International Court
of Justice

THE HAGUE

Cour internationale
de Justice

LA HAYE

YEAR 1997

Public sitting

held on Tuesday 4 March 1997, at 10 a.m., at the Peace Palace,

President Schwebel presiding

in the case concerning Gab_íkovo-Nagymaros Project

(Hungary/Slovakia)

VERBATIM RECORD

ANNEE 1997

Audience publique

tenue le mardi 4 mars 1997, à 10 heures, au Palais de la Paix,

sous la présidence de M. Schwebel, Président

en l'affaire relative au Projet Gab_íkovo-Nagymaros

(Hongrie/Slovaquie)

COMPTE RENDU

Present: President Schwebel

Vice-President	Weeramantry
Judges	Oda
	Bedjaoui
	Guillaume
	Ranjeva
	Herczegh
	Shi
	Fleischhauer
	Koroma
	Vereshchetin
	Parra-Aranguren
	Kooijmans
	Rezek
Judge *ad hoc*	Skubiszewski
Registrar	Valencia-Ospina

Présents : M. Schwebel, Président
M. Weeramantry, Vice-Président
MM. Oda
Bedjaoui
Guillaume
Ranjeva
Herczegh
Shi
Fleischhauer
Koroma
Vereshchetin
Parra-Aranguren,
Kooijmans
Rezek, juges

Skubiszewski, juge *ad hoc*

M. Valencia-Ospina, Greffier

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The PRESIDENT: Please be seated. We continue this morning with the oral presentations of the Republic of Hungary and I should like first to call upon Professor Nagy.

Mr. NAGY:

6. THE OBJECT AND PURPOSE OF THE TREATY AND THE CHARACTER OF THE ORIGINAL PROJECT

I. Introduction

1. Mr President, Members of the Court. It is an honour to appear before you for the first time. My task this morning is to clarify disputed issues concerning the purposes and object of the 1977 Treaty and the way how the regulatory regime of the Project functioned.

2. The 1977 Treaty had as its purpose the creation of a politically motivated economic joint venture which was to be consistent with environmental protection. In this presentation I will address the object and purpose of the Treaty, its character as a framework treaty to be flexibly applied, and its connection to various related agreements, as well as to the Joint Contractual Plan.

3. The picture I will describe is of a Treaty having two main purposes: first, the strengthening of fraternal relations between two States and contributing to the socialist integration among COMECON States, and second, utilising the natural resources of the Bratislava-Budapest section of the Danube river for the development of energy and, to a lesser and incidental extent, other sectors. These are the purposes identified in the Treaty's Preamble. The Barrage System was to be jointly constructed and jointly operated. The Treaty did not establish a territorial regime. It did not alienate either party’s rights over its share of the water. And it was intended to function without environmental degradation and in an economically viable manner.

4. I will address in turn the following aspects: first, the Treaty's objects and purposes; second, its character as a joint investment; third, its relationship with other agreements; and fourth, its character as an instrument to be flexibly applied. I begin with the first point.

II. The Purposes of the 1977 Treaty

5. Properly characterizing the purpose of the 1977 Treaty is a significant issue, and one on which the Parties are not in agreement. Arguments concerning material breach, supervening impossibility of performance, fundamental change of circumstances and even "approximate application" depend upon the answers to the question: what was the object and purpose of the 1977 Treaty and its related agreements?

6. For Slovakia, the basic aims of the Treaty were such that even through Variant C they "could still be achieved, at least insofar as the Bratislava-Sap (Palkovicovo) stretch was concerned"[14]. The extent to which this is true depends upon whether or not the Treaty incorporates the idea of two riparian States cooperating in the realization of an agreed joint venture. If it does, as Hungary believes, then Variant C is plainly incompatible with the 1977 Treaty.

7. For its part Hungary has consistently maintained that the 1977 Treaty had two purposes: the political and the economic[15]. Slovakia by contrast identifies almost a dozen items under various headings. The chart you see on the screen, which is also contained in your folders, illustrates the proliferation of Slovak views as to the Treaty's basic objectives (Illus. 6.1). We are told, for example, that the suspended works were "the very object of the Treaty itself"[16]. Elsewhere it is said that the Treaty sought "the improvement of surface and ground water"[17], or "environment protection"[18]. And yet elsewhere the "monitoring system" is elevated to the status of a "basic aim"[19].

8. We certainly agree with Slovakia that the objects and purposes of the Treaty may be ascertained not only from the treaty but from its negotiating history[20]. As Professor Valki has described, that history took place at a time, from the late 1950's to 1977, which has been characterized by Slovak Prime Minister Carnogursky as a totalitarian era. Writing to Hungarian Prime Minister Antall in 1991 a week after his Government's resolution approving the details of Variant C, he says: "Both of our countries are now living in a period of transition from totalitarianism to democratic systems."[21] The Project was a plan conceived by two totalitarian

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[14]SM, para. 5.26.

[15]HM, paras. 4.04-4.06, HCM, para. 1.13, HR paras. 1.03-1.11.

[16]SR, para. 2.12.

[17]SM, para. 6.132.

[18]SCM, para. 10.125.

[19]SM, para. 5.26.

[20]SM, para. 8.73.

[21]SM, Vol. IV, Annex 93, HM, Vol. 4, Annex 56.

States and partly realized by them. "Comrade Vohsalik's report from 1955 annexed by Slovakia[22] illustrates this point. He describes a meeting with Malenkov of the Central Committee of the Soviet Communist Party, at which the former Soviet Prime Minister described the construction of the water works on the Danube as being 'mainly a political issue'[23] since it concerned other Danubian countries. Malenkov stressed that the discussions on an agreement between Czechoslovakia and Hungary had to be 'held on a high political level'."[24] When he also expressed the Soviet Union's readiness to participate in these discussions, his interlocutor knew that this was an offer having the force of a command. And so it was.

9. The political character of the 1977 Treaty is reflected in the fact that the scheme emerged from consultations with Soviet participation between 1956 and 1960, and that it was approved by the COMECON Commission for Energy and Agriculture in September 1961[25]. The documents annexed by Slovakia confirm the Hungarian argument[26] as to the political character of the 1977 Treaty and the Project.

10. Hungary and Slovakia also agree that the Project was intended to have certain economic benefits in the fields of energy production, flood protection, and navigation. They differ on their assessment of the magnitude of these benefits and in the evaluation of viable alternatives. Later today Ms Gorove will deal with the viability of the Project so far as issues of energy production, flood protection, navigation and other sectors are concerned.

11. No doubt the Project would have brought benefits and imposed costs in several sectors. However, in identifying the object and purposes of the 1977 Treaty, whether for the purpose of treaty modification, termination or "approximate application", the reasonable approach is to remain with the intention of the Parties as expressed in the Treaty itself, as well as its history. It is not appropriate to pick and choose among the elements listed in the preamble of the 1977 Treaty, elevating some of them to the "main objective" and leaving others in the shadow, as Slovakia does.

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[22]SCM, Vol. 2, Annex 2.

[23]SCM, Vol. 2, Annex 2.

[24]*Ibid*.

[25]SM, Vol. II, Annex 3, at p. 35.

[26]See especially HR, Vol. 2, App. 3 and HM, paras. 3.12-3.28.

And as I have said, from the Treaty it is clear that the Parties had two purposes in mind: the political and the economic, which they sought to realize through the "joint investment".

12. But these purposes and the "joint investment" had to be consistent with environmental protection. This is clearly reflected in the fact that the 1977 Treaty devoted no less than three articles to the protection of water, nature, and fisheries. In that sense it might be said that the Treaty accurately sought to prepare the Parties for the environmental changes which were sure to come, and to which both Parties had committed themselves in the 1975 Helsinki Final Act of the Conference on Security and Cooperation in Europe, of which Ms Gorove will say more later this morning. By now you will no doubt be familiar with those three Articles, the requirements of which were mandatory. Article 15 of the Treaty provided that the parties "shall ensure ... that the quality of the water in the Danube is not impaired as a result of the construction and operation" of the Barrage System. Article 19 provided that the parties "shall ... ensure compliance with the obligations for the protection of nature". And Article 20 provided that the parties "shall take appropriate measures for the protection of fishing interests" in conformity with the 1958 Danube Fisheries Agreement. In other words, the 1977 Treaty committed the parties to ensuring conformity with applicable environmental norms from time to time.

III. The Character of the Project as a "Joint Investment"

13. I turn now to my second point, the character of the project as a "joint investment". The object of the Treaty was the construction and operation of the Project consisting of the two barrages under joint control. Its character was a large-scale industrial and infrastructural investment reflecting the readiness of socialist States to allocate enormous financial resources in order to achieve political and economic gains. But that investment had to conform to economic and environmental standards throughout its lifetime. The Treaty did not establish a new, immutable territorial régime regulating sovereign rights of States. It remained a socialist business transaction in which not only companies, but also States participated, because of the all pervasive role of the State in the economy during that period.

14. The Barrage System was to be a large-scale investment under socialist conditions. An investment under socialist conditions means a venture of a predominantly economic nature but lacking the discipline of market forces or of democratic public opinion. Under East European

socialism, profit, however measured, was one factor, but it was only one. Other factors were political and symbolic, such as "remaking nature". Frequently these political and symbolic factors overrode all economic considerations. This is reflected in the statement of Soviet Academician Fedorov made in the early seventies, and the position of Slovakia in its pleadings. Just as Fedorov expressed the view that "Once a socialist society is established over the whole of the planet, ecological crises will cease"[27], so the Slovak Memorial says that the Project presents a unique opportunity to remedy the problems of a rapidly deteriorating and highly artificial river landscape[28]. Such pronouncements are based on the belief that socialist engineers designing and constructing the Project could cure what the earlier (presumably capitalist) engineers, river trainers, energy plant builders – or even nature itself – might have spoiled.

15. Whatever one thinks about the role of the State as an organizing power in remaking nature and proving the superiority of planned economies, the *Gab_íkovo-Nagymaros Project* was intended to be an investment, and a joint one at that. As market pressures began to be felt in the region through the appearance of real prices and the collapse of the protective umbrella of Soviet subsidies, changes became inevitable. They forced investors, including States, to consider the costs of foregone alternatives and previously neglected costs, such as those relating to the environment.

16. The sponsors of the Original Project had to find ways of responding to emerging challenges. The joint venture envisaged in the fifties and codified in the seventies involved not only joint construction and ownership but also joint operation. The Treaty clearly required this, among others by identifying the role of the government plenipotentiaries during the operation of the Barrage System[29]. The Parties were obliged by the 1977 Treaty and the regulations implementing it to closely co-operate both in the day-to-day running of the Barrage system as well as in responding to extraordinary or unforeseen circumstances.

17. And as I have already indicated, joint operation had to conform with environmental requirements at the time of construction and during operation. A project meant to operate for several decades cannot be free from the impact of subsequent regulatory norms. The Parties concur

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[27]HR, Vol. 2, App. 3, at p. 131.

[28]SM, para. 1.18.

[29]1977 Treaty, Art. 3 (3) *(b)*.

on this. They agree that the operation of the Original Project must not have led to the impairment of the Danube waters, including underground waters[30], and that compliance with the requirements for the protection of nature ought to have been met throughout its lifetime[31]. Disagreement may remain over the extent of the obligations, but not as to the requirement that the joint investment had to meet changing environmental expectations and obligations including those not envisaged at the time of the Project's conception. In this way the 1977 Treaty provided for the continuous integration of applicable environmental standards, including those imposed by subsequent treaties and other rules of international law.

18. In connection with the object of the Treaty and character of the Project let me turn now to another matter dividing the Parties which is of great importance. That is the question of whether the sponsors of the Original Project intended to generate a territorial régime[32]. Slovakia maintains that the 1977 Treaty is a dispositive treaty[33] or a territorial treaty having the character of an objective régime[34]. Thereby it seeks to establish that Slovakia has some sort of *in rem* rights over the water, that Hungary somehow alienated its sovereignty over the water. This is unsupported by the Treaty. There is not a single provision in it which could justify this conclusion. Nor is the conclusion supported by general international law, as Professor Crawford will show later this week.

19. To conclude my second theme, let me repeat that the character of the Project was a joint investment, and one which had to be consistent with economic viability and environmental protection. It was one which would be jointly operated. How far the Variant C reflects those characteristics, we will see tomorrow.

IV. Relationship with other pertinent instruments

20. Mr. President, Members of the Court, I move to my third main point concerning the 1977 Treaty, namely its relationship to other agreements in effect between the Parties.

The related agreements

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[30]SR, para. 3.18.

[31]SR, paras. 3.32-3.34.

[32]SC-M, paras. 2.35-38, 2.48-52, HR, paras. 3.135-151, SR, para. 2.16-17.

[33]SC-M, para. 2.38.

[34]SC-M, para. 3.39.

21. Besides the 1977 Treaty as modified in 1983, the Project generated seven related bilateral agreements between the Parties[35]. Three of these concerned mutual assistance to be given each other. They were the Mutual Assistance Agreement of 1977 as twice amended[36]. The other four agreements dealt with (1) the drafting of the Joint Contractual Plan, (2) customs, (3) the regulation of the work of the plenipotentiaries and (4) border crossings in connection with the construction and operation of the Barrage System. These were formal international treaties, signed at governmental (at least ministerial) level. Their fate was linked to the Treaty and it is not in dispute that if the 1977 Treaty terminated, so did they.

Other relevant agreements

22. A second circle of treaties comprise those relevant bilateral and multilateral treaties, either pre-dating or post-dating the 1977 Treaty, which established obligations for the Parties to this dispute independently of the Project. The most important is the 1976 Boundary Waters Convention, others include the 1992 Biodiversity Convention. Their effect – together with the obligations based on general rules and principles of international law – will be addressed later this week.

The Joint Contractual Plan

23. Apart from these various agreements and other relevant rules and principles of international law, there was a host of documents produced by the Parties with regard to the Project. Many of these were typically socialist instruments combining public and private law elements with political commitments. This was true, for example, of the Joint Investment Programme of 1973 which led to the elaboration of the Joint Contractual Plan a few years later. It was followed by dozens of protocols and reports adopted in the Mixed Committee for Economic and Scientific-Technical Co-operation or by the Government Plenipotentiaries or in the Joint Operational Group. None of the Parties to this dispute thought it necessary to reproduce more than a few out of the hundreds of the protocols and I need not refer to them any further. But the difference between the Parties concerning the Joint Contractual Plan merits more detailed examination.

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[35] They are listed in HM, para. 4.53.

[36] HM, Vol. 3, Annexes 22, 29 and 30.

24. Slovakia maintains that the JCP "appears to be a treaty in the full sense of the term"[37], that it may be "regarded as an element of the 1977 Treaty itself", and that a violation of the Plan was equivalent to a violation of the 1977 Treaty[38]. By contrast, in Hungary's view, the JCP was subordinate and ancillary to the 1977 Treaty[39], and was incapable of modifying its purposes and the obligations it imposed[40]. As a technical document – or series of documents, because it consisted of a range of documents produced at different dates – the JCP reflected the specific role of a socialist State as investor in a transborder economic venture.

25. To understand the status of the Joint Contractual Plan requires some familiarity with the system of economic co-operation among socialist States. In planned economies no international business transaction could be accomplished without "approval" of the Planning Office, other competent State agencies and frequently the Communist Party itself. For its part the JCP was elaborated by six private companies[41] and endorsed by a low level bilateral technical committee[42]. Such a document is certainly not a treaty as envisaged by Article 11 of the Vienna Convention on the Law of Treaties. That Article refers to national approval by the State and not to endorsement by a technical supervising body. Slovak efforts to prove that the JCP was a formal treaty[43] contradict the facts. The JCP was not drafted by States but by companies, subject to private law. It was not signed by national authorities having full powers to represent their State nor approved according to the domestic rules applying to the approval of treaties. On the Czechoslovak side, the normal signature of approval of any part of the JCP was affixed by Engineer Oblozinsky of the Bratislava Water Construction Company[44] – of whom the Court will hear more later. The content

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[37]SC-M, para. 2.62.

[38]SM, para. 6.12.

[39]HR, para. 1.16.

[40]*Ibid*.

[41]Article 4 of the 1976 Agreement regarding the drafting of the Joint Contractual Plan, HM, Vol. 3, Annex 18.

[42]Article 6, paragraph 3, of the 1976 Agreement regarding the drafting of the Joint Contractual Plan, HM, Vol. 3, Annex 18.

[43]SC-M, para. 2.63.

[44]See SM, Vol. II, Annex 3, p. 34.

of the JCP was not governed by public international law, but by private law governing business transactions, valid at that time among socialist States.

26. Even identifying the "text" of the Joint Contractual Plan would be an insurmountable task: the summary alone of the Joint Contractual Plan was divided into 31 volumes. The Plan itself consisted of innumerable technical drawings, many thousands of pages which described designs in constant re-evaluation and amendment according to the availability of construction material, labour or the general state of the current five years plan. It was not a document but a filing cabinet, and a filing cabinet of several companies, not of the State. In no sense was it a single determinate text. It is no accident that at no point has Slovakia relied on any precise passage or paragraph of the "text" of the Joint Contractual Plan in support of any disputed point, whether as to the agreed discharges or its alleged provision for "underwater weirs".

27. This is not to deny that the Joint Contractual Plan was a tool to implement the 1977 Treaty. Rather than a treaty governed by international law, concluded between two States acting *iure imperii* and having continued capacity to modify the 1977 Treaty, it was a blueprint developed by State-owned companies who implemented an investment decision of two socialist States, which were the only possible investors under centrally planned economies.

V. The flexible character of the Project – at least until 1989

28. I turn to my fourth and final theme, the framework character of the Treaty and the intended flexibility of its implementation.

29. Deviation from the time schedule and from the Joint Contractual Plan was rather the rule than the exception, as indicated by the fact that 74 amendments to the Joint Contractual Plan had been adopted before 1 January 1985[45]. The time schedule for putting the turbines into operation was modified twice. One of them was reflected in the 1977 Treaty's text, the second was not. This shows that substantive changes could be adopted by the parties with or without formalizing it by amending the framework treaty.

30. Slovakia agrees with Hungary that the 1977 Treaty "is a framework instrument, imposing general obligations on the parties, with implementation being left to complementary and derivative

[45] HM, para. 2.22.

instruments"[46]. It also concedes that the provisions of the 1977 Treaty could be – and had to be – supplemented and adapted, in the light of experience, through the agreed provisions of the Joint Contractual Plan[47]. Nevertheless it asserts that the object of the Treaty, the construction of the Gab_íkovo-Nagymaros Barrage system as a joint investment was "fixed *ne varietur*"[48]. Hungary agrees with this as long as it expresses the firm intention to proceed jointly and have an economically viable, environmentally sound investment. But it can not accept the view according to which modifications which were called for by the expected harmful effects of the Project were prohibited, and could not have been introduced into the Treaty itself.

31. There is a contradiction here: Slovakia agrees with Hungary in the flexible nature of the regulatory system and admits the evolutionary character of the Project up to 1989. That is dubbed "implementation", "supplementation" "adaptation" as long as the modification of the design or the planned operational mode coincided with Czechoslovakia's economic needs and interests. However, when Hungarian economic and environmental concerns were presented as the grounds for the suspension of work or the invitation for additional research, "adaptation" and "implementation" was forgotten and Hungary was branded with the stigma of breach and violation.

32. Hungary believes that its suggestions in 1989 to review the Project from an environmental point of view could have led to adjustments both in design and operational mode compatible with the Treaty or acceptable by both Parties through the modification of the Treaty, and would not have undermined the object and purpose of the Treaty as understood and implemented thus far.

VI. Conclusion

33. Mr. President, Members of the Court, in conclusion let me summarize. -The 1977 Treaty had two paramount purposes: the political, which called for the strengthening of fraternal relations between Czechoslovakia and Hungary by enhancing their socialist integration, and the economic, which aimed at economic benefits and viability consistent with applicable environmental standards.

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[46] SC-M, para. 2.58.

[47] SR, para. 2.60.

[48] SR, para. 2.59.

- The object of the Treaty was the construction and operation of the Barrage system under joint control based on the agreement of the Parties. That agreement did not establish a territorial regime but set the framework. With the passage of time and the increased importance of market forces the construction and operation of the Project ought to have shown characteristics of a reasonable investment: profitability and environmental sustainability.
- The Project was addressed by seven related international agreements, which shared the fate of the 1977 Treaty. It was also subject to other relevant agreements, and to the rules and principles of international law, and these for the most part continue to bind the parties to the present litigation, whether or not the 1977 Treaty is in force.
- The Joint Contractual Plan was a tool of implementation, ancillary to the Treaty, linked to it and to the other agreements. But it lacked the necessary precision in content, let alone the minimum requirements of form, to qualify as a treaty on a par with the 1977 Treaty.
- This shows very clearly that the 1977 Treaty was a framework agreement to be implemented primarily through the constant revision of the Joint Contractual Plan, but also, if necessary, by the amendment of the Project timetable and, where necessary, of the 1977 Treaty itself. However in Autumn 1989, in response to the expressed Hungarian concerns about the viability of the Project, Czechoslovakia broke the tradition of flexible adaptation according to the needs of the parties, and insisted on realizing the object *ne varietur*. That insistence denying meaningful negotiations is at the root of the present dispute.

34. But before coming to these issues, something needs to be said about the concerns which Hungary had in 1989, and continues to have, about the Original Project as a whole. I would ask you, Mr. President, to call on Dr. Kern to introduce these issues. Thank you, Mr. President, Members of the Court.

The PRESIDENT: Thank you Professor Nagy. I now call upon Dr. Klaus Kern.

Dr. KERN:

7. THE ORIGINAL PROJECT - SCIENTIFIC CONCERNS

Introduction

1. Mr. President, Members of the Court, it is a great privilege for me to appear before you today to present Hungary's submissions on science. As a river engineer specializing in river restoration I am frequently asked the question: "To what extent can you rehabilitate river systems which have been disturbed by human intervention?" For the Danube, the question is reversed: how much disturbance can a river system endure without losing its essential ecological functions? I am greatly honoured to be asked to contribute to a case before this Court with wide implications for the affected Danube reach and other rivers as well.

2. Our presentation over the next hour addresses Hungary's scientific concerns of the Original Project. It will be divided into four parts, addressing the most important aspects of Hungary's concerns. To consider the potential impact of the Original Project, it is necessary to explain how it was to operate. I will address this in Part I of the presentation. In the second part Professor Wheater will describe the threat to the system of bank-filtered wells which supply Budapest with drinking water. In the third part he will explain the anticipated impacts in the Szigetköz region. Finally, he will then briefly address, from a scientific perspective, the deficiencies of the environmental impact assessment procedures which had been carried out before 1989.

I. PLANNED PEAK POWER OPERATION

3. I begin by describing how the Original Project was to function in a mode referred to as "peak power". This has particular environmental impacts requiring special attention. Before doing so, it is important to make clear that the Hungarian position is not one of outright opposition to hydro-power. It is not a question of being 'anti-dam' and 'pro-nature'. From an environmental point of view, hydro-power at appropriate locations and in an appropriate manner is preferable to many other sources of electricity generation. This is the case for parts of the Danube. In Austria, for example, there was little protest against a new dam at Vienna-Freudenau, since environmental impact assessment made it clear that it would not affect large floodplain areas or valuable side-branch systems. It is not located in a protected area. By contrast, 10 years ago, Slovakia led international opposition to a projected dam at Hainburg, just north of Bratislava, which was then cancelled on environmental grounds[49]. These were similar to those invoked by Hungary. Therefore, each case must be addressed on its own merits.

4. No one disputes that the Original Project threatened damage to this part of the Danube system. The issue in dispute is whether those impacts could be managed. We cannot in this oral phase enumerate all impacts or potential hazards to the environment or landscape. The Court is invited to refer to the written pleadings of Hungary for impacts on forestry, agriculture, fishery and for deficiencies in earthquake design[50]. We will focus on those impacts which are especially significant: water resources and biodiversity.

5. In this regard, both the sensitive location of the Project and the proposed mode of operation — peak power — threatened extraordinary damage.

6. To consider the implications of peak power it is necessary first to summarize how hydro-electric projects work. If the water arriving at a power station is continuously discharged through the turbines, it is operated as what is known as a "run-of-the-river" plant. In this case the maximum capacity of the turbines will only slightly exceed average flow of the river, and larger floods will be

[49] HR, Vol. 2, App. 5, Sect. 5.

[50] For example HC-M, Vol. 2.

discharged over the weir.

7. Most hydropower stations in low-land rivers work on a continuous basis. Some, however, store a portion of the daily discharge volume in a reservoir, releasing the water at higher flow rates to generate electricity during times of peak energy demand. This is known as "peak-power" operation. Peak-power production requires the construction of certain physical structures. It is also subject to particular difficulties, and engenders certain risks and dangers.

8. To begin with, an operational reservoir is needed to store part of the daily flow. Moreover, the maximum capacity of the turbines – that is to say the amount of electricity they can generate – is determined by the planned peaking mode rather than by the river's natural flow rate. The discharge capacity of the headrace and tailrace canals — their size — will correspond to the maximum flow through the power station. Last, but not least, the artificial daily floods caused by peaking require the construction of a second, downstream barrage. This barrage needs its own operational reservoir to limit downstream disturbance to the river and its ecosystem.

9. No other Danube hydropower station in Austria or Germany works in "peak-power" mode[51]. The Original Project is unique. Where such systems do exist, for example in the Upper Rhine or in the Rhône, they are designed to operate in a moderate peaking mode only and in accordance with strict conditions established by international agreement between all States concerned (Illus. No. 7.1). With 1,100 m^3/s, the average flow in the Upper Rhine is about half of that of the Danube. A system of 10 barrages is operated together, as seen on the chart. It has been agreed between France and Germany that the discharge released during peak operation must not be more than 300 m^3/s above the natural flow[52]. Because of the risks and dangers water levels within the barrage system may not be reduced by more than 50 cm. Below the last barrage at Iffezheim, the natural discharge must be re-established throughout peak operation. Similar restrictions are established for peak operation in the lower Rhône[53].

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[51]HC-M, para. 1.206.

[52]HC-M, para. 1.211.

[53]N. Bordiec & A. Frézet (1986) "La gestion automatisée d'aménagement à buts multiples - L'exemple du Rhône", *La Houille Blanche*, No. 6, 427-440.

10. How does this compare with the Original Project? The system was designed to operate in a large-scale peaking mode[54], unparalleled in Western Europe. The Dunakiliti-Hrusov Reservoir was planned to have a volume of about 60 million m^3, able to store an entire day's flow.

11. The discharge capacity of the power canal and the turbines was to be two-and-a-half times the mean annual flow of the Danube[55]. This meant that nearly the highest flood in an average year could be discharged through the turbines by-passing the floodplain forest, which would stay dry.

12. The envisaged large-scale peak operation required a tailwater reservoir to compensate for the daily flood waves that would be created. This was the function of the Nagymaros dam, as acknowledged by Slovakia[56], turning a free-flowing river into a reservoir of about 120 km in length, as seen on the chart, but with a drop of only 7 m.

13. The details of peak operation were not finally settled by Hungarian and Czechoslovak experts. However, the magnitude of peak operation was fixed[57] and dominated the design of the entire system. For a run-of-the-river plant working on a continuous mode, four instead of eight turbines would have been sufficient. Even for moderate peaking, the power canal could have been half of its actual size. Thus, the envisaged magnitude of peak operation is evident from the capacity of the structures and machinery. Different flow rates would have different peaking modes,

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[54]Peak operation modes are based on investigations by the Technical University of Budapest (1989) *Hydraulic-Energy Characteristics of the Gabcikovo-Nagymaros Hydrosystem for modified mode of operation*; authors: V. Nagy and J. Ratky (in Hungarian); they were published in a conference organised in 1993 by Slovakia: Karadi, G.M. and I.V. Nagy (1993) "Optimal operation of the Gabcikovo-Nagymaros Hydropower System", Proceedings of the International Conference "The Gabcikovo-Nagymaros System - Intentions and Reality", Sept. 7-9, 1993, Bratislava. Characteristics of the peak operation modes are given in HC-M, Vol. 2, Fig. 2.5 and HC-M, Vol. 4 (1), Annex 6.

[55]HC-M, Vol. 2, Chap. 2.3.2.

[56]SR, Vol. 2, p. 20 (2).

[57]Karadi, G. M. and I. V. Nagy (1993) *Optimal operation of the Gabcikovo-Nagymaros Hydropower System*, Proceedings of the International Conference "The Gabcikovo-Nagymaros System - Intentions and Reality", Sept. 7-9, 1993, Bratislava.

with one or two daily peaks, as seen on the inserted box on the lower half of the chart. At low-flow conditions the turbines at Gab_íkovo would be shut down for about 18 hours per day, and almost all of the low-flow discharge would be stored in the upper reservoir.

14. A small residual flow of just 50 m^3/s would be left in the old riverbed and more than 5,000 m^3/s would be released at Gab_íkovo over 6 hours. This is more than five times the average low-flow rate of the Danube[58].

15. How does peak operation affect the environment? As envisaged it would induce daily water level fluctuations in the Nagymaros reservoir of up to 4-5 m (Illus. No. 7.2). It would affect not just the tailrace canal as suggested by Slovakia[59]. Up to 15 km of the abandoned Danube channel and the lower side-branch systems, as well as the lower end of the Mosoni Danube[60] would be impacted. Contrasting with seasonal variations in surface and groundwater levels, these would cause daily disturbance to aquatic habitats and destroy riparian areas along the entire length of the Danube ridge. This type of damage can be seen in the draw-down areas of pump-storage reservoirs where the banks are stripped of all vegetation. Riparian areas, however, represent transitional habitats between land and water which are highly valuable, sheltering rare plant communities with many endangered species[61], as Professor Vida explained. This fact has been deliberately ignored by Slovakia[62].

16. Another, somewhat strange consequence of large-scale peaking is a daily change in the flow direction of tributary streams and channels. A sudden rise in water levels due to peak operation would force large quantities of water to flow several kilometres upstream in the old riverbed of the Danube, as well as nearly 20 kilometres upstream the Mosoni Danube[63] (Illus. No.

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[58] *Ibid.*

[59] SR, Vol. 2, p. 64 (6).

[60] HC-M, Vol. 2, Chap. 2.3.2.

[61] R. J. Naiman & H. Décamps (Eds.) (1990) *The Ecology and Management of Aquatic-Terrestrial Ecotones*, UNESCO, Paris, and The Parthenon Publishing Group, Carnforth.

[62] SR, Vol. 2, p. 59 (2).

[63] HC-M, Vol. 2, Chap. 2.3.2.

7.3). This "tidal effect" of peak operation will severely affect water quality in the Mosoni Danube[64] as Professor Wheater will explain.

17. How does peak operation affect aquatic habitats and biota? In short, very significantly. Disturbance of aquatic habitats would result for large areas of the Nagymaros reservoir, including the backwater reaches of the old riverbed and the lower end of the Mosoni Danube[65]. Small water insects, which are the main food source for fish, prefer familiar currents, and hide during the rising flows which normally announce flood events. This behaviour is an important strategy for the survival of aquatic fauna seeking to avoid drift. The daily fluctuations in flow velocity between almost zero and nearly 2 m/s[66] provide wholly inappropriate living conditions for the aquatic fauna[67]. It is therefore not understood how the tailrace canal, described by Slovakia as an artificial structure, specially designed for peak operation, could offer new habitats for fish[68]. It would be an alien environment.

18. Since experiments on the scale of the Original Project have not previously been attempted, comparable evidence from experience elsewhere is not available. However, it can be said that peak operation in much smaller Alpine rivers has caused significant damage to the aquatic fauna[69].

19. What kind of impacts would be expected below the planned Nagymaros barrage? That barrage would retain all coarse bedload. From the history of the riverbed around Szentendre Island[70], it is clear that further significant riverbed erosion would be very likely (Illus. No. 7.4).

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[64]HC-M, Vol. 2, Chap. 3.3.2.2.

[65]HCM, Vol. 2, Table 2.4.

[66]*Ibid.*

[67]HCM. Vol. 2, Chap. 4.4.2.4.

[68]SR, Vol. 2, pp. 64 (6), 85 (5).

[69]O. Moog (1993) *Quantification of daily peak hydropower effects on aquatic fauna and management to minimize environmental impact. Regulated Rivers: Research & Management*, Vol. 8, 5-14. Also see HR, Vol. 3, Annex 4.

[70]Hydrological Yearbook Hungary.

Riverbed deepening around Szentendre Island started in the 1940's after river training works were carried out. Dredging of sediments started in the 1960's and was terminated in 1980, with the exception of minor local dredging for navigation[71]. Nevertheless, deepening of the riverbed continued until recently, as seen on the chart by the drop of low-flow water levels at various river gauges. After construction of the Nagymaros barrage, sediment transport would be restricted to suspended load, and hardly any bedload would arrive in the

[71]HCM, Vol. 2, Chap. 2.2.2.

branches around the Island. This would increase erosion and change the sedimentation pattern in the channels[72].

20. The power station at Nagymaros was designed to release a minimum flow of 1,000 m^3/s, but would also produce a peak flow itself (Illus. No. 7.5). Under low-flow conditions it was envisaged to increase the flow to more than 2,000 m^3/s for six hours a day[73]. These peak flows would be released into the free-flowing part of the Danube. This contrasts starkly with the situation in the Upper Rhine where no such peak flows are permitted in the Franco-German treaty. In addition to the lack of bedload, peak operation would further reduce the stability of the bed.

21. In conclusion, it is not possible to quantify exactly what the changes in riverbed level and in the distribution of sediments would have been occasioned by the Original Project, but there would have been significant changes in the tailwater reach between Nagymaros and Budapest. There is a sufficient basis for concluding that sediment disturbance by the construction and operation of the Nagymaros Barrage would create real risks, risks which amply justify Hungary's desire for further investigation. In particular, they would endanger the drinking water well groups on and around Szentendre Island which supply the city of Budapest. This phenomenon will now be treated in more detail by Professor Wheater. Mr. President, Members of the Court, I would like to thank you for your attention. Mr. President I ask you to call on Professor Wheater to continue, I thank you.

The PRESIDENT: Thank you, Dr. Kern. Professor Wheater, please.

Professor WHEATER:

II. BANK-FILTERED WELLS AND THE BUDAPEST WATER SUPPLY

22. Mr.President, Members of the Court, it is a great honour to address you for the first time.

[72]HCM, Vol. 2, Chap. 2.3.2 and 3.6.5.2.

[73]HC-M, Vol. 2, Chap. 2.3.2.

23. My presentations will address the following issues. First, I will describe the role and functioning of bank filtered wells and the threat posed to them by the Original Project. Second, I will describe the anticipated impacts of the Original Project on the Szigetköz region, in particular on levels and quality of groundwater, on quality of surface water, and on the region's biodiversity. Third, I will comment on the lack of any adequate impact assessment prior to 1989.

a) Bank-filtered wells

24. One of the basic obligations of any State is to maintain the drinking water supply available to its citizens. In the 1980s it became apparent that the quantity and quality of the supply to Budapest – most of which comes from bank-filtered wells – was vulnerable to the effects of the Nagymaros dam, which would also affect water supplies to towns upstream.

25. Approximately 85% of the Budapest water supply capacity comes from 758 bank-filtered wells. The supply capacity is over one million cubic metres per day. Three quarters of the bank-filtered supplies are to the north of the city, mainly in the major well fields of Szentendre island[74], which you will visit next month. These are just downstream of the Nagymaros dam site, as shown here (Illus. No. 7.5). Upstream of the Nagymaros dam site, bank-filtered wells are also important, for water supply to local towns and villages[75].

26. Bank-filtered wells are a long-established method of abstracting river water for drinking water supply (Illus. No. 7.6). They are sited next to rivers and abstract water from deposits of underground alluvial material connected to the river. The wells draw on the river water, and the passage of the water through the alluvial sands and gravels provides a natural filtration which is highly effective in removing pollutants. This diagram illustrates the operation of a typical bank-filtered well. The quantity produced by a well depends on 4 factors: river water level, the thickness of the filter layer, its connection to the river, and the physical properties of the filter layer. Additionally, the removal of contaminants depends on the length of the filter pathway and the properties of the filter layer. Alter these characteristics, and you risk altering the yield and quality

[74] HC-M, Vol. 2, Sect. 3.6.1, p. 105.

[75] *Ibid.*

of the well.

b) The threat to bank-filtered well systems

27. The primary concern for bank-filtered water wells comes from changes in river bed sediments. River-bed erosion can reduce river water levels and hence the available well yield. More seriously, removal of the gravel layer will cause loss of water quality protection and can threaten the well supply in its entirety.

28. Where deposition of fine sediments (e.g. silt particles) occurs, important chemical changes may result from the degradation of organic material. The degradation consumes oxygen, which can result in the dissolution of iron and manganese, and the production of ammonium. These may render the water unsuitable for drinking, and can cause bacterial slimes which clog the well screens.

29. These are the basic principles. Let me now turn to actual Hungarian experience concerning degradation of well water quality.

30. The Surány Waterworks, Szentendre island, immediately downstream of the proposed Nagymaros dam, illustrates the degradation of water quality that can arise due to sediment deposition (Illus. No. 7.7)[76]. Water quality problems began in the 1970's, and a detailed study was carried out in the mid-1980's to identify the cause. This showed that two troughs in the river bed had filled with fine sediment, the degradation of which led to severe water quality deterioration, commencing in 1974-1975. By 1984 ammonium levels in one well reached 90 times EC guide levels for drinking water, while manganese levels were 200 times EC guide levels. The problems persist today[77].

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[76]HC-M, Vol. 2, Sect. 3.6.3.

[77]HC-M, Vol. 2, fig. 3.22 and figs. 3.25, 3.27.

31. Similar problems exist around Nagymaros. Deterioration of water quality began in the early 1980s, and several wells had to be removed from service as drinking water standards were exceeded[78]. Again, the adverse changes were due to sediment deposition and degradation.

32. The Hungarian experience is that bank-filtered wells are extremely sensitive to changes in bed sediments, that the processes of chemical degradation can readily lead to chemical concentrations which greatly exceed drinking water limits, and that effects can last for decades.

33. Sediment degradation is not the only problem. Erosion of the river bed is a further concern. This lowers river water levels and removes the protective filter layer. The lowering of river levels reduces well yield – that is to say the amount of water available. More important is the effect of gravel removal on the filter performance, and the possibility of complete removal of the bed filtration layer.

[78]HC-M, Vol. 2, Sect. 3.6.3.2.

34. The history of bed degradation at Szentendre has already been discussed by Dr. Kern. The long-term decline in bed level has now been halted by strict conservation measures. The current state of river bed gravels shows complete removal of the gravel bed in several areas. The Budapest Waterworks current estimate of the decrease in well capacity due to dredging is approximately 30% of the total water resource potential of this Nagymaros to Budapest reach.[79] Thus a major impact on Budapest's water supply has already occurred, as a result of river bed degradation. The vulnerability is clear.

c) Anticipated Impacts of the Original Project

35. Having considered the evidence of water quality degradation and impacts of bed changes, I turn now to the expected impacts of the Nagymaros dam. I begin with wells in the back-water reach, upstream of the proposed Nagymaros dam; I then consider the wells which supply Budapest.

[79] HC-M, Vol. 2, Sect. 3.6.4, p. 115.

1) Impacts of the Nagymaros Dam on bank-filtered wells in the backwater reach (Gönyû to Nagymaros)

36. As with all dams, deposition of fine sediment is anticipated in the backwater reach behind the dam. This is due to reduced flow velocities. It has important consequences for bank-filtered water supply. The long-term effect of sediment clogging is estimated to reduce well yields by up to 40%[80]. Calculations of the impact of sedimentation on well water quality show increased levels of iron and manganese[81]. On this the parties do not disagree, since Slovakia expected clogging, sediment degradation and groundwater quality deterioration in the Cunovo reservoir[82]. The Court will hear later of the observed impacts in that reservoir, but it is relevant to note here that predicted chemical changes are actually being observed today[83]. The experience with Variant C confirms the main fears associated with the Original Project.

37. There can be no doubt that Nagymaros posed a potentially serious threat to these upstream water supplies. Clogging would lead to loss of yield, and changes in water quality would render the supply unsuitable for drinking.

2) Impacts of the Nagymaros dam on Budapest water supply

38. I turn now to the downstream effects of Nagymaros. The water supply to Budapest is obviously of paramount national importance. Two thirds of Budapest's total drinking water comes from the bank-filtered well fields between Nagymaros and Budapest[84]. The sensitivity of this supply has been demonstrated. Any threat to this supply is a threat to a vital national resource.

39. The precise impact of the Nagymaros dam on downstream river bed sediment patterns is difficult to predict. Different calculation methods can produce order-of-magnitude differences in river

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80 HC-M, Vol. 2, Sect. 3.6.5.1, p. 116.

81 *Ibid.*

82 SR, Vol. II, Part II, p. 166.

83 SR, Vol. II, Part II, p. 142.

84 HC-M, Vol. 2, Sect. 3.6.1, p. 105.

bed changes[85]. Sticking to first principles, however, dams invariably retain most of the coarse sediments normally associated with bed-load transport. The loss of these sediments to the channel downstream induces downstream scour, an effect already observed downstream of the Variant C dam[86]. The magnitude of this downstream bed erosion is uncertain[87]. Three things are certain: (1) bed changes would definitely occur (2) these changes would have been aggravated by peak power operation, and (3) these changes would threaten further removal of the fragile filter layer on which the bank-filtered wells depend. Additionally, irregular pulses of fine sediments would be released by the dam and could settle in pockets downstream[88]. This would cause severe local degradation of well water quality, as already observed[89].

40. We have noted that, in its discussion of bank-filtered wells downstram of Nagymaros, Slovakia agrees that changes in the filter layer pose potential threats[90]. The issue for the Court, then is not whether a threat existed, but whether the threat justified further investigation, and then action. Slovakia makes no reference to the expected river degradation caused by Nagymaros. With a strange logic, it cites as evidence of lack of Hungarian concern a report indicating that "special attention" must be paid to river bed problems[91]. However, it conveniently overlooks the previous paragraph of that report, which states that "The riverbed is expected to degrade with the operation of the barrage system."[92]

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85 HC-M, Vol. 2, Sect. 3.6.5.2.

86 Rákóczi, L. and Sass, J. (1995) *Changes of the Channel of the Hungarian Upper Danube and of the Side River Arms of the Szigetköz upon putting the Dunacsúny I. River Barrage into Operation. Vízügyi Közlemények*, Vol. 77, pp. 46-70 (in Hungarian).

87 HC-M, Vol. 2, Sect. 3.6.5.2.

88 HR, Vol. 2, Sect. 4.4.2.

89 HC-M, Vol. 2, Sects. 3.6.3.1, 3.6.3.2.

90 SR, Vol. 1, pp. 280-282), SR, Vol .1, para. 12.03, p. 280.

91 The SR (Vol 1, p 282) quotes a Somlyody et al. report (HC-M, Vol. 4, p. 576)

92 *Ibid*.

41. The effects which I have described clearly posed a major threat to the water supply of Budapest. In response to concrete Hungarian evidence of yield reduction and water quality degradation, Slovakia states simply that "there is no support for such a conclusion"[93]. It consistently ignores the Hungarian science, much of which I have brought to your attention this morning.

III. ANTICIPATED IMPACTS IN THE SZIGETKÖZ REGION

42. In this second part of my presentation, I will now address the anticipated impacts of the Original Project for the Szigetköz Region, the importance of which was explained yesterday by Professor Vida.

43. The assessment of impacts on the region raises complex issues, in particular for the chemical and biological responses which would have resulted from physical changes, and the consequential implications, for example, for surface water and groundwater quality, and for ecological response. Knowledge and awareness of these matters has increased over the last decade. With the benefit of hindsight it is clear that these complexities were either ignored or dismissed on superficial analysis in the impact assessments of the Original Project. Their importance has now been recognised, at least by Hungary and international scientists.

44. Nevertheless, uncertainties remain, and we should not be frightened to say so. The best scientific predictions of risks will always contain an element of uncertainty. Slovakia's view that "The kind of 'uncertainty' invoked by Hungary does not exist"[94] is simply not tenable. Slovakia pours scorn on Hungary's recognition that complex, long-term environmental impacts, which may represent major risks to resources of national and international significance, come with a degree of uncertainty[95]. It adheres to the curious view that monitoring over three years is sufficient to detect long-term change, and that monitoring can guarantee that all adverse effects can be managed[96]. I hope the Court will

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93 SR, Vol. II, p. 27.

94 SR, Vol. I, para. 1.15, p. 6.

95 SR, Vol. I, para. 1.16, p. 6.

96 SR, Vol. I, paras. 1.16-1.18, pp. 6, 7.

recognise that to accept uncertainty is not to deny risk, or to limit the scope for reasonable, prudent protective measures.

45. In this context, and given the limited time available, I cannot discuss in detail all aspects of the impacts of the Original Project in the Szigetköz. These are given in Hungary's written pleadings[97]. I will review the flows fixed in the Original Project plans and then focus on three issues: (1) groundwater levels and quality, (2) surface water quality and, (3) ecological response. I will focus on perceived risks, since the Original Project was not completed. Tomorrow, I will consider the observed data on the impacts of Variant C.

46. The Joint Contractual Plan fixed discharges to the Danube river channel, the Mosoni Danube and to the floodplain (Illus No 7.8). To maximise electricity generation it was agreed that the residual discharge into the Danube be fixed at 50 m^3/s. In winter this would fall to 20 m^3/s or less. During the vegetation season it could increase to up to 200 m^3/s, still only 10 % of the natural average flow. And far less than the 800 m^3/s which the EC recommended[98], or the 600 m^3/s which Slovak government advisers considered necessary.[99] Lesser amounts would go to the Mosoni Danube and the Hungarian side-branch system.

47. The operational plans for the water distribution only allowed flood flows in the main riverbed once the discharge capacity of the turbines was exceeded. And only above the even higher level of 6,500 m^3/s would the side-branches in the upper and middle Szigetköz receive additional water. Inundation of large areas of the active floodplain would occur on average less than once in 20 years[100].

48. The wetland ecosystem would thus be deprived of its most essential elements – water, and the flow of water at varying levels. This would have significant impacts on groundwater levels and on groundwater quality.

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97 HC-M, Vol. 2.

98 HM, Vol. 1, Ann. 15, Sect. 3.2.

99 HM, Vol. 1, Ann. 15, Sect. 3.1.2.

100 HC-M, Vol. 2, Chap. 2.3.2.

a) Groundwater

49. To consider the impacts on groundwater, one must first describe the situation prior to construction activities. The video identified the large alluvial aquifer in the Szigetköz and Zitny Ostrov created by the Danube (Illus. No. 7.9). The volume of water in this aquifer, on the Hungarian territory alone, is estimated to be 5.4 cubic kilometres[101]. The aquifer was recharged mainly by the Danube channel; recharge from rainfall is very limited.[102] Natural processes of recharge maintained good groundwater quality[103], but the system is very vulnerable to change.

50. Groundwater flow velocities – and hence travel times – are extremely slow. It will take many years for pollution to move through the aquifer. A useful result of atmospheric bomb tests, carried out in the late 1950's and early 1960's, is that tritium was deposited and now can be used as a time marker. The extent to which tritium has penetrated the Szigetköz aquifer can be used to trace the contour of 30 year travel time from the Danube (Illus. No. 7.10).[104] This shows that rates of travel are less than 300 metres per year: in other words, a pollutant may take 10 years or more to move just 3 kilometres. [105] And such pollution will at best be long-lived; at worse, irreversible.

51. The average groundwater levels mask a highly dynamic groundwater response based on Danube floods (Illus. No. 7.11). As shown in the video, when the Danube levels increase, the river water recharges the aquifer. When levels decrease, there is a local drainage return flow to the Danube channel, providing a natural flushing of the gravel bed.

52. As can be seen from this diagram,[106] historical decreases in groundwater levels (so frequently

[101]HC-M, Vol. 2, Sect. 3.4.1.1.

[102]*Ibid.*

[103]HC-M, Vol. 2, Sect. 3.5.1.

[104]HC-M, Vol. 2, Sect. 3.5.1 and Fig. 3.7.

[105]*Ibid.*

[106]HC-M, Vol. 2, Sect. 3.4.1.1.

mentioned in the Slovak pleadings[107]) have been very limited in the Szigetkoz.

53. In fact, the major decreases in groundwater levels near Bratislava are clearly shown by Slovakia (Illus. No. 7.12) to be a result of local groundwater extraction[108].

54. The natural processes of groundwater recharge to the Szigetkoz from the Danube used to result in excellent quality groundwater. The infiltrated water was sufficiently rich in oxygen to oxidise the low amounts of degradable organic material. As a result chemical constituents such as iron, manganese and ammonium have only been present in low concentrations.[109] This high quality of recharge water ensured that most of the Szigetkoz had good groundwater quality. Pollution has been limited; poor quality water is generally localised and restricted to the upper 20m of the aquifer[110].

55. The Szigetkoz aquifer thus represents an immense resource of high quality water of national strategic importance. The 1978 Joint Contractual Plan posed a clear threat to that resource.

1) Groundwater levels

56. By removing 95% of the water from the Danube the 4 metre reduction in river levels would have caused a general reduction in groundwater levels and change in groundwater flows[111]. The Dunakiliti reservoir would have caused locally increased groundwater levels, and, at least initially, become the main source of groundwater recharge. However, the operation of the reservoir would be

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[107]E.g., SM, Vol. 1, para. 1.58; SC-M, Vol. 1, para. 7.81 and Illustration No. CM-5; SR, Vol. 1, para. 13.05; SR, Vol. 3, Chap. 1, Part 4.

[108]SR, Vol. 1, Illustration R-11.

[109]HC-M, Vol. 2, Sect. 3.5.1.

[110]**Ibid.**

[111]HC-M, Vol. 2, Sect. 3.4.2.1.

accompanied by deposition of fine sediments, which would in the long term reduce the recharge through the bed[112].

57. An attempt has been made to quantify these effects using groundwater simulation modelling (Illus. No. 7.13)[113]. The estimated impact on average groundwater levels for a flow of 50m^3/s shows a rise of 3 m close to the dam. However, over most of the area, groundwater levels fall, in some cases very significantly. An area of 20 km^2 suffers a decline in levels of more than 3m; 75 km^2 has a decline of more than 2m. The total area affected by reduced levels is over 300 km^2 [114]. An increased Danube flow of 200 m^3/s would bring only minor improvements: the area affected would be just under 300 km^2. More pessimistic (but plausible) estimates of clogging show further reductions in groundwater levels[115].

58. The effect on average conditions masks other important impacts. The variability of groundwater levels would largely be lost with implementation of the Original Project. The consequences would be a greater reduction of peak groundwater levels than the average levels which have been illustrated. This natural variability is essential for the functioning of the natural system, e.g., floodplain vegetation, maintenance of self-cleansing gravel river bed conditions, and oxygenation of the groundwater.

59. The estimated effect of the reduced groundwater levels on the natural processes of sub-irrigation is shown here (Illus. No. 7.14). Natural sub-irrigation depends on the groundwater table reaching the fine soils which overly the alluvial aquifer. It provides an essential soil moisture supply in dry periods. Dam construction would reduce the area benefitting from this process by approximately one half[116].

60. Apart from the loss of natural sub-irrigation, long-term changes to the soil profile, including

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[112] *Ibid.*

[113] HC-M, Vol. 2, Sect. 3.4.2.1; Vol. 5, Plate 3.11.

[114] HC-M, Vol. 2, Table 3.4.

[115] HC-M, Vol. 5, Plate 3.16.

[116] HC-M, Vol. 2, Sect. 3.4.2.1; Vol. 5, Plate 3.12.

development of carbonate accumulation layers, may occur. Again, Slovak soil scientists share this concern[117]. It is just one of many aspects of the Original Project not considered prior to 1989.

2) Groundwater quality

61. The Original Project raises equally serious concerns for groundwater quality. These have been consistently dismissed by Slovakia in its written pleadings[118], despite the evidence described by Professor Carbiener and acknowledged by Slovak and international scientists[119].

62. Under the Original Project the main sources of groundwater recharge would become the Dunakiliti reservoir and the network of side-arm channels. The reservoir would inevitably cause deposition of fine sediments over its bed. As I explained earlier, these fine sediments contain organic material which will degrade, consuming oxygen. If chemically-reducing conditions occur, iron, manganese and ammonium will be released into solution, and the quality of groundwater recharge will deteriorate[120]. These processes have been clearly demonstrated for bank-filtered wells. In fact, there is considerable international experience of such problems[121], as reviewed by Professor Carbiener, including dams further upstream in the Danube.

63. For example, intensive studies of the reservoir at Altenworth, in Austria, were undertaken in the 1980's (Illus. No. 7.15). The observed changes due to the dam[122] included exactly the same aspects of concern here for the Original Project: deposition of organic-rich sediments in the reservoir, infiltration from the reservoir to groundwater through these organic-rich sediments, a decrease in groundwater fluctuations (and hence oxygen supply), and the reduction of inundations of oxygen-rich surface water. These changes caused severe degradation of

[117] HR Vol. 2 pp. 60-61.

[118] E.g., SR, Vol. II, p. 43.

[119] E.g. SR, Vol. II, Part II, p. 166.

[120] HC-M, Vol. 2, Sect. 3.5.1.

[121] HC-M, Vol. 2, Sect. 3.5.2.1.

[122] Documented in detail by Professor Nachtnabel and colleague, from the Agricultural University of Vienna (Hary and Nachtnabel, 1989).

groundwater quality[123].

64. A key point to note is that these processes were not instantaneous, but emerged only after several years. This illustrates an obvious fallacy of Slovak arguments that monitoring is somehow adequate to prevent environmental damage. This is clearly incorrect for the Altenworth experience. It is incorrect for processes of long-term change in general. And it is incorrect in respect of the Original Project.

65. Hungarian analysis[124] indicates that degradation of groundwater quality would result from recharge from the Dunakiliti reservoir. This view is confirmed by Slovak scientists[125].

66. The other main source of groundwater recharge would be the side-arm channel system in the Szigetkoz. A similar set of concerns apply here[126]. As will be described later, the side-arm channel system contains fine organic sediments. Moreover, the underlying geological sequence consists of a complex interleaving of alluvial gravels and fine sediment materials[127]. It follows that infiltration through this sequence is subject to the same concerns for chemical degradation. The poor quality of infiltrating water has been clearly identified from monitoring programmes[128]. I will describe these in more detail when I consider the impacts of Variant C.

67. To summarize, the long-term implications for groundwater quality of the Original Project are as follows. Water of degraded quality from the reservoir bed and the side-arm system[129] would

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123 Hary and Nachtnabel write that "In the northern floodplain, for which extensive data is available, the groundwater quality indicates an oxygen-depleted or oxygen-free zone. Simultaneously, increased iron and manganese concentrations were found after a period of delay of a few years after the power station construction."

124 HC-M, Vol. 2, Sect. 3.5.2.2.

125 SR, Part II, p. 166.

126 HC-M, Vol. 2, Sect. 3.5.1.

127 HR, Vol. 2, Sect. 7.3.2.

128 HC-M, Vol. 2, Sect. 3.5.2.3.

129 HC-M, Vol. 5, Plate 3.15.

replace high quality recharge water from the Danube channel, and progressively replace the high quality groundwater of the Szigetkoz.

68. Such changes render the water unsuitable for drinking. They would seriously degrade a major and vital water resource. In addition, the loss of oxygen, together with the reduction in groundwater levels and loss of their natural variability, would have very serious implications for agriculture and the natural ecosystems.

b) Surface water quality

69. Let me turn now to the impacts on surface water quality.

70. The Danube, as is the case for most major European rivers, is used as a sink for industrial, agricultural and domestic wastes. The Danube water quality in Hungary thus contains a wide range of pollutants. It is also vulnerable to accidental pollution generated upstream.

71. The bacteriological water quality reflects the organisms commonly associated with untreated sewage[130]. Hence the entire Hungarian reach from Budapest upstream is unsuitable for bathing. Heavy metals in the water, for example, mercury, lead, cadmium, can exceed applicable limits[131]. The river sediments contain heavy metals, and organic pollutants. These contaminants are mainly associated with the fine sediments, for which average concentrations of heavy metals exceed limit values[132].

72. Long-term changes have taken place. Progressive deterioration occurred from the 1960's to the mid 1980's[133]. Dissolved oxygen is an essential requirement for most aquatic organisms, and a common measure of river pollution is the rate of consumption of oxygen by biological and chemical oxidation processes. This period saw a near doubling of this Biochemical Oxygen Demand (BOD) and

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130 HC-M, Vol. 2, Sect. 3.3.1.3.

131 HC-M, Vol. 2, Sect. 3.3.1.4.

132 HC-M, Vol. 2, Sect. 3.3.1.5.

133 HC-M, Vol. 2, Sect. 3.3.1.1.

a dramatic increase in the nutrients nitrogen and phosphorus (by a factor of ten in the latter case). However, in the last decade, progress has been made in reducing emissions, and hence there has been improvement in some water quality indicators[134].

73. One effect of the construction of dams further upstream has been that concentrations of suspended solids decreased by about half between the late 1950s and the late 1970s. This gives improved water clarity and light penetration. Together with the increased nutrient levels, this provides the classical conditions for enhanced growth of algae and higher aquatic plants, commonly known as eutrophication. Algal growth was no longer limited by nutrient availability, and a ten-fold increase occurred in the indicators of algal population, such as algal counts, algal biomass, and chlorophyll-a[135].

74. Eutrophication can have many adverse effects. These include fluctuations in dissolved oxygen levels that can lead to fish kills, enhanced sedimentation due to decaying organic matter and changes to many aspects of river ecology. A change in the composition of algal populations can result – for example, leading to the presence of toxic blue-green species[136]. Under particular combinations of meteorological and hydrological conditions (that is, warm weather, high incident radiation and low flows) massive growth of planktonic algae can occur, known as algal blooms, leading to severe problems of oxygen depletion.

75. This is the background. I will now turn to the anticipated impacts of the Original Project, noting that water quality was almost entirely overlooked in the planning for the Original Scheme. I will give just two examples of the impacts.

76. A simulation of the effects of the upstream reservoir in the Original Project on algal growth at Szap is shown in this diagram in blue (Illus. No. 7.16)[137]. Inter-year variability is marked, but the average result is a 60 per cent increase in biomass. Such increases in biomass create a load of organic

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134 By 4-7 per cent/year in the Rajka-Budapest stretch, 1986-1992.

135 HC-M, Vol. 2, Sect. 3.3.1.2.

136 *Ibid.*

137 HC-M, Vol. 2, Sect. 3.3.2.3, Fig. 3.6.

material which consumes oxygen. This effect can equal or exceed that of the added sewage effluent in the Rajka-Budapest reach. Hence, with the Original Project eutrophication is expected to be a major problem, particularly in the reservoirs and backwater reaches, and one which cannot be solved by wastewater treatment alone.

77. A second example of water quality impacts concerns the effect of peak operation on water quality in the Mosoni Danube[138]. This river receives wastewater from Gyor which reduces dissolved oxygen. The effect of peak power operation would be to introduce the daily flow reversal described earlier. This would significantly increase residence times for the water. This effect was not considered at all until 1989[139], when it was shown that low dissolved oxygen values could occur, and complete oxygen loss might even be expected with catastrophic results for the fish population and the river ecology in general.

78. Finally in this part, I turn to the ecological impacts.

79. How would the flow régime impact on aquatic habitats? The planned residual discharge of 50 m^3/s in the Danube riverbed would have resulted in a drop of surface water levels of about 4 m, reducing by half the extent of the wetted perimeter of the river. The remaining small river would differ considerably from the real Danube in its ecological functions. Flow velocities would drop to one-third their original rate[140]. The lower half of the abandoned channel would be a backwater reach impacted by peak operation as explained before.

80. This imposed régime would result in a complete change of sediment patterns in the lower half of the main channel of the Danube. Large areas of the riverbed would experience deposition of sand and silt. Clean coarse gravel, which used to dominate sediments in the Danube channel, would be limited to small areas only.

81. A smaller water volume, reduced flow velocities and changed sediment pattern would be

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138 HC-M, Vol. 2, Sect. 3.3.2.2.

139 Somlyody *et al*. (1989).

140 HC-M, Vol. 2, Chap. 2.3.2.

detrimental to the aquatic fauna[141] . Those fish which are typical for flowing rivers and need spawning areas with clean gravel, or those which depend on side-branches connected to the free flowing river, would be restricted to small areas and be reduced in diversity and abundance. Fish populations are indicative of what would happen to the aquatic flora and fauna in general: a shift in species composition would occur in favour of stagnant-water-preferring species. This would represent a distinct degradation of the natural value of this Danube reach. These impacts were predicted by Slovak fish experts[142] and accepted by Slovakia for the Original Project[143].

82. In addition, the Danube channel would suffer from its isolation between the two reservoirs and by being cut off from its floodplain habitats. Where floodplain habitats are connected to the river, organic matter is washed out in the running water during inundation, providing food for the benthic invertebrates and the river fish. These connected habitats are also used by numerous fish species from the main channel as spawning and nursery areas as well as for refuge during high spates or accidental pollution events in the main riverbed. I would like to refer back to Professor Carbiener who explained the ecological processes connecting the river and its floodplain which are essential for preserving and sustaining the very character and substance of the riverine ecosystem.

83. The branch system itself contained a broad diversity of aquatic habitats. The construction of a supply canal (as a so-called remedial measure) would require connecting all side-arms and closing the entrances to the main channel. The resultant constant flow would level out the differences in the physical-chemical properties (that is temperature, nutrients, oxygen content). The aquatic flora and fauna would lose its diversity and a few species would be favoured and reach high abundance. Similar processes were observed in the Upper Rhine[144], and were reported yesterday by Professor Carbiener.

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141 HC-M, Vol. 2, Chap. 4.4.2.

142 Holcik, J., I. Bastl, M. Ertl and M. Vranovsky (1981), *Hydrobiology and icthyology of the Czechoslovak Danube in relation to predicted changes after the construction of the Gabcikovo-Nagymaros River Barrage System. P*ráce Lab. Rybár Hydrobiol. 3: 19-158.

143 SR, Vol. 2, p. 61(6), 85(3), 85(4).

144 Krause, W. & G. Hügin (1987) *Ecological Effects of the Management System of Connected Side Branches (demonstrated by the example of the regulation of the side branches of the river Rhine).* Natur und Landschaft 62(1):9. HC-M,

More water fed into the branches would not cure the problem as suggested by Slovakia[145]. It would make it worse. A more detailed discussion of remedial measures will be presented tomorrow in the context of the impacts of Variant C.

84. How would the Original Project impact on terrestrial habitats? The impacts on the wetland ecology would be quite similar to the ones observed with the operation of Variant C, which will be described later. Groundwater levels would drop, preventing capillary rise of groundwater in large areas and resulting in a partial desiccation of valuable wetland habitats. Species of drought-tolerant vegetation communities would eventually replace hydrophilic species – a process which may take many years or decades but which is currently observed in connection with Variant C by the invasion of weeds. In those areas where the side-branch water supply would raise groundwater levels permanently to a high level, the species composition of the previous wetland plant communities – dependent on water table fluctuations and inundations – would change to those characteristic of marshy land[146].

IV. LACK OF INTEGRATED ASSESSMENT

85. My colleague, Dr. Kern and I have outlined just some of the concerns for the Original Project. There is no doubt that the Project had the potential to cause very significant environmental impacts. In this third, and final part of my presentation, I would like to comment briefly on scientific aspects of the impact assessment for the Original Project. Later this morning Ms Gorove will explain why the efforts at environmental impact assessment relating to the Original Project were deficient from the perspective of international law.

86. Clearly, a substantial effort was made by both sides to investigate some aspects of the perceived environmental risks of the Original Project. Unfortunately in these matters effort alone is not enough. When Hungary suspended work on its part of the Original Project, in 1989, the studies were inadequate for proper decision-making: they were narrowly defined, incomplete, and insufficient in a number of key areas and in particular, there had been no attempt at an integrated technical assessment, let alone a comprehensive Environmental Impact Assessment. There was therefore no scientific basis for assessing

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Vol.. 4(2), Ann. 15.

145 SR, Vol. 2, p 72(5).

146 HC-M, Vol. 2, chaps 4.4; HR, Vol. 2, chap 5.1.

the extent of the impacts.

87. Permit me to consider – briefly – the scope and content of the Slovakian studies which, it is claimed, demonstrate the extensive attention given to environmental assessment. Such studies as have been produced to the Court merely reinforce Hungary's concerns. For example,[147] the concerns of Slovak soil scientists are clearly demonstrated[148], and the incomplete nature of associated research[149]. It is said, among other things, that "The chemical properties of farmland soils and their variability and dynamics have to be assessed", "Remedial measures must be proposed", "It is necessary... to implement long-term soil research methods". All this from a 1993 Report.

88. Ms Gorove will discuss the 1985 Hungarian "Environmental Impact Assessment".[150] From a scientific perspective, it contained numerous omissions and was subject to major inadequacies. For example, the key processes of sediment degradation and their impact on quality of groundwater were ignored, despite the international experience of which you have heard. River water quality modelling neglected the impacts of nitrogen and phosphorus cycles and the effects of peak power operation. The dramatic potential impacts on the water quality of the Mosoni Danube had not been evaluated. And external review led to concern that its scientific approach lacked objectivity.[151]

89. The need for, and lack of, an integrated assessment was clearly identified by EC[152] and Slovak

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147 HR, pp 60-62.

148 "The construction of the Danube Barrage System constitutes a significant intervention into the natural environment of the region.....In a large part of this area, changes in the groundwater level entail the modification of the regimes of farmland, modifying the characteristics of agricultural soils, and changes in the levels of high mineral content groundwater may accelerate the accumulation of salts in the soil or farmland profiles..... Given the manifold nature of the particle composition of farmlands and the soil, and the differences in the depth and salt content of groundwaters, we have to expect a wide range of changes in the properties and transport characteristics of farmland soil." (Rehak et al., 1993). HR, Vol. 3, Appendix 7, Part 2.

149 HR Vol. 3, Ann. 7.

150 HC-M, Vol. 2, p 249 and Vol. 4 (2), Ann. 23.

151 HC-M, Vol. 4(2), p 911.

152 "To understand and analyze the complex relationships between physical, chemical and biological changes in the surface and subsurface water regimes requires multi-disciplinary expertise in combination with advanced mathematical modelling techniques. The overall project objective is to establish a reliable impact assessment model for the Danubian Lowland area, which enables the authorities to formulate optimal management strategies leading to the protection of the water resource and a sound ecological development for the area." Refsgaard et al, 1994, given in HC-

scientists. Professor Mucha, a Slovak groundwater specialist, was involved with the PHARE project for a time. He wrote that: "The construction of hydroelectric power plants in this region causes new problems for Slovakia because they affect the quality of ground water ... Many problems in this area are as yet untouched; the answers are completely open ... such conditions may occur which would make groundwater unsuitable for certain purposes. The pattern and rules of this complicated ecosystem is still hidden behind a veil of mysteries."[153] This was again in 1993.

90. Czechoslovakia recognized the inadequacies of the early studies in its 1990 application to the EC PHARE programme. The Czechoslovak Government stated that the Original Project "require[s] a thorough and complex study of a proper impact assessment model, enabling authorities to ensure the protection of natural and anthrop(ogen)ic resources, balanced ecological development, as well as optimised decision making and management". The implication of this is clear: prior to 1990 no integrated EIA had been carried out, without such an EIA environmental protection could not be ensured, and the appropriate management tools were not yet available. And Czechoslovakia was well aware of these deficiencies.

91. Mr. President, Members of the Court, may I conclude this Science section by summarizing just a few key points.

92. First of all, it is clear that large scale peak operation has ruled the entire project design, and secondly, it is evident that impacts on the environment have not been properly addressed. By May 1989 there was no proper basis on which to determine what the impacts of the Original Project were likely to be, or how they could be mitigated. Further studies were clearly necessary, as amply demonstrated by the initiation of the PHARE study.

93. Many of the scientific concerns were ignored in the early studies undertaken by Czechoslovakia and Hungary. The main thrust of the Slovak Reply, if I may say so, is simply to deny that these risks existed. There is no attempt to demonstrate scientifically that these risks were unfounded. And yet as I have shown, Slovak scientists, and their international colleagues, were

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M, Vol. 4 (2), Ann. 12.

[153] Mucha, I. (1993), "Ground water problems in Slovak Danubian Lowland" (HC-M, Vol.ume 4 (2), Ann. 11.

clearly aware of them, as amply demonstrated by the annexed Slovak material, and by the internal Slovak documents annexed to the Hungarian pleadings[154].

94. Instead, Slovakia urges the Court to turn to the grand experiment of Variant C and base its judgement on the monitoring data. This argument is,in principle, flawed. Long-term impacts cannot necessarily be detected within just a few years. However, as the Court will see, evidence of Variant C, including the impact of the remedial measures proposed by Slovakia as a solution to all problems, is beginning to demonstrate the reality of Hungary's concerns.

95. As Dr Kern and I have demonstrated, the planned operation of the Gab_íkovo-Nagymaros Barrage System would have:

- first: endangered the quantity and quality of drinking water abstracted from bank-filtered wells supplying two-thirds of the needs of the city of Budapest;
- second: imposed a considerable risk of pollution of valuable water resources underneath the upper section of the Project reach;
- third: resulted in a deterioration of aquatic and terrestrial habitats, endangering the indigenous wetland flora and fauna.

96. To return to my colleague's original question, "how much disturbance can the Danube river system endure without losing its essential ecological functions," the answer must unequivocally be that the Original Project would destroy the system as we know it.

97. Mr. President, Members of the Court. That concludes this second scientific presentation on behalf of Hungary. After the break, may I ask you to call on Ms Katherine Gorove, who will describe the viability of the Original Project.

Thank you, Mr. President.

The PRESIDENT: Thank you, Professor Wheater. The Court will now suspend for ten minutes. Thank you.

154E.g., SR, Vol.. II, Ann. 8; HR, Vol.. 3, Ann. 7; HC-M, Vol. 4 (2), Ann. 11; HM, Vol. 5 (I), Ann. 11.

The Court adjourned from 11.35 to 11.50 a.m.

The PRESIDENT: Please be seated. I call now on Ms Katherine Gorove.

Ms GOROVE:

8. THE VIABILITY OF THE ORIGINAL PROJECT

Mr. President, Members of the Court, it is a privilege and an honour for me to address you for the first time:

1. My colleagues have just demonstrated the grave scientific concerns held with respect to the Original Project. These concerns centred on: first, the significant risks posed to the quality and quantity of Hungary's drinking water, and second, the likely negative effects on the unique species of flora and fauna endemic to the only inland delta in Europe.

2. These concerns, and others I will mention later, impacted directly on the question of whether or not the Original Project could proceed. But environmental considerations were not the only ones, however important. There are other questions which a reasonable government would have asked. Did the Original Project have other substantial advantages? Or, by 1989 had the Project proceeded so far that stopping or even substantially modifying it was out of the question? Professor Crawford will show tomorrow morning that the Original Project had not reached such a point of no return, that reconsideration in 1989-1990 was still an option. It is my task to look at the question of whether other benefits claimed for the Original Project were such as to provide an overriding justification for it, notwithstanding the major risks and costs, in particular, those risks and costs associated with the environment and water resources, which by 1989 were becoming clear. I will show that even under the most hopeful of cost/benefit scenarios, and even leaving to one side the questions of environmental risk and damage, the Project's viability was doubtful. Under less optimistic predictions, the Project would have never left the drawing board.

3. Slovakia, in its pleading, states: "the Court has not been, and could not have been, asked to

weigh up the economic benefits to be received by the Treaty parties and to assess their values against (alleged) environmental impacts"[155]. Slovakia further states: "the realisation or otherwise of the expected benefits of the Project in terms of energy, navigation and flood control is irrelevant to Hungary's case and must be kept separate"[156].

4. Mr. President, Members of the Court, the costs and benefits of the Project cannot be irrelevant. Slovakia is asking this Court in 1997 to force Hungary to implement a project which was conceived in the 1950s, designed in the 1960s, and agreed on in the 1970s. It simply cannot be the case that a Project should be forced on a state without regard to improved knowledge or changed environmental and financial consequences.

5. Hungary submits that a well governed state faced with changed circumstances and about to take irreversible steps on a large project such as this would have asked itself the following three questions:

1) One, has a proper environmental impact assessment been carried out?

2) Two, if not, have the anticipated or potential consequences, both environmental and financial, been adequately assessed?

3) Three, are the intrinsic benefits of the Project such that it should nonetheless proceed?

I will show that the answer to each of these three questions, so far as the Original Project was concerned, was no.

I. THERE WAS NO ENVIRONMENTAL IMPACT ASSESSMENT

6. I turn first to the issue of environmental impact assessment.

7. By May 1989 the use of environmental impact assessment had been accepted in principle by Hungary and Czechoslovakia. For example, in the 1975 Helsinki Final Act of Conference and Security and Cooperation in Europe, both countries had agreed to the use of "legal... measures for the protection of the environment including procedures for establishing environmental impact assessment"[157]. A

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155 SR, para 13.28.

156 SR, para 1.48.

157 Helsinki Final Act, 1 August 1975, 14 ILM 1292 (1975), preamble.

more specific commitment was made by the two countries in April 1989 with the adoption of the United Nations Economic Commission for Europe Charter on Groundwater Management[158]. The Charter requires impact assessment both "at an early stage for project planning" and also "during the construction and operative phases of a project"[159].

8. What exactly did an environmental impact assessment require? At a minimum, a consideration of potential impacts on all environmental resources, including water and biodiversity, in an integrated manner. It must also take into account, as the Ground Water Charter specifies, an assessment of "different alternatives".

9. So far as the Original Project is concerned, the essential question is one of fact. As a matter of fact, the studies carried out before 1989 did not reach even the minimum standards for an environmental impact assessment. The existence of "hundreds of studies", is not, as Slovakia claims[160], an alternative for a proper environmental impact assessment. In particular, Slovakia refers to the Bioproject as a "complex'' and "complete examination of the effect of the Project on the environment"[161].

10. Hungary has requested access to the studies constituting the Bioproject on four occasions[162], without success. Hungary was informed that "[t]he actual contents of the reports are not relevant to the contention''[163]. This is curious, since the contention of Slovakia is that the Project "was indeed very carefully researched''[164]. As described by Professor Wheater, the studies actually submitted by Slovakia to the Court merely reinforce environmental concerns. For its part Hungary has searched the archives of the various officials responsible for work on the Original Project and has not been able to

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158 21 April 1989, ECE/DEC/E[44].

159 Ibid, Section XIV (Impact Assessment).

160 SM, paras 2.10-2.11. SC-M, paras 2.17-2.22, paras 4.04-4.07.

161 SC-M, para 4.06.

162 See *Note Verbale* from the Republic of Hungary to the Slovak Republic, in HC-M, Anns., Vol. 3, Ann. 14; Letters from Dr G Szénási, Agent of the Republic of Hungary of 6 September 1994 in HC-M, Anns., Vol. 3, Ann. 24 and Ann. 21; of 29 September 1996, in HC-M, Vol. 3, Ann. 30; of 25 January 1995, in HR, Vol. 3, Ann. 18.

163 Letter from Dr P Tomka to G Szénási, 3 August 1994; HC-M, Vol. 3, Ann. 11, p 38.

164 Ibid.

locate the studies to which Slovakia refers.

11. Hungary has shown in its pleadings, by reference to the reports of various international bodies, that there was no adequate comprehensive environmental impact assessment[165].

12. Specifically, although key concerns had been raised throughout the 1980s by individual scientists, the concerns had not been addressed in a comprehensive manner[166]. Rather, if they were addressed, they were addressed in isolation of other issues. For example, it might be that a study concluded that there would be a drop in the level of ground water in the Szigetköz. Yet, that study would stop with its conclusion. It would not continue with an analysis of the corresponding effects, for example, on soils, flora, fauna, fisheries, forestry, and biodiversity.

13. The most comprehensive of the Hungarian studies on the Original Project is a 1985 study carried out under the auspices of the Hungarian Academy of Sciences[167]. Experts who have reviewed and evaluated the study using international practices for assessment have concluded that the study was "unsatisfactory." On a scale of "A" to "F", they have given the study a "D".[168] Further, one of the two reviewers points to a bias in the study[169]. Hungarian scientists depending on state support carried out the impact assessment.

14. As described by the professional reviewers, the 1985 study did not discuss the issues in an integrated manner; gave no basis for the interpretation of the data; did not describe the standards, assumptions or values used; and did not address the impacts of the Project on ecosystems[170].

15. As described by Professor Wheater, groups within Czechoslovakia and the Government itself in its application to the European Communities for PHARE support, recognized the wholesale

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165 Hydro-Quebec Report, HM, Vol. 5 (part 1), Ann. 9, p 298; see also HC-M, para 1.141 and HR, para 1.72; Bechtel Report, HC-M, Vol. 4 (part 1), Ann. 1; see also HC-M, para 1.140; World Wildlife Fund, HC-M, Vol. 4 (part 1), Ann. 4, p 5; see also HC-M, para. 1.34; INFORT/Ecologia, HM, Vol. 5 (part 1), Ann. 5, p 59; see also HC-M, para. 1.33.

166 See HC-M, paras. 1.20-1.41 and HR, paras. 1.64-1.84.

167 See generally HR, paras. 1.74-1.75.

168 Hens, HC-M, Vol.. 4 (part 2), Ann. 1, p. 907.

169 See Hens, HC-M, Vol. 4 (part 2), Ann. 23, Ann. 1 (C), p 911.

170 Ibid, pp 888-93, 912-15.

inadequacy of what was performed before 1989. In 1994, Mr. Refsgaard acknowledged the need for advanced modelling techniques to understand and analyse complex relationships between various changes in water régimes in the context of discussing Variant C and the PHARE Programme. He stated:

> "The overall project objective is to establish a reliable impact assessment model for the Danubian Lowland area, which enables the authorities to formulate optimal management strategies leading to the protection of the water resources and a sound ecological development for the area."[171]

16. The Slovak PHARE Report[172], completed in December 1995 but made available to Hungary only during this past month, confirms that even today further study is still necessary[173]. That Report is not itself, it should be stressed, an environmental impact assessment[174] - it is the report of an attempt to install a computer model to allow simulation of the impacts of Variant C and then only on the Slovak side. Nor is it a substitute for an environmental impact assessment, which by definition has to be done prior to the initiation, let alone the completion of a project.

17. In sum, as of May 1989, no proper environmental impact assessment had been carried out for the Original Project in accordance with the modest standards of the time. Neither Hungary nor Slovakia were in a position to know what the environmental impacts of the Project would be.

171 Refsgaard *et al.*, 1994, reprinted in HC-M, Vol. 4, Part 2, Annex 12.

172 Ministry of the Environment, Slovak Republic, and Commission of the European Communities, Danubian Lowland – Ground Water Model, Final Report, Vol. 1 (December 1995).

173 *Ibid.*, Vol. 1, paras 6.2.1 and 6.2.2.

174 SR, Vol. 2, Chap. 7, para. (2).

II. WERE ALL CONSEQUENCES ADEQUATELY ASSESSED?

18. I turn then to the second question, whether in the absence of a proper environmental impact assessment, the Project's anticipated or potential environmental and financial consequences have been adequately assessed? As far as the environmental and scientific issues were concerned, Professor Vida, Professor Carbiener, Professor Wheater, and Dr. Kern have shown that the answer is clearly no. It is true that concerns have been voiced by various individuals and organizations. But it was not until the social and political changes of the late 1980s that these concerns were heard by the Hungarian Government[175].

19. By way of illustration, however, allow me to refer to one aspect which had not been properly factored in by 1989, namely, seismicity[176]. There is only one sentence on seismicity and large reservoir impacts in the 1985 study[177].

20. Now it seems that there is no dispute between Hungary and Slovakia on two points relating to seismicity;

- first, that the major risk was from collapse of dykes through liquefaction – the process whereby the ground behaves like a fluid because of intense vibrations; and
- second, that a seismic evaluation of the site should consider the "worst possible scenario"[178]. This involves, one, a determination as to the location of the closest earthquake source to the barrages of the Original Project and, two, a determination as to the Maximum Credible Event, the largest credible earthquake which could occur at that site.

175 See generally HM, paras. 3.74-3.108

176 For the discussion of seismic issues in the pleadings see HM, paras. 5.99-5.105; SM, paras. 2.12, 2.60-2.66; HC-M, paras. 1.157-1.170; *Scientific Evaluation*, Vol. 2, Chap. 6; SC-M, paras. 7.105-7.114; *Scientific Rebuttal*, HR, Vol. 2, Chap. 8; SR, paras. 12.54-12.72; SR, Vol. 2, Chap. 6 and Vol. 3, pp. 142-224.

177 HC-M, Vol. 4, Part 2, Annex 23, p. 913.

178 See, e.g., SM, para. 2.61.

21. There is disagreement, however, between Hungary and Slovakia on both of those factors[179]. Besides the physical parameters of the near surface layers[180], these two factors are the main components in determining an earthquake's "peak ground acceleration". The value used for the peak ground acceleration is determinative of whether moderate seismic activity could result in dykes collapsing due to liquefaction below their foundations. There are numerous precedents for widespread liquefaction in ground conditions similar to those found in the Szigetköz under moderate shaking, as may be expected in the "worst possible scenario"[181].

22. In fact, seismologists acknowledge the existence of an earthquake source zone running on a line through Gyõr[182], a town 20 km away from Gab_íkovo (Illus No 8.1). Based on an analysis of the 1763 Komárom earthquake, about 45 km away from Gab_íkovo, Slovakia presents a Maximum Credible Event at a Richter magnitude equal to 5.7[183], and an earthquake source zone located around Komárom[184]. But estimates of the 1763 earthquake at Komárom go as high as 6.5 and indicate the existence of an earthquake source zone much closer to Gab_íkovo than Komárom[185]. Within 15-20 km of the Gab_íkovo works, near Gyõr, small earthquakes have been registered in the last few years[186].

23. Slovakia's two assumptions lead it to describe a 'worst possible scenario' using a peak ground acceleration value which is not reflective of modern design standards. To cite an example, in the United Kingdom, where tectonic activity is less severe than in the Project area, dams are designed for four times the value used by Slovakia[187]. Even using one-half the UK design standards, liquefaction

179 SR, Vol. II, pp. 89-107.

180 See Balla, HC-M, Vol. 4, Part 2, Annex 21; Bondar, HC-M, Vol. 4, Part 2, Annex 22.

181 See HC-M, Vol. II, para 6.3.3.3.

182 See *Scientific Rebuttal*, HR, Vol. 2, Chap. 8.1 and note 11.

183 SR, Vol. III, Chap. 10.

184 SR, Vol. II, p. 98.

185 See *Scientific Evaluation*, HC-M, Vol. 2, Chap. 6.

186 See Scientific Rebuttal, HR, Vol. II, pp. 105-106.

187 See *An Engineering Guide to Seismic Risks to Dams in the United Kingdom*, BRE (1991); see contra SR, Vol. 1, para. 12.71.

could typically be expected at a depth of 15 m.[188]. It cannot have been the case that all liquefiable materials to this depth were removed or strengthened over the full extent of the dykes' foundations[189].

24. Thus in 1989, Hungary had serious and well-founded concerns as to the integrity of the 1965 design parameters used for the Project structures in light of developments in methods of design, hazard evaluation, and improved safety standards. These were in addition to the major concerns already identified by Professor Wheater, Dr. Kern and Professor Vida and quite apart from the sacrifice of natural values which the Original Project entailed. Also relevant were the anticipated financial consequences, for example, to fisheries, forestry, and agriculture[190], and the archaeological heritage[191].

188 See, e.g., Kinitzsky, Gould & Edings, p. 175 (1993).

189 See contra SR, para. 12.67.

190 *Scientific Evaluation*, HC-M, Vol. 2, Chap. 5; Scientific Rebuttal, HR, Vol. 2, Chap. 6; HM, paras. 5.68-5.98; HC-M, paras. 1.155-1.156; 1.122-1.138.

191 HM, paras. 5.97-5.98.

IV. OVERALL VIABILITY OF THE PROJECT

25. I turn then to my third question. Despite the factors that had not properly been taken into account in planning the Project, were its benefits as of 1989 so significant that it should nonetheless proceed? Professor Vida yesterday described why the Project was not necessary to stop the lowering of the riverbed and was, in fact, a primary cause of the river's degradation. I will turn therefore to three other supposed "benefits" touted by Slovakia: (1) increased flood protection[192], (2) improved navigation[193], and (3) energy production[194].

A. Flood Control

192 SM, paras. 1.21-1.34, 2.79-2.81.

193 SM, paras. 1.35-1.49, 2.82-2.83.

194 SM, paras. 1.50-1.56, 2.84.

26. The first is flood control[195]. The pictures of the terrible damage inflicted by the floods of 1954 and 1965 in the Slovak Memorial are evocative[196]. The suggestion that the Project was necessary for flood control in the Szigetköz region, however, is untrue. Actually, these pictures were taken prior to full implementation of an agreement between Czechoslovakia and Hungary under the 1954 Border Waters Agreement[197]. The agreement of a Government Plenipotentiary on Border Waters, which was entirely separate to the Original Project, provided for the implementation of design standards in accordance with the 100-year flood[198]. In other words, design standards should meet the highest flood that may occur on average once every 100 years. This is a generally accepted flood control standard for areas such as the Project area[199]. Much higher standards, such as the flood which may occur once every ten thousand years or once every thousand years, are only found where decisions taken to impound a river produce significantly higher levels of risk or where the potential damage is extraordinary[200].

27. The damage from the 1965 flood was due to the fact that 94% of the levees did not yet meet these accepted safety standards for the 100 year flood[201]. By the time of entering into the Treaty in 1977, however, the vast majority of levees along the upper reach, which includes the Szigetköz, had been reinforced to meet the 100 year standard with adequate safety margins and the necessary structures to prevent seepage had been built[202].

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195 For the discussion of flood control issues in the pleadings, see Laczay, HC-M, Vol. 4, Part 1, Annex 9; *Scientific Evaluation*, HC-M, Vol. 2, Chap. 2.6.3; HC-M, paras. 1.172-177; Scientific Rebuttal, HR, Vol. 2, Chap. 3.2; SM, paras. 1.21-1.34; paras. 2.79-2.81; SC-M, paras. 7.118-7.121; SR, paras. 13.40-13.48; SR, Vol 2, Chap. 2; SR, Vol. 3, pp. 225-258.

196 See SM, Illus. Nos. 15, 17 (A-D) accompanying SM, paras. 1.21-1.34.

197 1954 Border Waters Agreement, 4 February 1954, HM, Vol. 3, Annex 11, 4 February 1954.

198 See Laczay, HC-M, Vol. 4, Part 1, Annex 9, Table 2.

199 German Section of the International Commission on Irrigation and Drainage, *Selection of design flood – a comparison of international practice* (in German), Schriften, Vol. 62, pp. 1-62 (1983).

200 Ibid.

201 *Scientific Evaluation*, HC-M, Vol. 2, Chap. 2.2.4.

202 *Scientific Evaluation*, HC-M, Vol. 2, Chap. 2.2.4; see also Laczay, HC-M, Vol. 4, (part 1), Ann. 9, Table 3.

28. Increased flood hazards, such as the potential rupture of high embankments, failure of floodgates during high-volume discharges and the increased risk of flooding due to blockage of ice[203], necessitated a 1,000 year flood level design. Because of the discharge capacity of the power canal required for peak power operation, the dykes were at a height approximating the 10,000 year flood level[204].

29. Thus, aspects of flood protection were included in the 1977 Treaty because they were necessary to offset the additional risks caused by the Project itself. Apart from that, flood protection was neither a motivating factor nor an objective justification for the Project[205]. Applying a 100 year protection level, Hungary is providing appropriate flood protection along its section of the Danube without the Project.

B. Navigation

30. The second supposed benefit was navigation. It too was not a primary aim of the Treaty, as Slovakia submits[206]. Much as flood control, it was a by-product of the Treaty, an incidental benefit, which could, similarly, have been achieved through other means, for example, through traditional river training[207] .

31. In the 1960s, a general river-training plan was prepared and carried out for the Rajka-Sap stretch[208], while on the Sap-Budapest stretch, heavy dredging in lieu of river-training was carried

203*Scientific Evaluation*, HC-M, Vol. 2, Chap. 2.3.3.
204SM, paras. 2.79-2.81.
205For the discussion of navigation issues in the pleadings see HM, paras. 5.91; *Scientific Evaluation*, HC-M, Vol. 2, Chapter 2.6.3; HC-M, paras. 1.178-1.189; *Scientific Rebuttal*, HR, Vol. 2, Chapter 3.1; SM, paras. 1.35-1.49; paras. 2.82-2.83; SC-M, paras. 7.115-7.117; SR, paras. 13.31-13.39; SR, Vol. 2, Chap. 2; SR, Vol. 3, pp. 263-265.
206SM, para. 1.46.
207See contra SM, paras. 1.39-1.40, 1.45.
208*Scientific Evaluation*, HC-M, vol. 2, Chap. 2.2.3.

out in anticipation of the Project[209]. Therefore, as of 1977, upstream there were few obstacles to navigation, while downstream was more problematic because of years of neglect.

32. Since the termination of the Treaty, an international expert group has examined various options for improving navigation: one of its recommendations using a combination of traditional river training and dredging would achieve a fairway depth of 2.7 metres and a width of 120 metres[210].

33. Slovakia claims that in 1977 "the stretch of the river between Bratislava and Budapest was navigable on average only 120 days per year"[211]. This is entirely misleading. For the vessels which actually use it, the Danube was and is generally navigable in this sector throughout the year, except in situations of blockage by ice, which the Original Project would not have improved.

34. The term "navigable" is being used by Slovakia to mean navigation with conditions corresponding to the recommendations of the Danube Commission. Slovakia is giving more weight to these recommendations than they were intended to bear, as these are non-binding recommendations passed by majority vote of Danube Commission members[212].

35. Is a channel with dimensions different from those recommended by the Danube Commission navigable? Certainly yes. Three points should be made:

(1) First, the Danube Commission's recommendations vary according to

209See Laczay, HC-M, Vol. 4 (part 1), Ann. 8.

210See Delft-Harris-VITUKI, *Danube Environmental and Navigation Project, Feasibility Study*, Rajka-Budapest, Final Report, Stretch B1: Szap-Ipoly Mouth (August 1994), placed on file with the Library of the Court. See also Delft-Harris-VITUKI, *Danube Environmental and Navigation Project, Feasibility Study*, Rajka-Budapest, Final Report, Analysis of Strategies, Stretch A: Ipoly Mouth - Budapest (December 1993).

211SR, para. 13.32.

212Convention concerning the Regime of Navigation on the Danube, Belgrade, on 18 August 1948, 33 UNTS 181, Art. 11, reprinted in HM, Vol. 3, Ann. 4.

each stretch of the River. Depending on the class of ships, navigability may either be more or less difficult on certain stretches. In the Gab_íkovo-Nagymaros stretch the recommended width is 100-180 metres across, with a ship draught of 2.5 metres most of the year in the unimpounded stretch[213]. In other stretches of the Danube, the recommendations may be far less, and on other rivers the standards far less. For example, on the Main the width is generally 40 metres or less.[214] Where there is difficulty with ship navigability due to narrow stretches, the accepted practice is to have ship traffic regulations[215].

(2) Second, contrary to Slovak claims, the Nagymaros reach is not the worst bottleneck on the Danube River. The Danube between Straubing and Vilshofen has a water depth of 2.5 metres only 150 days per year[216] and is acknowledged as the worst bottleneck on the fairway between the Black Sea and the North Sea[217].

3) Third, the importance of river navigation on the Danube has declined. Even if the Project had increased traffic, it would have been relatively insignificant, especially when compared to the amount of traffic on rivers such as the Rhine, where there is one ship after another. On the much broader Danube, there is far less traffic. In fact, the volume of merchandise transported on the Danube has dropped by about one-half

213Danube Commission Recommendations, SM, Vol. 2, Ann. 14.

214*Network of Inland Waterways* (in German), (Verein fuer Biunenschiffaahrt und WassenstraBen VBW, editors), 1991.

215See H Contzen, *Remarks on the Regulation of the Danube between Straubing and Vilshefen* (in German), Zeitschrift fuer Binnenschiffahrt 18, September 1993; D Eujen, *Regulation of the Fairways of the Main between Aschaffenburg and Bamberg*, Zeitschrift fuer Binnenschiffahrt, 23/24, December 1993.

216See *Ibid*; p. 12, question 35; see also H Contzen, *Remarks on the Regulation of the Danube between Straubing and Vilshefen* (in German), Zeitschrift fuer Binnenschiffahrt 23/24, December 1993.

217Answer of the Government of the Federal Republic of Germany to Queries Posed by Members of Parliament, 11/2/93, Publication No 12/4351 (in German), p. 13, Question 39.

between 1980 and 1991[218]. Further, the relative importance of river navigation as opposed to rail or road has sharply declined.

36. In conclusion, in terms of navigation, the Project would have addressed concerns which could have been met through traditional river training. It cannot be argued that the Project's improvements to navigation contributed significantly to the viability of the Project[219].

C. Energy Production

37. I turn next to the third supposed benefit, energy production[220]. Slovakia argues that "the 'value' of [power generation] does not touch on the questions before the Court in this case"[221]. At the same time, it claims that: Hungary's reasons for ceasing its investment into the Project had an economic rather than environmental basis"[222].

38. In fact energy production was intended to be the primary benefit of the Original Project, as well as the primary mechanism by which the Project would have been financed[223]. The value of the power to be generated is critical to a determination of viability[224].

39. The relative importance of the electric energy to be produced by the Project has steadily declined. When the Project was initially conceived in the 1950s, Hungary's share of its projected output was approximately equivalent to 30% of its needs. By the 1960s, when project planning began in earnest, projected output would have accounted for some 20% of its needs. When the Project was being agreed upon within the framework of the 1977 Treaty, projected output was no more than 8.5% of Hungarian electric energy needs[225]. At present levels of demand, only 5% of

218*Annuaire Statistique de la Commission du Danube* pour 1992 (1994).
219See Equipe Cousteau, Final Report, *The Danube... For Whom and for What? The Gab_íkovo Dam: a Textbook Case* (March 1993), reprinted in HM, Vol. 5 (Part 2), Ann. 16, pp. 567-568.
220For the discussion of energy issues in the pleadings, see HC-M, paras 1.190-1.203; SM, paras 1.50-1.56 and 2.84; SR, paras. 13.26-13.30; and SR, Vol. 3, pp. 259-262.
221SR, para. 13.28.
222SR, para. 13.27
223SR, para. 13.30.
224See HC-M, paras. 1.190-1.203; see also Equipe Cousteau, *The Danube... For Whom and for What? The Gab_íkovo Dam: a Textbook Case* (September 1992), reprinted in HM, Vol. 5 (Part 1), Ann. 12, at 354-361.
225HR, para. 1.199.

Hungarian consumption would be met[226]. According to 1994 data supplied by the International Energy Agency, the Czechoslovak share would have been less than 5% of total consumption of the Czech and Slovak Republics[227].

40. Furthermore, since the political changes in 1989, most governments have implemented conservation-minded energy policies and industry in the region has generally become more energy efficient. The days of huge energy subsidies in order to support artificial production goals without regard for economic, environmental or social effects are over[228]. Recent predictions indicate that through the year 2000, the per capita demand for energy will continue to decrease in Central and Eastern Europe[229]. As can be seen from the diagram on the screen, energy consumption in Hungary has returned to approximately the level of 1983 (Illus. No. 8.2)[230].

41. And what of the net value of the electric energy produced by the Project? With little by way of supporting documentation, Slovakia asserts that Variant C currently nets in excess of US$ 100 million per annum[231]. There is not enough information to determine if all costs are adequately accounted for and income stream assessments made according to generally accepted accounting procedures. For example, it would be interesting to know whether Hungary's capital contributions to structures and equipment are calculated as an asset or a liability or, at the costs of remedial measures been factored in. Slovakia has so far denied the Court the tools necessary to assess the validity of this claim.

226HR, para. 1.192.
227International Energy Agency, *Energy Statistics and Balances of Non-OECD Countries*, 1993-1994 (1996).
228See *contra* SR, para. 13.28.
229International Energy Agency, World Energy Outlook (1996).
230International Energy Agency, *Energy Statistics and Balances of Non-OECD Countries*, 1993-1994 (1996).
231SR, para. 13.29.

D.Economic Analyses

42. I now turn to a description of what the economic analyses indicate about the overall viability of the Project. By 1989, Hungary had sufficient cause to question the viability of the Project. In fact, the economic analyses carried out in Hungary, although themselves weighted in favour of carrying out the Project, actually demonstrated its marginal value.[232]

43. In particular, all calculations made prior to 1989 indicated that costs exceeded benefits. For such analyses to reach favourable conclusions on the Project's viability[233] as they did, indirect economic benefits were given undue weight, while various costs were ignored. In particular environmental costs were inadequately assessed to the point that they were virtually ignored. Other costs that would have to be expended to maximise a particular "benefit" were also neglected – such as the costs of relocating a port to improve navigation.

44. The economic analyses of the Project done in Hungary also ignored what was happening outside of Central and Eastern Europe. The underlying assumptions were that the future would be similar to the past. For example, there was little or no analysis of alternative ways of producing the same amount of energy, the costs of the capital itself or the costs of conserving energy versus the costs of expanding supply were not taken into account. InfIationary price changes were not considered, and no account was taken of relative currency values.[234] The Joint Contractual Plan[235] appears to confuse the term "profitability" with the term "revenue." Perhaps this is why the European Bank for

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232 See Norgaard, The Economic Analyses of the Gabcikovo-Nagymaros Barrage System: A Report, HR, vol 2, app 4.

233 See, e.g., István Varga, *The Dynamic Analysis of the GNBS*, February 13, 1985; Resolution No 3540/1975 of the Ministerial Council on the Investment Proposal for the GNBS, November 20, 1975; *The Economic Efficiency Study of the GNBS*, February 9, 1983. National Office of Water Management, *Modified Investment Proposal for the GNBS, State Investment and Evaluation of its Technical-Ecological-Economic Aspects*, February 1986 and July 1986. National Planning Office, *Feasibility Calculations of the Gabcikovo-Nagymaros System of Barrages*, October, 1989. A copy of all documents have been deposited with the Court.

234 See generally Norgaard, HR, vol 2, app 4.

235 Joint Contractual Plan, Summarizing Documentation, 0-6 Economic Part, June 16, 1978. A copy of the document has been deposited with the Court, items 7 and 13.

Reconstruction and Development referred to the Project as being of "dubious economic value."[236]

45. A central issue in the transformation in Central and Eastern Europe was the change in perception of the relations between economic development and the environment. The change greatly affected economic analyses of projects and their viability. Pre-transition analyses assumed that the numerous environmental complications could be corrected without any additional cost.[237]

46. In the words of Professor Norgaard...

> "there are many projects proposed which do not receive full economic evaluation because professional economists judge *a priori* that these projects are not economically viable....[The Original Project] falls in this category of projects. If a project similar to the [Original Project] were proposed today...it would not receive a full evaluation and would probably be rejected *a priori*."[238]

47. In summary, by May 1989 Hungary had good reasons to believe that the original Project was not economically viable, all the more so when one took into account the significant risks to natural resources and environmental and financial costs.

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236 Letter from T Baudon, Director, Infrastructure, Energy & Environmental Department, European Bank for Reconstruction and Development, to Messrs C Balint & P A Farkas, Reflex, 19 May 1992.

237 István Varga, *The Dynamic Analysis of the GNBS*, February 13, 1985. A copy of the document has been deposited with the Court.

238 See Norgaard, HR, vol 2, app 4, pp 179-180.

IV. CONCLUSION

48. To conclude, Slovakia has argued that financial considerations were the sole motivation for Hungarian actions.[239] In fact, the financial analyses done before 1989, although using calculations which indicated that costs were greater than benefits, always came to a favourable conclusion on the viability of the Project. It was only in the light of the dramatically changing political and economic situation of the late 1980s that these analyses could be revisited, at a time when at last the values associated with protection of the environment and drinking water resources were also increasingly taken into account. Some of the ancillary benefits of the Project, such as improvements to navigation were real, but none of them were of such significance so as to justify the Project as a whole. In the circumstances, and taking into account the inadequacies of the environmental impact analyses done to that point, Hungary acted reasonably in calling for reconsideration of the Project, and in suspending further steps until that reconsideration could take place.

49. Mr. President, Members of the Court, a reasonable state faced with significant questions as to Project viability would have called for a joint comprehensive environmental impact assessment so as to discover all the likely consequences before proceeding. But Slovakia claims that once the 1977 Treaty was concluded, no subsequent developments, no matter how pressing the necessity, could justify departure from that Treaty. I ask you now to call on Professor Dupuy to examine that claim.

The PRESIDENT: Thank you so much, Ms Gorove. Professor Dupuy.

M. DUPUY :

9. LES RÈGLES DE DROIT JUSTIFIANT LA SUSPENSION ET LA TERMINAISON DES TRAVAUX PAR LA HONGRIE

239 SM, paras 3.36, 3.56, 3.61.

1. Messieurs les juges, c'est pour moi un honneur et un plaisir renouvelé de me présenter à nouveau devant vous à cette barre. Ma tâche, tout au long de ces plaidoiries, consistera dans l'exposé d'un certain nombre de règles et d'arguments de droit applicables en la présente affaire. Aujourd'hui, il s'agit pour moi de vous exposer le fondement juridique des raisons pour lesquelles la Hongrie s'est vue amenée à suspendre puis à terminer les travaux sur certains sites à partir de 1989. Mon collègue James Crawford reviendra en détails sur ces faits demain matin. Je n'en dirai moi-même donc que très peu de choses, destinées, à titre liminaire, à vous rappeler pourquoi, en cette affaire, l'invocation de l'état de nécessité occupera une place accrue, entre le printemps de 1989 et celui de 1992, entre l'interruption des travaux et la terminaison du traité.

La divergence croissante de chacune des deux Parties à l'égard de la rationalité du projet de barrage devait en effet prendre un tour dramatique à partir de mars 1989[240]. Plusieurs éléments expliquent ce phénomène. En premier lieu, la confirmation définitive des préoccupations de la Hongrie[241]. Elle était jusque là inquiète; elle devient extrêmement alarmée quant aux risques très considérables engendrés par la réalisation du projet pour l'équilibre écologique de toute la région concernée. Tous les experts, hongrois et étrangers, insistent en particulier sur l'importance du danger créé pour les ressources en eau potable. La Hongrie estime qu'il faut prendre le temps d'évaluer la situation et réfléchir sur les conséquences de droit et de fait à en tirer, afin de renégocier une partie du traité de 1977. Elle décide alors l'interruption des travaux à Nagymaros et elle offre en même temps à l'autre partie d'ouvrir des négociations.

2. C'est à partir de ce moment-là qu'on assiste à un véritable dialogue de sourds[242] : la Hongrie invoque la responsabilité des deux gouvernements envers les générations présentes et futures[243]. La Tchécoslovaquie répond en invoquant ses besoins en énergie et la possibilité de réduire les dommages à l'environnement par de simples aménagements techniques. Jamais, elle

[240]Voir § 9.04 et suiv. et §§ 3.74 à 3.108 du mémoire hongrois.

[241]Voir R.H. § 3.101.

[242]Voir MH, § 9.06 et suiv.

[243]Cf. MH, § 3.78 et 3.93.

n'envisagea de remettre en cause ne fût-ce qu'une partie du projet initial[244]. Dans un tel contexte, l'édification de la variante C par la Tchécoslovaquie entre 1990 et 1992 paraît inexorable. Les efforts constamment renouvelés de la Hongrie pour provoquer le réexamen substantiel du traité resteront sans succès. Aussi la concrétisation progressive de la menace de dérivation unilatérale du Danube constituera, durant toute cette période et c'est là le point important *un facteur majeur et constant* d'aggravation de la situation à l'origine de ce différend...

On comprend dès lors pourquoi, à la fin de cette période, la déclaration du 16 mai 1992 présentant les raisons de la terminaison du traité de 1977 devait commencer par le rappel de l'argument de nécessité déjà invoqué en 1989[245].

3. Il résulte des éléments de fait qui précèdent qu'en droit, *l'invocation de l'état de nécessité joue effectivement dans cette affaire un rôle considérable*, quoique, évidement, non exclusif. Nous examinerons d'abord les conditions juridiques mises par le droit international à l'invocation de cette circonstance exceptionnelle (I). Pour autant, on ne saurait s'en tenir là. La Slovaquie, en effet, dénie à la Hongrie le droit d'invoquer toute circonstance excluant l'illicite, quelle qu'elle soit. Et elle le fait au motif que, s'agissant d'un traité, la suspension de sa mise en oeuvre et, à fortiori sa terminaison, ne relèveraient ... que du droit des traités. La Hongrie serait ainsi interdite d'invocation de tout motif d'exclusion de l'illicite, puisque ces derniers relèvent du droit international de la responsabilité. Il conviendra alors de rappeler l'inanité d'une telle thèse, et tout d'abord la justification de l'invocation de l'état de nécessité (II).

I. JUSTIFICATION DE L'INVOCATION DE L'ÉTAT DE NÉCESSITÉ

4. L'état de nécessité, en droit international comme ailleurs, est une circonstance exonératoire de responsabilité. Il se distingue pourtant totalement des autres causes exonératoires, que la CDI appelle des «causes excluant l'illicite». L'état de nécessité, ce n'est ni la force majeure ni le cas fortuit, parce que ces deux autres cas exonératoires sont des cas dans lesquels la *volonté* de l'auteur de l'acte est pratiquement absente, comme c'est par exemple le cas d'une catastrophe

[244]Cf. MH, § 3.84.

[245]Cf. MH, § 10.03 et suiv.

naturelle. L'état de nécessité, au contraire, comme le dit à juste titre Roberto Ago "implique un comportement librement et volontairement adopté"[246].

Pour autant, l'état de nécessité se distingue également des contre-mesures, avec lesquelles il partage pourtant ce caractère volontaire. Contrairement à elle en effet, cette cause exonératoire peut être être invoquée *même sans constituer une réaction à un fait illicite initial commis par l'autre Etat*. C'est d'ailleurs la raison pour laquelle le pays qui invoque à juste titre l'état de nécessité devra le plus souvent *acquitter une compensation*, généralement sous forme d'indemnité, à son partenaire affecté par la non-réalisation de son obligation, ici, une obligation contractuelle.

En l'espèce, les circonstances ayant justifié la conduite hongroise étaient bel et bien provoquées par le comportement de la Tchécoslovaquie. Celle-ci avait en effet méconnu, au minimum, les clauses du traité de 1977 concernant la protection de la nature (articles 15,19 et 20) et, surtout, celles qui impliquaient la coopération et la constante disposition à négocier véritablement. Cette attitude impavide a certainement contribué à la formation d'une situation dangereuse. Pour autant, j'y insiste, *même si la révélation des risques majeurs inhérents au traité n'avait rien dû à l'attitude de la Tchécoslovaquie, l'état de nécessité aurait néanmoins pu être invocable par la Hongrie*.

C'est que l'état de nécessité vise avant tout *une situation*, et non d'abord un comportement du partenaire. Cet argument de nécessité présente en tout état de cause un caractère exceptionnel. L'admettre d'une manière trop peu rigoureuse entraînerait bien évidemment des menaces très sérieuses pour la sécurité des rapports juridiques.

5. Messieurs de la Cour, cela revient à dire que la question de savoir si un état de nécessité existait ou non dans une situation considérée au moment où il fut invoqué dépend dans une très large mesure de l'analyse de ces circonstances *de fait* sur lesquelles reviendra demain mon ami James Crawford. C'est une question qui, par excellence, s'analyse *in concreto*. Alors cette analyse peut résulter de l'examen conjoint de la situation par les parties intéressées lors d'une négociation. Cependant, quand le refus systématique de l'une d'entre elles de reprendre au fond l'examen de la

[246]R.Ago, *Annuaire de la CDI 1980*, vol. I, p. 144, §39.

situation est avéré, il est naturel que ce soit *une tierce partie* qui apprécie s'il y avait ou non en l'occurrence "état de nécessité". Il est d'ailleurs difficile de contester que la Hongrie ait jamais dit autre chose : lorsqu'elle a constaté qu'elle ne parviendrait pas à convaincre la Tchécoslovaquie de renégocier le traité qu'a-t-elle fait ? Elle l'a invitée à venir vous trouver; cela déjà en date du 18 août 1992[247].

6. C'est aussi parce ce que cet argument de nécessité est éminemment "*justiciable*", c'est-à-dire *susceptible d'appréciation par le juge*, que la Hongrie a été amenée, dès le stade de son mémoire, à produire l'ensemble des expertises scientifiques et techniques qu'elle a commanditées. Ces expertises, j'en conviens, peuvent nous paraître austères à nous juristes, elles sont pourtant incontournables, parce qu'elles vérifient, dans toute la mesure où la rigueur scientifique le permet, que les profondes préoccupations de la Hongrie dès le milieu des années quatre-vingt étaient justifiées.

7. En droit, la question est simple : dès le stade de l'interruption des travaux, et, à fortiori trois ans plus tard, la Hongrie pouvait-elle s'estimer légitimement fondée, à considérer que l'ampleur des incertitudes engendrées par la construction des barrages obligeait tout gouvernement raisonnablement diligent à interrompre, puis faute mieux, à terminer ces travaux ?

8. Etant donné le caractère exceptionnel de cet argument de nécessité, on comprend que la *Commission du droit international*, qui l'a codifiée, ait adopté à l'égard de cette cause exonératoire une position équilibrée.

D'un coté, elle ne voulait pas soumettre un Etat à des contraintes allant à l'encontre du devoir général qu'il a de protéger les intérêts majeurs de son territoire et de sa population. De l'autre, il fallait bien qu'elle restreigne les conditions d'invocation d'une telle exonération. Alors elle a pris un parti justifié. Il consista à rédiger l'article 33 du projet de codification du droit de la responsabilité *dans une forme négative*. Il dit : "l'état de nécessité *ne peut pas* être invoqué par un Etat comme une cause d'exclusion de l'illicéité d'un fait de cet Etat non conforme à une de ses obligations internationales". Cela, c'est la règle générale.

[247]Cf. MH. vol. 4, annexe 92, p. 197 et vol. 1, §§ 3.175 et suiv.

Puis il énonce les exceptions à cette règle, regroupées autour de deux conditions cumulatives. Il faut en premier lieu que ce fait "ait constitué le *seul* moyen de sauvegarder un intérêt essentiel dudit Etat contre un péril *grave* et *imminent*". Il faut, en second lieu, que ce fait "n'ait pas porté atteinte à un intérêt essentiel de l'Etat à l'égard duquel l'obligation existait".

9. Ainsi que le dit M. Ago, "La nécessité est une situation de fait dans laquelle un Etat, lié envers un autre Etat par une obligation internationale, se refuse à exécuter cette obligation, car par là il porterait atteinte à l'un de ses *intérêts essentiels*»[248].

Qu'est-ce qu'un intérêt essentiel ? Comme l'indiquait le rapporteur spécial, ce n'est pas nécessairement "un intérêt à l'existence"[249]. Ce sont des intérêts qui, selon lui, "peuvent relever de domaines aussi divers que l'économie ou l'écologie". A sa suite, au demeurant, la Commission du droit international voulut indiquer que le caractère "essentiel" de l'intérêt en cause peut en particulier concerner la nécessité de garantir la survie de la faune et de la flore de certaines régions ou, plus largement, nous dit-elle, celle de *préserver l'équilibre écologique de toute une région*[250].

Le rapporteur spécial s'était référé à bien des cas dans lesquels l'argument de nécessité a été invoqué avec succès, comme l'illustrent notamment l'affaire du "Neptune", celle de la "Caroline" ou bien encore celle relative aux droits des ressortissants des Etats-Unis au Maroc[251]. Mais il a évoqué également un autre précédent, particulièrement significatif de l'ancienneté des préoccupations de sauvegarde de la nature.

Il s'agissait non pas de l'affaire des forêts du Rhodope, malgré son nom bucolique et le fait que l'argument de nécessité y avait été accepté mais de celle des "Pêcheries d'otaries à fourrure au large des côtes russes". Elle était écologique avant la lettre cette affaire puisqu'elle remonte à la fin du XIX^{e} siècle. On sait que le Gouvernement britannique y admit l'invocation d'un Etat de nécessité par la Russie, lorsque celle-ci avait dû se résigner à interdire la chasse aux otaries alors

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[248] *Annuaire de la CDI 1980*, vol.I , p. 144, § 41.

[249] *Ibid*., p. 146, § 6.

[250] Voir MH, p. 285, § 10.10.

[251] *Ibid*., p. 149.

même que les lieux de chasse se situaient *en dehors* des zones placées sous sa juridiction. Or, dans notre affaire, la Hongrie n'a pas invoqué la nécessité pour sauver un troupeau d'otaries. Elle l'a certes fait pour sauver la flore et la faune de la zone humide du Szigetköz. Elle l'a fait également pour sauvegarder la beauté du site exceptionnel de Nagymaros. Mais elle l'a fait, surtout, pour sauvegarder l'intérêt des générations présentes et, plus encore, futures, dans la garantie de leur approvisionnement en eau potable.

Qu'est-ce que cela, sinon ce qu'on peut appeler en droit un «intérêt essentiel» ?

Elle l'a fait aussi par référence à l'appréciation comparée des coûts économiques, des aléas écologiques et des très contestables bénéfices énergétiques de l'entreprise. C'est l'ensemble de ces éléments qui constituait, dès 1989, cet «*état de nécessité écologique*» dont la Slovaquie, à défaut de pouvoir vraiment contester la notion, met aujourd'hui en cause le contenu.

10. Il ne suffit cependant pas que l'intérêt en cause soit essentiel. Il faut aussi que le péril à conjurer soit *imminent*. A cet égard, il ne m'appartient pas de revenir sur les circonstances de l'espèce mais je me contenterai de rappeler que c'est l'attitude tchécoslovaque en faveur du maintien intransigeant de l'intégrité du traité qui a d'abord placé la Hongrie devant une situation dans laquelle elle n'avait d'autre issue, pour tenter d'arrêter le temps, que d'interrompre les travaux.

11. Il en va de même pour la dernière condition que doit remplir l'invocation de l'état de nécessité. Elle doit se rapporter au caractère *inévitable* de la décision. La seule autre façon de parvenir au but poursuivi par la Hongrie, c'était la renégociation. Cette renégociation, la Tchécoslovaquie l'a assez dit, elle n'en voulait pas. Elle voulait bien des aménagements techniques mineurs, mais pas des revisions substantielles.

Alors, Messieurs les juges, ce sera à vous de répondre : quel autre moyen restait-il à la Hongrie pour tenter de sauvegarder ses intérêts essentiels, et, au demeurant, non seulement les siens mais ceux d'une région dépassant ses propres frontières.

Pour le reste, à moins que la Slovaquie n'arrive à vous démontrer que le traité de 1977 incorporait une ou plusieurs règles de droit impératif auxquelles l'invocation de l'état de nécessité

par la Hongrie aurait porté atteinte, je ne vois pas, pour ma part, laquelle des conditions énoncées par l'article 33 du projet de la CDI n'aurait pas été, en l'occurrence remplie.

C'est alors, parce qu'elle est consciente du sérieux de la position hongroise, que la Slovaquie n'avait que deux moyens d'y faire front : soit contester la bonne foi hongroise, soit tenter de faire barrage, c'est le cas de le dire, à l'argument de nécessité en disant qu'il n'est pas invocable parce que l'obligation à laquelle la Hongrie n'a pas déféré était, en l'espèce, d'origine conventionnelle.

II. Réfutation de la thèse slovaque de non invocabilité du droit international de la responsabilité par la Hongrie

12. L'article 2 du compromis sur la base duquel la Cour internationale de Justice se trouve saisie du présent différend lui pose des questions simples. La Hongrie était-elle fondée à interrompre puis à abandonner ses travaux dans le cadre du Projet relatif au système de barrages[252] ? La Tchécoslovaquie avait-elle le droit de mettre en œuvre la Variante C ? Si la Hongrie n'avait pas le droit d'agir comme elle l'a fait, elle engage sa responsabilité à l'égard de la Slovaquie et la réciproque est vraie dans le cas symétrique où les agissements de la Tchécoslovaquie puis de la Slovaquie seraient illicites. Rien ici que de très classique. Comme l'a rappelé constamment la juridiction internationale, «c'est un principe de droit international que la violation d'un engagement entraîne l'obligation de réparer»[253].

Pourtant, l'étrange position que la Slovaquie tente de défendre est de prétendre que, pour trancher ces questions de responsabilité internationale, la Cour ne pourrait pas appliquer ... le droit de la responsabilité internationale !

D'après la Slovaquie, la Cour ne le peut pas parce que l'obligation ou les obligations susceptibles d'avoir été violées trouvent leur fondement dans un traité. Il faudrait donc, d'après elle, appliquer le droit international des traités et lui seul, parce qu'il comporte lui-même des règles relatives à la suspension et à la terminaison des traités. Et ces règles, prétend la Slovaquie, seraient

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[252] Article 2. 1

[253] *Usine de Chorz¢w, C.P.J.I. sérieA n^o 9,* p. 21.

exclusives de celles du droit de la responsabilité internationale[254] !

Cette opinion s'appuie sur le présupposé que le souci de garantir la stabilité des conventions a incité les auteurs de la convention de Vienne de 1969 sur le droit des traités à restreindre pour un Etat le droit de suspendre ou de mettre fin à un traité au seul cas de «violation substantielle» du traité par l'autre partie. Cette expression est, comme on sait, définie à l'article 60 de la convention, pôle de tout le raisonnement juridique slovaque.

13. La Cour perçoit ainsi d'emblée ce qui lui est demandé par la Slovaquie. Elle lui demande, ni plus ni moins, de faire de l'arrêt qu'elle va rendre en la présente affaire un arrêt de principe ! Un arrêt, qui, à n'en pas douter, fera date dans l'histoire de la jurisprudence internationale par sa nouveauté ... radicale.

Il s'agirait en effet d'affirmer en droit international l'existence d'un *double régime de responsabilité*. A l'imitation de certains droits internes, on distinguerait ainsi désormais une responsabilité délictuelle ou quasi délictuelle, lorsque les faits incriminés méconnaissent une obligation trouvant son origine hors d'une convention; et puis d'autre part, une responsabilité «contractuelle» ou «conventionnelle» lorsque les obligations méconnues sont tirées d'un traité, comme c'est ici le cas. Le droit de la responsabilité se trouverait, du même coup, dépossédé d'une très large part de son champ d'application, quand on sait la part prise aujourd'hui par la création d'obligations internationales sur une base conventionnelle.

Un arrêt de la Cour faisant droit aux requêtes slovaques aurait enfin une portée d'autant plus considérable qu'il irait évidemment à l'encontre de la règle codifiée à l'article 17 du projet de la commission sur le droit de la responsabilité dont toute la doctrine s'est pourtant accordée à reconnaître qu'il traduisait très fidèlement le droit international coutumier.

Dois-je le relire ?

> «1. Le fait d'un Etat qui constitue une violation d'une obligation internationale est un fait internationalement illicite *quelle que soit l'origine, coutumière, conventionnelle ou autre*, de cette obligation.»

[254] MS, par. 8.13.

Et la même disposition précise à son paragraphe second :

> «2. *L'origine de l'obligation internationale violée* par un Etat est *sans effet sur la responsabilité internationale engagée* par le fait internationalement illicite de cet Etat.»

14. Aujourd'hui, au contraire, si l'on suit la thèse slovaque, il faudrait distinguer d'après l'origine de l'obligation non respectée.

15. Un arrêt de votre part consacrant la thèse slovaque, Messieurs les juges, serait d'autant plus assuré de passer à la postérité qu'il irait également *à l'encontre de l'ensemble de la jurisprudence* qui vous précède. Votre arrêt s'opposerait notamment à la dernière espèce rendue en la matière, celle du *Rainbow Warrior*, dans laquelle la Nouvelle-Zélande soutenait exactement la même thèse que la Slovaquie d'aujourd'hui et la France une position identique à celle de la Hongrie dans notre affaire. Or, en application des règles classiques, ce fut, bel et bien, sur ce point tout au moins, la France qui l'emporta.

De manière, en effet, parfaitement orthodoxe, le tribunal présidé par, l'ancien président de cette Cour, Monsieur Eduardo Jiménez de Aréchaga déclara :

> "les conséquences juridiques de la violation d'un traité, y compris la détermination des circonstances aptes à exclure l'illicéité et la réparation appropriée en cas de violation sont des questions de droit coutumier [portant] sur la responsabilité des Etats".

La sentence ajoutait:

> "la raison en est que les principes généraux du droit international en matière de responsabilité des Etats sont également applicables en cas de manquement à une obligation d'un traité *puisqu'en droit international, on ne fait pas la distinction entre responsabilité contractuelle et responsabilité pour acte illicite.*"[255]

Il est vrai qu'un désavœu évidemment parfaitement concevable de cette jurisprudence arbitrale par vous-même satisferait les exigences de la Slovaquie qui nous déclarait :

> "Slovakia contends that this arbitral award does not correctly state the relationship between the law of treaties and the law of State responsibility, and reserves its right to invite the Court so to find, in the context of the dispute between Slovakia and Hungary."

Voici donc la Cour avertie. Elle se trouve investie par la Slovaquie d'une compétence d'appel (ou

[255]Texte reproduit dans *Revue générale de droit international public*, 1990/3, p. 851, par. 75.

de cassation?) à l'égard d'une sentence arbitrale rendue entre deux Etats tiers et pourtant unanimement approuvée, en tous cas sur ce point!

16. Face à l'argument slovaque d'exclusion du droit de la responsabilité par celui des traités quant aux conséquences de la violation d'une obligation contractuelle, le contre-mémoire hongrois avait fait bien sûr quelques objections. Il s'était notamment permis d'indiquer en substance que si ces deux droits, l'un et l'autre profondément enracinés dans le droit coutumier international, étaient exclusifs l'un de l'autre, il était surprenant que l'on ait attendu la plaidoirie de la Slovaquie, faite à l'extrême fin du XX^{e} siècle, pour finir par s'en rendre compte!

Apparemment ébranlée par ce simple constat de bon sens, la République slovaque a d'abord semblé faire certaines concessions[256], mais en réalité elle continue à nier la réalité du droit positif. Alors qu'elle est-elle cette réalité ? Elle est toute simple. Elle est que le droit des traités et le droit de la responsabilité, selon la Hongrie, ont *chacun un domaine d'application distinct*. Ceci permet d'expliquer la précaution bien connue prise par la convention de Vienne sur les droits des traités, à son article 73, lequel précise que ses dispositions "ne préjugent *aucune question* (je souligne, aucune) qui pourrait se poser ... en raison de la responsabilité internationale d'un Etat".

17. Malgré tout, dans sa réplique, la Slovaquie continue à traiter du droit des traités et du droit de la responsabilité comme s'ils étaient placés en position de concurrence, de rivalité ou d'exclusion l'un par rapport à l'autre. Sa thèse continue à être, alors même que la Hongrie n'a jamais rien affirmé de semblable, que le droit de la responsabilité n'*ajoute pas* de nouvelles causes de suspension, d'exécution ou de terminaison à celles qui sont prévues dans l'article 60.

Elle persiste et signe dans ses errements passés quand elle affirme que l'article 73 ne dit pas ce qu'au demeurant personne ne lui fait dire.[257] Et puis un peu plus loin, elle s'engage dans une construction intellectuelle, à vrai dire assez complexe, de laquelle il ressort que si l'on veut chercher une complémentarité du droit des traités et du droit de la responsabilité, il faudrait bien

[256]RS, p. 86, par. 4.14.

[257]"The ILC's dictum does not refer to additional termination grounds being a matter failing within State responsibility" (RS, par. 4.20).

peut être la chercher du côté de l'article 60 de la convention de Vienne sur le droit des traités lequel ne s'occupe que des cas de suspension ou de terminaison des traités pour cause de violation substantielle, cependant que les violations mineures relèveraient du droit de la responsabilité, réduit au rôle, ô combien ingrat de "ramasse miettes". Curieuse ligne de partage : au droit des traités reviendrait la gestion des violations substantielles; au droit de la responsabilité resterait celle des violations mineures! Voilà bien une conclusion insolite, d'ailleurs formulée avec une certaine gêne, je cite la Slovaquie : "It may be that the law of State responsibility will have a role to play here"[258].

18. Relisons alors simplement ensemble, si vous le voulez bien, Messieurs les Juges, les *deux* dispositions autour desquelles se résume le débat des rapports entre ces deux piliers du droit international le plus profondément enraciné dans la pratique ancestrale des Etats. Il s'agit de l'article 60 de la convention de Vienne, pris ici, répétons-le, comme expression de la coutume internationale, et de l'article 33 du projet de la CDI sur la responsabilité. Que disent-ils l'un et l'autre ?

Article 60 (convention de Vienne) :

> "Une violations substantielle d'un traité bilatéral par l'une des Parties autorise l'autre Partie à invoquer la violation comme motif pour mettre fin au traité ou suspendre son application."

Il s'agit là, vous en conviendrez, d'une règle d'habilitation. Quel est son bénéficiaire ? *C'est l'Etat victime* de la violation du traité. Je dis bien l'Etat victime.

Voyons l'*article 33* (projet de la CDI) maintenant : "L'état de nécessité ne peut pas être invoqué par un Etat comme une cause d'exclusion de l'illicéité d'un fait de cet Etat non conforme à l'une de ses obligations internationales", sauf bien sûr, les conditions particulières que nous avons déjà étudiées dans la première partie. Cela, ce n'est plus une règle d'habilitation. C'est une règle d'interdiction, assortie d'exceptions conditionnelles. Quel en est le destinataire ? Par définition, et comme le dit clairement le texte, ce n'est plus du tout, comme à l'article 60, l'Etat lésé; c'est au contraire *l'auteur du fait illicite*, l'Etat à priori responsable.

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[258]RS, p. 88, par. 4.21.

19. Ainsi, dans l'un et l'autre cas, *ce ne sont tout simplement pas les mêmes Etats qui sont concernés*. Le droit des traités autorise la victime à suspendre ou terminer le traité. Le droit de la responsabilité excuse l'Etat responsable, à certaines conditions. Ils n'ont tout simplement ni le même destinataire, ni le même objet, ni par voie de conséquence, la même fonction.

La question n'est donc aucunement de savoir si le droit de la responsabilité *ajoute* des clauses de suspension ou de terminaison à celles prévues par le droit des traités, puisqu'ils ne se situent pas sur le même plan. C'est pourquoi, comme le disait Paul Reuter, la convention de Vienne "s'est constamment efforcée d'exclure et de réserver les conditions de responsabilité".

Mr. President, I still have about 10 minutes. Should I go on ?

The PRESIDENT: Please proceed.

M. DUPUY : Thank you very much. Je disais donc, c'est bien pourquoi, comme le notait Paul Reuter, la convention de Vienne "s'est constamment efforcée d'exclure et de réserver les conditions de responsabilité". Il précisait qu'en dépit des "contacts" et des "rapports" entre les deux matières, "il s'agit de deux systèmes de règles qui sont séparés par une différence essentielle[259]", celle, précisément, qui tient à leur différence formelle.

S'agit-il là d'une logique à la française, ou formelle pour être vraie? Trompeuse clarté de la pensée cartésienne ?

> "A Court cannot remedy a breach of a treaty by reading into the treaty a sanction or remedy for which it does not provide. This does not affect the responsibility of the defaulting State, but the remedy will consist in the application of the ordinary rules of international responsibility."

On aura reconnu sir Gerald Fitzmaurice dans son *Law and Procedure of the International Court of Justice*[260].

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[259] *Introduction au droit des traités*, p. 153 et 158.

[260] Grotius, 1985, p. 50.

On aurait d'ailleurs tout autant pu citer dans ce contexte la proposition de sir Humphrey Waldock dans laquelle la Slovaquie croyait pouvoir trouver quelque secours dans sa réplique, lorsqu'il proposait dans son rapport de 1964 l'adjonction d'un paragraphe au projet relatif au droit des traités déclarant simplement, pour reprendre les termes dans lesquels cette proposition est évoquée par la réplique slovaque :

> "that the failure of a State to comply with its obligations in good faith engages its responsibility unless this failure is excusable under the general rules of State responsibility"[261].

20. Ce disant, ces auteurs ne faisaient que reprendre le dictum de la Cour internationale de justice dans l'affaire relative à l'*Interprétation des traités de paix*, lorsqu'elle notait elle-même: «il est clair que le refus de s'acquitter d'une obligation conventionnelle est de nature à engager la responsabilité internationale»[262]. C'est alors dans ce cadre qu'interviendra la question de savoir si entrent en ligne de compte des circonstances excluant l'illicite de l'Etat incriminé, comme c'est précisément ici le cas pour les raisons que nous avons exposées plus haut et qui seront reprises demain.

Personne, sauf, hier, la Nouvelle-Zélande, et, aujourd'hui, la Slovaquie, ne demande à ces deux branches du droit d'apporter réponse aux mêmes questions ! Le droit de la responsabilité ne dit pas cela, parce que ce n'est pas son métier. Il dit à quelles conditions restrictives un Etat qui a suspendu l'exécution d'un traité ou l'a terminé n'encourt pas pour autant l'engagement de sa responsabilité.

21. Pour autant, à moins de sombrer dangereusement dans l'esprit de système, il ne s'agit pas de prétendre qu'il n'existe aucun point de contact entre le droit des traités et le droit de la responsabilité. Ce serait évidemment absurde, puisque le second traite d'obligations établies en application du premier. Il existe plusieurs «points de rencontre» entre ces deux droits, pour parler comme Paul Reuter à nouveau. Le concept de «force majeure», par exemple constituait à juste titre

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[261] *Yearbook of the ILC*, 1964, vol. lII, p. 7, cité par la réplique slovaque p. 91, par. 4.29.

[262] *C.I.J. Recueil 1950*, p. 228.

pour lui l'un de ces points de contact entre les deux domaines[263]. Le même auteur constatait que la survenance d'une situation rendant l'exécution impossible constitue, à la fois, un motif de mettre fin ou de suspendre le lien conventionnel et comme une circonstance excluant l'illicite. Le droit des traités déterminera dans quelle mesure ce fait affecte la survie du lien conventionnel. Le droit de la responsabilité, quant à lui, définira s'il existe une circonstance susceptible d'exonérer de sa responsabilité l'Etat auteur du fait illicite.

On comprend, dès lors, le commentaire que la Commission du droit international faisait à l'article 61 de la convention de Vienne lorsqu'elle déclarait à son sujet qu'elle n'entendait pas traiter «du cas général de force majeure, qui relève du droit de la responsabilité...» «D'ailleurs,» ajoutait-elle, «l'article 73 ... réserve toutes les questions relatives à la responsabilité internationale»[264]. Ce qu'elle disait de la force majeure, on peut, bien entendu, le dire également de l'état de nécessité.

Par conséquent, et j'en termine ainsi, il résulte des explications qui précèdent deux conséquences concrètes à tirer pour le présent cas :

- en premier lieu, en fait, la Hongrie se trouvait bel et bien, dès 1989, face à une situation affectant ses intérêts essentiels, l'autorisant à invoquer l'état de nécessité;

- en second lieu, en droit, rien n'interdit à la Hongrie d'invoquer l'état de nécessité dans un contexte mettant en cause l'application de ses obligations conventionnelles.

Monsieur le Président, Messieurs les juges, je vous remercie de votre attention.

The PRESIDENT: Thank you, Professor Dupuy. The Court will now rise and resume tomorrow morning at 10 o'clock.

The Court rose at 1.05 p.m.

[263] *Annuaire de la CDI 1980*, vol. I, p. 3, par. 8.

[264] *Annuaire de la CDI 1980*, vol. II , 2e partie, p. 78, par. 1.