The result-based agri-environment measure in Baden-Wurttemberg (Germany) [i]

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Brief summary of the case

Result-based agri-environment measures remunerate farmers to achieve a specific environmental objective and not to carry out certain managing activities, as with classical action-based agri-environment measures. In this way, they tend to ensure a high level of conditionality, because farmers are paid only if they can demonstrate they have obtained the desired environmental outcome. The result-based agri-environment measure in Baden-Württemberg (Germany) was the first introduced in the EU in 2000. Its objective is to support the conservation of species-rich grassland by remunerating farmers who declare that a minimum amount of wildflower species/taxa from a list of key species/taxa (which are used as indicators of biodiversity) are present in their grassland. The payment was EUR 50/hectare (ha) between 2000 and 2009 and EUR 60/ha between 2009 and 2014 for four species of wildflowers. With the new rural development programmes (RDPs) programming period of 2014-2020, a two-level payment was introduced and the payment is now EUR 230/ha for four indicator species and EUR 260/ha for six indicator species. However, since the result-based agri-environment measure cannot be combined with other agri-environment measures (as it could be before 2014), the de-facto additional payment is EUR 80/ha in most cases.

1 Description of the design, scope and effectiveness of the instrument

1.1 Design of the instrument

Result-based agri-environment measures (RB-AEMs) are innovative agri-environment measures (AEMs), which link payments to farmers to the provision of a desired environmental outcome and not to prescribed management activities as in traditional action-based AEMs (AB-AEMs). There are already more than 30 RB-AEMs in operation or planned in EU and EFTA countries, mostly in Northern and Western Europe (Allen et al. 2015). An increasing number of experts see the introduction of RB-AEMs as a way to increase the environmental conditionality and effectiveness of the AEMs financed by the Common Agricultural Policy as they allow for a more direct control of their impacts (as farmers are only paid if they provide the desired environmental outcome). Moreover, RB-AEMs also allow more flexibility to farmers, thereby stimulating innovation and spreading awareness on the importance of environmental protection.

The RB-AEM in place in Baden-Württemberg (BW) since 2000 represents an interesting example of this approach. It was called MEKA-B4, and it was the first RB-AEM to be introduced in the EU, with the objective of supporting the conservation of species-rich grassland. It remunerates farmers which have at least four species/taxa of wildflower from a predefined list in each third of a diagonal transect of their grassland. The list includes 28 key species/taxa of wildflowers which are used as a proxy for the species richness of grasslands (Breimle and Oppermann 2000). The list contained species of the seven main types of grassland habitats in BW comprising dry meadows, humid meadow and wet meadows as well as mountainous meadows (thus covering areas in BW between 100m and about 1,500m above sea level). Most

farmers participating in MEKA-B4 also received other AB-AEMs like MEKA-B1 ("Extensive grassland management" – EUR 50/ha) or MEKA-B2 ("Extensive grassland management with a limited number of cattle" – EUR 100/ha).

The MEKA-B4 payment was EUR 50/ha between 2000 and 2009 and increased to EUR 60/ha between 2009 and 2014. It was calculated based on the incurred costs (higher management costs) and the income foregone (reduced revenues due to extensive grassland management). For the programming period 2014-2020, MEKA-B4 was replaced with FAKT-B3, which works in a similar way. The main difference is a higher payment and the introduction of two thresholds: farmers are granted EUR 230/ha for species-rich grassland with at least four indicator species (FAKT-B3.1) and EUR 260/ha for species-rich grassland with at least six indicator species (FAKT-B3.2). The list has been expanded and now includes 30 species. A key difference with MEKA-B4 is that FAKT-B3 is not considered a top-up measure to other AEMs (as MEKA-B4 was), but a stand-alone measure for individual grassland parcels. This implies that the payment cannot be added to other agri-environment measures as could be done with MEKA-B4. As many farmers with species-rich grassland apply to the AEM targeting extensive grassland management (FAKT B1) which provides a reward of EUR 150/ha, the payment granted by FAKT-B3 only represents an additional EUR 80 or EUR 110/ha with respect to FAKT-B1. Furthermore, with FAKT-B1 farmers need to indicate the name of the wildflower species that they find in their grassland, which represents an additional burden. Many farmers have complained about the difficulty that this entails and further research is needed to assess whether this additional requirement contributes to a reduced interest among farmers in FAKT-B3 (Oppermann R., personal communication, 27 June 2016).

1.2 Drivers and barriers of the instrument

MEKA-B4 was established in 2000, on the occasion of the first revision of MEKA, one of the first AEMs in the EU. MEKA was established in 1992 and aimed to support the conservation of permanent grassland, which had been in decline in BW for decades. The motivation for the establishment of a result-based AEM was to attempt to improve the AB-AEM aiming to maintain species-rich grassland which had been introduced in MEKA in the previous programming period and was not delivering the hoped results. The measure required one or two cuts per year (in contrast to the three to five cuts normally carried out in intensively-managed grassland), and fixed mowing dates. Three experts in grassland biodiversity (Bronner et al. 1997) argued that more flexibility was needed to allow the number and dates of cuts to be adapted to local conditions. They suggested using key species as indicators for grassland biodiversity and prepared a first proposal of a list of such key species/taxes. This approach was further developed by Briemle (LAZBW), in cooperation with several grassland experts, into a practicable agri-environment measure (Briemle and Oppermann 2000). The methodology they developed was then tested by the BW managing authority, i.e. the Ministry for Rural Areas and Consumer Protection (MLR), together with LAZBW, during four meetings with representatives of agricultural unions and nature conservation organisations (Briemle and Oppermann 2000; Oppermann and Gujer 2003).

As regards barriers and challenges, the uptake of the RB-AEMs in BW is increasingly threatened by the rising economic attractiveness (and lower work intensity) of biogas production, which is incompatible with extensive grassland management (Russi et al., 2016).

In fact, the German Renewable Energy Law established high subsidies for biogas and a feed-in tariff guaranteed for 20 years, leading to a significant increase in the land used to produce energy crops. According to many authors (e.g. DBFZ, 2010; Delzeit, Holm-Müller and Britz, 2011; Federal Environment Agency, 2013) the subsidies on biogas play an important role in the increased biogas production and consequent conversion of grassland to arable land in Germany. The amount of biogas produced in Baden-Württemberg increased from 27.7 MW of installed electric power in 2004 to 295.8 in 2013[1], mainly thanks to the biogas subsidies. In contrast, the price of hay (the product of extensive grassland) has been low and significantly fluctuating over the last years. This example shows how important it is to coordinate environmental policies with different objectives in order to avoid unwanted negative effects like the impact of biogas on species-rich grassland.

1.3 Value of payments

Table 1 shows the total amounts of payments between 2009 and 2015 and the number of holdings that received the payment (data for previous years are not available). In general, both the total value of payments and the number of holdings receiving them have been decreasing over recent years (see below for a discussion on the possible causes).

Table 1 Number of holdings and total public expenditure of the result-based agri-environment measure in place in Baden-Württemberg

Year	Number of holdings	Total public expenditure (EUR)
2015	4,146	2,298,306
2014	4,686	2,463,012
2013	4,898	2,526,851
2012	5,774	2,884,077
2011	5,623	2,938,621
2010	5,670	2,443,616
2009	5,589	2,431,432

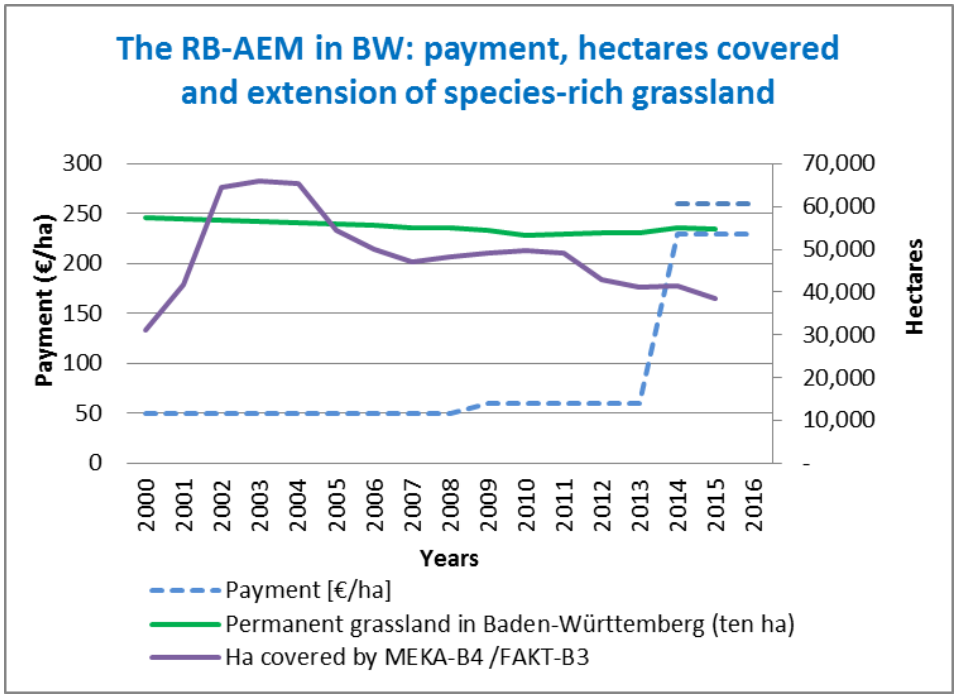
1.4 Environmental impacts and effectiveness

The extension of permanent grassland in BW has shown a decreasing trend over the last decades. It decreased from 647,000 ha in 1980, to 591,100 in 1992 (the year of the introduction of the MEKA agri-environment measure) to 573,300 in 2000 (the year of the establishment of the result-based AEM MEKA-B4). The decreasing trend continued until 2010, when it reached 531,700 ha, after which the land covered by permanent pasture in BW showed a slight increase (it was 548,300 ha in 2015). This continuously decreasing trend shows the need for an agri-environment measure to support the conservation of permanent pasture.

[1] Data from Statistical Office of BW.

The area covered by the RB-AEM in BW increased from 31,072 ha in 2000 (5% of the permanent grassland in BW) to 66,112 in 2003 (12%), after which it showed a decreasing trend until 2007, when it reached 47,133 ha (9%). After 2007, the land covered by the measure increased reaching more than 49,000 ha between 2009 and 2011, (about 9% of the permanent grassland in BW), and subsequently decreased to 41,006 ha in 2013 (8% of the permanent grassland in BW). In 2014 it slightly increased to 41,539 ha but then decreased to the lowest level since 2000, i.e. 38,603 ha (7% of the permanent grassland). Possible explanations for this decline include the low level of payment and higher technical requirements for documentation introduced in the last programming period (with farmers required to indicate in their electronic applications which species can be found in their grassland) (Oppermann R., personal communication, 27 June 2016).

The figure below shows the extension of permanent grassland in BW, the area covered by the RB-AEM and the level of payment over the years. However, it is important to note that FAKT-B3 is not EUR 170-200/ha higher than the MEKA-B4's as the figure seems to suggest. This is due to the fact that FAKT-B3 cannot be combined with other agri-environment measures as MEKA-B4. As many farmers with species-rich grassland apply to the agri-environment measure targeting extensive grassland management (FAKT B1), which is rewarded with EUR 150/ha, the FAKT-B3 payment of EUR 230-60/ha is only EUR 80-110/ha higher than that, i.e. the payment is EUR 20-50/ha higher than the MEKA-B4 one.



Source: data from MLR, EU DG Agriculture and Statistische Landesamt Baden-Württemberg (http://www.statistik.baden-wuerttemberg.de/UeberUns/Profil)

1.5 Other impacts

In general, RB-AEMs allow greater flexibility than AB-AEMs to farmers as they do not require farmers to adopt a specific set of management practices as AB-AEMs do, and as a result they can stimulate innovation. Farmers participating in MEKA-B4/FAKT-B3 are encouraged to

choose optimal mowing dates and the amount and type of fertilisers in order to ensure biodiversity conservation with the maximum possible grassland productivity.

Another impact of RB-AEMs is increased awareness of the importance of species-richness among farmers. In fact, before MEKA-B4/FAKT-B3, species-richness was a consequence, and not an objective of extensive farming. In many cases, farmers involved in MEKA-B4/FAKT-B3 have acquired more knowledge on the impact of their farming practices on grassland biodiversity and on the species composition of their grassland over time.

In addition, MEKA-B4/FAKT-B3 plays an important role in raising awareness among society in general on the importance of species-rich grassland and on the key role played by farmers in its conservation (see Section 2 below).

2 Stakeholder engagement

As explained above, MEKA-B4 was originated by a proposal from three experts in grassland biodiversity (Bronner et al. 1997), who were inspired by a similar measure in place in Switzerland. Dr. Briemle (LAZBW) led the work of a team of experts who prepared the list of 28 key indicator species/taxa of wildflowers (Briemle and Oppermann 2000).

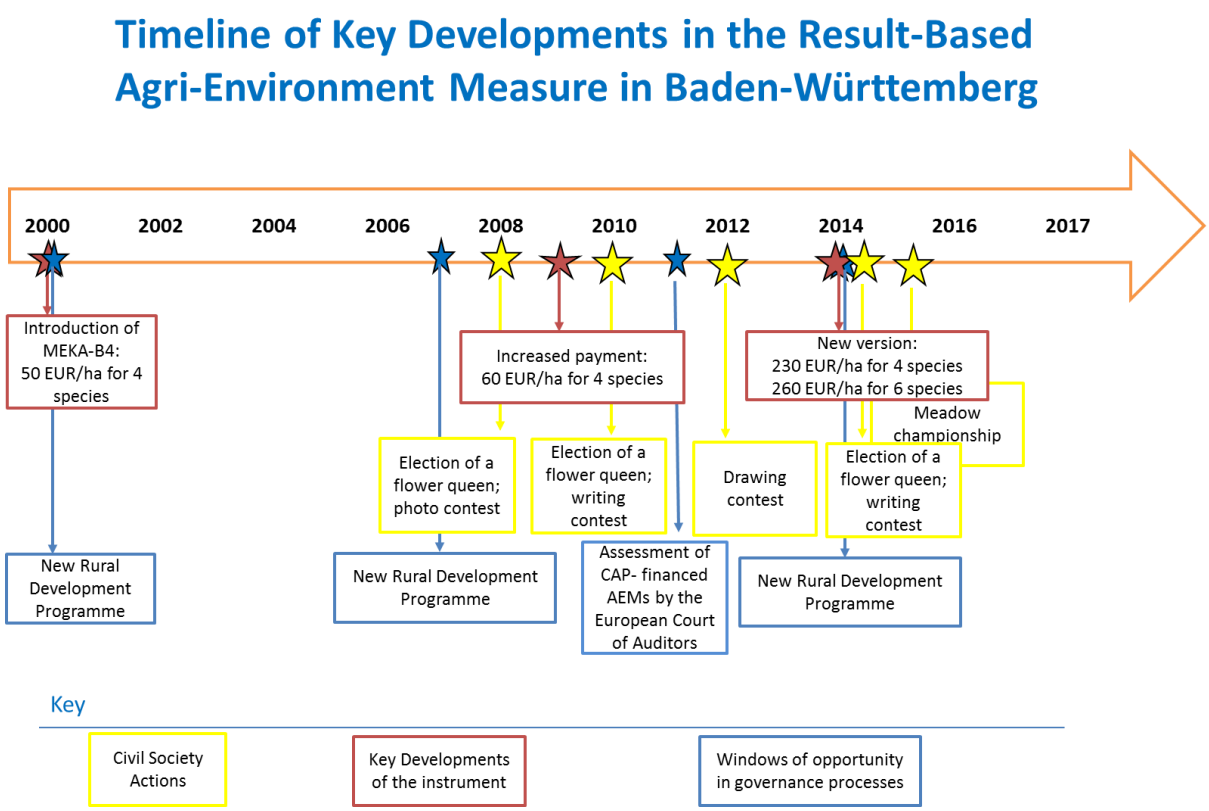
The instrument has been welcomed by farmers with extensively managed grassland, especially those who needed some support to make their activity economically sustainable. However, many farmers complained about the low payment provided by MEKA-B4 (Matzdorf and Lorenz 2010; Russi et al. 2016). The higher payment of the current programming period could potentially increase the buy-in of farmers with higher opportunity costs, but some experts argue that it is not enough to increase the buy-in of farmers. Moreover, the new requirements in terms of documentation may reduce the participation of farmers (Oppermann R., personal communication, 27 June 2016). This will need to be assessed in the coming years by future research.

Societal engagement played a key role in the increase of the payment in the 2014-2020 programming period. In fact, an initial version of FAKT-B3 consisted of a stand-alone measure with a payment at EUR 200/ha. However, the NGO Blumenwiesen-Alb e.V., which brings together different stakeholders interested in the conservation and promotion of species-rich grasslands and related cultural landscapes[2], prepared a letter in autumn 2014 to ask for a higher payment. Two representatives of the NGO view had a discussion with the MLR in which they argued that the originally planned EUR 200/ha would be only EUR 50/ha higher than FAKT-B1, the measure to which most of the farmers with extensively managed grassland apply (EUR 150/ha). Since in this new programming period payments from different measures cannot be combined, the additional income for farmers applying to FAKT-B3 would have been only EUR 50/ha (i.e. a lower payment compared to the previous version of the result-based agri-environment measure MEKA-B4, which was EUR 60/ha and could be combined with other measures). As a result of the letter and the meeting, the payment was increased to EUR 230-260/ha (which is still considered too low by Blumenwiesen-Alb e.V).

[2] Blumenwiesen-Alb e.V is a NGO active in the Swabian Jura mountains, which forms one of the largest mountain ranges with species rich meadows in Baden-Württemberg (and in Germany) (see www.blumenwiesen-alb.de).

Initiatives from civil society play an important role in motivating farmers and spreading awareness of the importance of species-rich grassland. For example the meadow championships organised with support of the MLR by IFAB and a number of NGOs[3] as well as by some other regional initiatives (Oppermann and Liesen 2015; Oppermann et al. submitted). These initiatives rewarded farmers with the most species-rich and ecologically valuable meadows and with a high fodder value with various prizes like books, dinners, weekend trips, wellness and cultural activity coupons. Three flower queens have been elected since 2008 who participate in various public events to help raise awareness on the importance of species-rich grasslands. In addition, regular activities are organised by Blumenwiesen-Alb (e.g. a photo contest in 2008, a writing contest in 2010, a drawing contest in 2012 and a meadow championship in 2015).

The evaluation of the RB-AEM in place in BW has been carried out by external experts including Krismann and Oppermann (2003), Krismann et al. (2006), Matzdorf and Lorenz (2010) and Russi et al. (2016).



3 Windows of opportunity

As for any CAP-financed AEM, a key window of opportunity is represented by the preparation of new Rural Development Programmes (RDPs) by the EU Member States or regions (in case

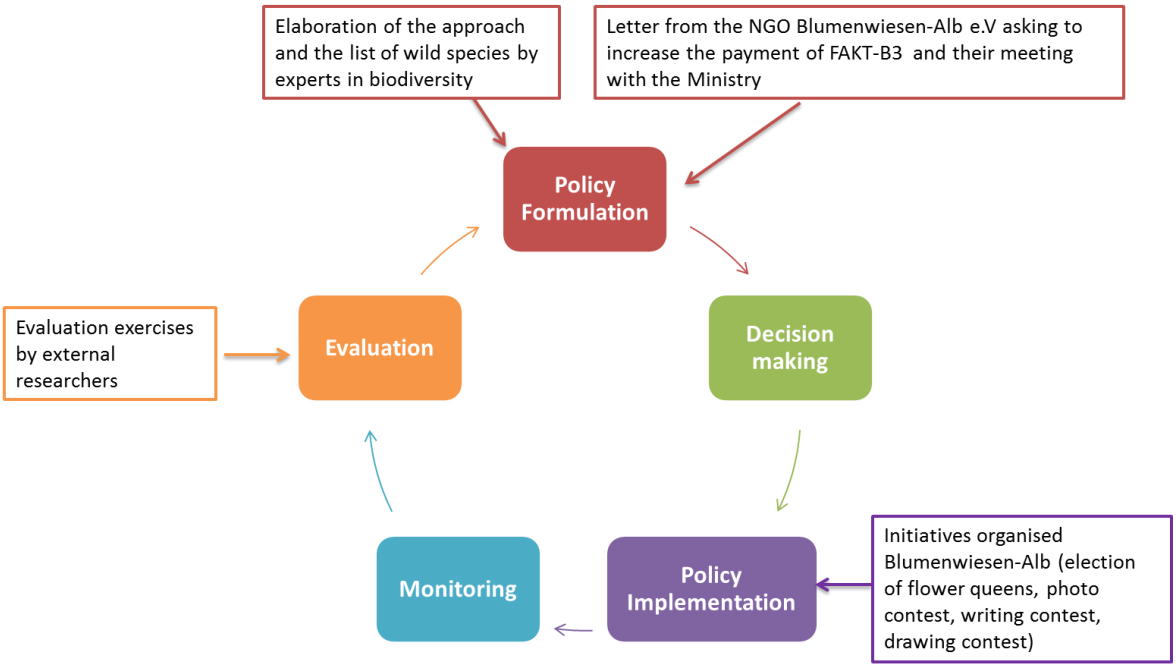
[3] See www.wiesenmeisterschaften-bw.de.

of decentralised countries). RDPs are prepared for each five year programing period (the current period covers the years between 2014 and 2020) and detail the contents of the AEMs.

As explained above, the window of opportunity of the preparation of the 2000-2006 RDP was used by the team of biodiversity experts to propose the use of a RB-AEM to protect species-rich grassland in BW. The development of the RDP for the years 2014-2020 allowed the payment to be increased.

An important window of opportunity for the discussion on a more extended use of RB-AEMs in the EU was represented by the increased interest of experts and managing authorities on ways to increase the cost-efficiency, effectiveness, conditionality and additionality of CAP-financed AEMs. An important role in this process was played by an assessment of AEMs by the European Court of Auditors (2011), which criticised the unclear objectives and low level of monitoring found in many AEMs. Subsequent efforts to improve efficiency (e.g. by increasing the use of RB-AEMs) may have been partly as a result of this criticism.

Civil society engagement with the result-based agri-environment measure in Baden-Württemberg



4 Insights into future potential/reform

4.1 Actual planned reforms and stakeholder engagement

There are no reforms planned at the moment.

4.2 Suggestions for future reforms – instrument design and civil society engagement

In order to avoid a decrease in farmer participation, it is crucial that the payment rate for RB–AEMs be periodically revised, in order to be sure that it still covers at least part of the opportunity costs, which may increase over time as happened in BW due to changes in the level of public subsidies for biogas production, or changes in market conditions. This should be done taking into account information on costs, revenues and opportunity costs associated with extensive agricultural practices provided by farmers, farmer associations and NGOs.

The uptake of the measure could be increased with a rise in the payment levels or by allowing the RB-AEM to be combined with other AEMs. In addition, the obligation to indicate the indicator species in the electronic form should be revised, as it imposes an additional burden to farmers (even if they are sure that their grassland contain the minimum number of species they often face problems in identifying them and also are concerned about making mistakes and risking sanctions by control bodies). Oppermann and colleagues suggest that a self-declaration by farmers of the presence of at least 4-6 species on their land should be enough without asking them to specify which species, which can be quite complicated for an individual farmer to assess. A share of the fields (around 5%) are checked, however, to verify that the farmers have the required number of species.

Finally, farmers would benefit from more advisory activities and publicity on species-rich grassland by the managing authorities.

4.3 Suggestions for replicability

The RB-AEMs in BW can be usefully replicated in similar contexts, i.e. areas where species-rich grassland need to be maintained. In fact, this kind of RB–AEMs is a good option to protect species-rich grassland, as it can be based on indicators that are relatively stable over time and mainly sensitive to factors that can be influenced by farmers (grass cutting dates, fertilizer type and amount). The use of this kind of RB–AEMs could be usefully extended in the EU because they are able to ensure high conditionality and improve farmers' motivations and environmental awareness. Interestingly, the risk of non-compliance due to factors outside the farmer's control (e.g., weather conditions), which seems to be one of the reasons for the limited use of RB–AEMs in the EU, is very low (Matzdorf and Lorenz 2010; Russi et al. 2016).

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