

## BŐS-NAGYMAROS FILE

*In the common reach of the Danube between Hungary and Slovakia the Czech and Slovak Federal Republic is preparing to divert the river into a new riverbed. According to the project in the length of 40 kilometres they are to divert the Danube without regard to the unpredictable ecological damages, to the new political tensions thus generated in the region, and to the vehement protests of the concerned population.*

*The afore-mentioned diversion of the river - ie. putting into operation the Gabčíkovo dam with the help of a so-called "temporary solution" - is the remnant of the old plan concerning the Gabčíkovo-Nagymaros Barrage system, according to which two ex-socialist countries signed a contract to achieve the Danube Barrage System to "conquer the Nature". The political changes at the end of the 1980's gave us hope to save the river. In 1992 Hungary gave up once for all the plans for the construction and terminated the treaty.*

*This subsequent summary is to illustrate the several decade old history of the barrage construction, and the fight for the preservation of the natural environment, and that of the living conditions of the people in the region.*

Budapest, October 1992

# THE HISTORY OF THE GABCIKOVO-NAGYMAROS BARRAGE SYSTEM

1963-1977

## The period of Planning

In April 1963, government committees of the Peoples's Republic of Hungary and the Socialist Republic of Czechoslovakia agreed to draw up a joint investment programme in order to realize the Gabčíkovo-Nagymaros Barrage System. The final scheme of the project was finished in 1973. It was accepted by the Government of the Socialist Republic of Czechoslovakia in January 1974 and by the Government of the People's Republic of Hungary in February 1974. First a so-called Joint Agreed Plan was drafted which became an inter-governmental agreement on 6 May 1976.

According to the Joint Agreed Plan, the goal of the construction of the Gabčíkovo-Nagymaros Barrage System was the complex utilisation of the Danube for the production of electric power, for international inland navigation, for the management of water supplies, for the economic development of neighbouring regions. The main technical features of the project are as follows: A weir will raise the level of the Danube at Dunakiliti creating the Dunakiliti-Hrusov Reservoir. From this reservoir a diversion canal will carry the flow of the Danube to the Gabčíkovo (Bős). The water will return to the original river bed at Palkovicovo (Szap). The downstream element of the system is the River Barrage of Nagymaros, operated in conjunction with the aforementioned structures. The Gabčíkovo Barrage, the diversion canal and the greater part of the Dunakiliti reservoir will be situated in Czechoslovakia while the Dunakiliti weir, a smaller part of the reservoir and the Nagymaros Barrage are in Hungary.

The Dunakiliti Reservoir will occupy the flood plains between Dunakiliti and Pozsony, in other words, the area within the existing flood protection levees. Its function is to collect and store the waters for further use. Its total capacity will be 200 Mm<sup>3</sup>, with a useful capacity of 60 Mm<sup>3</sup>. The Dunakiliti weir regulates the water level in the reservoir and releases an appropriate discharge into the bed of the old Danube. The 25 km long diversion canal is subdivided into two parts. The 17 km upstream stretch leads to the Gabčíkovo Barrage between dykes. The 8 km downstream stretch ends at the confluence with the old Danube at Palkovicovo (Szap). The main navigation route will follow the diversion canal. Eight turbines will be installed at the Gabčíkovo power plant with a total capacity of 720 MW. A lock will also be constructed here. The Gabčíkovo-Nagymaros project will create a 3.5 m deep channel. The river bed between Dunakiliti and Palkovicovo (Szap) will have a continuous but reduced flow (50 m<sup>3</sup>/sec, this is 3% of the present mean discharge); it will take part in flood attenuation and in ice discharging. The Nagymaros Barrage will compensate the streamflow released by the peak-operated power plant at Gabčíkovo (Bős) and its backwater extending to Gönyü

village, will ensure the draught required for navigation. The Nagymaros power plant will operate as a base plant with six turbines of 160 MW total capacity. The weir will be equipped with seven gates, each 24 m wide. Navigation will be provided with a lock.

### **On 16 September 1977 The Interstate Treaty Signed**

The prime ministers of the People's Republic of Hungary and the Socialist Republic of Czechoslovakia signed the Treaty on the Construction and Operation of the Gabčíkovo-Nagymaros Barrage System in Budapest, on 16 September 1977. The exchange of ratifications took place in Prague on 30 June 1978. The contracting Parties engaged themselves to put the power generators into operation between 1986 and 1990.

### **1978-1983 Modification of the Interstate Treaty**

After signing the 1977 Treaty, due to the economic difficulties arising simultaneously in both countries, the two Parties started inter-governmental negotiations in 1981, considering a significant postponement or even a possible renouncement of the project. Finally the Parties modified the 1977 Treaty by signing a Protocol in Prague on 10 October 1983. They decided to postpone the operation of the power generators by 5 years.

### **1983-1988 The Period of Construction**

Arising crisis from the antagonism of the protection of environmental resources and the conception of the barrage system. During the years when the programme and plans were established, the public opinion's attention was more and more focused on the protection of environmental and natural resources. At the same time the world has seen a decreasing prestige of technologies with low efficiency in energy and raw-material consumption, which also implied the reassessment of the basic conceptions of energy production. In the years of the emerging need for changing the political regime, the Hungarian society changed also its attitude towards environment by its growing environmental consciousness and by acknowledging the ecological priorities. This led to the revaluation of the goals of the Gabčíkovo-Nagymaros Barrage System.

By the mid-eighties it became evident that the construction of the Nagymaros dam exceeded the possibilities of Hungary both in financial and technological terms. Therefore the Hungarian investor concluded a private contract with an Austrian company for financing and accomplishment of the construction. The dam at Dunakiliti was built mainly by Austrian companies, financed from Austrian bank loans. The dredging of the downstream channel was made by a Yugoslavian company on the basis of another private contract.

Starting from 1985, the gradually speeding-up of construction work also attracted protests. Experts and non-professionals protested at conferences and in sharply worded articles against the forecast harmful and irreversible processes. People rejected the Danube water barrages in street demonstrations.

In its session held on 7<sup>th</sup> October, 1988 - although deciding on the continuation of the construction at Nagymaros - the Hungarian Parliament bound the further construction works to strict environmental protection conditions. Following this, and in consequence of the aforementioned events, general demand arised for the revealing and assessing of the values with a scientific thoroughness, including the order of magnitude of the values and the extent of the expected damage.

A quotation from a request made by a member of Parliament for the revision of the decision, in February 1989: "The hydro-electric power station at Nagymaros will not supply electric power for us for at least twenty years and it demands construction of such complementary investments, which on their side are many times more expensive than needed on the Hungarian side. The omission of the purification plants would in turn lead to an ecological catastrophe, destruction of our drinking water supplies. The members of the Parliament were not properly informed about the expected effects of the water barrage system, and especially not about opposing opinion. The attitudes of the Hungarian Academy of Sciences established in 1983 and 1985 were presented to the Parliament's member only the day before voting, thus rendering impossible responsible decision making. ... Under these conditions, it is considered necessary to evaluate the issue of the Nagymaros construction free of political temper, taking all scientific arguments and reasons into account, thus enabling Parliament to subsequently make a really responsible decision. Till that time, however, an immediate suspension of the works is necessary. This is demanded by common sense ..."

1989-1990

Suspending the Construction

Hungarian Attempts in Mutual Consent by Agreement  
Before the Free Elections in Both Countries

The Hungarian government suspended the construction at Nagymaros on 13 May 1989. On 2 June 1989, the Hungarian Parliament approved the resolution of the government of 13 May, and stated that further investigations were necessary on the conditions and consequences of the construction.

Between 17 and 19 July 1989 a Hungarian-Czechoslovak expert conference was held in Budapest on ecology, hydrology, geology, seismology, pedology and agricultural production. The records of the meeting showed that the participants agreed on considering the Gabčíkovo-Nagymaros Barrage System as an immense intervention in nature which affects invaluable ecological resources. Mutual consent was recorded in the protection of drinking water reserves: "It is of vital interest to keep undisturbed water supply from the Danube terrace concerned. This is the water supply of 3 million (or, in the long run, 5 million) people in Hungary and 5 million people in Czechoslovakia." The disagreement between the two countries appeared in the way they wanted to preserve the natural resources: the Czechoslovak experts considered that subsequent technical corrections would be sufficient for this purpose while the Hungarian Party did not accept this concept.

The dissenting opinion of the Hungarian experts was recorded as follows: "We do not agree with the opinion of the Czechoslovak delegation that the majority of the problems could be solved after accomplishing the construction of the barrage system and filling up the Dunakiliti-Hrusov reservoir. The possible alternatives are unknown in many cases, therefore it is extremely dangerous to carry out 'experiments' in nature.

The two prime ministers met in Budapest on 20 July 1989. The Hungarian prime minister announced the prolonged suspension of the Nagymaros construction until 31 October 1989, and the suspension of the work at Dunakiliti till the same date. The Hungarian prime minister offered alternatives for the joint revision: suspension of the construction work for 1 or for 3 to 5 years. Among the possible alternatives, there was a proposal for the definitive abandonment of the barrage system.

The Czechoslovak Party refused the Hungarian proposals, first in an aide memoire of 25 July 1989, then in a diplomatic note of 18 August 1989. This was also the content of the letter of the Czechoslovak prime minister of 31 August 1989, in which he gave notice of the possible provisional solution, i.e. diverting the Danube on Czechoslovak territory, in case the Hungarian Party suspended the construction for a long time or for ever.

On the basis of a government report that summarized the results of technical and scientific investigations carried out during the suspension, the Hungarian Parliament took a stand on 31 October 1989 on abandoning the peak-load operational mode and, consequently, abandoning the Nagymaros power station, too. The resolution considered it necessary to continue the investigations about the ecological risks and to conclude a new inter-governmental agreement on the ecological guarantees, prior to putting the Gabčíkovo plant into operation. The Hungarian government was authorized to propose the Czechoslovak Party a modification of the Treaty in this sense. The Hungarian proposal was handed over to the Czechoslovak Party in an Annex of the memorandum on 30 November 1989. The government of the Socialist Republic of Czechoslovakia never replied to this proposal.

As to the work done by Austrian and Yugoslavian companies, the related private contracts were terminated in November 1989 and June 1990, respectively. The parties agreed on the financial consequences of the termination.

## 1991-1992

### Further Hungarian Attempts to Arrive at an Agreement after the Free Elections

#### Inter-Governmental Negotiations on the 1977 Treaty

After the change of the political regime, the new Hungarian government published his general political programme on 22 May 1990. The programme announced among others that "The government, on the ground of the experts' opinion, considers the construction of the Danube Barrage System as a mistaken project, and will initiate, as soon as possible, negotiations on the rehabilitation and the sharing of the damages with the Czechoslovak government to be elected." At a meeting in Győr on 31 May 1990 the Hungarian government commissioner handed over to his Czechoslovak counterpart details of the government programme related to the Gabčíkovo-Nagymaros Barrage System.

In a resolution made on 16 April 1991, the Hungarian Parliament authorized the government to enter into negotiations with the Czech and Slovak government on the termination of the 1977 Treaty by agreement as well as on the preparation of a new treaty. This latter should settle all consequences arising from the abandonment of the Gabčíkovo-Nagymaros Barrage System, by observing the priority of ecological aspects.

Budapest, 22 April 1991

On 22 April 1991, the two Parties met again at inter-governmental level in order to discuss the official standpoints of their governments. The standpoints differed significantly. The Hungarian Party stressed the principle of the protection of natural conditions of human

life and human communities as well as the maintenance of friendship and cooperation of the two nations. The functioning of the Gabčíkovo-Nagymaros Barrage System would trigger irreversible and damaging ecological processes with serious environmental consequences on the territory of both countries. According to the Hungarian Party this fact had gained high certainty during the time of suspension of the construction. Thus, the termination of the 1977 Treaty by mutual consent would serve the interests of both nations. The Hungarian Party proposed the conclusion of a new treaty on the ecological rehabilitation of the region, the protection of drinking water, flood control and development of inland navigation. The Hungarian Party requested to suspend, by mutual consent, all further construction work until the conclusion of the new treaty. The Hungarian Party handed over the written opinion of the Academy of Sciences on the ecological-environmental effects of the Gabčíkovo power plant, a scheme outlining the main elements of the new treaty and a proposal for cooperation in the field of energy production, observing environmental priorities.

The Czech and Slovak Party, admitting the importance of ecological aspects, stressed its determination to accomplish the construction according to the original Treaty. Judging the environmental damages avoidable by additional technical interventions, it proposed to set up joint working groups for studying the problems where the two Parties had different standpoints. It did not see any possibility to suspend the construction, claiming that the Gabčíkovo plant was complete up to 90 per cent. The Czech and Slovak Party did not present any written documents.

Pozsony, 15 July 1991

The next meeting took place in Bratislava on 15 July 1991. The Hungarian Party repeated its standpoint based on the priority of ecological-environmental aspects. The Czech and Slovak Party expressed again its intention to put the Gabčíkovo plant into operation. It regarded the existing results of investigations sufficient to evaluate the effects arising from all possible operational variants of the Gabčíkovo power plant.

Budapest, 2 December 1991

The next inter-governmental meeting took place in Budapest, on 2 December 1991. The delegations agreed that the Gabčíkovo-Nagymaros Barrage System constituted a complex technical-scientific problem and it was reasonable to set up a joint expert Committee for reviewing the whole question. The Hungarian Party accepted the Czech and Slovak proposal to complement the Committee with the experts of a third party, the European Communities. The Hungarian delegation pointed out that the goal of the work of the Committee would be to prepare a well-established common decision. Therefore, the committee's activity has no sense if the Czech and Slovak Party continues the work aiming at the so-called provisional solution, i.e. diverting the Danube. The head of the Czech and Slovak delegation declared, however, that the suspension of the construction, even temporarily, was out of question.

## Correspondence of the Two Prime Ministers

The head of the Czech and Slovak delegation, in a letter sent to the head of the Hungarian delegation on 18 December 1991, confirmed the above Czech and Slovak standpoint. He stressed that the only solution he could accept should contain the functioning of the Gabčíkovo power plant.

On 19 December 1991, the Hungarian prime minister addressed a letter to the Czech and Slovak prime minister expressing his concerns that the chances of setting up the planned joint Committee were very little. In a reply of 23 January 1992, the Czech and Slovak prime minister asserted that his government was ready to take into account the committee's conclusions but not to suspend the work of the provisional solution.

On 26 February 1992, the Hungarian prime minister sent another letter to the Czech and Slovak prime minister. He pointed out that the Czech and Slovak Party had not presented any expert opinion proving that the possible damages and risks described by the Hungarian experts were implausible. According to the contents of the prime minister's letter, the Hungarian government contacted the Commission of the European Communities. In a letter addressed to the foreign ministers of the two countries on 13 April 1992, the vice-president of the Commission expressed the readiness of the Commission to take part in the resolution of the dispute. However, he laid down the condition that both countries refrain from steps that could influence or anticipate the future conclusion of the trilateral committee.

In a reply letter of 23 April 1992, the Czech and Slovak prime minister called the Hungarian request aiming at the cancellation of unilateral construction work as "ultimatum". He announced that the Czech and Slovak Party would not suspend but continue the work of the provisional solution. He indicated 31 October 1992, as the final deadline of the accomplishment of the provisional solution, i.e. the diversion of the Danube. Thus the Czech and Slovak Party made it impossible to set up the trilateral Committee.

On 25 May 1992

### The Termination of the Interstate Treaty

It is clear from the foregoing that the Hungarian Party has tried again and again to reach a mutual agreement since 1989, for more than three years, but met a permanent and consequent refusal on the Czech and Slovak side at every occasion. The Hungarian Party presented numerous expert opinions on the serious environmental risks and irreversible damages arising from the operation of the Gabčíkovo-Nagymaros Barrage System. The Czech and Slovak Party regarded these opinions unfounded, although without detailed analysis, and did not present any result that could prove the lack of danger. Finally, the Hungarian Party



tried to call the attention of the Czech and Slovak government in vain to the fact that the diversion of the Danube would seriously violate the norms of international law. Its legal arguments met the same refusal as the efforts aiming at the mutual recognition of ecological risks.

The Government of the Republic of Hungary, according to the resolution of the Hungarian Parliament on 24 March 1992, terminated the Treaty unilaterally. The official statement was handed over, accompanying a diplomatic note, to the Embassy of the Czech and Slovak Federal Republic in Budapest on 19 May 1992.

## ECOLOGICAL-ENVIRONMENTAL RISKS OF THE GABCIKOVO-NAGYMAROS BARRAGE SYSTEM

During the long-lasting period of planning the Gabčíkovo- Nagymaros Barrage System, fundamental research and investigations were neglected and not carried out. The program and plans were prepared without the invitation and participation of institutions that would have been competent in the problems to be solved.

The construction of the Gabčíkovo-Nagymaros Barrage System approaching the stage when the natural environment was to undergo profound changes, several prognostic schemes and environmental risk assessments were compiled by the experts of such questions, although official demand had never been expressed to this goal before the end of the 80's. These schemes were sufficiently precise to show the dimensions of the natural resources involved, and called attention to the serious danger caused by the construction. However, presentation of the risks in their exact form was not possible due to the lack of investigations that would have been fundamental during the planning and early constructions.

Three times since the suspension of construction, the Hungarian Party handed over to his partner summaries prepared by institutions investigating the environmental risks of the Gabčíkovo-Nagymaros Barrage System. Hungary urged joint research and investigations. On the other hand, the Czech and Slovak Party has never presented results that would prove the risks to be under a tolerable level.

It is regrettable that the radical differences of viewpoints apparent in official opinions of the two parties still prevent the technical-scientific discussions from being started. Without this, the problems of the region are not likely to find solution.

### Geological and geophysical risks

The planning of the Danube dams was not preceded by a detailed geological survey of the region. A serious mistake is that there was no structure-exploring deep drilling in the impact area of the dams. The insufficiencies of planning are well demonstrated by the fact that the contractors did not even have the necessary permit of the geological authorities.

A further problem is that the research results obtained separately in Hungary and Czech and Slovak Republic have never been integrated. For example, the so-called Gabčíkovo fault line discovered in Slovak territory has not been traced further in Hungary. This fault was the reason why the site of the Gabčíkovo dam was changed in the early 70's, although by not more than 600 m with respect to the original plan. Thus, as is admitted by a Slovak expertise, this dam has been built in the neighbourhood of a geologically young fault.

Another set of problems concerns the seismology of the area of the Gabčíkovo-Nagymaros Barrage System. The seismicity values of the Joint Agreed Plan cannot be accepted; the seismicity problem cannot be answered with a reliability required by international norms since the necessary studies are missing. The seriousness of the problem is shown by the fact that the expected intensity estimated for the Dunakiliti area from historic quakes is 8.7-9.0 MSK at the usual security threshold, while the original plans were prepared by assuming 6.0 MCS.

The sizing of the embankment is an especially grave problem among the uncertainties of planning, owing again to insufficiencies of prior investigations. One of the most important pieces of information obtained from the geophysical analysis of the Dunakiliti reservoir on the Hungarian side (1991) is that high-resistivity gravelly structures - ancient riverbeds - have been found beneath the embankment at several places. This was not explored earlier. Examples from the past show that this structure can lead to a breach in the embankment and, subsequently, to serious flood. The stability of certain parts of the embankment cannot be considered safe against earthquakes that are likely here. Security tests along the Dunakiliti reservoir show that the safety characteristics of the embankment do not fit the international standard norms. The risk level taken into consideration in the plans applies only to common buildings where environmental effects can be excluded.

### Effects influencing the ground water

The environmental and ecological consequences of the Gabčíkovo dam will follow from the hydrological and hydraulic changes and from the pollution of water. For the prediction of the resulting damage it is to be taken into account that the self-inducing effect of the changing environmental conditions will manifest itself slowly, and partly in a hidden manner, at least in some aspects of the changing ecological system. Thus the conclusions drawn from short-period model studies may be highly uncertain and unrealistic.

It is right in the area of the Danube affected by the Gabčíkovo-Nagymaros Barrage System where the most important drinking water reserves of both Hungary and Czech and Slovak Republic can be found. 45% of Hungary's drinking water supply comes from percolated water in the area of the Gabčíkovo-Nagymaros Barrage System, providing e.g. Budapest with drinking and industrial water for more than a century. A similar system serves the water supply of Bratislava. The relevant part of percolation and natural filtering occurs in the uppermost layer of the riverbed, some centimetres thick. It is therefore highly necessary to maintain the conditions that preserve the original state of this biologically active layer providing physico-chemical filtering.

It is again the filtering capacity of the riverbed that determines the quantity and quality of the water stored in the alluvial cone of Csallóköz-Szigetköz, a gravel layer several hundred metres thick. Fortunately enough this water reserve, which is permanently refreshed from the Danube, has not been disturbed in the course of the construction activities related to the Gabčíkovo-Nagymaros Barrage System. On the Hungarian side, this means a capacity of 1 million m<sup>3</sup>/day permanent drinking water supply - the average need of the Hungarian capital -, while in Slovakia this amounts to 2 million m<sup>3</sup>/day.

To preserve the role of the riverbed in filtering and decomposing the toxic organic matter, the present dynamics of the Danube should be maintained. Without this, the required oxygen supply, the self-purifying capacity of the Danube water and the regular renewal of the filtering bed surface cannot be guaranteed.

As a result of the operation of the barrage, fundamental changes will occur in the area of the Dunakiliti reservoir. The basic problem will be caused by the deposition of polluted silt, with its anaerobic dynamics, iron and manganese mobilization, and infiltration of toxic organic materials. This silt would mean a permanent source of viral contamination.

Because of the specific hydrogeological situation of Szigetköz, the toxic materials will pollute the ground water reserves within some tens of years. Moreover, since periodic dredging is planned for the removal of accumulating silt, this will not only be harmful to the quality of the surface water but, by destroying the filter layer, it will allow organic micropollutants and microbes to reach the ground water level.

It is to be noted that the conclusions of the Hungarian experts concerning ground water are identical to those found in the February 1990 report of the Slovak scientists. As to the missing investigations, similar conclusions were obtained by the Hydroquebec Company: this Canadian firm was requested by the Slovak government to form an opinion in the fall of 1990.

The water table will rise around the reservoir owing to the damming-up and to the change in the riverbed, while it will sink around the Old-Danube and the power canal due to the decrease of natural infiltration from the main branch.

Where the water table is lowered, mineralization of the vegetation remains is accelerated; the organic material content of the soil is diminished; deterioration of the soil structure and the eluviation of nutrients grows dangerous. Where the operation of the barrage lowers the ground water level from the fine surface layer down to the gravel, capillary water supply of the root zone is stopped. As a result, the crop of cultivated plants is reduced considerably and becomes uncertain; drought-resistance is weakened; water supply of the forests in the inundation area changes unfavourably; now contiguous ecosystems become isolated patches with a reduced production of organic material. (As is testified by the Upper-Rhine dams, a 50 cm lowering of the water table results in a 50% loss of crop.)

Where the water table is raised, air ventilation of the soil is diminished and anaerobic processes become predominant; there is a growing danger of inland waters; secondary sodification can occur in areas with bad natural drainage conditions, especially on the left bank of the Danube, east of the mouth of the river Vág. (Several years after damming up the river Tisza at the Tisza II barrage in Hungary, the surrounding agricultural area became a marshland and a dramatic loss of crop resulted on many thousands of hectares. This process could not be counterbalanced, therefore the gold crown value of these lands was halved by the authorities.)

## Effects on the surface waters

The Dunakiliti reservoir, after being filled up, will be the scene of unambiguous water quality deterioration. The reproduction of phytoplankton, which plays a key role in the material exchange of the Danube water, is now hindered by two factors: the flow speed and the quantity of light. (The nutrient surplus is already considerable.) As a consequence of the damming-up, the water speed in the reservoir will slow down, stagnant bays will form, the sedimentation rate will shoot up (the deposition of 3-5 million m<sup>3</sup>/year suspended material is estimated) and the ground water surface will rise due to the initial infiltration surplus. Since the flow speed will slow down and the water transparency will increase, the efficiency of the factors hindering the reproduction of algae will diminish: thus eutrophication is inevitable. The organic matter production of algae is already 100 tons a day in dry weight along the Rajka-Nagymaros river section. This amount will be multiplied as soon as the reservoir is put into operation, and the consequences of the decay of this algal biomass will afflict the Hungarian section of the Danube above all.

Hygienic and bacteriologic indices show that the water is polluted already and this situation may worsen if the reservoir is filled up. The human and non-human biological effects of the bituminous insulation that has been laid down in some places on the reservoir embankment are still uncleared. Similar asphalt insulation has been built in the embankment all along the 17 km long power canal, again without clear knowledge of its effect on water quality. Fishing utilization of the power canal may reach only a small fraction of the one of the Old-Danube, present main branch of the river. The consequences of the negative effects discussed above are likely to be felt down the river for, possibly, 150-200 km (i.e. also at Budapest) in the best part of the year.

## Ecological and genetical problems

The construction of the Gabčíkovo- Nagymaros Barrage System caused damage to two areas of outstanding natural value: Szigetköz and the bend of the Danube (Dunakanyar). Although the devastation of the natural resources and that of the landscape is significant, the damage is mostly repairable.

The biocenoses of Szigetköz still occupy a considerable area in natural or near-natural conditions, especially in the inundation zone. These ecosystems have adapted themselves to the seasonal dynamics of water. They follow gradually the constant changes in the Szigetköz branch system (ecological succession). In the case of forest populations this process is considerably slower and can be measured in terms of centuries. The answer to quick and drastic changes is degradation and decay. For the regeneration of forests living in near-natural conditions, centuries would be needed at the very best.

The forests of Szigetköz are Hungary's highest yield growing stock, the two-thirds of which is constituted by poplars spreading everywhere from the 1930's on (30 m<sup>3</sup>/hectare/year). This population utilizes the fluctuation of low and high water optimally. On account of the

river regulation, the productivity of these populations has been diminished significantly. By further lowering of the water table, these excellent wooded areas will be lost and only forests of much lower productivity could be replanted later.

Szigetköz is especially rich in species, only of flowering plants 60 protected ones can be found in this area. A considerable part of the flowerless plants and microorganisms is unknown so far. In the past few years only, 11 new species of fungi - unknown in other parts of the country - have been discovered here. The fauna of Szigetköz is similarly rich. 63 fish species of the 80 ones living in Hungary can be documented in the area. Several groups of animals have not been documented fully until now. Each year, there are a number of new species found. All of them are of national value: their preservation for the future generations is a moral obligation.

It is evident from the consequences of the construction activities carried out so far that the extensive destruction of biological resources cannot be evaded even by the most careful operation of the Gabčíkovo barrage. The indirect effects are far more dangerous than the direct ones. Changes like that of the water table, disappearance of the seasonal fluctuation, modification of the oxygen supply of water, all have their effect on species organized into populations with redoubled intensity. New conditions of competition, predation and other interactions in the new environment lead to the local extinction of species or their degradation. The probability of survival after any significant environmental change depends on the scope of genetic diversity. Only numerous, genetically diverse populations can have a chance to accommodation.

It is more worrying that the disappearance of genetic diversity and a consequent lack of adaptability may cause further extinction, leading finally to a severe degradation of the region and an 80-90 % decrease in the number of species.

## INTERNATIONAL LEGAL ARGUMENTS FOR THE TERMINATION OF THE TREATY

The 1977 Treaty, like the majority of international treaties, does not contain any provision for termination. Referring to this fact, the Czech and Slovak Party has proclaimed many times that the Treaty cannot be terminated unilaterally. However, in every case when the text of a treaty is silent on the possibility of termination, the subsidiary rules of general international law are to be applied. These rules allow unilateral termination, even in the absence of agreement between the parties, if there is sufficient ground for termination.

In the opinion of the Hungarian Party, the 1977 Treaty can lawfully be terminated for the following reasons:

1. The construction and operation of the barrage system causes an ecological state of necessity which precludes the wrongfulness of the termination. (This norm of general international law appears, first of all, in Article 33 of the Draft on State Responsibility prepared by the UN International Law Commission.) For the Hungarian State, grave and imminent peril would follow from the operation of the barrage system. Since, in his letter dated April 23, 1992, the Czech and Slovak Prime Minister has set October 31, 1992 as the time of the unilateral diversion of the Danube, the peril can be regarded as imminent.

2. Since the conclusion of the 1977 Treaty, the underlying circumstances have changed fundamentally. This principle concerning a fundamental change of circumstances has a long history in international law, and is also included in the Vienna Convention on the Law of Treaties. The preamble of the 1977 Treaty stated explicitly that the construction of the barrage system would "significantly contribute to bringing about the socialist integration of the member states of CMEA". Obviously, the historical changes that took place in both countries in 1989 could not be foreseen. These changes resulted in a complete turnover of the domestic and international situation, including the end of the CMEA and the "socialist integration". It is also obvious that this led to radical changes in the circumstances of the barrage system, putting similar gigantic constructions in a different light. These changes made it possible for environmental considerations to become a priority, at least in Hungary. Finally, the circumstances have radically changed from another point of view as well: namely, the importance of environmental resources and values has increased not only in Hungary but all over the world.

3. The Czech and Slovak Party did not fulfil its duties prescribed in the 1977 Treaty for the protection of nature and water quality. Therefore Czech and Slovak Republic can be condemned for material breach of the Treaty. According to general rules of international law, a treaty can be terminated unilaterally against a violating state.

4. The so-called "provisional solution" can be regarded as an even more severe breach of the Treaty. The Contracting Parties determined very precisely the work to be carried out in the original Treaty in 1977 and in the subsequent related agreements. The diversion of the Danube near Bratislava was not part of them in any form. During the implementation of a treaty neither of the parties has the right to activities that are not authorized to by the treaty: such a behaviour amounts to a material breach of the treaty.

5. The "provisional solution" seriously violates other norms of international law. This fact, in accordance with the rules of general international law, entitles the injured Party to take lawful counter-measures (repressalia). The termination of bilateral treaties effective between two parties may constitute such a counter-measure.

The "provisional solution" - the diversion of the Danube - violates the following international legal norms and agreements:

a) It constitutes a breach of the sovereignty and territorial integrity of the Republic of Hungary, which is protected by peremptory rules of international law. Leaving Bratislava, the Danube becomes an international boundary river, partly under Hungarian, partly under Czech and Slovak sovereignty. Neither of the parties can determine unilaterally the fate of the river. Thus, neither of them may divert the river to its own territory as if it were its own national river.

b) The "provisional solution" violates the inviolability of the frontiers of Hungary, protected by peremptory rules of international law. The diversion of the river would transfer the main navigation route to Czech and Slovak territory from the joint stretch. This route was designated as the frontier line between the two countries, first by the Peace Treaty of Trianon, Art.27, paragraph 4, then by the Peace Treaty of Paris, Art.1, paragraph 4(a), and finally by a bilateral treaty concerning the regime of the state frontiers concluded in 1956, Art.2. paragraph 3.

c) The "provisional solution" violates the 1976 bilateral Treaty of the two countries, regulating the questions of water management of the boundary rivers. This postulates that the precondition of any water management activity is the agreement of the contracting parties.

d) The "provisional solution" violates the rules and principles of customary international law that regulate the utilization of international environmental resources. The "provisional solution" would deprive Hungary of its due share of water quantity, water quality and power potential.

e) The "provisional solution" violates the principle of the prohibition of transboundary harm affecting the neighbouring state.



f) The "provisional solution" is in contradiction with the spirit of the Belgrade Convention on the Danube adopted in 1948. The danger that one of the Contracting States would divert the natural course of the river from its natural riverbed did not occur to the signatories, therefore the Convention does not contain an explicit prohibition for this case. However, other regulations of the Convention, like Art.3 which deals with work that become required by unforeseen circumstances and are carried out within the frontiers of a country, make it clear that lawful interventions can be carried out only by agreement of the riparian states.

6. Returning to the reasons for the termination of the 1977 Treaty, it is important to note that the rules of general international law on environmental protection, which have developed since the adoption of the plans for the system, take precedence over treaty provisions which were adopted earlier or are contradictory to them (*lex posterior derogat legi priori, lex specialis derogat legi generali*). These norms have recently been expressed in a number of international documents.

The most important rules prescribing the protection of the natural and human environment, the priority of environment, the necessity of the preservation of ecosystems, and the abandonment of contradicting economic activities are as follows:

Principle No.4 of the Stockholm Declaration prescribes that "Nature conservation, including wildlife, must therefore receive importance in planning for economic development." Principle No.3 of the World Charter for Nature adopted by the UN General Assembly in 1982 declares that "special protection shall be given to unique areas, to representative samples of all different types of ecosystems and to the habitats of rare or endangered species." It also states that "man's needs can be met only by ensuring the proper functioning of natural systems", and that conservation of nature must become an integral part of the planning process. The recommendations of the Brundtland Report on the law of environmental protection prescribe that "States shall maintain ecosystems and ecological processes essential for the functioning of the biosphere, shall preserve biological diversity, and shall observe the principle of optimum sustainable yield in the use of living natural resources and ecosystems."

The importance and priority of the cooperation in environmental problems were emphasized by the Helsinki Final Act and the Final Document of the Vienna follow up meeting.

7. The foregoing paragraphs justify the decisions of the Hungarian Government and Parliament which led to the unilateral suspension of construction first at Nagymaros, later at the upper Danube.

In addition, it can be established that the Hungarian Party has met the requirements of international law after the suspension in every respect. Hungary did not confront the Czech and Slovak Party with a *fait accompli* but rather made continuing efforts, according to the cited Parliament resolution, to achieve the termination of the 1977 Treaty by mutual agreement. Thus, Hungary has met her obligation established by Art. 65 of the Vienna Convention, to settle disputes arising from a treaty by peaceful means.

**Finally: what do the residents of the region really mean  
and want to do**

**MEMORANDUM**

**of the Danube Regions' Mayors Conference  
in the matter of the Danube  
Dunaszerdahely, 25 April 1992**

**The protection of the environment, nature and of the living conditions of people is the foremost priority of every society, and to assert this is the basic duty of the existing political power.**

**The people of the Danube Regions are anxious for the fate of the river, of their potable water, of their living conditions and of the beauty of scenic nature. Without asking the regions' residents a gigantic series of dams is being constructed at Bős, as a consequence, devastating 5800 hectares of forrest, a few thousand hectares of arable land, endangering the potable water of millions, not to mention the disregarding the arising irreversible environmental damages which are not being situated. In the past the residents of the regions protested against the environmental destruction several times, however, it was not ever taken into consideration in the decision making process. The Danube Regions' self-governments, following the generally accepted customs of the developed countries, shall co-operate in solving their common problems.**

**On today's conference we call repeatedly for the protection of our living conditions and our homeland.**

- 1. We call upon the Government of the Czech and Slovak Federal Republic to stop immediately the construction work of the 'C' variant, respectively of its temporary technological substitute.**
- 2. We urge the Governments of the Czech and Slovak Federal Republic, Slovak Republic and Hungarian Republic to render the start of the reaches of Danube affected by the series of dams. The realization of the decades neglected flood control and navigation problems retaining the Danube bed should start, as well.**
- 3. We demand the success of the priority of the protection of ecological- environmental values in connection with the realization of river planning, and the re-formation of the Danube Commission that it will lay down the conditions of the navigation with respecting the protection of the ecological values of Danube.**
- 4. We also demand the release of continuous and credible informations about the matters concerning the Danube, the plans determining the future, respectively about the consequences of the financial burden, so that based upon this, we can assert our rights to decide about the destiny of this region.**

**5. We request the Parliaments of the respective countries to assert out request and demands.**

**6. If the aforementioned demands shall not be accepted, respective self- governments will hold a referendum on this matter.**

**The environmental protection does not have international boundaries, thus the residents of Danube Regions through their self-governments wish to deal themselves with the problems concerning them. In the interest of this a Preparation Committee shall be formed with tasks to work out the constitutional framework of the regional co-operation, which is an important milestone of the road to the common European home.**