COUR INTERNATIONALE DE JUSTICE

RECUEIL DES ARRÊTS,
AVIS CONSULTATIFS ET ORDONNANCES

CERTAINES ACTIVITÉS MENÉES PAR LE NICARAGUA DANS LA RÉGION FRONTALIÈRE

(COSTA RICA c. NICARAGUA)

INDEMNISATION DUE PAR LA RÉPUBLIQUE DU NICARAGUA
À LA RÉPUBLIQUE DU COSTA RICA

ARRÊT DU 2 FÉVRIER 2018

2018

INTERNATIONAL COURT OF JUSTICE

REPORTS OF JUDGMENTS,
ADVISORY OPINIONS AND ORDERS

CERTAIN ACTIVITIES CARRIED OUT BY NICARAGUA IN THE BORDER AREA

(COSTA RICA *v.* NICARAGUA)

COMPENSATION OWED BY THE REPUBLIC OF NICARAGUA
TO THE REPUBLIC OF COSTA RICA

JUDGMENT OF 2 FEBRUARY 2018

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JUDGMENT

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INTERNATIONAL COURT OF JUSTICE

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CERTAIN ACTIVITIES CARRIED OUT BY NICARAGUA IN THE BORDER AREA

(COSTA RICA *v.* NICARAGUA)

COMPENSATION OWED BY THE REPUBLIC OF NICARAGUA TO THE REPUBLIC OF COSTA RICA

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* *

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* *

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* *

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JUDGMENT

Present: *President* Abraham; *Vice-President* Yusuf; *Judges* Owada, Tomka, Bennouna, Cançado Trindade, Greenwood, Xue, Donoghue, Gaja, Sebutinde, Bhandari, Robinson, Gevorgian; *Judges* ad hoc Guillaume, Dugard; *Registrar* Couvreur.

In the case concerning certain activities carried out by Nicaragua in the border area,

between

the Republic of Costa Rica,

represented by

H.E. Mr. Edgar Ugalde Alvarez, Ambassador on Special Mission,

as Agent;

H.E. Mr. Sergio Ugalde, Ambassador of Costa Rica to the Kingdom of the Netherlands, member of the Permanent Court of Arbitration,

as Co-Agent,

and

the Republic of Nicaragua,

represented by

H.E. Mr. Carlos José Argüello Gómez, Ambassador of Nicaragua to the Kingdom of the Netherlands, member of the International Law Commission,

as Agent,

The Court,

composed as above,

after deliberation,

delivers the following Judgment:

1. By an Application filed in the Registry of the Court on 18 November 2010, the Republic of Costa Rica (hereinafter "Costa Rica") instituted proceedings

against the Republic of Nicaragua (hereinafter "Nicaragua") for "the incursion into, occupation of and use by Nicaragua's army of Costa Rican territory", as well as for "serious damage inflicted to its protected rainforests and wetlands" (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)*, hereinafter referred to as the "*Costa Rica* v. *Nicaragua* case").

2. By an Order dated 8 March 2011 (hereinafter referred to as the "2011 Order"), the Court indicated provisional measures addressed to both Parties in the *Costa Rica* v. *Nicaragua* case (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Provisional Measures, Order of 8 March 2011, I.C.J. Reports 2011 (I)*, pp. 27-28, para. 86).

3. By an Application filed in the Registry on 22 December 2011, Nicaragua instituted proceedings against Costa Rica for "violations of Nicaraguan sovereignty and major environmental damages on its territory", resulting from the road construction works being carried out by Costa Rica in the border area between the two countries along the San Juan River (*Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica)*, hereinafter referred to as the "*Nicaragua* v. *Costa Rica* case").

4. By two separate Orders dated 17 April 2013, the Court joined the proceedings in the *Costa Rica* v. *Nicaragua* and *Nicaragua* v. *Costa Rica* cases.

5. By an Order of 22 November 2013 (hereinafter referred to as the "2013 Order"), the Court indicated further provisional measures in the *Costa Rica* v. *Nicaragua* case (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Provisional Measures, Order of 22 November 2013, I.C.J. Reports 2013*, pp. 369-370, para. 59).

6. Public hearings were held in the joined cases between 14 April 2015 and 1 May 2015.

7. In its Judgment dated 16 December 2015 on the merits, issued in the joined cases, the Court found, *inter alia*, with regard to the *Costa Rica* v. *Nicaragua* case, that Costa Rica had sovereignty over the "disputed territory", as defined by the Court in paragraphs 69-70 (*I.C.J. Reports 2015 (II)*, p. 740, para. 229, subpara. (1) of the operative part), and that, by excavating three *caños* and establishing a military presence on Costa Rican territory, Nicaragua had violated the territorial sovereignty of Costa Rica (*ibid.*, subpara. (2) of the operative part). The Court also found that, by excavating two *caños* in 2013 and establishing a military presence in the disputed territory, Nicaragua had breached the obligations incumbent upon it under the 2011 Order (*ibid.*, subpara. (3) of the operative part).

8. In the same Judgment, the Court found that Nicaragua had "the obligation to compensate Costa Rica for material damages caused by Nicaragua's unlawful activities on Costa Rican territory" (*ibid.*, p. 740, para. 229, subpara. (5) *(a)* of the operative part).

9. With respect to the question of compensation owed by Nicaragua to Costa Rica, the Court decided that "failing agreement between the Parties on this matter within 12 months from the date of [the] Judgment, [this] question . . . [would], at the request of one of the Parties, be settled by the Court" (*ibid.*, p. 741, para. 229, subpara. (5) *(b)* of the operative part).

10. Paragraph 142 of the same Judgment provided that the Court would, in such a case, determine the amount of compensation on the basis of further written pleadings limited to this issue.

11. By means of a letter dated 16 January 2017, the Co-Agent of Costa Rica, referring to paragraph 229, subparagraph (5) *(b)* of the operative part of the Court's Judgment of 16 December 2015, noted that "[r]egrettably, the Parties ha[d] been unable to agree on the compensation due to Costa Rica for material damages caused by Nicaragua's unlawful activities" as determined by the Court in the *Costa Rica* v. *Nicaragua* case. The Government of Costa Rica accordingly requested the Court "to settle the question of the compensation" due to Costa Rica.

12. At a meeting held by the President of the Court with the representatives of the Parties on 26 January 2017, pursuant to Article 31 of the Rules of Court, the latter expressed the views of their respective Governments regarding the time-limits required in order to prepare written pleadings. The Co-Agent of Costa Rica indicated that his Government wished to have at its disposal a period of two months for the preparation of its Memorial on the question of compensation. The Agent of Nicaragua stated that his Government would agree to a period of two months for the preparation of its Counter-Memorial on the same question.

13. Having ascertained the views of the Parties, and taking into account their agreement, by an Order of 2 February 2017, the Court fixed 3 April 2017 and 2 June 2017 as the respective time-limits for the filing of a Memorial by Costa Rica and a Counter-Memorial by Nicaragua on the question of compensation due to Costa Rica.

14. The Memorial and Counter-Memorial on compensation were filed within the time-limits thus fixed.

15. By a letter dated 20 June 2017, Costa Rica stated that, in its Counter-Memorial, Nicaragua had introduced evidence, and raised a number of arguments, in particular in respect of Costa Rica's expert evidence, which Costa Rica "ha[d] not yet had [the] opportunity to address". In the same letter, Costa Rica, *inter alia*, contested the methodology used by Nicaragua for the assessment of environmental harm and requested the Court that it be given an opportunity to respond by way of a short reply.

16. By a letter dated 23 June 2017, Nicaragua objected to Costa Rica's request and asked the Court "to proceed and assess the relevant material damage and the amount of compensation based on the evidence that the Parties have provided in their Memorial and Counter-Memorial".

17. The Court, noting that the Parties held different views as to the methodology for the assessment of environmental harm, considered it necessary for them to address that issue in a brief second round of written pleadings.

18. By an Order dated 18 July 2017, the President of the Court accordingly authorized the submission of a Reply by Costa Rica and a Rejoinder by Nicaragua on the sole question of the methodology adopted in the expert reports presented by the Parties in the Memorial and Counter-Memorial, respectively, on the question of compensation. By the same Order, the President fixed 8 August 2017 and 29 August 2017 as the respective time-limits for the filing of a Reply by Costa Rica and a Rejoinder by Nicaragua.

19. The Reply and Rejoinder were filed within the time-limits thus fixed.

20. In the written proceedings relating to compensation, the following submissions were presented by the Parties:

On behalf of the Government of the Republic of Costa Rica,

in the Memorial:

"1. Costa Rica respectfully requests the Court to order Nicaragua to pay immediately to Costa Rica:

(a) US$6,708,776.96; and
(b) pre-judgment interest in a total amount of US$522,733.19 until 3 April 2017, which amount should be updated to reflect the date of the Court's Judgment on this claim for compensation.

2. In the event that Nicaragua does not make immediate payment, Costa Rica respectfully requests the Court to order Nicaragua to pay post-judgment interest at an annual rate of 6 per cent."

in the Reply:

"1. Costa Rica respectfully requests the Court to reject Nicaragua's submissions and to order Nicaragua to pay immediately to Costa Rica:

(a) US$6,711,685.26; and
(b) pre-judgment interest in a total amount of US$501,997.28 until 3 April 2017, which amount should be updated to reflect the date of the Court's Judgment on this claim for compensation.

2. In the event that Nicaragua does not make immediate payment, Costa Rica respectfully requests the Court to order Nicaragua to pay post-judgment interest at an annual rate of 6 per cent."

On behalf of the Government of the Republic of Nicaragua,

in the Counter-Memorial:

"For the reasons given herein, the Republic of Nicaragua requests the Court to adjudge and declare that the Republic of Costa Rica is not entitled to more than $188,504 for material damages caused by Nicaragua's wrongful acts."

in the Rejoinder:

"For the reasons given herein, the Republic of Nicaragua requests the Court to adjudge and declare that the Republic of Costa Rica is not entitled to more than $188,504 for material damages caused by the actions of Nicaragua in the Disputed Area that the Court adjudged unlawful."

* * *

I. Introductory Observations

21. In view of the lack of agreement between the Parties and of the request made by Costa Rica, it falls to the Court to determine the amount of compensation to be awarded to Costa Rica for material damage caused by Nicaragua's unlawful activities on Costa Rican territory, pursuant to

the findings of the Court set out in its Judgment of 16 December 2015. The Court begins by recalling certain facts on which it based that Judgment.

22. The issues before the Court have their origin in a territorial dispute between Costa Rica and Nicaragua over an area abutting the easternmost stretch of the Parties' mutual land boundary. This area, referred to by the Court as the "disputed territory", was defined by the Court as follows: "the northern part of Isla Portillos, that is to say, the area of wetland of some 3 square kilometres between the right bank of the [2010] disputed *caño*, the right bank of the San Juan River up to its mouth at the Caribbean Sea and the Harbor Head Lagoon" (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Provisional Measures, Order of 8 March 2011, I.C.J. Reports 2011 (I)*, p. 19, para. 55).

23. On 18 October 2010, Nicaragua started dredging the San Juan River in order to improve its navigability. It also carried out works in the northern part of Isla Portillos, excavating a channel (*"caño"*) on the disputed territory between the San Juan River and Harbor Head Lagoon (hereinafter referred to as the "2010 *caño*"). Nicaragua also sent some military units and other personnel to that area (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, p. 694, para. 63; p. 703, paras. 92-93).

24. By its 2011 Order, the Court indicated the following provisional measures:

> "(1) Each Party shall refrain from sending to, or maintaining in the disputed territory, including the *caño*, any personnel, whether civilian, police or security;
>
> (2) Notwithstanding point (1) above, Costa Rica may dispatch civilian personnel charged with the protection of the environment to the disputed territory, including the *caño*, but only in so far as it is necessary to avoid irreparable prejudice being caused to the part of the wetland where that territory is situated; Costa Rica shall consult with the Secretariat of the Ramsar Convention in regard to these actions, give Nicaragua prior notice of them and use its best endeavours to find common solutions with Nicaragua in this respect;
>
> (3) Each Party shall refrain from any action which might aggravate or extend the dispute before the Court or make it more difficult to resolve;
>
> (4) Each Party shall inform the Court as to its compliance with the above provisional measures." (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Provisional Measures, Order of 8 March 2011, I.C.J. Reports 2011 (I)*, pp. 27-28, para. 86.)

25. In its 2013 Order, the Court found that two new *caños* had been constructed by Nicaragua in the disputed territory (hereinafter referred to as the "2013 *caños*") (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Provisional Measures, Order of 22 November 2013, I.C.J. Reports 2013*, p. 364, para. 44). Both Costa Rica and Nicaragua acknowledged that the excavation of the 2013 *caños* took place after the 2011 Order on provisional measures had been adopted, that this activity was attributable to Nicaragua, and that a military encampment had been installed on the disputed territory as defined by the Court. Nicaragua also acknowledged that the excavation of the *caños* represented an infringement of its obligations under the 2011 Order (*ibid., Judgment, I.C.J. Reports 2015 (II)*, p. 713, para. 125).

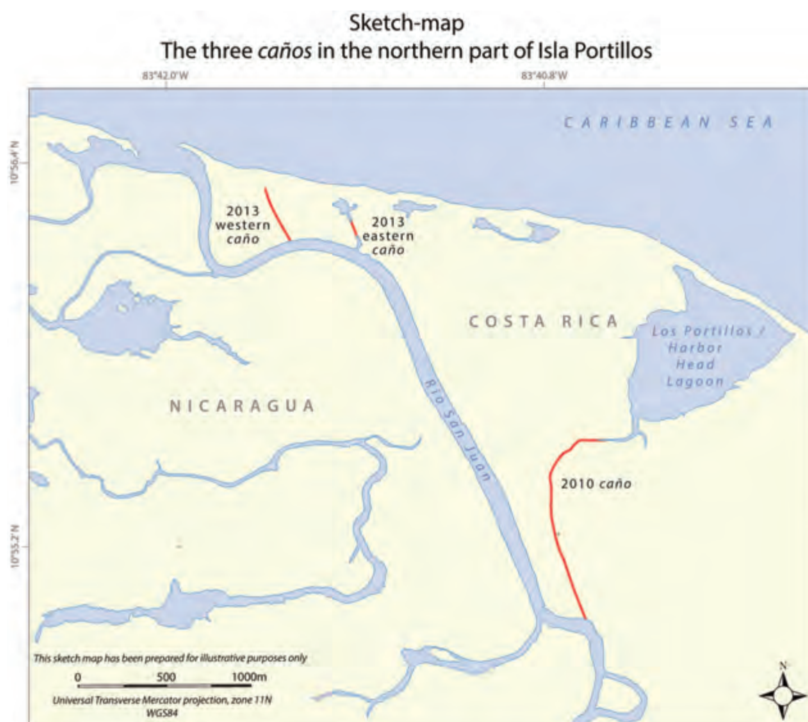
26. In its 2013 Order, the Court stated that

> "[f]ollowing consultation with the Secretariat of the Ramsar Convention [Convention on Wetlands of International Importance especially as Waterfowl Habitat, signed at Ramsar on 2 February 1971 (hereinafter the 'Ramsar Convention')] and after giving Nicaragua prior notice, Costa Rica may take appropriate measures related to the two new *caños*, to the extent necessary to prevent irreparable prejudice to the environment of the disputed territory" (*ibid., Provisional Measures, Order of 22 November 2013, I.C.J. Reports 2013*, p. 370, para. 59, subpara. (2) (E)).

After consultation with the Secretariat, Costa Rica constructed, during a short period in late March and early April 2015, a dyke across the eastern of the two 2013 *caños* (hereinafter referred to as the "2013 eastern *caño*").

27. In its Judgment of 16 December 2015, the Court found that sovereignty over the "disputed territory" belonged to Costa Rica and that consequently Nicaragua's activities, including the excavation of three *caños* and the establishment of a military presence in that territory, were in breach of Costa Rica's sovereignty. Nicaragua therefore incurred the obligation to make reparation for the damage caused by its unlawful activities (*I.C.J. Reports 2015 (II)*, p. 703, para. 93). The Court found that its declaration that Nicaragua had breached Costa Rica's territorial sovereignty provided adequate satisfaction for the non-material damage suffered. However, it held that Costa Rica was entitled to receive compensation for material damage caused by those breaches of obligations by Nicaragua that had been ascertained by the Court (*ibid.*, pp. 717-718, paras. 139 and 142). The present Judgment determines the amount of compensation due to Costa Rica.

28. The sketch-map below shows the approximate locations of the three *caños* in the northern part of Isla Portillos as excavated in 2010 and 2013.



Sketch-map
The three *caños* in the northern part of Isla Portillos

II. Legal Principles Applicable to the Compensation Due to Costa Rica

29. Before turning to the consideration of the issue of compensation due in the present case, the Court will recall some of the principles relevant to its determination. It is a well-established principle of international law that "the breach of an engagement involves an obligation to make reparation in an adequate form" (*Factory at Chorzów, Jurisdiction, Judgment No. 8, 1927, P.C.I.J., Series A, No. 9*, p. 21). The Permanent Court elaborated on this point as follows:

> "The essential principle contained in the actual notion of an illegal act — a principle which seems to be established by international practice and in particular by the decisions of arbitral tribunals — is that reparation must, as far as possible, wipe out all the consequences of the illegal act and reestablish the situation which would, in all probability, have existed if that act had not been committed." (*Factory at Chorzów, Merits, Judgment No. 13, 1928, P.C.I.J., Series A, No. 17*, p. 47; see also *Avena and Other Mexican Nationals (Mexico* v. *United States of America), Judgment, I.C.J. Reports 2004 (I)*, p. 59, para. 119.)

30. The obligation to make full reparation for the damage caused by a wrongful act has been recognized by the Court in other cases (see for example, *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Merits, Judgment, I.C.J. Reports 2010 (II)*, p. 691, para. 161; *Avena and Other Mexican Nationals (Mexico* v. *United States of America), Judgment, I.C.J. Reports 2004 (I)*, p. 59, para. 119; *Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, I.C.J. Reports 1997*, p. 80, para. 150).

31. The Court has held that compensation may be an appropriate form of reparation, particularly in those cases where restitution is materially impossible or unduly burdensome (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, pp. 103-104, para. 273). Compensation should not, however, have a punitive or exemplary character.

32. In the present case, the Court has been asked to determine compensation for the damage caused by Nicaragua's unlawful activities, in accordance with its Judgment of 16 December 2015 (see paragraph 27 above). In order to award compensation, the Court will ascertain whether, and to what extent, each of the various heads of damage claimed by the Applicant can be established and whether they are the consequence of wrongful conduct by the Respondent, by determining "whether there is a sufficiently direct and certain causal nexus between the wrongful act . . . and the injury suffered by the Applicant". Finally, the Court will determine the amount of compensation due (*Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 332, para. 14).

33. The Court recalls that, "as a general rule, it is for the party which alleges a particular fact in support of its claims to prove the existence of that fact". Nevertheless, the Court has recognized that this general rule may be applied flexibly in certain circumstances, where, for example, the respondent may be in a better position to establish certain facts (*ibid.*, p. 332, para. 15, referring to the Judgment on the merits of 30 November 2010, *I.C.J. Reports 2010 (II)*, pp. 660-661, paras. 54-56).

34. In cases of alleged environmental damage, particular issues may arise with respect to the existence of damage and causation. The damage may be due to several concurrent causes, or the state of science regarding the causal link between the wrongful act and the damage may be uncertain. These are difficulties that must be addressed as and when they arise in light of the facts of the case at hand and the evidence presented to the Court. Ultimately, it is for the Court to decide whether there is a sufficient causal nexus between the wrongful act and the injury suffered.

35. In respect of the valuation of damage, the Court recalls that the absence of adequate evidence as to the extent of material damage will not, in all situations, preclude an award of compensation for that damage. For example, in the *Ahmadou Sadio Diallo* case, the Court determined the

amount of compensation due on the basis of equitable considerations (see *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 337, para. 33). A similar approach was adopted by the Tribunal in the *Trail Smelter* case, which, quoting the Supreme Court of the United States of America in *Story Parchment Company* v. *Paterson Parchment Paper Company* (*United States Reports*, 1931, Vol. 282, p. 555), stated:

> "Where the tort itself is of such a nature as to preclude the ascertainment of the amount of damages with certainty, it would be a perversion of fundamental principles of justice to deny all relief to the injured person, and thereby relieve the wrongdoer from making any amend for his acts. In such case, while the damages may not be determined by mere speculation or guess, it will be enough if the evidence show the extent of the damages as a matter of just and reasonable inference, although the result be only approximate." (*Trail Smelter case (United States, Canada), 16 April 1938 and 11 March 1941*, United Nations, *Reports of International Arbitral Awards (RIAA)*, Vol. III, p. 1920.)

* *

36. In the present case, Costa Rica claims compensation for two categories of damage. First, Costa Rica claims compensation for quantifiable environmental damage caused by Nicaragua's excavation of the 2010 *caño* and the 2013 eastern *caño*. It makes no claim in respect of the 2013 western *caño*. Secondly, Costa Rica claims compensation for costs and expenses incurred as the result of Nicaragua's unlawful activities, including expenses incurred to monitor or remedy the environmental damage caused.

37. Nicaragua argues that Costa Rica is entitled to compensation for "material damages", the scope of which is limited to "damage to property or other interests of the State . . . which is assessable in financial terms". Nicaragua contends that the 2015 Judgment of the Court in this case further limits the scope *ratione materiae* and *ratione loci* of compensation to losses or expenses caused by the activities that the Court determined were unlawful.

38. The Court will address the Parties' submissions related to environmental damage in Section III. The Parties' submissions on costs and expenses incurred as a result of Nicaragua's activities are addressed in Section IV. The issue of interest is dealt with in Section V. The total sum awarded is stated in Section VI.

III. Compensation for Environmental Damage

1. The Compensability of Environmental Damage

39. Costa Rica argues that it is "settled" that environmental damage is compensable under international law. It notes that other international adjudicative bodies have awarded compensation for environmental damage, including for harm to environmental resources that have no commercial value. Costa Rica contends that its position is supported by the practice of the United Nations Compensation Commission ("UNCC"), which awarded compensation to several States for environmental damage caused by Iraq's illegal invasion and occupation of Kuwait in 1990 and 1991.

40. Nicaragua does not contest Costa Rica's contention that damage to the environment is compensable. In this connection, Nicaragua also refers to the approach adopted by the UNCC panels with respect to environmental claims arising from the first Gulf War. However, Nicaragua contends that, following that approach, Costa Rica is entitled to compensation for "restoration costs" and "replacement costs". According to Nicaragua, "restoration costs" comprise the costs that Costa Rica reasonably incurred in the construction of a dyke across the 2013 eastern *caño* while remediating the impact of Nicaragua's works. Nicaragua also recognizes that Costa Rica is entitled to "replacement costs" for the environmental goods and services that either have been or may be lost prior to the recovery of the impacted area.

* *

41. The Court has not previously adjudicated a claim for compensation for environmental damage. However, it is consistent with the principles of international law governing the consequences of internationally wrongful acts, including the principle of full reparation, to hold that compensation is due for damage caused to the environment, in and of itself, in addition to expenses incurred by an injured State as a consequence of such damage. The Parties also agree on this point.

42. The Court is therefore of the view that damage to the environment, and the consequent impairment or loss of the ability of the environment to provide goods and services, is compensable under international law. Such compensation may include indemnification for the impairment or loss of environmental goods and services in the period prior to recovery and payment for the restoration of the damaged environment.

43. Payment for restoration accounts for the fact that natural recovery may not always suffice to return an environment to the state in which it

was before the damage occurred. In such instances, active restoration measures may be required in order to return the environment to its prior condition, in so far as that is possible.

2. Methodology for the Valuation of Environmental Damage

44. Costa Rica accepts that there is no single method for the valuation of environmental damage and acknowledges that a variety of techniques have been used in practice at both the international and national level. It concludes that the appropriate method of valuation will depend, *inter alia*, on the nature, complexity, and homogeneity of the environmental damage sustained.

45. In the present case, the methodology that Costa Rica considers most appropriate, which it terms the "ecosystem services approach" (or "environmental services framework"), follows the recommendations of an expert report commissioned from Fundación Neotrópica, a Costa Rican non-governmental organization. Costa Rica claims that the valuation of environmental damage pursuant to an ecosystem services approach is well recognized internationally, up-to-date, and is also appropriate for the wetland protected under the Ramsar Convention that Nicaragua has harmed.

46. In Costa Rica's view, the ecosystem services approach finds support in international and domestic practice. First, Costa Rica notes that the "Guidelines for the Development of Domestic Legislation on Liability, Response Action and Compensation for Damage Caused by Activities Dangerous to the Environment" of the United Nations Environment Programme ("UNEP"), which were adopted by its Governing Council in 2010, recognize that environmental damage may be calculated on the basis of factors such as the "reduction or loss of the ability of the environment to provide goods and services". Secondly, Costa Rica highlights that Decision XII/14 of the Conference of the Parties to the Convention on Biological Diversity invites parties to take into account, as appropriate, the above-mentioned UNEP Guidelines. Furthermore, Decision XII/14 invites parties to take into account a "synthesis report" on technical information, which states that "[l]iability and redress rules might also address . . . the loss of [the ecosystem's] ability to provide actual or potential goods and services". Thirdly, Costa Rica notes that the ecosystem services methodology is employed by several States in the context of their domestic legislation on environmental damage. Finally, Costa Rica argues that the Report of the Ramsar Advisory Mission No. 69, which assessed environmental damage resulting from the excavation of the 2010 *caño*, adopted the ecosystem services approach.

47. Costa Rica explains that, according to the ecosystem services approach, the value of an environment is comprised of goods and services

that may or may not be traded on the market. Goods and services that are traded on the market (such as timber) have a "direct use value" whereas those that are not (such as flood prevention or gas regulation) have an "indirect use value". In Costa Rica's view, the valuation of environmental damage must take into account both the direct and indirect use values of environmental goods and services in order to provide an accurate reflection of the value of the environment. In order to ascribe a monetary value to the environmental goods and services that Nicaragua purportedly damaged, Costa Rica uses a value transfer approach for most of the goods and services affected. Under the value transfer approach, the damage caused is assigned a monetary value by reference to a value drawn from studies of ecosystems considered to have similar conditions to the ecosystem concerned. However, Costa Rica uses a direct valuation approach where the data for such valuation is available.

48. Costa Rica claims that the methodology adopted by Nicaragua is the same as that used by the UNCC in relation to environmental claims, which dealt with a subject-matter that was radically different to that of the present case. Costa Rica argues that valuation practices have evolved since the UNCC concluded claims processing in 2005, and that more recent methodologies, such as the ecosystem services approach, "recognize the full and potentially long lasting extent of harm to the environment".

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49. For its part, Nicaragua considers that Costa Rica is entitled to compensation "to replace the environmental services that either have been or may be lost prior to recovery of the impacted area", which it terms the "ecosystem service replacement cost" or "replacement costs". According to Nicaragua, the proper method for calculating this value is by reference to the price that would have to be paid to preserve an equivalent area until the services provided by the impacted area have recovered.

50. Nicaragua considers its methodology to be the standard approach to natural resource damage assessment. In particular, it notes that this was one of the methodologies followed by the UNCC when assessing claims for environmental damage. Nicaragua argues that there is no merit to Costa Rica's claim that this methodology has been displaced by more recent methods of valuation of environmental damage.

51. Nicaragua contends that the methodology that Costa Rica adopts is a "benefits transfer" approach, which seeks to value the damaged environmental services by reference to values assigned to such services in other places and in other contexts. In Nicaragua's view, such an approach is unreliable and has not been used widely in practice. Furthermore,

Nicaragua argues that the UNCC declined to accept the "benefits transfer" approach, even though it was asked to do so.

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52. The Court notes that the valuation methods proposed by the Parties are sometimes used for environmental damage valuation in the practice of national and international bodies, and are not therefore devoid of relevance to the task at hand. However, they are not the only methods used by such bodies for that purpose, nor is their use limited to valuation of damage since they may also be used to carry out cost/benefit analysis of environmental projects and programmes for the purpose of public policy setting (see for example UNEP, "Guidance Manual on Valuation and Accounting of Ecosystem Services for Small Island Developing States" (2014), p. 4). The Court will not therefore choose between them or use either of them exclusively for the purpose of valuation of the damage caused to the protected wetland in Costa Rica. Wherever certain elements of either method offer a reasonable basis for valuation, the Court will nonetheless take them into account. This approach is dictated by two factors: first, international law does not prescribe any specific method of valuation for the purposes of compensation for environmental damage; secondly, it is necessary, in the view of the Court, to take into account the specific circumstances and characteristics of each case.

53. In its analysis, the Court will be guided by the principles and rules set out in paragraphs 29 to 35 above. In determining the compensation due for environmental damage, the Court will assess, as outlined in paragraph 42, the value to be assigned to the restoration of the damaged environment as well as to the impairment or loss of environmental goods and services prior to recovery.

3. Determination of the Extent of the Damage Caused to the Environment and of the Amount of Compensation Due

54. The Court notes that, for both Costa Rica and Nicaragua, the size of the area affected by the unlawful activities of Nicaragua was 6.19 hectares.

55. Although Costa Rica identifies 22 categories of goods and services that could have been impaired or lost as a result of Nicaragua's wrongful actions, it claims compensation in respect of only six of them: standing timber; other raw materials (fibre and energy); gas regulation and air quality; natural hazards mitigation; soil formation and erosion control; and biodiversity, in terms of habitat and nursery.

56. Costa Rica claims that it is appropriate to calculate the total loss sustained as the result of Nicaragua's actions over a period of 50 years, which it considers to be a conservative estimate of the time required for the affected area to recover. Consequently, it provides a net present value for the total loss on the basis of a recovery period of 50 years with a discount rate of 4 per cent. According to Fundación Neotrópica, the discount rate is representative of the rate at which the ecosystem will recover. In its view, as the ecosystem goods and services recover, the yearly value of the environmental damage caused will gradually decrease.

57. Based on the above approach, Costa Rica claims, as compensation for the impairment or loss of environmental goods and services as a result of Nicaragua's activities, payment of US$2,148,820.82 in respect of the 2010 *caño* and US$674,290.92 in respect of the 2013 eastern *caño*. Costa Rica also claims US$57,634.08 for restoration costs, comprising US$54,925.69 for the cost of replacement soil in the 2010 *caño* and the 2013 eastern *caño* and US$2,708.39 for the restoration of the wetland. Costa Rica claims a total amount of compensation of US$2,880,745.82 for the environmental damage sustained as the result of Nicaragua's actions.

58. For its part, Nicaragua asserts, on the basis of its own method (see paragraph 49 above), that Costa Rica is entitled to replacement costs of US$309 per hectare per year, the figure which Costa Rica pays landowners and communities as an incentive to protect habitat under its domestic environmental conservation scheme (adjusted to 2017 prices). Over a reasonable period for full recovery, which it estimates to be 20 to 30 years, and taking into account a 4 per cent discount rate, Nicaragua concludes that the present value of the replacement costs amounts to between US$27,034 and US$34,987.

59. Nicaragua argues that even if, *quod non*, the ecosystem services approach proposed by Costa Rica was an appropriate method for quantifying environmental damage, Costa Rica implemented it incorrectly in ways that create a dramatic overvaluation of the impairment or loss of environmental goods and services as a result of the damage caused. In particular, Nicaragua claims that: Costa Rica wrongly assumes the presence of environmental services that were not provided by the area impacted by Nicaragua's activities; Costa Rica incorrectly values the gas regulation and air quality services provided by the area; and Costa Rica erroneously assumes that all goods and services will be impacted for 50 years.

60. Costa Rica claims, following the six categories of environmental goods and services that it contends have been lost, under a first head of

damage, compensation for trees that were felled in the construction of the 2010 *caño* and the 2013 eastern *caño*. The valuation it provides is based on the average price of standing timber for the species that were present in the 2010 *caño* (US$64.65 per cubic metre) and the 2013 eastern *caño* (US$40.05 per cubic metre), using figures taken from the Costa Rican National Forestry Office. Using these figures, Costa Rica values the eliminated stock and the growth potential of that stock over 50 years, assuming a volume of standing timber of 211 cubic metres per hectare, a harvest rate of 50 per cent per year, and a growth rate of 6 cubic metres per hectare per year. Fundación Neotrópica, whose figures Costa Rica adopts, explains that it does not assume, by referring to a harvest rate of 50 per cent per year, that it is possible to remove half of the annual growth of the trees each year. It maintains that it does this because the asset degradation caused by Nicaragua's unlawful activities will be reflected in Costa Rica's physical, natural, and economic accounts every year as a decrease in the monetary value of the country's natural assets until it has fully recovered.

61. Nicaragua contests Costa Rica's valuation of the trees felled in the excavation of the 2010 *caño* and the 2013 eastern *caño*. First, it claims that the only material damage caused by Nicaragua's activities was the felling of trees in the vicinity of the 2010 *caño*. It argues that the 2013 eastern *caño* has quickly revegetated and is now virtually indistinguishable from the surrounding areas. Secondly, Nicaragua contends that Costa Rica is mistaken in its calculation of the value of the felled trees over a period of 50 years, because trees can only be harvested once. Thirdly, Nicaragua claims that Costa Rica's figures do not demonstrate that it has accounted for the cost that would be required to harvest the timber and transport it to market, thus contravening accepted valuation methodology.

62. Costa Rica claims compensation, under a second head of damage, for "other raw materials" (namely, fibre and energy) that Nicaragua allegedly removed from the affected area in the course of its excavation works. The figures that Costa Rica adopts are based on studies that quantify the value of raw materials in other ecosystems (namely, in Mexico and the Philippines), from which a unit price is constructed (US$175.76 per hectare for the first year after the loss was caused, adjusted to 2016 prices). It uses this unit price to estimate the loss of raw materials in an area of 5.76 hectares (the area cleared during excavation of the 2010 *caño*) and 0.43 hectares (the area damaged in the construction of the 2013 eastern *caño*).

63. With regard to "other raw materials" (namely, fibre and energy), Nicaragua argues that, due to its rapid recovery, the area impacted by its activities has regained the ability to provide those goods and services.

In the alternative, Nicaragua contends that, even if Fundación Neotrópica had accurately assigned a unit value to other raw materials, it vastly inflated the valuation by assuming that the losses will extend for 50 years.

64. Thirdly, Costa Rica claims compensation for the impaired ability of the affected area to provide gas regulation and air quality services, such as carbon sequestration, which was allegedly caused by Nicaragua's unlawful activities. Costa Rica's estimate for the loss of this service is based on an academic study that values carbon stocks and flows in Costa Rican wetlands. Drawing on this study, Costa Rica estimates the loss of gas regulation and air quality services to amount to US$14,982.06 per hectare (for the first year after the loss was caused, adjusted to 2016 prices). Costa Rica argues that the fact that some of the gas regulation and air quality services impaired or lost may also have benefitted the citizens of other countries is irrelevant to Nicaragua's liability to provide compensation for the unlawful harm caused to Costa Rica on its own territory.

65. Nicaragua contests Costa Rica's valuation of the gas regulation and air quality services in several respects. First, Nicaragua argues that the benefits from gas regulation and air quality services are distributed across the entire world, and thus that Costa Rica is entitled only to a small share of the value of this service. Secondly, it criticizes the study upon which Costa Rica's figures are based, arguing that Costa Rica does not demonstrate why that study is relevant to the affected area and does not explain why it ignores studies that assign lower values to the services. Thirdly, Nicaragua notes that the figure used by Costa Rica is a stock value, which reflects the total value of all carbon sequestered in the vegetation, soil, leaf litter, and organic debris in one hectare. In Nicaragua's view, this carbon stock can only be released once into the atmosphere. Nicaragua argues that it is therefore incorrect for Costa Rica to calculate its loss on the basis of the value of carbon stock each year for 50 years.

66. Under the fourth head of damage, Costa Rica contends that freshwater wetlands, such as the affected area, are valuable assets to mitigate natural hazards, such as coastal flooding, saline intrusion and coastal erosion. In Costa Rica's view, the ability of the affected area to provide such services has been impaired by Nicaragua's actions. It argues that this conclusion is supported by the Report of the Ramsar Advisory Mission No. 69, which explains that changes in the pattern of freshwater flow in wetlands can impact both the salinity of the water and flood control capacity of the area. Costa Rica values this service at US$2,949.74 per hectare (for the first year after the loss was caused, adjusted to 2016 prices), based on the selection of a "low value" from a range of studies from Belize, Thailand and Mexico.

67. In Nicaragua's view, Costa Rica identifies no natural hazards that the affected area mitigated nor does it explain how Nicaragua's works impacted any natural hazard mitigation services provided. Furthermore, Nicaragua argues that Costa Rica's valuation is based entirely on a value transferred from a study that is irrelevant to the present case (namely, a study on the hazard mitigation services provided by coastal mangroves in Thailand).

68. Under the fifth head of damage, Costa Rica claims that the sediment that has refilled the 2010 *caño* and the 2013 eastern *caño* is both of a poorer quality and is more susceptible to erosion. It thus claims for the cost of replacement soil, which it values at US$5.78 per cubic metre.

69. Nicaragua argues that the 2010 *caño* and the 2013 eastern *caño* have refilled rapidly with sediment and are now covered with vegetation. In Nicaragua's view, Costa Rica has not presented any evidence that the new soil is of a poorer quality nor has it demonstrated that the soil is more vulnerable to erosion as a result of Nicaragua's actions. Moreover, it notes that Costa Rica has not presented any indication of its intention to carry out further restoration work on the two *caños*.

70. Finally, Costa Rica claims compensation for the loss of biodiversity services in the affected area, both in terms of habitat and nursery services. Costa Rica's valuation of biodiversity services is based on studies that quantify the value of biodiversity in other ecosystems (namely, in Mexico, Thailand and the Philippines), from which it constructs a unit price (US$855.13 per hectare for the first year after the loss was caused, adjusted to 2016 prices).

71. Nicaragua argues that, due to its rapid recovery, the affected area has regained the ability to provide biodiversity services. In the alternative, Nicaragua contends that, even if Fundación Neotrópica had accurately assigned a unit value to such services, it vastly inflated the valuation by assuming that the losses will extend for 50 years.

* *

72. Before assigning a monetary value to the damage to the environmental goods and services caused by Nicaragua's wrongful activities, the Court will determine the existence and extent of such damage, and whether there exists a direct and certain causal link between such damage and Nicaragua's activities. It will then establish the compensation due.

73. In this context, the Court notes that the Parties disagree on two issues: first, whether certain environmental goods and services have been impaired or lost, namely natural hazards mitigation and soil formation/erosion control; and secondly, the valuation of the environmental goods and services, which they consider have been impaired or lost, taking into account the length of the period necessary for their recovery.

74. In relation to the first of these issues, the Court is of the view that Costa Rica has not demonstrated that the affected area, due to a change in its ecological character, has lost its ability to mitigate natural hazards or that such services have been impaired. As regards soil formation and erosion control, Nicaragua does not dispute that it removed approximately 9,500 cubic metres of soil from the sites of the 2010 *caño* and the 2013 eastern *caño*. However, the evidence before the Court establishes that both *caños* have subsequently refilled with soil and there has been substantial revegetation. Accordingly, Costa Rica's claim for the cost of replacing all of the soil removed by Nicaragua cannot be accepted. There is some evidence that the soil which was removed by Nicaragua was of a higher quality than that which has now refilled the two *caños* but Costa Rica has not established that this difference has affected erosion control and the evidence before the Court regarding the quality of the two types of soil is not sufficient to enable the Court to determine any loss which Costa Rica might have suffered.

75. Concerning the four other categories of environmental goods and services for which Costa Rica claims compensation (namely, trees, other raw materials, gas regulation and air quality services, and biodiversity), the evidence before the Court indicates that, in excavating the 2010 *caño* and the 2013 eastern *caño*, Nicaragua removed close to 300 trees and cleared 6.19 hectares of vegetation. These activities have significantly affected the ability of the two impacted sites to provide the above-mentioned environmental goods and services. It is therefore the view of the Court that impairment or loss of these four categories of environmental goods and services has occurred and is a direct consequence of Nicaragua's activities.

76. With regard to the second issue, relating to the valuation of the damage caused to environmental goods and services, the Court cannot accept the valuations proposed by the Parties. In respect of the valuation proposed by Costa Rica, the Court has doubts regarding the reliability of certain aspects of its methodology, particularly in light of the criticism raised by Nicaragua and its experts in the written pleadings. Costa Rica assumes, for instance, that a 50-year period represents the time necessary for recovery of the ecosystem to the state prior to the damage caused. However, in the first instance, there is no clear evidence before the Court of the baseline condition of the totality of the environmental goods and services that existed in the area concerned prior to Nicaragua's activities. Secondly, the Court observes that different components of the ecosystem

require different periods of recovery and that it would be incorrect to assign a single recovery time to the various categories of goods and services identified by Costa Rica.

77. In the view of the Court, Nicaragua's valuation of US$309 per hectare per year must also be rejected. This valuation is based on the amount of money that Costa Rica pays landowners and communities as an incentive to protect habitat under its domestic environmental conservation scheme. Compensation for environmental damage in an internationally protected wetland, however, cannot be based on the general incentives paid to particular individuals or groups to manage a habitat. The prices paid under a scheme such as that employed by Costa Rica are designed to offset the opportunity cost of preserving the environment for those individuals and groups, and are not necessarily appropriate to reflect the value of the goods and services provided by the ecosystem. Accordingly, the Court is of the view that Nicaragua's proposed valuation does not provide an adequate reflection of the value of the environmental goods and services impaired or lost in the affected area.

78. The Court considers, for the reasons specified below, that it is appropriate to approach the valuation of environmental damage from the perspective of the ecosystem as a whole, by adopting an overall assessment of the impairment or loss of environmental goods and services prior to recovery, rather than attributing values to specific categories of environmental goods and services and estimating recovery periods for each of them.

79. First, the Court observes, in relation to the environmental goods and services that have been impaired or lost, that the most significant damage to the area, from which other harms to the environment arise, is the removal of trees by Nicaragua during the excavation of the *caños*. An overall valuation can account for the correlation between the removal of the trees and the harm caused to other environmental goods and services (such as other raw materials, gas regulation and air quality services, and biodiversity in terms of habitat and nursery).

80. Secondly, an overall valuation approach is dictated by the specific characteristics of the area affected by the activities of Nicaragua, which is situated in the Northeast Caribbean Wetland, a wetland protected under the Ramsar Convention, where there are various environmental goods and services that are closely interlinked. Wetlands are among the most diverse and productive ecosystems in the world. The interaction of the physical, biological and chemical components of a wetland enable it to perform many vital functions, including supporting rich biological diversity, regulating water régimes, and acting as a sink for sediments and pollutants.

81. Thirdly, such an overall valuation will allow the Court to take into account the capacity of the damaged area for natural regeneration. As stated by the Secretariat of the Ramsar Convention, the area in the vicinity of the 2010 *caño* demonstrates a "high capability for natural regeneration of the vegetation . . . provided the physical conditions of the area are maintained".

82. These considerations also lead the Court to conclude, with regard to the length of the period of recovery, that a single recovery period cannot be established for all of the affected environmental goods and services. Despite the close relationship between these goods and services, the period of time for their return to the pre-damage condition necessarily varies.

83. In its overall valuation, the Court will take into account the four categories of environmental goods and services the impairment or loss of which has been established (see paragraph 75).

84. The Court recalls that, in addition to the two valuations considered above, respectively submitted by Costa Rica and Nicaragua, Nicaragua also provides an alternative valuation of damage, calculated on the basis of the four categories of environmental goods and services. This valuation adopts Costa Rica's ecosystems services approach but makes significant adjustments to it. Nicaragua refers to this valuation as a "corrected analysis" and assigns a total monetary value of US$84,296 to the damage caused to the four categories of environmental goods and services.

85. The Court considers that Nicaragua's "corrected analysis" underestimates the value to be assigned to certain categories of goods and services prior to recovery. First, for other raw materials (fibre and energy), the "corrected analysis" assigns a value that is based on the assumption that there will be no loss in those goods and services after the first year. Such an assumption is not supported by any evidence before the Court. Secondly, with respect to biodiversity services (in terms of nursery and habitat), the "corrected analysis" does not sufficiently account for the particular importance of such services in an internationally protected wetland where the biodiversity was described to be of high value by the Secretariat of the Ramsar Convention. Whatever regrowth may occur naturally is unlikely to match in the near future the pre-existing richness of biodiversity in the area. Thirdly, in relation to gas regulation and air quality services, Nicaragua's "corrected analysis" does not account for the loss of future annual carbon sequestration ("carbon flows"), since it characterizes the loss of those services as a one-time loss. The Court does not consider that the impairment or loss of gas regulation and air quality services can be valued as a one-time loss.

86. The Court recalls, as outlined in paragraph 35 above, that the absence of certainty as to the extent of damage does not necessarily pre-

clude it from awarding an amount that it considers approximately to reflect the value of the impairment or loss of environmental goods and services. In this case, the Court, while retaining some of the elements of the "corrected analysis", considers it reasonable that, for the purposes of its overall valuation, an adjustment be made to the total amount in the "corrected analysis" to account for the shortcomings identified in the preceding paragraph. The Court therefore awards to Costa Rica the sum of US$120,000 for the impairment or loss of the environmental goods and services of the impacted area in the period prior to recovery.

87. In relation to restoration, the Court rejects Costa Rica's claim of US$54,925.69 for replacement soil for the reasons given in paragraph 74. The Court, however, considers that the payment of compensation for restoration measures in respect of the wetland is justified in view of the damage caused by Nicaragua's activities. Costa Rica claims compensation in the sum of US$2,708.39 for this purpose. The Court upholds this claim.

IV. Compensation Claimed by Costa Rica for Costs and Expenses

88. In addition to its claims of compensation for environmental damage, Costa Rica requested that the Court award it compensation for costs and expenses incurred as a result of Nicaragua's unlawful activities.

89. On the basis of the principles described above (see paragraphs 29 to 35), the Court must determine whether the costs and expenses allegedly incurred by Costa Rica are supported by the evidence, and whether Costa Rica has established a sufficiently direct and certain causal nexus between the internationally wrongful conduct of Nicaragua identified by the Court in its 2015 Judgment and the heads of expenses for which Costa Rica seeks compensation.

1. Costs and Expenses Incurred in relation to Nicaragua's Unlawful Activities in the Northern Part of Isla Portillos between October 2010 and April 2011

90. Costa Rica alleges that between October 2010 (when it became aware of Nicaragua's military presence on its territory) and April 2011 (when Nicaragua's military withdrew from Costa Rica's territory following the Court's 2011 Order on provisional measures), it has incurred a range of expenses in relation to Nicaragua's presence and unlawful activities, in the total amount of US$80,926.45. Costa Rica provides the following breakdown of these expenses: *(a)* cost of fuel and maintenance services for police aircraft used to reach and to overfly the "disputed ter-

ritory" (US$37,585.60); *(b)* salaries of Air Surveillance Service personnel required to attend access flights and overflights of the "disputed territory" (US$1,044.66); *(c)* purchase of satellite images to verify Nicaragua's presence and unlawful activities in the "disputed territory" (US$17,600); *(d)* cost of obtaining a report from the United Nations Institute for Training and Research/United Nations Operational Satellite Applications Programme (UNITAR/UNOSAT) to verify Nicaragua's unlawful activities in the "disputed territory" (US$15,804); *(e)* salaries of National Coast Guard Service personnel required to provide water transportation to the area near the "disputed territory" (US$6,780.60); *(f)* salaries of Tortuguero Conservation Area (ACTo) personnel required to attend missions in or near the "disputed territory" (US$1,309.90); *(g)* food and water supplies for ACTo personnel required to attend environmental monitoring missions in or near the "disputed territory" (US$446.12); *(h)* fuel for fluvial transportation for ACTo personnel required to attend missions in or near the "disputed territory" (US$92); and *(i)* fuel for land transportation for ACTo personnel required to attend missions in or near the "disputed territory" (US$263.57).

91. Nicaragua asserts that Costa Rica's claims for expenses allegedly incurred in connection with its police deployment are not compensable. Indeed, in its view, Costa Rican security forces were not employed to prevent or remedy any of the material damage caused by Nicaragua between October 2010 and January 2011. Nicaragua is also of the opinion that the flights allegedly carried out by Costa Rica were not related to its monitoring activities in the "disputed territory", nor were they substantiated by documentation. Nicaragua further argues that the salaries of Air Surveillance Service personnel, National Coast Guard Service personnel and ACTo personnel are not compensable as these staff were already employed as government officials. Finally, Nicaragua argues that the claims for satellite imagery and reports are "non-compensable litigation expenses" since they were largely commissioned by Costa Rica in connection with the presentation of its case on the merits. Moreover, Nicaragua asserts that they cover not only the "disputed territory" but also other areas.

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92. The Court now turns to its assessment of the compensation due for costs and expenses incurred by Costa Rica as a consequence of Nicaragua's presence and unlawful activities in the northern part of Isla Portillos between October 2010 and April 2011. Upon examination of all the relevant evidence and documents, the Court considers that Costa Rica has, with reference to two heads of expenses relating to the cost of fuel and maintenance services and the cost of obtaining a UNITAR/UNOSAT report, provided adequate evidence demonstrating that some of these costs have a sufficiently direct and certain causal nexus with the internationally wrongful conduct of Nicaragua identified by the Court in its 2015 Judgment.

93. With regard to the first head of expenses relating to fuel and maintenance services for police aircraft used to reach and overfly the northern part of Isla Portillos, the Court finds part of these expenses compensable. It appears from the evidence submitted to the Court that the Costa Rican Air Surveillance Service carried out several overflights of the relevant area in the period in question. The Court is satisfied that some of these flights were undertaken in order to ensure effective inspection of the northern part of Isla Portillos, and thus considers that these ancillary costs are directly connected to the monitoring of that area that was made necessary as a result of Nicaragua's wrongful conduct.

94. Turning to the quantification of the amount of compensation with respect to that first head of expenses, the Court notes that Costa Rica claims US$37,585.60 "for fuel and maintenance services for the police aircraft used" to reach and to overfly the "disputed territory" on 20, 22, 27 and 31 October 2010 and on 1 and 26 November 2010.

95. Costa Rica has presented evidence in the form of relevant flight logs, and an official communication dated 2 March 2016 (from the Administrative Office of the Air Surveillance Service of the Department of Air Operations of the Ministry of Public Security) with regard to the cost of overflights performed by the Air Surveillance Service on, *inter alia*, 20, 22, 27 and 31 October 2010 (US$31,740.60), as well as on 1 and 26 November 2010 (US$5,845), totalling US$37,585.60. The Court notes that Costa Rica calculated these expenses on the basis of the operating costs for the hourly use of each aircraft deployed; these operating costs included expenses for "fuel", "overhaul", "insurance" and "miscellaneous". With regard to the "insurance" costs, the Court considers that Costa Rica has failed to demonstrate that it incurred any additional expense as a result of the specific missions of the police aircraft over the northern part of Isla Portillos. This insurance expense is thus not compensable. As to the "miscellaneous" costs, Costa Rica has failed to specify the nature of this expense. Thus, the evidence before the Court is not sufficient to show that this expense relates to the operating costs of the aircraft used. Moreover, the Court observes that Costa Rica itself has specified in its Memorial on compensation that it claimed expenses only

for fuel and maintenance services. The Court therefore considers that these miscellaneous expenses are not compensable.

96. The Court also excludes the cost of flights to transport cargo or members of the press, the cost of flights with a destination other than the northern part of Isla Portillos, as well as the cost of flights for which, in the relevant flight logs, no indication of the persons on board has been given. Costa Rica has failed to demonstrate why these missions were necessary to respond to Nicaragua's unlawful activities and has therefore not established the requisite causal nexus between Nicaragua's unlawful activities and the expenses relating to these flights. In addition, the Court has corrected a mistake in Costa Rica's calculations for October 2010 in the list attached to the above-mentioned communication of 2 March 2016 concerning the duration of a flight on 22 October 2010. The compensation claim was calculated by Costa Rica on the basis of the duration of the flight indicated as 11.6 hours (aircraft registration number MSP018, Soloy), while the flight log indicates an actual duration of 4.6 hours.

97. The Court considers it necessary to recalculate the compensable expenses based on the information provided in the above official communication of 2 March 2016 and in the flight logs, by reference to the number and duration of the flights actually conducted in October and November 2010 in connection with the inspection of the northern part of Isla Portillos, and only taking into account the costs of "fuel" and "overhaul". The Court therefore finds that, under this head of expenses, Costa Rica is entitled to compensation in the amount of US$4,177.30 for October 2010, and US$1,665.90 for November 2010, totalling US$5,843.20.

98. The second head of expenses that the Court finds compensable relates to Costa Rica's claim for the cost of obtaining a report from UNITAR/UNOSAT dated 4 January 2011. The evidence shows that Costa Rica incurred this expense in order to detect and assess the environmental impact of Nicaragua's presence and unlawful activities in Costa Rican territory. The Court has reviewed this UNITAR/UNOSAT report (entitled "Morphological and Environmental Change Assessment: San Juan River Area (including Isla Portillos and Calero), Costa Rica") and is satisfied that the analysis given in this report provides a technical evaluation of the damage that has occurred as a consequence of Nicaragua's unlawful activities in the northern part of Isla Portillos. In particular, the report states that, based on high-resolution satellite imagery acquired on 8 August 2010, there are "strong signature indicators of recent tree cover removal", with "hundreds of fallen or cut trees [being] visible". According to the report, it is likely that the removal of this tree cover occurred "during the period of May-August 2010". The report also states that, "[b]ased on an analysis of satellite imagery recorded on 19 November and 14 December 2010, there is strong evidence to suggest that a new river

channel leading from the San Juan River to the Los Portillos Lagoon was constructed between August and November 2010".

99. Turning to the quantification of the amount of compensation, the Court notes that Costa Rica has presented evidence in the form of a numbered and dated invoice from UNITAR/UNOSAT, with an annexed cost breakdown, where reference is made to "Satellite-based assessment of environmental and geomorphological changes in Costa Rica". The invoice for this report totals US$15,804. In light of the Court's finding that the analysis contained in the UNITAR/UNOSAT report is directly relevant to Nicaragua's unlawful activities, the Court considers that there is a sufficiently direct and certain causal nexus between those activities and the cost of commissioning the report. The Court therefore finds that Costa Rica is entitled to full compensation in the sum of US$15,804.

100. The Court now turns to those heads of expenses with reference to which it considers that Costa Rica has failed to meet its burden of proof.

101. The Court notes that three heads of expenses (incurred between October 2010 and April 2011) for which Costa Rica seeks compensation relate to salaries of Costa Rican personnel allegedly involved in monitoring activities in the northern part of Isla Portillos, namely, the salaries of personnel employed with the Air Surveillance Service, the National Coast Guard Service and ACTo. The total amount claimed by Costa Rica for this category of expense is US$9,135.16. In this regard, the Court considers that salaries of government officials dealing with a situation resulting from an internationally wrongful act are compensable only if they are temporary and extraordinary in nature. In other words, a State is not, in general, entitled to compensation for the regular salaries of its officials. It may, however, be entitled to compensation for salaries in certain cases, for example, where it has been obliged to pay its officials over the regular wage or where it has had to hire supplementary personnel, whose wages were not originally envisaged in its budget. This approach is in line with international practice (see UNCC, Report and Recommendations made by the Panel of Commissioners concerning the First Instalment of "F2" Claims, United Nations doc. S/AC.26/1999/23, 9 December 1999, para. 101; UNCC, Report and Recommendations made by the Panel of Commissioners concerning the Second Instalment of "F2" Claims, United Nations doc. S/AC.26/2000/26, 7 December 2000, paras. 52-58; see also *M/V "SAIGA" (No. 2) (Saint Vincent and the Grenadines* v. *Guinea), Judgment, ITLOS Reports 1999*, p. 67, para. 177).

102. The Court observes that, in the present proceedings, Costa Rica has not produced evidence that, between October 2010 and April 2011, it incurred any extraordinary expenses in terms of the payment of salaries

of government officials. There is some indication in the evidence adduced that Costa Rican government officials were assigned functions and duties in connection with Costa Rica's response to Nicaragua's wrongful conduct. For example, Annex 7 to the Memorial includes a document from the Department of Salaries and Wages of the National Coast Guard Service, entitled "Report on working hours by personnel . . . in missions that took place on [the] occasion of Nicaragua's occupation of Costa Rican territory — 21 October 2010 to 19 January 2015". There is no evidence, however, that any of these functions and duties were carried out by personnel other than regular government officials. The Court therefore finds that Costa Rica is not entitled to compensation for the salaries of personnel employed by the Air Surveillance Service, the National Coast Guard Service and ACTo.

103. The Court further observes that three other heads of expenses are closely related to the functions of those personnel employed by ACTo (to conduct environmental monitoring missions in or near the northern part of Isla Portillos), for which Costa Rica claims costs totalling US$801.69 incurred in connection with food and water supplies (US$446.12), fuel for fluvial transportation (US$92) and fuel for land transportation (US$263.57). As evidence of the costs incurred under these heads of expenses, Costa Rica refers to Annex 6 to its Memorial. This annex is comprised of a letter (with attachment) dated 6 January 2016 from the National System of Conservation Areas (Tortuguero Conservation Area Natural Resource Management) of the Costa Rican Ministry of the Environment and Energy, and addressed to the Ministry of Foreign Affairs of Costa Rica. It is stated in the letter that the purpose of the communication is "the formal transmittal of two binders containing printed information" including "copies of logs, reports, among other documents, which provide evidence of the participation of government officials and ACTo teams in addressing the problems arising from the Nicaraguan invasion of Isla Calero". However, Annex 6 to the Memorial does not contain any such "logs" or "reports"; it only contains two tables which, for evidentiary purposes, are difficult to follow. The Court notes that, in terms of entries for costs related to land transportation, and to food and water, no specific information is provided to show in what way these expenses were connected to Costa Rica's monitoring activities undertaken as a direct consequence of Nicaragua's unlawful activities in the northern part of Isla Portillos in the period between October 2010 and April 2011. Moreover, these tables do not provide any information whatsoever regarding costs incurred in connection with fluvial transportation.

104. In light of the above, the Court considers that Costa Rica has failed to provide sufficient evidence to support its claims for the expenses under these three heads.

105. The Court finally turns to Costa Rica's claim that it be compensated in the amount of US$17,600 for the cost of purchasing two satellite images, which, in its view, were necessary in order to verify Nicaragua's presence and unlawful activities in the northern part of Isla Portillos. The Court considers that, to the extent that such images did provide information as to Nicaragua's conduct in the northern part of Isla Portillos, this head of expenses could be compensable on the ground that there was a sufficiently direct and certain causal nexus between Nicaragua's unlawful activities and the cost thus incurred. However, having reviewed the evidence adduced by Costa Rica in support of this claim — in the form of two invoices dated 1 and 10 December 2010 (invoice Nos. 106 and 108), respectively, from INGEO innovaciones geográficas S.A. — the Court notes that neither of these invoices provides any indication as to the area covered by the two satellite images. It follows that the Court cannot conclude, on the basis of these documents, that these images related to the northern part of Isla Portillos, and that they were used for the verification of Nicaragua's presence and unlawful activities in that area. The Court therefore finds that Costa Rica has not provided sufficient evidence in support of its claim for compensation under this head of expenses.

106. In conclusion, the Court finds that Costa Rica is entitled to compensation in the amount of US$21,647.20 for the expenses it incurred in relation to Nicaragua's presence and unlawful activities in the northern part of Isla Portillos between October 2010 and April 2011. This figure is made up of US$5,843.20 for the cost of fuel and maintenance services for police aircraft used to reach and to overfly the northern part of Isla Portillos, and US$15,804 for the cost of obtaining a report from UNITAR/UNOSAT to verify Nicaragua's unlawful activities in that area.

2. Costs and Expenses Incurred in Monitoring the Northern Part of Isla Portillos following the Withdrawal of Nicaragua's Military Personnel and in Implementing the Court's 2011 and 2013 Orders on Provisional Measures

107. Costa Rica recalls that the Court, in its 2011 Order, stated that

> "in order to prevent the development of criminal activity in the disputed territory in the absence of any police or security forces of either Party, each Party has the responsibility to monitor [the disputed] territory from the territory over which it unquestionably holds sovereignty" (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Provisional Measures, Order of 8 March 2011, I.C.J. Reports 2011 (I)*, p. 25, para. 78).

Costa Rica adds that the Court, in operative paragraph 59, subparagraph (1) of its 2013 Order, reaffirmed the measures indicated in its 2011 Order. Costa Rica states that, in fulfilment of its obligations under the Court's 2011 and 2013 Orders, it incurred expenses in monitoring the "disputed territory" following the withdrawal of Nicaragua's military personnel, so as to avoid irreparable prejudice being caused to the protected wetland. These expenses related, *inter alia*, to visits and overflights of the "disputed territory"; establishment and staffing of new police posts in close proximity to the area; transportation; instruments, tools, materials and supplies; salaries of monitoring personnel; food and water supplies; and the purchase of satellite images and a report from UNITAR/UNOSAT. According to Costa Rica, the total amount of these expenses is US$3,551,433.67.

108. Costa Rica gives the following individual breakdown of the expenses it has incurred as a result of Nicaragua's unlawful activities: *(a)* cost of fuel and maintenance services of police aircraft and salaries of Air Surveillance Service personnel for the inspection carried out in co-ordination with the Secretariat of the Ramsar Convention on 5 and 6 April 2011 (US$21,128.55); *(b)* cost of equipment and repairs to equipment for the two new police posts established at Laguna de Agua Dulce and Isla Portillos (US$24,065.87); *(c)* staffing of police posts in Laguna de Agua Dulce and Isla Portillos (US$3,092,834.17); *(d)* cost of fluvial transportation provided by the National Coast Guard Service to the Public Force personnel and the Border Police (US$22,678.80); *(e)* cost of four all-terrain vehicles (ATVs) for the police posts in Laguna de Agua Dulce and Isla Portillos (US$81,208.40); *(f)* cost of a tractor for the equipment and maintenance of the biological station at Laguna Los Portillos to allow monitoring of the environment of the "disputed territory" (US$35,500); *(g)* salaries of ACTo personnel taking part in monitoring activities in different site visits (US$25,161.41); *(h)* cost of food and water supplies for ACTo personnel (US$8,412.55); *(i)* cost of fuel for transportation of ACTo personnel (US$3,213.04); *(j)* acquisition price of two ATVs and three cargo trailers, dedicated to the biological station (US$42,752.76); *(k)* cost of fuel for transportation of personnel and supplies to the biological station (US$6,435.12); *(l)* purchase of satellite images of the "disputed territory" (US$160,704); and *(m)* cost of obtaining a report from UNITAR/UNOSAT to assess damage caused in the "disputed territory" as a consequence of Nicaragua's unlawful activities (US$27,339).

109. Nicaragua contends that nearly all of Costa Rica's "purported 'monitoring' expenses" (US$3,092,834.17) are salaries of Costa Rican

security personnel deployed between March 2011 and December 2015 to police newly constructed posts in order to "protect against the imagined threat of Nicaragua reoccupying the disputed area and, especially, occupying other parts of Costa Rica". As such, it maintains, they are unrelated to the material damage caused by Nicaragua's works in the "disputed territory" and are thus "inappropriate claims" for compensation. Nicaragua argues that even if the salaries of the Costa Rican police were, in principle, compensable, a State is only entitled to compensation for extraordinary expenses, such as costs of hiring new personnel or the payment of overtime. According to Nicaragua, Costa Rica, however, simply redeployed existing personnel from elsewhere. Moreover, Nicaragua contends that Costa Rica's compensation claim for the wages it paid to its security personnel is not substantiated by appropriate evidence.

110. Nicaragua asserts that Costa Rica's claims for expenses it allegedly incurred in connection with its police deployment — such as the wages paid to personnel who provided fluvial transport for the police deployment and the purchase of various items of equipment — are not compensable because the deployment of Costa Rican security forces was not to prevent or remedy any of the material damage caused by Nicaragua between October 2010 and January 2011 and in September 2013. Furthermore, according to Nicaragua, none of these expenses were extraordinary, nor were they supported by evidence.

111. Nicaragua maintains that claims for compensation for satellite images taken between September 2011 and September 2015 and for reports prepared by UNITAR/UNOSAT are "non-compensable litigation expenses" since they were largely commissioned by Costa Rica in connection with the presentation of its case on the merits. Moreover, Nicaragua asserts that they cover not only the "disputed territory" but also other areas.

* *

112. With regard to compensation for monitoring activities claimed to have been carried out in implementation of the Court's 2011 and 2013 Orders, the Court considers that Costa Rica has, with reference to three heads of expenses, provided adequate evidence demonstrating that some of these expenses have a sufficiently direct and certain causal nexus with the internationally wrongful conduct of Nicaragua identified by the Court in its 2015 Judgment.

113. First, the Court finds partially compensable Costa Rica's expenses for its two-day inspection of the northern part of Isla Portillos on 5 and 6 April 2011, both in co-ordination and together with the Secretariat of

the Ramsar Convention. This mission was carried out by Costa Rican technical experts accompanied by the technical experts of the Secretariat for the purposes of making an assessment of the environmental situation in the area and of identifying actions to prevent further irreparable damage in that part of the wetland as a consequence of Nicaragua's unlawful activities. In particular, according to the technical report produced by the officials of the Secretariat of the Ramsar Convention,

> "[t]he main aims of the visit to the site were the identification and technical evaluation of the environmental situation of the study area to determine the consequences of the works carried out, the impact chains initiated, their implications and the preventive, corrective, mitigating or compensatory environmental measures that would need to be implemented to restore the natural environmental balance of the site to avoid new, irreparable changes to the wetland".

In the view of the Court, the inspection carried out by Costa Rica on 5 and 6 April 2011 was therefore directly connected to the monitoring of the northern part of Isla Portillos that was made necessary as a result of Nicaragua's wrongful conduct.

114. Turning to the quantification of the amount of compensation, the Court notes that Costa Rica claims US$20,110.84 "for fuel and maintenance services on the police aircrafts used" and US$1,017.71 "for the salaries of air surveillance service personnel".

115. As evidence, Costa Rica has presented relevant flight logs and an official communication dated 2 March 2016 from the Administrative Office of the Air Surveillance Service of the Department of Air Operations of the Ministry of Public Security (as already referred to above in paragraph 95) which includes details of the cost of overflights performed by the Air Surveillance Service on 5 and 6 April 2011 totalling US$20,110.84. The Court observes that there are shortcomings similar to those it identified earlier in paragraphs 95 and 96 when it reviewed Costa Rica's evidentiary approach in establishing the cost of fuel and maintenance services for police aircraft. In particular, regarding the expenses linked to its monitoring activities for the period now under review, the Court notes that Costa Rica calculated these expenses on the basis of the operating costs for the hourly use of each aircraft deployed; these operating costs included expenses for "fuel", "overhaul", "insurance" and "miscellaneous". As already noted above (see paragraph 95), the Court considers that such insurance cannot be a compensable expense. As to the "miscellaneous" costs, Costa Rica has failed to specify the nature of this expense. Moreover, the Court observes that Costa Rica itself has specified in its Memorial on compensation that it claimed expenses only for fuel and maintenance services. The Court therefore

considers that this head of expenses is not compensable. The Court also excludes the cost of flights to transport members of the press, for the same reasons given in paragraph 96 above.

116. The Court considers it necessary to evaluate the compensable expenses based on the information provided in the above official communication of 2 March 2016, and in the flight logs, by reference to the number and duration of the flights conducted on 5 and 6 April 2011 in connection with the inspection of the northern part of Isla Portillos, and only taking into account the costs of "fuel" and "overhaul". The Court therefore finds that, under this head of expenses, Costa Rica is entitled to compensation in the amount of US$3,897.40.

117. The Court notes that Costa Rica has also advanced a claim of US$1,017.71 for salaries of Air Surveillance Service personnel involved in aircraft missions. The Court does not however find that Costa Rica is entitled to claim the cost of salaries for the April 2011 inspection mission. As already noted above (see paragraph 101), a State cannot recover salaries for government officials that it would have paid regardless of any unlawful activity committed on its territory by another State.

118. Secondly, the Court finds partially compensable Costa Rica's claim for the purchase, in the period running from September 2011 to October 2015, of satellite images effectively to monitor and verify the impact of Nicaragua's unlawful activities. To the extent that these satellite images cover the northern part of Isla Portillos, the Court considers that there is a sufficiently direct and certain causal nexus between the internationally wrongful conduct of Nicaragua identified by the Court in its Judgment on the merits and the head of expenses for which Costa Rica seeks compensation.

119. Turning to the quantification of the amount of compensation, the Court notes that Costa Rica has presented evidence in the form of numbered and dated invoices and delivery reports corresponding to the purchase of satellite images from INGEO innovaciones geográficas S.A. and from GeoSolutions Consulting, Inc. S.A. Under this head of expenses, Costa Rica claims a total of US$160,704. Having carefully reviewed these invoices and delivery reports, the Court notes that, by reference to the area covered by the satellite images, these invoices can be divided into three sets. The first set relates to the satellite images that cover the northern part of Isla Portillos (see invoice Nos. 204, 205, 215, 216, 218, 219, 224, 62, 65, 70, 73 and 86); the second set relates to the satellite images that cover the general area of the northern border with Nicaragua (see invoice Nos. 172, 174, 179, 188, 189, 191 and 90); and the third set provides no indication of the area covered by the satellite images (invoice Nos. 144, 150, 157, 163, 164, 169 and 171).

120. The Court considers that, as the satellite images contained in the first and second sets of invoices all cover the northern part of Isla Portillos, their purchase is, in principle, compensable. However, the Court notes that most of these satellite images cover an area that extends beyond the northern part of Isla Portillos, often covering an area of around 200 square kilometres. Moreover, these images are charged by unit price per square kilometre, mostly at the rate of US$28. The Court finds that it would not be reasonable to award compensation to Costa Rica for these images in full. Given the size of the northern part of Isla Portillos, the Court is of the view that a coverage area of 30 square kilometres was sufficient for Costa Rica effectively to monitor and verify Nicaragua's unlawful activities. The Court therefore awards Costa Rica, for each of the invoices in the first and second sets, compensation for one satellite image covering an area of 30 square kilometres at a unit price of US$28 per square kilometre.

121. With regard to the third set of invoices, the Court considers that Costa Rica has not established the necessary causal nexus between Nicaragua's unlawful activities and the purchase of the satellite images in question.

122. Consequently, the Court finds that Costa Rica is entitled to compensation in the amount of US$15,960 for the expenses incurred in purchasing the satellite images corresponding to the first and second sets of invoices, within the limits specified in paragraph 120.

123. Thirdly, the Court finds partially compensable Costa Rica's claim for the cost of obtaining a report from UNITAR/UNOSAT dated 8 November 2011. Costa Rica incurred this expense in order to detect and assess the environmental impact of Nicaragua's presence and unlawful activities in Costa Rican territory. The Court has reviewed this UNITAR/UNOSAT report and observes that the analysis given in Section 1 (entitled "Review of dredging activities at divergence of Río San Juan and Río Colorado (maps 2-3)") and in Section 3 (entitled "Review of meander cut sites (maps 5-6)") does not have any bearing on Costa Rica's efforts to detect and assess the environmental damage caused in its territory by Nicaragua. It notes, however, that the analysis given in Section 2, entitled "Updated status of the new channel along [the] Río San Juan (map 4)", provides a technical evaluation of the damage that occurred as a consequence of Nicaragua's unlawful activities in the northern part of Isla Portillos. The Court concludes that Costa Rica has proven that there exists a sufficiently direct and certain causal nexus between the internationally wrongful conduct of Nicaragua identified by the Court in its Judgment on the merits and the purchase of the UNITAR/UNOSAT report.

124. Turning to the quantification of the amount of compensation, the Court notes that Costa Rica has presented evidence in the form of a numbered and dated invoice from UNITAR/UNOSAT, with an annexed cost breakdown, where reference is made to "Satellite-based assessment of environmental and geomorphological changes in Costa Rica". The invoice for this report, which includes the cost of analysis, satellite imagery, procurement processing of imagery, operating expenses and programme support costs, totals US$27,339. In light of the fact that only the content of Section 2 of the UNITAR/UNOSAT report is directly relevant, and given that the three sections of the report are separable (in the sense that each section is self-standing), the Court considers that the total amount of compensation should be limited to one-third of the total cost of the report. On that basis, the Court finds that Costa Rica is entitled to compensation under this head of expenses in the amount of US$9,113.

125. With regard to the other heads of expenses for compensation, Costa Rica's claims can be separated into three categories: (i) those claims which relate to two new police stations in Laguna Los Portillos and Laguna de Agua Dulce, (ii) those claims which relate to a biological station at Laguna Los Portillos, and (iii) those claims which relate to the salaries of personnel involved in monitoring activities, as well as the ancillary costs of supplying food and water, and the costs of fuel for transportation of ACTo personnel.

126. The Court notes that Costa Rica has made it clear that it does not seek to claim compensation for the construction of the police posts or the biological station. With regard to the first category, however, Costa Rica has advanced a claim for the costs of some equipment, as well as for operational expenses. For the two police posts, Costa Rica claims expenses covering equipment costs (US$24,065.87), staffing (US$3,092,834.17), fluvial transportation of personnel and supplies provided by the National Coast Guard (US$22,678.80); and the purchase of four all-terrain vehicles for the police posts (US$81,208.40).

127. The Court finds that none of the costs incurred in connection with the equipment and operation of the police stations are compensable because the purpose of the said stations was to provide security in the border area, and not in particular to monitor Nicaragua's unlawful activities in the northern part of Isla Portillos. Moreover, Costa Rica has not presented any evidence to demonstrate that the equipment purchased and the operational costs were sufficiently linked with the implementation of the provisional measures ordered by the Court.

128. With regard to the second category relating to the biological station, the Court recalls that Costa Rica has claimed expenses covering the cost of a tractor for the equipment and maintenance of the biological station (US$35,500), the acquisition price of two all-terrain vehicles and

three cargo trailers (US$42,752.76), and the cost of fuel for the transportation of personnel and supplies (US$6,435.12).

129. As to the costs incurred in connection with the maintenance of the biological station, the Court similarly finds that none of the expenses incurred under this head are compensable because there was no sufficiently direct causal link between the maintenance of this station and Nicaragua's wrongful conduct in the northern part of Isla Portillos. In particular, the Court observes that in the Report for the Executive Secretariat of the Ramsar Convention on Wetlands, dated July 2013 and entitled "New Works in the Northeast Caribbean Wetland", prepared by the Costa Rican Ministry of Foreign Affairs, it is stated that the purpose of the biological station was to "[c]onsolidate the management of the Northeast Caribbean Wetland through a research program[me]", to "[c]reate an appropriate programme for biological monitoring of the status of existing resources", and to "[c]onsolidate a prevention and control programme to prevent the alteration of the existing natural resources".

130. With reference to the third category, as already explained earlier in the context of similar claims for compensation made by Costa Rica (see paragraphs 101 and 117), the Court does not accept that a State is entitled to compensation for the regular salaries of its officials. With regard to the other two heads of expenses within this category, the Court considers that Costa Rica has not provided any specific information to show in what way the expenses claimed for food and water, and for fuel for transportation of ACTo personnel, were connected with Costa Rica's monitoring of the northern part of Isla Portillos following the withdrawal of Nicaragua's military personnel.

131. In conclusion, the Court finds that Costa Rica is entitled to compensation in the amount of US$28,970.40 for the expenses it incurred in relation to the monitoring of the northern part of Isla Portillos following the withdrawal of Nicaragua's military personnel and in implementing the Court's 2011 and 2013 Orders on provisional measures. This figure is made up of US$3,897.40 for the cost of overflights performed by the Air Surveillance Service on 5 and 6 April 2011, US$15,960 for the purchase, in the period running from September 2011 to October 2015, of satellite images of the northern part of Isla Portillos, and US$9,113 for the cost of obtaining a report from UNITAR/UNOSAT providing, *inter alia*, a technical evaluation of the damage that occurred as a consequence of Nicaragua's unlawful activities in the northern part of Isla Portillos.

3. Costs and Expenses Incurred in Preventing Irreparable Prejudice to the Environment (The Construction of a Dyke and Assessment of Its Effectiveness)

132. According to Costa Rica, it incurred a third category of expenses when implementing the Court's 2013 Order on provisional measures, in

terms of works carried out to prevent irreparable prejudice to the environment of the "disputed territory". Costa Rica argues that, in accordance with the Order, after consultation with the Secretariat of the Ramsar Convention, it carried out the necessary works on the 2013 eastern *caño* (namely, the construction of a dyke) over a period of seven days, from 31 March to 6 April 2015. Subsequently, Costa Rica carried out overflights of the "disputed territory" in June, July and October 2015 in order to assess the effectiveness of the works that had been completed to construct the dyke across the 2013 eastern *caño*. Costa Rica states that the expenses thus incurred amounted to US$195,671.02.

133. Nicaragua accepts that compensation may be appropriate for costs reasonably incurred by Costa Rica in 2015 in connection with the construction of the dyke across the 2013 eastern *caño*. It nevertheless argues that the amount of US$195,671.02 claimed by Costa Rica is inflated because certain materials charged were not actually used for the construction of the dyke and certain overflights were made for purposes unrelated to activities that the Court found to be unlawful. Thus, according to Nicaragua's evaluation, Costa Rica is entitled to no more than US$153,517 which represents the real figure for the expenses incurred in connection with the construction of the dyke in 2015.

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134. The Court recalls that in its Order of 22 November 2013 on the request presented by Costa Rica for the indication of new provisional measures, it indicated, in particular, that

> "[f]ollowing consultation with the Secretariat of the Ramsar Convention and after giving Nicaragua prior notice, Costa Rica may take appropriate measures related to the two new *caños*, to the extent necessary to prevent irreparable prejudice to the environment of the disputed territory" (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Provisional Measures, Order of 22 November 2013, I.C.J. Reports 2013*, p. 370, para. 59, subpara. (2) (E)).

135. From 10 to 13 March 2013, the Secretariat of the Ramsar Convention carried out an onsite visit to the northern part of Isla Portillos to assess the damage caused by Nicaragua's constructions of the two new *caños*. Following this site visit, in August 2014, the Secretariat produced a report (Ramsar Advisory Mission No. 77) with recommendations on mitigation measures focused on the 2013 eastern *caño*. It requested that Costa Rica submit an implementation plan and recommended that it commence a monitoring programme. In accordance with that request, Costa Rica's Ministry of the Environment and Energy formulated an implementation

plan, dated 12 August 2014. That plan set out in detail the proposed measures, consisting of the construction of a dyke to ensure that the waters of the San Juan River were not diverted through the 2013 eastern *caño*.

136. Costa Rica proposed to begin works in September 2014 and requested that Nicaragua grant it access to the San Juan River to facilitate the undertaking. Since no agreement had been reached between the Parties, Costa Rica made arrangements to contract a private civilian helicopter for the purposes of the construction works. According to Costa Rica, this was necessary because its Air Surveillance Service did not possess any type of aircraft with the capacity to carry out such works. Costa Rica states that its police and ACTo personnel provided ground support for the operation. The works to construct the dyke were carried out over a period of seven days, from 31 March to 6 April 2015. Costa Rican personnel charged with the protection of the environment monitored the works by means of periodic inspections. Costa Rica also carried out overflights of the northern part of Isla Portillos in June, July and October 2015, in order to assess the effectiveness of the works that had been completed to construct the dyke.

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137. The Court observes that with regard to this category of expenses incurred by Costa Rica, Nicaragua "accepts that compensation may be appropriate for costs that were reasonably incurred". The Parties however differ as to the amount of compensation owed by Nicaragua to Costa Rica under this head. In particular, Nicaragua asserts that the amount claimed by Costa Rica should be reduced by excluding the cost of surplus materials (which it estimates at US$9,112.50) and the cost of three overflights (which it estimates at US$33,041.75) carried out on 9 June, 8 July and 3 October 2015, after the construction of the dyke across the 2013 eastern *caño*. According to Nicaragua, these overflights were, at least in part, "for purposes unrelated to the activities that the Court determined were wrongful".

138. The Court finds that the costs incurred by Costa Rica in connection with the construction in 2015 of a dyke across the 2013 eastern *caño* are partially compensable. Costa Rica has provided evidence that it incurred expenses that were directly related to the remedial action it undertook in order to prevent irreparable prejudice to the environment of the northern part of Isla Portillos following Nicaragua's unlawful activities. In this regard, Costa Rica advances three heads of expenses: (i) overflight costs prior to the construction of the dyke; (ii) costs connected with the actual construction of the dyke; and (iii) overflight costs subsequent to the construction of the dyke.

139. With reference to the first head of expenses, Costa Rica states that on 25 July 2014, it hired a private civilian helicopter to conduct a site visit to the northern part of Isla Portillos, in order to assess the situation of the two 2013 *caños* for the purposes of determining the measures required to

prevent irreparable prejudice to the environment of that area. According to Costa Rica, the cost of the flight for this mission amounted to US$6,183. The invoice submitted by Costa Rica for the cost of this flight indicates that the purpose of the flight was "for transportation of staff on observation and logistics flight to Isla Calero". The flight description also shows that this flight was nowhere near the construction site. In light of this evidence, the Court considers that Costa Rica has not proven that the 2014 helicopter mission was directly connected with the intended construction of the dyke across the 2013 eastern *caño*. Therefore, the expenses for this flight are not compensable.

140. With reference to the second head of expenses, Costa Rica refers to the costs incurred in terms of the purchase of construction materials and the hiring of a private civilian helicopter to transport personnel and materials required to construct the dyke across the 2013 eastern *caño*.

141. Costa Rica has divided these costs under the second head of expenses into two categories, namely, helicopter flight hours (US$131,067.50) and "purchase of billed supplies" (US$26,378.77). With regard to the first category, the Court is satisfied that the evidence adduced fully supports Costa Rica's claim.

142. In so far as the second category is concerned, the Court is of the view that the purchase of construction materials should, in principle, be fully compensated. With regard to the surplus construction materials, the Court considers that, given the difficulty of access to the construction site of the dyke, located in the wetlands, it was justified for Costa Rica to adopt a cautious approach and to ensure, at the start, that the construction materials it purchased and transported were sufficient for the completion of the work. The costs incurred for the purchase of construction materials which turned out to be more than what was actually used are, in the present circumstances, compensable. What matters, for the consideration of the claim, is reasonableness. The Court does not consider the amount of materials purchased by Costa Rica unreasonable or disproportionate to the actual needs of the construction work.

143. The Court notes, however, that in the "Breakdown of Invoices for Calero — Billed Supplies and Expenses" which gives a total amount of the expenses for the construction of the dyke, Costa Rica included an entry which refers to "Boarding — CNP and El Dólar", with a claim for compensation totalling US$3,706.41. It does not provide clarification as to the nature of this expense in any of its pleadings or annexes, including the "Report of works carried out from 26 March to 10 April 2015" prepared by the Costa Rican Ministry of Environment and Energy. The Court thus finds this expense to be non-compensable. The Court also points out that there is a mistake in the calculation of the item "fuel for boat". Costa Rica is claiming a total of US$5,936.54 whereas the calcula-

tion of the quantity (5,204) multiplied by the price of the unit (US$1.07) equals US$5,568.28. The Court has also corrected other minor miscalculations. Thus the Court, after recalculation, finds that Costa Rica should be compensated in the total amount of US$152,372.81 for the costs of the construction of the dyke (made up of the cost for the helicopter flight hours in the amount of US$131,067.50 and the purchase of billed supplies in the amount of US$21,305.31).

144. With reference to the third head of expenses, the Court recalls that Costa Rica is claiming expenses in connection with overflights made on 9 June, 8 July and 3 October 2015 for the purposes of monitoring the effectiveness of the completed dyke. The Court considers that these expenses are compensable as there is a sufficiently direct causal nexus between the damage caused to the environment of the northern part of Isla Portillos, as a result of Nicaragua's unlawful activities, and the overflight missions undertaken by Costa Rica to monitor the effectiveness of the newly constructed dyke. Costa Rica has also discharged its burden of proof in terms of providing evidence of the cost of flight hours incurred in respect of the hired private civilian helicopter used to access the northern part of Isla Portillos. Costa Rica has submitted three invoices, accompanied by flight data which indicated that the flight route took the aircraft over the dyke. In the Court's view, it is evident that the helicopter hired for these missions had to overfly other parts of Costa Rican territory in order to reach the construction site of the dyke. Moreover, the Court observes that there is nothing on the record to show that these overflights were not en route to the dyke area, nor that the helicopter missions were unrelated to the purpose of monitoring the effectiveness of the dyke.

145. For the flight of 9 June 2015, Costa Rica has produced an invoice in the amount of US$11,070.75, for the flight of 8 July 2015 an invoice for US$10,689, and for the flight of 3 October 2015 an invoice for US$11,282. The Court finds that the total expense incurred by Costa Rica under this head of expenses, totalling US$33,041.75, is therefore compensable.

146. In conclusion, the Court finds that Costa Rica is entitled to compensation in the amount of US$185,414.56 for the expenses it incurred in connection with the construction in 2015 of a dyke across the 2013 eastern *caño*. This figure is made up of US$152,372.81 for the costs of the construction of the dyke, and US$33,041.75 for the monitoring overflights made once the dyke was completed.

4. Conclusion

147. It follows from the Court's analysis of the compensable costs and expenses incurred by Costa Rica as a direct consequence of Nicaragua's

unlawful activities in the northern part of Isla Portillos (see paragraphs 106, 131 and 146 above), that Costa Rica is entitled to total compensation in the amount of US$236,032.16.

V. Costa Rica's Claim for Pre-Judgment and Post-Judgment Interest

148. Costa Rica maintains that in view of the extent of damage Costa Rica has suffered, full reparation cannot be achieved without payment of interest. It claims both pre-judgment and post-judgment interest. With regard to pre-judgment interest, Costa Rica states that such interest should cover its entire compensation for losses it incurred as a direct consequence of Nicaragua's unlawful activities. However, it makes what it considers to be a "conservative claim", whereby pre-judgment interest would accrue from the date of the Court's Judgment on the merits of 16 December 2015 until the date of the Judgment on compensation. As for post-judgment interest, Costa Rica argues that, should Nicaragua fail to pay the compensation immediately after the delivery of the Judgment, interest on the principal sum of compensation as determined by the Court should be added. It proposes that the annual rate of interest be set at 6 per cent for both pre-judgment and post-judgment interest.

149. Nicaragua maintains that an injured State has no automatic entitlement to the payment of interest and specifies that the awarding of interest depends on the circumstances of each case and, in particular, on whether an award of interest is necessary in order to ensure full reparation. Nicaragua observes that Costa Rica has not explained why the circumstances of the present case warrant the award of interest, nor has it attempted to justify the 6 per cent interest rate it requests.

* *

150. With regard to Costa Rica's claim for pre-judgment interest, the Court recalls that, in its 2015 Judgment, the actual amount of compensation due to Costa Rica was not determined; instead, the Court decided that the Parties were first required to seek a settlement of the question through negotiations. Only in the event that the question was not settled within 12 months could a Party refer it back to the Court for resolution (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, p. 741, para. 229 (5) *(b)*). The Court notes, not without regret, that no agreement was reached between the Parties on the question of compensation within the time-limit fixed by the Court. Consequently, at the request of Costa Rica, the matter is now before the Court for decision.

151. The Court recalls that in the practice of international courts and tribunals, pre-judgment interest may be awarded if full reparation for injury caused by an internationally wrongful act so requires. Nevertheless, interest is not an autonomous form of reparation, nor is it a necessary part of compensation in every case (see Commentary to Article 38, Draft Articles on Responsibility of States for Internationally Wrongful Acts, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), p. 107).

152. The Court observes that, in the present case, the compensation to be awarded to Costa Rica is divided into two parts: compensation for environmental damage and compensation for costs and expenses incurred by Costa Rica in connection with Nicaragua's unlawful activities. The Court considers that Costa Rica is not entitled to pre-judgment interest on the amount of compensation for environmental damage; in determining the overall valuation of environmental damage, the Court has taken full account of the impairment or loss of environmental goods and services in the period prior to recovery.

153. With regard to the costs and expenses incurred by Costa Rica as a result of Nicaragua's unlawful activities, the Court notes that most of such costs and expenses were incurred in order to take measures for preventing further harm. The Court awards Costa Rica pre-judgment interest on the costs and expenses found compensable, accruing, as requested by Costa Rica, from 16 December 2015, the date on which the Judgment on the merits was delivered, until 2 February 2018, the date of delivery of the present Judgment. The annual interest rate is fixed at 4 per cent. The amount of interest is US$20,150.04.

154. With regard to Costa Rica's claim for post-judgment interest, the Court recalls that in the case concerning *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo)*, the Court awarded post-judgment interest, observing that "the award of post-judgment interest is consistent with the practice of other international courts and tribunals" (*Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 343, para. 56). The Court sees no reason in the current case to adopt a different approach.

155. Thus, although it has every reason to expect timely payment by Nicaragua, the Court decides that, in the event of any delay in payment, post-judgment interest shall accrue on the total amount of compensation. This interest shall be paid at an annual rate of 6 per cent.

VI. Total Sum Awarded

156. The total amount of compensation awarded to Costa Rica is US$378,890.59 to be paid by Nicaragua by 2 April 2018. This amount includes the principal sum of US$358,740.55 and pre-judgment interest on the compensable costs and expenses in the amount of US$20,150.04.

Should payment be delayed, post-judgment interest on the total amount will accrue as from 3 April 2018.

* * *

157. For these reasons,

THE COURT,

(1) *Fixes* the following amounts for the compensation due from the Republic of Nicaragua to the Republic of Costa Rica for environmental damage caused by the Republic of Nicaragua's unlawful activities on Costa Rican territory:

(a) By fifteen votes to one,

US$120,000 for the impairment or loss of environmental goods and services;

IN FAVOUR: *President* Abraham; *Vice-President* Yusuf; *Judges* Owada, Tomka, Bennouna, Cançado Trindade, Greenwood, Xue, Donoghue, Gaja, Sebutinde, Bhandari, Robinson, Gevorgian; *Judge* ad hoc Guillaume;

AGAINST: *Judge* ad hoc Dugard;

(b) By fifteen votes to one,

US$2,708.39 for the restoration costs claimed by the Republic of Costa Rica in respect of the internationally protected wetland;

IN FAVOUR: *President* Abraham; *Vice-President* Yusuf; *Judges* Owada, Tomka, Bennouna, Cançado Trindade, Greenwood, Xue, Gaja, Sebutinde, Bhandari, Robinson, Gevorgian; *Judges* ad hoc Guillaume, Dugard;

AGAINST: *Judge* Donoghue;

(2) Unanimously,

Fixes the amount of compensation due from the Republic of Nicaragua to the Republic of Costa Rica for costs and expenses incurred by Costa Rica as a direct consequence of the Republic of Nicaragua's unlawful activities on Costa Rican territory at US$236,032.16;

(3) Unanimously,

Decides that, for the period from 16 December 2015 to 2 February 2018, the Republic of Nicaragua shall pay interest at an annual rate of 4 per cent on the amount of compensation due to the Republic of Costa Rica under point 2 above, in the sum of US$20,150.04;

(4) Unanimously,

Decides that the total amount due under points 1, 2 and 3 above shall be paid by 2 April 2018 and that, in case it has not been paid by that date, interest on the total amount due from the Republic of Nicaragua to the Republic of Costa Rica will accrue as from 3 April 2018 at an annual rate of 6 per cent.

Done in French and in English, the French text being authoritative, at the Peace Palace, The Hague, this second day of February, two thousand and eighteen, in three copies, one of which will be placed in the archives of the Court and the others transmitted to the Government of the Republic of Costa Rica and the Government of the Republic of Nicaragua, respectively.

(Signed) Ronny Abraham,
President.

(Signed) Philippe Couvreur,
Registrar.

Judges Cançado Trindade, Donoghue and Bhandari append separate opinions to the Judgment of the Court; Judge Gevorgian appends a declaration to the Judgment of the Court; Judge *ad hoc* Guillaume appends a declaration to the Judgment of the Court; Judge *ad hoc* Dugard appends a dissenting opinion to the Judgment of the Court.

(Initialled) R.A.
(Initialled) Ph.C.

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SEPARATE OPINION
OF JUDGE CANÇADO TRINDADE

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I. *Prolegomena*

1. I have voted in favour of the adoption by the International Court of Justice (ICJ) of the present Judgment (of 2 February 2018) in the case of *Certain Activities Carried Out by Nicaragua in the Border Area, Compensation Owed by the Republic of Nicaragua to the Republic of Costa Rica (Costa Rica* v. *Nicaragua)*, whereby the ICJ has taken the proper course in respect of the determination of the compensation due. Having supported the decision the Court has just taken in the *cas d'espèce* in this respect, yet there are points related to the matter dealt with, which are not addressed in the present Judgment.

2. The Court's reasoning is, to my mind, far too strict, this being the first case ever in which it is called upon to pronounce on reparations for environmental damages. Its outlook should have been much wider, encompassing also the consideration of restoration measures, and distinct forms of reparation, complementary to compensation. Yet, in all its reasoning, the Court focused essentially on compensation, as if it would suffice to adjudicate the *cas d'espèce* on reparations for environmental damages. This is not how I behold the whole matter at issue.

3. There are indeed yet other points to consider, to which I attribute special relevance, that have been overlooked in the present Judgment. The Court should have taken another step forward in the present domain of reparations, as it did in its previous Judgment on reparations (of 19 June 2012) in the case of *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo)*. In both cases, reparations are in my view to be considered within the framework of international regimes of protection: in the *Ahmadou Sadio Diallo* case, human rights protection, and in the present case, environmental protection.

4. I feel thus obliged to dwell upon those related points, so as to single them out and to leave on the records the foundations of my personal position thereon. Accordingly, I deem it fit to append to the ICJ's present Judgment my reflections contained in the present separate opinion, wherein I focus on such points, in the conceptual framework of reparations for damages. I do so in the zealous and faithful exercise of the international judicial function, seeking ultimately the goal of the *realization of justice*, ineluctably linked, as I perceive it, to the settlement of disputes.

5. Such points are: *(a)* the principle *neminem laedere* and the duty of reparation for damages; *(b)* the indissoluble whole of breach and prompt reparation; *(c)* a fundamental, rather than "secondary", obligation of reparation; *(d)* reparations in the perennial legacy of the thinking of the "founding fathers" of the law of nations; *(e)* reparation in all its forms (compensation and others); *(f)* reparation for environmental damages, the intertemporal dimension, and *obligations of doing* in regimes of pro-

tection; and *(g)* the centrality of *restitutio* and the insufficiencies of compensation.

6. In logical sequence, the remaining points are: *(h)* the incidence of considerations of equity and jurisprudential cross-fertilization; *(i)* environmental damages and the necessity and importance of restoration; and *(j)* reparation beyond simply compensation: the need for non-pecuniary reparations. The path will then be paved for the presentation of my final considerations, followed by an epilogue containing a recapitulation of all the points I have addressed in my present separate opinion.

II. The Principle *Neminem Laedere* and the Duty of Reparation for Damages

7. In the present Judgment on *Compensation Owed by Nicaragua to Costa Rica*, in its considerations of legal principle, the ICJ refers to the *jurisprudence constante* — going back to the times of the Permanent Court of International Justice (PCIJ), as from its celebrated dictum in the *Chorzów Factory* case (1927), up to the ICJ's *consideranda* in the *Ahmadou Sadio Diallo* case (2010-2012), to the effect that in principle reparation must cease all consequences of the unlawful act and re-establish the situation which existed prior to the occurrence of the breach; this is, the Court characterizes, a well-established principle of international law (para. 29).

8. The Court acknowledges that recourse is to be made first to *restitutio in integrum*, and, when it is not possible, one then turns to compensation (*ibid.*, para. 31). From then onwards, the ICJ focuses on compensation for environmental damage, as well as for costs and expenses consequently incurred. There are, in my view, additional elements to be taken into account within the conceptual framework of the fundamental duty of reparation.

9. May I start my own examination of the aforementioned related points (paras. 5-6, *supra*), that I have identified and selected, such as the historical beginning of the whole matter at issue. The conception of damages — ensuing from wrongfulness — and the prompt reaction of the legal system at issue requiring reparation (restitution and compensation), goes back historically to antiquity and, as well known, later on, to Roman law, as laid down in Justinian's *Digest* (530-533 AD). One finds therein, in starting to address *"de justitia et de jure"*, the statement of the precepts of law *"honeste vivere, alterum non laedere, suum cuique tribuere"*[1].

[1] For example, "to live honestly, not to cause damage to anyone, to give everyone his due" (Book I, title I, para. 3), F. P. S. Justinianus, *Institutas [do Imperador Justiniano]* [533] (transl. J. Cretella Jr. and A. Cretella), 2nd rev. ed., São Paulo, Edit. Revista dos Tribunais, 2005, p. 21; [F. P. S. Justinianus] *Digesto de Justiniano — Liber Primus* (transl. H. M. F. Madeira), 5th rev. ed., São Paulo, Edit. Revista dos Tribunais, 2010, p. 24; and in *The Institutes of Justinian* [533] (transl. J. B. Moyle), 5th ed., Oxford, OUP/Clarendon Press, 1955 [reprint], p. 3.

10. In effect, the basic principle of *neminem laedere*, as it came to be known, found expression much further back in time, in even more ancient civilizations[2]. After all, the contents of Justinian's *Digest* had been excerpted from far more ancient works. The conception of the duty of reparation, with such profound historical roots, was to mark presence, not surprisingly, ten centuries later, in the origins themselves of the law of nations (sixteenth century onwards, cf. Section V, *infra*).

11. The natural law general principle of *neminem laedere* inspired the conceptualization of the duty of reparation for damages (resulting from breaches of international law), so as to safeguard the integrity of the legal order itself, remedying the wrong done. The duty of reparation (in all its forms) was upheld, from the start, as the indispensable complement of the breach of international law: the two complement each other, forming an *indissoluble whole*.

III. The Indissoluble Whole of Breach and Prompt Reparation

12. Reparation comes indeed together with the breach, so as to cease all the effects of this latter, and to secure respect for the legal order. The original breach is ineluctably linked to prompt compliance with the duty of reparation. I have already sustained this position on earlier occasions within this Court (as in, e.g., my dissenting opinion in the case of *Jurisdictional Immunities of the State (Germany* v. *Italy: Greece intervening),* Judgment of 3 February 2012).

13. Later on, in my declaration appended to the Court's Order of 1 July 2015 in the case of *Armed Activities on the Territory of the Congo Congo (Democratic Republic of the Congo* v. *Uganda)*, I reiterated that breach and prompt reparation, forming, as they do, an indissoluble whole, are not separated in time. Any breach is to be promptly followed by the corresponding reparation, so as to secure the integrity of the international legal order itself. Reparation cannot be delayed or postponed.

14. As cases concerning environmental damage show, the indissoluble whole formed by breach and reparation has a temporal dimension, which cannot be overlooked. In my perception, it calls upon looking at the past, present and future altogether. The search for *restitutio in integrum* calls for looking at the present and the past, as much as it calls for looking at the present and the future. As to the past and the present, if the breach

[2] Such as, for example, the Mesopotamian ones, as illustrated by relevant provisions in the Code of Hammurabi (circa 1750 BC) and in the Assyrian Code (circa 1350 BC). On the presence of the attention to the duty of reparation (including restitution and satisfaction), for example, in the Code of Hammurabi, cf.: *Código de Hammurabi* (transl. F. Lara Peinado), 4th ed. (reprint), Madrid, Tecnos, 2012, pp. 18-19, 21, 23, 25 and 34-35; paras. 79-87, 100, 125 and 178-179.

has not been complemented by the corresponding reparation, there is then a *continuing situation* in violation of international law.

15. As to the present and the future, the reparation is intended to cease all the effects of the environmental damage, cumulatively in time. It may occur that the damage is irreparable, rendering *restitutio in integrum* impossible, and then compensation applies. In any case, responsibility for environmental damage and reparation cannot, in my view, make abstraction of the intertemporal dimension (cf. Section VII, *infra*). After all, environmental damage has a longstanding dimension.

IV. Duty of Reparation: A Fundamental, rather than "Secondary", Obligation

16. As the breach and the prompt compliance with the duty of reparation form an indissoluble whole, accordingly, this duty is, in my perception, truly *fundamental*, rather than simply "secondary", as commonly assumed in a superficial way. Already in the previous case on reparations decided by this Court, that of *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)* (p. 324) I pointed this out in my separate opinion: the duty of reparation is truly *fundamental*, of the utmost importance, as it is "an imperative of justice" (*ibid.*, p. 383, para. 97).

17. Even if the effects of the damage caused are longstanding — as it happens in the occurrence (like in the *cas d'espèce*) of environmental damage — compliance with such duty cannot be postponed or delayed. As I further pondered in my separate opinion in the aforementioned *Ahmadou Sadio Diallo* case, the full *reparatio* (from the Latin *reparare*, "to dispose again"), instead of "erasing" the breaches perpetrated, more precisely *ceases* all its effects, thus "at least avoiding the aggravation of the harm already done, besides restoring the integrity of the legal order" broken by those breaches (*ibid.*, p. 362, para. 39). And, furthermore, I warned:

> "One has to be aware that it has become commonplace in legal circles — as is the conventional wisdom of the legal profession — to repeat that the duty of reparation, conforming a 'secondary obligation', comes after the breach of international law. This is not my conception; when everyone seems to be thinking alike, no one is actually thinking at all. In my own conception, breach and reparation go together, conforming an indissoluble whole: the latter is the indispensable consequence or complement of the former. The duty of reparation is a *fundamental* obligation (. . .). The indissoluble whole that

violation and reparation conform admits no disruption (. . .) so as to evade the indispensable consequence of the international breaches incurred into: the reparations due (. . .)" (*I.C.J. Reports 2012 (I)*, p. 362, para. 40.)

18. Reparations, in my understanding, are to be properly appreciated within the conceptual framework of *restorative justice*, where they appear inter-related in all their forms (cf. Section IX, *infra*). In the international adjudication of inter-State cases before the Hague Court, there is a certain inclination to concentrate in particular on compensation, and to avoid focusing on other forms of reparation (besides *restitutio in integrum*, satisfaction, rehabilitation and guarantee of non-repetition), so as to avoid raising susceptibilities of States *inter se*.

19. I do not see much point in this approach, as an international tribunal should not be concerned with inter-State susceptibilies, but rather and only with the sound administration of justice, so as to achieve the realization of justice at international level, including in inter-State cases. As to the *cas d'espèce*, distinctly from what the ICJ states in the present Judgment on *Compensation Owed by the Republic of Nicaragua to Republic of Costa Rica* (para. 31), I sustain that reparations — including compensation — *can and do have an exemplary character*. And exemplary reparations gain in importance within regimes of protection (of human beings and of the environment) and in face of environmental damages, as in the *cas d'espèce*.

V. Reparations in the Thinking of the "Founding Fathers" of the Law of Nations: Their Perennial Legacy

20. In the law of nations, reparation is necessary to the preservation of the international legal order: reparation in effect responds to a true international need, in conformity with the *recta ratio*[3]. This latter marked presence in the jusnaturalist thinking of the "founding fathers" of international law. In effect, I have recalled the legacy of their thinking, — comprising the duty of reparation, — in my separate opinion, respectively in two ICJ decisions in cases pertaining to reparations, lodged with the Court by two African States, Guinea and Democratic Republic of the Congo.

21. Thus, in my separate opinion (paras. 14-21 and 86-87) in the *Ahmadou Sadio Diallo* case (*Compensation, Judgment, I.C.J. Reports 2012 (I)*, pp. 352-355 and p. 380), I deemed it fit to recall that the rationale of repara-

[3] On the *recta ratio* in the law of nations, cf. A. A. Cançado Trindade, *International Law for Humankind — Towards a New* Jus Gentium, 2nd rev. ed., Leiden/The Hague, Nijhoff/Hague Academy of International Law, 2013, pp. 11-14, 141 and 143-144; A. A. Cançado Trindade, *A Humanização do Direito Internacional*, 2nd rev. ed., Belo Horizonte/Brazil, Edit. Del Rey, 2015, pp. 3-27, 101-111, 122 and 647-665.

tion was already dwelt upon in the writings of the "founding fathers" of the law of nations, namely: the insights of F. de Vitoria, B. de Las Casas and A. Gentili in the sixteenth century; followed subsequently by those of F. Suárez, H. Grotius, and S. Pufendorf in the seventeenth century; and by those of C. van Bynkershoek and C. Wolff in the eighteenth century.

22. More recently, in my separate opinion (paras. 11-16) in the case of *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda), Order of 6 December 2016, I.C.J. Reports 2016 (II)* (pp. 1139-1142), I have again addressed the legacy of the "founding fathers" of international law as to reparations for damages. In effect, very early in the sixteenth century, F. de Vitoria examined the duty of *restitutio* in conformity with the *recta ratio* (his celebrated second *Relectio — De Indis*, 1538-1539, as well as his lesser known writing *De Restitutione*, 1534-1535).

23. F. de Vitoria's lesson *De Restitutione* ensued from his comments on the masterpiece of Thomas Aquinas in the thirteenth century (the *Summa Theologica*, — written between 1265 and 1274, — *secunda secundae*). It should not pass unnoticed that the duty of reparation found expression first in theology, and then moved into law (as shown in the lessons of the "founding fathers" of the law of nations/*droit des gens*); and it was not the only example to this effect.

24. Still over the sixteenth century, other pioneering authors studied the matter: for example, the duty of *restitutio* and reparation for damages was asserted by B. de Las Casas (*Brevísima Relación de la Destrucción de las Indias*, 1552, and *De Regia Potestate*, 1571), as well as by J. Roa Dávila (*De Regnorum Iustitia*, 1591). And F. Pérez focused on the duty of compensation, in the light of natural law thinking (*Apontamentos Prévios ao Tema da Restituição*, 1588).

25. Already in the sixteenth century, both F. de Vitoria and B. de Las Casas addressed *restitutio* together with satisfaction (as another form of reparation). They were aware that another form of reparation needed to be considered, as there were damages which were irreparable, thus rendering *restitutio* impossible. Yet, the ideal, for F. de Vitoria, was restitution, which should always be sought first; only when it was not possible, would one resort to other forms of reparation, like satisfaction, or else compensation (or indemnization *ad arbitrium boni viri*)[4].

[4] As a pool of universities in the Iberian Peninsula (Portugal and Spain) have recently undertaken, for one decade (ending in 2015), a project of further research on their own historical archives, new and unknown texts of early authors of the sixteenth century have then been found and brought to the fore for the first time; cf. P. Calafate and R. E. Mandado Gutiérrez (eds.), *Escola Ibérica da Paz / Escuela Ibérica de la Paz* (preface by A. A. Cançado Trindade), Santander, Edit. University of Cantabria, 2014, pp. 25-409. That project is currently being followed by a new one (to extend between 2016 to 2019), this time focusing in particular on restitution, examined in manuscripts also of the sixteenth century in the same Iberian Peninsula, likewise unknown to date.

26. Still in the sixteenth century, restitution was addressed by J. de la Peña (*De Bello contra Insulanos*, 1560-1561), and restitution and compensation also by A. de São Domingos (*De Restitutione*, 1574). At that time (sixteenth century), reparations were further addressed by A. Gentili (*De Jure Belli Libri Tres*, 1588-1589). Subsequently, early in the seventeenth century, J. Zapata y Sandoval wrote on the obligation of restitution (*De Justitia Distributiva et Acceptione Personarum ei Opposita Disceptatio*, 1609).

27. Later on, during the seventeenth century, H. Grotius examined reparation for damages also keeping in mind the dictates of *recta ratio* (*De Jure Belli ac Pacis*, 1625). Much later in the seventeenth century S. Pufendorf stressed the relevance of *restitutio* (*On the Duty of Man and Citizen according to Natural Law*, 1673). Others followed, in the examination of the duty of reparation in the eighteenth century, such as C. Wolff (*Principes du droit de la nature et des gens*, 1758).

28. The wisdom of the thinking of the "founding fathers" of law of nations *(droit des gens)* has rendered its legacy perennial, endowed with topicality even in our days, in this second decade of the twenty-first century. In my perception, the lessons extracted from their jusnaturalist thinking have helped to shape the attention devoted to principles (like those resting in the foundations of the duty of reparation) by Latin American legal doctrine, with its influential contribution to the progressive development of international law[5].

VI. Reparation in all Its Forms (Compensation and Others)

29. In my aforementioned recent separate opinion (paras. 11-16) in the case of *Armed Activities on the Territory of the Congo* (*Order of 6 December 2016, I.C.J. Reports 2016 (II)*, pp. 1139-1142), I have retaken the thinking of the "founding fathers" of the law of nations with attention turned to the *forms of reparation*. Their lessons, as to reparation (*restitutio* and other forms) are part of their perennial legacy; as from the sixteenth century to date, it is in jusnaturalist thinking that, over the centuries, prompt reparation has been properly pursued.

30. In another aforementioned case decided by the ICJ, that of *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo) (Compensation, Judgment, I.C.J. Reports 2012 (I))*, I also dwelt upon, in my separate opinion, *inter alia*, the distinct forms of reparation (*ibid.*, pp. 366-367, paras. 50-51, p. 368, para. 54, p. 378, para. 80, p. 379, para. 83 and p. 381, para. 90), namely: *restitutio in integrum*, satisfaction,

[5] Cf. A. A. Cançado Trindade, "The Contribution of Latin American Legal Doctrine to the Progressive Development of International Law", 376 *Recueil des cours de l'Académie de droit international de La Haye* (2014), pp. 19-92.

compensation, rehabilitation and guarantee of non-repetition of acts or omissions in breach of international law. I addressed them altogether, as I do in the present separate opinion in the *cas d'espèce*.

31. Compensation is — may I here reiterate — only one of the forms of reparation. There is no reason to overlook other forms of reparation. In the circumstances of a given case, they may prove to be the most appropriate one. Yet, in the present Judgment, the ICJ only briefly interrelates satisfaction and compensation (Judgment, para. 27), as well as restitution and compensation (*ibid.*, para. 31). It could or should have elaborated further on reparation in all its forms.

32. On the basis of my own experience, I think that, depending on the circumstances of a case, other forms of reparations may be even more appropriate and important than compensation. Given forms of reparation can more clearly be approached within the framework of *restorative justice* (cf. Sections IX-X, *infra*), which has much advanced in the last decades. Reparations for moral damages, for example, call for forms of reparation other than the pecuniary one (compensation), with the incidence of considerations of equity. In the case of reparation for environmental harm, one is to resort to such considerations of equity (cf. Sections VIII-IX, *infra*).

33. In my understanding, an appropriate consideration of the fundamental duty of reparation cannot limit itself to only one of its forms, namely, that of compensation. One may be tempted to argue that, as in the present case, the arguments advanced by the contending Parties before the Court focused only on compensation, the Court should limit itself to pronounce only on it. I am not at all convinced by such an outlook.

34. In fact, the arguments of both Costa Rica (in its Memorial) and of Nicaragua (in its Counter-Memorial) focused only on compensation. But that, in my view, does not entail that the ICJ — which is not an international arbitral tribunal — should focus exclusively on compensation. In order to *say what the Law is (juris dictio)* as to the fundamental duty of reparation, the Court cannot restrict itself only to compensation, even if the contending parties address only this latter. The Court can surely go beyond the contentions of the parties, so as to provide the solid foundations of its own decision, and persuade them that justice has been done.

35. It is true that *restitutio* is the modality of reparation *par excellence*; furthermore, it is related not only to compensation, and this latter cannot make abstraction of, or prescind from, the other forms of reparation. It is reasonable that *restitutio* should be sought first, as it amounts to a return to the pre-existing situation *(statu quo ante)*, before the occurrence of the breach. And nothing hinders *restitutio* being accompanied by one or more forms of reparation.

36. Moreover, in my understanding, contrary to conventional wisdom, *there is no hierarchy* between them: they intermingle among each other,

and the form of reparation to be ordered by the international tribunal concerned will be the one most suitable to remedy the situation at issue, and this will depend on the circumstances of each case. As they do not exclude each other, distinct but complementary forms of reparation may be ordered by the international tribunal concomitantly.

37. There are several examples of this, in the experience of Latin American countries with international adjudication, in the case law of the Inter-American Court of Human Rights (IACtHR)[6], for example. Within this latter, more than one and a half decades ago, by the turn of the century, in my separate opinion in the case of the *"Street Children" (Villagrán Morales and Others)* v. *Guatemala* (reparations, judgment of 26 May 2001), I deemed it fit to warn against "the risks of *reducing* the wide range of reparations" to compensation or pecuniary reparation only; one should also keep in mind, besides *restitutio in integrum* and compensation, distinct *forms* of reparation, such as satisfaction, rehabilitation, and guarantee of non-repetition of the wrongful acts (para. 28).

VII. Reparation for Environmental Damages, the Intertemporal Dimension, and *Obligations of Doing* in Regimes of Protection

38. In the same separate opinion in the *"Street Children"* case, I further outlined the principle of *neminem laedere*, and the duty of reparation attentive to the passing of time (para. 27). I then stressed the need to consider reparation in all its forms, without limiting its determination only to the pecuniary or monetary form (paras. 29-30)[7]. The intertemporal dimension (already addressed, in Section III, *supra*) marked its presence in the case of the *Moiwana Community* v. *Suriname* (merits); in the separate opinion that I appended to the IACtHR's judgment (of 15 June 2005), I proposed, in the circumstances of the case, to go beyond moral damage, given the configuration, in my perception, of the "spiritual damage" (paras. 71-81).

39. I then dwelt upon the determination of this newly conceived type of damage, as related to reparation:

> "Moral damages have developed in legal science under a strong influence of the theory of civil responsibility, which, in turn, was constructed in the light, above all, of the fundamental principle of the

[6] For an account and assessment, cf. A. A. Cançado Trindade, *El Ejercicio de la Función Judicial Internacional — Memorias de la Corte Interamericana de Derechos Humanos*, 4th rev. ed., Belo Horizonte/Brazil, Edit. Del Rey, 2017, pp. 359-386.

[7] On another occasion, in my separate opinion in the case of *Cantoral Benavides* v. *Peru* (reparations, judgment of 3 December 2001), once again I drew attention to the scope and forms of the duty of reparation (paras. 2-13).

neminem laedere, or *alterum non laedere*. This basic conception was transposed from domestic into international law, encompassing the idea of a reaction of the international legal order to harmful acts (or omissions) (. . .).

The determination of moral damages ensuing therefrom (explained by the Roman law notion of *id. quod interest*) has, in legal practice (national and international), taken usually the form of 'quantifications' of the damages. (. . .)

In historical perspective, the whole doctrinal discussion on moral damages was marked by the sterile opposition between those who admitted the possibility of reparation of moral damages (e.g., Calamandrei, Carnelutti, Ripert, Mazeaud and Mazeaud, Aubry and Rau, and others) and those who denied it (e.g., Savigny, Massin, Pedrazzi, Esmein, and others); the point that [what] they all missed, in their endless quarrels about the *pretium doloris*, was that reparation did not, and does not, limit itself to pecuniary reparation, to indemnification. Their whole polemics was conditioned by the theory of civil responsibility.

Hence the undue emphasis on pecuniary reparations, feeding that long-lasting doctrinal discussion. This has led, in domestic legal systems, to reductionisms, which paved the way to distorted 'industries of reparations', emptied of true human values. (. . .) There appears to be no sense at all in attempting to resuscitate the doctrinal differences as to the *pretium doloris*

. . . .

Unlike moral damages, in my view the *spiritual damage* is not susceptible of 'quantifications', and can only be repaired, and redress be secured, by means of obligations of doing *(obligaciones de hacer)*, in the form of satisfaction (. . .)." (Paras. 73-77.)

40. On another occasion, in my separate opinion in the *Gutiérrez Soler* v. *Colombia* case (merits, Judgment 12 September 2005), I pondered that *restitutio in integrum* is the modality of reparation *par excellence*; I further warned that there are circumstances in which the simple quantification of damages in pecuniary terms (for compensation) is insufficient, thus calling for the preservation of other forms of reparation, such as satisfaction (paras. 5-6), in pursuance of *obligations of doing*, bearing in mind the intertemporal dimension (para. 10).

41. *Obligations of doing* assume particular importance in the consideration of reparations within the framework of *regimes of protection*, such as those of the protection of the environment and the protection of the rights of the human person. Interrelated developments in those two regimes of protection[8] have much contributed to the evolution of contemporary pub-

[8] For an assessment, cf. A. A. Cançado Trindade, "Human Rights and the Environment", *Human Rights: New Dimensions and Challenges* (ed. J. Symonides), UNESCO/Dartmouth, Paris/Aldershot, 1998, pp. 117-153; [Various Authors], *Derechos Humanos,*

lic international law as a whole, including in respect of reparations in particular. Obligations of doing are essential to restoration.

VIII. The Centrality of *Restitutio* and the Insufficiencies of Compensation

42. Even though the ICJ devotes almost the whole of the present Judgment to pecuniary reparation (compensation), this latter does not meet the central issue or essence of the *cas d'espèce*, namely: how to remedy an environmental damage, to cease the effects of the wrong done, and to return to the situation that existed before the occurrence of the damage? Compensation is insufficient to this effect.

43. The priority to be aimed at is restitution. Compensation is to be resorted to, in particular, when the wrong done cannot be remedied, if *restitutio in integrum* cannot be achieved. And, then, compensation can come together with other forms of reparation (including the non-pecuniary ones); all depends on the circumstances of the case at issue, keeping in mind the necessity of restoration. Restorative justice encompasses reparations in all their forms (cf. *supra*), and one is to keep them all in mind.

44. In this connection, may it here be recalled that, on earlier occasions, such as in its Judgment (of 20 April 2010) in the case of *Pulp Mills on the River Uruguay*, opposing two South American States (Argentina and Uruguay), the ICJ pondered that, when the harm caused by a wrongful act has not been remedied by *restitutio*, the State responsible for it is obliged to provide compensation or satisfaction (para. 273).

45. Over a decade earlier, the Institut de droit international, for its part, in its resolution on "Responsibility and Liability under International Law for Environmental Damage", — adopted in the 1997 Strasbourg session, — sustained "a broad concept of reparation" for environmental damages, "including cessation of the activity concerned, restitution, compensation and, if necessary, satisfaction". It further stated that compensation here "should include amounts covering both economic loss and the costs of environmental reinstatement and rehabilitation" (Art. 24)[9].

46. The resolution then warned that there were environmental damages which were "irreparable or unquantifiable" damages, requiring other

Desarrollo Sustentable y Medio Ambiente / Human Rights, Sustainable Development and the Environment / Direitos Humanos, Desenvolvimento Sustentável e Meio Ambiente (ed. A. A. Cançado Trindade), 2nd ed., San José C.R./Brasília, IIDH/BID, 1995, pp. 1-414.

[9] *Annuaire de l'Institut de droit international* (Session de Strasbourg, 1997), Vol. 67, Book II, pp. 507 and 509.

measures for reparation, including equitable considerations and "intergenerational equity" (Art. 25)[10]. The adoption of the resolution was preceded by a long preparatory work[11], during which the point, *inter alia*, of "exemplary or punitive damages" was much discussed[12], from the start in relation to "a broader framework of reparation" and to "the role of collective reparation", amidst equitable considerations[13].

IX. The Incidence of Considerations of Equity and Jurisprudential Cross-Fertilization

47. In the present Judgment on *Compensation Owed by the Republic of Nicaragua to the Republic of Costa Rica*, the ICJ has not gone as far as it did in its previous Judgment on reparations in the case of *Ahmadou Sadio Diallo* (2012), when it was far more assertive as to considerations of equity (*I.C.J. Reports 2012 (I)*, pp. 334-335, para. 24, p. 337, para. 33 and p. 338, para. 36), and as to jurisprudential cross-fertilization (p. 331, para. 13, p. 333, para. 18, pp. 334-335, para. 24, p. 337, para. 33, pp. 339-340, para. 40, p. 342, para. 49 and pp. 343-344, para. 56). In the *cas d'espèce*, the Court could and should have been as forward-looking as it was in the *Ahmadou Sadio Diallo* case. The fact that in the present Judgment the ICJ finds itself bound to deal only with compensation because it so ordered in its previous Judgment of 2015 as to the merits, is to me a double misgiving.

48. In its aforementioned Judgment of 2015, the Court ordered *compensation* (*dispositif*, resolutory point 5 *(a)* and *(b)*), and also addressed — it should not pass unnoticed — satisfaction (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, p. 717, para. 139 and pp. 738-739, para. 224). In the present Judgment, the Court only briefly recalls this (para. 27); yet, it could and should have addressed compensation also in its relationship with all other forms of reparation. In comparison with its previous Judgment on reparations in the aforementioned case of *Ahmadou Sadio Diallo* (2012), the Court, in the present Judgment, only briefly refers to considerations of equity (para. 35), and considerably reduces its attention to jurisprudential cross-fertilization.

[10] *Annuaire de l'Institut de droit international* (Session de Strasbourg, 1997), Vol. 67, Book II, p. 509.

[11] Cf. *ibid.*, pp. 234, 238, 247, 251-252, 356-357, 359-360, 367, 370-371, 439, 442, 449, 452-453, 499, and 506-509.

[12] Cf. *ibid.*, pp. 391-392.

[13] Cf. *ibid.*, I, pp. 326-327, 335-339, 351 and 354.

49. As to this latter, the ICJ clearly stated, in its Judgment on reparations (of 19 June 2012) in the *Ahmadou Sadio Diallo* case (2012), that

> "the award of post-judgment interest is consistent with the practice of other international courts and tribunals (see, for example, *The M/V 'Saiga'* (No. 2) (*Saint Vincent and Grenadines* v. *Guinea*, judgment of 1 July 1999), ITLOS, para. 175; *Bámaca Velásquez* v. *Guatemala*, judgment of 22 February 2002 (reparations and costs), IACtHR, Series C, No. 91, para. 103; *Papamichalopoulos and Others* v. *Greece (Article 50)*, application No. 33808/02, judgment of 31 October 1995 (reparations), ECHR, Series A, No. 330-B, para. 39; *Lordos and Others* v. *Turkey*, application No. 15973/90, judgment of 10 January 2012 (just satisfaction), ECHR, para. 76 and *dispositif*, para. 1 *(b)*)" (*Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 344, para. 56).

50. In the present Judgment, the ICJ seems obsessed with compensation only, losing sight of this latter's close relationship with other forms of reparation. Its view of reparations is largely and unduly focused on, or limited to, compensation, pecuniary reparation only. This latter is, however, insufficient in case of breaches with aggravating circumstances; in my understanding, when addressing environmental damages we should widen our horizon for the purpose of determining reparations.

51. May it here be recalled that, for its part, the IACtHR, in its judgment on reparations (of 22 February 2002) in the case of *Bámaca Velásquez* v. *Guatemala*, after pointing out that even the determination of pecuniary reparation is done "in terms of equity", moved on to other forms of non-pecuniary reparations in terms of some *obligations of doing* (paras. 56, 60, 73, 78 and 81-85). Significantly, in the *dispositif* of its ground-breaking judgment in the case of *Bámaca Velásquez*, the IACtHR ordered, *first*, four non-pecuniary reparations in the form of obligations of doing (resolutory points 1-4), and only *afterwards* pecuniary (monetary) reparations (resolutory points 5-7).

52. Considerations of equity cannot be minimized (as positivists in vain try to do), as they assist the international tribunal concerned to adjust norms and rules to the circumstances of the concrete cases, and to adjudicate matters *ex aequo et bono*[14]. International tribunals, especially those operating within the framework of international regimes of protection, do not hesitate to make recourse to considerations of equity[15]. It so happens that the ICJ itself may be called upon to decide on matters

[14] A. A. Cançado Trindade, *Princípios do Direito Internacional Contemporâneo*, 2nd rev. ed., Brasília, FUNAG, 2017, pp. 96-99.

[15] Cf., e.g., IACtHR, case of *Cantoral Benavides* v. *Peru* (reparations, judgment of 3 December 2001), paras. 80 and 87; the IACtHR, once again, in the *dispositif* ordered pecuniary as well as non-pecuniary reparations in the form of *obligations of doing* (resolutory points 1-3, and 4-9, respectively).

pertaining to such regimes of protection, as the present case and the previous case of *Ahmadou Sadio Diallo* show, in respect of the duty of reparation.

X. Environmental Damages and the Necessity and Importance of Restoration

53. Compensation, in sum, is not self-sufficient; it is interrelated with other forms of reparation, and to *restoration* at large (cf. also Section XI, *infra*). The amounts of compensation awarded by the ICJ in the present Judgment (paras. 86-87, 106, 131 and 146), are directly related, to a greater or lesser extent, to restoration. In face of environmental damage, this is a point which cannot pass unnoticed; it is to be singled out, in respect of each of the amounts of compensation ordered by the Court. Only by means of restorative measures will the damaged environment be made to return, to the extent possible, to the pre-existing situation (*restitutio* by remedying works).

54. In a case of environmental damages like the present one, opposing Costa Rica to Nicaragua, full reparations can only be attained, in my understanding, within the framework of restorative justice. Full reparations require consideration not only of pecuniary compensation, but also — as I have already pointed out (cf. *supra*) — of other forms of reparation, starting with *restitutio*, as well as satisfaction, rehabilitation, and guarantees of non-repetition of the damages caused.

55. Any compensation awarded for environmental damage is to be used for restoration. The forms of reparation in a situation of the kind would further encompass apologies, quite proper mainly in regimes of protection (cf. Section VII, *supra*). In any case, environmental damages, in my perception, call first for *restitutio in integrum*; compensation comes afterwards, limited to material harm only, and aimed at restoration.

56. In the *cas d'espèce*, restorative justice is to be achieved, undoing the environmental harm caused by the excavation of the *caños* (2010-2011 and 2013). In its Memorial, Costa Rica specifies that the environmental harm for which it was requesting compensation related to the "quantifiable" material damage in consequence of Nicaragua's excavation of the first *caño* in 2010-2011 and another (eastern) *caño* in 2013 (paras. 2.2 and 3.44 *(a)*)[16].

[16] Costa Rica's Memorial refers to the dredging — accepted by Nicaragua — of three *caños* (one between October 2010 and March 2011, and the second and third in 2013 (para. 3.6).

57. The Court, in its previous Judgment (on the merits)[17] of 16 December 2015, after holding that the excavation of the three *caños* by Nicaragua amounted to breaches of international law (also under its Order on provisional measures of 8 March 2011) (resolutory points 2 and 3), determined Nicaragua's obligation of compensation to Costa Rica (resolutory point 5). The Court stated that its declaration of the finding of those breaches provided "adequate satisfaction" for them (in particular for the non-material injury) (para. 139).

58. In the present Judgment (in relation to *Certain Activities Carried Out by Nicaragua in the Border Area*), the ICJ focuses in particular on compensation only. The Court refers to environmental damage in respect specifically of the first *caño* (2010-2011) and the eastern *caño* (of 2013) (Judgment, paras. 51-52 and 55-56), in relation to the valuation of the felled trees. Yet, remediation of such damage calls for going beyond compensation only, so as to consider, to that effect, restoration measures.

XI. Restoration beyond Simply Compensation: The Need for Non-Pecuniary Reparations

59. In my understanding, mere pecuniary compensation, the only one that the legal profession is used to claiming, without much reflection, cannot at all prescind from endeavours of restoration, so as to achieve a proper remediation of environmental damage. In my own conception, reparations in their distinct forms should better be addressed altogether, and thus awarded, keeping in mind the necessity and importance of restoration.

60. Furthermore, in the light of the 1992 Rio de Janeiro Declaration on Environment and Development, human beings and the environment come together, one cannot make abstraction of one or the other; after all, human life and health are in harmony with the natural environment (Principle 1)[18] (cf. *infra*). After all, environmental harms concern popula-

[17] In the merged cases of *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica)*; the present Judgment on compensation relates to the former case.

[18] For an early study of this necessary anthropocentric outlook, cf. A. A. Cançado Trindade, *Direitos Humanos e Meio-Ambiente: Paralelo dos Sistemas de Proteção Internacional*, Porto Alegre/Brazil, S.A. Fabris Ed., 1993, pp. 1-351; cf., subsequently, A. A. Cançado Trindade, "Правата на човека и околната среда" ["Human Rights and the Environment"], *Правата на човека: нови измерения и предизвикателства* [*Human Rights: New Dimensions and Challenges*], Bourgas/Bulgaria, Bourgas Free University, 2000, pp. 126-161 (Bulgarian edition); and cf., more recently, e.g., A. A. Cançado Trindade, "A Proteção

tions, and the protections of human beings and their environment are interrelated.

61. In the present Judgment on *Compensation Owed by Nicaragua to Costa Rica*, the ICJ refers *in passim* to restoration (paras. 42-43, 53, 72 and 87). When it does so, it intermingles restoration with indemnification for impairment or loss of environmental goods and services[19]; and it links restoration to payment for environmental damage[20]. Only once the Court refers to "restoration measures" themselves[21], but without further elaborating on them.

62. In any case, in the *cas d'espèce* far greater attention is devoted by the ICJ, along the present Judgment, to indemnification for impairment or loss of environmental goods and services, in connection with compensation. The Court's view of "restoration" is thus too strict; it should in my view be much larger. Restoration of the damaged environment certainly deserves greater attention, well beyond monetary compensation. *Restorative justice* beholds reparations in all forms, among which rehabilitation and satisfaction.

63. On successive occasions in this Court I have stressed the imperative of the realization of justice. In my separate opinion in the case of the *Obligation to Prosecute or Extradite (Belgium* v. *Senegal)*, Merits, Judgment of 20 July 2012), for example, I deemed it fit to ponder that the realization of justice is essential to the rehabilitation of the victimized (*I.C.J. Reports 2012 (II)*, p. 533, para. 118, pp. 554-555, paras. 171-172 and p. 557, para. 181) and to the guarantee of non-repetition of the breaches (*ibid.*, pp. 534-535, para. 120). And I added that there are traces of restorative justice in the presence of the attention, from ancient to modern legal and cultural traditions, to the duty of reparation, in all its forms (not only compensation).

64. The roots of restorative justice are ancient, and I do not consider it as necessarily linked to reconciliation (a trend which only arose in the last three decades, in a given factual context) (*ibid.*, p. 555, para. 172 and p. 557, para. 180). The pioneering determination, by the ICJ, in the aforementioned Judgment of 2012 in the case of the *Obligation to Prosecute or Extradite*, of the application of the principle of *universal jurisdiction*, in

de Grupos Vulneráveis na Confluência do Direito Internacional dos Direitos Humanos e do Direito Ambiental International", *Evaluación Medioambiental, Participación y Protección del Medio Ambiente* (ed. G. Aguilar Cavallo), Santiago de Chile, Librotecnia, 2013, pp. 267-277.

[19] In paragraph 53 [Judgment], the Court refers, in an appropriate sequence, to "restoration of the damaged environment", and then to indemnification for "impairment or loss of environmental goods and services"; yet in paragraph 42 it refers, in reverse and improper sequence, to "indemnification for the impairment or loss of environmental goods and services", and then to "payment for the restoration of the damaged environment".

[20] Judgment, para. 87.

[21] *Ibid.*, para. 43.

my understanding has a bearing on restorative justice (the realization of justice itself).

65. In effect, the *realization of justice*, seeking to cease the effects of the harmful acts, can be seen in itself as a form of reparation, when securing satisfaction to those victimized. Restorative justice is considerably important: even if *restitutio in integrum* is not attainable, other forms of reparation such as rehabilitation and satisfaction are to be pursued so as to achieve restoration. Rehabilitation and satisfaction are forms of non-pecuniary reparation, requiring *obligations of doing* (cf. Section VII, *supra*) to the effect of restoration. To them one can add the guarantee of non-repetition of the breaches.

XII. Final Considerations

66. May I now turn to my final considerations. Reparations, their rationale, and all their forms, have been reckoned and elaborated as from the general principle of *neminem laedere*, in the light of jusnaturalist thinking. They are nowadays deeply rooted in the more lucid international legal thinking. The forms of reparation are distinct components of the duty to remedy promptly the wrong done, so as to cease its effects. Breach and reparation thus form an indissoluble whole.

67. The examination of reparation for environmental harm, as I have already pointed out, cannot prescind from considerations of equity (para. 32, *supra*). In its present Judgment on *Compensation Owed by the Republic of Nicaragua to the Republic of Costa Rica*, the ICJ, though referring briefly to equity (para. 35) and reasonableness (para. 142), appears too much concerned with quantification of environmental damages and of costs and expenses consequently incurred (with direct proof of causality).

68. To my mind, one cannot reasonably ascribe so much weight to *onus probandi incumbit actori* (in respect of costs and expenses) as related to reparation for environmental damage. After all, can environmental damage be precisely assessed and quantified only in financial or pecuniary terms? Not at all. In case of environmental damage, one should first look at *restitutio*. And considerations of equity have an incidence in the context of environmental harm.

69. The priority search for *restitutio* seeks to return to the *statu quo ante*, i.e., to return to the situation pre-existing before the occurrence of the harm. Compensation can only come afterwards, to be assessed and determined on the basis of equitable considerations. This is even more so in respect of environmental damage, such as the one before the ICJ in the factual context of the *cas d'espèce*, the full reparation of which is unattainable by compensation only.

70. To address reparation for environmental harm only from the angle of financial compensation is wholly unsatisfactory. One has to bear in mind the intrinsic value of the environment for the populations, and the harm done to it cannot be remedied only by the quantification of financial compensation. Take, for example, the question of reparation in respect of the damage done to wetlands. The 1971 Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat, e.g., warns from the start that the loss of wetlands "would be irreparable", and draws attention to the interdependence of human beings and their environment. It is necessary here to go beyond the strict inter-State outlook, and to keep in mind the populations of the countries concerned.

71. In other circumstances also, when faced with a large collectivity of victims, the ICJ cannot consider compensation only. Compensation (for environmental damage, and for costs and expenses consequently incurred) is just one aspect [or element] of the matter. After all, environmental harm affects also the populations concerned (the human collectivities which States represent)[22], and full reparation cannot lose sight of that.

72. Environmental harm further affects the *right of living*. Human life and surrounding nature are sources of pessimism and optimism, in face of the mystery of existence and the possibility of destruction. This is expressed in the poems of the thoughtful Central American writer (born in Nicaragua), Ruben Darío (1867-1916). In 1905, beholding the trees, in addressing fatality he pondered with pessimism:

> "Dichoso el árbol que es apenas sensitivo,
> y más la piedra dura, porque ésta ya no siente,
> pues no hay dolor más grande que el dolor de ser vivo,
> ni mayor pesadumbre que la vida consciente."[23]

73. Yet, hope never vanishes; Ruben Darío's poems disclose a blend of melancholy and joy. Again beholding the trees in a beautiful

[22] Cf., in this respect, e.g., Julio Barbosa (special rapporteur), UN International Law Commission: Eleventh Report on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law (ILC forty-seventh session,1995), *Yearbook of the International Law Commission* (1995)-II, p. 56, para. 20.

[23] Ruben Darío, "Lo Fatal" [1905], in: Ruben Darío, *Poesías Completas*, 11th ed., Madrid, Aguilar, 1968, p. 688; and Ruben Darío, *Poesía — Libros Poéticos Completos*, 1st ed., Mexico/Buenos Aires, Fondo de Cultura Económica, 1952, p. 305:

> "Happy is the tree, which is scarcely sensitive,
> and still happier is the hard stone, as it feels nothing,
> there is no greater pain as that of being alive,
> nor greater burden than that of conscious life." *[My own translation.]*

environment, two years later he further expressed, this time with optimism:

> "Oh pinos, oh hermanos en tierra y ambiente,
> yo os amo! Sois dulces, sois buenos, sois graves.
> Diríase un árbol que piensa y que siente,
> mimado de auroras, poetas y aves."[24]

74. In sum, the *right of living* brings to the fore the necessity and the importance of *restoration* (cf. *supra*), — by means of reparation in all its forms (as already pointed out — cf. *supra*), starting with the consideration of *restitutio*. For the examination of this latter, — may I reiterate, — considerations of equity are much needed. In relation to the factual context of the *cas d'espèce*, the ICJ — as I have already indicated (para. 61, *supra*) — refers briefly to restoration in the present Judgment, but without extracting all consequences therefrom.

75. Restoration of a damaged environment to its original condition may be complicated by the fact that environmental damage is often irreversible, as recognized in the aforementioned 1992 Rio de Janeiro Declaration on Environment and Development (Principle 15)[25], while addressing liability and compensation for such damage (Principle 13). The 1992 Rio Declaration further stresses the need to give special priority to addressing environmental vulnerability (Principle 6). It further underlines the need to secure healthy human life in harmony with nature (Principle 1).

76. Still in the nineties, the interrelationship between environmental protection and the *right of living* did not escape the attention of the ICJ itself. In its Advisory Opinion of 8 July 1996 on the *Threat or Use of Nuclear Weapons*, it pondered that "the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn" (*I.C.J. Reports 1996 (I)*, p. 241, para. 29). Yet, even if thus acknowledging the overarching importance of the environment to the welfare of human beings as a collective whole, in its reasoning it did not go beyond the inter-State outlook that it is used to (as shown, in the *dispositif*, by resolutory point 2E).

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[24] Ruben Darío, "La Canción de los Pinos" [1907], in Ruben Darío, *Poesía — Libros Poéticos Completos*, and *op. cit. supra* note 23, p. 335:

> "Oh pine trees, oh brothers on land and in the environment,
> I love you all! You are sweet, are good, are sombre.
> One would say you are a tree which thinks and feels,
> pampered by sunrises, poets and birds." *[My own translation.]*

[25] For a recent reassessment of Principle 15 of the 1992 Rio de Janeiro Declaration on Environment and Development, cf. A. A. Cançado Trindade, "Principle 15: Precaution", *The Rio Declaration on Environment and Development — A Commentary* (ed. J. E. Viñuales), Oxford University Press, 2015, pp. 403-428.

77. Two decades later, given the Court's finding that it had no jurisdiction in the three cases on *Obligations concerning Nuclear Disarmament* (lodged with it by the Marshall Islands), for alleged non-existence — in its view — of a dispute between the parties (Judgments of 5 October 2016), I appended three lengthy dissenting opinions thereto, wherein I sustained the need of a people-centred approach (*I.C.J. Reports 2016 (I)* and *(II)*, paras. 153-171 and 319), and relate the potential harm at issue to the fundamental right to life (*ibid.*, paras. 172-185); moreover, I discarded the strict and surpassed inter-State outlook (*ibid.*, paras. 190, 319 and 323), keeping in mind the claimant's attention to potential damages to human health and the environment together (*ibid.*, paras. 175-177)[26].

78. As to the present ICJ Judgment, I have sought, in this separate opinion appended thereto, to identify the lessons which, in my perception, can be extracted from the present Judgment, in the wider framework of restoration, with all its requirements and implications. I have also sought to demonstrate the need to proceed, as to the duty of full reparation, to considerations of equity (cf. *supra*).

79. The Court dwelt herein only on compensation, but even this latter is to be understood in its relationship with restoration. Thus, two monetary sums ordered by the ICJ in the present Judgment[27] are related to compensation for environmental damages in addition to restorative measures necessary, in respect of the wetland, to return it, to the extent possible, to the overall pre-harm condition. Thus, Costa Rica could use such monetary sums to plant trees and other plants, seeking to restore biodiversity, and increase the future provision of such services as gas regulation, air quality and raw materials, besides other restorative measures.

80. The other monetary sum ordered in the present Judgment[28] is granted as compensation for the restoration (remedial measure) already undertaken, i.e., the construction of the dyke (and monitoring overflights) enabling natural recovery in the area affected by the environmental damages. In sum, reparation is to be kept in mind in all its forms (compensation and others), so as to achieve restoration, with the remediation of the environmental harms.

81. Monetary compensation clearly has its limitations. It needs to be coupled with restoration measures, so as to minimize the damages, — even if *restitutio* is not wholly attainable. Restoring the harmed environment can repair the damages as much as possible. Restoration,

[26] The numbering of paragraphs, here referred to, corresponds to their numbering in one of the three cases at issue, namely, the one opposing the Marshall Islands to the United Kingdom; yet, the same considerations are found in my three dissenting opinions in the three aforementioned cases.

[27] Cf. paras. 86-87, and *dispositif*, resolutory point 1 *(a)* and *(b)*.

[28] Cf. paras. 142-143 and 145-146, and *dispositif*, resolutory point 2.

furthermore, opens ways for rehabilitation, and points towards the guarantee of non-repetition of the harmful occurrences. Reparation is to be contemplated and pursued in all its forms.

82. Last but not least, may I conclude in drawing attention to the fact that, unfortunately, lessons from the past have simply not been learned yet. Since the birth of the law of nations *(droit des gens)* in the sixteenth century *(supra)* to date, the duty of reparation has been studied (cf. Section V, *supra*). Yet, in contemporary international law, in this second decade of the twenty-first century, the application of that duty seems to be still in its infancy. Monetary or pecuniary quantification of environmental damage *per se* does not provide full reparation, in the wider framework of restoration. There remains nowadays a long way to go, in the endeavours towards the progressive development of international law in the domain of reparations.

XIII. Epilogue: A Recapitulation

83. From all the preceding considerations, it is crystal clear that my own reasoning goes well beyond that of the Court in the present Judgment on *Compensation Owed by Nicaragua to Costa Rica*. This being so, I deem it fit, at this stage, for the sake of clarity, to recapitulate all the points I have addressed herein, in my present separate opinion, keeping in mind that this is the first case in which the ICJ has been called upon to pronounce on reparations for environmental damages.

84. *Primus*: According to a well-established principle of international law, reparation must cease all consequences of the unlawful act and re-establish the situation which existed prior to the occurrence of the breach. *Secundus*: Recourse is to be made, first, to *restitutio in integrum*, and, when restitution is not possible, one then turns to compensation. *Tertius*: The conception of the duty of reparation for damages has deep-rooted historical origins, going back to antiquity and Roman law; it was inspired by the natural law general principle of *neminem laedere*.

85. *Quartus*: The breach causing harm promptly generates the duty of reparation; breach and prompt reparation form an indissoluble whole. *Quintus*: Responsibility for environmental damage and reparation cannot make abstraction of the temporal dimension; after all, responsibility for environmental damage has an inescapable longstanding dimension. *Sextus*: The duty of prompt reparation is a fundamental, rather than "secondary", obligation: it is an imperative of justice.

86. *Septimus*: Reparations are to be properly appreciated within the conceptual framework of *restorative justice*. *Octavus*: Exemplary reparations exist and gain in importance within regimes of protection and in face of environmental damages. *Nonus*: In the law of nations, reparation is necessary to the preservation of the international legal order, thus responding to a true international need, in conformity with the *recta*

ratio; this latter, and the rationale of reparation, were already dwelt upon in the writings of the "founding fathers" of the law of nations (sixteenth century onwards).

87. *Decimus*: Such writings also turned to the *forms* of reparation (namely, *restitutio in integrum*, satisfaction, compensation, rehabilitation and guarantee of non-repetition of acts or omissions in breach of international law). All these points are part of their perennial legacy on prompt reparation, in the line of jusnaturalist thinking. *Undecimus*: Depending on the circumstances of the case, forms of reparation other than compensation may be even more appropriate and important, within the framework of *restorative justice*.

88. *Duodecimus*: In order to *say what the Law is (juris dictio)* as to the fundamental duty of reparation, the Court cannot restrict itself only to compensation, even if the contending parties address only this latter. *Tertius decimus*: *Restitutio in integrum* is the modality of reparation *par excellence*, the first one to be sought. All forms of reparation *(supra)* complement each other. *Quartus decimus*: There are circumstances in which the simple quantification of damages (for compensation) is insufficient, calling thus for other forms of reparation.

89. *Quintus decimus*: *Obligations of doing* — which are essential to restoration — assume particular importance in the consideration of reparations within the framework of *regimes of protection* (such as that of the environment). *Sextus decimus*: Restorative justice encompasses reparations in all forms (starting with *restitutio*), to be duly kept in mind. Compensation is not self-sufficient; it is interrelated with other forms of reparation, and to *restoration* at large. *Septimus decimus*: Only by means of restorative measures will the damaged environment be made to return, to the extent possible, to the pre-existing situation (remediation).

90. *Duodevicesimus*: In the case of reparations (in all its forms) for environmental harm, one is to resort to *considerations of equity*, which cannot be minimized (as juspositivists in vain try to do); such considerations assist international tribunals to adjudicate matters *ex aequo et bono*. *Undevicesimus*: Greater attention is to be given to *jurisprudential cross-fertilization*, in particular to the relevant case law of the IACtHR and the ECHR on reparations in their distinct forms. International tribunals, especially those operating within the framework of international regimes of protection, do not hesitate to make recourse to considerations of equity (mainly the IACtHR).

91. *Vicesimus*: Full reparations, in a case of the kind of the present one, can only be attained within the framework of restorative justice. *Vicesimus primus*: Environmental harms also concern populations; one is to address environmental vulnerability, in seeking to secure human health

(1992 Rio de Janeiro Declaration on Environment and Development), the *right of living*. *Vicesimus secundus*: The *realization of justice* can be seen in itself as a form of reparation, when securing satisfaction to those victimized.

92. *Vicesimus tertius*: Environmental damages cannot be precisely assessed and quantified only in financial or pecuniary terms; full reparation is not attainable by compensation only. *Vicesimus quartus*: Attention is to be kept on the importance of restoration measures, beyond monetary compensation (e.g., planting trees to restore biodiversity), so as to achieve the remediation of the environmental harms. *Vicesimus quintus*: Restoration of the harmed environment can repair the damages as much as possible. Restoration measures can, with the passing of time, cease the consequences of the environmental damages.

93. *Vicesimus sextus*: The duty of reparation has been studied since the birth of the law of nations *(supra)*, but lessons from the past have simply not been learned yet. At present, the application of that duty in contemporary international law seems to be still in its infancy. *Vicesimus septimus*: Monetary compensation *per se* does not provide full reparation. There thus remains a long way to go, so as to ensure, within the wider framework of restoration, the progressive development of international law in the domain of reparations.

(Signed) Antônio Augusto CANÇADO TRINDADE.

SEPARATE OPINION OF JUDGE DONOGHUE

Compensation for "pure" environmental damage — Valuation of damage to environmental goods and services — Unsupported award for the value of restoration of the wetland.

1. I submit this separate opinion in order to set out the reasons for my votes with respect to compensation for the impairment or loss of environmental goods and services (Judgment, para. 157 (1) *(a)*) and restoration costs (*ibid.*, para. 157 (1) *(b)*).

I. Compensation for the Impairment or Loss of Environmental Goods and Services

2. I agree with the Court that Costa Rica is entitled to compensation for the impairment or loss of environmental goods and services, but I consider that the sum awarded by the Court exceeds the valuation that is supported by the evidence.

3. Reparation is intended to restore an applicant to the position in which it would have been if the respondent had not engaged in the wrongful conduct that caused damage to the applicant. The task before the Court at the present stage of these proceedings is limited to determining compensation for the material damage caused to Costa Rica by Nicaragua's wrongful conduct (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, pp. 740-741, paras. 229 (5) *(a)* and 229 (5) *(b)*). Damage to the environment can include not only damage to physical goods, such as plants and minerals, but also to the "services" that they provide to other natural resources (for example, habitat) and to society. Reparation is due for such damage, if established, even though the damaged goods and services were not being traded in a market or otherwise placed in economic use. Costa Rica is therefore entitled to seek compensation for "pure" environmental damage, which the Court calls "damage caused to the environment, in and of itself" (Judgment, para. 41).

A. The Evidence in Support of Costa Rica's Claim

4. The environmental damage of which Costa Rica complains occurred in its territory. There is no reason to depart from the general rule that the party which alleges a fact in support of its claims bears the burden of proving that fact (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 71, para. 162; *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 332, para. 15). Thus, it falls to Costa Rica to establish to the satisfaction of the Court the nature and extent of the injury that it asserts. This calls for evidence regarding the physical changes in Costa Rican territory that followed Nicaragua's unlawful activities and the environmental goods and services that allegedly were impaired or lost as a result of those changes.

5. The pleadings and reports that Costa Rica has submitted at the compensation phase of this case focus on the environmental goods and services that could, in theory, be provided by a wetland and on the methodology to be used to value those goods and services. However, Costa Rica offers little evidence to support its assertions regarding the extent of damage or the particular goods and services that it claims to have lost. When the pleadings and reports in the present phase of the proceedings are considered along with evidence submitted to the Court in earlier stages of the proceedings, however, it is possible to form some appreciation of physical changes in Costa Rica's territory that resulted from Nicaragua's activities and the effect of those activities on environmental goods and services.

6. The Report of Ramsar Advisory Mission No. 69 of 17 December 2010 (Memorial of Costa Rica (Merits), Vol. IV, pp. 83-136 (Ann. 147)), submitted by Costa Rica in an earlier stage of this case, provides some general information about the physical characteristics of the *Humedal Caribe Noreste* (hereinafter "HCN") Ramsar site in which the *caños* constructed by Nicaragua were located. It indicates that the total area of the HCN is 75,310 hectares (*ibid.*, p. 101), that the HCN is a wetland that includes lakes, flooded forests, rivers and estuarine lagoons and that the wetland is of great importance as a resting place for neotropical migratory birds and is home to several species of salamander (*ibid.*, p. 102). It states that "[l]and use is principally given over to the development of agricultural and livestock rearing activities, tourism and fishing" *(ibid.)*. Although Costa Rica has at times referred to the affected area as an "untouched wetland" (CR 2013/24, p. 19, para. 13 (Ugalde)), the evidence reveals a more nuanced picture. A 2011 Report of Costa Rica's Ministry of Environment, Energy and Telecommunications (Memorial of Costa Rica (Merits), Vol. IV, p. 278 (Ann. 155)) indicates that there has been an expansion of agricultural activity in the immediate vicinity of the area deforested by Nicaragua in 2010, and Costa Rica's expert

(Dr. Thorne) acknowledged in oral proceedings in 2015 that 52 hectares of flooded forest in the immediate vicinity of the 2010 *caño* had been cleared for agricultural purposes over the last decade or so (CR 2015/3, pp. 34-35 (Thorne)).

7. Nicaraguan personnel constructed three *caños* in the HCN. The first *caño* was excavated in 2010; the other two (western and eastern) *caños* were dug in 2013. Costa Rica's claim for compensation relates to the 2010 *caño* and the 2013 eastern *caño* only.

8. To construct the 2010 *caño*, Nicaragua cleared 5.76 hectares of land, within which it cleared a total of 2.48 hectares of forested land, located in three sectors of 1.67 hectares, 0.33 hectares and 0.48 hectares, respectively. The Parties disagree about the number and age of the trees that Nicaragua felled. I agree with the Court (Judgment, para. 79) that the removal of trees was the most significant damage caused by the excavation of the *caños.* I therefore review here the available evidence regarding the extent of this damage (that is, the number and age of felled trees).

9. In the first of the three sectors in which trees were felled to construct the 2010 *caño*, the Ministry of Environment, Energy and Communication of Costa Rica counted 197 felled trees (Memorial of Costa Rica (Merits), Vol. IV, pp. 47-64 (Ann. 145)). Costa Rica presented evidence that 66 per cent of these trees were older than 50 years and 46 per cent of the trees were older than 100 years (Memorial of Costa Rica on Compensation, Vol. I, p. 169 (Ann. 2); see also Memorial of Costa Rica (Merits), Vol. I, p. 366 (App. 1); Vol. IV, pp. 60-64 (Ann. 145)). The evidence suggests that Nicaragua felled close to 100 additional trees in the two other sectors and that the forests in those sectors were of a similar age to those in the first sector (Memorial of Costa Rica (Merits), Vol. IV, pp. 267-268 (Ann. 155)).

10. Nicaragua cleared an additional area of 0.43 hectares in constructing the 2013 eastern *caño*. There apparently were some trees in this area, although Costa Rica provided little information about them. At the merits stage of this case, Costa Rica's expert (Dr. Thorne) testified that the 2013 eastern *caño* was located on land that is much younger than is the area of the 2010 *caño*, and that did not have mature trees (CR 2015/3, p. 42 (Thorne)). Despite the distinction between the area of the 2010 *caño* and that of the 2013 eastern *caño* that Dr. Thorne recognized, Costa Rica uses the inventory of the 2010 *caño* as the basis for the portion of its compensation claim related to the 2013 eastern *caño*.

11. Taking into account the available information, I agree with the Court that the evidence establishes that Nicaragua felled approximately 300 trees. It did so in constructing the 2010 *caño*. There is no reason to doubt the evidence provided by Costa Rica regarding the age of those trees. For this reason, it seems appropriate to proceed on the basis that

recovery of the area of 2.48 hectares felled in construction of the 2010 *caño* will require 50 years. The other areas cleared to construct the 2010 *caño* (which were not forested) and the area of 0.43 hectares cleared to construct the 2013 eastern *caño* can be expected to recover more quickly. The evidence indicates that there has already been significant regrowth of plants other than trees.

12. Costa Rica bases its claim for compensation on six heads of damage: standing timber, other raw materials, gas regulation and air quality, natural hazards mitigation, soil formation and erosion control, and habitat and nursery (biodiversity). Costa Rica claims that all of these environmental goods and services will require a recovery period of 50 years and that, taken together, they should be valued at US$2,823,111.74 (Memorial of Costa Rica on Compensation, Vol. I, p. 149 (Ann. 1)).

13. In respect of two of Costa Rica's categories (damage to natural hazards mitigation and to soil formation and erosion control), I agree with the Court that Costa Rica has not presented evidence establishing environmental damage (Judgment, para. 74). As to the remaining four heads of damages (standing timber, other raw materials, gas regulation and air quality and biodiversity), the Court concludes (rather summarily) that Nicaragua's activities have "significantly affected" the provision of these goods and services (*ibid.*, para. 75). I consider that the evidence that bears on this conclusion regarding the extent of damage to Costa Rica deserves closer scrutiny.

14. Costa Rica presents a summary of its assertions regarding the six heads of damage in tabular form in Table 14 of the Neotrópica Report (Memorial of Costa Rica on Compensation, Vol. I, p. 146 (Ann. 1)). According to Costa Rica, construction of the 2010 *caño* caused first-year damage to all six categories of goods and services that it values, in total, at approximately US$100,000. Approximately one-third of this amount is based on alleged damage to soil formation and erosion control and seven per cent of the claim is based on alleged damage to natural hazards mitigation, both of which have been correctly rejected by the Court for lack of evidence.

15. Of the remaining four heads of damage, two loom large in Costa Rica's claim. Damage to standing timber accounts for approximately 20 per cent of Costa Rica's claim and damage to gas regulation and air quality is 37 per cent of Costa Rica's claim. The two remaining heads of damage (other raw materials and habitat and nursery (biodiversity)), taken together, account for only about two per cent of Costa Rica's claim.

16. There can be no doubt that the felling of trees caused significant damage to standing timber. As noted above, there is a basis in the evi-

dence to conclude that Nicaragua felled approximately 300 trees in constructing the 2010 *caño* and that the felled areas will take 50 years to recover.

17. The other significant head of damage claimed by Costa Rica is gas regulation and air quality. Under this head of damage, Costa Rica claims almost one million US dollars, as the present value of the alleged damage over 50 years (see Counter-Memorial of Nicaragua on Compensation, p. 135 (Ann. 1)). It bases this claim solely on the areas that Nicaragua deforested in constructing the two *caños*, a combined area of 2.91 hectares (Memorial of Costa Rica on Compensation, Vol. I, p. 146 (Ann. 1)). Costa Rica does not clearly define what it means by gas regulation and air quality, but the Neotrópica Report emphasizes the loss of carbon sequestration capacity.

18. Trees and other plants play an important role in carbon sequestration and deforestation can contribute to climate change. As Nicaragua points out, however, deforestation in one State leads to global damage to the capacity for carbon sequestration. Costa Rica nonetheless claims that it is entitled to compensation for the entire amount that it considers to be the value of the loss of carbon sequestration capacity.

19. Given the weight that Costa Rica attaches to its claim for damage to gas regulation and air quality services, its evidence in support of that claim should have been solid. However, Costa Rica relies primarily on a study authored by a graduate student that offers a valuation of damage far in excess of other studies noted by Costa Rica. The evidence presented by Costa Rica does not establish that Nicaragua's deforestation of an area of 2.91 hectares has had an impact on Costa Rica to the extent claimed by Costa Rica. Moreover, Costa Rica's claim that the gas regulation and air quality services provided by the affected area have been damaged at a level valued at almost one million US dollars must be considered in light of evidence that Costa Rica had allowed the clearing of land adjacent to the 2010 *caño* (see paragraph 6 above), with an area (52 hectares), which is almost twenty times the size of the area of 2.91 hectares on which Costa Rica bases its gas regulation and air quality claim. For all of these reasons, I do not find that Costa Rica has presented evidence supporting the Court's conclusion that Nicaragua's unlawful activities "significantly affected" gas regulation and air quality services. The damage to gas regulation and air quality that Nicaragua caused to Costa Rica is likely to be small.

20. It is not difficult to imagine that the destruction of trees and other plants and changes in water flows caused damage to the remaining two heads of damage — other raw materials (which I understand to mean the

plants other than trees that Nicaragua destroyed) and to the habitat and nursery (biodiversity) of numerous species, at least in the vicinity of the areas cleared by Nicaragua. As noted above, however, Costa Rica has given little weight to these services in its own valuation, and the areas cleared by Nicaragua make up only a tiny portion of the HCN, in which other, larger areas have been cleared for agricultural purposes. In addition, the recovery period for plants other than trees is likely to be shorter than the recovery period applicable to mature trees. These considerations lead to the conclusion that the damage to habitat and nursery (biodiversity) and other raw materials is not extensive.

21. I therefore conclude that Costa Rica has provided sufficient evidence to establish that Nicaragua's wrongful conduct caused significant damage to approximately 300 trees, many of them mature, and to the environmental goods and services provided by those trees, which will require 50 years to recover fully (standing timber). The destruction of trees and smaller plants (other raw materials) also caused a limited reduction in the environmental services of carbon sequestration (gas regulation and air quality) and habitat and nursery (biodiversity).

B. Valuation

22. Valuation of damage to environmental goods and services that have not been traded in a market is a matter of approximation and extrapolation. Neither Party presents a methodology that is entirely satisfactory. However, the approaches suggested by the Parties can assist the Court in arriving at an appropriate level of compensation.

23. Nicaragua pointed to a number of flaws in Costa Rica's valuation methodology, leading me to conclude that Costa Rica's methodology provides only limited assistance to the Court. I note three illustrations of shortcomings in that methodology:

(a) As Nicaragua points out, in calculating the value of standing timber, Costa Rica's methodology uses an annual value, as if each tree could have been harvested each year for 50 years. Nicaragua makes a convincing case that standing timber should be valued as a one-time loss of each tree.

(b) To estimate the cost of lost gas regulation services (carbon sequestration) in the affected area, Costa Rica draws values for carbon stock and annual carbon flow from a non-peer-reviewed study by a graduate student, ignoring other studies with lower valuations. Costa Rica

applies both the value of the stock and the value of the flow over a 50-year recovery period, assigning one-year values of US$14,955 to carbon stock and US$27 to carbon flow (Memorial of Costa Rica on Compensation, Vol. I, p. 146 (Ann. 1); p. 158 (Ann. 1, App. 3)), respectively. As Nicaragua notes, however, even assuming that carbon flow is lost each year, the carbon stock of a tree is released into the atmosphere once, when the tree is felled (Counter-Memorial of Nicaragua on Compensation, para. 4.25). Because Costa Rica's valuation is based almost entirely on stock, with only a negligible value assigned to flow, its methodology leads to a significant inflation of the value assigned to gas regulation and air quality.

(c) Costa Rica states that its calculations are based on a 4 per cent "discount rate", which is said to account *both* for the present value of the loss of goods and services in future years and for the rate of recovery of those services over a 50-year period. Nicaragua points out that a discount rate and a recovery rate are not one and the same, and that they are not typically combined into a single figure. Because Costa Rica's valuation methodology assumes natural recovery over a 50-year period, a recovery rate would take into account the fact that, in each successive year during the 50-year period, the impairment of goods and services decreases. A discount rate, on the other hand, takes into account the time-value of money and is used to calculate the present value of lost goods and services allocated to future years. The higher a discount rate, the lower the present value of future-year losses. Costa Rica combines both a recovery rate and a discount rate (as the term is usually used) within a single 4 per cent figure and appears to be applying a low discount rate and a low recovery rate, thus increasing the size of its claim, without explaining the basis for doing so.

24. I find more value in the approach that Nicaragua takes to the valuation of damage, at least as a starting-point. To value the environmental damage for which Costa Rica should be compensated, Nicaragua calls attention to a Costa Rican Government "Forest Conservation Certificate" programme which, according to a Costa Rican official, "was created for the purpose of remunerating the owner or holder [of land] for the environmental services generated by conserving their forest" (Reply of Costa Rica on Compensation, p. 134 (Ann. 1, App. 10)). The programme, according to this official, is

> "a mechanism used by the Costa Rican Government to monetarily compensate particular forest owners for their conservation efforts,

given the fact the society at large benefits from a variety of services that impact the protection and the improvement of the environment (The Forest Law refers to these services as '. . . greenhouse gases mitigation (fixing, reduction, sequestration, storage and absorption) protection of water for urban, rural or hydroelectric use, protection of biodiversity for its conservation sustainable, scientific and pharmaceutical use, research and genetic improvement, protection of ecosystems and diverse forms of life and natural scenic beauty for tourism and scientific purposes.')" (Reply of Costa Rica on Compensation, p. 134.)

25. Thus, this programme is designed to compensate landowners who preserve land that provides an array of environmental services to Costa Rican society, including certain of the environmental services that are at issue in the present case (greenhouse gas mitigation and the protection of biodiversity and ecosystems). Because the programme assigns an overall value to all environmental services provided by the forested area, its use as a valuation methodology does not require separate valuation of each environmental service for which Costa Rica seeks compensation.

26. Using the highest level of compensation that Costa Rica has paid under this programme, adjusted to 2017 US dollars (US$309 per hectare per year), and based on a recovery period of 30 years, Nicaragua (using a 4 per cent discount rate) assigns a maximum present value of just under US$35,000 to the environmental damage caused by its activities. (It is appropriate that Nicaragua does not further reduce the amount of compensation to take into account the rate of recovery, given that the programme would appear to apply regardless of the extent of recovery in a given year.)

27. The programme invoked by Nicaragua is, at best, an approximation of the value of the environmental services that the affected area provided to the State of Costa Rica and its population, which were damaged by Nicaragua's conduct. In two respects, Nicaragua's methodology may undervalue the services damaged by Nicaragua. First, Nicaragua bases its valuation on annual payments until the damaged area recovers. Its maximum valuation of US$35,000 is based on a 30-year recovery period. However, the services provided by the mature forests on the 2.48 hectares of land that Nicaragua deforested will be impaired during a 50-year recovery period. The compensation suggested by Nicaragua should therefore be increased to take into account the present value of annual payments in respect of these 2.48 hectares throughout a 50-year recovery period (i.e. by adding to the above-mentioned US$35,000 the present value of payments in years 31-50 for 2.48 hectares at US$309 per hectare (using Nicaragua's 4 per cent discount rate)). Secondly, Costa Rica has pointed out that the programme cited by Nicaragua does not apply to

government-owned land and that the programme is not specific to wetlands. It may be that the environmental services provided by 6.19 hectares of land in a protected wetland should be assigned a value that exceeds the maximum rate that Costa Rica has previously paid in this programme. Taken together, these considerations call for an increase in the valuation of environmental services based on Costa Rica's programme, perhaps in the range of five to ten thousand US dollars.

28. There is an additional reason why the programme invoked by Nicaragua does not appear to capture all of the environmental damage caused by Nicaragua to Costa Rica. As described by the above-cited Costa Rican official, this programme compensates landowners for the value to Costa Rican society of environmental services. The programme applies to land on which there has been no timber harvest during the preceding two years (Reply of Costa Rica on Compensation, p. 134 (Ann. 1, App. 10)). Thus, the rate of compensation does not appear to take into account the value of standing timber, which may or may not be found on the land in each year of payment. If the Forest Conservation Certificate programme is used to value the environmental damage to Costa Rica, it must be supplemented by another methodology that assigns a value to the 300 felled trees as standing timber.

29. Costa Rica's methodology for valuing standing timber makes use of the market value for timber. This is a reasonable proxy for their value, despite the fact that the felled trees were not being grown for timber. As noted in the Neotrópica Report, the felled trees were part of Costa Rica's "national reserves" (Memorial of Costa Rica on Compensation, Vol. I, p. 128 (Ann. 1)), which could have been harvested and sold as timber.

30. The Neotrópica Report assigns a value of US$19,558.64 and 1,970.35 to the first-year standing timber losses for, respectively, the 2010 and 2013 eastern *caños* (*ibid.*, p. 146). As it does for all of the environmental services for which Costa Rica seeks compensation, Neotrópica then applies the first-year loss value over a 50-year recovery period, using a 4 per cent "discount rate", to reach a total loss for each environmental service over that 50-year period (Memorial of Costa Rica on Compensation, Vol. I, para. 3.18; pp. 134-147 (Ann. 1); pp. 167-171 (Ann. 2); Reply of Costa Rica on Compensation, pp. 67-69 (Ann. 1)). Using Neotrópica's methodology, Costa Rica's total claimed compensation for standing timber is approximately US$462,490 (see Counter-Memorial of Nicaragua on Compensation, p. 135 (Ann. 1)). However, as noted above, I find persuasive Nicaragua's criticisms of the methodology that Costa Rica uses to arrive at this value, which appears to be premised on the assumption that

each tree is harvested each year for 50 years. Relying on its own experts, who have recalculated the value of the standing timber by changing only this one element of Costa Rica's methodology (and, *arguendo*, accepting all other elements), Nicaragua concludes that the lost standing timber should be assigned a value of approximately US$30,000.

31. Starting from the present value of the lost or impaired environmental services that Nicaragua calculates based on the Costa Rican Forest Certificate programme (US$35,000), adjusted to take into account (i) a 50-year recovery period for the deforested area of 2.48 hectares of mature forest and (ii) the fact that the damaged area was in a protected wetland, I conclude that the lost or impaired environmental services (including gas regulation and air quality, habitat and nursery (biodiversity) and other raw materials) should be assigned a present value of approximately US$40,000 to US$45,000. This valuation should be supplemented by a value for lost timber of approximately US$30,000. In total, it appears that the present value of the environmental goods and services damaged by Nicaragua's unlawful conduct is in the range of US$70,000 to US$75,000.

32. I agree with the Court that valuation of "pure" environmental damage is inevitably an approximation based on just and reasonable inferences. In the present case, however, the alleged damage is to a small area about which the Court has made extensive inquiries over a period of years. In such circumstances, a survey of the evidence regarding the extent of damage to environmental goods and services would assist the Court in ensuring both that the compensation that it awards provides reparation to the applicant and that it does not impose punitive or exemplary damages on the respondent. I consider that the reasoning in the Judgment does not provide a sufficient justification of the level of compensation set by the Court. I have voted in favour of the amount set by the Court, but have done so with some misgivings.

II. Costa Rica's Claim for the Value of Restoration of the Wetland

33. I have voted against paragraph 157 (1) *(b)* awarding US$2,708.39 to Costa Rica for the "value for restoration of the wetland" (Memorial of Costa Rica on Compensation, p. 147 (Ann. 1; Report from Fundación Neotrópica)). Although the amount of compensation awarded in para-

graph 157 (1) *(b)* is a miniscule part of Costa Rica's total claim, I consider that Costa Rica has not met its burden to prove the facts on which it bases this element of its claim, and thus that the Court should have rejected it.

34. As the Court observes (Judgment, para. 43), "active restoration measures" may be warranted when natural recovery does not suffice to restore the damaged environment to its prior condition. It was open to Costa Rica to pursue such active measures (for example, the replanting of trees) and to seek compensation for the cost of those measures.

35. In the Counter-Memorial on Compensation, Nicaragua addressed Costa Rica's claim for restoration (both the claim for "restoration of the wetland" and a claim for soil replacement). Nicaragua pointed out that "there is no indication in the Memorial that Costa Rica has any intention to carry out further restoration work" and that none of the four reports that are cited by Fundación Neotrópica recommended restoration measures beyond the construction of the dyke in 2017 (Counter-Memorial of Nicaragua on Compensation, para. 4.35; Rejoinder of Nicaragua on Compensation, para. 2.3). Costa Rica could have countered these assertions in its Reply on Compensation, but did not do so. In the absence of evidence that Costa Rica intends to pursue active "restoration of the wetland" measures, I consider that the compensation to Costa Rica for environmental damage should have been limited to compensation for the value of environmental goods and services impaired or lost as a consequence of Nicaragua's unlawful activities.

(Signed) Joan E. Donoghue.

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SEPARATE OPINION OF JUDGE BHANDARI

Relationship between compensation and restitution in the present case — Costa Rica chose compensation as an appropriate method for reparation in the present case — Insufficiency of evidence submitted by the Parties on the quantification of environmental damage — Necessity to quantify the damage based on equitable considerations — Relevance of the precautionary approach — Punitive or exemplary damages are justified where a State has caused serious injury to the environment — Ensuring environmental protection is one of the supreme obligations under international law in the twenty–first century.

1. I concur with the Court's reasoning on compensation owed to Costa Rica for Nicaragua's unlawful activities. However, I wish to make some comments, additional to the Court's Judgment, on the determination of the quantum of compensation by reference to equitable considerations, on the relevance of the precautionary approach and on punitive damages in international law.

A. Restitution and Compensation in the Present Case

2. It is established that restitution is the preferred method of reparation under international law. However, in the circumstances of this case the appropriate method of reparation is compensation. The Court confirmed that "compensation may be an appropriate form of reparation, particularly in those cases where restitution is materially impossible or unduly burdensome" (Judgment, para. 31), supporting its statement by reference to the 2010 Judgment in *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay)* [1]. The Court did not elaborate any further.

3. Article 35 of the 2001 Draft Articles on the Responsibility of States for Internationally Wrongful Acts ("ARSIWA") provides that "[a] State responsible for an internationally wrongful act is under an obligation to make restitution, that is, to re-establish the situation which existed before the wrongful act was committed" [2], or, in other words, to re-establish the *status quo ante*. However, there are two exceptions to this obligation to make reparation by way of restitution: first, restitution must not be

[1] *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, pp. 103–104, para. 273.

[2] Draft Articles on Responsibility of States for Internationally Wrongful Acts with Commentaries, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), p. 96.

"materially impossible"[3]; second, restitution must not "involve a burden out of all proportion to the benefit deriving from [it] instead of compensation". Article 36 of ARSIWA states that "[t]he State responsible for an internationally wrongful act is under an obligation to compensate for the damage caused thereby, *insofar as such damage is not made good by restitution*"[4] (emphasis added). The text of Article 36 clearly conveys that compensation is available as a method for reparation only in so far as the damage is not made good by restitution. The hierarchy between restitution and compensation is confirmed by the International Law Commission's ("ILC") commentary to Article 36, which states that the former has "primacy as a matter of legal principle"[5], but can be "partially or entirely ruled out either on the basis of the exceptions expressed in Article 35, or because the injured State prefers compensation or for other reasons"[6]. The Court upheld the primacy of restitution over compensation in earlier decisions[7].

4. In the present case, there are two reasons why compensation, despite not being the preferred method for reparation as a matter of legal principle, is the form which Nicaragua's reparation must take.

5. First, the present case falls within the scope of one of the exceptions to restitution listed in Article 35 of ARSIWA, since under the circumstances restitution would be "materially impossible". The Court was requested to award compensation for environmental damage, which is unlikely to be made good by way of restitution. In paragraph 55 of its Judgment, the Court noted that Costa Rica requested to be compensated for six categories of goods and services lost owing to Nicaragua's activities: "standing timber; other raw materials (fibre and energy); gas regulation and air quality; natural hazards mitigation; soil formation and erosion control; and biodiversity, in terms of habitat and nursery". It seems clear that it would be impossible for Nicaragua to revert to the *status quo ante* (i.e., the situation existing before the unlawful activities in the affected area). Even if one considered that trees from which timber is harvested could be regrown, thus achieving some sort of *restitutio in inte-*

[3] Draft Articles on Responsibility of States for Internationally Wrongful Acts with Commentaries, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), p. 96.

[4] *Ibid.*

[5] *Ibid.*, p. 99, para. 3.

[6] *Ibid.*

[7] *Pulp Mills on the River Uruguay*, *supra* note 1, pp. 103-104, para. 273; *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, p. 198, para. 153. See also *Factory at Chorzów, Merits, Judgment No. 13, 1928, P.C.I.J., Series A, No. 17*, p. 47.

grum, it seems extremely difficult that Nicaragua could restore the situation existing prior to its activities in the affected area in respect of air quality, soil erosion, and loss of biodiversity.

6. Second, an injured State can in principle choose which method of reparation it prefers in order for the responsible State to make good the damage caused. According to the ILC's commentary to the ARSIWA, the "provision of each of the forms of reparation . . . may . . . be affected by any valid election that may be made by the injured State as between different forms of reparation"[8], since "in most circumstances the injured State is entitled to elect to receive compensation rather than restitution"[9]. The ILC's commentary refers to Article 43 of the ARSIWA, under which an injured State invoking the responsibility of another State may specify, in its notice of claim, "*(b)* what form reparation should take . . ."[10]. Although in its Application instituting proceedings of 18 November 2010 Costa Rica did not state its preference for compensation, simply requesting the Court "to determine the reparation which must be made by Nicaragua"[11], it later unequivocally asked Nicaragua to provide compensation and not restitution. In its Memorial of 5 December 2011, Costa Rica stated that it "seeks pecuniary compensation from Nicaragua for all damages caused by the unlawful acts that have been committed or may yet be committed"[12]. In its final submissions at the closure of the oral proceedings on the merits (28 April 2015), Costa Rica again requested the Court to order Nicaragua to "make reparation in the form of compensation for the material damage . . . including but not limited to . . . damage arising from the construction of artificial *caños* and destruction of trees and vegetation on the 'disputed territory'"[13].

7. On these grounds, restitution, despite being the preferred method of reparation as a matter of legal principle, is not the most appropriate method of reparation given the circumstances of the present case. Compensation is the appropriate, and the first legally available, method to repair the damage suffered by Costa Rica.

[8] Draft Articles on Responsibility of States for Internationally Wrongful Acts with Commentaries, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), p. 96, para. 4.
[9] *Ibid.*
[10] *Ibid.*, p. 119.
[11] Application instituting proceedings (18 November 2010), para. 42.
[12] Memorial of Costa Rica (5 December 2011), para. 7.10.
[13] CR 2015/14, p. 70 (Ugalde-Alvarez).

B. Determining the Quantum of Compensation by Reference to Equitable Considerations

8. In paragraph 72 of the Judgment, the Court explained its three-step methodology used in order to determine the *quantum* of compensation owed to an injured State. Under this approach, formulated in *Diallo*, the Court must determine that: (i) a State suffered an injury; (ii) there is a "sufficiently direct and certain causal nexus" between the responsible State's unlawful activities and the injured State's injury (causation); and (iii) the amount due in compensation[14].

9. The Court established that Costa Rica suffered an injury in its Judgment of 16 December 2015[15]. By finding, in the 2015 Judgment, that Nicaragua breached its international obligations vis-à-vis Costa Rica, the Court also implicitly found that there was a "sufficiently direct and certain causal nexus" between Nicaragua's activities and the injury suffered by Costa Rica. Accordingly, the Court decided, in the 2015 Judgment, that Nicaragua shall pay compensation to Costa Rica[16].

10. Concerning valuation, I believe that the amount awarded to Costa Rica for environmental damage has not been sufficiently explained by the Court's reasoning. In paragraphs 76-77 of the Judgment, the Court expressed its view that the evidence provided by both Parties did not support the valuations proposed in their respective written proceedings. In its commentary to Article 36 ARSIWA, the ILC admitted that "[d]amage to . . . environmental values . . . may be difficult to quantify"[17]. The present case compellingly illustrates the difficulties of quantifying damages for environmental harm. The felling of trees by Nicaragua prior to the digging of the *caños* could not be made good simply by awarding Costa Rica the costs of lost timber. Through photosynthesis, the felled trees also produced oxygen, which was used by a number of living organisms in the affected area, including humans and a variety of animals. Through their roots, such trees also exchanged elements with the soil and the organisms living therein, especially nitrogen-fixing bacteria. The difficulty in assigning a monetary value to such arboreal activities seems apparent, since it is unclear and uncertain how long it would take for the felled trees to regrow and for the environmental services lost to be restored as a result.

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[14] *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 332, para. 14.

[15] *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road by Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, p. 740, para. 229 (2) to (4).

[16] *Ibid.*, para. 229 (5) *(a)*.

[17] Draft Articles on Responsibility of States for Internationally Wrongful Acts with Commentaries, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), p. 101, para. 15.

11. In a case such as this, in which the evidence presented to the Court is inadequate to precisely quantify the compensation to be awarded to an injured party, I believe that the most appropriate decision is to award the injured State a lump sum amount of compensation based on equitable considerations. The Court did not clearly state that it reached its decision on quantum based on equitable considerations. However, such an approach would be consistent with the 2012 Judgment in *Diallo*, in which the Court considered it "appropriate to award an amount of compensation based on equitable considerations"[18]. Moreover, it is also consistent with the Court's decision in the present Judgment not to apply one specific method of valuation (para. 52).

12. The Court could have been more explicit concerning its approach to determining the quantum of compensation, with particular regard to the use of equitable considerations in cases in which the available evidence is not adequate as to the exact amount to be awarded to an injured State. If it had done so, the Court would have been consistent with its previous jurisprudence on compensation and would have explained in more detail how it determined the quantum of compensation awarded for environmental harm.

C. The Precautionary Approach under International Environmental Law

13. The growing awareness of the need to protect the natural environment is also shown by the crystallization of the precautionary approach into a customary rule of international law. The precautionary approach was first formulated in a non-binding international instrument, namely under Principle 15 of the 1992 Rio Declaration. However, States have subsequently incorporated the precautionary approach into a considerable number of binding treaty provisions, which include, among others, Article 3 (3) of the 1992 United Nations Framework Convention on Climate Change[19], Article 2 (2) *(a)* of the 1992 OSPAR Convention[20], and Article 6 of the 1995 Fish Stocks Agreement[21]. More recently, States made direct references to the need of adopting the precautionary approach in resolution 66/288 of 27 July 2012, which the United Nations General Assembly unanimously adopted as an endorsement of the Rio+20 Declaration[22].

[18] *Ahmadou Sadio Diallo*, *supra* note 14, p. 337, para. 33.
[19] United Nations, *Treaty Series (UNTS)*, Vol. 1771, p. 107.
[20] *Ibid.*, Vol. 2354, p. 67.
[21] *Ibid.*, Vol. 2167, p. 3.
[22] UN doc. A/RES/66/288, Annex: "The future we want" (11 September 2012), paras. 158 and 167.

14. International courts and tribunals also recognized the importance of the precautionary approach. In the 1990s, the Court did not explicitly rely, or indeed mention, the precautionary approach in its judicial decisions on environmental law issues[23]. However, in its 2010 Judgment in *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay)*, the Court stated that "a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute [of the River Uruguay]"[24]. Similarly, the International Tribunal for the Law of the Sea ("ITLOS") did not rely on the precautionary approach in its early decisions, although it seemed to include implicit references to that approach in its reasoning in *Southern Bluefin Tuna (New Zealand* v. *Japan; Australia* v. *Japan)*[25]. In its 2011 Advisory Opinion the Seabed Disputes Chamber of ITLOS observed that "the precautionary approach has been incorporated into a growing number of international treaties and other instruments", which "has initiated a trend towards making this approach part of customary international law"[26].

15. The apparent crystallization of the precautionary approach into a customary rule of international law was a rapid process, which took place over only three decades. The speed of this process could be seen as a testament to the consciousness of the international community of States with respect to environmental protection. On these grounds, it would seem appropriate for the Court to rely more explicitly on the precautionary approach in future disputes raising issues of international environmental law.

D. Punitive or Exemplary Damages for Environmental Harm

16. Current international law thus excludes awards of punitive or exemplary damages. In its Judgment, the Court stated that "[c]ompensation should not . . . have a punitive or exemplary character" (para. 31). While I agree with the view that current international law does not include

[23] See *Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the* Nuclear Tests (New Zealand *v.* France) *(New Zealand* v. *France) Case, Order of 22 September 1995, I.C.J. Reports 1995*, p. 290, para. 5; *Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, I.C.J. Reports 1997*, pp. 41-42, para. 54.

[24] *Pulp Mills on the River Uruguay*, *supra* note 1, p. 71, para. 164.

[25] *Southern Bluefin Tuna (New Zealand* v. *Japan; Australia* v. *Japan), Provisional Measures, Order of 27 August 1999, ITLOS Reports 1999*, p. 296, paras. 73-80.

[26] *Responsibility and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, p. 47, para. 135. ITLOS as a full tribunal mentioned the precautionary approach in the *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, 2 April 2015, ITLOS Reports 2015*, p. 59, para. 208.

punitive or exemplary damages, I believe that additional considerations are relevant, including whether, in light of the circumstances of the case, punitive damages ought to be awarded as a sufficient deterrent against future conduct which might result in environmental harm.

17. The preservation of the natural environment is vital to the survival of mankind. States have recognized the necessity of preserving the environment by gradually endorsing the precautionary approach (see above). Moreover, they have created a number of international law instruments which address issues relating to environmental protection. For example, Part XII of the 1982 United Nations Convention on the Law of the Sea[27] is entirely dedicated to the protection of the marine environment. Article XX, paragraphs *(b)* and *(g)*, of the 1947 General Agreement on Tariffs and Trade ("GATT")[28] provides for exceptions to obligations under the GATT in case some trade–restrictive measures are, respectively, measures "*(b)* necessary to protect human, animal or plant life or health", or measures "*(g)* relating to the conservation of exhaustible natural resources". Article I of the 1977 Convention on the prohibition of military or any other hostile use of environmental modification techniques[29] states that

> "[e]ach State Party . . . undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party".

In the present case, the Court was presented with an opportunity to develop the law of international responsibility beyond its traditional limits by elaborating on the issue of punitive or exemplary damages.

18. Science has proven that damage to the environment adversely affects human beings in a manner which is far-reaching and, often, not precisely quantifiable. It has been established by scientific evidence that humanity will suffer tremendous harm if irremediable damage is caused to the Earth's natural environment. Preserving and protecting the natural environment ought to be one of the supreme obligations under international law in the twenty-first century. I am persuaded that an extraordinary situation warrants a remedy that is correspondingly extraordinary[30]. I am of the view that this case presents such an extraordinary situation, and that the law of international responsibility ought to be developed to

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[27] *UNTS*, Vol. 1833, p. 3.

[28] *Ibid.*, Vol. 1867, p. 187.

[29] *Ibid.*, Vol. 1108, p. 153.

[30] *Samaj Parivartana Samudaya* v. *State of Karnataka*, (2013), *Supreme Court of India Cases (SCC)*, Vol. 8, p. 154, para. 37; cited in *Samaj Parivartana Samudaya and Ors.* v. *State of Karnataka and Ors.* (2017), *SCC*, Vol. 5, p. 434, para. 15.

include awards of punitive or exemplary damages in cases where it is proven that a State has caused serious harm to the environment. The importance which humanity attaches, or ought to attach, to the well-being of the natural environment justifies, in my view, a progressive development in this direction.

19. Awards of punitive damages in these circumstances would seem to be in line with the domestic court practice in certain jurisdictions where judicial decisions on environmental harm cases have been handed down. For instance, under Indian law punitive or exemplary damages are awarded "whenever the defendant's conduct is found to be sufficiently outrageous to merit punishment"[31]. This approach extends to cases concerning environmental harm, in which a "person guilty of causing pollution can also be held liable to pay exemplary damages so that it may act as a deterrent for others not to cause pollution in any manner"[32]. In addition, under Indian law it is firmly established that there is absolute liability for harm to the environment, in accordance with the "polluter pays principle"[33]. According to Indian courts, this principle is part of the concept of "sustainable development"[34], as well as of customary international law[35]. In my view, the principle that polluters must bear the financial costs of their activities causing harm to the environment should also extend to punitive damages. Only if those causing harm to the environment, are made to pay beyond the quantifiable damage can they be deterred from causing similar harm in the future.

20. According to the United States Supreme Court, awards of punitive damages take "the reprehensibility of the defendants' conduct, their financial condition, the magnitude of the harm, and any mitigating facts" into consideration, amongst other factors[36]. As an additional sum with the objective to punish and discourage, punitive damages could also serve as a means to prevent or discourage activities that harm the environment and have catastrophic consequences[37].

21. Nevertheless, in awarding punitive or exemplary damages international courts and tribunals should not lose sight of the kind of environmental harm caused by a State, as well as of its extent. Although punitive damages can be justified based on humanity's necessity to live in a safe

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[31] *Common Cause* v. *Union of India* (1999), *SCC*, Vol. 6, p. 667, paras. 133-134.

[32] *M. C. Mehta* v. *Kamal Nath* (2000), *SCC*, Vol. 6, p. 213, para. 24.

[33] *Vellore Citizens' Welfare Forum* v. *Union of India* (1996), *SCC*, Vol. 5, p. 647, para. 12; *Indian Council for Enviro-Legal Action* v. *Union of India* (2011), *SCC*, Vol. 8, p. 161, para. 37.

[34] *Vellore Citizens' Welfare Forum* v. *Union of India* (1996), *supra* note 33, para. 12.

[35] *Ibid.*, para. 15.

[36] *Exxon Shipping Co. et al.* v. *Baker et al.* (2008), *United States Reports*, Vol. 554, p. 481.

[37] *Ibid.*

and healthy environment, they should not be completely disproportionate with respect to the financially assessable impact of a State's environmentally harmful activities.

(Signed) Dalveer BHANDARI.

DECLARATION OF JUDGE GEVORGIAN

Environmental damage — No punitive or exemplary damages in international law — Holistic approach to environmental damage — Burden of proof — Costa Rica's evidence was not persuasive — The extent of the damage can be established "as a matter of just and reasonable inference", but not the damage itself.

1. I voted in favour of all paragraphs of the *dispositif*, including the amounts for the compensation due from the Republic of Nicaragua to the Republic of Costa Rica for environmental damage. Nonetheless, taking into account that the present Judgment is the Court's first Judgment on compensation on environmental damage, I consider it necessary to express a word of prudence in relation to certain aspects of the Court's reasoning, bearing in mind the precedential character of this Judgment.

2. I consider it important that in the Court's Judgment, in the context of reparations for environmental damage, it recalls well-established rules and principles of international responsibility for wrongful acts and applicable provisions of procedural law. The first principle is that "compensation may be an appropriate form of reparation, particularly in those cases where restitution is materially impossible or unduly burdensome"[1]. The second is that "as a general rule, it is for the party which alleges a particular fact in support of its claims to provide the existence of that fact"[2]. The third is that "the absence of adequate evidence as to the extent of material damage will not [necessarily]. . . preclude an award of compensation for that damage"[3]. The fourth is that "compensation should not . . . have a punitive or exemplary character"[4].

3. In assessing the amount of compensation, the present Judgment relies on an "*overall* assessment of the impairment or loss of environmental goods and services prior to recovery" — as opposed to a *separate* assessment of each of the categories of goods and services claimed by

[1] See paragraph 31 of the present Judgment (quoting from *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, pp. 103-104, para. 273).

[2] See paragraph 33 of the present Judgment (quoting from *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 332, para. 15).

[3] See paragraph 35 of the present Judgment (quoting from *ibid.*, p. 337, para. 33).

[4] See paragraph 31 of the present Judgment.

Costa Rica[5]. While this holistic approach in this case may be considered generally acceptable, it must be applied with due consideration for the rule that the burden of proof rests with the party who invokes a fact. Otherwise, the risk exists of awarding *de facto* punitive or exemplary damages, a result that the Court intends to avoid.

4. In the present case, the burden of proof rests with the Applicant. The Court's mention in the Judgment of the "flexible" application of this general rule "in certain circumstances" risks being misinterpreted[6]. This circumstance — mentioned in *Diallo* — should not be assumed to have applied here, as Costa Rica had access to its own territory in order to evaluate the extent of the environmental damage caused by Nicaragua. Accordingly, only the general rule is relevant: in assessing the six categories of environmental goods and services considered by Costa Rica, the Court has to be satisfied that the Applicant has factually proven the existence of damage and of causal link.

5. Costa Rica's categories of environmental damage are: standing timber; other raw materials (fibre and energy); gas regulation and air quality; natural hazards mitigation; soil formation and erosion control; and biodiversity, in terms of habitat and nursery[7]. In its Judgment, the Court has ruled that two out of six categories are not compensable: natural hazards mitigation and soil formation and erosion control. In my opinion, the evidence submitted by the Applicant in support of two categories among the four accepted (other raw materials and biodiversity) was not persuasive.

6. Costa Rica's Neotrópica Foundation's Report based the existence of such damage on generic inferences made from studies conducted in other ecosystems that were not necessarily transferrable to Northern Isla Portillos.

For instance, in relation to raw materials:

The first study (Camacho-Valdez et al., 2014) relies on a database aggregating studies from around the world. Camacho-Valdez uses this general information to determine values for different land types; however, the report does not explain what type of land it has classified Isla Portillos nor why this general land value data is "transferrable" to the present situation.

[5] See paragraph 78 of the present Judgment; emphasis added.
[6] See paragraph 33, *ibid.*
[7] Memorial on Compensation of Costa Rica (MCCR), para. 3.16.

The second study (Mendoza-González et al., 2012), based in the Central Gulf of Mexico and relying mostly on studies conducted in Mexico, combines different ecosystems and partially estimates their value on the basis of factors alien to Isla Portillos, such as recreation, food production, waste management and medicine. It does not seem to give a separate account of the value of each one of these items, nor does Neotrópica explain the source of the value it attributes to raw materials on the basis of this study.

The third study (White, Ross and Flores, 2000) focuses on tourism and fisheries in coral reefs as reverting on the local populations of Olango Island in the Philippines; this is obviously not of concern in the present dispute.

In relation to biodiversity loss, the studies relied upon by Fundación Neotrópica focused mostly on tourism and fisheries (Camacho-Valdez et al., 2014, Samonte-Tan et al., 2007 and Barbier et al., 2002)[8].

Thus, these studies failed to present a reliable baseline or prove that Nicaragua's activities have damaged such goods or services.

7. Moreover, I have not been persuaded by Costa Rica's reasoning regarding Nicaragua's alleged damage to gas regulation and air quality services. In claiming compensation for this category, Costa Rica seems to assume that this service was provided to its own exclusive benefit and that it was the only State injured by the release of carbon to the atmosphere[9]. However, as Nicaragua has affirmed, to the extent that damage has been caused to this service, Costa Rica is entitled only to a "minuscule" share of the global damage[10].

8. The present Judgment, in my view, does not adequately address these issues and merely concludes (without further explanation) that Nicaragua's activities "have significantly affected the ability of the two impacted sites to provide the above-mentioned environmental goods and services . . . [the] impairment or loss of these four categories of environ-

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[8] See MCCR, Vol. I, Ann. 1, p. 158.

[9] According to Article 46 of the ILC's Articles on State Responsibility, "[w]here several States are injured by the same internationally wrongful act, each injured State may separately invoke the responsibility of the State which has committed the internationally wrongful act."

The Commentary explains that "[w]here there is more than one injured State claiming compensation on its own account . . . *evidently each State will be limited to the damage actually suffered*". (ILC Commentary on the Draft Articles on the Responsibility of States for Internationally Wrongful Acts, Report of the International Law Commission, UN doc. A/56/10, 2001, Commentary on Article 46, para. 4, p. 124; emphasis added.)

[10] Counter-Memorial on Compensation of Nicaragua (CMCN), para. 4.26 and Rejoinder on Compensation of Nicaragua (RCN), para. 2.23.

mental goods and services . . . is a direct consequence of Nicaragua's activities"[11]. I am inclined to find such a reasoning insufficient.

9. An "overall assessment" of environmental damage should exclude the possibility of being interpreted as "punitive or exemplary". It is one thing to assess the extent of the damage "as a matter of just and reasonable inference", as the present Judgment does in valuating Nicaragua's environmental damage. But it is another to apply this logic to the determination of the existence of a damage that is contested by the Respondent, or to compensate *one single* State for an injury *erga omnes* caused by another State. In my opinion, the Court's ruling must not be interpreted in such far-reaching terms; otherwise, the peaceful settlement of environmental disputes may be jeopardized.

(Signed) Kirill GEVORGIAN.

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[11] See paragraph 75 of the present Judgment.

DECLARATION OF JUDGE *AD HOC* GUILLAUME

[Translation]

1. In its Judgment of 16 December 2015, the Court found "that Nicaragua has the obligation to compensate Costa Rica for material damages caused by Nicaragua's unlawful activities on Costa Rican territory" (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, p. 740, para. 229, subpara. (5) *(a)*). Since the Parties failed to reach an agreement on the amount of compensation due, "the question of compensation . . . will [now] be settled by the Court" (*ibid.*, p. 741, para. 229, subpara. (5) *(b)*).

2. Costa Rica assesses the material damage it has sustained at US$6,711,685.26, while Nicaragua estimates it to be no more than US$188,504. The Court rejected the majority of Costa Rica's submissions and fixed US$358,740.55 as the principal sum of the compensation due. I supported this assessment, but would like to clarify my views on certain points.

3. As noted by the Court, "Costa Rica claims compensation for two categories of damage" (Judgment, para. 36). First, it sought US$2,880,745.82 for "quantifiable environmental damage caused by Nicaragua's excavation of the first *caño* in 2010. . . and a further [eastern] *caño* in 2013" *(ibid.)*. Second, it requested compensation of US$3,828,031.14 for various expenses allegedly incurred as a result of Nicaragua's unlawful activities.

4. On the latter point, my comments will be brief. On the former, they will be more detailed.

The Applicable Law

5. Early in its Judgment, the Court recalled the relevant principles of the law of international responsibility, noting that "the breach of an engagement involves an obligation to make reparation" (*ibid.*, para. 29). According to the well-known dictum of the Permanent Court in the *Factory at Chorzów* case, reparation is intended to "wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed" (*Factory at Chorzów, Merits, Judgment No. 13, 1928, P.C.I.J., Series A, No. 17*, p. 47). The International Law Commission stated in its Draft Articles on State Responsibility that "[f]ull reparation for the injury caused by the internationally wrongful act shall take the form of restitution, compensation and satisfaction" (Art. 34). Whenever possible, however, restitution in kind should be preferred (*Factory at Chorzów, Merits, Judgment*

No. 13, 1928, P.C.I.J., Series A, No. 17, p. 47). If this form of reparation "is materially impossible or involves a burden out of all proportion to the benefit deriving from it, reparation takes the form of compensation or satisfaction" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 103, para. 273; see also paragraph 31 of the Judgment).

6. In this case, neither Party contemplated restitution, i.e. the rehabilitation of the sites by Nicaragua. The Court's task is thus limited to fixing the amount of compensation due to Costa Rica.

7. When ruling on a request for compensation,

> "the Court [considers] whether an injury is established. It . . . then 'ascertain[s] whether, and to what extent, the injury asserted by the Applicant is the consequence of wrongful conduct by the Respondent', taking into account 'whether there is a sufficiently direct and certain causal nexus between the wrongful act . . . and the injury suffered by the Applicant' (*Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro), Judgment, I.C.J. Reports 2007 (I)*, pp. 233-234, para. 462). If the existence of injury and causation is established, the Court . . . then determine[s] the valuation." (*Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 332, para. 14; see also paragraph 32 of the Judgment.)

8. The sole purpose of the compensation due is to make reparation for the injury suffered. It does not depend on the seriousness of the acts alleged. Consequently, and as recalled by the Court, "[c]ompensation should not . . . have a punitive or exemplary character" (Judgment, para. 31).

9. "[A]s a general rule", and in accordance with extensive jurisprudence, "it is for the party which alleges a particular fact in support of its claims to prove the existence of that fact". However, the Court does not exclude the possibility that, in certain cases, "this general rule . . . [has to] be applied flexibly", in particular when the respondent "may be in a better position to establish certain facts" (*Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 332, para. 15; see also paragraph 33 of the Judgment). This is not the case here, however, since it is in fact Costa Rica alone which has access to the disputed area, that area falling under its sovereignty. Thus, when examining each of the heads of damage alleged by the Applicant, the Court was right to seek to determine whether Costa Rica had established the existence of the damage, the causal link between the damage and Nicaragua's unlawful activities and the cost of that damage.

10. Having set out these principles, it is necessary to examine Costa Rica's submissions regarding the material damage sustained. I will divide these submissions into three categories:

(a) expenses which have been or will be incurred with a view to reducing environmental damage through appropriate work;

(b) compensation due for damage which will remain in spite of such work;
(c) certain ancillary expenses incurred between 2010 and 2015, *inter alia*, to visit, overfly and acquire satellite images of the sites.

Site Restoration Expenses

11. Let us first examine the expenses which may have been or may be incurred by Costa Rica to rehabilitate the sites.

12. Here, Costa Rica seeks reimbursement of US$195,671.02 for expenses incurred in constructing a dyke across the 2013 eastern *caño* to prevent it from connecting the San Juan River to the sea. Nicaragua assesses the reimbursable expenses under this head at US$153,517. The Court awarded US$185,414.56 (Judgment, para. 146). Although I find this assessment generous, I cannot object to it.

13. Second, Costa Rica seeks US$54,925.69 for replacing the soil removed from the *caños*. The Court was right to reject this claim (*ibid.*, para. 87). The *caños* have in fact largely refilled and revegetated naturally. It is therefore hard to see why almost 10,000 cubic metres of earth should now be emptied into them, at the risk of destroying the vegetation that has already regrown there. Moreover, the Secretariat of the Ramsar Convention did not recommend such restoration.

14. This leaves Costa Rica's claim for compensation in the amount of US$2,708.39 for the "restoration of the wetland". This would clearly be welcome, and Costa Rica's claim is thus justified in principle. I would note, however, that the Applicant provides no details of the work it intends to carry out to that end or of the timescale for that work. Although I share the majority opinion of the Court on this point *(ibid.)* I would like to express here my hope that this work will actually be planned and carried out.

Compensation for Lasting Environmental Damage

15. Compensation for the construction of the dyke and for the restoration of the wetland could not make full reparation for the environmental damage caused to Costa Rican territory. Costa Rica assesses the lasting damage resulting from the excavation of the first *caño* in 2010 at US$2,148,820.82, and the lasting damage resulting from the excavation of the 2013 eastern *caño*, at US$674,290.92, namely US$2,823,111.74 in total. It claims nothing in respect of the western *caño* excavated in 2013.

Using a different method of assessment, Nicaragua estimates this damage at no more than US$34,987. Nicaragua's experts add, however, that

if Costa Rica's method of assessment were to be applied, and the errors corrected, the amount of compensation due would increase to US$84,296.

The Court awarded US$120,000 to Costa Rica under this head (Judgment, para. 86).

16. Before I examine the Parties' arguments in detail, it is important to recall that the first *caño* excavated in 2010 was intended to connect the San Juan River to Harbor Head Lagoon. It was just over 1 km long and no more than 15 m wide, and two-thirds of it was excavated on grazing land. However, the works undertaken by Nicaragua did lead to the felling of trees of various sizes across an area of some two and a half hectares in total.

The eastern *caño* excavated in 2013 — far shorter than the first — was intended to connect the San Juan River to the sea, but the excavation work was stopped before the connection could be made; as we have seen, a dyke was then built to avoid any risk of the river connecting with the ocean.

Finally, the San Juan River is known to carry large amounts of sediment, which have led to a considerable extension of its delta. In the absence of any clearing activities, that sediment has accumulated in the *caños*, which have become obstructed by natural means. The satellite images show that the two areas are now completely revegetated.

These circumstances should be borne in mind when examining the Parties' submissions.

17. Costa Rica contends that Nicaragua's unlawful activities have caused the following ecosystem goods and services to be lost:

(a) standing timber;
(b) other raw materials;
(c) gas regulation;
(d) natural hazards mitigation;
(e) soil formation and erosion control; and
(f) biodiversity, in terms of habitat and nursery.

18. Costa Rica evaluates the loss connected with these various goods and services by referring to values obtained for other locations in the existing documentation and applying these values to this case. It thus adopts what is generally known as a "benefits transfer" approach. However, it uses a different method to assess the loss of standing timber, relying on the local market price.

19. Nicaragua does not deny that these various types of damage are compensable, but states that some of them do not exist and that the method adopted by Costa Rica to assess others is flawed. It adds that the Applicant has made some serious errors in the application of its own method of assessment.

For its part, Nicaragua proposes evaluating the damage sustained by determining the overall "replacement costs", i.e. the "price that would

have to be paid to preserve an equivalent area until the services provided by the impacted area have recovered".

20. International law does not impose the use of any particular method for evaluating damage. It should be noted, however, that the United Nations Compensation Commission, founded in the aftermath of Iraq's invasion of Kuwait, adopted the approach favoured by Nicaragua. It may also be noted that this same approach was adopted in United States legislation, in the Oil Pollution Act, and in the European Union's Environmental Liability Directive. That said, it is for the Court to determine the amount of compensation due by conducting the most accurate assessment possible, leaving aside quibbles over methodology.

21. A careful examination of the Parties' calculations leads me to believe that, in fact, each of these approaches carries serious risks of error.

22. I will begin with Costa Rica's calculations. The first head of alleged damage concerns the trees felled during the excavation of the *caños*. Costa Rica estimates that 50 per cent of this timber could have been sold immediately, and uses the market rate to calculate its value. It then asserts that half of the trees' annual growth could also have been utilized. The sum of these two values is US$19,558.64 for the 2010 *caño* and US$1,970.35 for the 2013 eastern *caño*, amounting to US$21,528.99 for the first year. Believing that it will take at least 50 years for the trees to recover naturally, and applying a discount rate of 4 per cent, Costa Rica ultimately seeks US$462,490 in compensation under this head.

23. This calculation raises three problems of varying importance:

(a) First, it should be noted that this assessment is not intended to determine the environmental damage caused by the trees' disappearance (on account of their possible role in the absorption of carbon, for example). The only thing at issue here, as Costa Rica itself has observed, is the damage resulting from the disappearance of "timber" belonging to it. One might be surprised to see Costa Rica seeking reparation for such damage, when the trees in question were part of a protected wetland in which any kind of forest exploitation is prohibited. Even in the absence of action on Nicaragua's part, this timber would never have been sold and Costa Rica would not have profited from it. Consequently, the clearing carried out by Nicaragua did not deprive Costa Rica of any income-generating capital. Costa Rica's claim on this point thus raises a serious problem. The Court acknowledged this in refusing to use this method of calculation (Judgment, paras. 76 and 78-79).

(b) Second, in my view, Costa Rica makes a mistake in basing its calculation on the notion that the trees could have been cut and sold each year for 50 years. In reality, once they have been cut and sold, the trees take some time to regrow. They cannot be re-cut and re-sold

every year for 49 years. The damage resulting from the timber's disappearance is not incurred on an annual basis.

Furthermore, Costa Rica does little to contest this in its Reply on the question of compensation, and merely states that, in terms of national accounting, the value of the felled trees will be lost from the nation's assets for 50 years (subject to its gradual recovery). The Court was rightly unconvinced by this reasoning. After they have been felled, the trees cease to be part of the nation's assets. Once paid, the compensation will in turn form part of the assets and the accounts will be in order.

(c) In addition to these fundamental observations, I would point out that certain other aspects of the Applicant's calculations are open to challenge.

Costa Rica's count includes a number of trees measuring over 10 cm in diameter. It estimates the average age of these trees to be 115 years for the 2010 *caño*. This calculation is questionable: there can be no doubt that the age of the trees in this *caño* has been unduly inflated, since Costa Rica's experts failed to take account of the youngest specimens when calculating the trees' average age. Moreover, it seems to me that those experts believed themselves able to identify trees older than the very soil in which they were said to have grown. The trees in the 2013 eastern *caño* were clearly younger. On these bases, Costa Rica fixes the recovery period for the forest at 50 years. Nicaragua's experts accept a period of 20 to 30 years. The truth is probably somewhere between the two.

Furthermore, account must be taken of the fact that this recovery will be gradual. Costa Rica claims in its Reply on the question of compensation that the 4 per cent discount rate takes this into consideration. But that is not correct: the discount rate should aim to take account of the fact that, instead of receiving compensation each year throughout the entire recovery period, Costa Rica will receive a single payment in 2018 corresponding to the current value of those annual instalments.

After correcting some of these errors by Costa Rica, Nicaragua's experts, applying the Applicant's own method, conclude that the amount of compensation due here should be no more than US$30,175. This figure is a little low, but it gives an approximate idea of the damage sustained under this head.

24. Continuing my examination of the heads of damage claimed by Costa Rica, I now turn to the other raw materials (fibre and energy) that were lost. Costa Rica evaluates the damage resulting from the loss of these raw materials at US$832.20 for the first year. It then bases its calculation on the assumption that it will take 50 years for the raw materials to recover, applies a discount rate of 4 per cent and, ultimately, requests compensation in the amount of US$17,877.

I have serious doubts about the evaluation of this damage. We have seen no proof that the vegetation cut back to the ground by Nicaragua was used locally for its fibres (to make baskets, for example) or as fuel, or that it could be used to provide such services. Moreover, the alleged damage is assessed using the benefits transfer approach, on the basis of unclear criteria. The 50-year period is particularly unjustified, since the vegetation in question recovers over a far shorter period than is needed for tree regrowth, as recognized by the Court (Judgment, paras. 76 and 82).

That vegetation nonetheless helped maintain the ecosystem in that wetland which is protected under the Ramsar Convention. Compensation is due on this account.

25. A more difficult question is that of gas regulation and air quality. Costa Rica assesses the corresponding damage over one year at US$43,641.24. Then, allowing for a recovery period of 50 years and applying a discount rate of 4 per cent, it requests compensation in the amount of US$937,509.

Costa Rica is probably entitled to compensation on this account, but its calculation contains a number of errors:

(a) That calculation is made using the benefits transfer approach using a base value of almost US$15,000 per hectare, a value taken from the thesis of a Costa Rican student, who adopts a figure considerably higher than those usually applied.

(b) Costa Rica uses this figure for both the eastern *caño* excavated in 2013 and the one excavated in 2010, even though it is undisputed that the vegetation in these areas was very different.

(c) More serious still, by applying the figure for the first year to the entire 50-year-recovery period, its assessment is incorrect. A distinction must be made between:

— the site's existing carbon stock, which was diminished by the destruction of the vegetation (which should be counted only once); and

— the reduction in the site's annual carbon sequestration in the future.

Account must also be taken of the fact that, as the trees and vegetation recover, greater quantities of carbon will gradually be sequestered. This phenomenon could even occur quite quickly, since young, growing trees sequester more carbon than those which have reached maturity.

Nicaragua's experts re-calculated the amount of compensation due using the method advocated by Costa Rica, applying the per-hectare value put forward by the Applicant, and correcting only the errors made. The figure they arrived at was US$47,778, which is much more realistic in my view.

26. Finally, it is not in dispute that the *caños*' excavation has harmed

the biodiversity of the wetland protected under the Ramsar Convention. Compensation is due on this account. However, it is difficult to assess this harm, because Costa Rica provides only scant information about the situation before 2010 and 2013, about the impact of the work undertaken by Nicaragua and about the planned restoration measures (see paragraph 14 above).

27. I will not dwell on the last two heads of damage invoked by Costa Rica: in my view, this damage has not been established and there is thus no need for any calculations to be made.

(a) The Court found that Costa Rica had failed to demonstrate that the work carried out by Nicaragua had impaired the ability of the area in question to mitigate natural hazards such as earthquakes or flooding (Judgment, para. 74). I agree with this finding. Moreover, and assuming that such hazards did emerge following the excavation of the *caños*, the measures taken and the natural development of the area have caused them to disappear. There is, in particular, no longer any risk of coastal erosion or salt-water intrusion in the river due to the construction of a dyke across the 2013 eastern *caño*, a fact which appears to be corroborated by the Report of the Ramsar Advisory Mission No. 77 of August 2014.

(b) As noted by the Court *(ibid.)*, the same is true for soil formation and erosion control. Moreover, Costa Rica does not dispute that the *caños* are being refilled naturally. It simply claims that there is a difference between the soil carried by the river and the soil which was removed. However, Costa Rica has failed to prove that this difference, assuming it to be established, is having noticeable effects on the environment.

In short, if one uses Costa Rica's method of assessment, after the necessary corrections have been made to it, a figure in the order of US$85,000 is reached, as noted by the Court (*ibid.*, para. 84).

28. I find the method used by Nicaragua to be more satisfactory in principle, although it is not easy to determine the replacement cost in this instance. Nicaragua does so by referring to Costa Rica's forest protection scheme, under which compensation of US$309 per hectare is paid each year to forest owners who agree to take protective or preventive measures to enable their forests to continue providing environmental services to society and to safeguard them for future generations. Applying this figure to the 6.19 hectares damaged over a period of 30 years and using a discount rate of 4 per cent, Nicaragua's experts estimate the replacement cost to be no more than US$34,987. This approach is no better than the one employed by Costa Rica. Indeed, like the Court (Judgment, para. 77), I doubt that the sums paid by Costa Rica to encourage landowners to protect their forests correspond exactly to the damage suffered by the environment in the protected wetland.

29. In sum, I find it difficult to reach a completely accurate evaluation of the damage in this instance. In such a situation, the amount of damages should not be determined by mere speculation or guess. Evidence of the extent of the damage must be shown; however, it may be shown as a matter of just and reasonable inference, even though the result would be only approximate (see paragraph 35 of the Judgment). In the present circumstances, the Court was right to retain some elements of Costa Rica's assessment, as corrected by Nicaragua (Judgment, para. 86), and to award compensation of US$120,000, a figure which, given the uncertainties inherent in assessing this type of damage, I was able to support.

The Ancillary Expenses Incurred between 2010 and 2015

30. In addition, Costa Rica seeks US$80,926.45 in compensation for expenses incurred between October 2010 and March 2011 while attempting to verify the nature and scope of Nicaragua's unlawful activities on the disputed territory (overflights, first UNITAR/UNOSAT report, salaries, satellite images). The Court found that the amount of compensation payable under this head was US$21,647.20 (*ibid.*, para. 106). In my view, this assessment is justified.

31. Lastly, Costa Rica seeks compensation of US$3,551,433.67 for expenses incurred for monitoring the disputed territory between March 2011 and December 2015. The Court only awarded Costa Rica compensation in the amount of US$28,970.40 for overflights, the purchase of satellite images and the second UNITAR/UNOSAT report (*ibid.*, para. 131).

32. I agree with this assessment. In my view, the Court was right, in particular, to refuse to reimburse Costa Rica for various police expenses incurred by it. Costa Rica claimed to have established two police posts close to the disputed territory in order to carry out its obligations under the Order on the indication of provisional measures of 8 March 2011 (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Provisional Measures, Order of 8 March 2011, I.C.J. Reports 2011 (I)*, p. 6). However, the first police post at Laguna de Agua Dulce had already been set up in December 2010. Furthermore, the Outgoing Report of Costa Rica's Minister of Public Security, covering the period between May 2010 and April 2011, states that Costa Rica has launched a programme to protect both its northern and southern land boundaries, involving the re-establishment of a border police force at 45 outposts.

The establishment of the police posts was therefore part of a policy by Costa Rica to defend its territory in a general way. They were not set up to respond to the concerns expressed by the Court in paragraph 78 of its Order of 8 March 2011, encouraging the Parties to co-operate in order to

prevent the development of criminal activity in the disputed territory (*I.C.J. Reports 2011 (I)*, p. 25).

Thus, Costa Rica fails to establish that the creation of the police posts was a clear and direct consequence of the unlawful activities of which Nicaragua is accused. As the Court found (Judgment, para. 127), these expenses are not compensable.

33. In any event, the corresponding personnel expenses could not be compensated, since salaries would have been paid to those concerned even if Nicaragua had not acted. In fact, it is clear from statements made by Costa Rica's then Minister of Public Security, Mr. Mario Zamora Cordero, that the police deployed at Isla Portillos were simply officers who had been reassigned. The special border police unit was formed, according to the same minister, "by taking human and financial resources from other operational structures of the police". Costa Rica does not claim to have paid special allowances or overtime to the officers in question. Those officers simply received their regular salaries. Their reassignment did not generate any additional expenses for Costa Rica. In accordance with the jurisprudence of the United Nations Compensation Committee, founded in the aftermath of Iraq's invasion of Kuwait — jurisprudence which I believe should be upheld — no compensation is payable to Costa Rica under this head.

34. The same conclusions must be reached, for the same reasons, with regard to the equipping of the biological station and the remuneration of the officers assigned to that station, such as the salaries of the Costa Rican coast guards and pilots.

Pre-judgment Interest

35. With this case, the Court has, for the first time, awarded pre-judgment interest to the Applicant, taking the opportunity to explain that "pre-judgment interest may be awarded if full reparation for injury caused by an internationally wrongful act so requires" (Judgment, para. 151). In this instance, the Court refused to grant such interest on the amount awarded in compensation for the damage caused to the environment, that sum already making full reparation for that damage. It did however award pre-judgment interest on the expenses incurred by Costa Rica with a view, *inter alia*, to preventing further harm. In my view, this is a sensible solution, which is justified by the specific circumstances of the case and leaves room in the future for assessments to vary from case to case.

(Signed) Gilbert GUILLAUME.

DISSENTING OPINION OF JUDGE *AD HOC* DUGARD

Unable to accept methodology of quantification as accepted by the Court — Increased valuation of impairment to environmental goods and services — Court should have had regard to considerations such as protection of the environment, climate change and gravity of respondent State's conduct — Erga omnes *nature of obligation not to harm gas regulation services.*

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*

1. I agree with all the findings of the Court except its decision to make an award of US$120,000 to Costa Rica for environmental damages relating to the impairment or loss of goods and services arising out of Nicaragua's unlawful activities. My disagreement on both the reasoning of the Court and the quantum of damages awarded is so fundamental that I believe this opinion is more accurately described as a dissenting opinion than a separate opinion.

2. On the face of it this case may appear to be trivial. Damage to a wetland of 6.19 hectares for which the injured State claims a mere US$6,711,685.26 in compensation hardly suggests that this is an important case requiring the serious attention of the International Court of

Justice. Such an assessment would, however, be wrong. The dispute between Costa Rica and Nicaragua involves three fundamental issues: the forcible invasion of the territory of a State, the purposeful damage to an internationally protected wetland and the calculated and deliberate violation of an Order of this Court.

3. Costa Rica has claimed compensation for the costs and expenses incurred in investigating, monitoring and remediating Nicaragua's unlawful actions. It has also claimed compensation for material damage to the environment caused by Nicaragua's actions.

4. I will say little about the Court's Judgment relating to Costa Rica's claim for costs and expenses in investigating Nicaragua's incursions into its territory and in remediating the damage caused to its environment by Nicaragua. The Court may have been too strict on occasion in dealing with Costa Rica's claims but to a large extent Costa Rica has only itself to blame for failing to produce satisfactory evidence of the costs and expenses it claims to have incurred. Costa Rica's principal claim concerned the salaries paid to its staff responsible for monitoring the disputed area but, although it is very possible that staff were appointed expressly for this purpose or paid overtime for this work, insufficient evidence was produced to this effect.

5. It is Costa Rica's claim for material damage caused to the environment that forms the subject of the present opinion. This claim obliges the Court to place a monetary figure on the harm done to Costa Rica's environment by Nicaragua's unlawful activities. Inevitably this monetary quantification will be seen as the measure of the Court's concern for the protection of the environment in an age in which most nations agree on the need for a national and international commitment to the preservation of the environment of our planet.

6. The assessment of damage to the environment is a difficult task rendered even more difficult by the absence of an agreed scientific method for making such an assessment. This is reflected in the different methodologies proposed by the Parties in the present dispute for making this assessment and in the vastly different estimates advanced. Costa Rica claims US$2,880,745.82 while Nicaragua estimates that only the paltry sum of US$34,987 is due.

7. My disagreement relates to both the method employed by the Court to reach its decision on the quantum of damages to be awarded and the amount determined by the Court in its quantification of environmental damages. The Court has decided to award Costa Rica US$120,000 in compensation for the damage caused to its environment. While I would have assessed the amount due at considerably less than the amount claimed by Costa Rica I would have awarded Costa Rica considerably

more than that awarded by the Court. In my judgment the sum of US$120,000 constitutes a mere token for substantial harm caused to an internationally protected wetland by the egregious conduct of Nicaragua. In this opinion I will critically examine the methodology employed by the Court in arriving at the sum of US$120,000 and comment on its failure to have regard to equitable considerations, such as the character of the affected terrain, the implications of deforestation for climate change and the conduct of Nicaragua.

I. The Methodology Employed by the Court in Arriving at Compensation for Environmental Damages in the Sum of US$120,000

8. The quantification of damages in respect of environmental harm is not easy. This was emphasized by the United Nations Compensation Commission (UNCC) established in 1991 to consider claims arising out of Iraq's unlawful invasion and occupation of Kuwait[1]. The Panel of Commissioners stressed the "inherent difficulties in attempting to place a monetary value on damaged natural resources"[2] while the Working Group of Experts entrusted by the United Nations Environment Programme to assist the UNCC described the valuation of environmental damage as "a challenging task" which raised "inherent analytical and practical difficulties in specifying the appropriate elements of damage, the nature and extent of the damage required to allow for recovery and the determination of the amount of compensation"[3].

9. This is the first occasion on which the Court has considered a claim for environmental damage. In evaluating the harm suffered by Costa Rica, therefore, it was open to the Court to determine the methodology which it considered appropriate. The Court, having examined the Parties' different methodologies, concluded that it would not "choose between them or use either of them exclusively for the purpose of valuation of the damage caused to the protected wetland in Costa Rica", and that it would take

[1] See Security Council resolution 687 (1991), paras. 16 and 18. See further on the United Nations Compensation Commission (UNCC), R. Higgins et al. (eds.), *Oppenheim's International Law: United Nations*, Vol. II, Oxford University Press, 2017, p. 1254 ff.

[2] UNCC Governing Council, *Report and Recommendations Made by the Panel of Commissioners concerning the Fifth Instalment of "F4" Claims*, UN doc. S/AC.26/2005/10, 30 June 2005, para. 81.

[3] "Conclusions of the Working Group of Experts on Liability and Compensation for Environmental Damage arising from Military Activities", United Nations Environment Programme, *Liability and Compensation for Environmental Damage: Compilation of Documents*, Nairobi, 1998, para. 44.

elements of either Parties' method into account when they offered a reasonable basis for valuation (Judgment, para. 52). The Court declared that in valuating environmental harm it would make an "overall assessment" rather than attributing values to specific categories of environmental goods and services (*ibid.*, para. 78), guided in the absence of adequate evidence as to the extent of material damage by equitable considerations (*ibid.*, para. 35), and the character of the affected area — an internationally protected wetland.

10. A careful analysis of the Court's decision makes it clear that it has not in fact followed this approach. Moreover, the approach which the Court has followed is unsatisfactory. In the paragraphs which follow I will demonstrate this by, first, explaining the submissions of the Parties, and, secondly, critically examining the reasoning of the Court in making its award.

11. Costa Rica proposed an "ecosystems service approach" based on a report by a Costa Rican non-governmental organization, Fundación Neotrópica, which maintained that environmental damage might be calculated on the basis of the reduction or loss of the ability of the environment to provide certain goods and services. Such goods and services comprise those that may be traded on the market (such as timber) and those that may not be traded (such as gas regulation and natural hazards mitigation). A monetary value was attached to such environmental goods and services by a value transfer approach which relied on values drawn from the studies of other ecosystems with similar conditions. Costa Rica furthermore argued that the losses sustained as a result of Nicaragua's actions were to be calculated over a period of 50 years, the estimated time required for the affected area to recover. This was qualified by a discount rate of 4 per cent, the rate at which the ecosystem would recover. Costa Rica claimed for the loss or impairment of six goods and services: standing timber, raw materials (fibre and energy), gas regulation and air quality services such as carbon sequestration, mitigation of natural hazards, soil formation and erosion control and biodiversity services.

12. Nicaragua, for its part, proposed a less complicated method of assessment which involved an "ecosystem service replacement cost" in terms of which Costa Rica was only entitled to compensation to replace environmental services that either have been or may be lost prior to the recovery of the impacted area. This value would be calculated by reference to the price that would have been paid to farmers to preserve an equivalent area until the services provided by the impacted area had recovered. Nicaragua accordingly rejected both the system of value transfer for attaching a monetary value to goods and services and the 50-year recovery period.

13. Nicaragua submitted a report by two experts, Payne and Unsworth, which examined Costa Rica's estimate of US$2,823,112 for the six goods and services claimed to have been lost by Costa Rica as a result of Nicaragua's actions. Accepting Neotrópica's methodology for the sake of argument only, Payne and Unsworth corrected certain mistakes which it perceived in Neotrópica's assessment. It concluded that, correctly applying Neotrópica's own methodology, Costa Rica was entitled to a mere US$84,296.

14. The Court examined these different methodologies, but ultimately relied only on Nicaragua's "corrected analysis", with certain adjustments made to account for the Court's criticisms of Nicaragua's "corrections". These criticisms were: first, the Court said that Payne and Unsworth's corrected analysis had erred by assigning a value to raw materials of US$1,200 (in contrast to Neotrópica's valuation of US$17,877) that was based on the assumption that there would be no loss in those goods and services after the first year; second, its valuation of biodiversity services of US$5,144 (in contrast to Neotrópica's valuation of US$40,730) failed to pay sufficient regard to the importance of such services in an internationally protected wetland and regrowth was unlikely to match, in the near future, the pre-existing richness of diversity in the area; third, the "corrected analysis" for gas regulation of US$47,778 (in contrast to Neotrópica's valuation of US$937,509) did not take account of the loss of future carbon sequestration as it had incorrectly valued these services as a one-time loss. The Court made no objections to Payne and Unsworth's corrected valuation of felled trees of US$30,175 (in contrast to Neotrópica's valuation of US$462,490).

15. The Court's apparent reliance on the "corrected analysis" is problematic for several reasons. For one, the "corrected analysis" attaches a value to each head of damage in isolation. This runs counter to the Court's declared intention of not attributing values to specific species of harm. Secondly, certain elements of the "corrected analysis" cannot legitimately be relied upon by the Court as providing a "reasonable basis" for its own valuations. The methodology for the calculation of timber, for example, relies on an assessment of the volume of timber per hectare in the affected area. Nothing in the record before the Court explains why this method of calculation is used. The value transfer studies on which the "corrected analysis" relies have not been assessed by the Court for their reasonableness. Thirdly, the Court rejects Costa Rica's argument that the recovery period for goods and services is 50 years, observing "that different components of the ecosystem require different periods of recovery and that it would be incorrect to assign a single recovery time to the various categories of goods and services identified by Costa Rica" (Judgment, para. 76). But the Court gives no indication of what it considers to be the appropriate recovery period for the goods and services in question. Is it

20 to 30 years as accepted by Nicaragua[4] or 10-20 years for biodiversity and 1-5 years for raw materials and gas regulation as suggested by Nicaragua's expert, Professor Kondolf[5]? The Court's failure to clarify the recovery period which it considered applicable makes it impossible to assess the impact that this factor had on the Court's valuation.

16. The failure of the Court to address the value to be attached to the loss of "close to 300 trees", many of which were over 100 years old, is inexplicable in the light of the Court's statement that "the most significant damage to the area, from which other harms to the environment arise, is the removal of trees by Nicaragua" (Judgment, para. 79). Moreover the Court declared that "an overall valuation can account for the correlation between the removal of the trees and the harm caused to other environmental goods and services (such as other raw materials, gas regulation and air quality services, and biodiversity in terms of habitat and nursery" *(ibid.)*. Given the central role played by trees in the quantification of environmental damage — in the opinion of the Court — it is surprising that there is no indication of the valuation the Court attaches to the close to 300 trees felled by Nicaragua in 2010 and 2013. The Court rejects Nicaragua's proposed total compensation to Costa Rica of US$34,987 (*ibid.*, para. 77) but fails to indicate its own valuation in relation to the felled trees. Presumably, despite its silence on this subject, the Court does not accept Payne and Unsworth's valuation of US$30,175 for timber based on their correction of Neotrópica's valuation of US$462,490. Nor does the Court indicate *how* the felled trees are to be valued. Is the valuation based on the average price of standing timber that accords value to the eliminated stock and growth potential of that stock over 50 years as suggested by Costa Rica (*ibid.*, para. 60)? Or is it based on the value attached to each of the felled trees, and the loss of such trees over a 50-year or less recovery period. We simply do not know.

17. We do know, however, that the Court found that the compensation due to Costa Rica was in excess of Payne and Unsworth's valuation of US$84,296. This means that the Court's corrections to this valuation and, possibly, equitable considerations, of which the only consideration specified in the Judgment is the character of the affected area as an internationally protected wetland, account for US$35,704 to bring the total of compensation awarded for environmental damages to US$120,000.

[4] Counter-Memorial of Nicaragua on Compensation (CMNC), p. 61, para. 4.43.
[5] *Ibid.*, Ann. 2, p. 160 (Kondolf Report, 2017).

18. In my view this is a grossly inadequate valuation for environmental damage caused to an internationally protected wetland, having regard to the context of the harm caused. In my opinion a much higher compensation is warranted, one that takes account of an increased valuation of the impairment to trees, raw materials, biodiversity and gas regulation; the inclusion of a valuation for the impairment of soil formation; harm caused to the environment; the implications of the felling of trees and the destruction of undergrowth for climate change; and the gravity of an intentional harm caused to the environment of a wetland by Nicaragua.

II. Increased Valuation of the Impairment to Environmental Goods and Services

19. The Court has made the following findings on impairment to environmental goods and services. First, in a case of this kind involving environmental harm the Court should make an overall assessment of damages. Second, in making this assessment the Court should be guided by equitable considerations, including the harm caused to an internationally protected wetland. Third, that Nicaragua's "corrected analysis" of Neotrópica's valuation of the loss suffered by Costa Rica for the impairment of certain goods and services in the sum of US$84,296 underestimates the compensation due to Costa Rica. Fourth, that Nicaragua's "corrected analysis" in respect of raw materials and gas regulation is to be faulted on the ground that it values the impairment of these goods and services on a one-off basis and takes no account of the recovery period for such goods and services. Fifth, that Nicaragua's valuation of biodiversity services is defective because it fails to take account of the character of the affected area as an internationally protected wetland and the poorer nature of regrowth when compared to the pre-existing biodiversity in the area. Sixth, that Costa Rica is not entitled to any compensation for loss of natural hazards mitigation or for soil formation/erosion control. Seventh, that the felling of trees by Nicaragua is the most significant harm caused to the environment and the impairment to other goods and services flows from this harm. Eighth, that Nicaragua felled close to 300 trees in excavating the 2010 *caño* and the 2013 eastern *caño* and not 200 as argued by Nicaragua.

20. The finding of the Court that Nicaragua's "corrected analysis" of US$84,296 underestimates the value to be placed on the impairment of environmental goods and services and has "shortcomings"

(Judgment, para. 82) is the starting-point for the Court's assessment of the overall valuation. The finishing point is the Court's determination that, having regard to these "shortcomings", the overall valuation to be placed on the environmental harm caused by Nicaragua's illegal action is US$120,000. Unfortunately the Court gives no indication as to how the difference between these two figures of US$35,704 was determined. Equitable considerations possibly played a role in this assessment. The character of the affected area as an internationally protected wetland was mentioned as one such consideration and presumably this was taken into account in the assessment. We also know that the Court disagreed with the conclusions of the "corrected analysis" of Neotrópica's findings on the value to be assigned to the impairment of raw materials, biodiversity and gas regulation prior to their recovery. Presumably the Court increased the sum due in the "corrected analysis" for the impairment to raw materials for one year only to take account of such a loss for a longer recovery period. Perhaps as long as 20 to 30 years, the recovery period accepted by Nicaragua? Presumably, too, the Court increased the sum allocated by the "corrected analysis" for biodiversity services to take account of the fact that the regrowth of the area would not reach its previous richness of diversity in the "near future". Again, we are not told how long this recovery is likely to take but a period of 20 years would not seem to be unreasonable in the light of the acceptance of such a recovery period by Nicaragua. Presumably the Court also increased the sum estimated by the "corrected analysis" for gas regulation and air quality services which failed to take account of the loss of future annual carbon sequestration by characterizing "the loss of those services as a one-time loss" (Judgment, para. 85). No recovery period is suggested by the Court, but again 20 years would not seem to be unreasonable.

21. I find it difficult to accept that all the above factors identified by the Court as considerations to be taken into account in reaching an overall valuation for the loss or impairment of environmental goods and services have a monetary value of only US$35,704.

III. The Inclusion of a Valuation for Soil Formation and Erosion Control

22. In recent years there has been considerable criticism of the Court's handling of evidence in complex factual situations and highly technical matters[6]. Much of the criticism has been directed at the lack of transpar-

[6] See L. Malintoppi, "Fact-Finding and Evidence before the International Court of Justice (Notably in Scientific-Related Disputes)", *Journal of International Dispute Settle-*

ency displayed by the Court in its explanations of how it has evaluated the evidence and how it has reached its conclusions on disputed facts. The opaque reasoning leading to the finding of the Court that Costa Rica failed to prove that soil formation and erosion control had been impaired by Nicaragua's construction of the *caños* in 2010 and 2013 provides a further example[7] of unsatisfactory fact-finding. This is unfortunate as Costa Rica's claim in respect of this category of impairment to goods and services was the largest: US$1,179,924. In these circumstances one might have expected the Court to pay particular attention to providing a satisfactory explanation for its finding.

23. In this case Nicaragua did not dispute that 9,502.72 cubic metres of soil was removed from the areas affected by the construction of the 2010 and 2013 *caños*. It was agreed that the soil dredged in the *caños* had been replaced by alluvial sediment. The Parties, however, disputed whether the alluvial sediment was of poorer quality, as claimed by Costa Rica, and if so whether it was able to control erosion and to provide the same functions for the environment as the removed soil.

24. Nicaragua argued that the material which had refilled the *caños* did not differ in any meaningful way from the material that had been displaced by Nicaragua's works, claiming that Costa Rica had failed to produce site-specific samples to substantiate its submission that the alluvial sediment was of poorer quality than the soil that had been dredged by Nicaragua, making it less able to control erosion and to provide the same functions for the environment as the dredged soil. For this reason, Nicaragua submitted that Costa Rica was not entitled to any award in relation to soil.

25. While it is true that Costa Rica failed to carry out tests to prove that the dredged soil was superior to the alluvial sediment that had replaced it, it did present a report on this subject from Professor Thorne. Supported by a Ramsar Advisory Mission Report[8], Professor Thorne maintained that

> "the properties of sediment and soil differ by practically every measure of significance, due mainly to the relative absence of organic mat-

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ment, Vol. 7 (2016), p. 421; J. Devaney, *Fact-Finding before the International Court of Justice*, Cambridge University Press, 2016; and A. Riddell and B. Plant, *Evidence before the International Court of Justice*, British Institute of International and Comparative Law, 2009.

[7] See the comments on fact-finding in my separate opinion in *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, pp. 859-860.

[8] Ramsar Secretariat, "Ramsar Advisory Mission Report No. 69: North-Eastern Caribbean Wetland of International Importance, *(Humedal Caribe Noreste)*, Costa Rica", 17 December 2010, quoted in C. Thorne, Review of the report by G. M. Kondolf, Ph.D., 25 July 2017, Reply of Costa Rica on Compensation (RCRC), Ann. 2, p. 171.

> ter, humus and microbial life from the former and great abundance in the latter. There is literally a biological world of difference between a body of freshly deposited river sediment (known as alluvium) and a body of mature soil . . ."[9].

He further stated that other ingredients must be added to sediment to create soil, including particularly organic matter, and that it took time for organic matter "to rot down to produce the soil components largely responsible for making soils fertile"[10]. It would take decades, he continued, "before the organic content and fertility of soils currently forming from *caño*-filling sediments can approach the values characteristic of soils beneath the old growth/mature tree stands cleared by Nicaragua to make way for the *caños*"[11]. Thorne stressed that soil reinforced by roots of live vegetation is much more erosion-resistant[12]. He concluded by stating that Nicaragua's activities had clearly impacted soil formation and erosion control. This was evidence presented by an expert who had proved to be a credible witness in the hearing on the merits on what he described as "'classic' soil science"[13].

26. The Court dismissed Costa Rica's claim for the impairment of soil formation and erosion control, holding that

> "[t]here is some evidence that the soil which was removed by Nicaragua was of a higher quality than that which has now refilled the two *caños* but Costa Rica has not established that this difference has affected erosion control and the evidence before the Court regarding the quality of the two types of soil is not sufficient to enable the Court to determine any loss which Costa Rica might have suffered."[14]

27. This terse conclusion raises the following question. There was a well-reasoned report by Professor Thorne on the difference regarding the two types of soil, supported by a Ramsar Report. Was it the failure of Professor Thorne to produce soil-specific samples in addition to his exposition of classic soil science that rendered his evidence insufficient to prove the different qualities of the two types of soil? Or was it that the Court found Professor Kondolf's evidence, also unaccompanied by scientific data, more compelling. Surely, the Court is required to give some expla-

[9] RCRC, Ann. 2, p. 171.
[10] *Ibid.*, p. 172.
[11] *Ibid.*, p. 173.
[12] *Ibid.*, pp. 173-174. For these arguments see *ibid.*, pp. 13-14.

[13] *Ibid.*, Ann. 2, p. 173.
[14] Judgment, para. 74.