		Other unproductive areas and strips, excluding fallows (L22X) - this class includes practices related to the creation and or maintenance of any unproductive area and strip that is not a seeded flowering type. Practices on fallow land shall be not classified here	Buffer strips and farm practices for fire prevention (L221) - this class includes the creation and or maintenance of any unproductive strip or establishment of practices that are used for fire preventions
			Buffer strips against soil erosion (L222) - Buffer strips created in order to combat soil erosion

		but in the specific "Land laying fallow" class. If specific unproductive areas and strips, other than seeded flowering strips/areas, are qualified by the Member States as landscape features, they should be included in the class "other landscape features"	Strips for other aims (L223) - this class includes the creation and or maintenance of any unproductive strip and area other than the ones used for fire prevention (buffer strips along water courses, flowering strips and fallow land shall not be classified here, but in the appropriate classes). Strips targeting birds or other wild species for breeding, feed etc. should go into the wildlife section under the class " Other interventions targeted to wildlife" or to "other mowing restriction" (Grassland section) if on grassland
	Agroforestry (L3X) - This class identifies all practices associated to agroforestry. Agroforestry is a particular type of land-use system and technology where woody perennials (trees, shrubs, etc.) are deliberately used on the same land management unit as agricultural crops and/or animals	Silvopastoral systems (L31X) - this class includes agroforestry systems composed of woody perennial species and plant species managed for forage/pasture	Maintenance of silvopastoral systems (L311) - this class includes all practices related to maintenance of agroforestry systems composed of woody perennial species and plant species managed for forage/pasture
			Creation of silvopastoral systems (L312) - this class includes all practices related to the creation of agroforestry systems composed of woody perennial species and plant species managed for forage/pasture
		Silvicultural systems (L32X) - this class includes agroforestry systems composed of woody perennial species and annual or perennial crops	Maintenance of silvicultural systems (L321) - this class includes all practices related to maintenance of agroforestry systems composed of woody perennial species and annual or perennial crops
			Creation of silvicultural systems (L322) - this class includes all practices related to the creation of agroforestry systems composed of woody perennial species and annual or perennial crops
	Conservation of traditional agricultural landscapes (L4X) - this class includes any practices dealing with the conservation, restoration, maintenance of traditional agricultural landscapes. Traditional agricultural	Conservation of traditional orchards (L41) - this class includes any practice dealing with the conservation, restoration, maintenance of traditional orchards	
		Conservation of traditional vineyards	

	landscapes are characterised by features and management activities that are typical of that specific landscape and often need support to be maintained. The practices included in this class are referred to the landscape as a whole. Practices referring to specific elements of the landscape shall be classified in the appropriate landscape feature class. Practices referring to specific activity, such as mowing, shall be classified in the appropriate management class	(L42)- this class includes any practice dealing with the conservation, restoration, maintenance of traditional vineyards	
		Conservation of traditional olive groves (L43) - this class includes any practice dealing with the conservation, restoration, maintenance of traditional olive groves	
		Conservation of traditional irrigation systems (L44) - this class includes any practice dealing with the conservation, restoration, maintenance of traditional irrigation systems and methods	
		High Nature Value (HNV) farmland and environmentally sensitive grassland (L45) - this class includes any practice dealing with the conservation, restoration, maintenance of farmland classified as Hign Nature Value following a JRC/EEA methodology (Paracchini et al., 2008). It deals also with interventions on environmentally sensitive grassland	
	Management of wetland/peatland (L5X) - this class includes any practices on wetlands and/or peatlands, either referring to conservation, maintenance and restoration	Wetland and peatland maintenance and conservation (L51X) - this class includes practices related to conservation and/or maintenance of wetlands and/or peatlands. This label should only be used if the commitment is specifically targeting peatlands/wetlands. For a general ban or restrictions on drainage use the labels in the section on water management (ban on drainage etc.). When according to size, the Member States define small wetlands as landscape features the appropriate class shall be used	Wetland maintenance and conservation (L511) - this class includes practices related to conservation and/or maintenance of wetlands. This label should only be used if the commitment is specifically targeting wetlands. For a general ban or restrictions on drainage the labels in the section on water management shall be used (ban on drainage etc.). When according to size, the Member States define small wetlands as landscape features the appropriate class shall be used
			Peatland maintenance and conservation (L512) - this class includes practices related to conservation and/or maintenance of peatland. This label should only be used if the commitment is

			specifically targeting peatlands. For a general ban or restrictions on drainage the labels in the section on water management shall be used (ban on drainage etc.)
		Wetland and peatland restoration (L52X) - this class includes practices related to the restoration of wetlands and/or peatlands. This label should only be used if the commitment is specifically targeting wetland and peatlands. For a general ban or restrictions on drainage the labels in the section on water management shall be used (ban on drainage etc.). When according to size, the Member States define small wetlands as landscape features the appropriate class shall be used	Wetland restoration (L521) - this class includes practices related to the restoration of wetlands. This label should only be used if the commitment is specifically targeting wetlands. For a general ban or restrictions on drainage the labels in the section on water management shall be used (ban on drainage etc.). When according to size, the Member States define small wetlands as landscape features the appropriate class shall be used
			Peatland restoration (L522)- this class includes practices related to the restoration of peatlands. This label should only be used if the commitment is specifically targeting peatlands. For a general ban or restrictions on drainage the labels in the section on water management shall be used (ban on drainage etc.)
		Paludiculture (L53) - this class includes practices related to the productive use of wet and rewetted areas, expecially peatlands. It includes traditional peatland cultivation (reed mowing, litter usage) and new approaches such as the use of above ground biomass from wet peatlands for energy	
	Modification of the structure of fields (L6X) - this class includes interventions that modify the structure of fields	Splitting fields (L61) - this class includes interventions that promote the subdivision of fields into small parcels and the creation of a mosaic structuire of cultivated landscape	
		Land reform by enlarging field sizes (L62) - this class includes intervention that promote the merging of fields	

	Management of landscape features and unproductive areas other than along water courses (L7X) - This class shall be used when a management activity is required, restricted or banned on landscape features or unproductive areas, such as the interdiction of cutting hedgerows etc. When the ban or restriction is for the whole area under commitment, the corresponding labels should be used. When the bans or restrictions are on areas along a watercourse, the corresponding label should be used. For restriction referring to fertlisation, pesticide use, grazing, mowing and ploughing the respective classes shall be used	Other bans or restrictions on limited areas of the field other than along watercourses (L71) - this class includes practices where any activities other than fertilizers, plant protection products, mowing, grazing or ploughing are forbidden on limited areas of the field, such as landscape elements. When the ban or restriction is for the whole area under commitment, the corresponding labels should be used. When the bans or restrictions are on areas along a watercourse, the corresponding label should be used	
		Other obligations on limited areas of the field other than along watercourses (L72) - this class includes practices where any activities other than mowing or grazing are mandatory on limited areas of the field, such as landscape elements. When the obligation is for the whole area under commitment, the corresponding labels should be used. When the obligation is on areas along a watercourse, the corresponding label should be used	

Source: own elaboration.

3.1.7 Forestry

Table 7. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Forestry section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Forestry (YX)	Afforestation (Y1X) - this class includes the practices related to land that was converted from	Afforestation of agricultural land (Y11) - this class describes the conversion of agricultural land into forest. The process of planting a forest in an area previously cultivated or grazed shall be included in this class	

	agricultural land into forest	Maintenance of afforested land (Y12) - this class includes the practices used to maintain a land that was converted from agricultural land into forest. Support to maintain afforested land shall be included here	
	Forest management (Y2X) - this class includes forest management practices on forest land	Forest restoration and reforestation (Y21) - this class includes practices that are carried out on forest land, in particular the ones related to restoration and or reforestation	
		Sustainable forest management (e.g. for biodiversity, carbon sequestration, fire, genetic resources, clearance) (Y22) - according to FAO "Sustainable forest management is defined as a "dynamic and evolving concept, which aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations." Practices on forest land that fulfil this definition shall be classified here. They include reduced impact harvesting methods, adequate regeneration after wood harvesting practices, establishing ecological corridors, reducing the fragmentation of habitats, rehabilitation of areas that have lost forest cover etc,	

Source: own elaboration.

3.1.8 Grassland and grazing

Table 8. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Grassland and grazing section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Grassland and grazing (GX)	Grazing management (G1X) - this class includes practices relating to grazing and interdiction/limitation of grazing activities	Minimum grazing period- this class includes interventions establishing an obligation of a minimum grazing period. If there is a grazing or pasturing commitment, this label should be selected, even if the minimum grazing period is not specified (G11)	
		None or restricted grazing (timing, animal species etc.) (G12) - this class reports interventions establishing an interdiction of grazing or other limitations in relation to grazing such as interdiction of grazing in some periods of the year, interdictions for some animal species etc. If grazing restrictions refer to landscape features or unproductive areas this should be reported under the label "Bans or restrictions on grazing, mowing or ploughing of grassland on limited areas of the field other than along watercourses"	
		Grazing livestock density limitation (G13X) - this class reports interventions establishing limitations in the density of grazing animals. This is a limitation that refers on animals that are	Minimum livestock density (G131) - A minimum livestock (or stocking) density is

		allowed to graze on a piece of land. If the limitation of density refers to livestock in general and at the level of the farm and therefore not specifically to grazing (i.e. livestock units/ha in a farm), the intervention shall be reported in the class "Livestock density limits (farm level)". This is particularly the case if the limits target also non-ruminants or land other than grassland	established at the level of the field
			Maximum livestock density (extensive grasslands) (G132) - A maximum livestock (or stocking) density is established at the level of the field
		Livestock seasonal movement(G14X) - this class includes practices related to herding (moving a herd of animals from place to place)	Shepherding of animals (G141) - presence of a shepherd for the movement of the herd
			Without shepherd (G142) - this class includes practices related to moving a herd without the need of a shepherd
		Grazing on crop residues (G15) - this class includes practices where animals graze on crop residues that are left on the field after harvest	
		Rotational grazing (G16) - This class includes interventions where animals should move to one grazing field to another in order to give the field the time to recover production	
		Commonage (G17) - This class includes interventions supporting land held in common ownership on which two or more land owners or farmers have grazing rights.	
	Grassland management(G 2X) - this class includes practices and obligations relating to grassland (temporary and permanent), including the conversion of grassland into or from other land uses	Mowing obligations(G21) - this class reports interventions establishing an obligation of mowing (i.e. grassland shall be mowed at least once per year). The label should also be used for mowing obligations on temporary grassland (which is part of arable land). For mowing obligation on landscape features the appropriate class "Mowing or grazing obligations on limited areas of the field other than along water courses" should be used. For mowing obligation on buffer strips along water courses the appropriate label in the section water management should be used	
		Mowing restrictions (timing, number of cuts, etc.) (G22X) - this class reports interventions establishing restriction in mowing refrerring to timing (i.e. mowing is allowed after the 15th July), number of cuts (i.e. no more than 3 cuts per year) etc. The label should also be used for mowing restrictions on temporary grassland (which is part of arable land). For mowing restrictions on landscape features the appropriate class " Bans or restrictions on grazing, mowing or ploughing of	Mowing restriction on timing (G221)- this class reports interventions establishing restriction in mowing referring to timing (i.e. mowing is allowed after the 15th July). When the intervention refers to a timing requirement as part of an obligation (i.e. mowing shall be done at least once a

		grassland on limited areas of the field other than along watercourses" shall be used.	year between two specifed dates), this should be labelled under mowing obligations. When restriction of mowing applies to landscape features the appropriate class on " Bans or restrictions on grazing, mowing or ploughing of grassland on limited areas of the field other than along watercourses" shall be used
			Mowing restriction of number of cuts (G222) - this class reports interventions establishing restriction in the number of cuts (i.e. no more than 3 cuts per year). When the intervention refers to a requirement of cuts as part of an obligation (i.e. mowing shall be done at least twice a year), this should be labelled under mowing obligations. When restriction of the numebr of cut applies to landscape features the appropriate class " Bans or restrictions on grazing, mowing or ploughing of grassland on limited areas of the field other than along watercourses" shall be used
			Other mowing restrictions (G223)- this class reports interventions establishing other restrictions that may refer for instance to the use of specific machinery or when a certain share or strip on grassland shall be unmown etc. Mowing restrictions on productive areas along water courses (buffer strips) or on landscape elements (like flower strips etc.) shall be reported in the classes " Bans or restrictions on grazing, mowing or ploughing of grassland on limited areas of the field other than along watercourses" or " Bans or restrictions on grazing, mowing or ploughing of

			grassland along watercourses"
		Idling/resting of grassland (G23) - this class includes support given for leaving grassland uncut, ungrazed and uncultivated. The label should only be used if the idling affects the whole grassland parcel	
		Reseeding on grasslands (G24)- this class includes the practice of reseeding an existing grassland	
		Ban of ploughing of grassland (G25)- this class describes the ban of ploughing of a grassland (including temporary grassland on arable land)	
		No conversion of grassland into other uses (G26) - this class includes interventions establishing the explicit obligations of not converting grassland into another land use. When the intervention establishes specific conservation restrictions on grassland such as the ban of ploughing, the appropriate labels should be used instead of this one which only refers to the ban of conversion of grassland into other uses. The label should not be used generally for all grassland commitments which indirectly require the conservation of the affected grassland	
		Conversion of arable land to grassland (G27)- this class reports the conversion of arable land into grassland	
		Ban or restriction on grazing, mowing or ploughing of grassland on limited areas of the field other than along watercourses (G28)- this class includes practices where grazing, mowing or ploughing is forbidden on limited areas of the field, such as landscape elements. When the ban or restriction is for the whole area under commitment, the corresponding labels should be used. When the bans or restrictions are on areas along a watercourse, the corresponding label should be used	
		Mowing or grazing obligations on limited areas of the field other than along water courses (G29) - this class includes practices where mowing or grazing is required on limited areas of the field such as landscape elements. When the obligations apply to the whole area under commitment or to areas along water courses, the corresponding label should be used	

Source: own elaboration.

3.1.9 Animals

Table 9. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Animals section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Animals (AX)	Livestock density limits at farm level (A8)- this class reports interventions establishing limitations in the density of animals in the farm (i.e. livestock units/ha at farm level). If the limitation in density refers to animals that are allowed to graze on a piece of land, this should be reported in the appropriate class "Livestock density limitation (extensive grasslands)"		
	Improved livestock feeding strategies (A1X)- this class reports interventions that include requirements connected to the diet of animals, sometimes also in relation to the use of land	Restrictions on silage (A11) - this classes reports limitations in the use of silage in livestock diets	
		Feed from farm (A12X) - This class reports obligations to use a pescribed amount of feed produced on the farm in the livestock diets	Feed from farm total (A121) - obligations to use obligation to only use livestock feed produced on the farm in the livestock's diet
			Feed from farm partial (A122)- obligations to use some feed produced on the farm in the livestock's diet
		Improved access to water (A13) - this class includes interventions that facilitate the access of animals to water	
		Feed additives (A14) - Feed additives are substances, micro-organisms or preparations (other than feed materials and pre-mixtures) which are intentionally added to feed or water	
		Optimised feeding plans (A15X) - this class includes practices related to livestock diet formula that affect the proportion of specific dietary components such as legume, crude protein or tannins, among others	Sufficient fibre intake (A151)- this class includes practices that assure a sufficient level of fibre in the diet
	Animal trait selection programmes (A2X) - this class includes interventions related with	Animal trait selection for GHG emission (A21) - this class includes selection programmes aimed to improve animal performance by	

	the setting up of selection programmes to exploit livestock genetic variation to improve the animals' performance and health	selecting traits related to reducing GHG emissions	
		Animal trait selection for diseases resistance (A22) - this class includes selection programmes aimed to improve animal health by selecting traits related to disease resistance	
		Animal trait selection for longer lifespan (A23) - Longevity of breeds > longer lifespan	
	Biosecurity and hygiene measures and other measures to reduce anti-microbials use (A3X) - this class includes biosecurity and hygiene measures and other measures to reduce the risk of the introduction, development and spread of diseases in animal population	Vaccination (A31) - the intervention includes the vaccination of animals	
		Specific treatment plans (A32) - adoption of specific treatment plans to limit daily use of specific antimicrobials	
		Biosecurity and Hygiene measures (A33) - this class includes management and physical measures designed to reduce the risk of the introduction, development and spread of diseases to, from and within an animal population or an establishment or other facilities	
	Suppression of painful practices (A4X) - this class includes requirements where painful practices are avoided	Mutilation with appropriate pain-avoiding practices (A41) - mutilation is carried out but with appropriate practices that avoid pain to animals	
		No mutilation (A42) - interventions where mutilation is forbidden	
	Improved housing conditions (A5X) - this class includes different practices related to housing conditions to improve animal welfare	Outdoor access for animals reared in stables (A51) - the animals in stable should have a period of time with access to outdoor (e.g. court). For grazing or pasturing obligations one should not use this class but the one on "mimimum grazing period"	
		Provision of enrichment materials (A52) - Providing a sufficient quantity of suitable materials necessary to enable animals to fulfil their innate needs	
		Improved litter and indoor flooring (A53) - practices that improve litter and indoor floor conditions	
		Microclimate control (A54) - practices where microclimate control is requested	

		Light management (A55) - practices that include as requirements the management and control of light with the scope of improving animal welfare	
		Group housing (A65X) - interventions that foster systems where animals are reared in group	Removal of confinement (A561) - removal of a confinement production facility (e.g. phasing out of cages, tethering of cattle)
			Prohibition of large groups over a certain threshold (A562) - Intervention that promotes group housing but with the prohibition to rear animals in groups composed of large number of individuals
		Monitoring and regular checking of the herd (A57)- the herd is constantly monitored and checked	
		Improved space allowance per animal (A58) - Interventions that establish that animals should be allowed an improved space	
		Provision of adequate shelter (A59)- the outdoor is provided with adequate shelter	
	Other animal welfare practices (A6X) - this class includes other animal welfare practices not foreseen in previous classes		
	Beekeeping (A7X) - this class includes practices and obligations relating to the breeding, maintenance and management of honeybee colonies in hives, also called apiculture	Reducing anti-microbial in beehives (A71) - this class includes good beekeeping practices and biosecurity measures that lead to a limited use of antimicrobials in apiculture	
		Creation/maintenance of beehives (A72) - this label applies to interventions related to the creation and or maintenance of beehives	
		Rules on beehives transhumance (A73) - this class is associated to specific rules and interventions related to the seasonal migration of beehives	
		Restrictions on supplementary bee feeding (A74) - restrictions and directions on substances, timing and quantity of supplementary bee feeding	

		Other beehives management practices (A75) - this class includes practices and obligations related to apiculture not included in the previous sections	

Source: own elaboration.

3.1.10 Other species

Table 10. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Other species section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Other species (ZX)	Wildlife (Z1X) - this class includes practices and obligations related to the interaction of agricultural activity with wildlife that do not fall under other sections	Measures related to wildlife nests/boxes (Z11) - this class includes practices related to the installation and/or maintenance of structures for wildlife shelter and breeding	
		Measures to improve coexistence with large carnivores and other wildlife with potential to cause damage (Z12) - this class includes interventions such as prevention or mitigation practices to avoid and restore damages from wildlife, such as large carnivores (e.g. wolf, lynx, bear). Such measures to improve coexistence may include fencing, guard dogs etc. For shepherds the respective class in the grazing sections should be used	
		Measures against the spread of invasive species (Z13) - this class includes interventions such as prevention or mitigation practices to halt the spread of invasive species	
		Non-harvested crops for wildlife (Z14) - this class refers to the agricultural practice of leaving a crop wholly or partially unharvested to allow its use by wildlife	
		Overseeding for wildlife (Z15) - Practices where an increased dose of crop seeds is used for wildlife benefits	
		Restriction of seasonal work periods or daily work hours (excluding mowing) for wildlife (Z16) - this class refers to temporary restrictions on all type of farming activities to avoid disturbing or harming wildlife. Use this class only if there are no more specific classes for the works with time restrictions. This means that the class should not be used if restrictions are only for mowing, grazing, fertilizing, pesticide application, and ploughing. By contrast, it should be used for general work restrictions (no cultivation activities allowed in certain time periods) or e.g. time restrictions for harvesting, weeding etc. For	

		timing restrictions on landscape features, such as the interdiction of cutting of hedgerows in specific period of time, one shall use the appropriate class in the Landscape section	
		Interventions in Natura 2000 areas (Z17) - this label should be applied whenever an intervention is meant to be implemented in a Natura 2000 site	
		Other interventions targeted to wildlife but not covered (Z18) - this class includes interventions aimed at preserving and promoting farmland biodiversity not covered by other classes such as bird islands etc. on arable land. Unmown grass strips shall be reported in the class "other mowing restrictios"	
	Agrobiodiversity (Z2X) - this class is related to the management and preservation of the variety and variability of organisms that are used for food and agriculture, including crops and livestock	Cultivation of rare/local crop species (Z21) - this classes includes support given for cultivation and preservation of local and rare crop species	
		Conservation of rare/local livestock breeds (Z22) - this classes includes support given for the breeding, rearing and maintenance of local and rare livestock breeds	
		Conservation of valuable grassland species (Z23) - this classes includes support given for the management and preservation of valuable grassland species and communities	

Source: own elaboration.

3.1.11 Water

Table 11. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Water section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Water (WX)	Water management (W1X) - this class includes practices of water management, included the ones that are accomplished to reduce the leakage of nutrients and plant protection products in water courses	Ban of plant protection products along water courses (W11) - this practice refers to the interdiction of the use of plant protection products within a certain distance of a water course. This distance as well as the type of water course on which the restriction applies can vary with the Member States.	

			Ban on organic fertilisers along water courses (W121) - within the definition of the associated tier 2 class, this class refers to the interdiction of the use of organic fertilisers whatever the source
			Ban on mineral fertilisers along water courses (W122) - within the definition of the associated tier 2 class, this class refers to the interdiction of the use of mineral fertilisers
		Ban on fertilisation along water courses (W12X) - this practice refers to the interdiction of the use of fertilisers or the presence of animals within a certain distance from a water course. This distance as well as the type of water course on which the restriction applies can vary with the Member States.	Ban on manure application along water courses (W123) - within the definition of the associated tier 2 class, this class refers to the interdiction of manure application (note: manure deposited by grazing animals may still be allowed; only in the class "ban on organic fertiliser", see above, the deposition of manure from grazing animals is also forbidden)
			Ban on P fertilisers along water courses (W124) - within the definition of the associated tier 2 class, this class refers to the interdiction of P fertilizers
			Ban on sewage sludge along water courses (W125) - within the definition of the associated tier 2 class, this class refers to the interdiction of the use of sewage sludge
			Ban on slurry along water courses (W126) - within the definition of the associated tier 2 class, this class refers to the interdiction of the use of slurry
			Interdictions for animals (fencing) along water courses (W127)- within the definition of the associated tier 2 class, this class refers to the interdiction of the presence of animal on grassland within a certain distance from a water course
		Other bans, restrictions and obligations along watercourses, expect for fertilisers and plant protection products (W13X) - This class includes practices that introduce other bans, restrictions	Bans or restrictions of ploughing, grazing or mowing along water courses (W131) - this class includes practices where grazing, mowing or ploughing is forbidden or limited on areas of the field along watercourses such as buffer strips. When the ban or restrictions are on a whole areas under commitment, the corresponding label should be used. When the ban or restrictions are on limited areas of the

		or obligations on limited areas of the field located along water courses such as buffer strips. When the bans or restrictions refer to the use of pesticides or of fertilisers the appropriate labels should be used	field not along watercourses, the corresponding labels should used
			Other restrictions along water courses (W132) - this class should be used when restrictions along watercourses are different from those specific in other labels (e.g. on pesticide, fertiliser, mowing, grazing and ploughing)
			Mowing obligations along watercourses (W133) - this class includes practices where mowing is required along watercourses
			Other obligations along watercourses (W134) - this class includes practices where other actions are required along watercourses
			No irrigation (W141) - This class includes practices where the use of irrigation is banned
			Irrigation limitations in quantity and rates (% area irrigated and/or amount of water/ha/year) (W142) - This class includes practices that limit the use of water. These limitations are linked to the quantity of water used and they can be expressed either as a limitation in the percentage of the irrigated area of the farm or as a limitation of the volumes of water per year and/or hectares
			Improve water efficiency measures (W143) - This class includes measures that are implemented to improve water use efficiency. When water use efficiency is related to limitation in the use of specific irrigation methods, this should be reported in the appropriated class "Limitation in the use of Irrigation methods"
			Limitation in the use of Irrigation methods (W144) - This class includes practices that operate on the water irrigation methods in order to reduce the use of water

			Systems to catch rainfall (W151) - this class includes systems that are implemented to collect rainfall and water runoff on land for the purpose of irrigation or water for animals. If the storage scheme collects river water or groundwater, the label W172 should be used instead. If the commitment supports temporary storage of floodwater on fields, the corresponding W173 label should be used
		Infrastructure to store water (W15X) - this class should be used when the measures implemented involve the use of infrastructure to storage of water of any origin (rainfall, rivers, groundwater, etc)	Infrastructure to store water from rivers and groundwater (W152) - this label should be used where investments are made into the building or maintenance of reservoirs to store water abstracted from rivers or groundwater for irrigation purposes. If the reservoir collects rainwater, for instance through capture of overland water runoff, the corresponding class W171 should be used instead
			Temporary storage of floodwater on agricultural fields (W153) - this class should be used where the commitment compensate for the diversion of floodwaters to protect a downstream asset such as a town. The measure typically affects fields in the floodplain, and may involve a remodeling of dykes to allow for the flooding and temporary storage of flood waters
		Sustainable water management on paddy rice fields (e.g. late drying up of paddy rice fields) (W16) - This class includes practices of sustainable water management specifically addressed in rice paddy fields such as late drying up, seeding in dry fields etc.	
		Drainage- this class covers all practices that are implemented on the drainage systems (W17X)	Drainage ban (W171) - this label should be used where the commitment requires a total ban and abandonment of drainage maintenance. If the commitment specifically targets wetlands or peatlands use in addition the labels on peatland and wetland conservation.

			Drainage restrictions (W172) - this label should be used where the commitment sets restrictions on drainage, for instance by restriction of drainage in certain part of the year through e.g. controllable drainage systems and weirs, or when specific techniques reducing the impact of drainage are used such as installing two stage ditches. This class shall be used also if there is an interdiction for new drainage systems. If the commitment is specifically targeting wetlands or peatlands use in addition the labels on peatland and wetland conservation
			Drainage maintenance (W173) - this class should be used where the commitment involves maintaining existing drainage infrastructure
			Drainage installation (W174) - this class should be used where the commitment involves creating new drainage infrastructure

Source: own elaboration.

3.1.12 Bioeconomy, energy efficiency and production

Table 12. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Bioeconomy, energy and production section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Bioeconomy, energy efficiency and production (BX)	Bioeconomy (B1X) - this class shall be used for interventions where support is given for using renewable biological resources from land and sea, like crops, forests, fish, animals and micro-organisms to produce materials	Wood products (B11) - this class shall be used for interventions where support is given for using renewable biological resources from forests	
		Bioplastics (B12) - this class shall be used for interventions where support is given for using renewable biological resources to produce plastic materials	
		Bio-based chemicals (B13) - this class shall be used for interventions where support is given for producing chemical products that are wholly or partly derived from materials of biological origin (for example biomasses, feedstock, but also plants, algae, crops, trees, marine organisms and biological waste)	

		Other (textiles etc.) (B14) - this class shall be used for interventions where support is given for using renewable biological resources to produce materials that are not included in the other tier2 classes of bioeconomiy such as textiles	
	Renewable energy production (B2X) - this class shall be used for interventions where support is given for using renewable biological resources from land and sea, like crops, forests, fish, animals and micro-organisms to produce energy	Biogas and biomethane (B21X) - this class shall be used for interventions where support is given for using renewable biological resources to produce biogas and/or biomethane. This class covers support for biogas and biomethane plants	Biogas (B211) - this class shall be used for interventions where support is given for using renewable biological resources to produce biogas. This class covers support for biogas plants.
			Biomethane (B212) - this class shall be used for interventions where support is given for using renewable biological resources to produce a mixture of gases, primarily consisting of methane. This class covers support for biomethane plants
		Wind energy (B22) - this class shall be used for interventions where support is given for wind energy plants	
		Solar energy (B23)- this class shall be used for interventions where support is given for solar energy plants	
		Other renewable energy productions (B24) - this class shall be used for interventions where support is given for any renewable productions which cannot be classified in the other classes under tier 1 "renewable energy production" class	
	Energy efficiency, GHG audits and eco design (B3X) - This class includes practices which improve energy efficiency as well as interventions where Greenhouse Gas audits and eco-design are included	Measures to improve energy efficiency (B31) - this class includes all measures which improve energy efficiency	
		GHG audits and eco design (B32) - this class shall be used for interventions where Greenhouse Gas audits and eco-design are included, both as a supported action or as a requirement to take part in the intervention. GHG audit report identifies the GHG emission characteristics of different branches or products, evaluate potential costs and identify cost and emissions reduction opportunities. Eco-design means that there is a focus on lifetime energy use and other environmental aspects during the conception and design phases of a	

		product, before it is manufactured and brought to market.	

Source: own elaboration.

3.1.13 Diagnosis and Management plans

Table 13. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Diagnosis and Management plans section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Diagnosis and Management plans (DX)	Environmental and climate assessment (D1X) - this class shall be used for interventions where environmental and climate diagnosis are included, both as supported actions or as a requirement of the intervention	Environmental assessment- this class shall be used for interventions where environmental assessment/diagnosis are included, both as supported actions or as a requirement of the intervention. Environmental assessment/diagnosis consists in a systematic identification of some/all environmental factors related with the activities of a given organization.. (D11)	
		Climate risk assessment (D12) - this class shall be used for interventions where climate risk assessement are included, both as supported actions or as a requirement of the intervention. This can include a systematic identification of all risks of a given organization due to climate change	
		Soil sampling (D13) - this class shall be used for interventions where soil sampling is requested as committments to take part in the intervention or is financially supported	
	Management plans (D2X) - this class shall be used for interventions where management plans are requested as commitments to take part in the intervention or are financially supported. Management plans can refer to nutrients, pesticides, water etc.	Nutrient management plans (D21) - this class shall be used for interventions where nutrient management plans are requested as commitments to take part in the intervention or are financially supported. A nutrient management plan manages the amount, source, placement, form and timing of the application of nutrients and soil amendments	
		Pesticides management plans (D22) - this class shall be used for interventions where pesticides management plans are requested as commitments to take part in the intervention or are financially supported. A pesticides management plan manages	

		the amount, source, placement, form and timing of the application of pesticides	
		Water management plans (D23) - this class shall be used for interventions where water management plans are requested as commitments to take part in the intervention or are financially supported. A water management plan manages the amount, source, placement, way and time of distribution of water for irrigation	
		Biodiversity plan (D24) - this class shall be used for interventions where a biodiversity plan is included, both as supported actions or as a requirement of the intervention	

Source: own elaboration.

3.1.14 Precision agriculture

Table 14. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Precision agriculture section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Precision agriculture (EX)	Precision agriculture (E1X) - this class shall be used for interventions related to precision agriculture, a whole-farm management approach using information technology, satellite positioning (GNSS) data, remote sensing and proximal data gathering	Variable rate application technologies (E11X) - This class includes interventions where precision agriculture is specifically related to Variable Rate Application (application of a material, such that the rate of application is based on the precise location, or qualities of the area that the material is being applied to)	Variable rate application technologies (E111) - fertilisers- the variable rate application technologies are applied to fertiliser distribution
			Variable rate application technologies (E112) - pesticides- the variable rate application technologies are applied to pesticides application
			Variable rate application technologies (E113)- water- the variable rate application technologies are applied to irrigation
		Auto-steer (E12) - This class includes interventions where precision agriculture is specifically related to auto steer system for tractor with GPS guidance	
		Soil moisture sensing (E13) - This class includes interventions where precision agriculture is specifically related to the use of Soil moisture sensors that estimate volumetric water content	
		Soil mapping (E14) - This class includes interventions where precision agriculture is specifically related to soil mapping, meaning	

		capturing soil property information to delineate soils map units	
		Other precision agriculture practices (E15) -This class refers to interventions including precision agriculture practices not covered by other previous classes	

Source: own elaboration.

3.1.15 Certification schemes

Table 15. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Certification schemes section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Certification schemes (CX)	Certification schemes (C1) - this class shall be used for interventions that support any certification scheme other than organic farming		

Source: own elaboration.

3.1.16 Organic farming

Table 16. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Organic farming section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Organic farming	Organic farming (O1X) - This class shall be used for interventions that support organic farming as it is defined by Regulation (EU) 2018/848. The following farm practices should not be labelled together with this label because they are automatically covered: bans and limitations in the use of plant protection products and mineral fertilizers, cultivation of nitrogen fixing/protein crops, use of green manure, partial feed from farm, sufficient fiber intake, specific treatment plans (livestock), provision of adequate shelter, non-confinement systems, provision of enrichment materials, and mutilation with appropriate pain-avoiding practices. The following farm practices should only be labelled together with this label if the requirements are stricter than under	Maintenance of Organic farming practices (O11) - this class shall be used for interventions where support is given to maintain organic farming	
		Conversion to organic farming practices (O12) - this class shall be used for interventions that support the conversion of conventional systems into organic farming systems. The duration of the conversion period is defined by the Member States	

	the organic farming regulation: crop rotation, limitations on the use of organic fertilizers, outdoor access for livestock, minimum space allowances or maximum group sizes for indoor livestock raising, improved litter and indoor flooring, and maximum stocking densities		

Source: own elaboration.

3.1.17 Low input systems

Table 17. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Low input systems section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Low input systems (LX)	Low input systems (L1) - systems seeking to minimize the use of purchased production inputs by optimizing the management of internal production inputs to lower production costs, to avoid pollution of surface and ground water, to reduce pesticide residues in food, to reduce the farmer's overall risk, and to increase both short- and long-term farm profitability		

Source: own elaboration.

3.1.18 Training

Table 18. Farming practices at Tier 1, Tier 2 and Tier 3 level included under the Training section. Definitions included. Codes identifying each category are given in brackets.

SECTION	Farming practices Tier 1	Farming practices Tier 2	Farming practices Tier 3
Training (TX)	Training (T1) - this class shall be used for interventions for which support is given for training or in which training is compulsory to receive the support		

Source: own elaboration.

3.2 Extra labels

The definition of the different classes of the scheme has been deemed insufficient in some cases to describe the variety of interventions included in the CAP strategic plans without providing additional details in the class subdivision (e.g., a farming practice shall be applied only to crops or on a specific type of animals). To avoid further subdividing the defined classes, extra labels were introduced in the classification. In the application of the classification, each intervention may then be described by both using the classes as well as the extra labels, when applicable. Three types of extra labels were defined related to: land category, type of animal, and type of uptake.

3.2.1 Land categories

It has been found that quite often interventions in the CSPs target a specific type of land use. The following land categories are then defined:

Arable land	Permanent grassland
Permanent crops	High Value sensitive grassland

To meet the requirements of certain users, such as those developing the CAPRI model, additional detailed extra labels have been included for optional use. Specific permanent crops, including orchards, vineyards, olives, and other permanent crops, can be differentiated. Furthermore, a distinct label "horticulture" has been introduced.

3.2.2 Animals categories

Sometimes, the requirements included in the interventions specify that certain practices should only be applied to certain types of animals (e.g., limiting antimicrobial use for bovine, limiting antimicrobial use for pigs, etc.). To avoid duplicating the farming practices classes for each animal category, extra labels for animal types have been introduced.

The following animal categories are defined:

Dairy cows	Hens
Other cattle	Other poultry
Pigs	Goat/sheep/others (equid)
Lean	Other animals

3.2.3 Uptake categories

Some interventions provide farmers with the option to choose the farming practices to be implemented from a menu of farming practices. In this scenario, the intervention will be labelled according to the different farming practices embedded in it. However, this does not signify that all these farming practices will be implemented, as the final choice belongs to the farmer. In other cases, the condition to be fulfilled by the intervention mandates that all farming practices embedded in the intervention must be implemented. To account for these different situations, including farming practices related to result-based schemes or Good Agricultural and Environmental Conditions (GAEC), an extra label related to the uptake choice has been introduced.

The following labels are defined:

Pick and choose OR interventions (the farming practices included in the intervention are optional)

Pick and choose AND interventions (the farming practices included in the intervention are compulsory)

Whole farm approach (the intervention is part of a comprehensive approach to farm decision-making that brings the entire farm and all its resources into a process)

Result-based scheme (the intervention is part of a result based scheme)

Compulsory (GAEC) (the practice is a GAEC requirement)

4 CONCLUSIONS

The Common Agricultural Policy strategic plans have introduced a wide range of tailor-made interventions across the European Union, resulting in diverse requirements for farmers. To facilitate reporting and monitoring processes, a classification scheme based on farming practices related to climate and environment has been developed. The scheme covers 45 tier 1 classes, 164 tier 2 classes, and 157 tier 3 classes, providing a comprehensive framework for reporting interventions with environmental and climate-related commitments in the CAP strategic plans. The scheme has been tested and found to be applicable across different Member States and different CAP areas, enabling the extraction and aggregation of similar interventions. The scheme's versatility has extended its use beyond its original scope, as it has been employed for different policy analysis applications, such as its integration into the CAPRI model. The multi-agent refinement and feedback process applied ensures that the scheme can be a dynamic tool, able to adapt for further use in future policy cycles. Overall, the classification scheme plays a crucial role in simplifying the complexity of national and local specificities and in reporting at the European level, contributing to the effectiveness and performance-based approach of the CAP.

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List of abbreviations and definitions

CAP	Common Agricultural Policy
CLC+	Corine Land Cover Plus
IUCN	International Union for Conservation of Nature
DG AGRI	Directorate-General for Agriculture and Rural Development of the European Commission
DG CLIMA	Directorate-General for Climate Action of the European Commission
DG ENV	Directorate-General for Environment is a Directorate-General of the European Commission
EC	European Commission
ECA	European Court of Auditors
EEA	European Environment Agency
EGD	European Green Deal
EO	Earth Observation
EU	European Union
FAO	The Food and Agriculture Organization of United Nations
GAEC	Good Agricultural and Environmental Conditions
GDOŚ	Generalna Dyrekcja Ochrony Środowiska (General Directorate for Environmental Protection, Poland)
GSAA	The Geo-Spatial Aid Application
IMAP	Integrated modeling platform for agroeconomic and resource policy analysis
ISO	International Organization for Standardization
LC	Land cover
LCCS	Land Cover Classification System
LCLU	Land Cover/Land Use
LULUCF	Land Use, Land Use Change and Forestry
LPIS	Land Parcel Identification System
JRC	Directorate-General Joint Research Centre of the European Commission
MAES	Mapping and Assessment of Ecosystems and their Services
MARS	Monitoring Agricultural Resources
MS	Member State
PECBMS	Pan-European Common Bird Monitoring Scheme
PMEF	Performance Monitoring and Evaluation Framework
R	Result Indicator
RS	Remote Sensing
SO	Strategic Objective
WP	Work Package

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Annexes

Annex 1. JRC classification scheme for Rural Development Programmes interventions in CAP 2014-2020

A 1. List of farming practices grouped by themes.

Themes	Farming practices
Animal welfare	Measures targeting animal welfare (stable space etc.)
Pollination	Measures related to Beehives
Biodiversity	Measures related to bird nests/boxes
	Practices to improve coexistence with wild species
	Buffer strips and landscape elements for flowering and protagonists
	Grass field margins
Crop protection	Biological or mechanical pest control
	No chemical plant protection
	No fungicides and growth regulators
	No herbicides
	Practices to reduce the use of herbicides
	Other limitations on the use of pesticides (type, timing etc.)
Conservation agriculture	Cultivation of rare crop species
	Conservation of rare livestock breeds
	Conservation of valuable grassland species
	Conservation of landscape features
	Conservation of grassland
	Conservation of typical orchards (i.e. agroforestry grass/fruit)
	Conservation of typical vineyards in slopes
	Conservation of terraces
	Conservation of wetlands/no drainage
	Conservation agricultural land
	Conservation of traditional irrigation systems
Crop types and crop diversity	Crop rotation
	Crop diversification
	No intensive crops
	Cultivation of Legumes
	Cultivation of cereals
Erosion/runoff protection measures	Buffer strips in slopes
	Buffer strips along superficial water bodies
	Restriction on tillage timing
	Tillage restrictions on slopes etc.
	Other erosion/runoff protection measures (dams/soil covered with straw etc.)
	Erosion protection permanent crops (green cover etc.)
Feed restrictions	Feed only from pasture
	No silage
	Feed only from farm
	Other feeding restrictions
Fertilization	No fertilizer use (mineral and organic)
	No mineral fertilizers
	No application of manure
	No application of liquid manure
	No P fertilizers
	Direct injection of mineral fertilizer (cultan)
	Solid manure application from animals on straw

	Use of nitrification inhibitors and slow realizing fertilizers
	Nutrient Management plan
	Max N surplus
	Max N input per ha
	Max P input per ha
	Max mineral fertilizer input
	Limitations on fertilizer timing
	Low ammonia application of liquid manure
	Max livestock density
	Precision farming
Fire prevention	Buffer strips and farm practices for fire prevention
Grassland and grazing management	Grass cutting obligation
	Grass cutting restrictions (timing, number of cuts, etc.)
	Shepherding of animals
	Pasturing
	None or restricted pasturing (timing, species etc.)
	Idling of grassland
	Arable to grassland
Harvesting	Crop harvest obligations/restrictions
Irrigation	No irrigation
	Irrigation limitations (quantity, methods)
Organic farming	Organic farming
Restriction of seasonal work periods or daily work hours	Restriction of seasonal work periods or daily work hours
Soil cover/Soil conservation	Low tillage/mulching
	No tillage
	Intermediate crops / Cover crops / Catch crops
	Crop residues into soil
	Crop residues left on soil, leaving stubbles on the field
	No burning of crop residues
	Fallowing of arable land
Soil compaction	Restricted (heavy) machinery usage
Sowing	Sowing restrictions (plant species, certified seed, no sowing/dates)
Water protection	Protection of water courses by fencing

Annex **2. LIFT "Low**-Input Farming and Territories – Integrating knowledge for improving ecosystem-**based farming" H2020 Research Project. Farming Systems** classification.

A 2. List of farming practices grouped by Sections.

Section	Practice Name
Pest and plant disease management	Application of chemical products (insecticides/fungicides) not allowed by organic regulations
	Application of chemical products (insecticides/fungicides) allowed by organic regulations
	Biological control
	Use of Pest/disease resistant/tolerant varieties
	Adoption of Integrated pest management principles (IPM)
	Use of precision technologies
Weed management	Application of chemical products (herbicides) not allowed by organic regulations
	Application of chemical products (herbicides) allowed by organic regulations
	Mulching with organic/biodegradable material
	Mulching with an inorganic material
	Machine weeding
	Manual weeding

	Thermal weed control
	Varieties tolerant of weeds
	Integrated weed management (IWM) principles
	Precision technologies to guide herbicide application
Fertilisation and soil management of cropland and grassland	Conventional tillage
	Conservation tillage
	No tillage
	Application of inorganic fertilisers
	Application of animal manure
	Application of sewage sludge and other sludge
	Application of compost
	Application of soil amendments
	Green manuring
	Leaving crop residues on soil
	Planting of N fixing crops
	Planting of catch crops
	Planting of cover crops
	Precision technologies to target application rate (variable rate application)
	Machine controlled application
	Soil mapping
	Community seed bank
	Mowing (grasslands)
	Reseeding (grasslands)
Crop diversification and crop rotation	Crop rotation
	Crop diversification
	Selection of traditional/locally adapted varieties
	Mixed cropping (including intercropping , alley cropping, relay cropping ; does NOT INCLUDE agroforestry)
	Fallowing
Livestock management	Livestock density
	No. of months/days per year spent outdoor per Livestock Unit
	Grazing on common land
	Local rotation around farm
	Seasonal movement (stay in summer rangelands, spend grazing on mountainous rangelands)
Livestock feed	Grazing on pasture
	Conserved forage: silage
	Conserved forage: hay
	Concentrates
	Grains
	Beets
	Grazing on crop residues
	Feed beans/peas
	Potato protein
	Grassfeed (like pellets or such)
	Feed grain (wheat, barley, oats, triticale)
	Mineral feed
	Feed grain (wheat, corn, oats, barley, triticale)
	Feeding Lime
	Supplement feed
	Mineral feed

	Grassfeed (like alfalfa, clover or other grass-pellets)
	Soy (expeller/cake)
	Linseed (expeller/cake)
	Rapeseed (expeller/cake)
	Protein feed ((e.g. peas, beans)
	Oil
	Potato protein
	'Grazing' on pasture
	'Grazing' on crop residues
Livestock disease management	Use of antibiotics for prevention, or for treatment and prevention
	Use of antibiotics only for treatment
	Alternative remedies e.g. homeopathy or essential oils
	Physical measures e.g. separation, aeration, minimum days outdoors
	Trait selection
Manure and slurry management	Specific bedding type for animals (e.g. straw)
	Specific storage facility to reduce GHG emissions (e.g. covered pit)
	Specific storage facility to reduce leakage
	Digester
	Composting
Agroforestry	Agroforestry on arable land [silvoarable, hedgerow, windbreak and riparian buffer strips]
	Agroforestry on permanent grassland [silvopastoral practices such as dehesa, montado, wood pasture; and hedgerows, windbreaks, and riparian buffer strips]
	Agroforestry with permanent crops [grazing and intercropping of permanent crops]
Landscape features	Hedgerows
	Bushes
	Wet areas
	Tree lines
	Woodland on UAA (coppice, afforested areas, woodlots, etc.)
	Isolated trees
	Field margins
	Buffer strips
	Flower strips
	Terraces
Irrigation and water management	Irrigation rate (% area irrigated and/or amount of water/ha/year
	Soil mapping
	Soil moisture sensing
	Variable rate irrigation

Annex 3. Compendium of climate mitigation actions proposed in Martineau et al. **2016 as DG CLIMA service contract 'Support** to the assessment of the climate **ambition of CAP Strategic Plans'.**

A 3. List of Potential mitigation actions grouped by Categories.

Category	Potential mitigation action
Land use	Conversion of arable land to grassland to sequester carbon in the soil
	New agroforestry

	Wetland/peatland conservation/restoration
	Woodland planting
	Preventing deforestation and removal of farmland trees
	Management of existing woodland, hedgerows, woody buffer strips
	and trees on agricultural land
	Improving grassland management to increase carbon
	sequestration
	Use of grasslands to reduce fire risk
Crop Production	Reduced Tillage
	Zero Tillage
	Leaving crop residues on the soil surface
	Ceasing to burn crop residues and vegetation
	Use cover/catch crops
	Biochar applied to soil
	Extend the perennial phase of crop rotations
	Maintain Soil pH at suitable levels for crop/grass production
	Delay applying mineral N to a crop that has had slurry applied
Livestock Production	Livestock disease management
	Use of sexed semen for breeding dairy replacements
	Breeding lower methane emissions in ruminants
	Feed additives for ruminant diets
	Optimised feeding strategies for livestock
	Anaerobic digestion (to reduce GHG emissions during manure storage)
Nutrient and Soil Management	Soil and nutrient management plans
	Use of nitrification inhibitors
	Improved nitrogen efficiency
	Biological N fixation in rotations and in grass mixes
Energy	Carbon auditing tools
	Improved on-farm energy efficiency

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