

The Involvement of the Public and Independent Experts in the Decision Making Process: An Austrian Case Study about Hydropower Projects

H.P. Nachtnebel

Abstract: The objective of this paper is to analyse the role of public participation in two similar hydropower projects which were planned along the Austrian section of the Danube. While the first project could not be implemented because of an unexpected movement of grass-root groups opposing the project, the second scheme could be completed and gained public consent although it was built in a densely populated region and a challenging technological environment. In both cases groups of independent experts played an important role in the decision making process. The two case studies are analysed and the role of the public is investigated. Finally, conclusions are drawn for the successful integration of the public into the decision making process.

1. Introduction and Problem Description

In Austria hydropower contributes more than 70 % of the total Austrian electric power supply. The interest of the federal government in hydropower development has been several times clearly expressed in governmental declarations. For example, in 1979 such a declaration stated that the most important source of energy for Austria is hydropower and that the expansion of hydropower is to be continued, albeit with regard to the interests of nature and environmental protection.

As a result of the Second Nationalization Act of 1947, hydropower development and operation is in the responsibility of companies which are completely in the public property. Recently, the whole energy sector of Austria is under reorganisation due to the European liberalisation of the energy market and some companies are being under privatisation.

A separate company (Österr. Donaukraftwerke AG; DOKW) was established in 1947 to utilise the hydropower potential of the Austrian section of the Danube. With the construction of nine multipurpose hydropower plants from which one is jointly operated with the Federal Republic of Germany, the major portion of a multiphase hydropower development plan was implemented without any severe objections (Fig. 1). The costs for the projects, which also provide navigation, flood control, and other infra-structural benefits, were allocated by informal negotiations among the power company and the respective federal authorities. Until 1983 only the potential hydropower site Freudenu in Vienna and the downstream scheme

Hainburg were missing (Fig. 1). The scheme Rührsdorf which has not been developed yet should mainly serve navigation purposes and is of low interest for energy generation.

2. Description of Two Case Studies

Next, these two projects are being described from which the site Freudenau has been successfully built. The most downstream scheme is a good example how the lack of public participation resulted in major conflicts among interest groups which lead finally to a stop of the whole project.

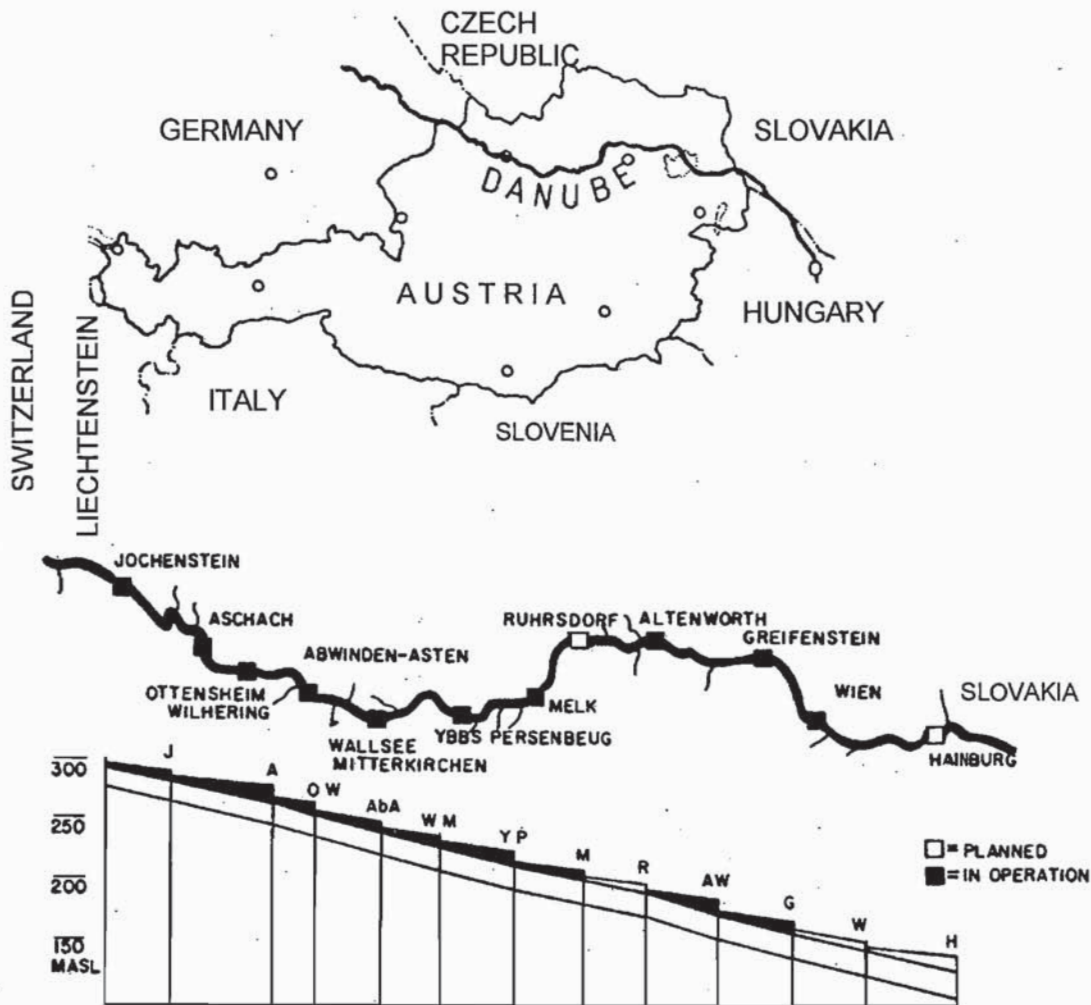


Figure 1: The existing and planned hydropower schemes along the Austrian Danube

2.1 Case Study Hainburg

In 1983 a governmental declaration explicitly called for the construction of a hydropower and navigation facility near Hainburg, a village in Lower Austria downstream from Vienna.

The Österr. Donaukraftwerke AG (DoKW, 1984) elaborated a general project which was based on the technical experiences gained from all the previous schemes upstream and asked the Supreme Water Law Authority (SWLA) associated to the Ministry of Forestry and Agriculture to designate this economically quite attractive hydropower project as a "preferred hydraulic scheme". Such a designation does not substitute any water concession but normally it accelerates the decision making process and automatically the SWLA at the Austrian

Ministry of Agriculture and Forestry will become the lead agency in all federal responsibilities. This special designation was granted in 1983 because of the importance of this scheme for the Austrian economy.

Another important factor is in the ecological integrity of the riparian habitat and wetlands along the unimpounded part of the Austrian Danube (Nachtnebel, 1994). Already in the seventies, about ten years before the Hainburg project was elaborated, initiatives started to protect this unique flood plain together with its wild-life and rare flora. In 1978 and 1979 major areas within federal forest preserves were legally protected by the natural protection agencies of the two provinces of Vienna and Lower Austria. During this period the provincial government of Lower Austria initiated activities to delimit a natural preserve worth of becoming a national park. The area was to include the riparian forests and wetlands in three Austrian provinces.

Although the provincial government is primarily responsible for habitat preservation, in the last decade the federal government joined two internationally important environmental conventions aiming to protect wetlands and to preserve European wildlife and its respective habitat. Austria passed a federal law ratifying these conventions in 1983.

The next step in the procedure was to obtain a water permit. Because of the importance of the riverine forests and wetlands that would be affected by the project the SWLA linked the granting of a water concession to a deforestation permit and to the approval with respect to nature protection laws which are in the responsibilities of the respective provinces. It is worth noting that neither legally based nor informal guidelines existed in this time to assess the compatibility of the project with environmental or social objectives. The SWLA had to ensure that any project had to be compatible with public interests which among others include the safeguarding of water with respect to quantity and quality. To achieve this task representatives from other ministries, provincial authorities, agencies and experts were involved in the negotiation phase. It should be emphasised that in this context negotiating always refers to a specific project proposal without considering other design alternatives. The proposed project was mainly designed to maximise hydropower output and to support navigation but it neglected concerns about adverse environmental impacts raised by small 'green groups'. During the negotiation process several conditions were imposed on the DoKW AG and the project had to be modified in several technical aspects. However, by the end of 1984 all required concessions were granted on the condition that several additional measures to protect the environment were implemented.

Public participation in the negotiations was restricted to those having any property or water right (concession) which might be directly affected by the project. Thus, for instance, nature protection organisations which received strong support by the public opinion and from the press were excluded from the procedure. (Bleed et al., 1990)

Though all legal prerequisites had been met, construction of the project could not be initiated. Contrary to the expectations of the governmental authorities, forest clearing works were stopped by several thousands of eco-activists who occupied the construction site and who received continuous strong support by the general public (Hesoun and Pötttschacher, 1985). In order to avoid further escalation of the conflict, the federal government suspended permission for forest clearing. A year later on the basis of a legal formality, the Administrative Court annulled the already granted water right.

Meanwhile, in 1985 the federal government established an ecological advisory board consisting of engineers, ecologists and representatives of the eco-groups. Without any legal basis the environmentalists achieved it finally to be involved in the decision making process. In spite of its heterogeneity, the board worked rather effectively. After numerous meetings and Hearings, the board recommended the establishment of a national park and suggested that the still unimpounded section of the river should be preserved in its natural state (Ecological Advisory Board, 1985). In 1987 the federal government declared that any hydropower facility should be sited in compatibility with the "Danube-March-Thaya" wetlands, a national sanctuary that was later on implemented along the Danube to preserve the riparian ecosystem.

2.2. The Hydropower Station Freudenu

The second case study refers to another hydropower scheme by name Freudenu which is located in the city of Vienna about 50 km upstream of Hainburg. The site conditions are rather complex due to the existing infrastructure such as bridges across the Danube and densely populated areas which constitute tight constraints for the construction. Further any changes in the hydrological boundary conditions for the groundwater system in the residential areas had to be avoided because the footing of many buildings were based on wooden piles and any change in the groundwater dynamics might lead to subsidence of foundation works. Several bridges crossing the Danube had to be lifted to ensure navigation also under an increased water table. The construction site itself had to be limited to a very small area located in an urban environment and therefore the scheme had to be completed in three steps starting with the sluices, some weir sections and finally the power house was implemented (Ruscher, 1998).

It is worth to mention that during the whole construction period flood protection for the city of Vienna had to be ensured and also navigation had not to be aggravated.

In the period from 1986 to 1988 both the provincial government of Vienna and the DoKW organised an free competition for the elaboration of proposals to improve the flood protection of Vienna, to stimulate urban development along the Danube, to ensure navigation, to support water based recreation, and finally to improve the ecological conditions in this region. The competition was organised in two steps. In the first step projects at the general level had to be developed and then an international, independent and interdisciplinary composed jury selected a subset for the elaboration of a detailed project proposal. These proposals were broadly discussed by the public and finally the international jury came up with one project which satisfied to a large extent all the requirements. Further, it was recommended that the plan for this hydropower scheme should be subjected to an environmental impacts compatibility study. All the plans and proposals were fully accessible to the public and information material was widely disseminated. About 15 000 people participated at information meetings. By the end of 1988 a general project proposal was submitted to the SWLA (DoKW, 1988). Simultaneously, it was decided by the DoKW that a voluntary environmental compatibility should be elaborated and an independent institution, the University for Agricultural Sciences in Vienna, was invited for the evaluation procedure. In total about ten expert groups were established to evaluate the project impacts with respect to

- hydrology and hydraulic structures
- sanitary engineering and protection of water bodies
- limnology and fish ecology
- regional planning and infra-structural development
- navigation

- landscape planning and landscape ecology
- botany
- zoology and
- climatology.

The experts concluded that the project can be realised under the restriction that about 130 conditions are being satisfied during construction works (University for Agricultural Sciences, 1991). Due to the fact that no legal basis for an environmental impact assessment existed in that time the positive declaration of the university experts only indicated that even very critical experts could not see any obstacle for this project. A subsequent information campaign mainly carried out for the Viennese inhabitants was followed by a referendum in May 91. About 44 % of the entitled people participated from which 72 % were in favour for the project. No major opposition raised its concerns against the scheme and no major campaign was initiated. Immediately after the successful referendum the Supreme Water Law Authority invited all people having either a property or a water right in the project area and also those people who live in this region to the main trial for the concession. According to the law of public participation about 40 000 people were entitled to attend the trial. Finally about 400 people participated and within two months the main trial was successfully completed. The 130 conditions which were listed in the environmental impact declaration were adopted by the Water Law Authority and extended to about 200 modifications of the original project. Further, the Water Law Authority stated that detailed plans had to be elaborated which were subsequently subjected to further evaluation of the respective experts. After this principal agreement several other permits had to be obtained in specific trials referring to the energy law, the navigation law, the law for technical constructions, the forestry law etc. In 1992 all these trials, in total 55 proceedings at law, were completed and the construction works could start. The project was finished in 1998 and about 10-15 % of total construction costs referred to measures to improve the environmental conditions in the river and in the former flood plain.

It is worthwhile to note that during the opening ceremony, which was in previous times a manifestation of the virtue of engineers and of the importance of hydropower companies for the Austrian economy, many of invited speakers raised their concerns about the economic efficiency of this scheme because of reduced energy prices due to liberalisation of the European energy sector. However, it can be claimed that hydropower utilises a renewable energy and although it is related with high investment costs it will become economically attractive in medium term due to the low operation costs.

3. Analysis of the Two Projects

Although the projects exhibit several technical similarities the procedures for granting the concession ended completely different. In this chapter the reasons for these outcomes are analysed and the emphasis is put on the legislation and the institutional aspects.

3.1 The Austrian Water Law

Austria is a federal state composed of nine autonomous provinces. Among the important characteristics of this federal state are the independent authorities of the provinces in the legislative field, their right to participate in legislation at the national level, and the existence of individual administrative bodies in the form of governments headed by a provincial

governor. For almost all administrative activities there are three levels of administration: the local authority, which is responsible for the administration of an individual district; the office of the provincial governor and the federal minister responsible for the respective issue. In principle, each administrative level is bound by any instruction from a superior authority.

In the field of water resources, the federal government has comprehensive jurisdiction. The federal Austrian Water Law (AWL) stipulates that to protect public interests, all bodies of water shall be kept clean to ensure the health of human beings and the fauna. The law also entitles federal authorities to supervise water management to protect the environment. According to AWL the utilisation of water is permitted to everyone but for almost all cases a concession (a water right) is required. Dependent on the size of the project and some other criteria, a water concession can be obtained from the local, the provincial or the federal authority. For large projects, the SWLA, associated to the ministry of forestry and agriculture, is the lead agency in the negotiation procedure for issuing the water use permit.

In 1985 an amendment to the AWL declared the preservation and improvement of ecological functions of water bodies as a public interest. Further, in 1990 the paragraph which entitles the SWLA to designate a projects as being in the special interests of the public was annulled. This paragraph supported an accelerated trial and excluded many interests opposing a project. It was an important legal tool during the reconstruction phase during the second World War and it supported the development of hydropower schemes in Austria.

Another amendment in 1990 widened the scope of the possible affected people and extended it from those who had any water right or property which might be affected to those whose general living interests might be concerned. Also, the participation of interest groups was facilitated.

Surprisingly, navigation is in the responsibility of the Ministry of Trade and is not a part of the AWL and is in the responsibility of the Ministry Public Economy and Transport.

3.2 Environmental Impact Assessment

Obviously, utilisation of water affects strongly the environment and although some aspects of environmental protection are included in the AWL environmental legislation and administration has to be considered additionally. Environmental protection encompasses a multitude of legislative acts which fall either into the responsibility of the provinces or into federal power. Until 1990 efforts have been intensified to extend federal responsibilities in environmental matters but still a complex and unintelligible situation remained. This means that no federal guidelines had been established neither for an environmental impact assessment nor for an environmental compatibility study.

Until 1993 two laws were important for environmental protection. The AWL enumerates among the public interest the protection of water quality and the safeguarding of water quantity. As mentioned above, the preservation of ecological functions was also included in the list of public interests but this happened after the Hainburg case in 1985.

Second, environmental preservation is, in contradiction to the AWL, in the responsibility of the provincial governments. So, to obtain a water permit, a trial at the provincial level is necessary in addition to the main trial under the SWLA, the lead agency at the federal level. In 1984 no regulations had been elaborated which referred to environmental impact

assessment procedures. This deficit was perhaps one of the main reasons that the Hainburg case failed. Even for the case of the hydropower scheme Freudenuau no legal framework was accomplished for environmental impacts assessment (EIA) but a law was already under preparation and some principles of the draft version and also EU guidelines from 1985 referring to EIA guidelines for large public and some private projects could be adopted on a voluntary basis.

3.3 International Agreements Concerning Navigation

Austria's interest in maintaining a navigable channel on the Danube results from international conventions and the economic benefits of the integration of the Danube into the Rhine-Main Danube Canal project, which will link the North Sea to the Black Sea. The agreement on the International Convention on Navigation on the Danube, was adopted in 1948 in Belgrade and joined by Austria in 1960. As part of the agreement, the bordering countries promised to maintain a navigable river in their respective sections of the Danube. The Danube Commission, headquartered in Budapest, issues recommendations on the minimum depth of water, the width of the channel, the dimensions of gates etc. and motivates the individual countries to enforce these recommendations by setting up appropriate rules.

4. The Role and Importance of Public Participation

It is obvious from these two examples that the public opinion stopped one project while it supported clearly the project objectives in the second example. But who is really the public? Public interests are enumerated in the AWL; then there are numerous NGOs which are active in the verbalisation of the public opinion, then there are independent experts who reflect at least parts of the public interests, and finally there is the press which manipulates and focuses public interests. Most of the existing literature (World Bank 1997; Hulme and Edwards, 1997) on this subject has been written on the subject of NGO's relation with business and governments, nowadays the term 'civil society' has emerged (Putnam, 1993). Besides some attempts to distinguish among NGOs and Civil Society both have in common that they care about the environment and social stability.

In the current Austrian legislation the role of the public in negotiation processes is defined by the Environmental Compatibility Law and the Public Participation Law which became effective in 1993 and respectively in 1996 but until now no water project has been subjected to such a procedure.

The example from Freudenuau indicates that the public could be integrated on a voluntary basis. Several criteria are seen as important. First, the planning and decision making process have to be transparent from the early stage to ensure credibility. Secondly, the interaction among planners, decision makers and the public should be stepwise to ensure the integration of feedback from the public into the further planning phase. This stepwise approach gives enough time to make the public familiar with the problems and to initiate a learning process among the planners and the public. The dissemination of information should be appropriately elaborated for different public groups, like the broad public, specific interest groups, experts and the press. If the gap between available information for experts and the public is getting to large a loss in credibility might occur. Private interest groups having more expertise than the broad public might contribute to close this gap in information as long they are supported with reliable information from the planning institution.

Another deficit is seen in the planning approach itself. The Freudenau case exhibits clearly a multi-criterion framework for the assessment of the scheme trying to achieve a compromise among environmental, social, regional, and economic objectives. On contrary, in the case of Hainburg, a single objective approach guided the whole planning phase trying to maximise energy output and to support navigation. Ecological objectives played a minor role in the approach. A multi-criterion approach (Nachtnebel, 1994) clearly showed that the scheme Freudenau ranked quite low in comparison to several alternative proposals which were developed between 1985 and 1990.

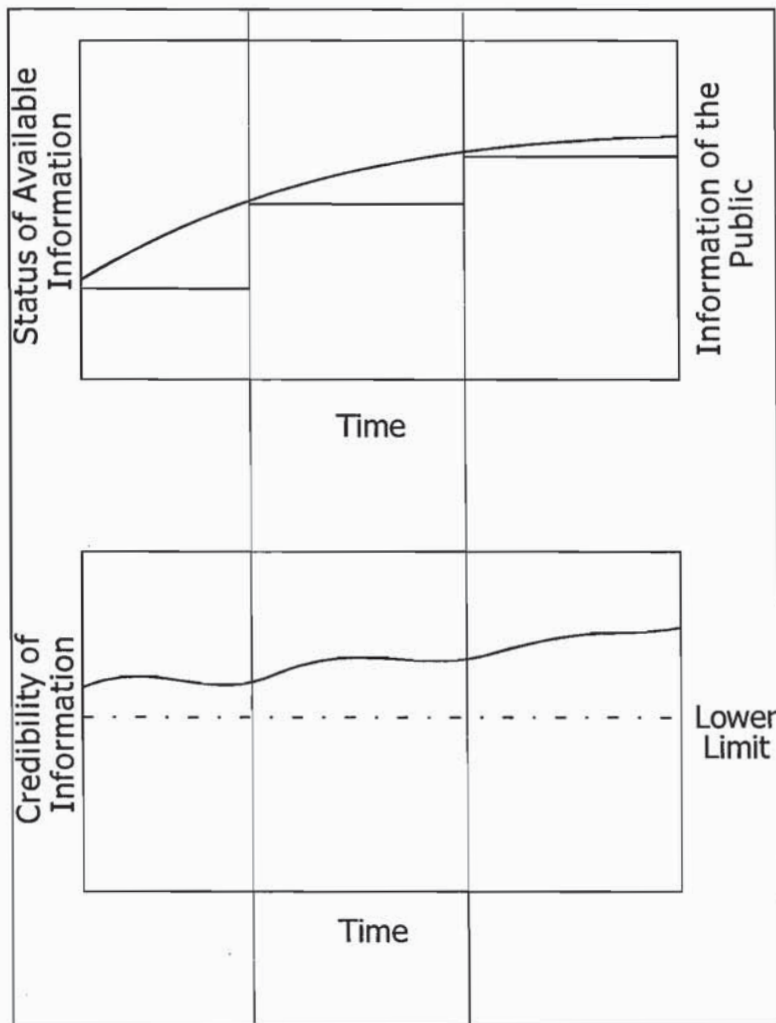


Figure 2: Temporal Development of Public Information and Credibility of Planners

5. Summary and Conclusions

Two case studies about hydropower development in Austria were discussed. Although quite similar in the technical design one project failed while the other one could be successfully completed. The first project failed because of unequal treatment of ecological concerns in comparison of economic objectives, especially hydropower generation.

The role of public participation is analysed in the two projects and it can be concluded that in both cases the public played an important role. In the first, the legal framework for public

participation was not yet developed and the public intervened by claiming the construction site. In the second case study which followed about five years later to the Hainburg example the public was involved from the early beginning. First, within a free competition the scope of alternative approaches was screening and then a project was selected by an international jury and was subsequently elaborated in detail. A voluntary environmental compatibility statement was elaborated by the hydropower company which was subsequently evaluated by an independent scientific institution. Finally, a referendum was held which was supported by the Viennese people voting with 72 % for the planned scheme.

Finally, some guidelines were drawn how the public, which itself is composed of different interest groups having different preferences, can be successfully integrated into the decision making process. Reliability of the planner, transparency of the planning and the decision making process, consideration of justified feedbacks from the public to the planners and decision makers are seen as important criteria.

References:

- Bleed, A., H.P. Nachtnebel, I. Bogardi and R.J. Supalla (1990) Decision Making Process on the Danube and the Platte. *Water Res. Bulletin, AWRA, Vol. 26, No. 3, p. 479-487.*
- DoKW-AG; Donaukraftwerke AG (1984) The Project Hainburg. Documentation of the General Project submitted to the Ministry of Agriculture and Forestry. Vienna, Austria (In German).
- DoKW-AG; Donaukraftwerke AG (1989) The Project Freudenu. Documentation of the General Project submitted to the Ministry of Agriculture and Forestry, Vienna, Austria (In German).
- Ecological Advisory Board (1985). Final Report to the Ministry of Environment, Youth and Family, Vienna, Austria. (In German)
- Hesoun, J. and H. Pöttschacher (1985) Documentation Hainburg. Lower Austrian Chamber of Labour, 1060 Vienna, Austria. (In German).
- Hulme, D. and M. Edwards (1997) NGOs, States and Donors- too close for comfort ?. Mc Millan Press, UK.
- Nachtnebel, H.P. (1994) Environmentally and Socially Sound Utilisation of Flood Plains; Some Austrian Experiences. In: *Defence from Floods and Floodplain Management.* Eds.: J. Gardiner, Ö. Starosolszky and V. Yevjevich. P. 539-554, NATO ASI Series Vol. 299; Kluwer Acad. Press, Dordrecht, Boston, London.
- Putnam, R. (1993) *Making Democracy Work- Civic Traditions in Modern Italy.* Princeton University Press, USA.
- Ruscher, G. (1998) *Hydropower Station Freudenu.* Ed. In collaboration with DoKW-AG. Publisher A.F. Koska. Vienna and Berlin. (In German).
- University for Agricultural Sciences (1991) *Evaluation of the Environmental Compatibility Study for the Hydropower Station Freudenu.* Under contract of the Ministry of Agriculture and Forestry, Vienna, Austria. (In German).
- World Bank (1997) *Handbook on Global Standards and Best Practices for Laws Governing NGOs.* Washington, USA.

H.P. Nachtnebel
Dept. for Water Resources Management, Hydrology and Hydraulic Engineering
University for Agricultural Sciences
Vienna, Austria
Tel:++43-1-36006-5500
Fax:++43-1-36006-5549
Email: nacht@donau.boku.ac.at