Chapter VI

SHARED NATURAL RESOURCES

A. Introduction

73. The Commission, at its fifty-fourth session in 2002, decided to include the topic "Shared natural resources" in its programme of work.[318]

74. At the same session, the Commission also decided to appoint Mr. Chusei Yamada as Special Rapporteur.[319]

75. The General Assembly, in paragraph 2 of resolution 57/21 of 19 November 2002, took note of the Commission's decision to include the topic "Shared natural resources" in its programme of work.

76. At its fifty-fifth session, in 2003, the Commission considered the first report of the Special Rapporteur.[320]

B. Consideration of the topic at the present session

77. At the present session the Commission had before it the second report of the Special Rapporteur (A/CN.4/539 and Add.1).

78. The Commission considered the second report of the Special Rapporteur at its 2797th, 2798th and 2799th meetings, held on 12, 13 and 14 May 2004, respectively.

79. At its 2797th meeting, the Commission established an open-ended Working Group on transboundary groundwaters, chaired by the Special Rapporteur. The Working Group held three meetings.

80. The Commission also had two informal briefings by experts on groundwaters from ECE, UNESCO, FAO and IAH on 24 and 25 May 2004. Their presence was arranged by UNESCO.

81. At the request of the Special Rapporteur, the Commission, at its 2828th meeting, on 4 August 2004, agreed that a questionnaire, prepared by the Special Rapporteur, be circulated to Governments and relevant intergovernmental organizations asking for their views and information regarding groundwaters.

1. Introduction by the Special Rapporteur of his second report

82. The Special Rapporteur noted that his second report provided some hydrogeological case studies and other technical background and that, unfortunately, some technical difficulties precluded the inclusion in the addendum of a review of existing treaties and groundwater world maps, as envisaged in paragraph 6 of his report. In this connection, he indicated that these materials and others would be made available to the Commission in an informal setting.

83. In view of the sensitivity expressed both in the ILC and in the Sixth Committee on the use of the term "shared resources", which might refer to the common heritage of mankind or to the notion of shared ownership, the Special Rapporteur proposed to focus on the sub-topic of "transboundary groundwaters" without using the term "shared".

84. Although the second report contained several draft articles, the Special Rapporteur stressed that this should not be construed as indicative of the final form the Commission's endeavour would take. He did not intend to recommend to refer any of the draft articles to the Drafting Committee at this initial stage; the draft articles were formulated so as to generate comments, to receive more concrete proposals and also to identify additional areas that should be addressed.

85. The Special Rapporteur acknowledged some of the criticism regarding his statement in 2003 that almost all the principles embodied in the Convention on the Law of the Non-navigational Uses of International Watercourses (hereinafter referred to as the "1997 Convention") would also be applicable to groundwaters, thus recognizing the need to adjust such principles. Nonetheless, he also stated his continued belief that the 1997 Convention offered the basis upon which to elaborate a regime for groundwaters.

86. In paragraph 8 of the report, the Special Rapporteur laid down a general framework for formulating draft articles.[321] This framework reflected more or less that of the 1997 Convention and also took into account the draft articles on the prevention of transboundary harm from

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[318] *Yearbook ... 2002*, vol. II (Part Two), p. 100, para. 518.

[319] *Ibid.*, para. 519.

[320] *Yearbook ... 2003*, vol. II (Part One), document A/CN.4/533 and Add.1.

[321] The general framework prepared by the Special Rapporteur is as follows:

"Part I. Introduction

Scope of the Convention
Use of terms (definition)

Part II. General principles

Principles governing uses of transboundary groundwaters
Obligation not to cause harm
General obligation to cooperate
Regular exchange of data and information
Relationship between different kinds of uses

Part III. Activities affecting other States

Impact assessment
Exchange of information
Consultation and negotiation

Part IV. Protection, preservation and management

Monitoring
Prevention (Precautionary principle)

Part V. Miscellaneous provisions

Part VI. Settlement of disputes

Part VII. Final clauses"

hazardous activities, adopted by the Commission at its fifty-third session, in 2001.[322]

87. In the second report, the Special Rapporteur presented draft articles for Part I, Introduction, and for Part II, General principles. He stated his plan to present draft articles for all the remaining parts in 2005 and requested comments on the general framework proposed, as well as suggestions for amendments, additions or deletions.

88. As regards the introduction, the Special Rapporteur noted that he continued to use the term "groundwater" in the report, yet had opted to use the term "aquifer", which was a scientific and more precise term, in the draft articles.

89. The scope of the proposed convention was found in paragraph 10 of the report as draft article 1.[323] The Special Rapporteur noted that in 2002, he had proceeded on the assumption that the Commission's endeavour would only encompass those transboundary groundwaters that were not covered by the 1997 Convention, which were designated as "confined transboundary groundwaters". The Commission's use of the term "confined" was to indicate that such a body of groundwaters was "unrelated", "not connected" or "not linked" to the surface waters. However, the use of the term "confined" had posed serious problems.

90. Firstly, groundwater experts use the term to mean something entirely different. For them, "confined" is the hydraulic status of waters under pressure. Accordingly, it was preferable to omit the term "confined" in order to avoid confusion between lawyers and groundwater experts, as the latter will be involved in the implementation of the proposed convention.

91. Another important reason to drop the notion of "confined" from the scope of the proposed convention was the inappropriate assumption that the Commission should deal exclusively with groundwaters not covered by the 1997 Convention. The Special Rapporteur explained why such an approach was not advisable by referring to the huge Nubian sandstone aquifer system which is found in four States: Chad, Egypt, Libyan Arab Jamahiriya and Sudan. Although the system is connected with the river Nile in the vicinity of Khartoum, thus making the 1997 Convention applicable to the whole aquifer system, the connection to the Nile is actually negligible. The aquifer system practically does not receive recharge, and it has all the characteristics of groundwaters and not of the surface waters. A similar situation also exists for the Guarani Aquifer (Argentina, Brazil, Paraguay and Uruguay). The case studies of these two aquifers were included in the report.

92. The Special Rapporteur was of the view that the Commission should cover these two important aquifers and he therefore decided to delete the limiting factor of "unrelated to the surface waters" from the scope of the draft convention.

93. This action could lead to the situation of dual application of the proposed convention as well as the 1997 Convention to the same aquifer system in many instances. In this connection, the Special Rapporteur did not feel that parallel application would cause a problem and that, in any event, a draft article according one primacy could be envisaged to deal with any potential difficulty.

94. In relation to his proposal to regulate activities other than uses of transboundary groundwaters, the Special Rapporteur explained that this was necessary to protect groundwaters from pollution caused by such surface activities as industry, agriculture and forestation.

95. As for draft article 2 on definitions,[324] he noted that it contained, *inter alia*, technical definitions of "aquifer" and "aquifer system". In the case of groundwaters, the concept of aquifer consists of both the rock formation which stores waters and the waters in such a rock formation, so it is sufficient to say "the uses of aquifers" to cover all categories of the uses. In this connection, the Special Rapporteur referred to case 4 of the aquifer models described at the end of the report which illustrates domestic aquifers of State A and State B that are, nonetheless, hydrologically linked and should therefore be treated as a single system for proper management of these aquifers. Such an aquifer system is transboundary and therefore he considered it necessary to have a definition of "aquifer system" and proposed to regulate aquifer systems throughout the draft convention.

96. The Special Rapporteur also referred to case 3 of the aquifer models described at the end of the report and noted that there could also be a case 3 *bis*, where a domestic aquifer was hydrologically linked to a domestic river of State B. Although in the report he had stated that both the 1997 Convention and the proposed convention would be applicable to case 3, upon reflection he was no longer certain if this hydrological link was the connection to the surface waters that the drafters of the 1997 Convention had in mind. If it was and the 1997 Convention was applicable, its article 7 containing the "no harm" principle would alleviate some of the problems. The formulation of draft article 2, however, did not make such an aquifer transboundary, and an adequate solution on how to deal with such an aquifer was thus required.

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[322] *Yearbook ... 2001*, vol. II (Part Two) and corrigendum, p. 146, para. 97.

[323] Draft article 1 proposed by the Special Rapporteur in his second report reads as follows:

"*Article 1. Scope of the present Convention*

The present Convention applies to uses of transboundary aquifer systems and other activities which have or are likely to have an impact on those systems and to measures of protection, preservation and management of those systems."

[324] *Ibid.*, draft article 2 proposed by the Special Rapporteur in his second report reads as follows:

"*Article 2. Use of terms*

For the purposes of the present Convention:

(*a*) "Aquifer" means a permeable water-bearing rock formation capable of yielding exploitable quantities of water;

(*b*) "Aquifer system" means an aquifer or a series of aquifers, each associated with specific rock formations, that are hydraulically connected;

(*c*) "Transboundary aquifer system" means an aquifer system, parts of which are situated in different States;

(*d*) "Aquifer system State" means a State Party to the present Convention in whose territory any part of a transboundary aquifer system is situated."

97. As for case 5 of the aquifer models described at the end of the report, he noted that the definitions of an aquifer and an aquifer system leave recharge and discharge areas outside aquifers. Since these areas should also be regulated for proper management of aquifers, he planned to formulate draft articles to regulate them, possibly in part IV of his general framework.

98. As for Part II, General principles, which would contain a draft article on the principle governing uses of transboundary aquifer systems, the Special Rapporteur indicated that he required advice on the formulation of such a draft article. The two basic principles embodied in article 5 of the 1997 Convention, "equitable use" and "reasonable utilization", might not be appropriate for the Commission's endeavour. Although "equitable use" might have been deemed adequate for situations where a resource is "shared" in the true sense of the word, the resistance to the notion of "shared resource" in the case of groundwaters casts doubts as to whether the principle of equitable use would prove politically acceptable. As regards the other principle of "reasonable utilization" which had the scientific meaning of "sustainable use", it was valid if the resource in question was renewable, yet in light of the fact that some groundwaters were not renewable the concept of sustainable use would be irrelevant. The States concerned would have to decide whether they wished to deplete the resource in a short or lengthy span of time. This raised the issue of objective criteria which could be applied to such situations, a matter on which the Special Rapporteur did not yet have answers.

99. As for another key principle, the obligation not to cause harm to other aquifer States, the Special Rapporteur referred to draft article 4,[325] paragraphs 1 and 2 of which call for preventing "significant harm" to other aquifer system States. Both in the ILC and in the Sixth Committee, the view had been expressed that a lower threshold than "significant harm" was required due to fragility of groundwaters. However, he had retained the threshold of significant harm, adopted in article 7 of the 1997 Convention and in article 3 of the draft articles on prevention of transboundary harm from hazardous activities, since the concept of "significant" is flexible enough to safeguard the viability of aquifers.

100. As for the placement of paragraph 3 of draft article 4, which deals with the case where an aquifer system might be permanently destroyed, he thought it could be moved to Part IV.

101. The Special Rapporteur recalled that paragraph 4 mentioned the question of compensation but did not deal with liability *per se*. In relation to the proposal by some members of the ILC and some delegations in the Sixth Committee for the inclusion of an article on liability, the Special Rapporteur was of the view it was a matter best left for consideration by the Commission under the topic of international liability for injurious consequences arising out of acts not prohibited by international law.

102. The Special Rapporteur stated that draft articles 5,[326] 6[327] and 7[328] were self-explanatory. He noted that regular exchange of data and information constituted a prerequisite for effective cooperation among aquifer system States and that paragraph 2 of draft article 6 had been formulated in view of the insufficiency of scientific findings on aquifer systems.

103. Draft article 7 related to the relationship between different kinds of uses of aquifer systems and followed the precedent of article 10 of the 1997 Convention. As

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[325] *Ibid.*, draft article 4 proposed by the Special Rapporteur in his second report reads as follows:

"*Article 4. Obligation not to cause harm*

1. Aquifer system States shall, in utilizing a transboundary aquifer system in their territories, take all appropriate measures to prevent the causing of significant harm to other aquifer system States.

2. Aquifer system States shall, in undertaking other activities in their territories which have or are likely to have an impact on a transboundary aquifer system, take all appropriate measures to prevent the causing of significant harm through that system to other aquifer system States.

3. Aquifer system States shall not impair the natural functioning of transboundary aquifer systems.

4. Where significant harm nevertheless is caused to another aquifer system State, the State whose activity causes such harm shall, in the absence of agreement to such activity, take all appropriate measures in consultation with the affected State to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation."

[326] *Ibid.*, draft article 5 proposed by the Special Rapporteur in his second report reads as follows:

"*Article 5. General obligation to cooperate*

1. Aquifer system States shall cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain appropriate utilization and adequate protection of a transboundary aquifer system.

2. In determining the manner of such cooperation, aquifer system States are encouraged to establish joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in the light of experience gained through cooperation in existing joint mechanisms and commissions in various regions."

[327] *Ibid.*, draft article 6 proposed by the Special Rapporteur in his second report reads as follows:

"*Article 6. Regular exchange of data and information*

1. Pursuant to article 5, aquifer system States shall, on a regular basis, exchange readily available data and information on the condition of the transboundary aquifer system, in particular that of a geological, hydrogeological, hydrological, meteorological and ecological nature and related to the hydrochemistry of the aquifer system, as well as related forecasts.

2. In the light of uncertainty about the nature and extent of some transboundary aquifer systems, aquifer system States shall employ their best efforts to collect and generate, in accordance with currently available practice and standards, individually or jointly and, where appropriate, together with or through international organizations, new data and information to more completely define the aquifer systems.

3. If an aquifer system State is requested by another aquifer system State to provide data and information that is not readily available, it shall employ its best efforts to comply with the request, but may condition its compliance upon payment by the requesting State of the reasonable costs of collecting and, where appropriate, processing such data or information.

4. Aquifer system States shall employ their best efforts to collect and, where appropriate, to process data and information in a manner which facilitates its utilization by the other aquifer system States to which it is communicated."

[328] *Ibid.*, draft article 7 proposed by the Special Rapporteur in his second report reads as follows:

"*Article 7. Relationship between different kinds of uses*

1. In the absence of agreement or custom to the contrary, no use of a transboundary aquifer system enjoys inherent priority over other uses.

2. In the event of a conflict between uses of a transboundary aquifer system, it shall be resolved with special regard being given to the requirements of vital human needs."

regards the phrase "requirements of vital human needs" at the end of draft article 7, paragraph 2, the Special Rapporteur recalled that there was an understanding pertaining to this phrase which the Chairperson of the Working Group of the Whole noted during the elaboration of the 1997 Convention. The understanding was that "in determining 'vital human needs', special attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for production of food in order to prevent starvation".[329]

2. Summary of the debate

104. Members commended the Special Rapporteur for his second report which, given the specialized nature of the topic, incorporated changes to terms in light of the availability of scientific data. Members also welcomed the assistance that he was getting from technical experts. Several members stated that further research was required, especially in relation to the interaction between groundwaters and other activities. Nonetheless, a query was raised as to the amount of additional technical information that was required prior to embarking upon the development of a legal framework.

105. The point was also made that the Commission should not overestimate the importance of groundwaters and that some of the groundwaters to be covered by the study could be located far beneath the surface where their very existence might not be clearly ascertained.

106. Some concern was expressed about the assumption in paragraph 14 that the 1997 Convention had not adequately addressed some groundwater problems. A restrictive interpretation of the 1997 Convention was not something the Commission might wish to embark upon; the issues raised might possibly be dealt with through a new instrument, which would not necessarily be mandatory, or a protocol to the 1997 Convention.

107. Some members concurred with the Special Rapporteur that the focus of the work could not be limited to those groundwaters not covered by the 1997 Convention, while others considered it necessary to have a more detailed explanation of the groundwaters that would be excluded by the current endeavour.

108. As for the scope of the Commission's work, support was expressed for the position of the Special Rapporteur to exclude those aquifers which were not transboundary in nature. The point was also made that somewhere in the draft articles, reference should be made to those groundwaters which were excluded from the scope of the draft convention. On the other hand, the point was also made that it would be interesting to know the reasons why technical experts felt that all kinds of groundwaters, not just the transboundary ones, should be regulated. In addition, the question was also posed as to whether the international community ought to take an interest in ensuring that a State acted responsibly towards future generations of its own citizens with regard to a fundamental necessity of life such as water.

109. A view was expressed that the Commission had to determine the object of its endeavour. The exercise the Commission had embarked upon did not seem to entail the codification of State practice nor the progressive development of international law, but was rather legislative in nature. It was also stated that the primary purpose of the endeavour of the Commission was to establish the proper use of a natural resource, not to elaborate an environmental treaty or to regulate conduct.

110. The point was made that the report lacked a specific reference to the States where the groundwaters were formed, when it was precisely those States to whom the draft articles should be addressed.

111. The point was made that each State had a primary responsibility for the way it decided to use its groundwater resources, a responsibility which preceded State responsibility at the international level. Accordingly, the respective rules of conduct had to be adopted by States, by agreements between States and with the assistance of the international community, wherein regional arrangements would have a particular role. In this connection, reference was made to the approach taken by the countries of MERCOSUR, Argentina, Brazil, Paraguay and Uruguay, with regard to the Guarani Aquifer.

112. In this connection, it was recalled that article 2 of the 1997 Convention acknowledged the importance of the regional role, with its reference to a "regional economic integration organization". Preference was thus voiced for the regional approach which did not deny fundamental principles such as the obligation not to cause harm, to cooperate and to use the resource rationally, principles that could certainly be reflected in the draft articles.

113. As an example of work carried out at the regional level, mention was made of the two MERCOSUR projects concerning the Guarani Aquifer: the first one was a technical study that considered issues such as access and potential uses, while the second project sought to establish the legal norms regulating the rights and duties of States under whose territories the resource was located. The MERCOSUR countries, it was noted, had considered certain elements regarding the Guarani Aquifer: groundwaters belonged to the territorial dominion of the State under whose soil they are located; groundwaters were those waters not connected with surface waters; the Guarani Aquifer was a transboundary aquifer belonging exclusively to the four MERCOSUR countries; they considered the development of the aquifer as a regional infrastructure integration project falling within its competencies as a regional economic integration organization. The MERCOSUR countries were focusing on preservation, controlled development and shared management of the Guarani Aquifer, in close cooperation with international organizations, but ownership, management and monitoring would remain the sole responsibility of the MERCOSUR countries themselves. Thus, two procedures would be taking place simultaneously. On the one hand, the Commission would pursue its codification while the regional arrangement concerning the Guarani Aquifer would go ahead at a more rapid pace; an exchange of information would prove most useful.

[329] A/51/869, para. 8.

114. However, the view was also expressed that a draft convention would not be incompatible with regional or national approaches to the matter. Furthermore, having the Commission state the general obligations of States with regard to groundwater management could encourage States to develop regional agreements.

115. It was emphasized that groundwaters must be regarded as belonging to the State where they were located, along the lines of oil and gas which had been recognized to be subject to sovereignty; they could not be considered a universal resource and the Commission's work should not convey the impression that groundwaters are subject to some special treatment different from that accorded to oil and gas. It was also suggested that the text could clearly state, possibly in the preamble, that the sovereignty over groundwaters was in no way being questioned.

116. Some caution was urged in relying upon the 1997 Convention as the basis for the Commission's work on groundwaters, since that Convention was not yet in force and had a low number of signatures and ratifications. It was also stated that similar caution was warranted in relation to being guided by the draft articles on the prevention of transboundary harm from hazardous activities,[330] since they had not yet been adopted by the General Assembly.

117. Support was expressed for the suggestion of the Special Rapporteur to elaborate a provision on a possible overlap between the 1997 Convention and the Commission's work on the subtopic.

118. It was noted that there had been scant response from States to the Commission's requests for information regarding the use and management of transboundary groundwaters. The scarcity of State practice was considered another justification for a cautious approach to establishing a legal framework on the sub-topic. However, the point was also made that the Commission should encourage the Special Rapporteur to pursue the topic since its mandate was not restricted to codifying existing practice.

119. Several members expressed their support for the term "transboundary" incorporated by the Special Rapporteur in his second report, since the prior use of the word "shared" had met with criticism. Nonetheless, it was also said that despite the use of the word "transboundary" the property connotation might not have been eliminated since the resource was indivisible and was therefore "shared" with another State that also had rights. The incorporation of the word "aquifer" and the deletion of the word "confined", as suggested by the Special Rapporteur, were also supported.

120. It was suggested that an article could be drafted to highlight the three elements that constituted the scope of the draft convention; such a provision would set out the applicability of the draft convention to transboundary aquifer systems and to (a) the uses of; (b) activities which have or are likely to have an impact upon; and (c) measures of protection, preservation and management of, transboundary aquifer systems.

[330] See footnote 322 above.

121. The point was raised as to whether the term "shared" should continue to be used in the title of the topic.

122. As regards the form which the final product of the Commission's endeavour should take, divergent views were expressed. The point was made that without sufficient State practice to rely on, a draft convention would not be acceptable to States and therefore, according to this view, it would be preferable to elaborate guidelines containing recommendations which could assist in drafting bilateral or regional conventions. Another suggestion was to elaborate a model law or a framework convention. Support was also expressed for the approach by the Special Rapporteur of preparing draft articles to assist the Commission in its work, leaving the issue of the final form for a later stage.

123. As for the general framework proposed by the Special Rapporteur in paragraphs 8 and 9 of the second report, it was stated that depending on the results of the research to be carried out, a revision might be warranted in the future.

124. In relation to draft article 1, some support was expressed for not restricting the application of the provisions to "uses", but also extending them to "other activities". Greater clarification was felt warranted for the terms "uses" and "activities". It was suggested to replace the word "uses" with "exploitation", a concept found in draft article 2 (*a*).

125. It was suggested that the object of the term "uses" should refer to groundwaters and not to "aquifers".

126. Some difficulty was voiced over the suggestion in paragraph 15 of the second report to use the phrase "which involve a risk of causing" instead of "which have or are likely to have" since the new wording would not apply to activities that currently had an impact on a transboundary aquifer system. Support was also expressed for the latter phrase which accommodated environmental concerns.

127. As for the definitions contained in draft article 2, it was felt that being technical in nature, they constituted a solid basis for discussion by the Commission. In relation to draft article 2 (*a*) clarification was required regarding two points. The first was whether the reference to exploitability should be interpreted solely in light of current technology or whether it implied that additional aquifers could fall within the ambit of the convention as technology developed. The second point was whether the concept of exploitability referred to quantities of water that could be used or to notions of commercial viability.

128. Furthermore, the issue was raised as to whether, given the definitions of draft article 2 and reading them in conjunction with paragraphs 2 and 3 of draft article 4, aquifer system States were obliged to protect aquifers that could be used in the future; appropriate protection for such aquifers was deemed warranted.

129. As for the definition of "aquifer system" contained in draft article 2 (*b*), the view was expressed that it was unclear why the aquifers had to be associated with specific rock formations since the fact that they were hydraulically connected would suffice.

130. The point was also made that the definition of "aquifer" might prove insufficient or imprecise in relation to obligations relating to the exploitation of the aquifer, thus requiring a definition of "aquifer waters".

131. With regard to the definition of "transboundary aquifer system", the query was made as to whether it would adequately cover the case of an aquifer located in a disputed territory, a situation which would require addressing the need for interim measures of protection to be adopted by the States concerned.

132. As for the principles that should govern the draft convention, mention was made of the need to include more principles than those contained in the 1997 Convention, especially in the area of environmental protection and the sustainable use of aquifers; the protection of vital human needs was deemed to be one of the major principles that merited enunciation in the draft. Some principles related to oil and gas would need to be considered due to the exhaustible nature of the resource, although the point was also made that groundwaters could not be given the same treatment as oil and gas in light of their special characteristics. It was also stated that the principles of equitable and reasonable utilization and participation, contained in the 1997 Convention, should be integrated into the draft articles. Nonetheless, the point was also made that incorporation of those principles had to be approached with great caution, given the differences which existed between groundwaters and watercourses. Some of the queries raised by the Special Rapporteur in paragraph 23 required searching for relevant State practice.

133. As regards draft article 4, it was suggested that the order of paragraphs 1 and 2 should be inverted since the activities referred to in paragraph 2 might already have begun prior to the exploitation of the aquifer; furthermore it was stated that the preventive measures mentioned should also be applicable to States which, though not an aquifer system State *per se*, carry out activities that could have an impact on the aquifer, a point equally valid for paragraph 1 of draft article 5 and paragraph 3 of draft article 6.

134. In relation to the obligation not to cause harm, contained in draft article 4, paragraphs 1 and 2, it was noted that considerations of inter-generational equity and respect for environmental integrity warranted an obligation to prevent harm to the aquifer itself, and not to the aquifer State as the provisions suggested. In this connection it was suggested that draft articles 4 to 7 could only be discussed once the context had been adequately defined and the relevant principles developed.

135. In relation to the term "harm", it was noted that although useful, the term entailed a loose concept that required the presence of proof that a certain level of harm had been inflicted. Accordingly, the Commission should give further thought to identifying the types of harm it had in mind.

136. Furthermore, some concern was expressed that the present concept of "significant harm" would not be applicable to the problems posed by the non-sustainable use of groundwater, although draft article 4, paragraph 3, might constitute an attempt to deal with extraction rates. It was also noted that the concept of significant harm varied depending on different factors, such as the passage of time, the level of economic development, etc., and that it was preferable to avoid defining significant harm, a matter which States could agree on at the regional level. The point was also raised that perhaps a lower threshold than significant harm was required, since groundwaters were much more vulnerable to pollution than surface waters.

137. It was stated that greater precision was called for in paragraph 3 of draft article 4 and that additional clarifications on the meaning of the term "impair" contained therein were required; the text of that paragraph seemed to cover a different situation than the one described in paragraph 27 of the report. It was also stated that the term "significant harm" should be incorporated into the provision.

138. It was also stated that some ambiguity existed in the notion of "measures" which could, *inter alia*, refer to the formation, protection and conservation of groundwaters.

139. In relation to the issues of liability and dispute settlement mechanisms, referred to in paragraph 28 of the second report, it was stated that compensation would probably never be an adequate remedy and that therefore prevention was critical. Accordingly, the Commission might devise provisions to encourage States to act cooperatively, recognize their interdependence in respect of groundwater resources and identify means of obtaining assistance in the resolution of any disputes that might arise. It was also stated that a State which had impaired the functioning of a transboundary aquifer should be obliged to do more than merely discuss the question of compensation, as proposed in draft article 4, paragraph 4. In addition, the situation could raise the issue of responsibility if the impairment resulted from a wrongful act. According to another view, the issue of liability was, as suggested by the Special Rapporteur, best dealt with under the topic of international liability for injurious consequences arising out of acts not prohibited by international law.

140. As concerns draft article 5, it was suggested that the obligation to cooperate in paragraph 1 include a specific reference to environmental protection and sustainable use. Suggestions were also made to explain the implication of the term "territorial integrity", contained in paragraph 1, though it was also noted that the term had been debated and included in article 8 of the 1997 Convention. Another suggestion made was to strengthen paragraph 2 of draft article 5.

141. In relation to draft article 6, paragraph 2, it was stated that its content seemed to be implicitly included in paragraph 1 of the same draft article, thus making it unnecessary; a provision similar to paragraph 2 was not found in the 1997 Convention. It also suggested that a provision regarding data and information vital to national defense and security could be incorporated, inspired perhaps by article 31 of the 1997 Convention.

142. As regards draft article 7, it was stated that the extent to which the "vital human needs" referred to in paragraph 2 would take precedence over the existence of an agreement or custom, referred to in paragraph 1, was not clear. According to another view, the two paragraphs could be merged, according primacy to vital human needs.

It was noted that if a State was obliged to halt the exploitation of groundwater in order to address vital human needs, compensation would be due. However, the point was also made that vital human needs were not *jus cogens* and therefore could not override treaty obligations. Furthermore, a suggestion was made to allow the aquifer system States concerned to address the priority of uses.

3. Special Rapporteur's concluding remarks

143. As regards the serious difficulties posed by the scarcity of State practice, the Special Rapporteur indicated that he would do his best to extract such practice from the international cooperation efforts for the proper management of groundwaters, especially efforts undertaken at the regional level, and he acknowledged that most existing treaties only dealt with groundwaters in a marginal manner.

144. The Special Rapporteur stressed his full support for the importance of regional arrangements on groundwaters, arrangements which took due account of the historical, political, social and economic characteristics of the region. He indicated that the formulation of universal rules by the Commission would be designed to provide guidance for regional arrangements.

145. In relation to the final form of the Commission's work, divergent views had been expressed, but he hoped that a decision could be deferred until progress had been attained on major aspects of the substance. He reiterated that although the proposals in his report had been formulated as draft articles and that reference was frequently made to a draft convention, he did not preclude any possible form.

146. The Special Rapporteur welcomed the specific suggestions and questions by the members and indicated that some of them could be clarified with the assistance of experts.

147. He thought that the suggested reformulation of draft article 1 was most useful. He also felt that an aquifer which is not currently exploited but could be exploited in the future was covered by the definition.

148. With regard to the concept of groundwater, the Special Rapporteur explained that not all subterranean water was groundwater. The waters that remain in the unsaturated zone of rock formation, which eventually reach rivers or lakes or are reabsorbed by vegetation, do not constitute groundwater, but are called interflow. Only waters which arrive at the saturated zone become groundwater. An aquifer therefore is a geological formation that contains sufficient saturated permeable material to yield significant quantities of water. He felt that a detailed explanation could be provided in the commentary.

149. The need for a definition of "transboundary", not only in relation to transboundary aquifers but also in relation to transboundary harm, merited due consideration.

150. The Special Rapporteur was not certain if a separate definition of "waters" might be required, since it could suffice to focus on the use of waters stored in rock formations.

151. With regard to the query as to why the harm to other States must be limited to harm caused through the aquifer system, the Special Rapporteur was of the view that other harm, such as the one caused through the atmosphere, would be covered by the work being carried out under the topic of international liability.

152. As to the relationship between impairing the functioning of an aquifer system, referred to in paragraph 3 of draft article 4, and the permanent destruction of aquifers, his understanding was that when an aquifer was exploited beyond a certain level, the rock formation lost its capacity to yield water, and therefore it would no longer be an aquifer as defined in draft article 2.

153. As regards the "no harm" clause, several members had referred to the question of "significant harm" from different perspectives. The Special Rapporteur recalled the extensive history of debate surrounding this concept in the Commission, which had finally agreed to the term "significant harm" during the adoption on second reading of the draft articles on the law of non-navigational uses of international watercourses.[331] The understanding then had been that harm was "significant" if it was not minor or trivial, but that it was less than "substantial" or "serious". The Commission also took the same position when it adopted draft article 3 on the prevention of transboundary damage from hazardous activities.[332] Furthermore, he recalled that the Commission had recommended the threshold of significant harm to the General Assembly twice on similar projects and that a compelling reason would thus be required to modify the threshold. He welcomed any alternative suggestion in this regard.

154. In relation to draft article 2 (*b*), he concurred with the suggestion that the phrase "each associated with specific rock formations" could be dispensed with, since it was a scientific description of an aquifer system that had no legal consequence.

155. As regards the question of the scope of the 1997 Convention, the Special Rapporteur was of the view that the Commission, as the drafter of the instrument, was called to provide such an answer.

156. Several members had referred to the relationship between different kinds of uses in draft article 7. The Special Rapporteur felt that this article depended on the final outcome of the principle governing the uses of aquifer systems. He did not consider paragraph 2 as an exception to paragraph 1. Paragraph 2 would mean that in case of a conflict between the extraction of water for drinking purposes and for recreational purposes, the former should be accorded priority.

157. The Special Rapporteur also stated that he would refer to and if appropriate take into account the water rules which the International Law Association would be finalizing in August 2004.

[331] *Yearbook ... 1994*, vol. II (Part Two), p. 89.

[332] See footnote 322 above.