THE WORLD BANK
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COMPLAINT (REQUEST FOR INSPECTION) FORM

To:

The Executive Secretary, The Inspection Panel, The World Bank, MSN: MC 10-1007
1818 H St., NW, Washington, DC 20433, USA. Fax: +1(202)-522-0916. Email: ipanel@worldbank.org

Section 1: Complaint

1. What harm do you believe the World Bank-financed project caused or is likely to cause to you or your community? Please describe in as much detail as possible.

Poland has a troubled record as far as compliance with the EU Framework Water Directive and the Habitats and Birds Directives is concerned. On 30 June 2016, the European Court of Justice found that Poland had infringed on the Framework Water Directive (Case C-648/13). The legal proceedings had been started by the European Commission. The Court ruled that the drainage and channelization projects conducted in Poland had caused ecosystems to deteriorate and that the effect on flood protection was dubious. Given this background, the new World Bank project no. P147460 needs to be examined thoroughly.

We do not believe that it is the World Bank's intention to devastate Poland's valuable natural sites of European importance with the present Project. We are convinced that your Bank consistently follows the principles of sustainable development in its projects and makes sure that the requirements laid down in the *Safeguards* are met.

We request that you suspend the implementation of the World Bank Project No P147460 with a view to enabling a public debate about its objectives and identifying solutions that will genuinely improve flood protection, while eliminating those which threaten to destroy valuable river ecosystems.

[redacted] we present to you the attached "Appeal by non-governmental organisations, scientists and local governments concerning the plans to develop inland water transport on Poland's rivers". (More in the appendix - the letter to the head of the World Bank in August 2016 and in the list of the group about 70 scientists and NGOs from 20

2. What is the name of the World Bank project? (If known)

   World Bank Project No P147460 – Odra-Vistula Flood Management

3. Where is the World Bank project located? (Please include country name)

   Poland, Odra and Vistula Basin

4. Do you live in the project area?
   Yes

5. Have you previously reported your concerns to World Bank management? If yes, please provide the details about those communications and explain why you are not satisfied with the Bank's action in response.

This is above, these are excerpts from a letter sent 3 years ago to Chief WB-Dr. Jim Yong Kim. No effect. The bad project is still going on. The World Bank sells only money, it does not improve flood safety. It improves the status of hydrotechnical lobby accounts. There is evidence today. The Polish Minister of Transport and Inland Navigation Marek Gróbarczyk, as a result of the resistance of the local community in Kotlina Kłodzka, withdrew from plans to build another 9 dry tanks. The construction of four dry tanks is still going on there, which also do not have much sense in terms of flood, ecological, economic and social

6. If known, please list the World Bank's operational procedures you believe have not been followed.

   1)Reliable and partner consultation with residents, NGOs and the public. What was an apparent, formal and hasty consultation
   2) No reliable cost-benefit analysis (flood-proof effects) has been performed. For example, the 4 dry tanks in the Kłodzko Valley, which are very costly and interfere in the environment, are to reduce the flood foe in Kłodzko City, by a maximum of 14 cm. But it even seems doubtful.
   3) No solid environmental impact assessment has been carried out for EU Natura 2000 sites, probably the authors have falsified the real threats, as we know from the German NGO expertise (BUND, DUH-Gerstgraser)

7. Do you expect any form of retaliation or threats for filing this complaint to the Inspection Panel?

I don't know. We speak hear about big many and people which live for this many from many years. This is III project WB in Poland. IN PCU in Wroclaw is the same people, which have good connections in Washington WB

Section 2: Contact Information

8. Are you complainants or a representative of complainants?
   Complainants: ☒ Representing a complainant or community: ☐

9. Would you like your name and contact details to be kept confidential? *(The Inspection Panel will not disclose your identities to anyone without your prior consent.)* Yes ☐ No ☒

10. Complainants' Names (Minimum two names and signatures are required):

Complainant 1	Complainant 2
Name [redacted]	Name [redacted]
Address Stowarzyszenie Ekologiczne EKO-UNIA (Ecological Association EKO-UNIA), ul.Białoskórnicza 26, 50-134 Wrocław, Poland info-ekounia@eko.org.pl,	Address Stowarzyszenie Ekologiczne EKO-UNIA (Ecological Association EKO-UNIA), ul.Białoskórnicza 26, 50-134 Wrocław, Poland info-ekounia@eko.org.pl,
Phone [redacted] Email [redacted]	Phone [redacted] Email [redacted]

11. We, the undersigned, request the Inspection Panel to investigate the issues described above.

Signatures *(More signatures can be sent as an attachment document):* [redacted]

NOTES:

- Please attach supporting documents, if available.
- If you have any difficulty in completing the form, please contact the Inspection Panel at ipanel@worldbank.org or by phone: +1-202-458-5200.

Transforming natural rivers into canals without water?
The expensive fantasy of inland waterways in Poland

Appeal by non-governmental organisations, scientists and local governments concerning the plans to develop inland water transport on Poland's rivers

Warsaw, June-July 2016

The *"The Polish inland waterway plans for 2016-2020 with perspective to 2030"*, drafted by the Ministry of Maritime Economy and Inland Waterways and adopted by the Council of Ministers of Poland, as well as the **government's grand plans for the development of inland navigation, are entirely unrealistic**.

The plans resemble, probably unintendedly, Soviet Russia's undertakings to divert the Siberian rivers, which have become discredited because of their environmental and social impacts. They also bring back the memories of the Gierek-era love for gigantesque engineering projects, which manifested itself in the plans to build a cascade of barrages on the Vistula in the 1970s.

The inland navigation on the Rheine should by no means serve as a justification or model for us today – it developed in the previous century when attitudes towards protecting biodiversity were completely different, during a different economic era and under different climate conditions. With respect to rivers, we should be particularly careful in following the footsteps of Western countries.

The damage that transforming rivers fully into navigable canals will entail is incommensurate with the promised benefits, which in our view are unlikely to materialise.

This damage would include an increased risk of flooding, more severe impact of droughts, economic losses and a deepening budget deficit, the risk of an unnecessary 'fight' over water with the municipal, energy or agriculture sectors, and finally, destruction of Poland's natural environment of pan-European importance.

The questionable benefits actually can actually be reduced to spending tens of billions of zlotys from the taxpayers' pockets on the development of the hydro-engineering sector,

which will implement the costly investments leading to the destruction of Poland's environmentally and touristically precious rivers.

Detailed justification

I. The grand plans for the development of inland waterways

1. Water shortages – the prospect of destruction of natural rivers – canals without water

Poland does not have much water. This may sound surprising because for years we've been opening taps and seeing water run, often of increasingly good quality. Yet Poland is a country with one of the lowest water reserves in Europe. The authors of the inland waterways programme know that perfectly well. They have raised the issue on a number of occasions, but in the present case they have been one-sidedly promoting the interests of river transport. If consistently developed, publicly-funded inland navigation may rob other sectors of the water they need and lead to shortages of drinking water in those regions where water is sourced from surface water intakes. We wish to point point to the warming of Poland's climate and its impact on the balance of water available in the economy („*Wpływ zmian klimatycznych na bilans wodny w dorzeczu Odry i Wisły w kontekście wybranych dziedzin gospodarki" ["Impact of climate change on the water balance in the drainage basins of the Odra and Vistula rivers in the context of selected branches of the economy],* dr Sylwester Kraśnicki, 2016; the quotes below in italics come from this study).

According to forecasts, *"the current climate change scenarios for Poland predict a decrease in total runoff of water by around 37% in the next 110 years (the years 2071-2090 as compared to the years 1971-1980). The decrease in total runoff means that Poland's renewable water resources will shrink, and even today they are among the smallest in the European Union per capita …"*

The largest consumers of water will probably face conflicts over water:

"Production processes, and especially coal-based energy generation, account for the largest portion of water consumption in Poland, followed by municipal water supply and irrigation

systems. Coal energy generation is the most susceptible to water shortages and situations such the 2015 drought will be taking place ever more often."

Thus, a 'war' over water resources may ensue. *"The diminishing surface water resources may lead to conflict situations between farmers and owners of ponds who rely on those resources to irrigate fields and fill the fish ponds."*

And as the climate continues to warm and droughts occur more frequently, we should expect a massive development of field irrigation systems like the ones in Southern Europe. The risk identified in the title is real – **the rivers may become canals without water**: *"The decreasing resources of ground water call into question the justification for investments in maintaining and further developing the navigability of waterways on the Odra and the Vistula. In the upper sections of these rivers the water resources may already prove to be insufficient, and climate change will further exacerbate the situation."*

2. Unrealistic economic and climate effects. No economic justification for the plans.

The authors of the "*The Polish inland waterway plans for 2016-2020 with perspective to 2030"* present a one-sided picture of the benefits, which are supposed to include:

- Increased market-share of inland transport on rivers
- Improved competitiveness of the sea ports located at the river mouths of the Odra and the Vistula as a consequence of increasing the volume of water transport on these rivers
- Economic revitalisation and better conditions for passenger and tourist/recreational river transport
- Better protection against floods
- Generation of renewable energy on the impoundments to be created on rivers.

Those benefits are highly questionable for many reasons, e.g. because, as discussed above, it is very likely that there won't be enough water for such plans of river regulation and river transport, and conflict with other economic needs may occur. This kind of development is not based on sustainable foundations. The plans have been drafted by a single interest group, which paid no attention to other needs of the state, the society or the environment. The authors have failed to notice the natural contradictions. Using the waterways for transport will

require storing water in multi-purpose reservoirs in order to feed water into rivers during barge transports in periods of low water levels (a solution seldom applied outside Poland).

From the point of view of flood protection, those reservoirs should be kept empty in the event they have to take in a flood wave. River transport and the generation of electricity in hydro power plants on the new impoundments stand in conflict with the demand for water on the part of conventional power generation, which relies on river water for its technological processes. We witnessed a dramatic demonstration of this last year when the Polish energy sector had to impose power supply limits because of the low water levels in rivers.

In this sense, the development of inland waterways may undermine Poland's energy security.

3. Uncertain transport effects

In 2014 the total amount of domestic cargo transports on Polish rivers was 4.8 million tonnes, according to the Central Statistical Office of Poland (GUS). The share of inland water cargo transport in total cargo transport had decreased from 0.8% to 0.4% between 2000 and 2014. Inland cargo transport is a dying subsector that is facing a great degree of uncertainty due to climate change. Reviving it at a great cost is pointless.

The government's promises of economic revitalisation and better competitiveness of the sea ports are highly doubtful. In fact, all of the new industry on the Odra and Vistula rivers is located away from the rivers (e.g. the newly built power plant in Opole will not be able to collect coal from barges). Even if some factory in Wrocław wished to transport its goods along the Odra, the cargo would have to be brought to the river by truck first. Re-loading the goods twice makes no sense because it is too expensive and too time-consuming.

The Ministry of Maritime Economy and Inland Waterways maintains that 20 million tonnes of cargo will be carried along the Odra and 7.8 million tonnes along the Vistula by 2020. These numbers are entirely unrealistic. Even if we assume that transporting such volumes of cargo is practicable, it is unclear what sort of cargo could be transported along the Odra and the Vistula. Hopefully not the imported coal, which is much cheaper at the ports than the coal sold by the Polish mines?

From the economic point of view, the volume of around 28 million tonnes of cargo in 2020 can easily be transported by Poland's environmentally friendly, relatively fast, state-owned railways.

In its *Information note on the implementation of the Strategy for the development of transport to 2020 (and perspective to 2030)* published in 2015, the Ministry of Infrastructure and Development presented the structure of cargo transport in Poland. In 2014 the railways accounted for 228 million tonnes of cargo, trucks – for 1548 million tonnes, and inland waterways – for 7.6 million tonnes. In terms of transport activity measured in tonne-kilometres, the role of inland waterways is even more marginal, with inland water transport of cargo accounting for 0.8 billion tkm, the railways – 50 billion tkm, and truck transport – 263 billion tkm in 2014.

The projections concerning the development of rail transport in Poland, presented in the *Strategy for the development of transport to 2020 (and perspective to 2030)* and the *Master Plan for rail transport in Poland to 2030,* in accordance with which investments worth billions of zlotys have been made in the railway sector over many years, predict that the railways' transport activity will double to around 98 billion tkm. That means the volume of rail cargo transports can easily increase by the amounts planned for inland waterways.

All this leads to a very serious question: why should the Polish state (i.e. the Polish taxpayers) create and fund competitors for the Polish railways, which we have been modernising and in which we have been investing billions, and which will have a much greater unused capacity to carry cargo than the plans to turn rivers into canals can achieve?

4. The *The Polish inland waterway plans* envisage huge expenditures from the public purse

In total, these plans are expected to cost 76.8 billion PLN to 2030, including 8.9 billion PLN to 2020. Meanwhile Poland is in debt. Every year we spend huge amounts (more than 33 billion PLN in 2014) on public debt servicing. The government has taken on a number of new commitments, including in the social sphere. **The inland waterways project will bring no social, economic or environmental benefits, apart from channelling massive amounts of funding to a relatively narrow group of hydro engineering design and construction companies**. In that, it resembles the great projects of wetland draining in Poland and in other countries in the 20th century.

The Polish People's Republic spent massive amounts of funding on "drying the wetlands" – a project that was supposed to deliver better yields for farmers, reduce flooding, etc. The effects have been rather sad and nothing like what had been promised, with degraded soils,

dried-up land, lower agricultural yields, destroyed natural water retention and irreversible damage to the environment.

This begs the question whether an indebted country facing many urgent social needs shouldn't allocate the tens of billions of zlotys now earmarked for the inland waterways to more pro-developmental purposes?

Has the Council of Ministers even considered these dilemmas?

5. Devastation of river valleys and riverbeds – destruction of habitats and species in Natura 2000 sites

The plans concerning inland waterways do not mention the environmental devastation that will happen to Poland's near-natural rivers and their valleys as they get transformed into navigable canals. **Poland's environmentally unique rivers are admired throughout Europe and are a true treasure, an element of our biodiversity heritage comparable to the castle of Wawel in the sphere of culture**. Most sections of large river valleys in Poland are Natura 2000 sites established to protect European habitats of flora and fauna, including birds. The regulation of the Vistula and the Odra and the construction of the Odra-Vistula waterway will entail enormous destruction of these areas. The projects in question will violate the Habitats and the Birds Directives, which required the EU Member States to bring rivers to "good status" by 2015.

According to scientists, no 'public interest' can ever justify such investments, because there will be no place left for the ecosystems and species associated with river valleys if the *The Polish inland waterway plans* are put into practice.

On 8 June 2016 a group of researchers from the Faculty of Biology of the University of Warsaw wrote the following in an *Open letter to the participants of the Maritime Congress* (quotes marked hereafter as *Open letter*): '*As a result of the technological interventions needed to ensure the possibility of cargo transport, the natural and near-natural sections of the not yet canalised rivers and their valleys will lose their environmental value and will not be able to provide their ecosystem services at the same level as now. Because of the specific character of the environmental systems of rivers and their valleys, which depends, inter alia, on the geological and hydrological conditions, those losses cannot be compensated ….*".

Thus, the damage resulting from transforming rivers into canals could not be compensated in any way, and the integrity of Natura 2000 sites could not be preserved.

If the waterways plans go through, we will lose one of Europe's largest riparian forest complexes on the Odra river, two of Europe's last relatively natural large rivers, i.e. the Vistula and the Bug, the uniquely wild Międzyodrze and many other valuable natural sites in which we now take pride.

6. Compromised flood protection because of the inland waterways programme – higher risk of flooding and extra costs

The authors of *The Polish inland waterways plans* make an unjustified claim about the programme leading to "*improved protection against flooding and less potential flood-related damage*". **In reality, the deep regulation of rivers needed to upgrade them to class IV navigability** (transit depth: 2 m for rivers and 3.5 for canals, breadth: 40 m) **along with the construction of reservoirs needed for navigation will lead to an increased risk and threat of flooding given the inevitable low water periods and increasingly frequent torrential rains.** As mentioned before, ensuring the possibility of inland navigation stands in contradiction to the flood protection function. The authors of the programme cannot credibly tell the people living in the floodplains on the Odra or the Vistula, who have suffered as a result of the floods in the years 1997-2010, that the inland waterways programme will not contribute to a new flooding of their homes and losses of human life and property. In order to try to compensate for this increased risk of flooding the taxpayers would have to pay an enormous extra cost to build flood protection facilities which, according to specialists, is hardly realistic.

Thus, the 78 billion PLN to be spent on the inland navigation programme is not the end of public expenditure. The cost of dealing with the deteriorating levels of protection against flooding will have to be added to this amount.

II. The new World Bank programme - regulation of rivers and destruction of the environment disguised as flood protection

In September 2015, the Polish government signed a loan deal with the World Bank to finance the **ODRA-VISTULA FLOOD MANAGEMENT PROJECT,** an undertaking

allegedly serving to improve flood protection on the Odra and Vistula rivers. The project is well in line with the current government's intentions expressed in "*The Polish inland waterway plans for 2016-2020 with perspective to 2030*" and shows no hint of any willingness to distance oneself from the 'legacy' of the current government's predecessors.

The World Bank project was drafted in secret and adopted by the previous government following a very limited public consultation which involved no major non-governmental organisations dealing with water.

**Worth more than 1.317 billion US$,** the project will be funded from loans provided by the International Bank for Reconstruction and Development (504 million US$) and the Council of Europe Development Bank (329 million US$), as well as a subsidy from the European Union (219 million US$).*

The undersigned hold a very critical view of the project, which we see as an undertaking to destroy the Odra river and the Vistula tributaries in their current shape at the expense of taxpayers. An interest-bearing loan has been contracted for this purpose, which the taxpayers will have to repay via the government.

We argue that the project and the related expenses are unjustified for the following reasons:

1. **The regulation of the Odra and hydro-engineering works on the Vistula will undermine and destroy Natura 2000 habitats and sites**

The project poses an unprecedented threat to the ecosystems of the river valleys concerned, which are of unique value for Poland and for Europe. Scientists from the Faculty of Biology of the University of Warsaw wrote:

"*If the rivers and their valleys lose the capacity to provide their ecosystem services as a result of the hydro-engineering works undertaken to enable navigation, that will also mean the loss of fauna and flora habitats associated with the river …*" (Open letter)

In the summary of the "*Preliminary assessment of the potential impact of*

- *the World Bank "Odra-Wisła" project P147460*
- *the governments "The Polish inland waterway plans for 2016-2020 with perspective to 2030"*

drafted by Klub Przyrodników (Naturalists' Club) we read:

"In the Odra valley, the project will affect an entire chain of protected areas (including 8 Natura 2000 sites and 4 landscape parks), which runs uninterrupted from Malczyce to Szczecin. The project's objective, i.e. concentrating and deepening the Odra riverbed, intended to limit the frequency and reach of flooding, runs counter to aim of preserving the integrity of those areas, where alluvial ecosystems, which depend on such flooding, are protected. Limiting the flooding will have a considerable adverse effect on all the alluvial habitats (especially riparian alluvial forests of willow, alder and ash (91E0), riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor (91F0), and alluvial meadows of river valleys of the Cnidion dubii (6440)), and the scope of that impact may extend to all of such habitats in the Odra valley. All along the middle and lower Odra, the activities to be undertaken as part of the project pose a critical risk to habitats on muddy river banks (3270) because the crucial element of those habitats, i.e. the muddy banks themselves, are to be transformed as part of the planned works.

The component concerning the Nysa Kłodzka Valley poses a risk of adverse effects for two Natura 2000 sites but those effects may be regionally significant as they concern unique habitats of crucial importance for the entire region: water courses with the Ranunculion fluitantis (3260) and watercourses with gravel banks (3220), as well as the species: European bullhead Cottus gobio and the brook lamprey Lampetra planeri. However, as no details about the planned activities are available, it is impossible to say if the negative impacts will in fact occur.

The Sandomierz-Tarnobrzeg component may potentially affect the Tarnobrzeska Dolina Wisły Natura 2000 site, although the impact may be avoidable if the works are designed properly.

Because of the absence of specifics and the fact that the project in this part is only a template, the Upper Vistula component must be regarded as potentially threatening to at least 21 Natura 2000 sites, including a substantial part of the following habitats: gravel banks without vegetation (3220), with Myricaria germanica (3230) or with rosemary willow (3240), riverside alder (91E0), or tall herb fringe communities (6430), as well as the populations and habitats of the following species: the yellow-bellied toad Bombina variegata, barbel Barbus carpathicus, European bullhead Cottus gobio and Kessler's gudgeon Gobio kessleri (in the case of the latter, the potential impact will affect the entire Polish population). Without access to details of the investment it is not possible to determine if the potential risk will materialise and to what extent."

2. Ineffective flood protection.

Component 1: Flood Protection of the Middle and Lower Odra, for which 446 million EUR has been allocated, is flood protection in name only.

The justification for some of the expenses is quite absurd, even if it may sound convincing to non-experts. The project text claims that the objective is to rebuild the waterway to class III parameters in order to enable icebreakers to operate on the Lower Odra if there is a need to break ice jams. We consider this to be pseudo-flood protection: the last large winter ice flood took place nearly 70 years ago, and in the context of climate change, the number of days with freezing temperatures is expected to decrease nearly by half within the hundred-year period starting in the 1970s. The experience of winter-anti flood action on other rivers shows that even if the river has been dredged and regulated, icebreakers are not always able to reach the ice jam for other reasons, and finally, there are other, cheaper ways to prevent an ice flood. It is therefore clear that flood protection serves as a pretext here, while the real objective is to spend nearly 450 million EUR from the loan on the construction of a class III waterway. In fact, the authors of the World Bank project make no secret about it. In the text (but not in the title) it is stated that the objective is to upgrade the Odra to class III navigability.

Thus, the project's objective is well in keeping with the *The Polish inland waterway plans,* a document of the Ministry of Maritime Economy and Inland Waterways, which envisages canalization of the Odra and the Vistula. **And it also has similar drawbacks – as the actions envisaged are more likely to contribute to increasing the risk of flooding, rather than protecting people and property against the element.**

Let us once again refer to the opinion of the scientists from the University of Warsaw: *"Non-canalised rivers that have not been cut off from their valleys are crucial for eliminating or reducing the impact of flooding. The riverbeds and adjacent areas absorb water in periods of high water, and vegetation slows down the runoff, thus mitigating the swelling or rivers. This important ecosystem service will in effect be completely eliminated if the river undergoes the hydro-engineering works needed to ensure the navigable depth required for cargo transport. Moreover, adapting the rivers to this kind of navigation will increase the risk of violent flooding. The barrages cannot mitigate that risk in any way because the reservoirs formed on them by definition do not have any significant capacity that could replace the lost soil, riverbed and valley retention in a river transformed to meet the needs of transport."* (Open letter)

3. We are surprised that the World Bank has agreed to finance these investments

It has done so despite the criticism and the multiple negative experiences with regulation and canalisation of rivers in many parts of the world. Undoubtedly the Bank has many experienced experts, and yet it has decided to back a lopsided undertaking by a hydro-engineering lobby which runs counter to the objectives of environmental protection and has nothing to do with a sustainable approach to the complex problematic of Poland's rivers and their various functions.

4. We are surprised by the stance of the EU

The European Union has previously objected to financing regulation and destruction of rivers and streams from the EU funds in the years 2007-2013 and has questioned drainage and hydro-engineering expenses in Poland worth hundreds of millions of Euros. Yet in this case it has pledged a subsidy of 219 million US$ to support similar projects that will destroy the ecosystems of Poland's rivers. How can the European Commission finance activities which violate the Habitats and Birds Directives and the Water Framework Directive?

We call on the Prime Minister of the Government of Poland, the President of the World Bank, the Governor Council of Europe Development Bank and the President of the European Commission to reconsider their involvement in those environmentally, economically and socially destructive projects.

The undersigned oppose the one-sided, unsustainable activity on Poland's environmentally valuable rivers.

[SIGNATURES WERE REMOVED BY THE INSPECTION PANEL]

** According to figures available as of 30.06.2016, the budget of the entire project, consisting mainly of loans, is US$* 1317 *million, including:*

European Commission: US$ 219 million
International Bank for Reconstruction and Development: US$ 504 million
Borrower: US$ 210 million

Council of Europe Development Bank: US$ 329 million

National Fund for Environmental Protection and Water Management: US$ 55 million

Source:

http://www.worldbank.org/projects/P147460/?lang=en&tab=financial

European Commission

DG Environment

Complaint about Application of Union Law

Reasons why Polish and German Environmental NGO are convinced that The World Bank's Odra-Vistula Flood Management Project (OVFMP) infinges on EU Water Framework Directive and EU Natura 2000 Directives

– CHAP(2016)0299 –

Fig. 1: Międzyodrze area together with the Eastern and the Western Odra

Source: www.szczecin.eu; www.wloczykij.com

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Wrocław, January 16, 2017

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List of Abbreviations

BAW	German Federal Waterways Engineering and Research Institute (Bundesanstalt für Wasserbau)
BfN	German Federal Agency for Nature Conservation (Bundesamt für Naturschutz)
BDB	Federal Association of German Inland Water Transportation (Bundesverband der deutschen Binnenschiffahrt e.V.)
BMJV	German Federal Ministry of Justice and Consumer Protection (Bundesministerium der Justiz und für Verbraucherschutz)
BMUB	German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (Bundesministerium der Justiz und für Verbraucherschutz))
BMVI	German Federal Ministry of Transport and digital Infrastructure (Bundesministerium für Verkehr und digitale Infrastruktur)
BN	Bavarian branch of the BUND (BUND Naturschutz in Bayern e.V.)
BReg	German Federal Government (Bundesregierung der Bundesrepublik Deutschland)
BUND	Friends of the Earth Germany (Bund für Umwelt und Naturschutz Deutschland e.V.)
CAP	Common Agricultural Policy
Code	Natura 2000 species code
DG Environment	Directorate-General for the Environment of the European Commission
EA	Environmental Assessments and Management Framework Document E4745 of The World Bank
EC	European Commission
EIA	Environmental Impact Assessment
EJC	European Court of Justice
ESMF	Environmental and Social Management Framework SFG1100 of The World Bank
FRMP	Flood Risk Managemement Plan
IGB	Leibniz-Institute of Freshwater Ecology and Inland Fisheries (Leibniz-Instituts für Gewässerökologie und Binnenfischerei (IGB) im Forschungsverbund Berlin e.V.)
IUCN	International Union for Conservation of Nature and Natural Resources
KZGW	Polish National Water Management Authority (Krajowy Zarząd Gospodarki Wodnej)
MŚ	Polish Ministry of the Environment (Ministerstwo Środowiska)
NGO	Nongovernmental Organization
ORFPP	Odra River Basin Flood Protection (Project P086768 of The World Bank)
OVFMP	Odra-Vistula Flood Management Project (Project P147460 of The World Bank)
PAD	Project Appraisal Document 1203 of The World Bank
PCU	Project Coordination Unit
RDOŚ	Regional Directorate for Environmental Protection (Regionalna Dyrekcja Ochrony Środowiska)

RM	Council of Ministers of the Republic of Poland (Rada Ministrów)
SCI	Site of Community Importance
SDF	NATURA 2000 Standard Data Form
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
UBA	German Federal Environment Agency (Umweltbundesamt)
uRBMP	updated River Basin Management Plan
WFD	Water Framework Directive (Directive 2000/60/EC)
WSA	Waterways and Shipping Board (Wasserstraßen- und Schifffahrtsamt)
WSV	Waterways and Shipping Administration in Germany (Wasserstraßen- und Schifffahrtsverwaltung des Bundes)
ZPKWZ	Zespół Parków Krajobrazowych Województwa Zachodniopomorskiego (Landscape Parks of West Pomeranian Voivodeship)
ZZMiUW	West Pomerania Board of Amelioration and Hydraulic Structures in Szczecin (Zachodniopomorskiego Zarządu Melioracji i Urządzeń Wodnych)

1 Summary

The most severe concerns of Polish and German Environmental NGO are related to the following sub-components of the Project P147460 – Odra-Vistula Flood Management Project (OVFMP).

Subcomponents of the OVFMP of most concern are

- building a new polder in existing natural flood plains (subcomponent 1A.6 in Międzyodrze area),
- destroying the River Odra by a stream basin development (subcomponents 1B.2, 1B.1),
- modernizing a functioning pumping station in an already diked area (subcomponent 1A.5 stage 3 at the village of Krajnik Dolny)

All these subcomponents

- have a dubious effect on flood protection with the danger of adverse effects creating negative impact on flood protection according to first preliminary verbal statements of hydro engineers from Netherlands, Poland and Germany (see for details chapter 3)
- additionally violate severely EU Natura 2000 directives and EU Water Framework Directive (WFD) and endanger several according to IUCN globally threatened species (with category Vulnerable – see for details chapters 4 and 5).

There additionally is reasoned suspicion that the Polish government only uses the argument of flood protection of the OVFMP for its real goal, for achieving a higher class of navigability by realizing the OVFMP, most-likely knowing that the OVFMP will not significantly improve flood protection (see for details chapter 6).

There is also doubt whether it is planned to conduct Environmental Impact Assessment (EIA) for these subcomponents. NGO fear that the authorities just realize these subcomponents without any EIA, stating that the planned subcomponents just were

"maintenance", this concerns (not only but especially) subcomponents 1B.2, 1B.1, the planned stream basin development of the River Odra (see for details chapter 6).

The Environmental NGO have strong doubts whether the Polish authorities showed the full plans and its full implications to the European Commission (EC) when the authorities applied successfully for a co-financing out of EU subsidies for The World Bank´s OVFMP. Therefore, the Environmental NGO are convinced that the EC was not fully informed about the full implications of the OVFMP during the application procedure. These doubts are also underlined by the fact that also the official World Bank´s documents contain several false statements concerning relevant issues as will be shown in the further.

Environmental NGO want to develop together with the Polish government, The World Bank and the EC better alternatives improving flood protection and ensuring compliance with EU environmental law – alternatives such as

- a relocation of dikes further away from the shore creating more flowing storage space reducing flood levels significantly (since a lot of suitable areas exist along the Odra which could reduce the flood level, areas which are diked at the moment with no settlements, relevant parts of it not used at all, other parts of it used only on a very small scale for agriculture and forestry, relevant parts of it already in state property)
- flood relief channels at potential bottlenecks (as it is done e.g. in Nijmegen in The Netherlands or in Raciborz, Opole and Wrocław along the Upper Odra)
- using icebreakers with a shallower depth (as it is done e.g. on River Elbe, only 150 km west of River Odra)
- the restoration of wetlands in the basin of River Odra in order to help avoid the beginning of floods by repairing the natural flood storage of the landscape, creating a further positive effect to reduce low water periods and improve navigability on the River Odra.

These alternatives have not even been named in the OVFMP, as can be shown in The World Bank´s own Environmental Assessment (EA). These alternatives are described in detail in chapter 4.4.

Project information about the Odra-Vistula Flood Management Project is available under http://projects.worldbank.org/P147460/?lang=en&tab=documents&subTab=projectDocuments

The Project Appraisal Document can be found at: http://documents.worldbank.org/curated/en/320251467986305800/pdf/PAD1203-PAD-P147460-R2015-0142-1-Box391498B-OUO-9.pdf. On p. 92 of this document there is a map where the spatial size of the planned components is shown.

The planned components of the OVFMP and how they are situated in protected areas (e.g. Natura 2000) can be shown at: http://odrapcu.pl/doc/OVFMP/RPZSiS_Zalacznik_06_Obszary_chronione.pdf
(The URL http://natura2000.eea.europa.eu/# can be used if someone wants to examine more in detail, which Natura 2000 sites are situated at the River Odra in the areas of the planned components, here also the Standard Data Forms of the sites can be found.)

Since big parts of this paper are also developed to show the infringement of EU law to further parties concerned we apologize that the paper contains legal information which is of course known to the EC.

2 The Planned Measures in Detail

2.1 Subcomponent 1A.6: (Re-)Construction of the Międzyodrze Polder

This polder with a size of 5,200 ha[1] was built between 1904 and 1930 during historical German time, but was not maintained after 1945 so that the River Odra re-naturalized its wetlands in short time. ,Therefore the area is now again in a (near-)natural state and part of the natural flood detention basin of the River Odra forming an impressive wilderness area in a natural flood plain.

Within The World Bank project it is planned to rebuild this polder[2]

- by re-establishing dikes (=embankments)
- re-establishing flood gates
- by deepening the natural river arms and oxbows of the river (which destroys relevant parts of their natural vegetation and habitats)[3]

in order that flood water of a flood wave can run in a very short time into the polder where it can be stored by closing the flood gates; after the peak of the flood wave is cut by this measure, the flood water shall be released part by part by opening the flood gates again.

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1 According to The World Bank's PAD1203, p. 40, subcomponent 1.A.3.

2 According to The World Bank's PAD1203, p. 40, subcomponent 1.A.3. It is noteworthy that the "dredging and stabilization of channels" described in PAD1203 are in reality the dredging of natural river arms, since the so-called "channels" (which are connected to the former historical flood gates) are in 90 % natural river arms. The former polder of Międzyodrze were built between 1904 and 1930 in historical German times and were used during only a very short period between 1930 and 1945, refer to Mönninghoff 1997, p. 26 f.

3 According to ZZMiUW, statement at the conference on November 20, 2015 in Criewen, where state officials of the German state of Brandenburg were given first informations by the ZZMiUW.
- The ZZMiUW used also "ecological"arguments stating that the "too high water level" in the natural wetlands of the Międzyodrze would "endanger" the habitat for aquatic warbler (*Acrocephalus paludicola*) and Whooper swan (*Cygnus cygnus*) in the Międzyodrze.
- Refer also to ZZMiUW (unpublished): "Aufgaben, die durch die Westpommersche Verwaltung für Melioration und Wasseranlagen in Szczecin zur Ausführung aus Mitteln der Weltbank geplant sind", p. 21; presentation held on November 20, 2015 .This presentation can be found in the Annex of this document.
- According to all independent ornithological experts the opposite is the case: Both species are not endangered by natural high water levels, quite the opposite: Especially the aquatic warbler needs natural high water levels and is endangered by any kind of drainage.
- Refer also to p. 11, 12 of Annex 1 of The World Bank´s Environmental and Social Management Framework (ESMF), where the excavation and deepening of the river arms is also described. (Note: The World Bank names the Natura 2000-sites partially incorrect: the Natura 2000-site PLB320003 is named correctly, but the Natura 2000-site "PLB320037" does not exist, instead the Natura 2000-site PLH320037 is meant by The World Bank!)

These measures, especially the the excavation of the natural river arms and oxbows, endanger directly and indirectly many Natura 2000-species of the Natura 2000 sites Dolna Odra (PLH320037) and Dolina Dolnej Odry (PLB320003).

2.2 Subcomponent 1A.5 stage 3: Modernization of the pumping station in the Marwice Polder

The modernization[4] of an existing and functioning pumping station raises the danger of a stronger drainage of the wetlands in the polder which would endanger the last existing metapopulation along the River Odra of the according to IUCN globally vulnerable aquatic warbler (*Acrocephalus paludicola*) living on these wetlands in the Marwice polder (part of Natura 2000 sites PLH320037, PLB320003) and in the adjacent German Lower Oder Valley National Park (being the last population of aquatic warbler in Germany).

2.3 Subcomponent 1B.2: Modernization works on boundary sections of Odra River, together with Subcomponent 1B.1: Reconstruction of river control infrastructure on Odra River. Adaptation to the conditions of Class III waterway. Stage II

Note: In The World Bank's Environmental and Social Management Framework (ESMF) subcomponent 1B.1 is described as "Repair and modernization of regulatory infrastructure on the free-flowing Odra – reconstruction and modernization of regulatory infrastructure – in order to adapt section of Odra from Malczyce to the estuary of Nysa Łużycka to class III waterway". Whereas the later published Project Appraisal Document (PAD) defines that the "works extend to about 115 km between Nowa Sól and the Nysa-Łużycka mouth."

It is planned

- to dredge the river bed of the River Odra on its whole width in order to achieve a constant minimum depth of 1.80 m on its whole width for 80% of time up-

[4] Environmental Assessments and Management Framework Document (E4745), p. 80.

stream and 90 % of time downstream of the River Warta confluence.[5] This dredging would homogenize (= destroy) the underwater habitat for many species.

- to re-establish the groynes and establish also new groynes, which would result in a further erosion of the river bed which would drain also adjacent wetlands.

Both – the homogenization of the river bed as well as the (re-)establishment of the groynes – endangers numerous Natura 2000 species on huge Natura 2000 sites. In the following tables the most important Polish Natura 2000 sites coinciding with the area of OVFMP's investments are listed. However, many further Natura 2000 sites in Germany and Poland are also affected. According to IUCN Red List even globally threatened fish species will be endangered by these measures.

Site Code	Site Name
PLH320037	Dolna Odra
PLC080001	Ujście Warty
PLH080013	Łęgi Słubickie
PLB320003	Dolina Dolnej Odry
PLB080004	Dolina Środkowej Odry

Tab. 1: Natura 2000 sites coincide with the area of the investment between Nysa-Łużycka mouth and the Odra mouth (boundary section)

Source: Own creation

Site Code	Site Name
PLH080014	Nowosolska Dolina Odry
PLH080012	Kargowskie Zakola Odry
PLH080028	Krośnieńska Dolina Odry
PLB080004	Dolina Środkowej Odry

Tab. 2: Natura 2000 sites coincide and/or affected with the area of the investment between Nowa Sól and Nysa-Łużycka mouth

Source: Own creation

[5] According to The World Bank´s PAD,
- the dredging and the achievement of a water depth of 1.80 m is described in no. 26 on p. 38,
- the achievement of navigability class III and the water depth of 1.80 m for both subcomponents 1.B.1 and 1.B.2 is additionally described on p. 40.
- The fact that this is done on the whole width of the river derives from the fact that icebreakers always operate on the whole width of the river, driving side by side.

Note: If OVFMP's subcomponent 1B.2 will also include the Odra river section between Malczyce and Nowa Sól then this will affect among others following Natura 2000 sites. These sites are without any assessment in ESMF, Annex 1.

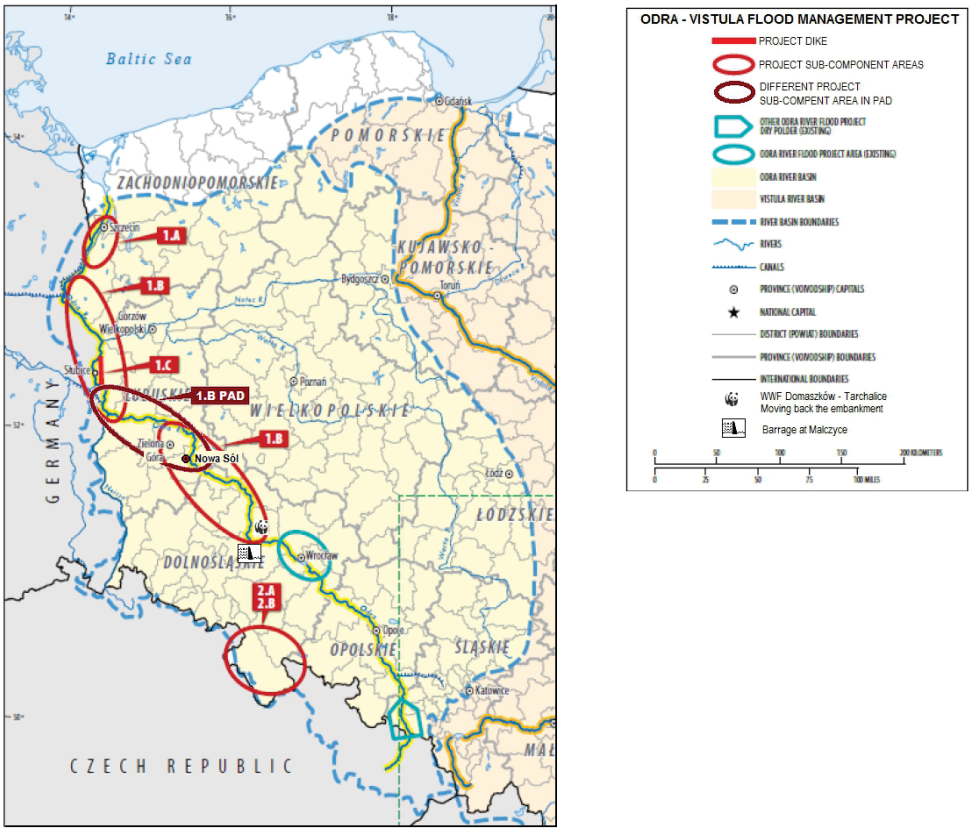

Fig. 2: OFVMP Map with regional difference of subcomponent 1.B

Source: own modification of PAD, Annex 6, p. 92.

Site Code	Site Name
PLH080014	Nowosolska Dolina Odry
PLH020100	Kozioróg w Czernej
PLH020018	Łęgi Odrzańskie
PLB020008	Łęgi Odrzańskie

Tab. 3: Natura 2000 sites coincide with area of potential investment between Malczyce and Nowa Sól

Source: Own creation

Further Note: According to The World Bank's PAD, the erection of new groynes is described in no. 26 on p. 38. The statement hat the groynes on the German site would have been built already during the last 10 years is not true. Only isolated projects as the work in River Odra at Reitwein – officially approved by the German Waterways and Shipping Administration in Germany (WSV) on December 19, 2014 and including an environmental impact study and a Habitats Directive impact assessment – were set up.

Instead, modernisations and so-called "maintenance" of groynes at the German bank have been started or are still planned without participation of NGO.[6]

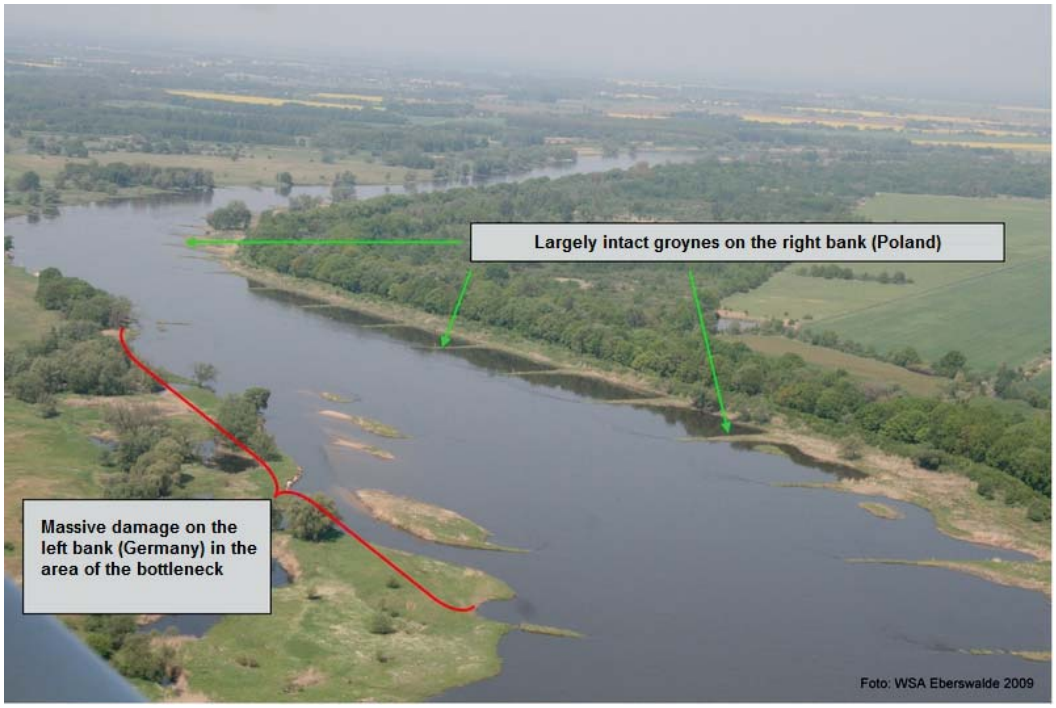

Fig. 3: Planned work in River Odra at Reitwein

Source: WSA Eberswalde (2009), www.wsa-eberswalde.de

[6] German NGO such as BUND – Friends of the Earth Germany prepare charges against these plans of the German shipping administration, since they infringe on Natura 2000 and on WFD.

Fig. 4: Aerial photographs of the eroded shore areas at Reitwein (1992, 2003, 2004)

Source: WSA Eberswalde (2012A), environmental impact study, p. 14

3 The positive Effect on Flood Protection of the planned Subcomponents is dubious, adverse negative Effects on Flood Protection are likely

3.1 Concerning Subcomponent 1A.6: Polder in Międzyodrze

3.1.1 The storage capacity of the planned polder is much smaller than announced by The World Bank

The PAD states:

"*A one meter high water layer on the wetland would store about 1 billion m³ of floodwater.*"[7]

1 billion m³ is indeed a miraculous high number, but it is totally unclear how The World Bank came to this evidently false conclusion. The new Międzyodrze Polder would have a size of 5,200 ha, according to the same document.[8]

A = 5,200 ha * 10,000 m² / ha = 52,000,000 m² = 52 million m².

V = h * a = 1 m * 52 million m² = 52 million m³

So, a 1 meter high water layer can maximum create (if all the vegetation would be totally erased) a storage of only 52 million m³ of floodwater. This is evidently not 1 billion m³, it is only 5,2 % of one billion m³!

Or, in other words, in order to achieve The World Bank´s miraculous amount of 1 billion m³ of flood water in the polder, the Międzyodrze Polder would need to have dikes of a height of more than 19 meters![9]

So, already here occurs the problem that the storage effect of the polder is calculated totally wrong. A similar problem occurs in the Raciborz reservoir in the upper part of the Odra near the Polish-Czech border. There the storage volume of 185 million m³ is correctly calculated. But the percentage of a flood wave similar to the flood wave in

[7] PAD, p. 38.

[8] Subcomponent 1.A.3 in: PAD, p. 40.

[9] 19.23 m height of water layer * 52 million m² area of Międzyodrze = 1 billion m³. The planned dikes have a height of around 2 m. And since the polder is situated in the lowlands, dikes of a height of 19 m would make no sense at all, since the River Odra could not fill the polder due to its height, this could only fictitiously be done by many huge pumping stations.

1997 that could be stored in the reservoir is calculated totally wrong, showing that the reservoir is totally ineffective since it can by far not store enough flood water.[10]
The consequences of also this wrong estimation of the Raciborz reservoir are discussed in chapter 7.

3.1.2 The Międzyodrze area is already part of natural flood plains making it impossible to store there an additional amount of flood water

It further has to be mentioned that the new polder is situated in an already existing natural flood detention basin which is flooded naturally every year during every flood, so the new polder cannot host an additional amount of flood water. Therefore The World Bank´s statement:

"This wetland of 5,200 ha forms the former overflow plain situated between the two parallel arms of the Lower Odra between Gryfino and Szczecin."[11]
is evidently false, since the Międzyodrze area does not form any "former" overflow plain, but instead it forms an enormous natural existing overflow plain.

3.1.3 Due to the small storage capacity of the new polder a flood wave cannot be reduced significantly, additionally such a storage effort deteriorates flood protection for the towns sidewards and upstream of the polder

One other problem arises when the new polder is used:
Typically for the River Odra are longer flood waves stretching usually several 100 km along the river and its adjacent rivers such as e.g. River Warta. Compared to this length of the flood wave and its water amount, the polder in the Międzyodrze is really small. Taking this into account, the new polder has to be kept empty for a longer time during a flood wave in order to be opened in the right moment to "catch" the peak of the flood wave. But until this right moment is reached in a later time, the polder has to be kept empty during the first phase of the flood wave. This means that the danger of floods for the towns and villages upstream will be raised (compared with the current situ-

[10] Please see in detail the first preliminary statement from hydro engineer Janusz Żelaziński in the Annex of this document.
[11] Refer to The World Bank´s PAD, p. 40, subcomponent 1.A.3

ation), since the new, empty polder will create a new and dangerous bottleneck for floods endangering the towns and villages upstream.

In such a dangerous situation the flood gates of the polder have to be opened for the floods in order to reduce the danger of a bottleneck for floods upstream to not endanger settlements upstream. But this would also mean that the polder is being opened too fast and will run full of water too fast. This happens in a time where the peak of the flood wave has still not reached the polder, but is still further upstream. So, a new flood danger will occur: The polder – being full of water now and having closed its flood gates again in order to store the water – is again a dangerous blockade and bottleneck for the peak of the flood wave being still upstream, raising again the flood danger for the towns and villages upstream of the polder.

In such a situation the flood gates of the polder would have to be opened. So all the water can run through the polder from upstream to downstream. However, in this situation the polder would completely loose its storage capacity showing that it is totally useless to build this polder.

In such a situation the flood gates of the polder would have to be opened so that all the water can run through the polder from upstream to downstream. But in this situation the polder would totally loose its storage capacity showing that it is totally useless to build this polder.[12]

3.1.4 The new polder also cannot reduce the danger of a collision between a flood wave from upstream and a flood wave caused by winds from downstream,therefore it cannot reduce the flood danger for Szczecin

But even if the polder would work in times of a shorter flood wave, and if the polder could be closed in exactly the right moment storing the peak of the flood wave:

The new polder is already very close to Szczecin, it is also not higher than Szczecin, which means it will not be able to store a potential upstream flood wave from the

[12] Even if the polder would be closed again later during the peak of the flood wave, this would have (nearly) no storage effect, because the polder was already filled before by the streaming water! Quite the opposite, to close the polder during the long peak of the flood wave means that the water upstream of the polder then has – when it passes the polder – only space in the River Odra (Western and Eastern Odra) and not any more space in the polder, so that the flood danger for the town of Gryfino and other adjacent towns and villages upstream and sideward of the polder grows dangerously.

South with sufficient distance or height from a possible downstream flood wave coming from the Szczecin lagoon created by northern winds. So, since the new polder extends directly into the "flood-wave-collision-zone" at Szczecin, there is strong doubt that the danger of a collision of both flood waves (from the South and from the North) in Szczecin can be significantly reduced by the establishment of this polder in the Międzyodrze area. The avoiding of the collision of a flood wave from the South with a flood wave from the North is the justification for the erection of the polder in the Międzyodrze area, according to the West Pomerania Board of Amelioration and Hydraulic Structures in Szczecin (ZZMiUW) being responsible for the erection of the polder.[13]

So, if this collision of both flood waves cannot be significantly reduced by the new polder, the establishment of the polder loses totally its justification.

[13] According to ZZMiUW, verbal statement at the conference on November 20, 2015 in Criewen, where Brandenburg state officials were given first informations by the ZZMiUW; this can also be read in The World Bank´s PAD, p. 38.

3.2 Concerning Subcomponent 1A.5 stage 3: Modernization of the Pumping Station in the Marwice Polder

It is unclear why an existing and working pumping station in a front dike has to be modernized, since the existing pumping station works properly in order to reduce floods in the polder so that no flood danger occurs to adjacent villages since this polder has no backward dikes which could protect the villages.

A repair / renovation of the pumping station which would not raise

- neither its pumping capacity
- nor the pumping time during the year

would be understandable. But the phrase "modernization" implicates the raise of the technical pumping capacity of the pumping station. The raise of its pumping capacity is not necessary for flood protection – instead, a modernization of the pumping station can enable a stronger drainage of the land in order to intensify farming.

3.3 Concerning Subcomponents 1B.1 and 1B.2: The Stream Basin Development of the River Odra

The justification for these measures is the need for icebreakers to prevent ice floods.

3.3.1 Strong doubts whether a stream basin development could improve the use of icebreakers in the mid-term

A stream basin development can also lengthen lower water periods. Ice floods in the past occurred as a result of both, too heavy ice floes not breakable by icebreakers and of a lack of bypasses near bottlenecks, not as a result of too shallow water for icebreakers. If the administration would really fear that icebreakers would be too deep for the river, it would have used also during the last years icebreakers with a shallower draught such as used in River Elbe. The river bed shall be dredged, in order to achieve more water depth for icebreakers. This leads to a drainage of the adjacent wetlands.
Additionally, the old groynes shall be rebuilt and even raised bigger than ever before, also new groynes shall be built, which will also deepen the river bed and shall ensure a sufficient long-term deepening of the river bed (see for details chapter 2 and chapter 5.5).

The groynes shall avoid an erosion of the river shores and instead lead to a planned erosion of the riverbed (Groynes reduce the cross-section of the river, so the water speed accelerates which erodes the river bed deeper, until the cross-section of the river is as big as it was before. Then the water speed slows down again and the erosion of the river bed stops according to the planners). So the river shall keep its necessary water depth for icebreakers, also in the mid-term. But the erosion of the river bed often does not stop and continues also after the date when the cross-section of the river is as big as it was before: Then the erosion of the river bed becomes from a planned erosion to an unplanned erosion, often due to the reason, that the river cannot erode to its sides so that it cannot build up new underwater sandbanks, and that its former underwater sandbanks also do not exist any more due to dredging. Therefore that new underwater sandbanks – natural barriers which stop soil erosion in the river – cannot develop any more, so the soil erosion of the river continues - what was not planned by planners.

According this, the erosion will only in the short term provide a shipping lane for icebreakers. In the mid-term both, first the planned erosion of the river bed (during low water periods) and later the unplanned erosion of the river bed (also during middle water periods), can increase the drainage effect on the wetlands. This intensified drainage can severely damage the soil pores and consequently the water storage capacity of the wetlands.

So both,

- the draining of the wetlands during lower water periods (due to the deepening of the river bed as a result of both dredging and groynes)
- and as a result the destruction of the water storage capacity of the wetlands,

risks the lengthening of low-water periods during the year. This will not only raise the danger of droughts in adjacent areas – but will also threaten the potential use of icebreakers in the mid-term since the water depth of the river can be reduced instead of being raised. A comparable scenario can be watched at the River Vistula at Warsaw. There the river was also developed as a shipping lane and now a water depth of less than 1 meter can be found during longer periods of the year. This makes navigability impossible during these longer periods. A similar scenario can also be watched at the River Odra near Brzeg Dolny.

So, there is strong doubt if a cost-intensive stream basin development is also in the mid-term and in the long term a successful measure in order to enable icebreakers to approach to ice barriers. Therefore, icebreakers with a shallower draught, e.g. such type of icebreaker which is used at the River Elbe (a river similar to the Odra) are suggested by us as both, cost-efficient and an ecological better alternative (for details, see chapter 4.4.2, **alternative B**).[14]

Janusz Żelaziński, a hydro engineer experienced in flood protection in Poland since decades, highlights the fact that of course icebreakers are necessary against ice barriers. But he argues that the disastrous ice flood at the River Vistula in 1982 in Poland

[14] Please see in detail the first preliminary statement from Janusz Żelaziński in the Annex of this document.

was caused by the fact that the ice was too heavy, so that the icebreakers could not break the ice barriers (the river was deep enough for the icebreakers, this was indeed not the problem), and that there was no bypass for the water around the ice barrier which was not inhabited by people. Therefore Janusz Żelaziński urgently recommends for dangerous bottlenecks which raise the danger of ice barriers the following: the relocation of dikes and the planning of near-natural flood relief channels in order to create bypasses at these bottle necks.[15]

3.3.2 There is no case in the past where icebreakers could not use the River Odra due to a lack of navigability or due to too shallow water

Additionally it has to be highlighted, that on July 18, 2016, the government of Brandenburg state answered to the written question No. 1839, that there have been no known cases of icebreaker deployments failing due to a lack of navigability or because of shallow waters in recent years. This answer is noteworthy, since it also includes the Polish icebreakers on the River Odra. The German and Polish icebreakers always operate together under one command.

So, if the case that icebreakers were stopped by low water levels never has happened before, this case is a 100 % theoretical case. The question then is, if this case is only a theoretical scenario and which models were used in order to predict such a future scenario where icebreakers cannot be used due to shallow water. This raises also the question which likelihood for such a case was predicted by the models?

[15] Please also see in detail the first preliminary statement from Janusz Żelaziński in the Annex of this document.

3.4 Concerning subcomponents 1 B.1 and 1B.2: Stream Basin development of Odra, in combination with subcomponent 1A.6: Polder in Międzyodrze

We also do not understand why World Bank money is being used

- on the one hand to "improve" the water way for icebreakers (subcomponent 1B.1 and 1B.2) and
- simultaneously on the other hand it is being used to re-erect dikes and flood gates in the Międzyodrze area (subcomponent 1A.6). Exactly this combination of new dikes and flood gates together with the existing Odra bridges at Mescherin and Gryfino[16] can create new and dangerous bottlenecks for ice barriers . This new flood danger is not examined in any paper of The World Bank project.

[16] Both bridges contain pillars which are directly located in the River Odra (see pictures of Western bridge at Mescherin: http://oder-neisse-blogger.de/wp-content/uploads/2015/05/Br%C3%BCcke-Mescherin.jpg and http://www.gartz.de/news/index.php?rubrik=1&news=163725 and of Eastern bridge at Gryfino: http://www.noz.de/lokales/samtgemeinde-bersenbrueck/artikel/414597/von-bersenbruck-nach-gryfino#gallery&0&0&414597); ice floods here would not only endanger the downtown parts of the towns of Gryfino and Gartz and adjacent villages, but also the huge power plant situated very close to these bridges at the Eastern Odra at the Polish village Krajnik.

4 Infringement on the EU Water Framework Directive

4.1 Preliminary Note

During the last years the EC conducted an infringement procedure concerning Polish water policy. Concerning this infringement procedure, the EC wrote per email in 2013:

"[...] Now, with regard to the dike, indeed there is a horizontal problem in Poland with regard to flood control and river regulation measures. These measures are often carried out without any strategy or plan, i.e. without strategic environmental assessment or water framework directive assessment, their flood control impact is uncertain, their cost-benefit ratio is doubtful and existence of public interest justifying these investments is often absent. Indeed, as you rightly point out, often these so called flood control measures are in reality used to reclaim more arable land (e.g. for CAP payments). The Commission is aware of this problem. To address this problem the Commission launched a horizontal infringement procedure against Poland regarding rivers regulation in the context of flood control. We had a meeting with the Polish authorities in June to discuss among others this issue. At the meeting the authorities presented some ideas how to rectify this problem, e.g. by introducing changes to the Polish Water Act. The Commission position is that the prosed amendment will not fully address the problem (although with some respects it's going in the right direction) because it's not sufficiently addressing the horizontal problem of lack of strategic planning and public interest. We are therefore continuing the dialogue with the Polish authorities in view of fully addressing the problem. We are also in contact with other Commission services (DG AGRI and REGIO) to ensure that EU co-financing is allocated only to projects and activities which comply with EU law. [...]"

The authors of The World Bank´s EA on the OVFMP write in the beginning, that during this infringement procedure Polish authorities together with the EC´s DG Environment decided on a preliminary positive list of items being "acceptable because well manageable and not requiring basin wide analysis", and that all measures of the OVFMP were part of this positive list.[17]

[17] Please refer to EA, p. 6; unfortunately Annex 7 of the EA which contains the positive list, is not included in the public version of the report: therefore this cannot be verified from an outside perspective.

However, it has to be noted, that even if all measures of the OVFMP are on this positive list, this does not mean that DG Environment thinks that these measures are automatically all in compliance with the WFD – DG Environment only made clear that these measures seem to be manageable without the need for a whole basin-wide analysis. But of course, also for these measures WFD assessments (and also Habitats Directive impact assessment, see next chapter) have to be carried out. They are not automatically in compliance with the WFD.

This has to be noted especially before the background that Polish authorities acted very intransparent concerning the full extend of the planned measures within the OVFMP. So it is not even clear, if and how much details the DG Environment really knew about the full plans of the OVFMP. Only half a year ago, after The World Bank´s EA was written and after the OVFMP was approved, the European Court of Justice (EJC) judged that Poland´s Water Act indeed had infringed on the WFD (Case C-648/13).

Of course, it is true what the authors of The World Bank´s EA write: the WFD allows the deterioration of the ecological status of a river and its wetlands, if there is an overriding public interest. So it seems that the authors of The World Bank´s EA seem to agree after all on the fact that several subcomponents of the OVFMP have at least the potential to deteriorate the ecological status of the Rivers Odra and Vistula.

4.2 The Ecological Deterioration of the River Odra, concerning Subcomponents 1B.1 and 1B.2: the Stream Basin Development of River Odra

Indeed the WFD is massively affected, since the ecological status of at least the River Odra (its structure including its river bed and its adjacent wetlands) is massively deteriorated due to

- the excavation and homogenization of its river bed,
- due to its river bed erosion (due to groynes),
- which additionally results in a draining of its huge wetlands,

as shortly described in chapter 2 above and as shown in first preliminary studies of Environmental NGO.

Also The World Bank admits a general deterioration in its ESMF, Annex 1, unfortunately this deterioration is not examined in this Annex in detail. It is also not distinguished between the different subcomponents. Also the deteriorations are only described very generally. Especially no endangered species are named here:[18]

[18] Refer to p. 9-12 of Annex 1 of The World Bank´s ESMF. The World Bank names the Natura 2000 sites partially incorrect: The Natura 2000 Birds Directive site PLB320003 is named correctly, but the Natura 2000site "PLB320037" does not exist. Instead the Natura 2000 Habitats Directive site PLH320037 is meant by The World Bank!

Component of the environment	Type of impact	Significance	Likelihood of impact	Spacial scale of impact	Temporal scale of impact
Category: regulation and maintenance works in the riverbeds and inter-embankment zones of natural parts of waters, artificial or heavily modified parts of waters and drainage ditches					
Surface and ground waters					
Hydromorphological elements, physical and chemical parameters of the flow of surface waters	Increase in the velocity of water flow, change in roughness of the ground, change in capacity of the riverbed – impact on the flow regime.	Significant	Certain	SWB (local)	Long-term (stage of exploitation)
	Changes in morphology of the riverbed and interembankment zone, liquidation of riverbed and by riverbed structures, increase of bottom erosion, change in dynamics of fluvial processes, change in longitudinal profile – impact on hydromorphological elements of SWB.	Significant	Certain	SWB (local)	Long-term (stage of exploitation)
Protected Areas					
Lower Odra Valley PLB320003	Modernization of inter-flood bank area – liquidation of valuable natural habitats and habitats of species	Significant	Most likely	Local	Long-term (phase of exploitation)
	Changes in water conditions within habitats of valuable species of birds	Significant	Most likely	Local	Long-term (phase of exploitation)
Lower Odra PLB320037	Modernization of inter-flood bank area – liquidation of valuable natural habitats and habitats of species	Significant	Most likely	Local	Long-term (phase of exploitation)
	Changes in water conditions within habitats of valuable species of birds	Significant	Most likely	Local	Long-term (phase of exploitation)
	Dredging the canal connecting branch of the Oder, possible changes in water conditions within the adjacent bird habitats	Moderate	Most likely	Local	Long-term (phase of exploitation)
Flora and Fauna					
Oxbow lakes (3150) and related communities of vegetation and animal species assemblages	Backfilling, liquidation, shallowing water bodies	Oxbow lakes and associated flora and fauna communities	Most likely	Local	Long-term (phase of implementation exploitation)
Fauna and flora communities directly associated with the riverbed	Dredging the riverbeds - the destruction of the structure of the bottom, animal habitats, the increase in suspension in the riverbed (temporary deterioration of the occurrence conditions for organisms)	Fauna and flora communities directly associated with the riverbed	Most likely	Local	Long-term (phase of implementation exploitation)

Tab. 4: Table Category: regulation and maintenance works in the riverbeds and inter-embankment zones of natural parts of waters, artificial or heavily modified parts of waters and drainage ditches - Affected Natura 2000 Sites
Source: The World Bank: ESMF, Annex 1

One first example for endangered species is given here, by far not including all the ecological deterioration. Here we focus only on one fish species, since

- this fish species is globally vulnerable,
- it is directly endangered by the planned measures,
- and it is not protected by Habitats Directive Annex II and IV.

The endangering of this fish species is by far not the only ecological deterioration of the River Odra, since the indirect deterioration of the planned measures (e.g. the draining of the huge adjacent wetlands as an indirect result of the excavation of the river and of the raise of the groynes) is not examined here due to a lack of resources at this moment.

In the next chapter 5 we also focus on further species and habitats which are protected by EU Natura 2000 law, so those fish species which are protected under Habitats Directive Annex II and IV are not examined in this chapter.

Showing that the maraene (*Coregonus maraena*) as an according to IUCN globally threatened fish species (category Vulnerable) is endangered by the planned measures, shall show that the planned measures clearly deteriorate the ecological status of the River Odra which affects clearly the WFD:
One component of the Ecological Status of a river is, according to the WFD, the fish fauna. And according to the rule "one out all out" a river has to be judged as completely ecologically deteriorated, if even only one component is ecologically deteriorated. As a result, the planned measures deteriorate the whole ecological status of the River Odra since they clearly deteriorate at least its natural fish fauna. Therefore the measures clearly affect the WFD:

- Excavating / dredging the river bed on its whole width to a depth of 1.80 m destroys the underwater sandbanks which destroys the spawning habitat of the according to IUCN globally threatened fish species maraene (*Coregonus maraena*) and many further fish species.

- Raising of groynes and erection of new groynes also leads to the result of a deepening and homogenization of the river bed which destroys the underwater sandbanks which eliminates the habitat of the according to IUCN globally vulnerable fish species maraene (*Coregonus maraena*) and many further fish species.

This will be described in detail now.

- **The Maraene (*Coregonus maraena*) – Code: 5068**, is not specially protected by Habitats Directive Annexes II and IV, but as *Coregonus spp.* by Annex V. It is also indirectly protected under the fish fauna component of the WFD. The maraene is globally threatened according to the IUCN Red List[19] Its whole geographical range worldwide contains only the Baltic Sea basin including its tributaries. The maraene is a migrating species which also migrates upstream of the River Odra up to Eisenhüttenstadt / Kłopot (border between Poland and Germany), in order to spawn in winter (November to December) on the underwater-sandbanks in the midst of the stream (informations according to Christian Wolter, Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), pers. Comm.).

- **Negative direct impact:** A stream basin development would be an ecological catastrophe for *Coregonus maraena*, since the underwater-sandbanks which are necessary for this species as spawning areas would be totally destroyed by the excavating of the river bed. The River Odra is the only bigger stream in Germany where this species still reproduces in a relevant number. The reason is that the River Odra is the only bigger German stream which still contains these underwater-sandbanks, since no intensive stream basin development was conducted there (all these informations according to Christian Wolter, Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), pers. Comm.).

In spite of the fact that the North Sea population and the Baltic Sea population of *Coregonus maraena* is seen as one species (*Coregonus maraena*, taxonomic classification of both populations as one single species is controversial), only the North Sea

[19] Status "vulnerable" according to the IUCN Red List: http://www.iucnredlist.org/details/135672/0

population of *Coregonus maraena* is protected by Annex II and IV Habitats Directive. The Baltic Sea population of *Coregonus maraena* is only listed in Annex V Habitats Directive (according to the German Federal Agency for Nature Conservation the species *Coregonus oxyrinchus* is mistakenly listed in Annex II and IV Habitats Directive, since this species is already extinct worldwide for more than 100 years. The species *Coregonus oxyrinchus* listed in Annex II and IV Habitats Directive means according to the taxonomic classification which is used nowadays the North Sea population of *Coregonus maraena*).[20]

In spite of the fact that the Baltic Sea population of *Coregonus maraena* is not listed in Annex II and IV Habitats Directive, even though it is globally threatened, this population is indirectly protected by the WFD. Since following Annex V no. 1.1.1., 1.1.2., 1.1.3. WFD the fish fauna (including its diversity abundance and age structure) is one of the biological quality components of the WFD, the quality components serve as the base in order to categorize the ecological state of a water body. If one quality component is deteriorated, the whole river is judged to be deteriorated. Concerning fishes the ecological state of a water body is defined by finding out how close to a natural state the composition and abundance of fish species in the examined water body is (according to Annex V no. 1.2.1., 1.2.2., 1.2.3. WFD).

The EJC clarified on July 1, 2015, after an allegation by the NGO BUND (Friends of the Earth Germany) concerning the River Weser, that all projects – also a stream basin development, which deteriorate the ecological state of a water body – affect the WFD, and have to be judged under the obligations of Art. 4 Sect. 7 WFD (Case C 461/13).

The EJC judged that

- member states are obliged to fulfil both obligations of the WFD independent of each other: the obligation to not deteriorate the ecological state of a water body and the obligation to improve the ecological state of a water body,
- a deterioration of the ecological state of a water body is not only given, if a worse category described in Annex V WFD of an ecological state is realized; a

[20] Please refer to http://www.ffh-anhang4.bfn.de/ffh-anhang4-nordseeschnaepel.html

deterioration of the ecological state is already given if it is a smaller deterioration within one category described in Annex V WFD,

- a deterioration of the ecological state of a water body is also given if the deterioration is happening in a river which is already categorized with the worst category described in Annex V WFD,
- as a result member states are obliged to judge all projects which deteriorate the ecological state of a water body or which makes it impossible to reach a better ecological state under the obligations of Art. 4 Sect. 7 WFD.[21]

According to Art. 4 Sect. 7 S. 1 no. c) WFD a deterioration of a good ecological state can only be legitimated if an overriding public interest is given or similar reasons are given. Such as the benefit for health, security or a sustainable development are higher than the benefit of the goals of the WFD for environment and for the public.

According to Art. 4 Sect. 7 S. 1 no. d) WFD an overriding public interest or similar reasons (higher benefit for health, security or sustainable development) can only be declared if there is no reasonable alternative to the planned project.

As a result, if the population of *Coregonus maraena* in the River Odra is deteriorated, this is also a clear deterioration of the ecological state of the River Odra, both in Poland and Germany. So both countries face the danger of a violation of the WFD. A deterioration of the ecological state of a river as a result of a stream basin development is only justifiable by an overriding public interest or similar reasons such as that the benefit for health, security or a sustainable development are higher than the benefit of the goals of the WFD for the environment and for the public, and if there is no reasonable alternative.

[21] Please refer to http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:62013CJ0461&from=DE

4.3 The Ecological Deterioration of the River Odra, Concerning subcomponent 1A.6 (Polder in Międzryodrze)

Creating artificially a conflict in nature protection aims where there was no conflict before: deteriorating the ecological connectivity of the water arms versus deteriorating the drying of the wetlands.

Even if the Regional Directorate for Environmental Protection (RDOŚ) Szczecin can keep its promise they made at the conference in Criewen (Germany) on November 20, 2015 to protect the huge peatlands of the Międzryodrze area as a huge natural carbon and nitrogen sink against drainage[22], this would mean that during low water periods at least a significant number of the new flood gates in the dikes have to be closed in order to reduce the drainage effect during low water periods.

- Since the many natural river arms have to be intensively cleansed in order to improve the flood protection at least a little bit (most likely still with no significant impact on flood protection, see chapter 3),
- and since most of the flood gates which will be rebuilt now are located in the natural river arms[23], the artificial drainage will grow during low water periods even in spite of the fact that no pumping stations will be built.

Therefore it will be necessary to close a significant amount of the flood gates of the many still natural and in the future cleansed river arms during low water periods in order to avoid a non-natural drainage of the wetlands in the Międzryodrze area. As a result the river connection between the Międzyodrze area and the River Odra is clearly deteriorated, compared with the situation now.

[22] A promise which seems difficult to keep, since at the same meeting in Criewen on November 20, 2015 the ZZMiUW and also the leader of the Landscape Parks of West Pomeranian Voivodeship (ZPKWZ), Dorota Janicka, told that it is indeed planned to conduct a dry mowing in parts of the area, for a dry mowing the water level must be lower as it is now during the whole year. Both the ZZMiUW and also Dorota Janicka spoke at the conference that in their opinion the Międzryodrze area was “too wet”. So there is still suspicion that it is planned to drain the area.

[23] Only very few flood gates are situated in old artificial channels. If most flood gates would be situated in the few old artificial channels, of course these channels could be cleaned and the flood gates of these channels closed in order to avoid drainage, and this would also not deteriorate the ecological connection between the river arms in the Międzryodrze and the main River Odra (Western Odra and Eastern Odra outside of Międzryodrze).But most flood gates are not situated in the old channels but in the natural river arms there where they meet the River Odra.

As a result of the planned cleaning of the natural rivers in combination with the planning of the restoration of the old dikes and flood gates, an artificial conflict of two protection aims is created in the future due to the planned measures. This is a conflict which does not exist at the moment:

- either the drainage is too much (when the flood gates are open)
- or the ecological connectivity between the natural river arms in the Międzyodrze area and the Odra is significantly reduced (when the flood gates are closed)
- or both happens, if a compromise is developed between reducing the drainage effect and still trying to enable a minimum of ecological connectivity.

Therefore a massive negative impact of the planned measures

- on the central aim of the WFD, to protect and improve the ecological state of aquatic ecosystems and their depending land ecosystems and wetlands (Art. 1 a) WFD) and as part of this aim,
  - the protection aim of not draining wetlands on the one hand
  - and on the other hand the protection aim of keeping the existing ecological connection between the natural river arms and the main River Odra (Western Odra and Eastern Odra)
- and on species specially protected by Natura 2000 law holding strong regional populations on the affected SCI (Site of Community Importance) and SPA (Special Protection Area),
  - many of them needing not drained wetlands on the one hand
  - and many of them needing sufficient ecological connection on the other hand (e.g. Habitats Directive Annex II species *Misgurnus fossilis* and *Anisus vorticulus* need both, neither a drainage nor a deterioration of ecological connectivity, see chapter 5 below, where the infringement on Natura 2000 directives is examined)

is the consequence.

4.4 Infringement on the Water Framework Directive

As the authors of The World Bank´s EA correctly point out, an ecological deterioration of a river does not infringe on the WFD, if an overriding public interest is given, according to Art. 4 Sect. 7 WFD.

Of course flood protection is a very important public interest,

- but as was drafted in chapter 3, it is doubtful if the planned measures will have a significant improvement on flood protection; additionally, there is a real danger that these measures create adverse effects deteriorating flood protection,
- moreover, even if these measures would have a significant positive impact on flood protection, even in this case an overriding public interest does only exist, if there do not exist other reasonable alternative measures with a better cost-benefit-ratio.

In The World Bank´s Environmental Assessment (EA) of the project many potential alternatives have not been examined, they have not even been named! Therefore the following alternatives also have not been named in The World Bank´s EA:[24]

4.4.1 Alternative A: The possibility of the relocation of dikes along several parts of the Odra in order to enlarge the natural flood detention basins – reducing flood levels and therefore reducing danger to settlements and cities such as Szczecin

This alternative has not been examined within The World Bank´s EA, in spite of the fact that such huge wetlands exist along the Odra which could reduce the flood level, areas. These are diked at the moment with no settlements, parts of it are not used at all and being wilderness areas and already in state property. Other parts are used only on a very small scale for agriculture and forestry (the forested areas and parts of the meadows are also partly in state property).

In order to name only two examples:

[24] Please refer to EA, p. 102 - 103.

Huge wetlands North-East of Szczecin east of the River Odra, especially in the areas between Stepnica and Święta and between Święta and Lubczyna (additionally also between Lubczyna and Czarna Łąka, also north of Szczecin Dąbie, also north of Czarnocin, and also west of the Odra near Police) exist, with a space of minimum 5,000 ha and up to 13,000 ha- These potential areas offer a much better flood protection for Szczecin against the collision of flood waves from the North and also from the South than a polder in the Międzryodrze area, because

- these 5,000-13,000 ha are diked at the moment and not part of the flood detention basin; so if the dikes there would be destroyed and a new backward dike would be built around these wetlands, they create additional huge space for floods (different to the 5,200 ha in in the planned Międzryodrze Polder which are already now part of the natural flood detention basin and do not create additionally space for floods)
- and they create additionally space of floods at the right geographical point so that the water height in Szczecin due to a collision of flood waves from the South and from the North can be reduced (different to the 6,000 ha in the planned Międzryodrze Polder which is situated already in the collision zone of both flood waves at Szczecin; so that the planned polder cannot store the flood wave from the South in sufficient distance to the flood wave from the North; so the Międzryodrze Polder cannot reduce the collision of both flood waves and therefore not reduce the water height in Szczecin – see for details chapter 3):

  Since such a relocations of dikes in these huge areas especially north-east of Szczecin will

  - not only be able to create much more space for a flood wave resulting from Northern winds from the Szczecin lagoon
  - but also be able to create much more space for a flood wave from the South from upstream, in spite of the fact that this area is 15 km downstream of Szczecin, since a relocation of dikes has especially the effect to reduce the height of the flood wave coming from upstream. For example the dike relocation of only 400 ha at the River Elbe at Lenzen resulted in the fact that the flood wave 2013 was reduced at the place of the dike relocation for maximum 49 cm and 15 km upstream for already 15 cm.[25]

[25] Heinzelmann et al. (2016), p. 12-13.

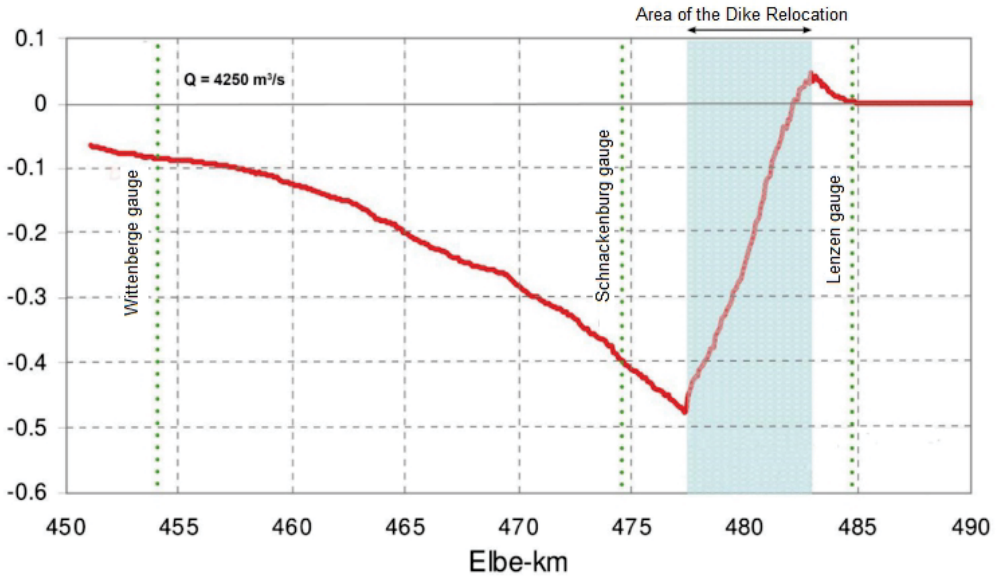

Fig. 5: Effect of Dike Relocation at Lenzen on Reducing Elbe Flood wave 2013

Source: Promny et al.(2014)

As mentioned, significant parts of these areas, especially between Stepnica and Święta, are in relevant parts not used at all and in state property. In other parts the areas are used for small-scale-mowing which is only done in order to receive EU CAP subsidies. After 1990 and before 2004, these meadows were not used at all. The CAP subsidies could also be paid if the land is too wet after a relocation of dikes, e.g. in Sweden and in Germany subsidies can be paid to farmers also in natural river basins and during years where they cannot mow. Another possibility could be to pay compensation to farmers so that they stop the use of their land which would enlarge the existing wilderness areas being attractive to both biodiversity, new inhabitants of the region and wilderness tourists; e.g. the moose uses this area already for reproduction.

In the northern part of the Warta Mouth National Park at the mouth of the River Warta into the River Odra at Kostrzyn nad Odrą (120 km upstream of Szczecin) exists a huge polder of around 5,000 ha north of the River Warta. At the moment this cannot be used in order to store floods, because a backward dike to the adjacent villages further North is totally missing. So if a backward dike would be built, this existing polder can be used for storing floods,

- raising the natural flood detention basin for an additionally 5,000 ha
- and being able to store an upstream flood wave from the south in sufficient distance to Szczecin.

For this, in both ways it would work much better than a new polder in the Międzryodrze area which is too close to Szczecin and which is situated in an existing flood detention basin and therefore cannot offer any additional space for floods.

It could also be examined – after the backward dike is built – whether it would be better to destroy parts of the front dike between the polder and the River Warta, so that this area would not only be used as a polder, but as a near-natural flowing flood storage. According to hydro engineers from The Netherlands this is most-likely better than a full polder, because

- as was shown in chapter 3, the River Odra has very long flood waves, so that polder generally have a lower flood storage effect and
- a (half) open flowing flood storage can better planish the height of a flood wave since it homogenizes the flood wave better. To simulate this planishing process with a polder is very difficult, and in case that the polder is filled too fast, its flood gates have to be opened again in order to avoid that the peak of the flood wave finds less space in the river bed and endangers adjacent settlements behind the dike due to the already filled polder. However, different to the Międzryodrze area, even a full polder in the Northern Part of the Warta Mouth National Park would not endanger adjacent settlements more than now since such a Polder raises in every case the spaces for floods and will be built in areas that are fully diked at the moment, and no new dikes are built in the natural flood detention basin (different to the Międzryodrze Polder, where new dikes are built in the natural flood detention basin which raises the flood danger for adjacent and upstream towns, see chapter 3).

As mentioned, this polder is already now part of the Warta Mouth National Park, it is a huge wetland area, and it is only used for small-scale mowing. If this polder would be used as a real polder, no additional cost would arise except the building of a new backward dike, since the water level would not be higher than now. So mowing could be continued. Only in the rare cases when the polder is used during a huge flood wave land use would be reduced during the time when the polder is filled. In the case that

this polder would be partially opened by destroying part of the front dike, then the water level will raise also during normal high water times which can raise the costs for farmers. But the CAP subsidies could also be paid. if the land is too wet after a relocation of dikes. For example in Sweden and also in Germany subsidies can be paid to farmers in natural river basins even during years where they cannot mow. Another possibility could be to pay compensation to farmers so that they stop the use of their land which would enlarge the existing wilderness areas, being attractive to biodiversity, new inhabitants of the region and wilderness tourists. Since the area is property of the state, this seems relatively easy to handle.

It has to be mentioned that such a relocation of dikes further away from the shore would not only help in cases of normal floods but also in cases of floods due to ice barriers. So such a relocation of dikes further away from the shore

- is not only a much better alternative to the subcomponent 1A.6 (polder in Międzryodrze)
- but also a much better alternative to the subcomponents 1B.1 and 1B.2 (the stream basin development of River Odra for icebreakers), especially, if such relocations of dikes are combined with the use of flood relief channels (see alternative C) and icebreakers with a shallower draught (see alternative B).