

WORLD HEALTH ORGANIZATION CRITICAL REVIEW OF THE COCA LEAF

SUPPORTING DOSSIER

(Annex to the notification to the Secretary-General by the Plurinational State of Bolivia to initiate a critical review)

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1. The history of coca leaf scheduling

The discussion regarding coca leaf chewing in the UN control system began at the very first session of the Commission on Narcotic Drugs (CND) in 1946, when it was recalled that Colombia had stated in 1939, *"that in order to combat drug addiction, which in that country takes the form of the chewing of coca leaves, it had taken measures to prevent the extension of this addiction; it considered, however, that international action should be taken in order to facilitate its suppression"* and therefore suggested *"an enquiry by the League of Nations with a view to preparing an international convention to limit the cultivation of coca leaves to the world's medical requirements"*.¹ In previous meetings, coca leaf had appeared, but only as a raw material for cocaine production, once cocaine was included in the list of substances under international control in the 1912 and 1925 treaties, without aiming to suppress traditional uses of coca.

At the next CND session in 1947, Peru tabled a resolution to *"study the effects of coca chewing in some South American countries"*.² At that time fierce debate between defenders and opponents of coca leaf chewing was the object of a national polemic in Peru. Academics and medical professionals were deeply divided on whether the effects of chewing were detrimental or beneficial to health, and whether coca chewing should be prohibited or tolerated, as had been the case since colonial times. At one extreme, it was argued that

¹ CND (1946). *Report to the Economic and Social Council on the First Session of the Commission*, held at Lake Success, New York, from 27 November to 13 December 1946, p. 36.

² CND (1947). *Request by the Government of Peru for a field survey on the effects of the chewing of the coca leaf*, Resolution 4(II), Commission on Narcotic Drugs, 2nd session, 4 August.

progress towards a modern nation was impeded by the “backwardness” of the coca chewing Indian part of the population. At the time, a causal relationship was assumed between coca leaf chewing and the poverty and malaise of indigenous peoples, connecting an improvement in their living conditions to the suppression of the phenomenon.³ On the other hand, its defenders claimed “*the coca habit contributed significantly to successful acclimatization in Highland Peru, without causing any detrimental health problems*”.⁴

The ECOSOC resolution of August 10, 1948 speaks of “*the problem of the coca leaf*”, in line with the request of Peru, and its meeting that year “*approves the dispatch of a commission of enquiry to Peru at the earliest possible date to study the effects of chewing the coca leaf and the possibilities of limiting its production and controlling its distribution*”.⁵ In April 1949, the Bolivian government requested that the commission would extend its investigations to Bolivia.

An extensive annotated bibliography was prepared for the members of the Commission of Enquiry by Pablo Osvaldo Wolff (Argentina),⁶ who subsequently became Chief of the WHO Addiction Producing Drugs Section. In a lecture in 1949 he presented his own —highly prejudiced and racist— reflections on the preparatory work he had done for the Commission:

“The indio who does not chew coca leaves is clear-sighted, intelligent, and light-hearted, willing to work, vigorous, and resistant to diseases; the coquero, on the contrary, is abulic, apathetic, lazy, insensitive to his surroundings, his mind is befogged; his emotional reactions are rare and violent, he is morally and intellectually ‘anaesthetized,’ socially subdued, almost a slave. [...] Moral degeneration accompanies the physical; lying is one of the outstanding characteristics, probably due to lack of moral equilibrium. Criminality is high, and barbaric forms of homicide can only be explained by a certain moral insensibility. There is no doubt that the habit of chewing coca leaves is one of the most powerful reasons for the backwardness and misery of the Indian population.”⁷

The ECOSOC *Commission of Enquiry on the Coca Leaf* presented its findings in May 1950, after a short visit to Peru and Bolivia. The missions’ members were pharmacologists and physicians, and the mission was headed by Henry B. Fonda, a vice-president of the American Pharmaceutical Association. Once published, the report caused much controversy in Peru, spurring its own National Commission for the Study on the Coca Problem to publish a report

³ Díaz, A. (1988). *Hoja, pasta, polvo y roca. El consumo de los derivados de la coca*. Barcelona: Servei de Publicacions de la Universitat Autònoma de Barcelona.

⁴ Gagliano, J. (1994). *Coca prohibition in Peru: The Historical Debates*, Tucson: University of Arizona Press, p. 117.

⁵ ECOSOC (1948). *Commission of Enquiry into the Effects of Chewing the Coca Leaf*, Resolution of 10 August 1948, Geneva: Economic and Social Council.

⁶ Wolff, P. O. (1950). *Annotated Bibliography on the Effects of chewing the Coca Leaf*, by Pablo Osvaldo Wolff, M.D., Ph.D., with the assistance of the Narcotics Division, Department of Social Affairs of the United Nations, in: ECOSOC (1950). *Report of the Commission of Inquiry on the Coca Leaf*, Economic and Social Council, New York: United Nations, Annex II, pp. 119-160.

⁷ Wolff, P. O. (1949). “The Second Kelynack Memorial Lecture: Problems of Drug Addiction in South America”, *The British Journal of Addiction*, 46(2), p. 73. doi:10.1111/j.1360-0443.1949.tb05077.x

in November 1950, countering many of the ECOSOC report's conclusions. It considered that *"the experts appointed by ECOSOC visited Peru, not to research the problem scientifically, but just to collect information"*, and included the opinions of many *"persons profane to the issue"*. An intensive and well documented written exchange between the ECOSOC Commission and the Peruvian Commission ensued.⁸

In the opinion of H.B. Fonda, expressed in an interview with a local newspaper upon arrival in Lima in 1949, coca chewing was *"not just a harmful and pernicious habit, but a cause of racial degeneration of many population groups and the decadence visibly demonstrated by numerous indigenous and even mestizo inhabitants of certain areas of Peru and Bolivia. Our studies will confirm the certainty of our assertions. And we hope to be able to present a rational action plan, duly grounded in reality with knowledge of experience on the ground to achieve the absolute and certain abolition of such a pernicious habit."*⁹

The purpose of the mission had been to establish the harms inflicted by coca leaf chewing. The final report concluded coca chewing *"does not constitute an addiction (toxicomania), but a habit"* and although *"it has all the characteristics of a habit [...] no abstinence symptoms are seen"*. At the same time, the report claims coca is the cause of malnutrition of the indigenous population, and is said to reduce the economic performance of those consuming it. Coca was thus held responsible for keeping the indigenous population in a poor economic condition. While the report contains a number of testimonials of local physicians (in Peru and Bolivia) who describe the use of coca as non-problematic and even beneficial, most of the report's descriptions of indigenous behavior and customs would nowadays be classified as biased, racist and ethnocentric, and as such quite unacceptable in a scientific debate. In addition, coca usage was viewed exclusively from a very limited pharmacological and physiological perspective, not taking into account or valuing its cultural significance and its nutritional and health benefits. The only obsession of the Commission was the intake of cocaine, albeit in minimal quantities.

At the December 1950 CND meeting, Peru and Bolivia questioned the outcome of the report, disagreeing with its main conclusions and demanding a serious scientific study, as they had proposed originally.¹⁰ During the following years, between the issuing of the report and the coming into existence of the 1961 Single Convention, the issue surfaced again at the World Health Organization (WHO), in conformity with the procedure established to determine which substances should be included into the Convention's schedules for control.

With the matter still in dispute, the WHO Expert Committee on Drugs Liable to Produce Addiction discussed the issue in its sessions of 1952 and 1954. At both sessions, the above mentioned Pablo Osvaldo Wolff acted as Secretary of the Expert Committee. Confronted with the ECOSOC study that had defined coca chewing as a habit, it reviewed the question in

⁸ All relevant documents regarding this debate appear in: Instituto Indigenista Peruano (1952). *Perú Indígena*, Vol. III, nrs. 7 and 8, Lima: December, pp. 16-130. <https://repositorio.cultura.gob.pe/handle/CULTURA/1083>

⁹ *El Comercio*, Lima, 12 September 1949, morning edition

¹⁰ CND (1950). *Report of the Commission on Narcotic Drugs (fifth session)*, E/CN.7/216, 29 December, pp. 145-161.

1952 and concluded that *“The Report of the Commission of Enquiry on the Coca Leaf clearly shows that coca chewing is detrimental to the individual and to society. The Committee therefore was of the opinion that coca chewing comes so closely to the characteristics of addiction, [...] that it must be defined and treated as an addiction, in spite of the occasional absence of some of these characteristics”*.¹¹ At the 1954 meeting the Committee similarly stated that *“it has taken notice of evidence showing the absorption of cocaine during the chewing process. It was pointed out that there is a wide variation in the amount of cocaine ingested between coca chewers, just as there is among individuals who take pure alkaloid for non-medical purposes. The term cocainism is applicable to the latter and [...] coca chewing (cocaism) must be considered a form of cocainism”*.¹²

The 1961 Single Convention listed coca leaf in Schedule I based upon this judgment, and it also called for the abolition of coca chewing. Although embedded in the medicinal, nutritional, social, cultural and religious practices of Andean and Amazonian populations, all signatories were obliged to phase out its usage by this article: *“Coca leaf chewing must be abolished within twenty-five years from the coming into force of this Convention”* (Article 49, 2.e).

The WHO and the pre-review of coca leaf

Many years later, at the 1992 meeting the WHO Expert Committee on Drug Dependence (ECDD), the question of the coca leaf appeared on the agenda again –at the prompting of Bolivia– and was added by the WHO secretariat to a list of ten substances to be considered by the Committee for a critical review. During this ECDD meeting, it was noted that because the *“traditional use of coca leaf is still prevalent in certain regions of the world, the dependence producing properties of chewed leaf, its social role, and the health consequences of its use should be studied”*. It nevertheless came to the rather contradictory conclusion that *“the coca leaf is appropriately scheduled under the Single Convention on Narcotic Drugs, 1961, since cocaine is readily extractable from the leaf. The Committee did not recommend coca leaf for critical review.”*¹³

The prereview stage appears to have been used to prevent a more thorough examination of the scientific evidence. This defensiveness on the part of the WHO Expert Committee on Drug Dependence is perhaps understandable: an examination of the original rulings which supported the 1961 Single Convention would show that little or nothing was made of the extractability argument at the time, and the arguments which were then used – coca’s links with malnutrition, or its potential to cause an addiction-like “habit” – have very little scientific basis and credibility today. In other words, the grounds for maintaining coca leaf in Schedule 1 of the Single Convention were changed, but – this is the important point –

¹¹ WHO (1952). *Expert Committee on Drugs Liable to Produce Addiction, Third Report*, Technical Report Series 57, Geneva: World Health Organization, p.10.

¹² WHO (1954). *Expert Committee on Drugs Liable to Produce Addiction, Fourth Report*, Technical Report Series 76, Geneva: World Health Organization, p 10.

¹³ WHO (1993). *Expert Committee on Drug Dependence, Twenty-eighth Report*, Technical Report Series 836, Geneva: World Health Organization, pp. 35 and 39.

without carrying out the necessary critical review on the part of the WHO Expert Committee on Drug Dependence.

A few years earlier, a study by the same WHO on the adverse effects of cocaine contradicted the earlier conclusions of the Expert Committee, when it describes coca chewing in the following terms: *“This technique allows the drug to be absorbed by mouth, slowly and continuously. Blood concentrations of cocaine are generally low, the risk of dependence is also small and the drug thus administered is unlikely to produce psychological or social disturbances or constitute a threat to health”*.¹⁴

The prereview process took place in tandem with the “WHO/UNICRI Cocaine Project”, an extensive WHO and United Nations Interregional Crime and Justice Research (UNICRI) study on the different forms of cocaine use around the world. This was carried out between 1991 and 1995 with surveys in 22 cities, 19 countries and five continents, performed by 45 experts in the field of drug research. It also included three detailed case studies of the use of coca leaf by chewing, since it was clearly established that this form of ingestion involves the absorption of trace amounts of the cocaine alkaloid present in the leaves.

The Cocaine Project underscored that the *“traditional use of coca appears to have no negative health effects and that it serves positive therapeutic, sacred and social functions among indigenous groups in the Andean region”*.¹⁵ The scientists who participated in the WHO/ UNICRI study made the following recommendations:

- Although there is a possibility that use of the coca leaf may be linked to certain health problems that have not yet been detected, this is unlikely. It would be much more interesting to determine whether chewing coca could have positive health effects.
- The WHO should investigate the impact of drug control legislation and repressive measures on particular individuals and specific populations of users.
- The WHO should investigate the therapeutic benefits of the coca leaf, and whether such beneficial effects could be transferred from traditional contexts to other countries and cultures.

On March 14, 1995, the WHO announced the impending publication of the WHO/UNICRI Cocaine Initiative report to the international press. Shortly thereafter, on May 9, 1995, at the 48th World Health Assembly in Geneva, the US representative said he was *“surprised to note that the package seemed to make a case for the positive uses of cocaine, claiming that use of the coca leaf did not lead to noticeable damage to mental or physical health, that the positive health effects of coca leaf chewing might be transferable from traditional settings to other countries and cultures, and that coca production provided financial benefits to*

¹⁴ WHO (1988). *Consecuencias adversas para la salud del uso indebido de cocaína*, Texto editado por A. Arif, División de Salud Mental, Organización Mundial para la Salud, Ginebra, p. 2.
<https://apps.who.int/iris/handle/10665/39149>

¹⁵ WHO (1995). *WHO/UNICRI Cocaine Project: Briefing Kit*, Geneva: World Health Organization (unpublished document). <https://www.tni.org/en/article/the-who-cocaine-project>

peasants.”¹⁶ He added that his government would suspend financial support if the WHO did not dissociate itself from the study’s conclusions and if it adopted a position justifying coca production.

In response the WHO secretariat said that the study was an extensive, objective analysis of data gathered from many countries, and that it had been carried out by international experts, while its conclusions did not reflect the position of the WHO. The US representative replied that the study was not extensive or objective, and that it should be subjected to peer review in accordance with the WHO’s own strict guidelines. This process was held up by endless prevarications over who should be called to conduct the review, and in the end never took place. The report was shelved and never officially published by the WHO.

The INCB and the ‘ambiguities’ around coca

In its 1994 supplement, *‘Coca leaf: a need to clarify ambiguities’*, the International Narcotics Control Board (INCB) mentioned other grey areas surrounding the use of coca, such as the fact that the drinking of coca tea “*which is considered harmless and legal in several countries in South America, is an illegal activity under the provisions of both the 1961 Convention and the 1988 Convention, though that was not the intention of the plenipotentiary conferences that adopted those conventions*”. The report concluded that “*there is a need to examine the situation regarding State parties to the 1961 Convention that have made reservations under article 49 of that Convention. Traditional drug use that had been temporarily permitted under the 1961 Convention should be assessed, with a view to making a decision on what the approach of the international drug control system should be to that problem.*”¹⁷ At that point the Board was “*confident that the Commission on Narcotic Drugs, on the basis of scientific evaluation, will resolve such long-standing ambiguities, which have been undermining the conventions.*” It consequently called on the WHO to undertake a scientific review of the issues at stake.

Despite this honest recognition of the contradictions caused by the inclusion of coca in the UN treaty instruments, the annual reports of the Board have continued to be a constant source of aggravation for millions of people who use coca. In its report for 2007, for example, the Board called on Bolivia and Peru “*to consider amending their national legislation so as to abolish or prohibit activities that are contrary to the 1961 Convention, such as coca leaf chewing and the manufacture of mate de coca (coca tea) and other products containing coca alkaloids for domestic use and export*”.¹⁸ In response, Bolivian President Evo Morales wrote a letter to the Secretary General, requesting him to “*make a representation in the name of the government and people of Bolivia, on the report presented by the International Narcotics Control Board (INCB) in the most ample spirit of respect for*

¹⁶ WHA (1995). *Forty-Eighth World Health Assembly, Geneva, 1-12 May 1995*, WHA48/1995/REC/3, Summary Records and Reports of Committees, Committee B: Sixth Meeting, Geneva, p. 229.

¹⁷ INCB (1995). *Effectiveness of the International Drug Control Treaties*, Supplement to the Report of the International Narcotics Control Board for 1994, E/INCB/1994/1/Supp.1, New York: United Nations, p. 11. <https://www.incb.org/documents/Publications/AnnualReports/AR1994/E-INCB-1994-1-Supp-1-e.pdf>

¹⁸ INCB (2008). *Report of the International Narcotics Control Board for 2007*, E/INCB/2007/1, New York: United Nations, pp. 37-38.

the millions of Bolivians who, while we reject the illicit trafficking of drugs, reaffirm our right to let our cultural values prevail through the traditional consumption of the sacred coca leaf.”¹⁹

In its report the following year, the INCB recognized that “*there is a movement to elevate the status of the coca leaf to that of a symbol of national and ethnic identity used by indigenous peoples to reaffirm their cultural roots and historic rights*”, but still reiterated that: “*The position of coca leaf in Schedule I of the 1961 Convention is clear: non-medical consumption of the coca leaf without prior extraction of its principal active alkaloids, including cocaine, is prohibited.*”²⁰

Key considerations for the critical review

- 1. The inclusion of the coca leaf in Schedule I of the 1961 Single Convention was based on the 1950 ECOSOC Enquiry containing serious scientific fallacies, and the subsequent political determination of the WHO in the 1950s that ‘coca chewing is detrimental to the individual and to society’ and ‘must be defined and treated as an addiction’.**
- 2. The ECOSOC Report and the WHO's position in the 1950s and early 1960s corresponds to a colonial view of prejudice towards indigenous peoples and their cultural practices that existed at the time and permeated the international drug control system.**
- 3. The health impacts of coca chewing, and the potential benefits of the coca leaf have never been officially examined at the UN level, while the perceived negative effects were asserted without any epidemiological evidence or clinical trials, exposing the lack of legitimacy of its current classification. The only research initiated by the WHO, the 1992-1995 WHO/UNICRI Cocaine Project, was impounded under political pressure from a single country and its results were never published.**

2. The legal situation of coca Reservations, national legislation and treaty conflicts

In 1925, during negotiations in Geneva for the International Opium Convention, the United States had already proposed “*that the production of coca leaf should be so controlled that there would be no surplus available for purposes not strictly medical or scientific in character*”. Bolivia objected, arguing that “*the experience of several centuries has shown the mastication of coca leaf and the absorption of its juice to be perfectly innocuous.*” The sub-committee empowered to consider suggestions for the limitation of the production of the coca leaf for export, concluded that “*having considered the information of the Delegate of Bolivia as to the innocuous use of coca leaves by the Bolivian people, it was of opinion that*

¹⁹ *Carta al Secretario General Ban Ki Moon*, Evo Morales, Presidente de la República, La Paz: 8 de marzo 2008. See: <https://druglawreform.info/images/stories/documents/fernandez.pdf>

²⁰ INCB (2009). *Report of the International Narcotics Control Board for 2008*, E/INCB/2008/1, New York: United Nations, p.7.

the limitation of the production of the coca leaf to the amount needed for medical and scientific purposes could not be realized as that would imply the absolute prohibition of the harmless consumption of the leaf in several South American States.”²¹ The 1925 Convention, for that reason, only applied a system of import and export certificates for coca leaf, and required countries to submit statistics on the amounts produced for export. The use of coca leaf was not limited to medical or scientific purposes, that restriction was only imposed on cocaine and “crude cocaine”, defined as “any extract of the coca leaf which can be used directly or indirectly for the manufacture of cocaine”. When Bolivia acceded to the Convention in 1932, it still made a reservation, underscoring that “Bolivia does not undertake to restrict the home cultivation or production of coca, or to prohibit the use of coca leaves by the native population”, and clarifying that the “exportation of coca leaves shall be subject to control by the Bolivian Government, by means of export certificates”.

Bolivia initially did not become a Party to the 1961 Single Convention, and only signed the treaty in 1976 during the brutal military dictatorship of General Banzer, after it was amended by the 1972 Protocol, and without a reservation. Argentina and Peru, both with significant coca chewing populations, were the only countries to deposit a reservation upon signing the Convention. Peru withdrew its reservation when ratifying the treaty in 1964, and the Argentine military regime withdraw its reservation in 1979.

In 2009, Bolivia requested an amendment to the 1961 Single Convention, deleting the obligation in Article 49 that “coca leaf chewing must be abolished” (the Spanish treaty text even reads “shall be prohibited”). The article originally allowed countries a temporary exemption to this measure, but coca chewing had to be phased out in any case within 25 years – a period which expired at the end of 1989 (the 1961 Convention entered into force in December 1964). Bolivia’s request would have been approved automatically, but 17 countries opposed the amendment and prevented this from happening.²² No formal decision, however, has been reached yet about the amendment proposal, which requires ECOSOC to rule that either (1) the amount of objections suffice to take no further action; (2) that the amendment enters into force but will not be operative in respect of objecting Parties; or (3) that a Conference of the Parties should be convened to consider the amendment (Article 47).

As the next step in bringing its national law in line with international obligations, on June 29, 2011, Bolivia withdrew from the Single Convention by presenting the UN General Secretary a formal notification of denunciation. The withdrawal entered into effect on 1 January 2012, and one year later, Bolivia re-acceded to the Convention with the following reservation:

²¹ Willoughby, W. (1925). *Opium as an International Problem: The Geneva Conferences*, Baltimore: The Johns Hopkins Press, pp. 385-387.

<https://ia800202.us.archive.org/18/items/opiumasinternati00will/opiumasinternati00will.pdf>

²² Initially 21 countries registered objections to the amendment: all G-8 members (Canada, France, Germany, Italy, Japan, Russian Federation, United Kingdom, United States) plus Bulgaria, Colombia, Denmark, Egypt, Estonia, Latvia, Macedonia, Malaysia, Mexico, Singapore, Slovakia, Sweden and Ukraine. However, Colombia, Macedonia and Egypt already withdrew their objections before the closure date of 31 January 2011. See: <https://www.druglawreform.info/en/issues/unscheduling-the-coca-leaf/item/1184-objections-and-support-for-bolivias-coca-amendment> Mexico subsequently withdrew its objection in 2018.

“The Plurinational State of Bolivia reserves the right to allow in its territory: traditional coca leaf chewing; the consumption and use of the coca leaf in its natural state for cultural and medicinal purposes, such as its use in infusions; and also the cultivation, trade and possession of the coca leaf to the extent necessary for these licit purposes. At the same time, the Republic of Bolivia will continue to take all necessary legal measures to control the illicit cultivation of coca in order to prevent its abuse and the illicit production of the narcotic drugs which may be extracted from the leaf.”

In total, only 14 countries have objected to Bolivia’s re-accession with its coca reservation, and since that number fell far short of the required minimum of one-third of all treaty Parties to invalidate it, the Secretary-General communicated that the reservation *“shall be deemed permitted”*.²³

Coca and the 1988 Convention

More than 25 years had passed since the drafting of the 1961 Single Convention, when the issue resurfaced at the negotiations around the 1988 Convention against Trafficking of Narcotic Drugs and Psychotropic Substances. Bolivia and Peru had developed a “Coca Diplomacy” at the international level, and jointly advocated to differentiate between traditional coca consumption and its use for cocaine production. The focus was on measures to eradicate illicit cultivation and eliminate illicit demand and was itself an outcome of the polemical debate on the balance between the concerns of producing, consuming and transit countries. A 12-country amendment²⁴, intended to correct certain misunderstanding with regard to traditional and legitimate uses of plants containing psychotropic or narcotic substances, was presented *“to ensure that the convention would not penalize the licit cultivation of coca bushes and the licit traditional uses of coca leaf”*.²⁵

The Bolivian delegate, speaking on behalf of the sponsors of the amendment, explained that *“as the 25-year tolerance period for traditional uses of coca leaves provided for in the 1961 Convention would shortly expire, her country and others in the Andean subregion would have to cope with very serious problems connected with small-scale coca growers”*.²⁶ The chairman of the Committee of the Whole, István Bayer (Hungary), confirmed that *“a distinction must be drawn between the illicit use of the coca plant and traditional uses, such as coca chewing and coca tea drinking current in Latin American countries. The drafters of*

²³ United Nations (2013). *Bolivia (Plurinational State of): Accession*, Single Convention on Narcotic Drugs, 1961, as amended by the Protocol amending the Single Convention on Narcotic Drugs, 1961, Communication by the Secretary-General, C.N.94.2013.TREATIES-VI.18 (Depositary Notification), 22 January, New York. All G-8 members objected again, plus Finland, Ireland, Israel, Mexico, Netherlands, Portugal and Sweden. Mexico withdrew its objection in 2018.

²⁴ Bahamas, Bolivia, Colombia, Costa Rica, Cuba, Guatemala, India, Jamaica, Mexico, Panama, Paraguay and Peru.

²⁵ United Nations (1998). *Commentary on the Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988*, E/CN.7/590, New York, p. 296.

²⁶ United Nations (1991). *United Nations Conference for the Adoption of a Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, Vienna, 25 November-20 December 1988, Official Records*, E/CONF.82/16/Add.1, Volume II: Summary records of plenary meetings, Summary records of meetings of Committee I and Committee II, New York, p. 305.

the Single Convention had ensured that the source of cocaine-the coca bush and leaf-was properly controlled, but had made temporary arrangements to maintain and respect traditional coca chewing. Those measures were now coming to an end.”²⁷

The Andean representatives tried very hard to negotiate an exceptional status for coca, making clear that, *“There were three aspects of the 12-country amendment which were not negotiable under any circumstances; namely, the fundamental human rights of the cultivators, traditional domestic use -where there was historic evidence of such use- and protection of the environment.”* The Single Convention, however, had closed off all roads to the legitimation of traditional uses of controlled substances, and other member states negotiated to ensure that all provisions previously agreed to, would remain intact. Those opposing *“felt that the notion of traditional uses should not be so expanded as to legitimize drug abuse”*, and that -in the words of the UK delegate- any change *“would cause confusion about the status of coca”*. The U.S. delegate *“was deeply concerned about amendments which seemed to be at variance”* with the 1961 Convention, arguing that, *“Any country that experienced difficulties with article 49 of the Single Convention with regard to traditional use and licit cultivation could always take action under article 47”*.²⁸ As mentioned above, however, when Bolivia twenty years later indeed proposed an amendment using this Article 47, the U.S. objected and mobilised other countries against it.

The final text of the 1988 Convention makes clear that its provisions shall not derogate from any previous treaty obligations (Article 25), underscoring in the first paragraph of Article 14 that also eradication measures *“shall not be less stringent than the provisions”* of the 1961 Convention. Still, by adopting the second paragraph based on the 12-country proposal, it also introduced the term *‘traditional licit uses’*, a concept absent from the 1961 treaty, where the only licit uses were deemed to be either medical or scientific:

“Each Party shall take appropriate measures to prevent illicit cultivation of and to eradicate plants containing narcotic or psychotropic substances, such as opium poppy, coca bush and cannabis plants cultivated illicitly in its territory. The measures adopted shall respect fundamental human rights and shall take due account of traditional licit uses, where there is historic evidence of such use, as well as the protection of the environment.”
(Article 14.2)

Bolivia made a formal reservation to the 1988 Convention emphasizing that its *“legal system recognizes the ancestral nature of the licit use of the coca leaf which, for much of Bolivia’s population, dates back over centuries.”* The reservation made the following points:

“The coca leaf is not in itself a narcotic or psychotropic substance; its use and consumption do not cause physical or psychic alterations greater than those resulting from the consumption of other freely and universally used plants and products; the coca leaf has wide medicinal applications as supported by the practice of traditional medicine defended by the World Health Organisation and confirmed by science; it can be used for industrial

²⁷ Ibid., p. 299.

²⁸ Ibid., pp. 297-302.

purposes; coca leaf is generally used and consumed in Bolivia, which means that if it were to accept the orders mentioned above, a large part of the Bolivian population would have to be considered criminal and punished as such, which would make the rules inapplicable in practice; it should be noted that coca leaf becomes a drug when it is transformed in chemical processes that use equipment and materials that do not come from Bolivia; the Republic of Bolivia will take all the pertinent legal measures to control cultivation, use, consumption and illicit acquisition, in order to prevent coca leaf being diverted into the manufacture of narcotics.”

Colombia also made a reservation to the 1988 Trafficking Convention. Regarding coca leaf it stated: *“It is the view of Colombia that treatment under the Convention of the cultivation of the coca leaf as a criminal offense must be harmonized with a policy of alternative development, taking into account the rights of the indigenous communities involved and the protection of the environment”*.²⁹ Peru also reserved the right to legal cultivation, curiously omitting which plant it was referring to: *“Peru formulates an express reservation to paragraph 1 (a) (ii) of article 3, concerning offenses and sanctions; that paragraph includes cultivation among the activities established as criminal offenses, without drawing the necessary clear distinction between licit and illicit cultivation.”*³⁰

National legal treatment of coca leaf

Current national legislation in several countries of South America shows that the use of coca is a recognized cultural phenomenon and an accepted medicinal practice, including provisions in their national legal framework that allow for its cultivation, sale, possession, trade and use. What follows is a reflection of the current situation, not a historical overview of all legislation concerning coca.

Bolivia adopted a new Constitution in 2009, containing an article declaring the coca leaf to be part of its national heritage,³¹ and Law Nº 864 of December 2016 declares the "Acullico", the traditional chewing of the coca leaf, as intangible cultural heritage. Bolivia has never prohibited the use of coca by law, only restricted its cultivation to the area needed for legal purposes, an estimate backed by studies supported by the European Union on the volume required for traditional use. A household survey in 2012 estimated that there were more

²⁹ Corte Constitucional (1994). *Sentencia No. C-176/94, Tratado Internacional-Reservas/Tratado Internacional-Declaraciones*, Bogotá: República de Colombia. <https://www.corteconstitucional.gov.co/relatoria/1994/C-176-94.htm>. It was formally registered as a ‘declaration’ and not as a ‘reservation’, but the Court considered that from the point of view of Colombian constitutional law, it falls under the generic term of reservations since the declaration conditions the acceptance of the treaty to a certain interpretation and thus delimits the commitment of the Colombian State. The English translation is taken from the UN Treaties Collection (see next footnote).

³⁰ All official reservations made to UN 1988 Convention can be found in English at:

https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=VI-19&chapter=6&clang=_en

³¹ Bolivia (2009). *Constitución Política del Estado*, Cuarta parte, Título II, Capítulo séptimo: Coca, La Paz: Estado Plurinacional de Bolivia, 7 de febrero.

than 3 million consumers with an estimated total annual consumption of 19,000 metric tons.³²

In **Colombia** legislation establishes the legality of coca leaf in the context of the protection of indigenous cultural identity and respect for indigenous customs and traditions (Article 7 of the Constitution). The Colombian Constitutional Court, referring to the constitutionality of the 1988 Trafficking Convention, maintained:

“The coca plant and the licit and legitimate uses that have been and can be made of it cannot be placed on the same level as its use as a raw material for the production of cocaine. This differentiation between the coca leaf and cocaine is necessary since numerous studies have shown not only that the coca leaf could have forms of legal alternative trade that could precisely prevent the spread of drug trafficking, but also that the ancestral consumption of coca in our indigenous communities has no negative effects.” The distinction between coca and cocaine has a solid constitutional basis, according to the Court, *“which means that the persecution of drug trafficking cannot be translated into a disregard for the cultural identity of indigenous communities”*.³³

In **Peru** coca cultivation itself is not proscribed, but when harvest is due, all revenues become illicit if the farmers fail to deliver it to the state agent that controls output to the legal market. It uses a system of licensing to permit cultivation and sale, regulated exclusively through the state agency *Empresa Nacional de la Coca* (ENACO). Peru has always maintained a legal coca market under its domestic law and in 2005 declared coca chewing part of its cultural heritage. Coca is commonly consumed by a large percentage of the population, around 6 million people. Three household surveys were conducted in 2003, 2013 and 2019, which show an increase in the coca leaf using population.³⁴ ENACO is the sole authority overseeing the collection, drying, industrialization and transport of coca for licit consumption. It produces teas and other coca products, including cocaine for medical use, and it exports coca leaf and its derivatives abroad. One mayor client is Coca Cola who, through the company Stephan Chemical, imported 144 metric tons in 2022,³⁵ as it has been doing for the past decades using the exemption in the 1961 Convention that allows *“the use of coca leaves for the preparation of a flavouring agent, which shall not contain any alkaloids”* (Article 27).

The **Argentine** drug law of 1989 contains an article that specifically allows its citizens to be in possession of coca leaf for personal use. Law N° 23.737 establishes that: *“The possession and consumption of coca leaf in its natural state, destined at the practice of coqueo or*

³² CONALTID (2013). *Estudio Integral de la Demanda de la Hoja de Coca en Bolivia*, La Paz: Consejo Nacional de Lucha contra el Tráfico Ilícito de Drogas.

³³ Corte Constitucional (1994). *Sentencia No. C-176/94, Tratado Internacional-Reservas/Tratado Internacional-Declaraciones*, Bogotá: República de Colombia. <https://www.corteconstitucional.gov.co/relatoria/1994/C-176-94.htm>

³⁴ DEVIDA (2020). *Informe sobre la demanda de hoja de coca para fines tradicionales e industriales*. Lima: Comisión Nacional para el Desarrollo y Vida sin Drogas.

³⁵ ENACO (2022). *Hechos de importancia, Año 2022*, Lima: Empresa Nacional de la Coca. <https://transparencia.enaco.com.pe/comunicados-y-o-informes-oficiales-2020-2-2/>

chewing, or its simple use for infusions, will not be considered possession or consumption of drugs” (art. 15). There is no coca cultivation in Argentina itself, the supply for the widespread practice of coca chewing especially in the Northern provinces of Salta and Jujuy comes from Bolivia. Cross-border trade was roughly estimated at a minimum of 2,000 metric tons per year.³⁶ Compared with Bolivian figures, that amount would indicate at least 300,000 regular users, about 10 per cent of the population of the two Northern provinces, but reliable data are not available.

Parts of the **Chilean North** has a coca consuming Aymara population, estimated to be around ten thousand people. It is not a place coca is visibly part of the culture. Chilean law does not formally allow coca to be traded, or sold, but in practice will not prosecute Aymara people when found in possession of coca leaves. It is not difficult to find coca as an infusion.

In **Ecuador**, a country where evidence of coca consumption dates back to at least 3000 BCE, the habit has almost completely disappeared since the 17th century, when the Spanish Inquisition prohibited its use. Nowadays it is used by some indigenous groups as a traditional medicine, and is not sanctioned by law.

Other international instruments and contradicting obligations

Several international legal instruments and obligations are at odds with the current scheduling and related prohibition of coca leaf usage, including the traditional practice of coca chewing. The use of coca leaf as an expression of cultural norms and as a fundamental part of the traditional nutritional and medical practices of indigenous people, is clearly protected by dispositions in human rights treaties.

The ethical, legal and moral primacy of human rights norms that recognise and protect the ancestral use of natural resources by indigenous Andean-Amazonian peoples includes the coca leaf. When there is a collision between legal systems, in this case the drug treaties and the international system for the protection of human rights, *jus cogens* norms prevail, which are peremptory norms from which no derogation is permitted according to Articles 53 and 64 of the 1969 Vienna Convention on the Law of Treaties. What is certain is that the administrative procedure for the inclusion of the coca leaf in List I of the 1961 Single Convention has resulted in a severe and permanent infringement of the rights of peoples who use coca leaf.

In the past decades a number of legal instruments have appeared, firmly embedding indigenous peoples’ rights into national and international law. A critical review is needed in order to resolve legal contradictions and arrive at a balanced legal position between the current classification of coca leaf in the 1961 Single Convention and the following legal instruments:³⁷

³⁶ Abduca, R. and Metaal, P. (2013). *Working towards a legal coca market: The case of coca leaf chewing in Argentina*, Legislative Reform of Drug Policies 23, Amsterdam: Transnational Institute.

³⁷ For an overview of the affected rights under these instruments, see: Barrett, D. (2011). *Bolivia's concurrent Drug Control and other International Legal Commitments*, Background, International Centre on Human

- ☐ Universal Declaration of Human Rights, 1948
- ☐ International Covenant on Civil and Political Rights, 1966
- ☐ International Covenant on Economic Social and Cultural Rights, 1966
- ☐ International Convention on the Elimination of Racial Discrimination, 1965
- ☐ UN Declaration on the Rights of Indigenous People, 2007
- ☐ ILO Convention 169 - Indigenous and Tribal Peoples Convention, 1989
- ☐ UNESCO Convention for the Safeguarding of Intangible Cultural Heritage, 2003
- ☐ UN Convention on the Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988
- ☐ UN Convention on Biological Diversity, 1992, and the Nagoya Protocol, 2010

Though it may be an ongoing exercise to align global drug policies with obligations that are part of the global human rights regime, there are several recent references - to coca leaf chewing, medical practices, or other cultural uses of plants – that relate specifically to the rights of indigenous people, and it is imperative to take them into account.

According to the UN Permanent Forum on Indigenous Issues (UNPFII) in 2009, *“The Permanent Forum recognizes the cultural significance and medical importance of the coca leaf in the Andean and other indigenous regions of South America. It also notes that coca leaf chewing is specifically banned by the United Nations Single Convention on Narcotic Drugs (1961). The Permanent Forum recommends that those portions of the Convention regarding coca leaf chewing that are inconsistent with the rights of indigenous peoples to maintain their traditional health and cultural practices, as recognized in articles 11, 24 and 31 of the Declaration, be amended and/or repealed.”*³⁸

More recently, the UN High Commissioner for Human Rights, Zeid Ra’ad Al Hussein, clearly stated that the language regarding indigenous rights in the 2016 UNGASS Outcome Document, based on the wording of the 1988 Convention, was *“ambiguous”* and that *“it would have been better if it were clearly indicated that indigenous peoples should be allowed to use drugs in their traditional, cultural or religious practices when there is historical basis for this”*.³⁹

The UN General Assembly, in its annual omnibus resolution on drugs, approved for the first time, in December 2022, a paragraph on this issue: *“Reaffirming that Indigenous Peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals, and that they also have the right of access, without any discrimination, to all social and health services and to*

Rights and Drug Policy, July. <https://www.hr-dp.org/contents/90>; and: Burger, J. and Kapron, M. (2017). “Drug Policy and Indigenous Peoples”, *Health and Human Rights Journal*, Vol. 19, No. 1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5473056/>

³⁸ UNPFII (2009). *Report of the Eighth Session of the UN Permanent Forum on Indigenous Issues (18-29 May 2009)*, E/2009/43 - E/C.19/2009/14, New York: UN Permanent Forum on Indigenous Issues, para. 89.

³⁹ *Statement by Mr. Zeid Ra’ad Al Hussein, United Nations High Commissioner for Human Rights, 30th Special Session on World Drug Problem, General Assembly, 20 Apr 2016, Round Table 3, Cross-cutting issues: drugs and human rights, youth, women, children and communities, UN Web TV, video.* <http://webtv.un.org/meetings-events/general-assembly/watch/round-table-3-30th-special-session-on-world-drug-problem-general-assembly/4855628109001> at minute 42:18.

*participate in decision-making processes, in accordance with United Nations Declaration on the Rights of Indigenous Peoples”.*⁴⁰

And last but not least, in April 2023 the Human Rights Council adopted by consensus a similar paragraph on indigenous rights, in the context of a resolution on the human rights implications of current drug policy, mandating the Office of the High Commissioner for Human Rights (OHCHR) to prepare a report “*on human rights challenges in addressing and countering all aspects of the world drug problem*”.⁴¹

Key considerations for the critical review

1. The rights of Indigenous Peoples are now firmly established as part of the international human rights regime and the obligation to respect their cultures and their right to participate in decision-making processes need to be taken into account in the critical review process.

2. The right to maintain an ancient culture and traditional medicinal uses cannot be sacrificed in the name of “the cocaine problem”.

3. Contradictions between the various treaties have been recognized by the WHO and the other relevant UN entities, but never properly addressed or resolved. Now is an opportunity to resolve these tensions over coca leaf use from a legal and scientific perspective.

3. *The history and geographic distribution of uses of the coca leaf*

What is commonly referred to in the formula - *the traditional use of coca* - is not a single pattern of behaviour, but rather a diverse set of practices which have evolved over time and multiplied into many different cultural forms. Their persistence through the ages underpins the legitimacy of current attempts to reconsider the status of the coca leaf, whose use was condemned in the 1961 Single Convention. The hegemonic views of that time largely excluded the opinions of societies where coca was valued as a natural resource and an important element of indigenous cultures. In particular, the Aymara and Quechua speaking populations of the central Andes, though numbering millions and occupying the majority of the highland territory of Bolivia and Peru, were largely excluded from any of the relevant discussions, and took no part in the drafting of official documents.

A process of diversification in the use of coca has been observable over the centuries as use of the plant spread out of this core area: into the northern Andes, the western Amazon

⁴⁰ General Assembly (2022). *Addressing and countering the world drug problem through a comprehensive, integrated and balanced approach*, A/RES/77/238, Resolution adopted by the General Assembly on 15 December 2022. <https://digitallibrary.un.org/record/4000190?ln=en>

⁴¹ HRC (2023). *Contribution of the Human Rights Council with regard to the human rights implications of drug policy*, A/HRC/52/L.22/Rev.1, Resolution adopted on 4 April 2023, Geneva. <https://documents-dds-ny.un.org/doc/UNDOC/LTD/G23/066/18/PDF/G2306618.pdf>

basin and southwards into Chile and Argentina. Furthermore, innovative departures continue to emerge up to the present day, evolving into novel forms of consumption and consolidating themselves as new “traditions”. It is therefore misleading to consider ancestral customs as the sole, properly valid point of reference, and in the process disqualify the wide range of present-day developments as somehow less legitimate and less sincere.

Indeed, it would seem preferable to consider all use of the coca leaf - in its unadulterated forms of leaf, flour and tea - as a single undivided phenomenon, distinguishable from other products which have been transformed by chemical processes of extraction. These would include not only the obvious cases of cocaine and its salts, but also many other industrial preparations which have emerged on the market, and which deserve a separate treatment. It is possible that such products could be considered analogous to the coca leaf only if they maintain levels of alkaloid content similar to the leaf – that is to say, less than 1% of total dry weight.

Recent excavations in the coastal valleys of northern Peru have established that the practice of chewing whole coca leaves mixed with slaked lime was already well established as early as 6500 BCE, and coincides with the emergence of agriculture and fixed settlements in the Andean region.⁴² Archaeological evidence for the continued importance of this custom continues throughout the pre-Hispanic period - from the shores of the Caribbean (e.g. the Tairona culture) to the deserts of north-central Argentina (various sites in the province of Catamarca) - and substantially undermines the contention of many early European observers, who claimed that the use of coca was a privilege restricted to the Inca elite. With time, lime came to be replaced in many regions by various forms of vegetable ash – which fulfilled the same function of making coca’s properties more bioavailable through the mouth’s membranes. In the present day, lime (processed from limestone or sea shells) continues to be the main adjunct to coca in highland Colombia and the northern half of highland and coastal Peru, while ashes predominate in the Amazon basin, southern Peru and Bolivia. A recent innovation, spreading since the 1930s from northern Argentina, has been the introduction of bicarbonate of soda as the alkaline agent, a “modern” trait which has established a novel addition to the range of “traditional use”.

A number of other differences have become apparent as the result of more detailed anthropological research. The drying of coca leaves is accomplished by toasting in large earthenware urns in highland Colombia and the Amazon, whereas in most of the Andes coca is dried in the sun. Sometimes, as in Ayacucho, coca is intentionally trampled by foot, which oxidizes the leaf and renders it darker, as well as reputedly sweeter. In the district of Tingo Maria, in central Peru, top quality coca is dried on layers of sheets in large, flue-heated installations known as *secadoras*. Beyond the considerable diversity in the different alkalis used, the varying drying techniques, and the regional forms of the bush (two species and four major varieties are recognized by botanical science), there are also a number of other herbs and mineral elements which are sometimes added to chewed coca; principle among

⁴² Dillehay, T.D. et al. (2010). “Early Holocene Coca chewing In Northern Peru”, *Antiquity* 84: 939-953.

these is the stem of a jungle vine known as *chamairo* (*Mussitia* sp.), widely used in the region between Cuzco and La Paz.

One of the major “traditional uses” contemplated in today’s discussion of the coca leaf concerns its use in the form of tea or *mate de coca*. Sixteenth and seventeenth Spanish sources on coca are entirely silent on this practice, which may have emerged in response to the Jesuit introduction in the Andes of Paraguayan tea or *mate* (*Ilex paraguariensis*). Drinking coca tea became more generalized after Independence; it lacked the association with indigenous identity, was more in accord with western consumer styles, and delivered a milder effect – which made it suitable for children, older people, and city dwellers with ethnic prejudices. To this day, in Peru, tourists are regularly offered coca tea, while coca chewing is still mainly restricted to miners, the rural population, and their descendants who have migrated to urban areas. Recent estimates by the Peruvian National Institute of Statistics (INEI) estimate almost 6 million consumers in that country, with per capita consumption in decline, but new urban and coastal markets doubling since 2003.⁴³ In Bolivia a household survey funded by the EU in 2012 estimated over 3 million users, again with a marked increase in urban and lowland areas.⁴⁴

Considerable variation is observable in the cultural importance accorded to coca chewing; different ethnic groups treat coca as an offering to immanent forces in nature, as a ritual lubricant in religious ceremonies, as a magical and medicinal plant, as an aid to discussion and debate, or simply as a working stimulant – most often, in fact, in varying combinations of all of these functions. Detailed ethnographic accounts of coca’s place in indigenous cultures have appeared in Colombia⁴⁵, Peru⁴⁶ and Bolivia⁴⁷, and called into question the previous association of coca with “backwardness” and malnutrition. In the present day, a revival of the autochthonous cultures in the Andean-Amazonian region, allied to nationalist sentiment in South America and a world-wide turn to organic foods and herbal remedies, has produced a surprising turn-around in public perceptions of the coca leaf. From a dangerous drug deserving to be “phased out” (in the inimitable words of the Single Convention), coca has - in the period 1980-2020 - acquired the reputation of a medical panacea, as well as a truly emblematic status in ongoing identity politics. In Bolivia, indeed, the use of coca has acquired an important role in the wider imperative to *Vivir Bien* ("Live well") - a programme of public health and cultural re-affirmation which has been central to the regenerative process of the last two decades.

Its political divorce from, and cultural opposition to, the refined alkaloid are summed up in the widely diffused slogans of *coca sí, cocaína no* and *coca no es cocaína*. The renewed respect for ancestral traditions is thus allied to ongoing innovations in an expanding market for the coca

⁴³ DEVIDA (2020). *Informe sobre la demanda de hoja de coca para fines tradicionales e industriales*. Lima: Comisión Nacional para el Desarrollo y Vida sin Drogas.

⁴⁴ CONALTID (2013). *Estudio Integral de la Demanda de la Hoja de Coca en Bolivia*, La Paz: Consejo Nacional de Lucha contra el Tráfico Ilícito de Drogas.

⁴⁵ Henman, A. (1981). *Mama Coca*, Bogotá: El Ancora/La Oveja Negra.

⁴⁶ Allen, C. (1988). *The hold life has: Coca and cultural identity in an Andean community*, Washington: The Smithsonian Institution.

⁴⁷ Carter, W. and Mamani, M. (1986). *Coca en Bolivia*, La Paz: Ediciones La Juventud.

leaf across the Andean region. As a result of the many novel uses of the coca leaf in contemporary society, public opinion has moved on from a merely defensive posture and taken to an enthusiastic advocacy of its benefits and contributions in improving the quality of life. No exact figures are available on the market share which these novel uses represent, but the pervasive presence of coca in myriad forms in street stalls, health-food shops, the supermarkets of multinational retail conglomerates, and even airport departure lounges, is all proof of its growing acceptance among consumers and traders alike.

The dissemination of novel practices into new social contexts is a phenomenon which has undoubtedly increased in the last hundred years, along with social and geographical mobility itself. Andean customs of coca use have been carried by Ashaninka migrants across the Upper Amazon to the frontiers of Brazil, where they are being assimilated by other indigenous groups. Though coca is still subject to ethnic discrimination – particularly in Peru, Chile and Colombia – in Bolivia and regions such as north-west Argentina, coca chewing has crossed the social divide and become an acceptable habit among the non-indigenous and professional population.⁴⁸ A wider appreciation of its medicinal and nutritious properties has led to new uses in cookery and baking; though these afford a poor uptake of the plant's stimulant properties, they are fast becoming established as a new "tradition" of coca cuisine. Despite little evidence of coca ever having been used historically as food, there is no doubt that it has a long record, and a promising future, as an overall nutritional supplement, particularly as a source of calcium, and other minerals and vitamins as well.⁴⁹ Its broader medicinal potential was highlighted in the 1997 study of the Instituto Boliviano de Biología de la Altura (IBBA), which pointed out its benefits in preventing both diabetes and thrombosis – major health problems whose incidence is significantly lower among the coca-using population.⁵⁰

One development in particular merits detailed attention, for it shows how a very ancestral form of coca consumption may suddenly find itself at the vanguard of change. Coca does not adapt well to lowland Amazonia; although it grows profusely, the leaves contain a high proportion of fibre and relatively little of the plant's pharmacological properties. Accordingly, in the north-west Amazon a process was devised whereby dried coca is pulverized and sieved to produce a fine powder, potentiated by the addition of the ash of the leaves of the tree genus *Cecropia*. Among the Tukanoan and Bora/Witoto peoples of the Vaupés, Caquetá, and Putumayo drainages this product, known as *ypadu* or *mambe*, plays a central role in ritual practices, as well as being used in the context of physical exertion.⁵¹ Its existence was destined to remain an ethnographic curiosity until practically the end of the

⁴⁸ Abduca, R. and Metaal, P. (2013). *Working towards a legal coca market: The case of coca leaf chewing in Argentina*, Legislative Reform of Drug Policies 23, Amsterdam: Transnational Institute.

⁴⁹ Restrepo, D.A. et al. (2019). "Erythroxyllum in Focus: An Interdisciplinary Review of an Overlooked Genus", *Molecules* 24: 3788.

⁵⁰ IBBA (1997). *Usos de la Hoja de Coca y Salud Pública*, Villena Cabrera, M. y Sauvain, M. (eds.), La Paz: Instituto Boliviano de Biología de Altura.

⁵¹ Echeverri, J.A. and Pereira, E. (2005). "Coca amazônica", in: *O uso ritual das plantas de poder*, Labate, B. and Goulart, S. (eds.), Campinas: Mercado de Letras/FAPESP; and Hugh-Jones, S. (1979). *The Palm and the Pleiades: Initiation and Cosmology in Northwest Amazonia*, Cambridge: Cambridge University Press.

twentieth century, when occasional use became popular among the student population in Leticia, Colombia's main Amazonian outpost. In little over twenty years this pattern has spread widely, inspiring adepts to experiment with preparations made from the coca flours that have recently become such a feature of the Andean whole-food trade. The modern urban market is thus receiving its inspiration directly from what could be considered one of the most "traditional" (or even "primitive", in the words of some unsympathetic observers) and also most ritualized, symbolically elaborate forms of coca consumption.

No doubt considerations about the value of ethnographic precedent were at the forefront of deliberations by the WHO's Expert Committee on Drug Dependence (ECDD) when, in 1992, its agenda included a pre-review of coca's status under the treaties. Noting that "*some countries may decide to aim for complete eradication of the use of a particular drug, others may see such an aim as impractical or even undesirable*", the members of the Committee "*discussed the advisability of prohibiting under the international conventions plant products containing psychoactive substances that are traditionally used by indigenous populations*". On balance, they felt "*that the social problems resulting from the prohibition of these products under international controls might outweigh any health benefits*", and recommended that the WHO "*consider studying these patterns of use and their health and social implications*".⁵² This ruling, however, was not applied retroactively to the coca leaf, already included in the schedules of the 1961 Single Convention, though it has been maintained in the case of plants with stronger psychoactive effects or more potential for misuse. It is high time, therefore, for a more thorough revision of the scientific literature on coca, and a more dispassionate consideration of the precise social and cultural contexts in which it is used.

Key considerations for the critical review

- 1. Human use of the coca leaf dates back over 8000 years and is now widely distributed in the Andean-Amazonian region, involving more than 10 million regular consumers.**
- 2. The concept of "traditional use" does not imply a single normative behaviour, but rather a culturally diverse and constantly evolving set of practices, some of them of recent origin in non-indigenous and professional populations.**
- 3. Coca has not enjoyed the consideration and protection given by the WHO to other plants used in the traditional medicine of indigenous groups.**

4. *Brief survey of the scientific literature on the effects of coca in leaf form*

Few authors of the colonial period gave much attention to the effects of coca chewing, preferring to concentrate on its commercial importance in the context of the mining economy. An exception was the Jesuit Bernabe Cobo (1653) who described many of its

⁵² WHO (1993). *Expert Committee on Drug Dependence, Twenty-eighth Report*, Technical Report Series 836, Geneva: World Health Organization, pp. 19-20, 35.

virtues in controlling the digestion, healing wounds, aiding respiration, and conserving the teeth - in the latter case, describing its use on his own person, being perhaps the first European savant to do so. The eighteenth-century Enlightenment encouraged the botanical identification of different cultivars of coca in Colombia, Bolivia and Peru, and produced at least two enthusiastic accounts of its positive effects on the human organism. The Jesuit Antonio Julian (1787), writing about the Sierra Nevada de Santa Marta, described a number of cases that led him to the conclusion that coca should be more widely used - being preferable to tea, coffee, and Paraguayan *mate*, and “giving vigour and sustenance” to all those who consumed it. In Lima, the eminent doctor Hipolito Unanue (1794) echoed these sentiments with a long dissertation in the principal scientific journal of the time, in which he described coca as “the arch-tonic of the vegetable kingdom”.

Together with many travelers’ accounts of the stamina induced by coca chewing, the nineteenth century witnessed the first systematic studies of the effects of various different coca preparations on a wide range of human subjects. The Italian physician Paolo Mantegazza (1859), having worked in Salta, northern Argentina, was also explicit in describing the effects of coca on himself, producing subjective accounts of euphoria that the literature would later conflate with the cocaine-inspired excesses of the subsequent generation.

Though Mortimer (1901) attempted to redress the situation and refocus on the leaf itself, most of the debate in the period 1880-1950 willingly confused the effects of coca with those of cocaine. The psychiatric establishment in Lima took their cue from Hermilio Valdizan (1913), who claimed that “cocainism” was the cause of what he considered the backwardness of the indigenous population, a view that came to be shared by all factions of the capital's political class - including the nationalist APRA and the fledgling Communist party. Medical authorities such as Carlos Ricketts (1952, 1954) made a career out of denouncing coca and Carlos Gutierrez-Noriega and Vicente Zapata Ortiz went so far as to claim that “*the consumption of coca, illiteracy, and a negative attitude to the superior culture are closely intertwined*”.⁵³ The clearly racist and ethnocidal bias of anti-coca opinion was supported by these authors through dubious samples of users from prisons and mental asylums, and the addictive potential of coca was established through copious intravenous injections of pure cocaine hydrochloride in dogs.

On this basis, the Peruvian government requested a visit from the newly formed United Nations, designed to address the growing “problem” of coca chewing - now described by the untranslatable term *toxicomania*. The subsequent report (ECOSOC, 1950) confirmed the worst expectations of the authorities of the day, and strongly influenced the recommendations of the WHO Expert Committee which led to the inclusion of the coca leaf in List 1 of the 1961 Single Convention.

⁵³ Gutiérrez-Noriega, C. and Zapata Ortiz, V. (1947). *Estudios sobre la coca y la cocaína en el Perú*, Lima: Ministerio de Educación Pública, p. 77.

No sooner had the Single Convention been ratified by a majority of countries at the UN, than cracks began to appear in the monolithic condemnation of the coca leaf. Opposition to the findings of the 1950 Commission had already been expressed by notable medical authorities in Peru, including the neurosurgeon Fernando Cabieses (1946, 1992) and the director of the Institute of Altitude Biology, Dr. Carlos Monge (1953). Arguments presented by this latter authority – which focused on coca’s role in aiding human adaptation to high altitudes – were confirmed and further developed by the North American researchers R. Burchard (1975) and R. Bolton (1976), who underlined coca’s ability to stabilize blood glucose levels and avoid hypoglycemia. More recent metabolic studies have confirmed the fact that coca’s principal physiological effect is that of enhancing glucose availability, thus preventing altitude sickness or *soroche*.⁵⁴

There remains some discussion – much of it, ideologically charged, rather than scientifically based - about whether or not the use of coca involves the ingestion of its main alkaloid, cocaine. Summarizing the literature and their own extensive range of blood tests, Rerat et al. (1994) noted three principal features:⁵⁵

- 1) A marked variation in cocaine concentrations in the blood of coca chewers, ranging from 30 to 211 ng./ml., with an average of 98. Surprisingly, this did not bear any direct correlation with the amount of coca leaves consumed.
- 2) A pronounced tendency for cocaine to metabolize into benzoyl-ecgonine, initially from hydrolysis in the mouth and subsequently through internal organs of the human body. It has been hypothesized that this compound, which remains in the blood for over 24 hours, may account for some of the more subtle, less obvious metabolic and medicinal effects of the use of coca.
- 3) Though the human organism undoubtedly absorbs cocaine through coca chewing, as well as various metabolites and other alkaloids, concentrations in the blood plasma remain sufficiently low to avoid any of the intense effects associated with the refined drug, such as the pronounced “rush” associated with crack smoking.

As a result of this more nuanced understanding of the effects of the coca leaf, some commentators have emphasized that the principal difference between coca and cocaine does not lie solely in chemical structure (as coca contains many other properties other than simple cocaine), but also principally in the route and rate of absorption afforded by coca chewing or coca-tea drinking.⁵⁶ It is indeed surprising, in retrospect, that such a basic principle of pharmacology - a first semester lecture topic for any medical student - never entered into the considerations of the 1950 Commission, nor of the various WHO expert committees that examined the question in the 1950s. Most probably, such oversight resulted from the fact that

⁵⁴ Biondich, A.S. and Joslin, J.D. (2015). “Coca: High Altitude Remedy of the Ancient Incas”, *Wilderness Environ. Med.* 26: 567-571.

⁵⁵ Rerat, C. et al. (1997). *Absorción de los principios activos de la hoja de coca en el humano sano, durante el uso tradicional*, La Paz: Instituto Boliviano de Biología de Altura (IBBA).

⁵⁶ Weil, A. (1981). “The therapeutic value of coca in contemporary medicine”, *Journal of Ethnopharmacology* 3: 367-376; and Henman, A. and Metaal, P. (2009). *Coca myths*, Drugs and Conflict Papers 17, Transnational Institute.

virtually no attention was given at the time to how coca was actually ingested, with the “user’s voice” replaced by highly theoretical laboratory studies, conducted by authorities who never consumed coca themselves.

As a final footnote to the scientific literature on coca, consideration should be given to ongoing DNA research on the original domestication of this plant. Once thought to represent a single line of evolution from a hypothetical wild ancestor,⁵⁷ it has recently been suggested that the two cultivated species of coca – *Erythroxylum coca* and *E. novogranatense* – are the result of separate domestication events. White et al. thus summarize their findings: “Our results support a novel and robust hypothesis of multiple independent origins of different coca varieties from *E. gracilipes*, a widespread wild species”.⁵⁸ Hybridization of *E. coca* and *E. novogranatense* under laboratory conditions by Plowman in the 1980s produced sterile offspring, and the attendant difficulties are confirmed by the experience of farmers in southern Colombia, where extensive plantations of both species exist in close proximity. Though farmers select for resistance to disease, parasites and glyphosate spraying, there has been no major reported breakthrough in alkaloid yields, cocaine content remaining stubbornly below 1% in virtually all field assays. The prospect of a “super-coca”, with concentrations of active principles well beyond those of the traditional plant, remains entirely unproven to date.

In any case, current legislation is tilted towards an absurdly unviable objective: Paragraph 1, sub-paragraph (e) of the 1961 Single Convention places all the wild species of *Erythroxylum* (using the now discarded synonym *Erythoxylon*) under the same restrictions as *E. coca* and *E. novogranatense*, which had been correctly identified as the sources of cocaine in pre-World War 2 treaties. There are over 200 species in this genus, several with well-established medicinal uses, particularly in Brazil, where *catuaba* (*E. vacciniifolium* Mart.) enjoys a considerable reputation as an aphrodisiac. At the Conference which established the Single Convention, the representative from Ghana also claimed that the wild *E. Gabiensis* was “much favoured by the local witch doctors”.⁵⁹ While the intention of “phasing out” coca chewing may possibly be understood – if not entirely excused - in the ethnocentric context of the post-war period, the idea that the final solution to the cocaine question should involve the annihilation of an entire plant genus literally beggars belief, and exhibits signs of a prevalent megalomania in the Western attitude to coca.

Key considerations for the critical review

⁵⁷ Plowman, T. (1984). “The origin, evolution and diffusion of coca, *Erythroxylum* spp. in South and Central America”, in: Stone, D. (ed.), *Pre-Columbian plant migration*, Harvard University: Papers of the Peabody Museum of Archaeology and Ethnology vol. 76.

⁵⁸ White, D. et al. (2021). “Origins of Coca: Museum Genomics Reveals Multiple Independent Domestications from Progenitor *Erythroxylum gracilipes*”, *Systematic Biology* 70(1):1-13. See also: White, D. et al. (2019). “Phylogenetic inference in section *Archerythroxylum* informs taxonomy, biogeography, and the domestication of coca (*Erythroxylum* species)”, *Am. J. Bot.* 106: 154-165.

⁵⁹ *United Nations (1964). United Nations Conference for the Adoption of a Single Convention on Narcotic Drugs, New York, 24 January – 25 March 1961, Official Records, E/CONF.34/24, Volume I: Summary Records of Plenary Meetings, New York, p. 56.*

- 1. While the human organism does absorb cocaine through coca chewing, concentrations in the blood plasma remain so low that the effect is significantly reduced, and produces none of the alterations observed in the use of the refined drug.**
- 2. The studies cited as justification for the inclusion of coca leaf in the 1961 Single Convention failed to consider basic pharmacological differences between the route and rate of absorption of coca alkaloids in refined and leaf form.**
- 3. The prohibition of all species of the genus *Erythoxylum* was a gross mistake in the drafting of the Convention, since many of these plants are used medicinally and contain no cocaine.**

5. Coca & cocaine: the ‘convertibility’ question

The WHO Guidance on the review process makes clear that with regard to the 1961 Convention, the Expert Committee, when deciding to recommend a change in international control, first needs to assess whether the substance “(1) is liable to similar abuse and productive of similar ill-effects as the substances in Schedule I or Schedule II; or (2) is convertible into a substance already in Schedule I or Schedule II.” “In addition to the principle of “Similarity”, laid down in Article 3, paragraph 3 (iii) of that Convention” the Guidance explains, “the Convention also contains the principle of “Convertibility”. A substance is convertible if it is of such a kind as to make it, by the ease of the process and by the yield, practicable and profitable for a clandestine manufacturer to transform the substance in question into controlled drugs.”⁶⁰

The incorporation of the ‘convertibility’ principle as a second criterion for scheduling stems from the 1931 Convention, which stated that “the term ‘conversion’ shall denote the transformation of a drug by a chemical process, with the exception of alkaloids into their salts”.⁶¹ It referred to precursors that can be chemically transformed into narcotic drugs. For example, thebaine was included in Schedule I as a precursor for morphine, and ecgonine because it can be converted to cocaine. It is important not to conflate the terms ‘extraction’ (or ‘concentration’) and ‘conversion’ (or ‘transformation’), which are different concepts and processes. Cocaine molecules are already present in the plant material, and can be extracted without any conversion.

As explained above, coca leaf was originally included in Schedule 1 because coca chewing according to the ECDD had to be “defined and treated as an addiction”⁶² and “considered a form of cocaineism”⁶³ and therefore had to be abolished. Coca leaf was classified as a ‘narcotic drug’ based on its perceived liability to ‘abuse’ and ‘ill effects’. The argument was

⁶⁰ WHO (2010). *Guidance on the WHO review of psychoactive substances for international control*, Geneva: World Health Organization, par. 48-49, p. 15-16.

⁶¹ Quoted in: WHO (2010), par. 25, p. 32.

⁶² WHO (1952). *Expert Committee on Drugs Liable to Produce Addiction, Third Report*, Technical Report Series 57, Geneva: World Health Organization, Section 6.2, p. 10.

⁶³ WHO (1954). *Expert Committee on Drugs Liable to Produce Addiction, Fourth Report*, Technical Report Series 76, Geneva: World Health Organization, Section 6, p. 10.

based on its ‘similarity’ with the effects of cocaine, not on its ‘convertibility’ to cocaine. Controls on the cultivation of coca bush were laid down in specific treaty articles to prevent the illicit production of the ‘narcotic drugs’ that could be derived from the plant: coca leaf and cocaine. ECOSOC confirmed the dual purpose in 1974, saying that *“additional measures for the control of coca-leaf production are essential in order to make possible the abolition of coca-leaf chewing and the elimination of the clandestine manufacture of cocaine”*.⁶⁴

In 1992, however, the ECDD, without any sustaining documentation concluded that the coca leaf was appropriately scheduled because *“cocaine is readily extractable from the leaf.”*⁶⁵ Coca leaf can of course be used as a raw material in cocaine manufacture, and the cultivation of coca bush is therefore subject to certain control provisions laid down in articles 22, 26 and 27 of the Convention. But coca leaf does not meet the ‘convertibility’ criterion of the 1961 Convention in order to be classified as a narcotic drug in Schedule I on that basis. The argument used by the ECDD in 1992 for keeping coca leaf in Schedule I by changing the basis for its classification from the ‘similarity’ to the ‘convertibility’ principle without any further explanation, requires a critical review.

It raises a number of pertinent questions about the difference between ‘conversion’ and ‘extraction’, and between the control principles of the treaty regime applicable to ‘precursors’ and ‘raw materials’ including plants. Consistency in the application of terminology, definitions and scheduling criteria is essential to establish properly which substances meet the criteria for scheduling as narcotic drugs on Schedules I and II, subject to the general obligation to limit their use to medical and scientific purposes. A clear distinction needs to be made between those substances and the raw materials including plants that are only subject to the controls of specific treaty articles because they can be used in the illicit production of narcotic drugs, without being classified as narcotic drugs themselves.

The required levels of control for the different stages from the cultivation of the three plants (opium poppy, coca and cannabis) to the ‘narcotic drugs’ that could be derived from them, was one of the main issues in the negotiations of the 1961 Convention. Poppy straw and coca leaf were extensively discussed in that context during the 1961 conference. In the end, ‘concentrate of poppy straw’ was included in Schedule I, defined in the ‘*Yellow List*’ as the ‘intermediate material’ when poppy straw *“has entered into a process for the concentration of its alkaloids”*. Poppy straw itself as the primary raw material was left unscheduled and only became subject to the control provisions laid down in Article 25 to ensure that *“the manufacture of drugs from poppy straw is adequately controlled”*, requiring Parties to apply *“the system of import certificates and export authorizations”* and to furnish *“statistical information on the import and export”*. The original draft of the Single Convention proposed to include ‘crude cocaine’ in Schedule I, defined as *“any extract of coca leaf which can be used for the manufacture of cocaine”*, referring to *coca paste* or

⁶⁴ ECOSOC (1974). *Cultivation and chewing of the coca leaf: clandestine manufacture of and illicit traffic in cocaine*, Economic and Social Council, 1896th Plenary Meeting, E/RES/1974/1846(LVI), 15 May.

⁶⁵ WHO (1993). *Expert Committee on Drug Dependence, Twenty-eighth Report*, Technical Report Series 836, Geneva: World Health Organization, Section 10.2.3, p. 38.

cocaine base. In the end, however, coca leaf itself was scheduled as a narcotic drug with harmful properties. In the case of cannabis, the ‘flowering or fruiting tops of the cannabis plant’, and ‘cannabis resin, extracts and tinctures’ were included in Schedule I, though cannabis leaves were deliberately left out.

The issue came up again in the negotiations at the 1988 Conference, when a proposal was tabled “*to extend the control regime to cover poppy straw, which was the raw material used in morphine and heroin production*”, by inserting poppy straw as a ‘precursor’ in List I of the Convention. Several other representatives objected to this proposal for the reason that, if there were a need to regulate poppy straw, it would be more appropriate to do so under the 1961 Convention. The Bolivian representative commented that “[t]he basic criterion should be that poppy straw was not in itself a narcotic drug, since a lengthy manufacturing process was required before it could be considered as falling within that category”, adding that, “*Similar considerations would apply in the case of coca leaf, which had many medicinal and other uses*”. The Algerian delegate in this context proposed that the 1988 Convention, in the article on illicit cultivation, should respect “*traditional domestic uses*”, as well as “*the domestic socioeconomic use of licit crops in their natural state, which have not been subject to chemical processing*”.⁶⁶

The question whether poppy straw still needed to be scheduled under the 1961 Convention was reviewed by the 32nd WHO Expert Committee in 2000, and the outcomes allow for a relevant comparison with coca leaf. “*In considering poppy straw, the Committee noted that there are some varieties of opium poppy which contain only negligible concentrations of opiates. The Committee further noted that the poppy straw extracts that are actually abused are already controlled under the 1961 Convention because these extracts meet the definition of a ‘preparation’ (a mixture, solid or liquid containing a drug controlled under the 1961 Convention). [...] Since the scheduling criterion would require poppy straw to be readily convertible to a controlled drug, the Committee did not recommend critical review.*”⁶⁷

In contrast to the opinion expressed in 1992 in the case of coca leaf, in this case the ECDD did not argue that poppy straw belonged in Schedule I because morphine and other opiate alkaloids are “*readily extractable*” from it. On the contrary, the poppy straw recommendation explicitly states that the ‘convertibility’ criterion does not apply. Furthermore, the consideration that there are some varieties which contain only negligible concentrations of alkaloids, as mentioned above, equally applies to coca leaf. And for the coca leaf it can also be argued that the “*extracts that are actually abused are already controlled under the 1961 Convention*”, because coca paste and cocaine base - the intermediate product when cocaine sulphate is extracted from coca leaves, before it is refined to cocaine hydrochloride - also fall under the definition of preparations that “*are*

⁶⁶ United Nations (1991). *United Nations Conference for the Adoption of a Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, Vienna, 25 November-20 December 1988, Official Records, E/CONF.82/16/Add.1, Volume II: Summary records of plenary meetings, Summary records of meetings of Committee I and Committee II*, New York: United Nations, pp. 297-299.

⁶⁷ WHO (2001). *Expert Committee on Drug Dependence: Thirty-second Report*, Technical Report Series 903, Geneva: World Health Organization, Section 5.7, p. 21.

subject to the same measures of control as the drugs which they contain” (Article 2.3). Both are already included in the Yellow List annex of “names and trade names of known preparations of narcotic drugs listed in the schedules of the 1961 convention”. ‘Coca paste’ is listed as a synonym for cocaine, while erroneously ‘coca base’ (more commonly referred to as ‘cocaine base’) is included as a synonym for coca leaf, which should be corrected.

It is imperative that the WHO reconsiders the rationale for including the coca leaf as a Schedule I drug, which considers the properties of coca chewing to be "addictive" and "a form of cocaineism". Once the basis for the current classification of coca leaf is finally discredited, it will be difficult to maintain that it is appropriately scheduled on the basis of ‘convertibility’ or ‘ease of extraction’. The basic premise of the treaty is that plant materials are only scheduled as a narcotic drug when they are considered to produce harmful effects themselves similar to other scheduled substances, which in the case of coca leaf chewing are in no way similar to the effects of cocaine use. Control measures for their use as raw material for the extraction and production of narcotic drugs are subsequently covered in specific treaty articles, in the case of coca especially in Article 26 on *“The coca bush and coca leaves: If a Party permits the cultivation of the coca bush, it shall apply to coca leaves the system of controls as provided in article 23 respecting the control of the opium poppy”*. That system requires licenses for cultivators, and controls by government agencies over wholesale trade, import and export.

Those provisions would remain in force even if coca is deleted from its Schedules and thus no longer classified as a narcotic drug itself (see Article 2, paragraphs 6 and 7). Parties will still be required to take control measures to prevent coca leaf being used as a raw material in the illicit production of cocaine. Moreover, the 1988 Convention reinforced those provisions in its Article 3.1, requiring Parties to establish as criminal offences, *“The cultivation of opium poppy, coca bush or cannabis plant for the purpose of the production of narcotic drugs contrary to the provisions of the 1961 Convention”*. Bolivia’s reservation under the 1988 Convention does not derogate from that treaty obligation, as it only applies to Article 3.2, and specifically mentions that it *“will continue to take all necessary measures to control the cultivation of coca in order to prevent its abuse and the illicit production of the narcotic drugs which may be extracted from the leaf”*. The same wording was used when Bolivia re-acceded in 2013 to the 1961 Convention with a coca reservation.

Reviewing the current scheduling of the coca leaf means questioning its current classification as a narcotic drug that limits its use to medical or scientific purposes. Currently, the Convention only allows for very limited ‘other legitimate purposes’. The ‘Coca Cola’ exemption permits *“the use of coca leaves for the preparation of a flavouring agent, which shall not contain any alkaloids” (Article 27)*. Recent industrialization innovations using coca leaf for the production of cosmetics, dyes and organic fertilizers,⁶⁸ are legitimate under the exemption for *“drugs which are commonly used in industry for other than medical or scientific purposes” (Article 2.9)*. The Commentary noted that the exemption *“was of no*

⁶⁸ Troyano Sánchez, D. and Restrepo, D. (2018). *Coca Industrialization: A Path to Innovation, Development, and Peace in Colombia*, Bogotá: Open Society Foundations.

*immediate practical importance, but had been inserted to anticipate possible future developments” where drugs might be “transformed for use for harmless non-medical purposes, e.g. as dyes”, while ensuring “that the recovery of drugs used up in manufacture is prevented or made impracticable”.*⁶⁹

Revising the current classification of the coca leaf in the schedules, however, would be a necessary step in order to legitimise coca chewing, coca tea, coca flour, *ypadu/mambe* and other uses of natural coca products not only in traditional settings but also in more recent contexts. At the national level those uses are already legal in Bolivia thanks to its treaty reservation, and to a certain extent also in Peru, Colombia and Argentina. The opening of international markets would require the unscheduling of the coca leaf, or that other countries acquire a reservation similar to Bolivia's, or that they enter into an ‘inter se’ agreement to modify the treaty and allow trade amongst themselves.

The fear that this might result in the flooding of cocaine on the international market, already out of control according to the recent UNODC Global Cocaine Report,⁷⁰ is unrealistic for a number of reasons. As just explained, existing treaty controls on coca cultivation and the use of coca leaf for the illicit production of cocaine remain in force. Though no longer mandatory, to soothe possible concerns, it could further be considered to submit estimates and statistical information to the INCB (under Articles 19 and 20) to keep track of how the new international market in legal coca products develops, at least in its initial stages. Those data are currently required for the use of coca as a decocainized flavouring agent. Bolivia —since re-entering the Convention with its coca reservation— has submitted them as well for the amounts required for the reserved purposes of the licit domestic market.

Geographic and climate conditions also restrict the areas where coca could potentially be grown. In that sense, it is not comparable to the cannabis market, where legal regulation has led to a shift in production from traditional producing countries to Northern countries, including in indoor and greenhouse settings. Additional protections, especially for indigenous peoples and traditional growers, could be found in the preferential treatment the treaty recommends for traditional producing countries, or by applying for ‘geographical indications’ or ‘appellation d’origine contrôlée’-type certifications, or using provisions from the Nagoya Protocol on biodiversity, signed by all three main coca growing countries, Bolivia, Colombia, and Perú.⁷¹

Finally, the qualification that “*cocaine is readily extractable from the leaf*” also needs to be read in its proper context. Large volumes of coca leaf are needed for the production of cocaine, and this is the reason why this activity only takes place close to major cultivation areas. According to the latest UNODC research in Colombia, a metric ton of fresh coca

⁶⁹ United Nations (1973). *Commentary on the Single Convention on Narcotic Drugs, 1961*, New York, p. 72.

⁷⁰ UNODC (2023). *Global Report on Cocaine 2023, Local dynamics, global challenges*, Vienna: United Nations Office on Drugs and Crime.

⁷¹ See: Ruiz, M. (2016). *Las Relaciones entre las Herramientas de la Propiedad Intelectual, los Conocimientos Tradicionales y Recursos Genéticos, en el Contexto de la Aplicación del Protocolo de Nagoya: Alcances y Aproximaciones*, San Salvador: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

leaves are needed to produce 1.45 kg of cocaine (80% purity).⁷² The cocaine content depends on the species, and varies between 0.11-0.41% for ‘Amazonian coca’ (*E. coca* var. *ipadu*), to an average of 0.63% for ‘Bolivian coca’ (*E. coca* var. *coca*), and between 0.72-0.77% for ‘Colombian and Trujillo coca’ (*E. novogranatense*).⁷³ The extraction of cocaine sulfate in the form of coca paste or cocaine base (which can be done at farm level), as well as the further refinement into cocaine hydrochloride (which requires more sophisticated laboratory equipment) requires multiple chemicals and expertise. The efficiency of extraction and refinement depends on the requisite chemicals, the processing technique, and the equipment; significant experience is required to extract at best 70% of the alkaloids present in the leaves.

The fear that a legal international retail market in coca tea, coca flour, *ypadu/mambe*, and other coca-based products could become a source of clandestine cocaine production, is completely misplaced. The supposed ‘ease of extraction’ does not apply to the retail market, the process is far too complicated to even consider using a kilo of tea bags or mambe to extract a gram of cocaine, and also economically it simply wouldn’t pay off. This unrealistic hypothesis appeared several times in criminal trials in Spain, with attempts to prosecute Andean migrants for illicit cocaine trafficking when they were caught bringing coca leaves or flour into the country. The defense lawyers effectively countered the argument that they could have intended to use it to produce cocaine.⁷⁴

Comparison with other plants

The distinction between plant materials, extracted alkaloids, preparations and convertible precursors, already present in the Single Convention, was subsequently embedded more explicitly in the 1971 Convention on Psychotropic Substances and the 1988 Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. In a special section of its report for 2010 on “Plant material containing psychoactive substances”, the INCB drew attention to the fact that *“although some active stimulant or hallucinogenic ingredients contained in certain plants are controlled under the 1971 Convention, no plants are currently controlled under that Convention or under the 1988 Convention. Preparations (e.g. decoctions for oral use) made from plants containing those active ingredients are also not under international control.”*⁷⁵

Triggered by a discussion on indigenous ceremonial uses of hallucinogenic cacti (Peyote and San Pedro containing mescaline) and fungi (mushrooms containing psilocybin), the 1971 conference agreed to *“a consensus that it was not worth attempting to impose controls on*

⁷² UNODC (2022). *Colombia - Monitoreo de territorios afectados por cultivos ilícitos 2021*, United Nations Office on Drugs and Crime, pp. 165-171.

⁷³ Restrepo, D.A. et al. (2019). “Erythroxyllum in Focus: An Interdisciplinary Review of an Overlooked Genus”, *Molecules* 24: 3788.

⁷⁴ ICEERS (2022). *Coca Leaf in Court: Cultural Rights and the Toxicological Labyrinth*, Barcelona.

⁷⁵ INCB (2011). *Report of the International Narcotics Control Board for 2010*, E/INCB/2010/1, Vienna: International Narcotics Control Board, para. 284-287.

biological substances from which psychotropic substances could be obtained".⁷⁶ Only the extracted alkaloids were classified as 'psychotropic substances' in Schedule I, and the 1971 Convention does not contain any control measures for raw materials or precursors. With regard to precursors, the WHO Guidance clarifies that: *"The 1961 Convention provides for the control of substances convertible to narcotic drugs. The 1971 Convention provides for no such control of precursors. The 1988 Convention fills the void that existed for controlling precursors of psychotropic substances and the control of other chemicals frequently used in the illicit production of all controlled substances."*⁷⁷

For the sake of consistency in the implementation of scheduling criteria across the drug control treaty system, it is relevant to compare the status of the coca leaf with similar plants whose psychoactive ingredients are controlled under the 1971 and 1988 conventions - khat (*Catha edulis*) and ephedra (*Ephedra sinica*) - as well as with kratom (*Mitragyna speciosa*), recently reviewed by the ECDD, whose active compounds are not under international control.

In 1964, the Expert Committee studied a report by the Secretariat on the medical aspects of the habitual chewing of khat leaves, and the initial conclusions pointed in the same direction as those drawn a decade before about coca chewing. Khat chewing, according to the Committee, had led "in some areas to socio-economic phenomena detrimental to the individual and the community, such as loss of man-hours and diversion of income, with malnutrition and aggravation of disease as consequences". It concluded *"that the problems connected with khat and with the amphetamines should be considered in the same light because of the similarity of their medical effects, even though there are quantitative differences and specific socio-economic features"*.⁷⁸ Amphetamines, however, were not yet scheduled at the time, they were only brought under international control when the 1971 Convention was adopted. Further research was undertaken in the 1970s on the chemistry of khat and its components, and by 1988 its primary psychoactive compounds were placed under control: cathinone in Schedule I and cathine (norpseudoephedrine) in Schedule III of the 1971 Convention, and norephedrine under the 1988 Trafficking Convention as a precursor used in the illicit manufacture of amphetamine.⁷⁹ Khat itself later appeared on the agenda again at the request of the CND, and the ECDD concluded in 2006 after a critical

⁷⁶ United Nations (1973-b). *United Nations Conference for the adoption of a Protocol on Psychotropic Substances, Vienna, 11 January–19 February 1971, Official records, E/CONF.58/7/Add.1, Volume II: Summary records of plenary meetings, Minutes of the meetings of the general committee and the committee on control measures*. New York, United Nations, p. 38.

⁷⁷ WHO (2010). *Guidance on the WHO review of psychoactive substances for international control*, Geneva: World Health Organization, par. 47, p. 15.

⁷⁸ WHO (1964). *Expert Committee on Addiction-Producing Drugs, Thirteenth Report, Technical Report Series 273*, Geneva: World Health Organization.

⁷⁹ Global Commission on Drug Policy (2019). *Classification of Psychoactive Substances: when science was left behind*, Geneva. <http://www.globalcommissionondrugs.org/reports/classification-psychoactive-substances>

review that *“the potential for abuse and dependence is low and the level of abuse and threat to public health is not significant enough to warrant international control.”*⁸⁰

Ephedrine and pseudoephedrine, which can be extracted from the ephedra plant, are scheduled under the 1988 Convention as precursors for methamphetamine. Ephedra itself, a traditional herbal medicine widely used in China and other parts of Asia, has never been under consideration for placement under international control. This is in spite of the fact that in China and India, and more recently in Afghanistan, ephedra is extensively used as a raw material for the extraction of alkaloids subsequently used in the illicit production of methamphetamine.

Kratom and its main compounds have only recently been reviewed for the first time. The pre-review report described consumption patterns very similar to coca, and considered information on traditional use in Southeast Asia, as well as investigation into possible medical applications. *“The indigenous population has used kratom leaves for centuries as herbal medicine to treat various medical conditions (especially pain and opioid withdrawal), to enhance sociability, and to increase energy and reduce fatigue (especially among manual workers). Lower doses reportedly have stimulant-like effects, while higher doses have opioid-like effects. Kratom use is almost exclusively oral, typically by chewing the leaves, ingesting powdered leaf, or drinking a kratom tea or decoction (Southeast Asia) or by ingesting powdered leaf as a capsule or pill or dissolved in a beverage (US, Western Europe).”*⁸¹ In spite of certain negative health effects and cases of dependence through intensive use, more indeed than have ever been recorded for coca leaves, the ECDD *“concluded that there is insufficient evidence to recommend a critical review of kratom.”*⁸²

Key considerations for the critical review

- 1. The original justification for the inclusion of coca leaf as a narcotic drug in Schedule I of the 1961 Single Convention was based on its perceived dependence-producing properties and ill effects, and the characterization of coca chewing as ‘a form of cocaine’, not because *“cocaine is readily extractable from the leaf”*.**
- 2. The opinion expressed by the ECDD in 1992, changing the original justification, erroneously conflates the concepts of ‘convertibility’ and ‘extraction’, and is inconsistent with how other plants and raw materials are dealt with in the Single Convention and across the drug control treaty system.**
- 3. If a review of the evidence of the effects of coca leaf in its natural form and on human health leads to the conclusion that the original basis for its current classification can no**

⁸⁰ WHO (2006). *Assessment of khat (Catha edulis Forsk)*, Expert Committee on Drug Dependence, Thirty-fourth meeting, 2006/4.4, Geneva: World Health Organization.

http://www.who.int/medicines/areas/quality_safety/4.4KhatCritReview.pdf

⁸¹ WHO (2021). *Pre-Review Report: Kratom (Myragyna speciosa), mitragynine, and 7-hydroxymitragynine*, Expert Committee on Drug Dependence, Forty-fourth meeting, 11-15 October, Geneva: World Health Organization, p. 5.

⁸² WHO (2022). *Expert Committee on Drug Dependence: Forty-fourth report*, Technical Report Series 1038, Geneva: World Health Organization, p. 15.

longer be sustained, it will be difficult to argue that it is still appropriately scheduled on the basis of ‘convertibility’ or ‘ease of extraction’.

4. Revising the classification of the coca leaf as a narcotic drug would resolve long-standing legal inconsistencies and contradictions, end the criminalization of indigenous, cultural and traditional medicinal practices, and allow the international community to benefit from using the coca leaf in its natural form. Provisions to control the cultivation of coca and the use of coca leaves for the illicit production of cocaine would remain in force, as those are embedded in specific articles in the 1961 and 1988 conventions.

6. Concluding observations

The inclusion of the coca leaf as a narcotic drug in Schedule I of the 1961 Convention, as well as the treaty obligation to abolish coca chewing, represent a grave historical error with severe social impacts and infringements on indigenous and cultural rights. It was based on the conclusion of the WHO Expert Committee in 1952 and 1954 that coca chewing was a form of ‘addiction’ and ‘cocainism’. The only background document used for this assessment was the contested 1950 report by the UN Commission of Inquiry on the Coca Leaf, even though the report itself concluded that coca chewing “*does not constitute an addiction (toxicomania), but a habit*” and that “*no abstinence symptoms are seen*”.

The primary institutional responsibility for this historical error therefore lies with the WHO itself. The international community had entrusted the WHO with making conclusive assessments of the health impacts of psychoactive substances, which were supposed to be based on clear scientific evidence. Without the conclusions presented by the WHO Expert Committee, the Parties would not have decided at the 1961 Conference to add coca leaf to Schedule I and require that coca chewing be abolished. Since then “*there has been no official evaluation of coca leaf chewing by WHO*”, according to the Expert Committee in 1992.

Research conducted in 1992-1995 in the context of the WHO/UNICRI *Cocaine Project* concluded that the “*traditional use of coca appears to have no negative health effects and that it serves positive therapeutic, sacred and social functions among indigenous groups in the Andean region*”. Political interference from a single country, however, prevented the publication of this study.

In 1992, the ECDD considered that the properties of coca leaf, its social role, and the health consequences of its use should be studied, implicitly acknowledging the weak evidence base for its previous conclusion in the 1950s. The Committee concluded nevertheless that the coca leaf was appropriately scheduled, but only on the basis that “*cocaine is readily extractable from the leaf*”. This change of the justification for maintaining the scheduling of the coca leaf as a narcotic drug —from its ‘similarity’ to cocaine to its ‘convertibility’ to cocaine— was made without a proper review or any substantiation. The decision conflates the concepts of ‘convertibility’ and ‘extraction’ without any further explanation, and is

inconsistent with how other plants and raw materials are dealt with in the Single Convention and across the UN drug control treaty system.

The WHO Guidance clearly states that a **critical review** is immediately initiated when “*there has been notification from a Party to the 1961 or the 1971 Convention concerning the scheduling of a substance*” (paragraph 19), skipping the stage of a pre-review that is initiated when a proposal has been submitted by the Secretariat, any member of the Expert Committee, or representatives of other organizations (paragraph 15). The assessment on the basis of the critical review document “*should include the Expert Committee’s findings regarding pharmacological similarity, similar abuse, and similar ill-effects of the substance to substances in Schedules I and II of the 1961 Convention and, in the case of a “convertible” substance, an assessment of the convertibility of the substance into a substance already controlled as a narcotic drug.*” (Paragraph 60).

The ECDD therefore needs - as a first step - to re-assess its original judgmental and unscientific position, and express a clear updated opinion based on the available scientific evidence about the alleged ill-effects and addiction-producing properties of the coca leaf, as well as its medicinal properties and beneficial health impacts. Subsequently, the Committee also needs to re-assess the conclusion it reached in 1992: simply re-stating the fact that cocaine can be extracted from the leaf does not provide a legitimate justification for keeping it in Schedule I. The Committee will have to argue how this relates to the ‘convertibility’ criterion, taking into account the assessments the ECDD has made with regard to other raw plant materials that can be used for the extraction of controlled alkaloids.

Bolivia, Peru, Colombia and Argentina have all - on different occasions in recent decades - already challenged the condemnation of the coca leaf by means of treaty reservations and provisions in their own Constitutions or domestic laws. Millions of people in these countries are using coca leaf on a daily basis without experiencing any negative effects, and none of them have ever entered the health services available for the treatment of dependence or harmful effects related to the ‘abuse’ of narcotic drugs. For many Indigenous Peoples in the region, the coca leaf represents an essential element in their cultural, ceremonial and traditional medicinal practices. Their right to maintain these practices is firmly established in international human rights law, particularly in the International Covenant on Economic, Social and Cultural Rights (1966), the ILO Indigenous and Tribal Peoples Convention (1989), and the UN Declaration on the Rights of Indigenous Peoples (2007).

The importance of fully respecting Indigenous Rights, in the case of drug policies as well as all other domains, has been underscored by the Permanent Forum on Indigenous Issues, and has been reaffirmed in recent resolutions adopted by the General Assembly (December 2022) and the Human Rights Council (April 2023). These include the right of Indigenous Peoples to participate in decision-making in matters which would affect their cultural integrity. In that context, the WHO should consider ways of including their perspective in the critical review process, for example by inviting Indigenous Peoples to participate in the review’s information collection phase, by soliciting the advice of the Permanent Forum and the OHCHR, and by inviting representatives of Indigenous Peoples to participate in the ECDD

meeting where the coca leaf will be discussed. The involvement of the WHO Global Centre for Traditional Medicine would also be crucial for the review process.

Finally, it is important to clarify that initiating this critical review of the coca leaf intends to rectify an historical error, re-assessing the plant's properties in the light of the latest scientific evidence, and improving the consistency of the treaty system with respect to the control of plant material, precursors, preparations and extracted alkaloids. Revising the classification of the coca leaf as a narcotic drug would resolve long-standing legal inconsistencies and contradictions, end the criminalization of widespread indigenous, cultural and traditional medicinal practices, and allow the international community to benefit from the use of coca leaf in its natural form. The intention is not to lessen international control of the cultivation of coca and the use of coca leaves for the illicit production of cocaine. Those control provisions are embedded in specific articles in the 1961 and 1988 conventions, which would still remain in force when the coca leaf is no longer classified as a narcotic drug itself and is deleted from the schedules.

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