

Public goods bonus

A concept for the effective reward of agricultural environmental and climate protection services within the eco-schemes of the EU Common Agricultural Policy (CAP) from 2023 on

Developed in cooperation with agriculture, science and administration



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Summary

Public goods bonus – A concept for an effective reward of agricultural environmental and climate protection services within the eco-schemes of the EU Common Agricultural Policy (CAP) from 2023 on

The concept of the public goods bonus of Landcare Germany (Deutscher Verband für Landschaftspflege (DVL)) is based on the principle that **farmers are entrepreneurs**, and thus environmental services are primarily provided by them when they act in an entrepreneurial manner and can offer their services to generate income.

The basic principles of the **public goods bonus** were initially developed by DVL on a local level and then **tested and further developed for nationwide application**ⁱ as part of a research and development project.

The public good bonus contains a menu of **19 measures covering the issues of biodiversity, climate and water protection**. The menu of measures is divided into the land use categories arable land, grassland, special crops and farmgate balances, and farms can select the most suitable combination of measures according to their needs. The measures are explained in greater detail in a separate publication.¹⁰

The single measures of the public goods bonus are assigned with points according to their worth for the protection of biodiversity, climate and water. The overall performance of the farm is remunerated by adding up the points obtained and rewarding them financially. In addition, a new **multiple measures supplement** has been developed to increase the diversity of measures used in the agricultural landscape.

DVL recommends **using the public goods bonus to shape the eco-schemes under the EU Common Agricultural Policy after 2020 in Germany**. The public goods bonus is based on the substantive and administrative requirements set by the EU Commission and can help to effectively achieve the environmental and climate protection goals.

ⁱ The research and development project was funded by the Federal Agency for Nature Conservation (BfN) with funds from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The measures, the evaluation method and the corresponding reward system were revised assisted by agricultural economists and administration experts.



State of the EU Common Agricultural Policy

Starting point: Greening has failed

A core element of the reform of the EU's Common Agricultural Policy (CAP) in 2014 was the introduction of mandatory so-called greening, which would bind direct payments to the provision of environmental services. **Greening is now regarded as a failure**, as it has only resulted in **low environmental performance** and at the same time is associated with a **high administrative burden**. Accordingly, the current proposals of the European Commission (COM) for the design of the CAP after 2020¹, no

longer include greening in its current form. With its recent legislative proposal, the COM formulates the claim **that the CAP should make a greater overall contribution to achieving the environmental and climate goals in the coming funding period**. To achieve these goals, the Commission proposes a new «green architecture» in conjunction with a new delivery model to manage the transition to **a performance-based system**.

Eco-schemes: Innovation of the future „green architecture“

As a core element of the commission proposal for „green architecture“, so-called „**eco-schemes**“ will be introduced as a new category of direct payments. In Pillar 1, the eco-schemes complement the now extended cross compliance criteria („conditionality“) and must at the same time be differentiated from the „environmental, climate and other management commitments“ (previous agri-environmental and climate measures) in Pillar 2. The eco-schemes serve exclusively to implement the

three specific environmental and climate goals of the CAP. According to the current state of the CAP negotiations, the programming of eco-schemes is **obligatory for the Member States**, but participation in them is **voluntary for farms**. To achieve the environmental and climate protection goals, farmers can be offered **economic incentives for participation within the national concretisation of the eco-schemes**. The CAP Strategic Plan should pay due attention to administrative simplification.

Solution: Application of the public goods bonus

As early as 2017, the DVL submitted a proposal with its **concept of the public goods bonus (PGB)** on how the current system of agricultural subsidies could be fundamentally reformed in order to achieve a **higher reward of public services in agriculture**.² Following the presentation of the COM proposal on the design of the CAP after 2020, it was also explained how the PGB concept **could be used** to design specifically the eco-schemes **when implementing the current legislative proposal**.³ The proposals were based on the

example of the federal state of Schleswig-Holstein, where the concept of the public goods bonus was originally developed (see Box 1). In the **present paper**, the proposal to use the public goods bonus **for the implementation of the eco-schemes in Germany is based on the results of a research and development project (R&D project) in which the concept from Schleswig-Holstein was tested for its nationwide applicability and revised accordingly** (see Box 2).

Box 1: The idea of the public goods bonus – preliminary work from Schleswig-Holstein

The public goods bonus is a concept that could be used in future to align the funding system of the Common Agricultural Policy according to the principle of “public money for public goods”.² The method already developed by DVL in 2011/12 rewards farms for the area-related environmental services they provide instead of – as has been the case to date – subsidising them on a flat rate basis by the number of eligible hectares. The basis is a point rating system for individual farm management measures that generate positive effects in terms of **biodiversity, climate and/or water protection**. The rating is designed to ensure that the required information can be taken from the annual application for agricultural subsidies. The overall performance of the farm is honoured in that the points obtained are financially rewarded.

The idea of assessing environmental services provided by agriculture with “eco-points” and, based on this, rewarding them through EU agricultural policy is not new.⁴ The basic features

of the PGB assessment method are based on a point rating method which, building on previous assessment approaches, was originally developed for operational biodiversity consulting and certification in Schleswig-Holstein. The point ratings were validated by field surveys of the field bird indicator and the High Nature Value (HNV) farmland indicator (previous EU mandatory indicators).⁵ In a pilot project with 80 representative farms, the assessment procedure proved to be practicable.⁶ In 2015, the assessment was **extended** to include **climate and water protection** services in cooperation with Prof. Dr. Friedhelm Taube (University of Kiel) and subsequently validated again in 2016 by farm surveys.⁷

The preliminary work from Schleswig-Holstein formed the basis for the R&D project, in which the concept of the public goods bonus was tested for its **nationwide applicability** and further developed in light of the results obtained (see Box 2).



Box 2: Further development of the public goods bonus at national level

In an R&D project entitled “Common Agricultural Policy: Public Money for Public Goods – Further Development of a Reward Model for Environmental Services of Agriculture in the Common Agricultural Policy (CAP)ⁱⁱ, the concept of the public goods bonus was further developed for its nationwide applicability. The aim was to develop an **approach that had been successfully tested in agricultural practice and was acceptable to politicians and authorities**.

In detail, the R&D project

[1] tested the PGB method developed and validated in Schleswig-Holstein (see Box 1) for its **Germany-wide applicability** at farm level and in agricultural administration and – where necessary – adapted it accordingly. For this purpose

- (a) the **existing PGB measures and their evaluation in different landscapes in Germany were reviewed, modified and further developed**. For this purpose, 93 farms were surveyed and continuously validated in test regions with different agricultural structures and farm types in different natural environments of Baden-Wuerttemberg, Saxony and Brandenburg (16 landcare organisations; Tobias Pape, Grünweg office; DVL);
- (b) the previous algorithm of the point rating method and the calculation of the farm payments was reviewed and adjusted (Prof. Dr. Uwe Latacz-Lohmann & Dr. Gunnar Breustedt, University of Kiel; DVL);⁸
- (c) proposals for the derivation and determination of a monetary price per point (€/point) were developed (Prof. Dr. Uwe Latacz-Lohmann & Dr. Gunnar Breustedt, University of Kiel; DVL);⁸

(d) a **linear point rating method with a bonus for measure diversity** was newly developed and evaluated with regard to economic effects based on eight differently structured model farms and different variational calculations (Prof. Dr. Uwe Latacz-Lohmann & Dr. Gunnar Breustedt, University of Kiel; DVL)⁸;

(e) examined the differences in the application of the Integrated Administration and Control System (IACS) in the federal states (Bundesländer) by means of surveys in agricultural and environmental administrations to determine the extent to which the modified PGB measures can be represented by the information stored in IACS and thus how they can be controlled (Thünen-Institut für Ländliche Räume, Braunschweig);⁹

[2] explored the significance of the PGB concept and its possible **integration into an overall CAP funding architecture after 2020, which is to be newly oriented towards public welfare aspects** (project accompanying working group with representatives of the administration; DVL) and finally ...

[3] ... investigated its applicability for shaping the eco-schemes in Germany was investigated.

Within the R&D project, the work of the experts was commissioned by DVL. The results and recommendations of the experts’ report formed the basis for the successive further development of the PGB method during the project. Basis of the experts’ reports was the respective status of the PGB concept at the time the contract was awarded.

ⁱⁱ The R&D project was funded by the Federal Agency for Nature Conservation with funds from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and covered the period from 1st August 2017 to 29th February 2020.



How the public goods bonus works

Public goods bonus measures

Within the R&D project, **19 measures** were identified that are suitable for a nationwide implementation of the concept of the public goods bonus for shaping the eco-schemes (Table 1). The PGB measures cover the **categories arable land, grassland, special crops and the farmgate balances for nitrogen and phosphorus**. From this list, farmers can select the most suitable combinations of measures for their farms.

A detailed description of the individual PGB measures are given in a separate publication in the form of **fact sheets** (PGB fact sheets¹⁰). These contain information on

- Definitions,
- Effects on the protected goods in question,
- References to EU indicators,
- Possible combinations of measures,
- Distinctions to conditionality and measures of the 2nd pillar,
- control and management requirements.

In addition to the PGB measures (Table 1), numerous other measures were examined, but were not considered further (see Box 3). The selection of

the nationwide PGB measures was initially based on the set of measures available from the preliminary work in Schleswig-Holstein (see Box 1). Some of these measures turned out to be unsuitable for nationwide uniform application (e.g. specifications on mowing dates). Other measures were newly included because they are important from a national perspective (e. g. orchards, special crops). The selection of measures was based on the project's expert ratings, which in turn incorporated the validation results of the farm assessments from the different test regions (see Box 2).

The PGB measures were selected and defined in such a way that, as far as DVL is able to assess, they can be integrated into the existing Integrated Administration and Control System (IACS). Most of the PGB measures are already offered in the current funding period as 1st and/or 2nd pillar measures and are therefore already available in IACS or could be fitted into it with little effort. Information on this can be found in the fact sheets. The allocation of the PGB measures to individual parcels (fields, sections of land) could be done easily in the funding application by means of simple allocations or additional information (selection of extra options e. g. by ticking boxes, compare also the case of ecological focus areas). **From the farmers' perspective, this would change little in the user interface of the electronic application procedure.**

Table 1: Nationwide measures of the public goods bonus (as eco-schemes) with information on the rating (points/ha) as well as the required minimum area share [% of the Agricultural Area (AA)] to obtain the multiple measures supplement (for explanations see text; status: 02/2020).

Measure	Point rating	Minimum area share for multiple measures supplement ^a
	[Points/ha]	[% of AA (net)]
Arable land (AL)		
AL 1 Small parcelled arable land	1	10
AL 2 Summer cereals	1	10
AL 3 Legumes and mixtures thereof	2	5
AL 4 Untreated stubble fields	2	10
AL 5 Flower areas and strips	10	1
AL 6 Fallow land with spontaneous vegetation	12	1
AL 7 No use of synthetic chemical pesticides and mineral fertilisers	4	5
Grassland (GL)		
GL 1 Small parcelled grassland	1	10
GL 2 Permanent grassland	1	30
GL 3 Permanent grassland	2	10
GL 4 Old grass and hem strips	1	10
GL 5 No use of synthetic chemical pesticides and mineral fertilisers	4	5
GL 6 No use of organic fertilisers ^b	4	5
GL 7 Meadow orchards	4	0,5
Special crops (SO)		
SO 1 Alternating inter-row management	1	10
SO 2 Flower and beneficial insect strips	3	1
SO 3 No use of synthetic chemical pesticides and mineral fertilisers	8	5
Farmgate balances (HO)^c		
HO 1 Farmgate nitrogen (N) balance (gross)	0–12 points/farm * 0.7 * AA Total ^d	No crediting with the supplement
HO 2 Farmgate phosphorus (P) balance	0–12 points/farm * 0.7 * AA Total ^e	

a Related to the respective category AL, GL, SO; in case of measure GL 2, deviating from the total AA; superordinate measures are only evaluated for the bonus if the LN of the corresponding measure area AL, GL, SO each account for at least 5 % of the total LN (net).

b On surfaces with GL 5

c The financial reward is calculated by multiplying the rated balance with the agricultural area and the coefficient 0.7.

d The point rating is based on the amount of N fertilisers of organic origin produced on the farm (kg N/ha).

e The point rating is differentiated according to the soil content P-classes.

Note on c-e: For the rating and financial reward of the farmgate balances see also the PGB fact sheets¹⁰

Box 3: Requirements for public goods bonus measures

- **Nationwide uniformity and simplicity:** Measures of the public goods bonus must be uniform nationwide, be as easy to implement and administer as possible, and they must be distinguishable from each other.
- **Connectivity:** PGB measures should be suitable for integration in the existing IACS, so that administrations and applicants do not have to switch to a fundamentally new agricultural administration system. Minor adjustments to IACS may be necessary, e. g. through new definitions.
- **Annuity:** In analogy to the previous payment system for direct payments, it must be possible to implement the measures on an annual basis or to reapply for them each year. For certain effective measures, however, it is desirable and must therefore be possible for applicants to commit themselves for several years (see PGB fact sheets 10).
- **Accuracy:** The PGB measures must be suitable for making positive contributions to the protected goods biodiversity, climate and/or water at farm level. Individual measures do not contribute equally to these target areas, but they are an important part of the menu of measures (see also next point).
- **Making it easy for farms to get started:** The PGB measures should enable as many farmers as possible to participate and thus achieve a high level of land coverage nationwide. The PGB menu of measures therefore refers to arable land, grassland and special crop areas. In addition, along-side „dark green“ measures, „light green“ measures are also offered, but these are also rated significantly lower (see Table 1).
- **Including existing services:** Farms should also be able to contribute their existing landscape structures and existing services. The menu of measures therefore also contains parameters on the individual farm landscape situation (small parcelled arable land/grassland).
- **Better than in the past:** PGB measures should also bring about clear changes compared to the current situation. A positive (point) rating and thus reward of the measures is therefore above the codes of good professional practice and the legal minimum criteria defined in the conditionality (see „Demarcation of the PGB from conditionality“).
- **No replacement of Pillar 2 measures:** Measures which pursue very specific technical goals with regard to the three protected goods in question are not eligible for the PGB method (e. g. single species protection). However, they are absolutely necessary and must be guaranteed by appropriate measures (2nd pillar CAP, Länder programmes).
- **Combining measures is necessary:** It must be possible to combine PGB measures and specific Pillar 2 measures (e.g. contractual nature conservation) on a single site without causing overlaps in content.
- **Integrating organic farming:** Farms that operate according to the guidelines of organic farming are integrated into the PGB concept with their area-related biodiversity, climate and water protection services. Therefore, organic farms cannot receive additional funding under the 2nd pillar for PGB measures that are also required in the organic farming guidelines (exclusion of double funding, concerns PGB measures „No use of synthetic chemical pesticides and mineral fertilisers“, see Table 1).

Rating and reward of the public goods bonus measures

The evaluation and remuneration of the measures of the public goods bonus is based on the method originally derived from field evaluations in Schleswig-Holstein and further developed for nationwide application within the framework of a R&D project (see Boxes 1 and 2). Economic analyses and model calculations were carried out for the adjustments and various calculation approaches were tested. In order to select a reward system which is suitable for application in the eco-schemes, project-specific requirements were formulated as in the identification of measures (see Box 4).

Point rating: The basis for the derivation of a nationwide uniform assessment of the PGB measures was initially the scale of points available from the preparatory work in Schleswig-Holstein (see Box 1). After the expert ratings and the results of the validations from the various test regions (see Box 2), the scale also proved to be appropriate for the nationwide PGB set of measures. The twelve-point scale (0–12 points) was therefore retained. The points that can be obtained for each measure reflect the respective overall performance for the protected goods in question (biodiversity, climate, water).

According to the original PGB proposal, the area-related measures were classified by area share (e. g. 10–20 % of the area results in 2 points)⁷.

In many cases, small area shares were rated disproportionately higher, i. e. with increasing area shares, relatively fewer points could be obtained (degressive rating). This rating method proved to be unsuitable for nationwide application during the analyses and model calculations. As a new reference value the area of the individual measure was introduced, which is rated linearly with points (points per ha AA). In the case of the farmgate balances the point rating refers as before to the total farm area (AA) and additionally considers covariates (see Table 1).

In the case of combined measures, the points of the different measures on the respective area are added up. The total number of points per farm is

calculated by adding up the points obtained for the individual measures. The total number of points can be further increased by a multiple measures supplement (Table 2). The calculation of the actual public goods bonus, i. e. the reward per farm, is finally done by multiplying the total number of points by a fixed monetary point price (€/point). Deviating from the original concept for the public-goods bonus (see Box 1), it is proposed – based on the results of the R&D project – to keep the price per point constant over the entire funding period. This increases planning security for farms and facilitates budget management (see below, section “Classification in the ‘Green Architecture’”).

However, it should be possible to adjust the monetary price per point depending on goal achievement, e. g. within a midterm evaluation.

Multiple measures supplement: This instrument was developed as a new central element of the PGB reward system. The bonus aims to promote a diversity of measures used in the agricultural landscape and at the same time to safeguard the requirements of the reward system (see Box 4). When calculating the bonus, only measures with a certain minimum area share in the respective land use category (arable land, grassland, special crops) are taken into account (Table 1). In addition, the use category in question must cover a minimum of 5 % of the total farm area. The supplement is granted as a point addition to the total number of points (points/farm). It is calculated as a percentage of the total number of points, whereby linearly higher percentages are applied as the diversity of measures increases (entry level: four measures with a point supplement of 10 % of the total amount, adding 1 % more for each additional measure, see Table 2 and application example below).

Table 2: Multiple measures supplement.

Number of different measures on the farm ^a	4	5	6	7	8	9	10	...
Supplement in % of total points to total points	10	11	12	13	14	15	16	...

^a A measure can only be counted in the supplement system if it has a defined minimum area share (see Table 1). The farmgate balances are not taken into account in the supplement system.

The PGB reward system can be **integrated into the existing electronic application and administration system** with comparatively simple

algorithms. A “PGB calculator” could be offered on the online application tool, so that applicants can “play through” and compare different variants.

Box 4: Requirements for the rating and reward method of the public goods bonus

The rating and reward of the measures of the public good bonus are **based on the services provided for the protected goods in question**. The payments for PGB measures may therefore deviate from the payment level that result from “classical” calculations for compensation payments (lost revenues and extra cost calculations).

The PGB reward system ensures that the scope of the implemented measures is based on individual farm decisions and does not have to be oriented towards the compliance with minimum criteria (as is currently the case with greening). For this reason, no “caps” on the scope of measures are envisaged.

The rating and reward method of the public goods bonus **intends to reach an equally distributed land coverage**. This means that different types of farms in Germany must not be disadvantaged or advantaged by the method (equal treatment of farms). However, larger

farms can generate higher payments in absolute terms, since the PGB concept rates and rewards environmental and climate performance on an area-related basis. Yet this doesn't result in a general advantage for larger farms, as the payments are linked to the scope of the respective PGB measures.

To achieve the above-mentioned public welfare goals, **a (marginal) incentive effect is conducive**. In the PGB reward system, this is designed by integrating the supplement system in such a way that even small measure scopes have an impact on income and, at the same time, the implementation of as many different measures as possible is attractive.

The reward system must be as **robust** as possible **against strategic adjustments** (e.g. land lease) and the possibility for “greenwashing”. This shall be achieved through the high rating of ambitious measures and, in particular, the integration of the multiple measures supplement.

In addition to the broad range of measures, the point rating of the individual measures and the multiple measures supplement are the central control variables for achieving and safeguarding the goals of the public goods bonus. Only if “light green” and “dark green” measures are rated based on their actual performance and the multiple measures supplement is applied, the principle of “public money for public goods” can be effectively implemented

and “greenwashing” through ineffective or over-rated measures can be prevented. Furthermore, a minimum number of measures is required for the multiple measures supplement to be applied. **The proposed PGB measures with their ratings and the associated multiple measures supplement must therefore to be regarded as a coordinated overall system that cannot be changed at will.**

In summary, the calculation of the farm payment involves the following four steps (see also the application example in Table 3)

- 1 point rating of the individual PGB measures (Table 1):
Points/individual measure
- 2 adding up the points of the individual measures for the whole farm:
Total points/farm
- 3 points supplement for multiple measures (Table 2):
Total points/farm + multiple measures supplement
- 4 multiplication of the total number of points (incl. supplement, if applicable) by the monetary . . . point price: *(Total points/farm + multiple measures supplement) * €/point*

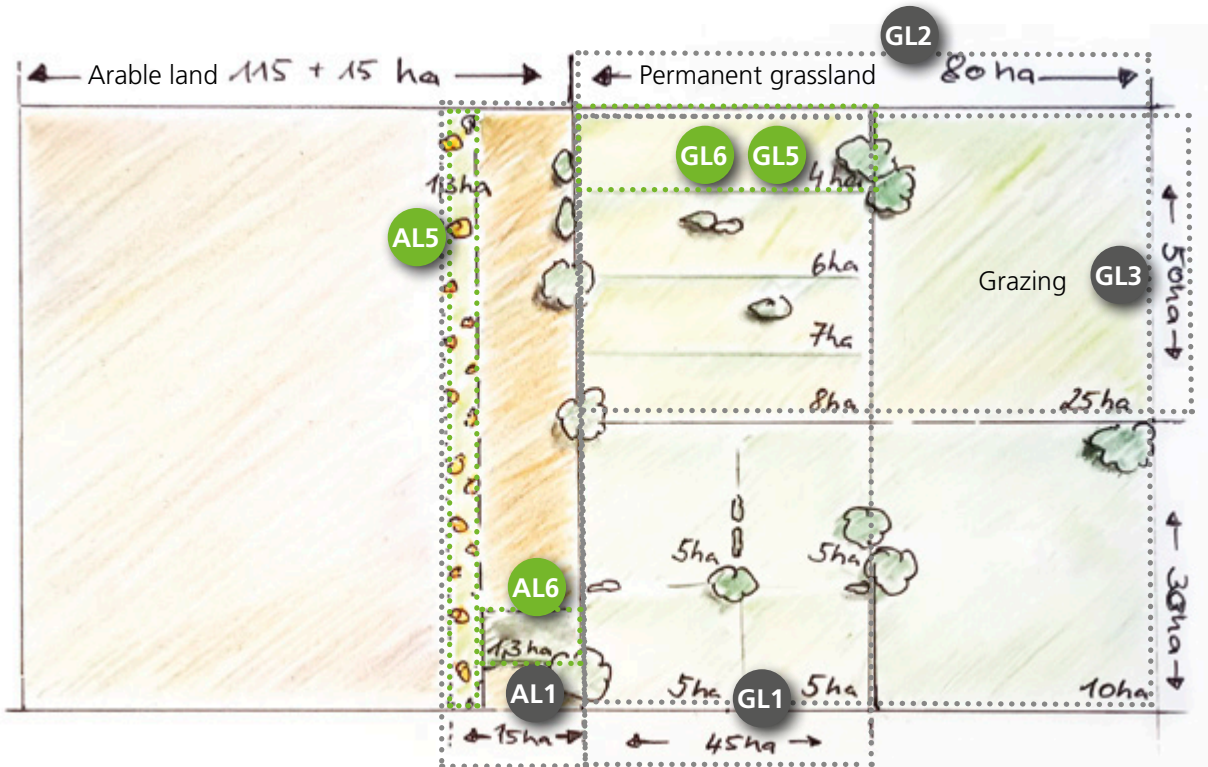
Application example and operational effects

To examine how the advanced reward system of the public goods bonus looks from an economic point of view across different farm situations in Germany, **profitability analyses and model calculations** were carried out as part of the R&D project (see Box 2). Due to the complex interrelationships, simplifying assumptions had to be made for these analyses. For example, it was assumed that operational decisions on implementing PGB measures are made on purely economic criteria, even though in reality other factors often play a major role for environmental behaviour (including personal attitudes and social environment). With regard to the multiple measures supplement it was also assumed that the area of an additional measure is optimised in such a way that it

achieves the minimum area share for entry into the next supplement level (see Tables 1 and 2).

Using a fictitious model farm as an example, Table 3 illustrates the PGB payment that can be generated under the above mentioned assumptions for PGB measures (that are also selected as examples). The farm is a 210 ha conventionally managed mixed farm with a focus on arable farming. In the initial situation, 130 ha are used for winter crops. In addition, 80 ha of grassland is used with a herd of suckler cows, of which 50 ha are used for grazing and 30 ha as mown pasture. The calculation is based on a point price of 50 €/point.

Table 3: Example of the implementation of eight PGB measures in a model farm with calculation of the farm payment (mixed farm, 210 ha, focus on arable farming, conventional farming).



Measure	Measure rating [Points/ha]	Measure area [ha]	Points per measure
Measures without adaptation costs in the model farm (initial situation):			
AL 1 Small parcelled arable land (fields < 10 ha)	1	15	15
GL 1 Small parcelled grassland (fields < 10 ha)	1	45	45
GL 2 Permanent grassland	1	80	80
GL 3 Grazing	2	50	100
Measures requiring cost-effective land use adaptations in the model farm:			
AL 5 Flower areas and strips	10	1,3	13
AL 6 Fallow land with spontaneous vegetation	12	1,3	15,6
GL 5 No use of synthetic chemical pesticides and mineral fertilisers	4	4	16
GL 6 No use of organic fertilisers	4	4	16
Total points			300,6 points
Multiple measures bonus: 8 measures, 14 % supplement			42,1 points
Total points incl. supplement			342,7 points
Farm payment at 50 €/point			17.135,00 €
Farm payment per ha (farm size 210 ha)			81,59 €/ha

● Four Steps as described in the box on page 14

Due to its assumed landscape situation and operational orientation, the model farm can already obtain points in the initial state for the measures shown in Table 3.

As these measures also fulfil the minimum criteria for the multiple measures supplement due to their area shares (cf. Table 1), the 10 % supplement can also be applied for these measures without further adjustments. The payments of the public goods bonus, which are calculated for the assumed initial state, are fully income-effective as the farm does not incur any adaption costs. In addition to the public goods bonus, the farm should also be allowed to combine it with payments for 2nd pillar measures in order to further “qualify” the PGB measures through special measures (see Box 3 and the chapter on “Integrating the public goods bonus into the “green architecture””).

In addition to the points from the above-mentioned measures, the model farm decides to implement four further measures and thus generate additional points: :

- AL 5 Flower areas and strips (1.3 ha),
- AL 6 Fallow land with spontaneous vegetation (1.3 ha),
- GL 5 No use of synthetic chemical pesticides and mineral fertilisers (4 ha)

and

- GL 6 No use of organic fertilisers (4 ha) of grassland with GL 5.

Since the area coverage by these four measures each meets the minimum criteria for the multiple measures supplement (see Table 1), the bonus can be applied for altogether eight measures, which increases the total payment accordingly (see Table 3).

However, it is not (only) the additional payment that is crucial for the decision on whether one or more additional PGB measures make economic sense, but the income effect that remains as a profit after deduction of all adaption costs.

Therefore, in the model calculations and economic analyses, the marginal revenue and marginal costs were compared for different operating situations to examine the additional implementation of PGB measures (for details on the calculations see Latacz-Lohmann & Breustedt 2019 and 2020⁸).

The results of these analyses can be summarised as follows:

- The new nationwide point rating method including a multiple measure supplement provides an incentive to implement a wide range of PGB measures. Thanks to the supplement, it can make economic sense to implement a measure in a package with other measures that would not be economically viable on its own. As the number of measures increases, both the total farm payment and the profit per hectare of farmland increase.
- The farm structure has a major influence on the PGB payment and its income effect. In general, it can be assumed that diversified mixed farms, extensive farms and organic farms can achieve higher payments than highly specialised and intensively managed conventional farms. In the former, the PGB payment has a higher income effect due to lower adaptation costs.
- The PGB reward system appears to be relatively robust against strategic adjustment reactions, even if these cannot be completely ruled out in advance.
- According to the model calculations, the incentive system of the PGB is also relatively robust to cost changes (caused by changes in product prices, revenues, contribution margins, etc.).
- The new point rating method including a multiple measures supplement proved to be well calibrated to promote organic farms. Furthermore, it provides an effective incentive to implement further PGB measures that go beyond the organic farming guidelines.
- For the model calculations a fixed monetary point price of 50 €/point was assumed. According to

the project results, this amount can provide an effective incentive to implement a wide range of measures without systematically (non-objectively) disadvantaging or favouring individual farms.

- Furthermore, it can be assumed that environmental pricing within the public goods bonus will

contribute to make farmers more sensitive to environmental issues than in the past and to fundamentally rethink their environmental behaviour.





Integrating the public goods bonus into the „green architecture“

Suitability of the public goods bonus for the design of the eco-schemes in Germany

With the eco-schemes, a new instrument will be introduced into the CAP funding system, with which a part of the direct payments will be linked more strongly to environmental and climate-related public services of agriculture and be rewarded accordingly. The funding will be granted in the form of an annual payment and can also be paid as an income-generating top-up payment to basic income support. In this respect, eco-schemes also offer the opportunity to gradually shift the 1st pillar CAP funding system further towards public welfare goals, e. g. agricultural environmental and climate protection.

For the first time farmers can generate an income within the 1st pillar by providing services for environmental, nature conservation and/or climate protection goals. In contrast to the environment-related measures of the 2nd pillar, where compensation payments must be calculated strictly by yield losses and extra costs, eco-schemes offer the chance of an incentive effect through the payments. In this way, the environmental services provided by farms could be rated and accordingly rewarded, by applying the

principle of the public goods bonus.

In this light, the Commission proposal with its eco-schemes provides a suitable frame-work for implementing the concept of the public goods bonus.

The general requirements for the eco-schemes in the COM proposal should be considered in this regard. This publication does not go into further detail on the budgetary requirements. Detailed recommendations on this have been published, e. g., by the Advisory Board on Agricultural Policy, Food and Consumer Health Protection (WBAE) at the Federal Ministry of Food and Agriculture (BMEL) (WBAE 2019¹¹). In the following, indications are given on how the eco-schemes can be differentiated from the GAEC standards of conditionality (GAEC: “Good agricultural and environmental conditions”) and the “Environmental, climate and other management commitments” (AECC: Agri-environment-climate commitments) of the 2nd pillar when applying PGB. The descriptions are based on considerations that have already been derived in more detail for the conditions in Schleswig-Holstein.³

Differentiation of the public goods bonus from conditionality

The COM proposal of the new “green architecture” requires a differentiation between the eco-schemes and the GAEC standards of conditionality. The GAEC standards for which there may be overlaps with the PGB measures as eco-schemes are listed in Table 4. If and how differentiations are necessary

depends on the final specifications or definitions of conditionality. **Overlaps between the GAEC standards and PGB measures (as eco-schemes) can be avoided, if the PGB measures are only rewarded at levels above the criteria for the GAEC standards.**

Table 4: Possible content overlaps of the PGB measures as eco-schemes (see Table 1) and the GAEC standards of conditionality.

Conditionality criteria	PGB measures as eco-schemes
GAEC 1 Maintenance of permanent grassland based on a ratio of permanent grassland in relation to agricultural area	GL 2 Permanent grassland
GAEC 4 Establishment of buffer strips along watercourses	AL 5 Flower areas and strips AL 6 Fallow land with spontaneous vegetation
GAEC 5 Compulsory use of the new Farm Sustainability Tool for Nutrients (FaST)	HO 1 Farmgate nitrogen (N) balance (gross) HO 2 Farmgate phosphorus (P) balance
GAEC 9 Minimum share of agricultural area devoted to non-productive features or areas	AL 5 Flower areas and strips AL 6 Fallow land with spontaneous vegetation SO 2 Flower and beneficial insect strips
GAEC 10 Ban on conversion/ploughing permanent grassland in Natura 2000 sites	GL 2 Permanent grassland

Differentiation of the public goods bonus from „environmental, climate and other management commitments“ (2nd pillar)

According to the COM proposal, the measures of the public goods bonus as eco-schemes need to be differentiated not only from conditionality but also from the future “environmental, climate and other management commitments” of the Länder.

Specific Pillar 2 measures which are essential to achieve specific protection goals are not covered by the rating system of the public goods bonus. Measure types that serve specific goals and/or are of special relevance in certain regions/funding schemes would thus be programmed as AECC within the 2nd pillar to complement the PGB measures/eco-schemes (for examples see Table 5).

Within the AECC, a distinction must be made between individual measures that can be realised on top of PGB measures without any overlaps in content (e. g., late mowing as AECC on grass-land areas with PGB measure “no use of fertilisers”, GL

5 and GL 6) and types of measures that require an area exclusion from GWP measures due to content overlaps, and thus cannot be combined with GWP measures on the same area (e.g. result-oriented AECC measures to maintain species-rich grassland).

A special consideration is given to organic farming: Through the PGB measures “No use of synthetic chemical pesticides and mineral fertilisers” (AL 7, GL 5, SO 3; see Table 1) central management criteria of the organic farming guidelines are already rewarded within the eco-schemes (see Box 3). Accordingly, a parallel payment of organic farming would not be permitted for these services within the AECC. However, other funding for organic farms can still be granted under the 2nd pillar, e. g. for the conversion period or other public services provided by organic agriculture.

Table 5: Examples of 2nd pillar AECC to complement PGB measures as eco-schemes in Pillar 1.

	1st pillar: PGB measures as eco-schemes	2nd pillar: supplementary AECC
AL	AL 1 Small parcelled arable land AL 2 Summer cereals AL 3 Legumes and mixtures thereof AL 4 Untreated stubble fields AL 5 Flower areas and strips AL 6 Fallow land with spontaneous vegetation AL 7 No use of synthetic chemical pesticides and mineral fertilisers	<ul style="list-style-type: none"> – No use of organic fertilisers – Conversion of arable land into grassland – Cultivation of rare crop varieties – Biotope management measures, e. g. establishment and maintenance of hedges or small water bodies – Special regional species protection programmes, e. g. for European hamster, ortolan, Montagu’s harrier
GL	GL 1 Small parcelled grassland GL 2 Permanent grassland GL 3 Grazing GL 4 Old grass and hem strips GL 5 No use of synthetic chemical pesticides and mineral fertilisers GL 6 No use of organic fertilisers GL 7 Meadow orchards	<ul style="list-style-type: none"> – Specifications on stocking density, grazing periods, etc. on pastures – Result-oriented grassland management – Special upgrading measures, e. g. transfer of mown material, new sowing (regional seed) – Rewetting of organic soils – No dragging and rolling within a blocking period – Late mowing with specified mowing date – Phased mowing – Programs with special mowing technology – Special regional species protection programmes, e. g. for meadow birds, orchids – Biotope management measures, e. g. establishment and maintenance of hedges or small water bodies
SO	SO 1 Alternating inter-row management SO 2 Flower and beneficial insect strips SO 3 No use of synthetic chemical pesticides and mineral fertilisers	<ul style="list-style-type: none"> – Viticulture in steep and terraced vineyards – Biotope management measures, e. g. reconstruction of stone walls in steep vineyards – ...



Conclusions and outlook

According to the results of the R&D project, the concept of the public goods bonus is a practicable and administrable implementation model to reward the public welfare services of agriculture within the eco-schemes of the 1st pillar based on performance.

The point rating and the (voluntary) multiple measures supplement are central control parameters in this regard. They ensure a set of qualified measures, which must be supplemented by further special contractual nature conservation and AECC offers. The PGB concept is not based on the compensation of lost revenues or extra costs, but on measurable environmental performance. Following the results of the economic analyses in the R&D project, farmers have the chance to develop a new source of income by implementing PGB measures (as eco-schemes) and thus, if they want, to build up an independent business branch in this area.

The COM proposal on the future „green architecture“ of the CAP gives Member States flexibility in the design of conditionality, eco-schemes and the AECC¹¹. Depending on the priorities set, corresponding effects on budget allocations must be taken into account. **The proposed application of the PGB concept requires a sufficiently strong budget allocation in the funding of eco-schemes.** This is particularly necessary if – as

intended in the PGB model – not only existing environmental services shall be rewarded but also and especially the necessary changes and effects.

Financial flexibility resulting from setting priorities within the 2nd pillar eco-schemes (e. g. by integrating the non-use of fertilisers into the eco-schemes) can be used, for ambitious special AECCs as well as for the expansion of urgently needed accompanying advice.

Models that include a performance-based and ambitious design of the eco-schemes can result in a redistribution of funds between individual regions. However, the diverse menu of PGB measures ensures that farms in different region-specific situations have access to suitable -measures and thus also to rewards.

The concept of the public goods bonus has been continuously developed since the first drafting of its basic ideas. The present publication marks the current stage of work based on the R&D project. Since the final design of the COM proposals for a regulation on the new “green architecture” will still be negotiated in 2021, formal adjustments may still be necessary to establish the public goods bonus as a model for the eco-schemes. It is thereby important, however, to adhere to the basic requirements of the PGB model (see Boxes 3 and 4).

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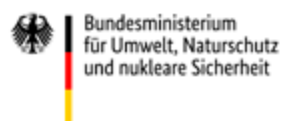
Public goods bonus – A concept for the effective reward of agricultural environmental and climate protection services within the eco-schemes of the EU Common Agricultural Policy (CAP) from 2023 on

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