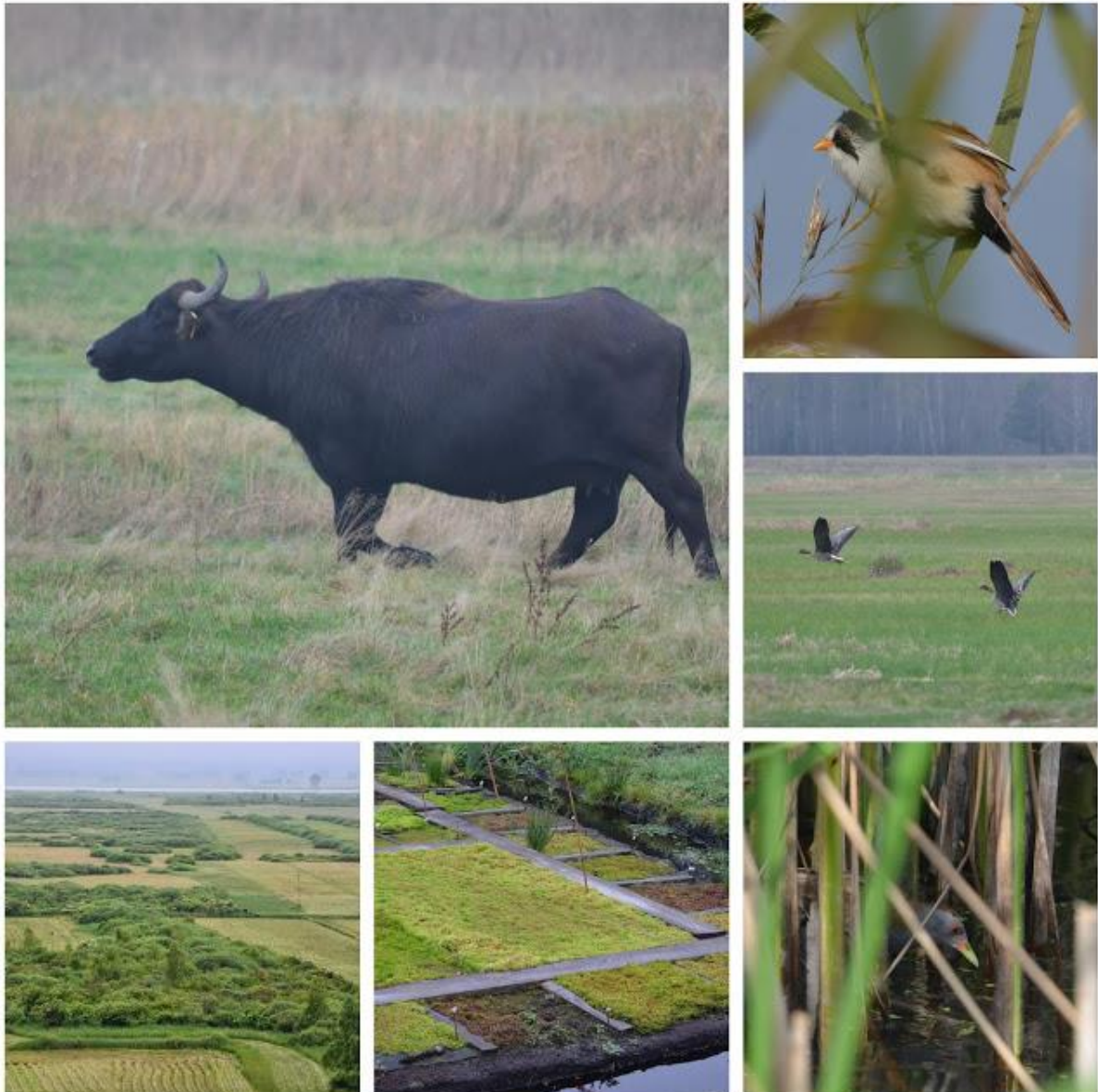


## ***Proposal for new packages of agri-environment-climate payments for water retention and paludiculture***



**Contractors:**

**Preparation of the study:**

*Marek Jobda*

## Table of contents

1. Introduction .....	3
2. Justification of the need for new provisions .....	3
3. Agri-environmental and climatic measures to support water retention, in other countries.....	6
4. Legal conditions for preparing new packages .....	7
5. Proposals for amendments.....	9
6. English Summary .....	14

## 1. Introduction

The study titled "Proposals for new packages of agri-environment-climate payments (PRŚK packages)" is implemented as part of the project "Development of Sustainable (adaptive) peatland management by Restoration and paludiculture for nutrient retention and other ecosystem services in the Neman River catchment". It was prepared under contract of the Polish Society for the Protection of Birds (OTOP) and includes guidelines for the preparation of new agri-environment-climate measures (AECS) or modifications of the existing ones in the field of water management and paludiculture.

## 2. Justification of the need for new provisions

### Justification - retention packages

Environmental benefits associated with water retention are very important and meet the need for our country to achieve goals related to both combating climate change and protecting biodiversity, reducing nutrients in the water. Floodplains in river valleys belong to key flora and fauna refuges, as well as important sites for rare and threatened birds. Floodplains also play a very important role in water retention, acting as natural buffers, where water may accumulate during high river levels. Important benefits include:

- preventing drought, by improving water retention. Such actions are extremely important in the context of climate change and the progressive decline of the country's water resources and complement well national initiatives such as the Drought Action Plan;
- reduction of CO<sub>2</sub> emissions from drained, degraded peatlands, or even the accumulation of carbon on rewetted peatlands, and thus the reduction of the negative impact of climate change. Such actions may support Poland's compliance with climate commitments, regulated, among others in the EU's climate and energy policy until 2030;
- protecting biodiversity by maintaining or restoring wetland habitats important for many plant and animal species including protected at national and European level. This will support, among others, the fulfilment of Poland's obligations related to the implementation of the Birds and Habitats Directives.
- retaining (phosphorus) and eliminating (nitrogen) nutrients and other pollutants and by that improvement of water quality meeting the demands of the „Convention on the Protection of the Marine Environment of the Baltic Sea Area”

The need to introduce better provisions concerning the regulation of water management in agriculture was repeatedly signalled during previous programming periods of the Rural Development Programme (RDP). It was stressed that not only water retention itself is important but also that adequate humidity of meadows and pastures is crucial for protection of species and habitats occurring there. So far, appropriate measures supporting water retention, under the so-called "water package", have not been implemented under agri-environment-climate measures (AECS). This is due to a number of constraints that hinder the development of such a package, including:

- the impact of the measures outside the farmer's land - water accumulation affects not only the land plot where the agri-environment-climate measures (AECS) are implemented, but also neighbouring land plots, including other agricultural holdings (especially in the case of land fragmentation),
- the need to implement actions on the land of other entities - improving the moisture content of an agricultural land parcel, or water retention within it, requires actions to be taken on drainage ditches, which often do not belong to a farmer interested in the implementation of the agri-environment-climate measures (AECS),
- requirements resulting from the Water Law Act - many retention activities require a water law permit, which is an additional obstacle in their implementation,
- investment measures - support for water retention or improvement of the moisture content of an agricultural land parcel requires undertaking investment measures (e.g. construction of water damming valves), which go beyond what can be financed under the AECS.

It is worth noting that the above limitations may be significantly minimised, among other things, by simultaneous introduction of the so-called "Community" package enabling the planning of activities within the framework of the AECS on a larger area belonging to several entities, as well as by basing retention activities on non-investment activities.

#### Justification – paludiculture

Paludiculture, also called wet peatland agriculture, is a way of using wet and rewetted peatlands, which on the one hand gives the possibility of obtaining biomass (as in traditional agriculture), and on the other hand supports the reduction of carbon dioxide emissions, water and nutrients retention. It includes the cultivation of plants such as reeds (*Phragmites australis*), cattails (*Typha spp.*) and peatmosses (*Sphagnum spp.*), and the grazing of animals such as water buffaloes (*Bubalus bubalis*). All these forms of use require the maintenance of peatlands in state close to natural or the re-wetting of drained peatlands. Therefore, paludiculture, although it should be considered in economic terms as

one of the forms of agricultural use, is also of great importance in the protection of natural resources and mitigation of the impact of climate change.

The main benefit of paludiculture implementation is the economic viability of biomass, thus supporting national agricultural development objectives and supporting the potential of local farmers, while ensuring the preservation or restoration of wetland habitats - which are of exceptional ecological importance and, at the same time, a strongly declining ecosystem type.

Among the environmental effects of the implementation of paludiculture, are:

- reduction of CO<sub>2</sub> emissions from drained, degraded peatlands, or even carbon accumulation on rewetted peatlands, thus reducing the negative impact of climate change;
- counteracting drought and reducing flood risk by increasing water retention;
- reduction of loads of nutrients to open waters by reduced decomposition of the peat after rewetting, by filtering inflowing waters and by export of nutrients with the harvested biomass;
- protecting biodiversity by maintaining or restoring wetland habitats important for many plant and animal species.

However, when analysing the environmental effects of the implementation of the above mentioned measures, potential risks should also be taken into account. This risk may concern the intensification of the use of ecosystems, which currently have high natural values. Therefore, to minimize this risk, paludiculture should be implemented only on re-wetted, formerly drained and degraded, peatlands.

Both paludiculture and the needs for drought control, biodiversity conservation, nutrients retention and finally maintaining the productivity of permanent grasslands require appropriate water conditions. So far, there are no AECS packages, or requirements in these packages, for improving water conditions. These requirements are limited to prohibiting *'the establishment of new, expansion and reconstruction of existing drainage systems, with the exception of the construction of facilities for the adaptation of water levels using existing drainage systems to the requirements of the habitat species/land areas (...).'* ( RDP 2014-2020). Therefore, according to these provisions, the improvement of water conditions is at most permissible.

### 3. Agri-environment-climate measures supporting water retention - an overview of solutions available in other countries

Although the provisions of the agri-environmental climate schemes were prepared independently, their requirements are very similar in different EU Member States. This is probably due to similar environmental problems in individual countries and similar conditions of implementation of this instrument. Paludiculture, due to its innovative character, has not been so far supported directly by agri-environmental measures. However, in various countries there are provisions supporting the maintenance of wetlands in rural areas.

One of the simplest solutions, often used in different countries, is to establish buffer zones around wetlands. Their function is, among other things, to limit the flow of nutrients and plant protection products into peatland or other sensitive areas. In this case, it is not so much the use of wetlands that is supported, but the zones around them. This solution is used, among others, in Hungary or Finland. In the case of the latter country, measures of this type are supported, among others, by using another instrument of RDP - "non-productive investments", which provided more possibilities to support areas not directly related to agricultural production.

An interesting solution is to support the establishment of new constructed wetlands, which is available, among others, in Sweden, as part of the local agri-environmental programme<sup>1</sup>. Their purpose is, amongst others, to limit the runoff of biogenic elements from the fields and thus prevent eutrophication of the Baltic Sea waters, which is in line with the provisions of the Water Framework Directive (EU 2000/60/EG). The wetlands created by farmers are between 0.5 to 1 hectare in size and are fed with water flowing from the surrounding agricultural areas and partly left for spontaneous plant succession. The subsidies compensate farmers for both the establishment and maintenance of these wetlands. Similar solutions exist in Denmark and Finland, for example<sup>2</sup>.

In Denmark, wetland maintenance is financed under the AECS. It is assumed that this payment compensates for losses due to abandonment or extensification of land use due to excessive water level rise. What is worth noting is the duration of the commitment - it has been extended to 20 years

---

<sup>1</sup> Hansson, A., Pedersen, E., & Weisner, S. E. (2012). Landowners' incentives for constructing wetlands in an agricultural area in south Sweden. *Journal of environmental management*, 113, 271-278.

<sup>2</sup> Zandersen, M., Bråten, K. G., & Lindhjem, H. (2009). Payment for and management of ecosystem services. Nordic Council of Ministers.



(as allowed by EU regulations<sup>3</sup>), in order to ensure better environmental performance and the possibility of long-term funding for farmers who have undertaken such measures. The amount of payment depends on the type of land flooded with water (the lowest in so-called natural areas and the highest in orchards). Additionally, other commitments can be implemented in the same places, e.g. concerning the use of meadows or pastures<sup>4</sup>.

One of the most interesting solutions in terms of financing improvements in water relations is the AECS package in Brandenburg (Germany), which aims to reduce greenhouse gas (GHG) emissions from agriculturally used peatlands. Farmers regulate the water level at the flow from a weir or culvert to keep groundwater at 10 cm below the ground. This level ensures a reduction in CO<sub>2</sub> emissions and can be reduced (up to 30 cm) between 1 June and 15 October. In addition, as part of technical assistance (also from RDP funds), advice is financed which, among other things, helps farmers to obtain a water-legal permit<sup>5</sup>.

#### 4. Legal conditions for preparing new packages

The proposed amendments are based on the provisions of the proposed Regulation (EU) No 2018/0216 of the European Parliament and of the Council laying down "provisions for support under the strategic plans drawn up by the Member States in the framework of the common agricultural policy (CAP strategic plans), financed by the European Agricultural Guarantee Fund (EAGF) as well as the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulation (EU) No 1305/2013 along with Regulation (EU) No 1307/2013 of the European Parliament and of the Council"<sup>6</sup>.

According to Article 5 of the abovementioned draft regulation, 'support from the EAGF and the EAFRD shall be aimed at further improving the sustainable development of agriculture, food and rural areas' and shall contribute to achieving, amongst others, the following general objective: "enhancing environmental protection and climate action in order to contribute to EU environmental and climate objectives". The general objectives should be achieved by pursuing specific objectives (listed in Article 6), including:

- "contributing to mitigating and adapting to climate change and using sustainable energy",

---

<sup>3</sup> ROZPORZĄDZENIE PARLAMENTU EUROPEJSKIEGO I RADY (UE) NR 1305/2013 z dnia 17 grudnia 2013 r. w sprawie wsparcia rozwoju obszarów wiejskich przez Europejski Fundusz Rolny na rzecz Rozwoju Obszarów Wiejskich (EFRROW) i uchylające rozporządzenie Rady (WE) nr 1698/2005

<sup>4</sup> Wichmann, S. (2018). Economic incentives for climate smart agriculture on peatlands in the EU. Institute of Botany and Landscape Ecology, University of Greifswald Partner in the Greifswald Mire Centre.

<sup>5</sup> Wichmann 2018

<sup>6</sup> <https://eur-lex.europa.eu/legal-content/PL/TXT/HTML/?uri=CELEX:52018PC0392&from=EN>

- "promoting sustainable development and the efficient use of natural resources such as water, soil and air",

- "contributing to the conservation of biodiversity, the enhancement of ecosystem services and the protection of habitats and landscapes".

The agri-environmental and climatic measures (AECS) were included in Article 65 of the above mentioned draft regulation. They only provide payments that go beyond obligations under national and EU law, including those collected in standards of good agricultural and environmental condition (GAEC) and minimum requirements for the use of fertilizers and plant protection products and animal welfare. These payments relate to measures going beyond normal agricultural practices (in accordance with Article 4(1)(a)) and differ from the obligations under Article 28 (EcoSchemes).

In accordance with paragraph 6 of Article 65, the payment shall be granted annually and shall compensate for costs incurred and income foregone by the beneficiary. "Where necessary", such payment may also cover transaction costs. Commitments are made for a period of 5 to 7 years (paragraph 8). The commitment period may be extended or shortened in justified cases.

The application of Article 65, the draft regulation in question, concerns not only AECS, but also payments for organic farming, forest-environmental and climate services. For all these interventions, payments per hectare should be established (paragraph 9).

According to paragraph 7, of the abovementioned Article, 'Member States may promote and support collective and result-based payment schemes in order to encourage farmers to make significant improvements in the quality of the environment on a larger scale'.

Paludiculture and other actions aimed at improving water conditions may also be supported under ecoschemes. Ecoschemes are included in Article 28 of the above mentioned draft regulation and are intended to support persons 'actually engaged in farming' who undertake to implement on 'eligible hectares' agricultural practices beneficial for the climate and the environment (paragraph 2).

In accordance with the above, lists of climate- and environmentally friendly agricultural practices meeting the specific objectives discussed above (paragraphs 3 and 4) should be established. Ecoschemes only apply to payments going beyond national and EU law obligations: including those collected in GAEC standards and minimum requirements for the use of fertilisers and plant protection products and animal welfare. These payments concern measures going beyond usual agricultural practices (according to Article 4(1)(a)) and differ from the obligations under Article 65.

Support for ecoschemes is an annual payment, per eligible hectare, and is additional to area payments (paragraph 6). The interventions covered by them must be compatible with those implemented under Article 65 of the draft regulation (paragraph 7).



In addition, according to Article 68 of the draft regulation, support may be granted for non-productive investments related to the achievement of environmental and climate goals. In accordance with the mentioned article, support is also provided for consultancy and knowledge exchange. All these instruments can be very useful for financing paludiculture and actions to improve water relations.

The provisions of the AECS packages related to water management should be consistent with the Water Law Act (Journal of Laws 2017, item 1566)<sup>7</sup> regulating water management. The provisions of this Act may also be a potential limitation or impediment to the implementation of certain activities, especially those of an investment nature. However, not all activities related to damming up water require a water law permit. According to Art. 395 of the Water Law Act, "A water permit or a water law notification is not required (...) to retain water in ditches if the range of impact does not exceed the boundaries of the area the plant owns". However, Art. 394 of the same act states that "the water-law notification requires (...) reconstruction of a ditch consisting in making a culvert or other closed section on a length not exceeding 10 m". Therefore, at least some damming up of water in ditches is possible without a water-law permit. Such activities are mostly of an investment character, although they do not always involve the spending of significant resources<sup>8</sup>.

The provision of the amended Water Law Act, which may be particularly applicable in the case of some of the AECSs proposals, is Art. 196, which states that 'in order to ensure access to information on water drainage facilities and on drained land, a register of water drainage facilities and drained land shall be kept, hereinafter referred to as a 'water drainage register''. According to the quoted Act, the unit responsible for the records of water drainage is State Water Management Company Wody Polskie (PGW WP).

## 5. Proposals for amendments

### Records concerning paludiculture

Paludiculture has great development potential, but is still rather 'experimental', with few good examples of long-term initiatives in some countries, mainly in Western Europe. It is still not implemented on a larger scale in Poland. Local activities, such as reed harvesting, are the exception. In the case of reed production, there is a developed market for reed and this industry has been operating for many years. However, there is currently no market for many of the potential paludicultural

---

<sup>7</sup> <http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20170001566/U/D20171566Lj.pdf>

<sup>8</sup> <https://www.kp.org.pl/pdf/poradniki/antymeliora-cje.htm>

products. This also applies to large scale mown perennial meadows, which are valuable in nature. Despite attempts, there is currently no stable market for hay from late mown grasslands. Their use, e.g. in a manner conducive to the protection of bird habitats, requires continuous subsidisation, e.g. within the framework of the AECS packages. The development of both their supply (including processing) and demand requires large financial outlays, which in the future may result in stable development of this industry.

At present, due to the still limited experience of paludiculture implementation, the limited current possibilities for its larger scale implementation and the arguments cited above, it appears that support for paludiculture in the framework of the AECS should not be based on a separate package, but on a series of 'small regulations'. These "small regulations" would mean provisions in other packages that would create space for easier implementation of any new paludicultural initiatives developed in the new funding period in Poland. The proposed set of regulations is discussed below.

1. Paludiculture is to be considered as an alternative use in the AECS packages on permanently wet extensive grasslands.

In this case, the carrying out of paludicultural use may be an acceptable extension of the hay use, as required in the package, with similar environmental benefits. Such a solution could, for example, be applied in the case of the package, under the framework of the RDP 2014-2020, called "Extensive use in Special Bird Protection Areas (SPAs)". Its implementation is not linked to specific criteria on the natural value of a given grassland use. The package provided for mowing between 15 June and 30 September, no more than two mowings per year<sup>9</sup>. In this case, the proposal of the record is: "*mowing between 15 June and 30 September, no more than two swaths per year or use in accordance with paludiculture requirements*" (and paludiculture requirements need to be specified in proper clause of the regulation). Both forms of use would have a similar environmental effect and the introduction of such a provision would not restrict the development of paludiculture where such a AECS package is implemented or even provide additional financial support. However, as some forms of paludiculture may pose a threat to valuable natural habitats, such a provision should not apply to packages dedicated to the protection of specific habitats or species. Additionally, in the case of Natura 2000 areas, compliance with the provisions of the Protection Management Plans should be required, which would limit the risk of negative impact of such use on the protected areas.

2. Entries in the list of crops qualifying for the single area payment.

---

<sup>9</sup> Pełne wymogi na:

[https://www.arimr.gov.pl/fileadmin/pliki/PROW\\_2014\\_2020/RoIno\\_srodowiskowo\\_klimatyczny/a/prsk\\_pakiet4.pdf](https://www.arimr.gov.pl/fileadmin/pliki/PROW_2014_2020/RoIno_srodowiskowo_klimatyczny/a/prsk_pakiet4.pdf)

Other area payments, including the single area payment (SAPS) or organic farming, may provide additional support for the implementation of paludiculture. For these payments to be possible, crops specific to paludiculture, i.e. cattail, peatmoss, reed should be included in the list of crops eligible for SAPS<sup>10</sup> and in the list of crops eligible for the ecological payment<sup>11</sup>. These crops should also be included in other plant lists if they are linked in the future to area-specific payments: e.g. for integrated or sustainable agriculture.

### 3. Provisions on pasture use.

Grazing is not only the form of paludiculture, but also an interesting alternative to the use of valuable wetland habitats<sup>12</sup>. However, currently, for some of the AECS natural habitats, grazing is not allowed<sup>13</sup>, which excludes the use of these areas for grazing. After a careful analysis of the impact of this grazing on individual habitats, it is worth considering the possibility to allow grazing under certain circumstances, i.e. with a stocking density that would not have a negative impact on valuable plant communities.

For other variants, where current pasture use is allowed, exceptions are possible, e.g. for the length of the pasture season, as currently foreseen for Polish horses or Hucul horses<sup>14</sup>, if the specific use of these animals so requires.

### 4. Provisions on the use of 'wet' biomass for composting and mulching.

The factor limiting the development of paludiculture, or simply the use of wet meadows, valuable in nature, is the demand for biomass obtained there. Hay from late mowing meadows has limited fodder applications, and there are big problems with energy use. Therefore, all measures to increase the demand for this biomass should be supported, thus supporting the market for paludicultural products. One of the uses of such biomass, obtained from naturally valuable wet meadows, is composting<sup>15</sup>. Although it is difficult to use the compost prepared in this way, e.g. when spreading it using traditional agricultural equipment<sup>16</sup>, it should be supported under the AECS (or EcoSchemes). One way of such support is to derogate from restrictions on fertilisation of crops (e.g. related to the

<sup>10</sup> [https://www.arimr.gov.pl/uploads/media/Zalacznik\\_do\\_Instrukcji\\_nr\\_18.12\\_Wykaz\\_upraw.pdf](https://www.arimr.gov.pl/uploads/media/Zalacznik_do_Instrukcji_nr_18.12_Wykaz_upraw.pdf)

<sup>11</sup> <http://podr.pl/wp-content/uploads/2017/04/Wykaz-ro%C5%9Blin-obj%C4%99tych-p%C5%82atno%C5%9Bci%C4%85-ekologiczn%C4%85-%E2%80%93-od-kwietnia-2017.pdf>

<sup>12</sup> Tanneberger, F. & Kubacka, J. (eds) (2018) The Aquatic Warbler Conservation Handbook.

Brandenburg State Office for Environment (LfU), Potsdam

<sup>13</sup>

[https://www.arimr.gov.pl/fileadmin/pliki/PROW\\_2014\\_2020/Rolno\\_srodowiskowo\\_klimatyczny/a/prsk\\_pakiet4.pdf](https://www.arimr.gov.pl/fileadmin/pliki/PROW_2014_2020/Rolno_srodowiskowo_klimatyczny/a/prsk_pakiet4.pdf)

<sup>14</sup> J.w.

<sup>15</sup> [https://bagna.pl/images/biblioteczka/studium\\_zagospodarowania\\_biomasy\\_z\\_poznego\\_koszenia.pdf](https://bagna.pl/images/biblioteczka/studium_zagospodarowania_biomasy_z_poznego_koszenia.pdf)

<sup>16</sup> [https://www.gdos.gov.pl/files/aktualnosci/49107/Poradnik\\_wersja\\_elektroniczna.pdf](https://www.gdos.gov.pl/files/aktualnosci/49107/Poradnik_wersja_elektroniczna.pdf)

implementation of agri-environmental commitments) when using such compost. In addition, hay harvested from meadows gives good results in mulching of soils on arable land<sup>17</sup> (providing soil cover, e.g. to protect against erosion during the season without cultivation, enrichment with humus, water retention and limiting the development of weeds). Mulching with biomass from valuable natural wet meadows may be favoured in the AECS (or ecoschemes), e.g. by increasing payments for organic farming. Another, just upcoming potentials of utilisation of haylike biomass are packaging and construction materials.

#### 5. Provisions on investment and support.

In order to ensure the development of paludiculture, not only AECS payments will be crucial, but also payments based on Article 68 of the proposed Regulation (EU) No 2018/0216 of the European Parliament and the Council, which should concern investments in appropriate machinery, construction of stacking equipment, market or advisory support. These actions go beyond the scope of this study.

#### **Provisions on water retention**

Floodplains are characterised by high variability in water level, both during and between years. The dominant forms of use in these areas are perennial meadows and pastures. In some years, high water levels prevent agricultural use, while in others meadows can be mown early and up to the riverbed itself. Unpredictability of conditions makes it difficult for farmers to undertake 5-year agri-environmental commitments (mowing is not possible every year), which limits their interest in the AECS packages. Due to the importance of floodplains for the environment and the risk of changes in their use (e.g. related to the construction of embankments and changes in land use), it is important to develop a specific package for SFD.

Therefore, two alternative solutions for floodplains (or areas with periodic excess of water) are proposed - the "high water" package and the "low retention" package.

#### **„High Water” Package**

The "High Water" package supporting extensive use of wet meadows (e.g. mowing after 1 June) is similar to the current "Extensive use in Special Bird Protection Areas (SPAs)"<sup>18</sup>. However, in contrast, in two out of five years, it would be possible to leave the meadow unmown due to the high water level.

---

<sup>17</sup> Jodaugienė, D., Pupalienė, R., Sinkevičienė, A., Marcinkevičienė, A., Žebrauskaitė, K., Baltaduonytė, M., & Čepulienė, R. (2010). The influence of organic mulches on soil biological properties. *Zemdirbyste-Agriculture*, 97(2), 33-40.

<sup>18</sup> [https://www.arimr.gov.pl/fileadmin/pliki/PB\\_2018/WPRE/PRSK/Pakiet\\_4\\_i\\_5.pdf](https://www.arimr.gov.pl/fileadmin/pliki/PB_2018/WPRE/PRSK/Pakiet_4_i_5.pdf)

Implementation of the package should be limited to floodplains. In order to simplify the implementation of such a package, these may be pre-determined areas on a national scale. As for the other requirements, it would be consistent with the requirements of the current "Extensive Use" package, except that its implementation would not be limited to Natura 2000 sites.

This can be done using the currently existing ISOK<sup>19</sup> (National IT System for Flood Protection) flood risk map showing, among other things, areas at risk of flooding with a high probability of 10% (i.e. once every 10 years). However, any solutions based on a pre-prepared map represent a certain simplification which may result in some people being overly favoured (e.g. ensuring payments despite the lack of flooding) and be detrimental to others (no payments despite flooding). Therefore, alternatively, a more precise approach is proposed, although requiring slightly more advanced organisational solutions. Instead of a separate 'High Water' package, it is possible to derogate from the requirements for use in areas that are flooded (or excessively flooded) in a given year. This would give an impression of the AECS packages to farmers who are afraid of making commitments in places that are difficult to manage, and would also encourage the use of environmentally valuable wetlands. In this case, areas covered by water, where exceptions are possible in a given year, would be indicated by the competent authority (e.g. ARiMR), for example on the basis of data from the Sentinel satellites supervised by the European Space Agency<sup>20</sup>, which provide frequently updated coverage pictures.

### **The water package - "Low Retention"**

The construction of valves is associated with various financial and organizational difficulties (related to the impact on land of different properties and the need for appropriate permits), and those built in the past often do not work properly (water is not collected in them due to lack of service or poor technical condition). An additional obstacle limiting the construction of new damming facilities is the reluctance of farmers who own adjacent agricultural land plots and fear that their land will be excessively flooded. It is therefore proposed to introduce a financial incentive to overcome the reluctance of farmers whose land is affected by functioning damming equipment. They would be paid for the ecosystem service of water retention on their land.

According to the Water Law Act<sup>21</sup> (art. 196), the State Water Management Company Wody Polskie (PGW WP) is responsible for registering water drainage facilities and drained land. Therefore, the above mentioned records could constitute a basis for the assessment of which agricultural land parcels may be affected by water damming facilities. Farmers managing these land could receive an additional

---

<sup>19</sup> <http://mapy.isok.gov.pl/imap/>

<sup>20</sup> <https://sentinel.esa.int/web/sentinel/home>

<sup>21</sup> <http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20170001566/U/D20171566Lj.pdf>

payment to compensate for difficulties related to excess water in the vicinity of these facilities. This payment could take the form of an easy-to-implement ecoscheme (based on annual declarations by the farmers concerned) associated with the achievement of environmental objectives, by maintaining water on agricultural land. Therefore, the essence of this solution is not to support the construction of damming facilities, but to support areas where groundwater levels have been raised by these facilities. It would also be paid in a situation where, due to low water levels, areas would not be flooded in a given year.

Alternatively, this payment could apply to all flooded areas, regardless of the factor causing the flooding, i.e. also those flooded by beaver activity or other natural causes. On the other hand, the basis for the eligibility of the land could also be the analysis of current remote sensing images, e.g. from the Sentinel<sup>22</sup>.

## 6. English Summary

### Background

So far, there have been no measures specifically supporting paludiculture and no measures strictly promoting high water levels in the Polish RDP. Among the AES requirements, there were provisions regulating the obligation of “no deterioration of water regime”, but there were no requirements for their improvement.

Future CAP should contain measures which can provide support for both paludiculture and the preservation of optimal water regime, including agri-environment-climate commitments (Article 65 of the proposal for a regulation COM (2018) 392<sup>23</sup>) and eco-schemes related to one-year commitments (Article 28). In addition, support is provided for non-productive investments linked to the specific environmental- and climate-related objectives (Article 68) and advisory and knowledge exchange (Article 68). Both payments can be especially useful on start-up phase of paludiculture initiatives or high water level management.

### Scheme for paludiculture

Paludiculture has great development potential, but is still rather a „testing phase”, with only few good examples of long-term running paludiculture initiatives from some countries, mostly in Western Europe. It is still not implemented in Poland at a larger scale (except for, only locally, reed growing).

---

<sup>22</sup> <https://sentinel.esa.int/web/sentinel/home>

<sup>23</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A392%3AFIN>



Consequently, there are only niche markets established for “processing” biomass from paludiculture right now in Poland.

Therefore, at this stage, support for paludiculture should not be based on a separate scheme, but rather integrated into other schemes by a number of „small” adjustments giving needed flexibility. This will create a space for new paludiculture initiatives being developed in a more easy way. The proposed set of regulations include:

A) Paludiculture should be treated as an alternative management with high water levels within extensive grassland schemes (with the exception of high-nature valuable grasslands); in this case, paludiculture could derogate from other requirements (e.g. grassland can be mown after 1<sup>st</sup> June or according to other needs of paludiculture management) and gives extra incentives for keeping high water levels by top-up payments.

B) Paludiculture plant species, i.e. cattails, sphagnum, reed, should be included in the list of cultures eligible for Single Area Payment (SAP), organic farming products and the list of crops related to the cultivation of sustainable agriculture (or integrated production).

C) Water buffalos grazing on wet grassland should be indicated as one of eligible management forms in the schemes for protection of valuable pastures.

D) The market for paludiculture biomass and biomass from nature-valuable late mown meadows should be supported, by allowing and incentivising its use in fertilization (e.g. compost) or mulching in prescription of agri-environment-climate schemes or eco-schemes for arable lands.

E) Investment scheme for supporting farmers in purchasing adapted agricultural machinery sluices for keeping water level high, biomass processing facilities, market access... to start-up paludiculture.

### **Water scheme**

Restrictions hindering the development of the provisions of the "water package" are:

- ✓ impact of these activities beyond the supported plot (especially in small farms),
- ✓ need for implementation of activities on lands of other ownership (ditches),
- ✓ requirements arising from the Water Law Act,
- ✓ the investment nature of activities (e.g. dams).

All these factors hampered the development of the water scheme in previous RDPs.

Water scheme – „high water”

Floodplains in river valleys are key birds sites, being very important also for other biodiversity and water retention – they often play the role of natural flood polders. Agricultural use of floodplains is restricted, especially at high water levels. Periodic difficulties in the perennial wet grassland

management (in wet years) prevent farmers from undertaking 5-year agri-environmental commitments (mowing is not possible every year).

Due to the environmental significance floodplains and the risk of changes in their use (e.g. embankment):

- (1) a separate scheme should be developed for floodplains (HWS “High water scheme”). HWS should support the extensive use of meadows (e.g. mowing after June 1); and in two out of five years it would be possible to abandon the swath (due to high water). The implementation of HWS should be limited to floodplains (e.g. flood risk areas designated on the official map – eg. ISOK), or

- (2) it should be possible to skip mowing in flooded areas (or periodically covered by water). The areas covered by water should be indicated by the relevant authority (e.g. on the basis of Sentinel satellite data) in case of implementation of any grassland scheme.

#### **Water scheme – „small retention”**

The construction of small water retention devices (i.e. sluices) has a positive effect on both biodiversity and water levels. It is also associated with a reduction of CO<sub>2</sub> emissions in the case of drained peatlands, and thus also have a positive impact on the climate. The construction of sluices is difficult, and the old ones are often not working properly (water is not stacked in them). Introducing a financial incentive could help to overcome the reluctance of farmers whose parcels are adjacent to sluices that increase water in ditches and take part in the measure.

According to the Water Law Act (Art. 196), state administration (Wody Polskie) keeps records of water drainage facilities and their influenced areas. Farmers working on the above-mentioned areas could be supported by an additional payment compensating for temporary difficulties related to high water levels near water sluices (e.g. in the form of an easy-to-implement eco-scheme).

The essence of this solution is not to support construction of sluices, but areas where the groundwater level was raised by these constructions.

This payment may also concern areas flooded in other ways (e.g. by beaver dams) and may also be implemented based on e.g. satellite scanning of the current situation (e.g. on the basis of Sentinel satellite data).