

Nature conservation versus flood protection – participatory conflict resolution for the Białka River Valley

Anna DUBEL
AGH University of Science and Technology, Poland

Karolina KRÓLIKOWSKA
Wrocław School of Banking, Poland

Abstract: Białka River, the right tributary of the Vistula River, flowing in the mountainous Małopolska region is commonly referred to as one of the last non-modified streams in the Polish Carpathians. Most of the river valley is protected within PLH120024 Białka River Valley Natura 2000 site. However, there are also economic activities going on in the valley. Therefore the protection of assets (e.g. infrastructure, forests) against flood is desired by the local communities. Nature protection within this Natura 2000 site stands sometimes in conflict with flood protection actions preferred by the local communities. This kind of situation was observed at the beginning of the development of a management plan for this Natura 2000 site. In order to ease the tension and prevent conflicts between authorities and local community, which could hinder effective creation of the management plan, the participatory process was designed and conducted as an additional support for the standard management plan development meetings. The aim of the paper is to present the management experiment - especially designed and structured participatory process, supported by the observations and questionnaires, leading to the proposals of the win-win solutions for the Białka River Valley. The outcomes are reviewed with regard to the possibility of the process replication in other places. The key factors that enabled achievement of win-win solutions are discussed.

Keywords: ecological conflict, participatory management, win-win solution, flood protection, Natura 2000, management plan

1. Introduction

Nature conservation did not gain deserved attention within the technical paradigm of the water resources management. This approach based on the engineering tradition focuses on

Correspondence Address: Anna Dubel, AGH University of Science and Technology, Faculty of Management, ul. Gramatyka 10, 30-067 Kraków, Poland. Tel.: +48 12 617 42 17. E-mail: adubel@zarz.agh.edu.pl. Karolina Królikowska, Wrocław School of Banking, Institute of Tourism, ul. Fabryczna 29-31, 53-609 Wrocław. Tel.: +48 600 923 911. E-mail: karolina.krolikowska@wsb.wroclaw.pl

hydrological infrastructure development (e.g. dikes, dams, reservoirs construction, river regulation) to control environmental problems with technical solutions. The turn to the highly infrastructural methods was present in many countries in Europe and around the world mostly in the late XVIIIth, XIXth and XXth centuries. The trend towards the development of technical solutions to flood and drought problems in Poland has been recently withheld to a large extent partly due to the lack of funds and a long return on investment period.

Attempts to merge ecology and hydrology research can be traced to the early sixties of the XXth century (Hannah, et al., 2004). Today ecohydrological and hydroecological approaches promote a shift from structure oriented thinking aimed at conservation and restoration towards a holistic approach focused on evolutionarily established ecological and hydrological processes, understanding of which allows to increase carrying capacity and sustainable development (Zalewski, 2002; Zalewski and Robarts, 2003). Sustainable water management or integrated water resources management has become the reigning paradigm over the past years (Pahl-Wostl et al., 2008). However, it is not uncommon that in practice an aggressive spatial development driven by accidental regional economic growth results in ecosystems' degradation. It is realized by placing too much construction and transport infrastructure in the floodplains regardless their natural features and capacities. There is a constant pressure for construction within floodplains and later consequent pressure to protect developed infrastructure against natural disasters. It happens that new investments are being built recklessly within the floodplain without consideration of the natural water flow regime. These issues are especially significant on Natura 2000 sites located in river valleys. It is a considerable challenge to reconcile contrary interests of many actors to get the social legitimacy and agreement on a management solution that joins nature conservation and people's interests.

In this paper we present a participatory conflict resolution process that was experimentally implemented in the real-life situation in order to support development of the Białka River Natura 2000 site management plan. This case study was developed within Swiss Grant project „Promotion of participation and mediation in environmental management at the Natura 2000 sites” (PINAT). Its purpose was to develop practical models of public participation and conflicts resolution in nature conservation policy.

There might be various approaches to prevent or to terminate a conflict. The hypotheses tested within the Białka River case study was as follows: the participatory approach to the

conflict resolution within Natura 2000 site may lead to an effective win-win solution.

2. Managing environmental conflicts

Environmental or ecological conflicts are related not exclusively to environmental resources access, distribution, management and their consequences for the ecosystems and human wellbeing. Conflict situations may have different character and they can be defined as (Runc, 1998):

- structural, when there is an objective contradiction in the socio-ecological system, e.g. contradictory interests, plans or aims of the parties that can't be satisfied at the same time,
- psychological, when there is a hostility between groups or individuals,
- behavioural, when there are actions or social behaviours based on competition or fight between the parties in order to reach benefits or conquer an adversary.

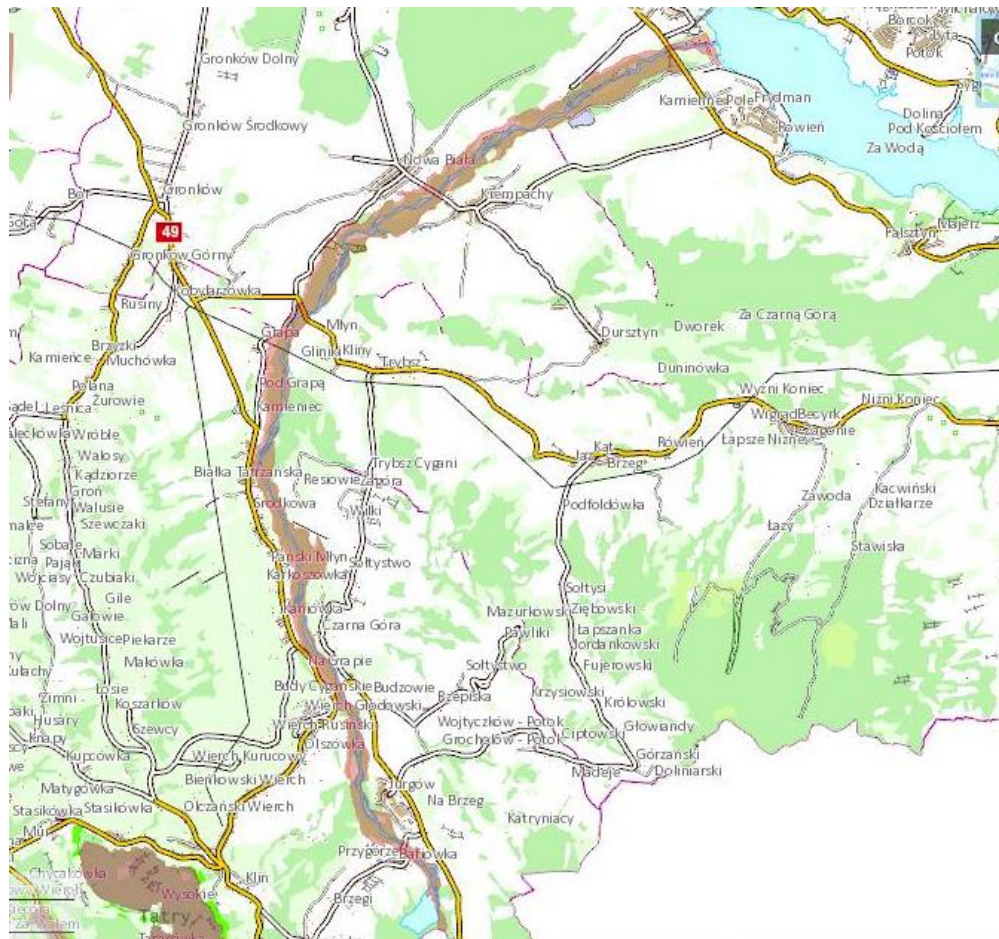
Conflicts can be also classified according to their reasons as conflicts over land, water, or other natural resources. It is crucial to understand, that not every conflict situation can lead to the conflict development (Sztumski, 2000), which gives a space for action in advance or during the process of tension growth.

How to deal with environmental conflict situations in order to prevent them beforehand, to mitigate them while they develop and to resolve them if they occur, is a valid question studied recently, but not exclusively, in e.g. Shamir (2003), HARMONICOP Handbook (2006), Królikowska (2007), or Dubel et al. (2013). These publications give an overview and advice on alternative dispute resolution approaches and development of participatory processes to meet the actual needs and aims of stakeholders. There is usually more than one best or optimal solution of a conflict, while dealing with multiple stakeholders with different, sometimes contrary interests. Participatory management is one of the most advised approaches, because it advocates collaboration between different stakeholders from the earliest moment possible (Pahl-Wostl et al., 2008).

3. Conflicts within the Białka River Valley

The Białka River, flowing in the mountainous Małopolska region, is commonly referred to as the last non-modified stream in Poland. Most of the river valley is protected within PLH120024 Białka River Valley Natura 2000 site.

Figure 1: PLH120024 Natura 2000 site



Source: own elaboration, based on Geoportal.pl

Figure 2: Bialka river valley, PLH120024 Natura 2000 site



Source: Picture taken by Dubel A.

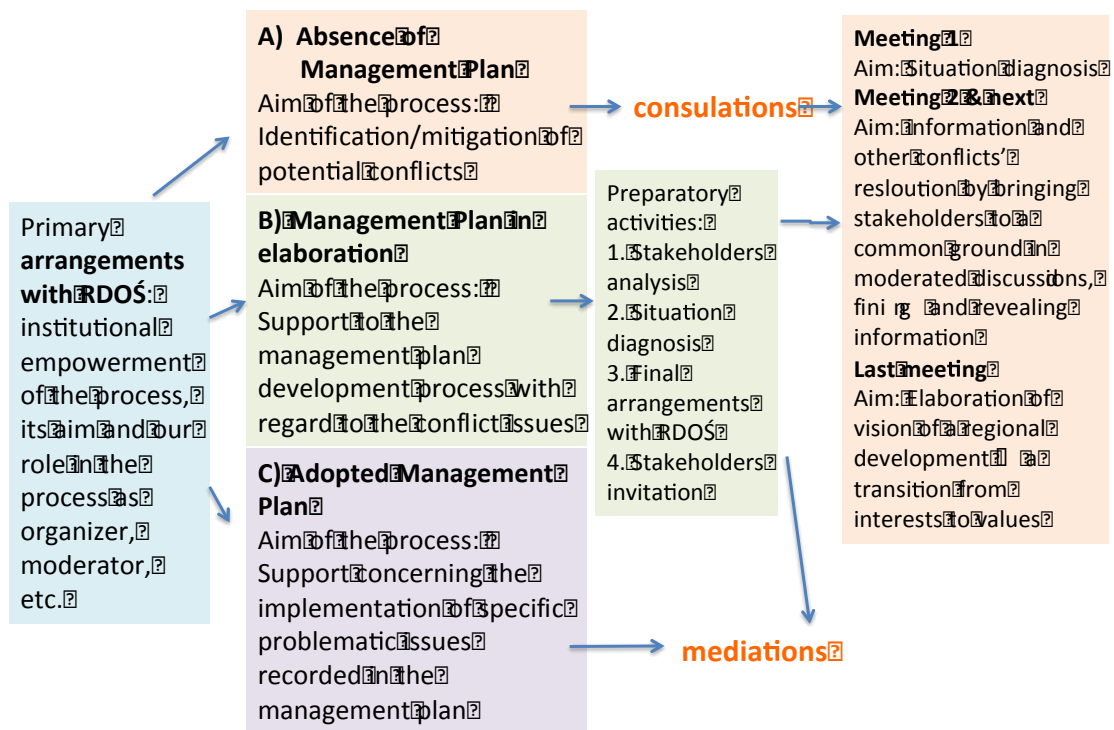
Most important protected values of the site are: an alpine river environment and its ligneous vegetation with *salix elaeagnos*. (SDF of the Natura 2000 Białka River Valley, 2004). There are also economic activities going on in the valley and therefore local communities expect the protection of assets, such as construction, road infrastructure and forests against flood. Nature protection within this Natura 2000 site stands sometimes in conflict with flood protection solutions preferred by the local communities (CRS, 2012). Land management practices in the valley are changing very fast. Traditional practices that created valuable ecosystems of the valley are substituted by more aggressive interventions. Gravel extraction from the riverbed is a leading example. Quickly developing tourism and other economic sectors (agriculture, forestry) constitute pressure on infrastructure development and affect natural resources, such as clean water. It is the lack of sewage treatment, which leads to the degradation of water quality that bothers the local communities the most, together with the limitations set on the flood control measures. The deterioration of habitats valuable for ecologists does not seem to be a priority for the Białka River Valley inhabitants (CRS, 2012). Therefore an urgent need to protect the natural

environment via legal regulations (Kraź and Balon, 2010; Kraź, 2012) stands in conflict with local social, economic and political demands.

4. Method application and outcomes

We have designed a participatory conflict resolution process that was experimentally implemented in the real-life situation (Figure 3) and subsequently analysed its results following the standard case study approach. This process was applied as a support for the ongoing management plan consultations for the PLH120024 Białka River Valley in order to prevent conflicts between nature conservation authorities and local community.

Figure 3: A participatory conflict resolution approach



RDOŚ – Regional Environmental Protection Board

Source: authors' own elaboration

In order to incorporate all relevant stakeholders the existing working groups were broadened, using the snowball technique (Gilbert, 2008: 179). Inhabitants, representatives of local business, social enterprises, non-governmental organizations and local authorities met four times with the Regional Environmental Protection Board (REPB) and the management plan contractor. On the clear request of the stakeholders one of these meetings was entirely dedicated to the flood control solutions. Both Regional Water Management Board (RWMB) and consulting company preparing the flood management options (RZGW, 2009) were invited for this session and took part in the rough discussion. In the end all sides have declared to work further on a solution that will be satisfactory for everybody. Inhabitants perceive natural flooding as a kind of serious hazard so they claimed a leeway to regulate the river and extract gravel. They did not accept legal regulations, and did not want to admit that gravel extraction practices, once extensive, have changed very much nowadays. Therefore another session, on the stakeholders' request was devoted to discussions about possible changes in legal regulations. To make it possible politicians were invited – representatives of the local communities in Polish and EU parliaments. The behaviour of the local people during these meetings was quite aggressive in the beginning, defensive and offensive statements mixed and the atmosphere was rough. However, from meeting to meeting the atmosphere was getting better as the local communities gained trust and saw that their wishes concerning negotiations with different authorities as well as other promises concerning the process were fulfilled by the process organizers. We have achieved the following final effects of the process:

- existing information conflicts concerning flood protection planning were resolved,
- structural conflict was mitigated as the local community gained more understanding of legal frames of Natura 2000,
- the working group on wastewater treatment facility was voluntarily created,
- informal networks for future dialog and cooperation between stakeholders were established.

However the main and promising win-win solution of conflicts in Białka River Valley case lies in the established management plan with incorporated suggestions of stakeholders and defined actions that should be taken to both protect nature and serve people. The compromise was achieved concerning the buffer zones for the protection of bridges against flood. Places of limited intervention were precisely defined, allowing for the adoption of the flood protection option. This decision will help to maintain the safety of people and to avoid high losses

(exceeding the costs of flood control actions) during floods while not affecting the status of protected habitats.

What goes beyond an ordinary compromise is the bottom-up initiative to resolve problems with wastewater treatment and work out a new flood defence plan. The new plan describes technical food measures that satisfy needs of all the conflicted parties. Nevertheless, when the participatory process was terminated a few unresolved issues have still remained, like possible development of tourism infrastructure or difficult procedures to receive financial compensation for the private lands taken by the water.

The results of the participatory process were measured by the stakeholders' willingness to cooperate and their level of commitment to the process declared in the questionnaires. The results were positive, most people declared their willingness to cooperate with each other and institutions. They took part in the process and thought that it was valuable. With time there was also a noticeable change in the tone of discussions and attitudes of participants towards more positive ones.

5. Discussion of the results

The analysis of the process performed in the Białka River Valley gave us certain ideas about public participation in nature conservation. First of all it was crucial that the conflict resolution process was officially integrated with the process of management plan development for this site. The engagement of nature conservation authorities responsible for the management plan acceptance, publication and implementation ensured the proper legitimization of the whole process. It is absolutely necessary that results of negotiations or mediations are legitimate according to law and official procedures.

The process resulted in the "seeds of consensus" and made stakeholders talk to each other. Sometimes "endless" discussions of the same issue enhanced its comprehension by the participants and improved information exchange. Such many-sided discussions of the complex issues at stake were a good way forward. However we have learned that real and effective public and stakeholders participation is a very time consuming process and its results can never be foreseen in advance. In order to reach consensus mental models of interest groups need to be changed and it takes not only a lot of time, but a huge effort and good will of all sides as well.

Our experience shows that the process of management plans development could be very much improved if adequate amount of time would be assumed just from the beginning, when contracts are signed. Unfortunately it is usually not possible due to imperfect polish law concerning public contracts (not enough time and money for proper public participation).

It would also be helpful if environmentalists would be trained in social communication skills or professional moderators would be hired to facilitate the management plans development.

The initial aggressive behaviour of stakeholders can be partly explained by the way Natura 2000 network was implemented in Poland i.e. without any reasonable social consultations. Many people also experienced useless meetings, which gave only the illusion of influence, whereas the actual decisions were taken outside local communities. Thus, it is a real challenge in such multilateral rough discussions to uncover true interests hidden behind behavioural masks and find common ground to find solutions.

Based on Bialka River Valley experience key factors of participatory conflict resolution success can be determined:

- well prepared institutional setting
- official possibility to implement created solutions;
- proper stakeholder analysis that ensures representation from all sides of the conflict, (snow-ball technique applied in advance might be helpful);
- enough time for meetings, talking with people and building trust,
- organizers always deliver what was promised in the meeting,
- adequate process structure based on deep situation diagnosis,
- clearly defined goals and being absolutely open with people about the aim of the discussion, (allowing deviations, while keeping an eye on the goal),
- professional setting of discussion (by getting professionals to lead meetings; by providing real, full and easy to understand information by experts; by appealing for mutual respect and good will of all sides),
- some key factors like stakeholder engagement or their willingness to openly state their interests might be sometimes out of organizers' control.

6. Conclusion

It is a challenge to enhance public participation in decision making for the effective management of Natura 2000 sites. While the planning phase is over the implementation of Natura 2000 management plans will begin, which might be very difficult due to dispersion of land ownership, imperfect law and unclear issues of funding. Hence, it will be very important to support and sustain social communication set off during management plans development. Consultation meetings, information campaigns, as well as flow of reliable and accurate information help to enhance mutual trust and respect of communities and institutions, and thus prevent potential conflicts. Effective elaboration of win-win solutions requires application of the rigorous participatory process as it was presented in the paper. It is especially important and difficult in case of river valleys where flood protection issues include such an essential factor like safety, which means much more to people than pure economic interests. The process replication in another place is certainly possible and recommended, however local circumstances must be taken into consideration.

7. Acknowledgements

We would like to acknowledge the whole interdisciplinary team of co-workers, mostly from the Centre for System Solution Association, which participated in the PINAT project „Promotion of participation and mediation in environmental management within the Natura 2000 sites” conducted by the CRS Association in 2012-2013, co-financed from the Swiss Grants. We would also like to acknowledge project partners: Fundacja Dobrych Rozwiązań, Dialogue Matters, UK and the Oegut – Austrian Society for Technology and Environment.

Literature

- CRS (2012). *Protocols: no 1, no 2, no 3, no 4, from the social consultations conducted in the Białka River Valley PLH120024 within the project: Promotion of participation and mediation in environmental management within the Natura 2000 sites*. Centre for Systems Solutions Association (CRS) Press (in Polish). Available at: http://www.natura2000.crs.org.pl/partycypacja/pl/index.php?id_s=29. Accessed 13.08.2014.
- Dubel, A.; Jamontt-Skotis, M.; Królikowska, K.; Dubel, K.; Czapski, M. (2013). *Metody rozwiązywania konfliktów ekologicznych na obszarach Natura 2000*. CRS Press (in Polish).
- Gilbert, N. (2008). *Researching social life*. 3rd ed. London: Sage.
- Hannah, D.M.; Wood, P.J.; Sadler, J.P. (2004). Ecohydrology and hydroecology: A 'new paradigm'? *Hydrological Process* 18: 3439–3445. DOI: 10.1002/hyp.5761.
- HARMONICOP Handbook (2006). *Learning together to manage together – improving participation in water management. The EU Project Harmonising Collaborative Planning*. Osnabrück: University of Osnabrück, Institute of Environmental Systems Research.
- Kraż, P. (2012). Problemy w zarządzaniu systemem krajobrazowym Doliny Białki. *Problemy Ekologii Krajobrazu XXXIII*: 229-234 (in Polish).
- Kraż, P.; Balon J. (2010). *Przemiany środowiska przyrodniczego zlewni Białki na Podtatrzu*. In: Kotarba, A. (ed.). *Nauka a zarządzanie obszarem Tatr i ich otoczeniem, tom I*: 77-82. Zakopane (in Polish).
- Królikowska, K. (2007). *Konflikty społeczne w polskich parkach narodowych*. Kraków: Oficyna Wydawnicza Impuls (in Polish).
- Pahl-Wostl, C.; Mostert, E.; Tàbara, D. (2008). The growing importance of social learning in water resources management and sustainability science. *Ecology and Society* 13(1): 24. Available at: <http://www.ecologyandsociety.org/vol13/iss1/art24/>. Accessed 7 August 2008.
- Runc, J. (1998). *Ochrona środowiska a konflikty społeczne w Polsce*. Poznań: Wyd. Nauk. Wyższej Szkoły Nauk Humanistycznych i Dziennikarstwa (in Polish).
- RZGW (2009). *Program ochrony przeciwpowodziowej doliny pot. Białka na odcinku w km 0+000- 24+500 na terenie pow. nowotarskiego i tatrzańskiego woj. Małopolskiego*. Kraków (in Polish).
- SDF of the Natura 2000 Białka River Valley* (2004). Available at: <http://natura2000.gdos.gov.pl/datafiles/download/PLH120024/sdf>. Accessed 13 August 2014.
- Shamir, Y. (2003). *Alternative Dispute Resolution Approaches and their Application*. PCCP series no 7. UNESCO-IHP. Available at: <http://unesdoc.unesco.org/images/0013/001332/133287e.pdf>. Accessed 13 August 2014.
- Sztumski, J. (2000). *Konflikty społeczne i negocjacje, jako sposoby ich przewycięzania*. Częstochowa: WWZPCz (in Polish).
- Zalewski, M. (2002). Ecohydrology - the use of ecological and hydrological processes for sustainable management of water resources. *Hydrological Sciences Journal* 47: 823–832.
- Zalewski, M.; Robarts, R. (2003). Ecohydrology - a new paradigm for integrated water resources management. *SIL News* 40: 1–5.

Ochrona przyrody kontra ochrona przeciwpowodziowa – partycypacyjne rozwiązywanie konfliktów na przykładzie Doliny Białki

Streszczenie

Płynąca przez górskie rejony Małopolski Białka, będąca prawym dopływem Wisły, jest uznawana za jeden z ostatnich naturalnych potoków w polskich Karpatach. Większa część Doliny Białki jest objęta ochroną, jako obszar Natura 2000 (PLH120024). Jednak obszar ten jest również wykorzystywany gospodarczo i dlatego miejscowa ludność oczekuje ochrony dóbr materialnych (infrastruktura, uprawy leśne) przed powodzią. Oczekiwania te są czasami sprzeczne z wymogami ochrony przyrody. Taka właśnie sytuacja miała miejsce, kiedy rozpoczęto prace nad planem zadań ochronnych dla Doliny Białki. Aby złagodzić napięcia i zapobiec konfliktom mogącym utrudnić prace nad tym dokumentem zaprojektowano i wdrożono proces partycypacyjnego rozwiązywania sporów. Uzupełniał on wymagane przez prawo ochrony przyrody standardowe konsultacje społeczne. Celem niniejszej publikacji jest przedstawienie tego eksperymentu z zakresu zarządzania partycypacyjnego. Jako wynik towarzyszących procesowi obserwacji i ankiet ewaluacyjnych przedstawiono propozycję takich rozwiązań zaistniałych sytuacji konfliktowych, w których nie ma przegranych. Wyniki poddano dyskusji z myślą o wdrożeniu zaproponowanych rozwiązań na innych obszarach.

Słowa kluczowe: konflikty ekologiczne, zarządzanie partycypacyjne, ochrona przeciwpowodziowa, Natura 2000, plan zadań ochronnych