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.

nation for its rejection of Professor Thorne's evidence premised on "'classic' soil science"?

28. In my view Costa Rica has sufficiently demonstrated that fresh alluvial sediment is necessarily of a lower nutrient value than mature soil in a forested area. Although a site-specific study may have been the best evidence that the new soil is of a lower quality than the old soil, this does not mean that expert evidence which demonstrates that alluvial deposits can be assumed to be of a lower quality than mature, organic soil is insufficient to meet the burden of proof. Costa Rica's claim of US$1,179,924 for soil formation/erosion control is inflated. However, on Thorne's evidence there is no doubt that substantial harm has been caused to soil quality and that there is compensable harm that will take a long recovery period. For this reason I believe that the Court should have attached some valuation to the impairment of soil formation.

IV. Equitable Considerations

29. The Court has suggested, without clearly asserting, the relevance of equitable considerations in awarding compensation for damage caused[15]. When the extent of the damages cannot be established, the assessment is at the discretion of the Court. In exercising its discretion, the Court will be guided by the equities. In 1997 the Institut de droit international declared:

> "Environmental regimes should provide for a broad concept of reparation, including cessation of the activity concerned, restitution, compensation and if necessary, satisfaction.
>
> Compensation under such regimes should include amounts covering both economic loss and the costs of environmental reinstatement and rehabilitation. In this context, *equitable assessment* and other criteria developed under international conventions and by the decisions of tribunals should also be considered."[16]

[15] Judgment, para. 35. In referring to its decision in *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 337, para. 33, in which the Court established the amount of compensation due on the basis of equitable considerations, the Court suggested that equitable considerations would be taken into account in the present case in the absence of adequate evidence as to the extent of material damage.

[16] Session of Strasbourg, 1997, Resolution III, "Responsibility and Liability under International Law for Environmental Damage", Article 24; emphasis added.

In the present case there are a number of equitable considerations that the Court might, and in my judgment, should have taken into account in its quantification of damages. These include the protection of the environment, the importance attached to measures to combat climate change in today's world, and the gravity of the respondent State's actions. Unfortunately, the Court appears to have had regard only to the character of the affected area as an internationally protected wetland.

V. Protection of the Environment

30. It is not necessary to describe the importance attached to the protection of the environment in the contemporary international legal order. The protection of the environment has been proclaimed by the Declarations of Stockholm (1972) and Rio (1992) and recognized as a human right by the African Charter on Human and Peoples' Rights (Art. 24). The destruction of the environment is both an internationally wrongful act and an international crime[17]. In the present case Nicaragua intentionally caused damage to the environment of another State in an internationally protected wetland.

31. Wetlands are highly sensitive ecosystems of particular importance. The report of Professor Thorne relied upon by Costa Rica sets out the reasons why the *Humedal Caribe Noreste*, which includes the affected area, was designated a wetland of international importance in 1996[18]. These include the facts that it is highly valued as a stronghold of the region's genetic and ecological diversity and that it is a stopover for migratory fish and birds[19]. Harm to this environment should to be treated with a high degree of seriousness and this should be reflected in the amount of compensation awarded.

32. It seems that the Court took the fact that Nicaragua's actions caused damage to the *Humedal Caribe Noreste* wetland into account in its quantification of damages. It declared (Judgment, para. 80):

> "[a]n 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 support-

[17] See Article 8 (2) *(b)* (iv) of the Rome Statute of the International Criminal Court.
[18] RCRC, Ann. 2 (Thorne Report), p. 169.
[19] *Ibid.*

> ing rich biological diversity, regulating water régimes, and acting as a sink for sediments and pollutants."

However, the Court gave no indication of the monetary value it attached to this consideration. As it was only one of a number of factors considered by the Court in extending the sum proposed by Payne and Unsworth's "corrected analysis" from US$84,296 to US$120,000 it appears that this could not have been a substantial sum. The paucity of this award will do little to emphasize the importance of the protection of a Ramsar wetland site.

VI. Climate Change

33. The correlation between deforestation and climate change is clear. Although this branch of science is still developing there is no doubt that the destruction of trees exacerbates climate change. Mature forests store quantities of carbon in the trees themselves and in the soil surrounding trees in the form of decaying plant matter. When trees are destroyed carbon is released into the atmosphere, increasing the amount of carbon dioxide and other greenhouse gases which accelerate global warming and climate change.

34. Nicaragua destroyed close to 300 trees in 6.19 hectares of the "disputed territory". Costa Rica claimed US$937,509 for loss of gas regulation services arising out of this action. Again, the sum is inflated but a substantial portion of it should have been allowed.

35. Nicaragua argued that the cost of lost carbon sequestration reflects the value to the world population of this ecological service and that Costa Rica was therefore not entitled to claim for the full amount of harm done[20]. Undoubtedly this is a matter of concern to the international community as a whole. The obligation not to engage in wrongful deforestation that results in the release of carbon into the atmosphere and the loss of gas sequestration services is certainly an obligation *erga omnes.* Nevertheless it is common knowledge that third States hardly ever, if ever, assert their rights arising from the violation of obligations *erga omnes.* In these circumstances it is the State most immediately affected that is most likely to assert these rights on behalf of both itself and the global community. Costa Rica should therefore have been allowed to recover compensation in full for this harm. In making this

[20] CMNC, Ann. 1, p. 131 (Payne and Unsworth Report, 2017).

claim Costa Rica asserted an interest owed both to itself and to the international community as a whole.

36. The Court failed to make any finding on which States might bring a claim despite the fact that it was central to Nicaragua's argument on the valuation of the impairment of carbon sequestration and gas regulation. Nor did it answer the question of whether harm to gas regulation services is ever capable of recovery in full by a single State. In so doing it missed an opportunity to contribute to the progressive development of customary international law on the mitigation of climate change[21].

37. The Court cannot ignore the relevance of the Paris Agreement on climate change[22] of 4 November 2016 to its decision in this case. Over 170 States parties, which include Nicaragua and Costa Rica[23], have committed themselves to the aim of reducing greenhouse gas emissions and have therefore recognized a link between greenhouse gas emissions and climate change[24]. The Parties have also recognized the importance of the conservation and enhancement of sinks and reservoirs of greenhouse gases[25].

38. The Court should have had regard to Article 4 of the Paris Agreement, in terms of which parties aim to reach a "global peaking of greenhouse gas emissions" as soon as possible. To this end, parties determine individual targets for themselves and are under the obligation to make efforts to achieve those targets. Each party is required to "prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve" and "shall pursue domestic mitigation measures, with the aim of achieving" these NDCs[26]. This demonstrates that, although it remains true that at a practical level the world as a whole benefits from clean air and from a reduction in each individual State's carbon emissions, the global community has purposefully adopted an approach to gas regulation that individualizes States' obligations. As a corollary to this approach, gas regulation services are perceived as accruing primarily as a benefit to individual States. Indeed, if the costs and benefits associated with the management of gas regulation services were not individualized in this way, there would be no mechanism for holding individual states to account for efforts to reduce their carbon emissions

[21] See further below the section on climate change.

[22] The Paris Agreement under the United Nations Framework Convention on Climate Change, 22 April 2016, entry into force 4 November 2016.

[23] The Paris Agreement entered into force for Nicaragua on 22 November 2017. It entered into force for Costa Rica on 12 November 2016.

[24] Paris Agreement, Arts. 4 and 10.

[25] *Ibid.*, Art. 5.

[26] *Ibid.*, Art. 4 (2).

under Article 4 of the Paris Agreement. (Costa Rica submitted its NDC in 2015, listing the enhancement of carbon sinks through land-use and reforestation as one of the four mitigation options being considered[27].)

39. This is the first occasion that the International Court of Justice has addressed this issue. In an age of serious debate about the means to be employed to combat climate change it is inevitable that close attention will be paid to the pronouncement of the Court on this subject. The failure of the Court to address this matter will be interpreted as an unwillingness on its part to join the global consensus determined to combat climate change.

VII. The Gravity of the Respondent State's Actions

40. Nicaragua's conduct in these proceedings has been characterized by bad faith and a determination to deliberately flout international law and the Court's authority. At the same time this conduct has shown a complete disregard for the environment of an internationally protected wetland. The construction of the first *caño* in 2010 was an attempt to stealthily change the course of the San Juan River in order to expand Nicaragua's territory. It was not a good faith misinterpretation of the limits of an international frontier. Inevitably this attempt to alter the boundary was accompanied by environmental harm resulting from the destruction of trees, vegetation and organic soil. The bad faith of Nicaragua was demonstrated by its untrue statements relating to the presence of Nicaraguan military personnel in the disputed territory, which continued up to the start of legal proceedings on 19 January 2011[28]. Nicaragua's contempt for the environment and the Court's Order was further demonstrated by its support for the presence of several thousand nationalistic students — the Guardabarranco Environmental Movement — masquerading as environmental activists in the disputed territory[29]. The final straw was the deliberate and purposeful violation in September 2013 of the Court Order on provisional measures of 2011[30]. This violation which was initially denied by Nicaragua is further evidence of bad faith. It

[27] Ministry of Environment and Energy of Costa Rica, "Costa Rica's Intended Nationally Determined Contribution", San José, September 2015, App. 1, p. 12.

[28] See the separate opinion of Judge Robinson 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 (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, pp. 811–812.

[29] See my dissenting 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 (Nicaragua* v. *Costa Rica), Provisional Measures, Order of 16 July 2013, I.C.J. Reports 2013*, p. 271.

[30] Joint declaration of Judges Tomka, Greenwood, Sebutinde and Judge *ad hoc* Dugard in *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)*

demonstrated contempt for the authority of the Court and a total disregard for the environment.

41. In assessing compensation in this case, the Court should have had regard to the gravity of Nicaragua's unlawful activities. The amount of compensation should be assessed so as to fit the wrongful conduct[31]. This was made clear by the International Law Commission in its Commentary on the Draft Articles on the Responsibility of States for Internationally Wrongful Acts when it declared:

> "As to the appropriate heads of compensable damage and the principles of assessment to be applied in quantification, these will vary, depending upon the content of particular primary obligations, *an evaluation of the respective behaviour of the parties* and, more generally, a concern to reach *an equitable* and acceptable outcome."[32]

42. The Institut de droit international has echoed this view. In its final report on Responsibility and Liability under International Law for Environmental Damage of 1997, the Institut stated:

> "Full reparation of environmental damage should not result in the assessment of excessive, exorbitant, exemplary or punitive damages. Punitive damages are not usually accepted under international law, but where it would be equitable for compensation to exceed actual loss or some other alternative measurement punitive damages might be envisaged. Deliberate environmental damage might be a case in point."[33]

43. Given the gravity of Nicaragua's violations of international law, the scale of compensation should be higher than it would otherwise be for lawful conduct that caused environmental damage[34]. International courts and tribunals have often — at least implicitly — taken into account the

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and *Construction of a Road in Costa Rica along the San Juan (Nicaragua* v. *Costa Rica), Judgment, I.C.J. Reports 2015 (II)*, p. 754.

[31] J. Crawford, *Brownlie's Principles of Public International Law*, 8th ed., 2012, Oxford University Press, p. 573: Crawford remarks in relation to *LG & E* v. *Argentina*, a United Nations Framework Convention on Climate Change (ICSID) arbitration and the Eritrea-Ethiopia Claims Commission that "[b]oth tribunals seem to have had in mind the need to adjust the amount of compensation in such a way that it fits the wrongful conduct".

[32] *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), p. 100; emphasis added.

[33] *Annuaire de l'Institut de droit international*, Final Report, December 1996, Paris, Pedone, p. 339.

[34] See J. Crawford, *Brownlie's Principles of Public International Law*, 8th ed., 2012, Oxford University Press, p. 573: "The scale of compensation in cases of lawful activities may be less ambitious than that applicable to activity unlawful at birth, such as unprovoked attacks or unlawful expropriation."

conduct of the Parties and the gravity of the violation in the assessment of compensation[35]. The British Commissioner (Cockburn) in the *Alabama Claims* said that reparation sought must be reasonably proportionate, not only to the loss which is the consequence of the fault (the act or omission), but also to the gravity of the fault itself[36]. (Cockburn's opinion in the *Alabama Claims* drew support in the dissenting opinion of Judge Azevedo in the *Corfu Channel Case (United Kingdom* v. *Albania)*[37].)

44. Other examples include the *I'm Alone* case (1933-1935), in which a sum of money was awarded as "material amend" for the intentional unlawful sinking of a ship and *The Rainbow Warrior* arbitration (1990) in which the recommendation was that France pay US$2 million for contempt of an earlier agreement with New Zealand[38]. The conduct of the parties was taken into account in the assessment of compensation by the Eritrea-Ethiopia Claims Commission. The Commission stressed the need to achieve "a measure of proportion between the character of a delict and the compensation due"[39] and commented that it had been informed by the "gravity" and "seriousness" of the violations in making its determination in respect of compensation[40].

45. Jennings and Watts state that in the assessment of damages a great difference would be likely to be made "between acts of reparation for international wrongs deliberately and maliciously committed, and for those which arise merely from culpable negligence"[41]. They argue:

> "It is sometimes maintained that, having regard to the sovereignty of states, their responsibility for international wrongs is limited to such reparation for wrongs committed by them as does not exceed the limits of restitution, and that damages in excess of those limits (often referred to as penal or punitive damages) are excluded. This

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[35] R. Jennings and A. Watts (eds.), *Oppenheim's International Law: Peace*, Vol. I, 9th ed., London, Longman, 1992, p. 533.

[36] J. Personnaz, *La réparation du préjudice en droit international public*, 1939, p. 107.

[37] *Corfu Channel (United Kingdom* v. *Albania), Merits, Judgment, I.C.J. Reports 1949*, p. 96. See T. Bingham, "Alabama Arbitration", in *Max Planck Encyclopaedia of International Public Law*, para. 10.

[38] See R. Kolb, "Legal effects of responsibility" in *The International Law of State Responsibility — An Introduction* (2017), pp. 166-167. Kolb opines that "there may well also be some exemplary or punitive element in this recommendation [In Rainbow Warrior]".

[39] Eritrea-Ethiopia Claims Commission, Final Award, Ethiopia's Damages Claims (17 Aug. 2009), in *International Law Reports*, Vol. 140, 2011, para. 312.

[40] *Ibid.*, para. 103. See also paras. 310 and 311.

[41] R. Jennings and A. Watts (eds.), *Oppenheim's International Law: Peace*, Vol. I, 9th ed., London, Longman, 1992, p. 532.

> view hardly accords either with principle or with practice . . . international tribunals have in numerous cases awarded damages which must, upon analysis, be regarded as penal . . .”[42].

46. Without advocating the imposition of punitive damages, it is possible to take account of the gravity of Nicaragua’s conduct in seeking to fully restore Costa Rica to the position which it enjoyed prior to Nicaragua’s violation taking place.

Conclusion

47. Precise quantification of the harm caused by Nicaragua to Costa Rica’s environment is impossible. The dictum in the *Trail Smelter* case[43] does, however, provide some guidance in the search for a reasonable and equitable award. In this case the tribunal declared:

> “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 amends for his acts. In such [a] case, while the damages may not be determined by mere speculation or guess, it will be enough if the evidence shows the extent of the damages as a matter of just and reasonable inference, although the result be only approximate.”

48. Costa Rica has claimed what appears to be an inflated sum for the environmental damages it has suffered at the hands of Nicaragua — US$2,880,745.82. The extravagance of this claim is compounded by the quality of the reasoning Costa Rica employed to advance this claim. These factors should not, however, conceal the fact that Costa Rica suf-

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[42] See *op. cit. supra* note 41, p. 533. After careful reappraisal of the question of punitive damages in international law, Professor Nina Jorgensen concludes that

> “[i]t is often difficult to draw a line between damages designed to punish the wrongdoing State, and purely compensatory damages which nevertheless reflect the State’s degree of misconduct. In this regard, a certain quantum of the damages or the entire sum awarded in a given case may be designed to cater for various forms of non-pecuniary loss or moral damage, but the purpose is still compensatory.” (“A Reappraisal of Punitive Damages in International Law” (1997), *British Yearbook of International Law*, Vol. 68, Issue 1, p. 260.)

[43] *Trail Smelter* Case *(United States, Canada)*, United Nations, *Reports of International Arbitral Awards*, Vol. III, p. 1920, quoting the United States Supreme Court in *Story Parchment Co.* v. *Paterson Parchment Paper Co.* (1931), *United States Reports*, Vol. 282, p. 555.

fered serious environmental harm and that this was not the result of a negligent misinterpretation of a historical boundary but of a wilful and deliberate strategy to extend the territory of Nicaragua by damaging and re-shaping the environment of an internationally protected wetland. In the course of this action Nicaragua caused serious harm to the trees, vegetation, and soil of Costa Rica. It irresponsibly disturbed the biodiversity of the wetland and contributed, albeit minimally, to global warming by damaging carbon sequestration. These are serious violations. In making its award the Court should have reflected that seriousness by placing a higher monetary sum on the valuation of the environmental goods and services impaired by Nicaragua and the impact of Nicaragua's actions on an internationally protected wetland. Nicaragua's destruction of close to 300 trees over 100 years old provided the Court with an opportunity to pronounce on the implications of this conduct for climate change and to attach a monetary value to this factor. Unfortunately this opportunity was missed. Finally, the conduct of Nicaragua in the course of its invasion, occupation and excavation of the wetland should not have been overlooked in the quantification of damages. For these reasons I believe that the award of compensation for the impairment of environmental goods and services made by the Court in the sum of US$120,000 fails to meet the standards of fairness and equity propounded by the tribunal in the *Trail Smelter* case.

(Signed) John DUGARD.
