

**PREVENTIVE CRIMINAL PROTECTION OF THE ENVIRONMENTAL LEGAL INTEREST
AND OFFENCES OF ILLEGAL WASTE MANAGEMENT:
TOWARDS THE CIRCULAR ECONOMY**

SUMMARY OF THESES. PROPOSALS *DE IURE CONDENDO*

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Introduction. Fifty-One Theses

The investigation conducted in this monograph required establishing a general framework of environmental and waste criminal law. The aim was to develop an independent interpretation of the ultimate purposes of a criminal-law protection area that remains largely underdeveloped. In view of an administrative model of waste criminal law, which – despite partially understandable premises – does not always lead to satisfactory results, an attempt was made to find a solution within a circular economy model, which promises better outcomes. Nevertheless, a renewal of the conception of the waste concept and of the end goals pursued in its management proves necessary, combined with a stronger effort to uphold and protect the waste hierarchy through criminal law, to minimize the share of disposal.

In the Italian version of these concluding considerations, I decided to compile a series of theses, presenting them as the result of my argumentative path, as is common practice in German legal scholarship¹. In the German and English language version, these theses also serve as a summary of my work.

1. The environment requires the application of the principle of offensiveness in combination with anticipatory and preventive needs of criminal protection, given its dimension as a vital space for human beings—who, according to an anthropocentric-ecologist philosophical conception, are its administrators and are therefore called upon to legislate in this field—and for other species, as well as in consideration

¹ See F. SGUBBI, *Il diritto penale totale. Punire senza legge, senza verità, senza colpa. Venti tesi*, Bologna, 2019. Among those Authors dealing with circular economy, see K. MEBERSCHMIDT, *Ressourcenschutz durch Kreislaufwirtschaft – aus der Sicht der Rechtswissenschaft*, in M. Kloepper (ed.), *Das neue Recht der Kreislaufwirtschaft*, Berlin, 2013, pp. 99 ff.

of the temporal and moral/material costs required to restore a disturbed equilibrium following environmental degradation. In this view, the anthropocentric-ecologist approach is given prevalence over purely anthropocentric or ecocentric conceptions.

2. The category of legal good, critically understood and corrected by the principles of materiality and offensiveness, is also suitable for protecting those common and diffuse goods that lack one or more determinable holders, and where endangerment or damage may lead to mass victimization. Such cases are referred to as offences with an indeterminate victim. The environment represents one of the most evident examples of this phenomenon. Based on scientific-naturalistic and philosophical analysis, it emerges as a good that cannot be linked to individual ownership: it is a physical space and a set of ecosystemic conditions surrounding the plurality of living beings that benefit from it.

3. The search for a balance between a rigorous application of the principle of offensiveness and adequate protection of a diffuse good such as the environment is a complex task, considering that many actions that harm the environment appear, in themselves, microscopic relative to a good of such macroscopic dimension. However, through a kind of “cumulative” phenomenon, they may well produce danger or damage to the environment or, in any case, to its essential compartments. The identification of offences against intermediate goods underlying the environmental legal good can be helpful in this regard (see Theses 22 and 39).

4. From the perspective of economic theory, the environment presents itself as a common good: its use is non-excludable, as mere existence allows enjoyment, and no one can be excluded from it; yet it can be considered rivalrous, since abuse by some users—even if not inherently rivals—through polluting actions that degrade one or more ecosystems diminishes environmental quality for everyone.

5. Focusing, in particular, on the issue of waste, it is possible to outline three models of the relationship between economic development and environmental protection, which can be summarized using chromatic metaphors and correspond, in turn, to two models of production chains, describable through geometric metaphors:

- a. The first model is the red or brown economy, in which the needs of economic development prevail and sacrifice environmental concerns.
- b. The second and currently the prevailing model is the green economy, in which economic development and environmental protection are balanced. Both models manifest through a linear production chain, although in the green economy there is greater attention to circularity: the raw material, through the production process, becomes a product, which frequently, after a shorter or longer period, turns into waste. This latter transformation tends, over time, to become permanent, albeit with partial recovery mechanisms within the green economy system.
- c. The third model, chromatically defined as the blue economy, corresponds instead to a production chain model aimed as much as possible at circularity. The final stage of the chain, that of waste –

which should moreover be significantly reduced through preventive actions – should become the starting point for further production cycles, substituting for primary raw materials. This is a model that is not easy to implement, but once fully operational, it would predictably yield joint benefits for both economic development and the environment. The reuse of the reduced quantity of waste produced would entail a decreased human intervention in the environment to extract raw materials, as well as a reduced occupation of volumes permanently allocated for waste disposal (see, *infra*, Theses 40 ff.).

6. It has been noted that Article 41 of the Italian Constitution (Cost.) and Article 14 of the German Basic Law (*Grundgesetz*) incorporate the three models outlined above regarding the relationship between economic development and the environment. Initially, economic freedom of enterprise and property rights are recognized as autonomous values; subsequently, the necessity of balancing these rights with societal interests is emphasized; and finally, their *harmonisation* with such interests is required – which, explicitly, also encompasses environmental protection.

7. Until the post-World War II period, constitutions generally did not contain provisions defining the environment or enshrining it as a fundamental right or as a state objective. Only from the 1970s onward – following international and European debates and the recognition of collective, “*res nullius*” rights – did environmental protection enter constitutional texts. More recent constitutions include such provisions from the outset, constituting “environmental constitutions.” In other cases, the respective constitutions were subsequently amended, giving rise to what may be termed “revised environmental constitutions”.

8. Until the constitutional reform of 2022, the Constitution of the Italian Republic belonged to the category of “silent constitutions”, insofar as it contained no provision specifically devoted to the environment. The only reference to the term, following the constitutional reform of 2001, appears in Article 117, paragraph 2, letter s) of the Constitution, which serves the purpose of attributing matters relating to the environment, the ecosystem and cultural heritage to the exclusive legislative competence of the State. It is therefore necessary to rely, first and foremost, on the right to health enshrined in Article 32 of the Constitution, the physical and spatial prerequisite of which can only be a healthy environment; secondly, on Article 9 of the Constitution, which includes among the fundamental principles the protection of the landscape and of natural beauties. These, however, constitute only partial approaches to the environmental issue. A minority strand of legal scholarship has also relied on Article 2 of the Constitution, identifying therein a right-duty to preserve in a healthy state the essential ecological processes as life-support systems, and to safeguard over time the functional capacity of ecosystems for the benefit of future generations – thus anticipating both the subsequent constitutional reform and the case-law of the European Court of Human Rights.

9. The European Convention on Human Rights (ECHR), adopted in 1950 and centred on the protection of individual rights vested in the human person, makes no reference whatsoever to the environment. Consequently, the “traditional” case-law of the European Court of Human Rights has resorted to an interpretative approach aimed at greening certain human rights enshrined in the Convention: first and foremost, the right to respect for private and family life under Article 8. Secondly, the Court has identified the environment as a possible limitation on other human rights, in particular on the right to private property. The jurisprudential turning point of 2024-2025, represented by the judgments in “Old Ladies for Climate” (*KlimaSeniorinnen v. Switzerland*) and “Land of Fires” (*Terra dei Fuochi, Cannavacciuolo and others v. Italy*), has recognised a right to the environment with a collective dimension, aimed at protecting a broad good susceptible to forms of multifactorial harm, which may be exercised by associations of individuals and invoked not only under the parameter of Article 8, but also under that of the right to life enshrined in Article 2.

10. The international legal order, also in view of the planetary scope of environmental problems, was the first area of law in which the environment was identified as an object of legal protection. The earliest treaties had a more sectoral focus and were limited to a small number of contracting parties. The Conferences of Stockholm (1972), Rio de Janeiro (1992) and Kyoto (1997), as well as the Paris Agreements (2015), have progressively established principles of environmental protection aimed at anticipating public intervention – namely precaution and prevention – and have defined a broad and articulated concept of the environment. This concept also encompasses the protection of the planet’s climatic conditions: in this way, international law has acknowledged the connection between certain forms of production and the aggravation of the phenomenon of global warming, which requires action that is as coordinated as possible at the worldwide level.

11. The Republic of Austria was one of the first States to include the environment in a text of constitutional relevance, namely the *Bundesverfassungsgesetz über den umfassenden Umweltschutz* of November 27th, 1984, which was replaced by a new constitutional statute in 2013. In both acts, the definition of the environment is limited to the elements of the biosphere. The constitutional law merely enshrines the principle of sustainability (*Nachhaltigkeitsprinzip*) and the protection of future generations.

12. The Grundgesetz (*Basic Law*) of the Federal Republic of Germany introduced a provision dedicated to the environment (*Umwelt*) in 1994. Article 20a of the Basic Law is strongly influenced by the philosophical principle of human responsibility toward creation and toward future generations (*Prinzip Verantwortung*), a reference that is critical and of somewhat uncertain meaning, but that can be interpreted as an invitation to the prudent use of resources. The environment is defined according to a narrow formula, coinciding with the elements of the biosphere, and is presented as the “vital foundation of nature and animals,” thereby committing the Federal State to its protection through legislation and administration. It is therefore a provision that establishes a State objective (*Staatsziel*) rather than a

fundamental right (*Grundrecht*). Recent case law of the Bundesverfassungsgericht has extended the scope of protection of this provision to include climate protection in accordance with international agreements, understood also as the safeguarding of future freedoms of action that may entail emissions.

13. The *Charte de l'environnement* of 2005, a constitutional-legislative text appended to the Constitution of the Fifth French Republic, does not attempt to provide definitions of the legal concept of environment, but instead contains a structured catalogue of principles addressed to the legislature, the judiciary, and the public administration – namely prevention, the promotion of sustainable development, participatory procedures, and the financing of education, training, research, and innovation. It is also noteworthy that the Charter addresses citizens themselves, who are called upon, both individually and collectively, to adopt behaviours aimed at the preservation, improvement, and restoration of the environment.

14. The Italian constitutional reform of 2022, which introduced the protection of the environment into Articles 9 and 41 of the Constitution, in turn adopts a restrictive definition of environment, modeled on Article 20a of the German Basic Law (*Grundgesetz*), and reproduces its critical aspects. Nevertheless, it represents a constitutional revision of profound symbolic value, enabling the environment to enter both among the fundamental principles of the legal order and within the so-called “economic constitution”.

15. Following an initial focus on the problem of workers’ health, the provisions of the European Treaties² have become the primary forum for environmental protection of a “high level,” grounded in the principles of precaution, prevention, remediation, and financial responsibility for pollution. Furthermore, for the purposes of the inquiry into the legal good, the extension of the concept to a plurality of components is significant, including human health, the use of natural resources, and, finally, climate change. The term “environment,” as used in Article 191 § 1 TFEU, appears to be employed in a comprehensive and broad sense, albeit distinguished from some of its components, as suggested by its occurrence in both the first and the last of the four points that make up the definition.

16. The issue of climate change is also mentioned in Article 191 § 1 TFEU. This suggests that the climatic dimension should likewise be given due weight for the purposes of defining a unitary concept of environment, in contrast to what occurred in certain theoretical approaches of the past.

17. The system of criminalization obligations provided for by European Union directives outlines a rational framework that “segments” the system of environmental offences into a limited number of conduct categories, generally grouped – one may observe – according to the intermediate legal good protected. This system, however, suffers from the problem of the limited and indirect competences of

² See Article 174 of the Treaty establishing the European Community (Maastricht, 1992); Articles 3 and 37 of the Charter of Fundamental Rights of the European Union (Nice, 2000); finally, Article 191 of the Treaty on the Functioning of the European Union (Lisbon, 2009).

the Union in criminal matters, as opposed to its more developed competences in environmental law, as well as from the constant recourse to a “double-text” technique that separates the administrative protection of this “supranational good” from its criminal-law protection. With regard to the specific field of waste:

- a. Directive 2008/99/EC, recently repealed, identified in Article 3 § 1(b) a set of four types of conduct relating to illegal waste management, characterized by clauses of so-called special unlawfulness: collection, transport, recovery (Verwertung), and disposal. These corresponded to the stages of waste management, starting from collection, and were accompanied by further provisions aimed at criminalizing unlawfully performed “specialized” activities, such as the supervision of those operations – including so-called decommissioning – activities carried out as a trader or intermediary, as well as illegal shipment and the unlawful operation of installations. The degree of adherence to such an overall synthetic and rational scheme has varied considerably, even though it was scarcely innovative and never “contaminated” by the cultural contributions of the directives on the circular economy.
- b. Directive (EU) 2024/1203, in Article 3 § 2(f), further consolidates the general categories of illegal waste treatment into a triad, with “treatment” replacing recovery and disposal, and with the introduction of an institutional distinction between hazardous and non-hazardous waste. In continuity with the repealed directive, the regulation of illegal shipment remains characterized by an explicit reference to the relevant EU regulation; the most evident novelty concerns the criminalization of ship recycling. The unlawful operation of installations, by contrast, is subsumed under the broader field of environmental protection through the accessory reference to the “Seveso” directives on the prevention of industrial accidents. Yet once again, the opportunity has been missed to “circularize” the system of waste criminal law, which remains entrusted to references to the protected administrative function and to clauses of special unlawfulness, as well as to normative interpretation.

18. Theories seeking to articulate a unitary and unmediated definition of the environmental legal good display considerable variability depending on the field of reference, or, at times, rely on conceptions that are mutually opposed. In this respect, it does not appear feasible to base the construction of environmental law – and even less so of environmental criminal law – on the attempt to recognize a unitary structure for an abstract good, which would risk being either unduly restrictive or, conversely, entirely indeterminate:

- a. The environment has been conceived as the human habitat, within an anthropocentric framework that excludes the protection of natural goods not immediately “useful” for human well-being;
- b. Alternatively, the environment has been construed restrictively (*restriktiver Umweltbegriff* in the German literature) as composed of the elements of the biosphere, within an ecocentric conception, which

excludes the environmental protection of human goods, leaving them subject exclusively to the protection of individual safety;

- c. Finally, the environment has been interpreted extensively (*extensiver Umweltbegriff*) – and indefinitely – as a “unitary immaterial good” (*bene immateriale unitario*).

19. The pluralistic theory is grounded in the acknowledgment of the need to decompose the environmental legal good, in its dimension as a final good, into a plurality of components: elements of the biosphere, landscape and natural beauties, the healthfulness of places, and the integrity of the territory. This approach displays greater interpretative proximity to positive law, notwithstanding certain differences concerning the number and quality of such components and their capacity to provide a complete and adequately nuanced representation of the final legal good. The pluralistic theory appears to be the one most closely aligned with the structure conferred by the Italian legislator upon the criminal offences which, since 2015, punish conduct harmful to the environmental legal good. Reference is made to the offences of environmental pollution and environmental disaster, placed at the beginning of the statutory framework on environmental crimes, both constituting result-based offences imputable either based on intent³ or, through the provision of a mitigated form, negligence⁴. These offences have been subject to criticism on account of a general and structural indeterminacy concerning the boundaries of the protected interest and of the harmful result, as well as with regard to the relevant temporal parameters and critical junctures for the purposes of causal assessment. In any event, although the pluralistic theory is preferable to monistic approaches, it neglects the search for a unifying dimension capable of justifying the convergence of the various components within what is, effectively, a unitary concept.

20. It is proposed here to acknowledge, alongside the necessary presence of individual environmental compartments, also a unitary dimension of the environment, partly distinct from its individual components, consisting in its extended spatial dimension and its climatic aspect, which constitute the naturalistic presuppositions of the environmental compartments themselves. In light of this proposal, the environment may be defined as a unitary, final-level protected legal good, representing the physical-spatial and climatic precondition of the material, ecosystemic, and territorial conditions that in turn constitute the basis for the life, subsistence, and harmonious psychophysical development of the human being and of other living beings. It is necessary to exclude landscape as an aesthetic component, which may itself be recognized as an autonomous legal good, albeit one requiring distinct protection and not infrequently entering into tension with environmental interests (one may think, for instance, of “landscape-based” opposition to wind turbines or railway infrastructure). At the normative level, two examples appear to be of particular relevance:

³ Italian Criminal Code, Chapter VI-*bis*, Articles 452-*bis* and 452-*quater*.

⁴ Italian Criminal Code, Chapter VI-*bis*, Article 452-*quinquies*.

- (1) Article L110-1, commas 1-2, of the French *Code de l'environnement*, as a provision of administrative law, which errs by excess insofar as it incorporates within the concept elements that extend beyond the properly environmental sphere;
- (2) §§ 177d and 177e of the Austrian Criminal Code (*öStGB*), which criminalize the unlawful handling of materials contributing to the depletion of the ozone layer, thereby identifying a “higher-level” referent that transcends the individual environmental compartments considered in isolation.

21. In view of the breadth and abstraction of the environmental legal good as thus defined, it remains necessary to further decompose it into instrumental legal goods that may serve as “intermediate” conceptual referents capable of indicating the ultimate direction of protection. These may, in certain cases, coincide with the administrative functions governing a particular sector of environmental protection; in other cases, however, they must be distinguished from them. Such coincidence is possible – and indeed desirable – in the case of functions directly aimed at protecting “compartmental” goods (*mediales Umweltstrafrecht*), where the object of the function corresponds to an environmental component recognizably deserving of criminal-law protection. Conversely, it risks giving rise to forms of self-referential protection where administrative functions are primarily directed at regulating the causes of pollution (*kausales Umweltstrafrecht*); in this latter case, it becomes necessary to identify instrumental legal goods that are distinct from the administrative function itself. The causal criminal law framework governing waste – and, insofar as it is connected thereto, the corresponding administrative regulation – constitutes, from this perspective, a fundamental testing ground.

22. The Italian subsystem of waste criminal law, unlike its EU counterpart, exhibits a high degree of dispersion and fragmentation of “atomized” forms of conduct, as it consists of a plurality of provisions contained in at least two separate legislative acts: the Criminal Code (Art. 452-*quaterdecies codice penale*, *c. p.*: *Organized Activities for the Trafficking of Waste*) and the Environmental Code (Articles 255 *cod. amb.* et seq.). In essence, the principle of “codification reserve” (*riserva di codice*) set out in Article 3-*bis* of the Criminal Code and introduced into the penal system in 2018 has, in this field, been only partially implemented. Furthermore, owing to a lack of coordination with Legislative Decree June 8th 2001, no. 231, – which does not include Article 452-*quaterdecies* of the Criminal Code among the predicate offences – the offence of organized activity for the trafficking of waste cannot be imputed to legal entities. Given the homogeneity not only of the material object but also of the protected legal good, a greater concentration and systematic consolidation of provisions would appear to constitute a higher-quality legislative solution.

23. The provision of Section 181b of the Austrian Criminal Code (*StGB*), “duplicated” by Section 181c *StGB* regarding the negligent version of the offence, exhibits a structure closely aligned with Article 3 § 1(b) of Directive 2008/99/EC. It shares the merit of rendering the object of protection clearly identifiable – adopting a moderately anthropocentric and pluralistic perspective on the environment, indicating a minimum threshold of expenditure for remedial intervention – and of requiring, with due

attention, at least an abstract or potential level of danger for the typical forms of conduct. Moreover, these forms of conduct are typified in such a way as to reflect, in a concise and systematic manner, the successive phases of waste treatment. In this respect, the provision constitutes an interesting model for possible reform perspectives, albeit within the limits inherent in the managerial regulatory framework in which it is embedded.

24. Waste, as mere material objects (*Gegenstände*) discarded by their holders at the conclusion of a production process or following use for consumption purposes, represents the most acute problematic nexus within a conflict-oriented vision of the relationship between environment and economic development. On the one hand, waste constitutes the outcome of a system of production and circulation of goods that has proven advantageous for large segments of humanity; on the other hand, in its aggregated dimension, it presents a significant harmful potential for the surrounding environment and occupies volumes thereby withdrawn from other possible uses.

25. Legislators respond to the problems posed by waste by establishing an administrative function of proper “*downstream*” waste management, thereby transforming such objects into sources of costs and obligations aimed at preventing or containing environmental harm. This was the configuration of the model applied by the European Union up to the 2018 directives; such was – and, upon closer inspection, continues to be – the model embodied in Legislative Decree no. 152 of 3 April 2006. The Austrian *Abfallwirtschaftsgesetz* is likewise structured in terms of waste management; however, as will be reiterated shortly, this articulation of the model appears – for reasons to be discussed – to represent an “advanced” version when compared with a “pure” managerial model.

26. Precisely by virtue of the peculiarities of a preventive system that generates costs and obligations, waste also acquires a commercial potential that has been fully grasped by criminal organizations. These have mobilized in order to offer services at costs significantly lower than those that disposal operators complying with the administrative function are able to propose, systematically violating management obligations and thereby giving rise to phenomena of environmental degradation which, in certain areas, appear particularly evident. This makes it necessary to undertake an analysis and revision of the managerial system and, for the purposes of criminal law, of the associated legal good and the offences established for its protection – while already situating such inquiry within the perspective of a broader systemic reform.

27. The definition of waste adopted both by European Union law and by domestic legal systems focuses, albeit with varying emphases, on the notion of disposal. This is primarily a subjective concept, except when it is corrected by the legal-objective element of the “obligation” to dispose. However, it appears to lack an economic-objective notion concerning the exhaustion of the utility of the item being discarded. In particular, the obligatoriness of disposal seems connected to a concept of prudent management of substances potentially hazardous to the surrounding environment.

28. the assumption that disposal does not follow from a lack of economic-objective utility also seems present in the definitions of items that delimit the negative scope of waste. Both *by-products* and *end-of-waste* items demonstrate that objects not attributable to product quality may nonetheless possess a utility that allows their reuse: in the first case, without a prior phase of disposal; in the second case, by ceasing to be classified as waste.

29. The prevailing approach regarding the range of objects that may be subsumed under the definition of waste appears, in any case, aimed at narrowing it, whereas the initial tendency had been towards expansion. This trend can be assessed as both positive and necessary, insofar as the due rigor required in managing certain material objects entails, as already noted, corresponding implications in terms of duties and costs⁵.

30. The administrative function of waste management is primarily characterized by the actors who participate in it. In the context of environmental criminal law, this represents a matter of great importance: the relevant offences, although directed at “anyone” (*Wer* in German), must in practice be regarded as offences committed by specific persons. The subjective definitions can virtually encompass all individual natural persons interacting with the waste chain. It is furthermore readily observable that the typical conduct defined by the offences coincides with that of lawful management, albeit directed toward purposes contrary to the environmental legal good, and therefore capable of assuming, in fact, the qualities under discussion. Among the relevant roles, three bear general and primary responsibility for the course of waste, from which liability may be discharged principally through participation in certified management systems or, more complexly, by proving facts sufficient to interrupt the causal chain:

- (i) The waste producer may be defined as the individual who intervenes directly and materially – rejecting the notion of “legal referability” – on the waste, even for non-professional reasons, thus constituting a material producer;
- (ii) The waste holder⁶ is identifiable as anyone who has had material availability of the waste and has performed acts of disposition;
- (iii) the product producer is identifiable as the subject at the beginning of the waste course, being the professional producer of the material goods from which the waste derives, following total or partial disposal: the extension of their responsibility may in fact represent one of the first elements of circularity in waste management, as it should induce producers to engage in prevention.

⁵ See COMMISSION OF THE EUROPEAN COMMUNITIES, *Communication from the Commission to the Council and the European Parliament on the Interpretative Communication on waste and by-products*, Bruxelles, 21.2.2007, COM (2007) 59, p. 5, § 2.2.1: « *An excessively wide interpretation of the definition of waste imposes unnecessary costs on the businesses concerned, and can reduce the attractiveness of materials that would otherwise be returned into the economy. An excessively narrow interpretation could lead to environmental damage, and undermine Community waste law and common standards for waste in the EU.* ».

⁶ The concept of waste holder has been translated, in the Italian version of the EU directives, with *detentore*.

Continuing the analysis, also considering other legal systems involved, additional roles can be identified with partial responsibility over the segment of the waste course they directly control, or even as potential counter-interested parties:

- (iv) The intermediary actors – traders, brokers, transporters – represent subjective roles concerned with transferring rights over collected waste, or with physically moving the material objects;
- (v) Endbewirtschafter: Hierbei handelt es sich um die Subjekte, die die bereits gesammelten Abfälle bewirtschaften. Ihre Rolle lässt sich mit dem im österreichischen AWG definierten „Abfallbehandler“ vergleichen, also „jede Person, die Abfälle entsorgt oder verwertet“.
- (vi) Inspired by the Austrian AWG, the figure of authorized experts (*befugte Fachpersonen*) appears useful: these are qualified individuals for scientific-experimental research, administration, or technical inspection, justified if they adopt unlawful conduct in performing their designated tasks;
- (vii) Also from the Austrian AWG, particularly rich in implications is the figure of neighbours (*Nachbarn*), that is, individuals who reside or permanently dwell in the territory potentially affected by emissions from recovery or disposal facilities, who, in the event of unlawful conduct, may be identified as “collective” victims of the committed offence.

31. The hierarchy of the five actions for waste management – prevention, preparation for reuse, recycling, recovery, disposal – still appears, in practice, excessively skewed toward the residual actions, particularly disposal. The pathologies associated with this final, residual action seem to be the focal point, as will be specified shortly, of the relevant criminal offences. Moreover, if the protective perspective is centred on preventing harm through proper waste management, without being supported by the concept of systematic resource recovery, it seems impossible to find adequate incentives to promote the other actions.

32. A comparison with the Austrian *Abfallwirtschaftsgesetz* reveals a system that accords strong attention to the declaration of objectives that proper waste management must pursue, already from the definition of “waste” (§ 1 Abs. 1 AWG). This demonstrates a better focus on the ultimate purpose and, consequently, on the protection of the legal interest in its final components. It also constitutes an interesting objective corrective to the requirement of disposal, which is more substantive compared to the legislator’s predetermined categorization.

33. In consideration of the object and function that the legislator seeks to protect through punitive instruments, environmental criminal law tends to “invert” the schemes of classical criminal law, insofar as it must achieve a compromise between the principle of offensiveness (*Thesis 2*), classically aimed at punishing acts harmful to the protected legal interest, and the *anticipatory* principles of environmental harm, of a scientific-experimental origin, such as the principles of precaution and prevention.

34. The precautionary principle is a factual source of norms aimed at the avoidance and anticipation of harmful events whose causal course is characterized by uncertainty; in this sense, it constitutes a

method for governing risky activities. In environmental criminal law, this principle plays a role in shaping the offense and the systematics of the subject matter, as well as in interpreting its elements, which translates into:

- a. a “strong” alignment of the offense with the administrative function of proper waste management, based on the sanctioning of omitted notifications to the public administration (*Thesis 37.i*);
- b. the adoption of a scheme of presumed-danger offences;
- c. the prevalent – though not exclusive – application to offences of an administrative-punitive nature;
- d. the attribution of relevance to a negligent subjective element, reserving the intentional element for qualifying the severity, or, in the case of offences with a minor objective offensiveness, for specific intent;
- e. offences linked to “hyper-sectoral” conduct, focused on the violation of duties aimed at facilitating the control of the public administration, such as offences of “illegal movement” of waste or failure to complete required forms.

35. The prevention principle is aimed at protection against actual danger, with regard to known sources of pollution that manifest an evident potential. Among offences of illegal waste management, which are in themselves a certain cause of pollution, this principle assumes a more central importance than the precautionary principle, which translates into:

- a. an accessory role of the offence in relation to the administrative function, in terms weaker and different from those imposed by the precautionary principle (*Theses 37.ii* and *37.iii*);
- b. the adoption of the abstract-potential danger scheme of the *Eignungsdelikte*, further incentivized by Directive (EU) 1203/2024;
- c. the prevalent placement in offences of a contraventional nature or, in more serious cases, in criminal offences;
- d. the attribution of relevance to a negligent subjective element, reserving intentionality for criminal offences;
- e. in contextually heterogeneous offences, among which are particularly those of a managerial nature, including unlawful management under Art. 256 of the Italian Environmental Code, and, at a comparative level, §§ 181b and 181c of the Austrian *StGB*;
- f. in a criminal offence such as Art. 452-quaterdecies of the Penal Code, which criminalizes organized activities for the illicit trafficking of waste, highlighting a link between environmental and economic crime, the latter understood not only as motivated by enrichment but also as injurious to the collective good of the society’s economic development.

36. Environmental criminal law must also consider reactive-preventive principles of socio-economic origin, such as the principle of correction at source and the principle of the causer (*Verursacher*), or polluter – “the polluter pays” principle. The former shapes those offences aimed at intervening in situations

dangerous to the environment by requiring the active subject of the conduct to engage in remedial or restorative cooperation, punishing subsequent inaction. In Italian law, this applies to non-compliance with removal orders concerning waste and to the procedure for the extinction of environmental contraventions based on an injunctive model, as well as to cases in which remediation is carried out after prosecution for failure to remediate, corresponding to an exculpatory or mitigating model. A comparable logic is also reflected in the German concept of *tätige Reue*. The corrective paradigm, with a stronger focus on the individual subject, also encompasses restorative justice procedures. The latter principle finds its most immediate applications primarily in civil and tax law; however, it is also present in administrative-punitive and criminal law. Clear examples include: (i) the liability of legal entities for offences committed by their members, accompanied by pecuniary administrative sanctions, and allowing for corporate cooperation through so-called compliance programmes; (ii) the aforementioned corrective interventions, the cost of which must be borne by the active subject; (iii) environmental confiscation and confiscation relating to waste, which – particularly in cases of confiscation by equivalent – often assumes a punitive character and, where properly framed in its dimension as an “indirect financing” of environmental restoration activities, may acquire a resocializing function.

37. Within a *downstream regulatory model* of waste governance, waste criminal law operates in a subsidiary and accessory capacity in relation to administrative law. The legislator has focused primarily on the administrative function of proper waste management, conceived as the control and containment of risks and damage arising once waste has already been generated. Following the four forms of accessoriness by content, the following distinctions may be drawn:

- (i) Offences of *strong* accessoriness, based on the failure to notify the public administration of activities entailing a risk of pollution: such is the provision subjecting to administrative sanction the breach of obligations of communication, record-keeping, and completion of mandatory forms, presuming the danger of unlawful and harmful management conduct that may result therefrom⁷;
- (ii) Offences of *medium* accessoriness, based on the carrying out of activities without the prescribed authorisations: these include “qualified” presumed-danger offences relating to the movement of waste, whether national (transport⁸) or international (transboundary shipment⁹), as well as abstract-potential danger offences such as unlawful waste trading¹⁰;
- (iii) Offences of *weak* accessoriness, based on the breach of threshold-limit values: this technique is largely recessive in the Italian environmental-criminal subsystem on waste, being contemplated mainly

⁷ See Article 258 of the Italian Environmental Code (*cod. amb.*).

⁸ See Article 452-*quaterdecies* *cod. pen.* and Article 256 *cod. amb.* In Italian Law; see *Beförderung*, § 181b *Abs. 1* *öStGB*.

⁹ See Article 259 *cod. amb.*; § 181 *Abs. 3* *öStGB*.

¹⁰ See Article 452-*quaterdecies* of the Italian Criminal Code and, as well, the Articles 256 and 259 of the Italian Environmental Code; see the misconduct of transportation, *Beförderung*, § 181b *Abs. 1* *öStGB*.

in relation to omitted reclamation¹¹, which refers to the concept of “exceeding risk-threshold concentrations” that opens the administrative discipline of remediation – a concept entrusted to an *ad hoc* assessment¹² and implying concrete danger;

- (iv) Offences based on *the violation of express administrative orders*: such are the offences criminalising the breach of waste removal and remediation orders, which intervene in situations where a harmful event has already occurred, thereby allowing these offences to be construed as either concrete-danger or abstract-potential danger offences.

38. Beyond the administrative function – which remains the primary focus of the Italian legislator – a teleological interpretation of the relevant provisions makes it possible to identify the prevention of pollution deriving from waste as their underlying objective, which effectively assumes the role of an intermediate legal interest. This interest is distinct both from the material object of waste and from the administrative function of proper management – of which it represents the objective – as well as from the para-final and final legal interests that may be affected, in terms of endangerment, by the more “macroscopic” unlawful conduct.

39. The analysis of the subjective element allows further conclusions to be drawn with regard to the identification of the intermediate or instrumental legal interest and to the overcoming of the status quo. The negligent element – which, in the field of offences concerning unlawful waste management, remains the most widespread due to the continuing presence of contraventional offences and administrative-punitive violations – does not, even in its dual objective-subjective dimension, always require detailed knowledge of administrative regulation. It does, however, require at least awareness of breaching a precautionary rule aimed at preventing a specific event or a specific situation of danger.

40. The element of intention is indicative, on the one hand, of the tendency of environmental criminal law to target a new type of offender that has emerged within environmental criminological research, namely the intentional polluter. On the other hand, it requires an inquiry into the awareness and intention to damage or endanger a specific legal interest, whether final or instrumental. With regard to unlawful waste management, it appears difficult to assume that harm to the environment constitutes the primary objective of the conduct, particularly in cases of direct intent: it suffices to consider that pollution caused by waste contributes to the deterioration of the very global – and often also local – environment in which the offenders themselves live and operate.

41. Alongside the awareness of causing dangers to the environment, economic objectives are also involved, namely an unlawful saving on waste treatment procedures: their pursuit entails distortions within the productive system, leading many entrepreneurs to accept illegal contracts with organised crime. For this reason, it may become necessary to overcome a criminal-policy model based on the violation of

¹¹ Article 257, comma 1, *cod. amb.*

¹² Article 240, comma 1, lett. c) Italian *cod. amb.*

the administrative function of proper waste management and of the intermediate legal interest of preventing pollution deriving therefrom, by adopting a joint perspective of economic and environmental protection – in short, a *circular economy* perspective.

42. The circular economy, as a way of conceiving the relationship between economic development and the environment, requires waste to be reconsidered as a material good, rather than a mere object. These would clearly be goods characterised by a high degree of peculiarity, comparable to raw materials to be reserved for highly technical uses rather than to merchandise that may be traded on ordinary consumer markets. In this sense, the circular economy may represent an outcome that also requires the legislator to reformulate some of its protective instruments and to distinguish from the outset, including through the necessary administrative measures, reusable items from those – to be contained by every possible means – destined for disposal.

43. A legal system that makes it possible to study the first effects of the introduction of the concept of the circular economy into administrative law and, more marginally, into criminal law, is that of the Federal Republic of Germany, whose *Kreislaufwirtschaftsgesetz* (KrWG) – the Circular Economy Act, in force since 2012 but preceded by a similar statute of 1994 – clearly describes the “circular” approach to the legal regulation of waste, which abandons a system of orderly disposal in order to embrace one increasingly oriented toward prevention and, above all, recovery or, better, valorisation (*Verwertung*)¹³.

44. The circular economy also affects the very notion of waste. Traditionally, from the inception of waste law, an “external” distinction has existed between waste and “economic goods” (*Wirtschaftsgut*), alongside an “internal” distinction between mandatory waste and waste arising from the will of the holder, or rather the holder (*Besitzer*). With the 1994 law, the German legislator introduced a further distinction between waste for disposal (*Abfälle zur Beseitigung*) and waste for valorisation (*Abfälle zur Verwertung*). The latter – still distinct from the concepts of by-product (*Nebenprodukt*) and end-of-waste, as defined under EU-wide law – are recognised, according to criteria not clearly defined by the law, as possessing a residual value that allows them to be directed towards valorisation activities. This concept merits adoption in other legal systems, as it entails management measures and obligations designed to prevent the loss of significant material resources.

45. It is precisely the actions encompassed by the concept of valorisation – comprising three activities distinct both from prevention (the primary measure) and disposal (the measure of last resort), listed in § 6 KrWG: preparation for reuse (*Vorbereitung zur Wiederverwendung*), recycling, and specific forms of valorisation (*sonstige Verwertung*) – that represent a pivotal development in German law. § 7 KrWG, in

¹³ The term *Verwertung* is rendered as *recupero* in the Italian versions of the relevant EU directives, as well as “recovery” in the English ones. However, the translation *valorizzazione*, which can be rendered as “valorisation” in English, appears more appropriate, as it – derived from the root *valore* (“value”) – emphasises the economic aspect of value creation and thus aligns more closely, in terms of content, with the circular economy approach. The literal “recovery” risks conveying only a technical or material process, without capturing the economic and value-oriented dimension of the concept.

addition to emphasising that these actions must be governed by administrative functions and must not cause harm to the public at large, introduces a crucial concept: the importance of avoiding the introduction of harmful substances into new circular economic cycles.

46. From the perspective of an Italian interpreter, the examples of “specific forms of valorisation” provided in the text of the German Circular Economy Act are particularly noteworthy. § 6 Abs. 1 Nr. 4 *KrWG* mentions, in fact, two practical applications that the Italian social context still struggles to accept: energy recovery *seu* valorisation (*energetische Verwertung*) and backfilling (*Verfüllung*). Such guidance underscores the importance of consolidating these activities as established practices, so that previously discarded but still valorisable materials can be used instead of virgin raw materials, thereby conserving resources and preventing disposal.

47. In criminal law, the concept of “waste” relevant to the offence under § 326 of the German *StGB* is narrowed in accordance with the principles of subsidiarity and *ultima ratio*. Accordingly, illicit waste-treatment conduct is considered criminal only when it involves objects with particularly hazardous potential – such as the capacity to produce toxins or pathogens, to alter the human genetic map, or to explode – or when their quantitative and qualitative characteristics are sufficient to cause harm to one or more environmental compartments, or to the health of humans or animals. The *Minima-Klausel* (minimal clause) at the end of § 326, which addresses situations in which only a small quantity of waste is treated illegally, excludes the typical offence when the waste lacks such dangerous potential.

48. § 326 *dStGB* includes a broad catalogue of conduct and explicitly identifies a series of environmental goods that are put at risk, an element further reinforced by the offence of damage set out at the end of § 330 *dStGB*. Secondly, it is worth noting the inclusion of commercial, transactional, and dispositional conduct – among which the residual category of *bewirtschaften*, referring to deriving profit from waste even through inactive conduct – which highlights the profit-driven character of illegal waste trafficking¹⁴.

49. The criminalisation of illegal valorisation (*verwerten*) is particularly significant for understanding the effects of the circular economy. The political-criminal choice to assign penal relevance even to valorisation activities – which might at first appear paradoxical – is aimed at preventing circumvention of legal obligations, both in the relevant administrative framework and in relation to the risk of extracting value from potentially harmful waste. It thus constitutes a “penal accompaniment” to the administrative function, necessary for the development of an effective, well-functioning, environmentally beneficial, and legally compliant circular economy system.

¹⁴ See DEUTSCHER BUNDESTAG, *Drucksache 17/5391*, 6.4.2011, *Gesetzesentwurf der Bundesregierung. Entwurf eines Strafrechtsänderungsgesetzes zur Umsetzung der Richtlinie des Europäischen Parlaments und des Rates über den strafrechtlichen Schutz der Umwelt* (Draft bill of the Federal Government. Draft of a Criminal Law Amendment Act for the implementation of the Directive of the European Parliament and of the Council on the criminal protection of the environment), in *dipbt.bundestag.de*, S. 25.

50. In a system of conduct structured in this way and functioning in support of the circular economy, the criminalisation of acts under both forms of liability provided by German criminal law – intent (*Vorsatz*) and negligence (*Fahrlässigkeit*) – can be interpreted as addressing the dual need to prevent environmental damage arising both from careless waste management and from intentionally profit-driven conduct that also ‘pollutes’ the economic system.

51. The European Union seems to have drawn many elements of the two 2018 circular economy directives from German legislation – just as the 2008 directives were clearly inspired by the 1994 German law – with the aim of strengthening prevention and valorisation practices. This includes the subtle introduction of the category of waste for valorisation through the designation of “non-hazardous waste,” the reintroduction of “secondary raw materials” as part of recycling via reprocessing of discarded materials, and the use of tax and financial tools – such as pledge value – while extending producer responsibility. However, these pieces of secondary legislation did not explicitly acknowledge the potential impact of such a paradigm shift on environmental offences. The Italian transposition of the 2018 directives has been both delayed and partial; further developments will be needed for the 2024 directive, placing the Italian legislator at a critical juncture.

Epilogue, First part. *Proposals de-jure-condendo.*

By way of conclusion to the present study, it appears appropriate to advance a concrete proposal for the future development of the regulatory framework in this field. While it is necessary to refer to the Austrian and German legislative models adopted as comparative benchmarks, in order to give substantive effect to the comparative analysis undertaken, it has also been possible to identify certain systemic shortcomings in both systems. The proposal set out below seeks to address and overcome those limitations.

A. The Circular Economy as a Function and an Intermediate Legal Good. Reconsideration of the Concept of Waste, Secondary Raw Materials, and Participatory Procedures

Regarding the administrative dimension of the matter – referred to in this study for reasons of accessoriness – it is intended to formulate general policy guidelines, the translation of which into binding normative provisions would require joint work with scholars and practitioners of administrative law.

First and foremost, there is an ideological and terminological issue of legislative policy which, however, would amount to a broader commitment to reconceptualising the system. The circular economy should become the cornerstone of every general principle governing administrative intervention in the field of waste and, more broadly, in the regulation of the relationship between the use of available resources and the productive system.

In practical terms, this would require a substantial strengthening of instruments aimed at waste prevention and valorisation, as well as a greater degree of privatisation in waste management. A first paradigmatic measure – relatively straightforward in its implementation – would be the attribution of a deposit value to empty containers upon their return to commercial distribution outlets, following the model of the German *Pfand* system. Such a mechanism would significantly affect consumer behaviour, encouraging greater care in preventing dispersion, given the prospect of recovering sums that, though modest individually, become meaningful in accumulation. It would also impact the practices of producing companies – whose role within the framework of extended producer responsibility would thereby be reinforced – by enabling cost savings through the reuse of packaging.

Equally worthy of consideration is the expansion of the requirements designed to strengthen the legal regimes of by-products and, even more so, end-of-waste status, considering their preventive and valorising function. Such reinforcement would contribute to reducing the overall volume of waste and to maintaining, or reintroducing into circulation, a significant quantity of resources¹⁵.

The introduction of fiscal and financial instruments that also operate as incentives – transforming the “polluter pays” principle into a “non-polluter is rewarded” approach, without undermining the corrective function of the former – constitutes a more complex measure. Nevertheless, it can foster virtuous conduct by aligning private and corporate interests with tax savings or access to funding. In the field of waste, the required commitment should consist in reducing those components of the final product or its packaging that are destined to become waste, or in manufacturing them from materials suitable for recovery or valorisation.

Even more complex is the introduction of the category of “waste for valorisation” – whether understood as secondary raw materials or, alternatively, as materials intended for energy recovery or other forms of recovery. Yet this measure appears urgent and fundamental for jointly addressing the problems of excessive waste generation and the conservation of raw materials. The general definition should depart from the tautological and “negative” formulation found in § 7 *KrWG* and instead adopt a positive formulation along the following lines:

“Waste for valorisation: non-hazardous waste which, according to criteria of environmental sustainability, is suitable for reuse, following reprocessing that respects its material characteristics, as production material for goods; or, where such reuse is not feasible due to its characteristics, following treatments that alter its material characteristics, as material for energy production or for other industrial uses.”

Finally, both the *Charte de l'environnement* and environmental administrative legislation suggest the adoption of participatory procedures for citizens affected by the installation of waste-valorisation

¹⁵ Cfr. G. MASTRODONATO, *Nuovi modelli di economia circolare nella gestione dei rifiuti* (New Circular Economy Models in Waste Management), in A. Buonfrate- A. Uricchio (eds.), *Trattato breve di diritto dello sviluppo sostenibile* (Brief Handbook on Sustainable Development Law), Milano, 2023, pp. 789-834, pp. 807 ff.

facilities. Such participation should not be conceived as a channel for the expression of pseudo-environmentalist opposition (NIMBY), but rather as a means of ensuring proper public information regarding the rationale, objectives, and functioning of such facilities, as well as enabling a form of diffuse civic oversight over their lawful operation. The identification of the subjects entitled—or rather invited—to participate may be facilitated by defining the category of “neighbours” affected by the installation.

B. *The Inclusion of the Category of “Neighbours” in Circular Economy Law*

It therefore appears appropriate, first and foremost, to introduce into administrative law a specific regulation concerning “neighbours”, drawing inspiration from the *Nachbarn* provided for in the Austrian *Abfallwirtschaftsgesetz*, § 2(6) no. 5. This category is defined in a manner analogous to that of recipients of emissions under civil law¹⁶, subject to the necessary adaptations required by the public-law context and by the protection of fundamental rights other than proprietary rights:

[§ 2 Abs. 6 Nr. 5 AWG] 5. sind „Nachbarn“ Personen, die durch die Errichtung, den Bestand, den Betrieb oder eine Änderung einer Behandlungsanlage gefährdet oder belästigt oder deren Eigentum oder deren dingliche Rechte gefährdet werden könnten. Nicht als Nachbarn gelten Personen, die sich vorübergehend in der Nähe der Behandlungsanlage aufhalten und die nicht Eigentümer oder dinglich berechtigt sind. Als Nachbarn gelten jedoch die Inhaber von Einrichtungen (zB Beherbergungsbetriebe, Krankenanstalten, Heime, Schulen), in denen sich regelmäßig Personen vorübergehend aufhalten, hinsichtlich des Schutzes dieser Personen. Als Nachbarn gelten auch Eigentümer von grenznahen Liegenschaften im Ausland, wenn in dem betreffenden Staat österreichische Nachbarn in den entsprechenden Verfahren rechtlich oder tatsächlich den gleichen Nachbarschutz genießen.

[Translation for the English version] 5. “Neighbours” are persons who could be endangered or inconvenienced by the construction, existence, operation, or modification of a treatment facility, or whose property or property rights could be affected. Persons who are temporarily present in the vicinity of the treatment facility and who are neither owners nor holders of property rights shall not be considered neighbours. However, owners or operators of facilities (e.g., accommodation establishments, hospitals, nursing homes, schools) in which persons regularly stay temporarily shall be regarded as neighbours for the purpose of protecting those persons. Owners of border properties abroad shall also be considered neighbours if, in the relevant state, Austrian neighbours enjoy equivalent legal or de facto protection in the corresponding proceedings.

Such a provision would need to be cleansed of the “conflict-of-law” clause that applies protection to foreign neighbours only where the foreign state provides reciprocal protection: the focus must be on the safeguarding of environmental goods, not on international relations.

In this way, a defined set of persons would have the right to participate in the participatory procedures concerning waste treatment facilities. For criminal law purposes, such a provision would help delimit the category of potential victims of offences against waste management or—prospectively—against the

¹⁶ See Chapter II, § 5.1.

circular economy, which could, in a secondary instance, also contribute to the development of substantive restorative justice mechanisms.

C. The Producer as the Primary Subject of the Circularisation of the Economic System

The producer of the product has been identified as the “primary node” in the circularisation of the economic system. This subject is the first who can be incentivised – starting from the administrative and fiscal planes – to manufacture objects and substances containing the minimal possible number of discardable elements (packaging, accessory components) and designed for durability, also envisaging forms of repair obligations, which would correspond to a right of repair for purchasers, particularly consumers¹⁷.

In the same perspective of waste minimisation and recycling, as regards criminal law and administrative punitive law, it is necessary to extend the producer’s responsibility to product labelling and the choice of production practices to be adopted. A fundamental example concerns the need to implement sanctions against so-called greenwashing practices, aimed at addressing the discrepancy between production practices adopted and those declared to render the product more appealing on the market¹⁸.

Regarding waste that is nevertheless generated during production, or that may result from the use of the products themselves, it is essential to establish protocols with the relevant actors for its treatment, reinforcing the role of participation in the commission of environmental offences – even independently of any agreements with consortia affiliated with organised crime.

D. The Restructuring of Criminalised Conduct

One of the fundamental critiques raised regarding the status quo in both Italian and German law is the excessive specification of conduct: in the Italian system, these are dispersed across multiple provisions, themselves scattered in at least two separate legislative acts.

As noted in Chapter V, particular praise is due to the presentation of conduct in § 181b *öStGB*, even though it is subsidiary to an advanced management system. This provision concentrates all possible intentional (*dolus*) conduct related to waste, while § 181c duplicates the provisions for negligent intent (*Fahrlässigkeit*). The catalogue of conduct is notably concise, closely mirrors Article 3 § 1(b) of the previous Directive 2008/99/EC, and carefully follows the phases of waste management and treatment. By comparison, this catalogue overlaps with that of Article 256 co. 1 of the Italian Environmental Code, as well as Article 452-*quaterdecies* of the Italian Criminal Code, becoming, however, fragmented and diluted across multiple additional incriminated conduct provisions.

¹⁷ See F. PETERSEN, *Perspektiven des Kreislaufwirtschaftsrechts in Deutschland und Europa*, in *DVB*, 2024, Nr. 23, pages 1441-1450, 1444.

¹⁸ *Ibidem*.

1) The first typified conduct in § 181b *öStGB* is the *collection* (*sammeln, raccolta*). It literally encompasses both the physical apprehension of waste from designated disposal sites and spontaneous accumulations, as well as the temporary concentration of waste at specific locations. It occurs at the outset of the waste treatment phase. As such, it can encompass multiple excessively segmented actions present in both Italian and German law, such as uncontrolled temporary storage (*Ablagerung*).

The illicit version of collection directly conflicts with the objective of prevention: illegally conducted collection not only violates technical management standards but may also mix objects not legally defined as waste with waste, converting them into waste by contamination. In this way, illicit collection may substantially undermine the objectives of prevention as well as preparation for reuse, recycling, and valorisation.

Moreover, the act of collection can include more specific conduct such as appropriation of by-products, end-of-waste materials, and recoverable waste, especially when combined with commercial activities or other acts of disposition. This suggests that appropriation should not be separately codified but should be considered in the context of enforcement.

2) The second conduct listed is the *transport* (*befördert, trasporto*). Both Austrian and German law limit this conduct to domestic transport. Transport occurs after initial collection, often bridging multiple collection acts. Situating it in a provision identifying assets exposed to environmental risk better highlights the offensive nature and protective purpose of the conduct. Presumptively hazardous transport based solely on administrative violations can instead be delegated to punishable regulatory offences.

3) The third conduct mentioned in § 181b *öStGB* is that of *valorisation* (*verwertet*), which, without further specification, encompasses all actions distinct, on the one hand, from prevention – which is generally lawful by definition – and, on the other, from disposal. This conduct therefore covers a rather wide spectrum of treatment activities.

For clarity, it is useful to juxtapose it with the active treatment conduct (*Behandlung, behandeln, trattamento*), intended to include both allocative acts, such as storage and release into the elements of the biosphere, and modificatory acts affecting the quality and volume of the waste, such as combustion or chemical-biological treatments aimed at reducing the waste's volume and decomposing its material for dispersion.

This set of actions should be considered meritorious and useful when carried out legally and according to the *regulae artis*; conversely, they present a significantly high potential for harm to both the environment and the (circular) economy if conducted outside these standards. Their criminal sanction must therefore be maintained.

3-bis) Conduct aimed at recognising value in collected waste, whether lawful or unlawful, also applicable to by-products, should explicitly include trafficking conduct in its various forms – purchase, sale, export, import (the latter possibly combined with transport), and brokerage (*makeln*) – summarised

in the German language as *bewirtschaften* and defined in German doctrine as a typical “catch-all” provision (*Auffangtatbestand*). It generally indicates active management, or even passive participation in another’s management, from which economic benefit is derived, distinct from *Handeln* (direct commerce).

Such conduct is absent from § 181b *Abs. 1 öStGB*, but present in Italian law (art. 452-*quaterdecies cod. pen.*, art. 256 co. 1 *cod. amb.*) and in § 326 *Abs. 1 dStGB*. Including it in a consolidated, rationalised provision is desirable, as illicit waste trading remains a primary means for criminal organisations or noncompliant enterprises to generate illegal profit, while significantly distorting the legitimate market for recovered waste and materials. Failure to criminalise waste trading would likely incentivise such actors to expand illicit commercial activities.

4) The fourth conduct mentioned in § 181b *StGB* Austrian law is disposal in landfills (*beseitigt*). This action, in any case, occurs at the end of the life cycle of the waste, and more generally of any material object, representing a sort of tanatosis.

It should be noted that this conduct encompasses actions of final abandonment, deposit, or discharge¹⁹, which Italian law has scattered across two provisions (arts. 255, 256 comma 2 *cod. amb.*), and which the previous Directive 2008/99/EC did not explicitly mention, as is also the case with Directive 2024/1203/EU.

From the perspective of the Italian legislator, an argument for the necessity of sanctioning such conduct might appear “implicit,” since the European environmental law framework imposes a set of waste management actions clearly incompatible with their uncontrolled dispersion. A correlation with the widespread problem of social disorganization in Italy could also be noted. However, particularly in this sector, legislative economy is invaluable; it is therefore desirable to consolidate these and other conducts into a single definition capable of encompassing them.

Disposal is thus an inherently harmful action, even when legally conducted. Its risks, however, increase exponentially in a system of illegal disposal, since, for example, criminal organisations do not hesitate to open illegal landfills near homes, water tables, or even within forests, natural areas, or heritage sites.

In a circular economy system, the reduction of the total amount of objects disposed of would naturally make illegal disposal less frequent. Nevertheless, it remains a relevant issue in the sector in question, both in terms of the protected administrative function and the intermediate legal good – especially if the valorisation of certain objects appears economically more burdensome than their illegal disposal. Maintaining criminal liability for illegal disposal, therefore, remains a necessity even within a circular economy system.

¹⁹ See G. AICHER-ADLER, sub §§ 181b, 181c *StGB*, in F. Höpfel F.- E. Ratz (eds.), *Wiener Kommentar zum Strafgesetzbuch*, 176th file (*Lieferung*), Wien, 2017, pp. 82 ff., p. 85: In the act of disposal (*Beseitigung*), conduct such as “the deposition on or into the soil, the incorporation into the soil, the discharge into waters” (*»die Ablagerung in oder auf dem Boden, das Einbringen in den Boden, Einleitung in Gewässer«*) is also included.

5) The Austrian provision is also positively distinguished by the typification, for the purpose of integrating the objective element of a business position, literally described as one of oversight or control (*diese Tätigkeiten betrieblich überwacht oder so kontrolliert*). However, due to some generic elements (*so kontrolliert*), together with the presence of already noted general extension clauses for omission offences, it is assumed that this could be extended to supervisory duties (*Aufsicht*).

The corporate context in which these conducts frequently occur makes it essential to foresee the attribution of liability even to subjects assigned corporate compliance functions, even if they do not possess direct inhibitory powers but are at least responsible for reporting and alerting. In such cases, it becomes necessary to typify the supervisory position itself.

6) A separate discussion concerns illegal shipment (*Verbringung*). Considering the transnational dimension of the problem and its accessory nature to EU law, this conduct requires dedicated regulation, which could, however, be contained in a separate paragraph rather than a standalone article.

Article 259 *cod. amb.* continued until 2025 to reference the repealed Regulation (EEC) 259/1993, whereas the Austrian federal legislator took care to update the reference to Regulation (EC) 1013/2006.

Nevertheless, the best solution may be that adopted by the German federal legislator under § 326 *Abs. 2 dStGB*. Without needing to refer to a specific EU source, this provision adequately typifies the conduct of shipment and the relevant territorial scope, referring to the “required authorization” (*erforderliche Genehmigung*) as an accessory element tied to administrative protection. Such a provision is suitable both for clearly describing the prohibited conduct in full compliance with the principle of legal certainty and for overcoming the problems associated with an express referral to extra-penal legislation.

E. Enhancing the Identifiability of the Protected Legal Good, Offensiveness Profiles, and the Protective Purpose; Explicit Reference to the Circular Economy

Another element worth considering for adoption into the Italian legal system is the explicit identification of the legal goods potentially endangered by prohibited conduct.

In this regard, both § 181b *öStGB* (Austria) and § 326 *dStGB* (Germany) offer instructive guidance. In particular, the Austrian statutory provision merits attention within the framework adopted here, due to the sequenced presentation of the environmental goods it protects and its reflection of a pluralistic and comprehensive conception of the environment:

[§ 181b *öStGB*]. (1) ... dass dadurch

1. eine Gefahr für das Leben oder einer schweren Körperverletzung (§ 84 Abs. 1) eines anderen oder sonst für die Gesundheit oder körperliche Sicherheit einer größeren Zahl von Menschen,
 2. eine Gefahr für den Tier- oder Pflanzenbestand in erheblichem Ausmaß,
 3. eine lange Zeit andauernde Verschlechterung des Zustands eines Gewässers, des Bodens oder der Luft oder
 4. ein Beseitigungsaufwand, der 50 000 Euro übersteigt,
- entstehen kann, ...

[Translation for the English version] (1) ... where, as a result,

1. a danger to the life of another person or of serious bodily injury (§ 84 comma 1), or otherwise to the health or physical safety of a large number of people,
 2. a danger to animal or plant populations on a significant scale,
 3. a long-lasting deterioration of the condition of a body of water, the soil, or the air, or
 4. remediation costs exceeding 50,000 euros,
- may arise, ...

From the perspective adopted here, as regards environmental goods, the only element lacking is the explicit mention of the integrity of the territory, which is liable to be jeopardised by unlawful waste management and disposal activities – as emphasised throughout this analysis – and should therefore be subject to preventive protection.

However, both provisions lack an express reference to the theme of the circular economy. A reference in this regard, albeit for the pragmatic purpose of identifying the source of administrative accessoriness, is instead contained in § 327 para. 2 no. 3 of the German Criminal Code (*StGB*). One may also add the mention of “profit-seeking” (*Gewinnsucht*) in § 330 para. 1 no. 4 *dStGB*, although this is situated within a closing provision of the environmental criminal law system.

Likewise absent is any reference to the element of organised trafficking, an offence of relevance considering its potential harmfulness to the environment. While it remains advisable to maintain a strict separation from associative offences, particularly those of a *mafia-type character*, the organisation of persons and means nevertheless constitutes an element that significantly contributes to environmental endangerment, since it facilitates the circulation of particularly large quantities of non-hazardous waste as well as – irrespective of quantity – hazardous waste. The inclusion of such conduct within Article 452-*quaterdecies c.p.* – whose shortcomings lie rather in the insufficient typification of dangerousness profiles – constitutes one of the (few) merits of the Italian system of waste criminal law²⁰.

This protective purpose must instead be declared explicitly, so that the conceptual innovations of the circular economy may make their manifest entry also into the sphere of criminal law that is ancillary to, and aimed at protecting, it. A possible formulation could consist in the reference to “an economic advantage deriving from the violation of administrative prescriptions,” to be provided alternatively or – as is more likely where the agent acts with intent – cumulatively with environmental damage, provided that such advantage is significant in relation to the activity of the waste operator and, above all, to the volume of waste handled. This would be done without fixing an explicit minimum threshold of relevance, but rather by referring to a minimal degree of offensiveness that stands in contrast with the symptomatic indicators of impairment²¹ identified in the description of the typical offence.

²⁰ Cf. L. SIRACUSA, *Note brevi a margine della proposta di riforma dei reati ambientali del gruppo di studio dell'associazione dei professori di diritto penale* (Brief Notes on the Draft Reform of Environmental Offences by the Study Group of the Association of Criminal Law Professors), in *RTDPE (Quarterly Review on Economic Criminal Law)*, 2022, nn. 1-2, pp. 137-159, in part. pp. 157-158.

²¹ See the proposal by the Italian Association of Criminal Law Professors: C. RUGA RIVA, *I reati ambientali* (Environmental Offences), in AIPDP, *La riforma dei delitti contro la persona* (The Reform of the Offences Against the Human Person), Milano, 2023, pp. 820-827, in part. p. 825.

F. *The Introduction of a Closing Provision for Damage-Based Offences*

The issue of damage-based offences aimed at protecting the environment may lead to two different outcomes in terms of systematic classification: such offences may be placed at the beginning of the codified sections devoted to environmental protection, in keeping with the traditional criminal law scheme that regards offences of damage as the rule and offences of endangerment as the exception, progressively retreating from the harmful event; conversely, they may be placed at the end, thereby acknowledging the “reversal” of perspective characteristic of environmental criminal law and emphasising the primarily preventive purpose of environmental offences, reserving the offence of damage for cases in which precaution and prevention have failed.

The first solution was adopted in Title VI-bis of the Italian Criminal Code. The second solution was chosen instead in the context of the 29th Section of the Special Part of the German Criminal Code (*dStGB*), which concludes with the provision of § 330 *dStGB*, to which only subsequently were added the further “supplementary” provisions contained in §§ 330a-330d *dStGB*²². A third possible solution departs from these two extremes and consists in providing for an aggravating circumstance based on damage “at the end” of the endangerment provision: this is the approach followed in the context of §§ 181b and 181c of the Austrian Criminal Code (*öStGB*).

The second option appears by far preferable. Recognising the primary role of the preventive purpose of environmental criminal law, as a synthesis of diverse and at times opposing principles, is fundamental also from the standpoint of the naturalistic need to preserve the entity within which human beings and other living species exist. For the same reason, the third solution likewise appears respectable and in any event preferable to the placement of a damage-based offence at the beginning, although it is more dispersive and less suited to constructing a system centred upon the ultimate protected legal good.

It follows that the provision of damage-based offences – necessary in order to punish more severely cases in which the consequences of the intentional or negligent conduct of the individual have reached their most extreme outcome – must be highlighted, already at the systematic and classificatory level, as an *extrema ratio* and a subsidiary instrument in the event of the failure of prevention at all its levels.

Regarding the normative model under consideration, discussed during the analysis, it may however be appropriate to broaden the range of legal goods mentioned by the provision as objects of protection. § 330 *dStGB*, in fact, tends to limit itself to elements of the biosphere and to animal and plant species,

²² The German provisions referenced in this study include § 330a *dStGB*, which concerns severe endangerment through the release of toxins (*Schwere Gefährdung durch Freisetzen von Giften*); § 330b *dStGB*, addressing active repentance (*Tätige Reue*, corresponding to the Italian *ravvedimento operoso*); § 330c *dStGB*, which regulates confiscation (*Einzziehung*); and § 330d *StGB*, providing definitions (*Begriffsbestimmungen*). These sections, together with § 330 *dStGB*, form the closing provisions of the German environmental criminal law framework, particularly relevant for preventing and remedying environmental harm while accommodating the principles of a circular economy.

whereas – once again – it would be desirable to include reference to the healthfulness of places for human communities and to the integrity of the territory.

G. The Introduction of Restorative Justice Instruments: Obligations to Restore Ecological Balance and Agreements with Victims

Active repentance (*ravvedimento operoso*), understood as a serious and voluntary intervention addressing the causes of environmental danger or damage – therefore in the absence of remediation or removal orders – could be developed at a more advanced level than that provided for by Article 452-*decies* of the Italian Criminal Code. It could assume a more decisive role in matters concerning punishability. Our proposal would move in the direction of separating the case in which its effect is that of a mitigating circumstance – extending up to two-thirds of the penalty, rather than merely one-half – from the case in which it may extend into the sphere of a ground for non-punishability.

Within the framework of the Italian Criminal Code, the provision regulating this institution cannot display a degree of judicial discretion comparable to that of § 330b *dStGB*. This reflects a fundamental cultural factor in the context of Italian criminal law: within a legal order that, as a matter of principle, attributes a very high degree of autonomy and independence to the judiciary, the reduction of judicial discretion – even regarding institutions favourable to the offender – operates as a balancing mechanism.

For the purposes of calibrating the effects of voluntary repentance and of the mitigating circumstance or ground for non-punishability, the focus should lie on the effects of repentance on the protected legal good – whether intermediate, para-final (sectoral environmental goods), or final (the environment itself).

In the field of waste, so long as management systems persist or during the transitional phase toward the circular economy, this once again makes it possible to reaffirm the importance of separating the intermediate legal good from the administrative function. Were one to argue for a coincidence between these two entities, it would suffice, on the one hand, to requalify situations of unlawful management as situations of lawful management – for example, by transferring abandoned waste to lawful landfills or recycling or recovery facilities, or by regularising missing documentation. In other cases, however, the restoration of administrative legality would be virtually impossible, and neither mitigating circumstances nor non-punishability could be granted, except solely based on the “good will” of the active subject: one may think, for instance, of combustion. Quite different is the consideration of the prevention of waste-related pollution: restoring the situation before pollution reaches its most extreme consequences, or removing the damage that has occurred, makes it possible to measure objectively the effects of repentance.

Within a circular economy system, repentance is further enhanced by the need to invest logistical and financial resources to remove the damage. Not only is this process privatised – being entrusted to the offender motivated to avoid the deserved penalty – but it also strikes at any profit obtained through

violation of circular economy rules, thereby achieving retributive, preventive (about future offences of a similar kind), and rehabilitative purposes. It may also be observed that the recovery of unlawfully treated waste could, under certain circumstances, result in the recovery of material capable of being valorised, in whatever forms this may be possible.

From the perspective of rehabilitation – moreover in accordance with what is already provided by § 330b *dStGB* – even an effort undertaken for the purpose of repentance may give rise to mitigation or non-punishability even where restoration of the situation occurs independently of that effort. Given the favourable consequences for the offender, the perspective adopted here substantially inverts that of the impossible offence: an “objectively impossible” repentance would be assessed based on the means employed and the will to repair thereby demonstrated.

The calibration of sentence mitigation – to extend at least up to two-thirds – or the “extension” into a ground for non-punishability should therefore be linked to the effects of voluntary repentance on the protected legal good, or in any case to the effort undertaken in that direction, at least about intentional offences. The greater the restoration of the protected legal good – or the greater it would have been – the greater the sentence reduction must be. In the case of negligent offences, the “recovery of diligence” manifested by repentance, considering the involuntary character of the harm caused, would in any event justify non-punishability.

Although assigned a secondary position, agreements with the passive subjects of the offence could also be inserted into this framework, to be envisaged where neighbouring parties have identified a representative victim-participant taking part in the criminal proceedings, particularly as a civil party. Regarding this secondary institution, the judge should retain discretion as to the feasibility of such an attempt at social pacification. Such agreements cannot, of course, assume decisive value for the purposes of repentance effects, but they may contribute to identifying and delimiting the actions that constitute repentance.

Epilogue, Second Part. *Legislative Reform Proposal: The Single Offence of “Unlawful and Dangerous Waste Treatment” and the Closing Provisions*

The proposal formulated at the conclusion of this study, following the fifty theses and the *de jure condendo* proposals, consists of three normative provisions. The first concerns the figure of the offence against the circular economy; the second is aimed at the punishment of damage-based offences and constitutes the closing provision of the system; the third addresses voluntary remediation.

The first of these provisions could replace the entire set of numerous regulations currently dispersed between the criminal code and the environmental code, as regards Italian law; with respect to the other jurisdictions analysed, it could integrate §§ 181b and 181c of the Austrian (*öStGB*) and amend § 326 of the German (*dStGB*), incorporating the provision of § 327 Abs. 2 Nr. 3 as well.

It could be formulated as follows:

Trattamento abusivo e pericoloso di rifiuti

(1) Chiunque, in violazione delle disposizioni a tutela dell'economia circolare e di provvedimenti o mandati dell'amministrazione raccolga, trasporti, tratti, valorizzi, traffichi in forma organizzata o smaltisca rifiuti o sorvegli o controlli tali attività nell'ambito di attività produttive, in modo che possa derivarne

- 1. un pericolo rilevante per la vita o una lesione grave all'integrità fisica o della salute di una pluralità numero di persone, o di specie animali e vegetali;*
 - 2. un peggioramento duraturo dello stato di un bacino idrico, del suolo o dell'aria;*
 - 3. un pericolo per l'integrità del territorio fisico;*
 - 4. un vantaggio economico, rilevante in relazione all'attività d'impresa o al volume dei rifiuti trattati, derivante dalla violazione delle prescrizioni amministrative;*
 - 5. una spesa per il ripristino ambientale che superi i cinquantamila euro;*
- è punito con la pena della reclusione da uno a cinque anni.*

(2) Chiunque, in violazione di divieti e delle autorizzazioni definite dall'ordinamento dell'Unione Europea, spedisca rifiuti dall'estero verso il territorio nazionale, da quest'ultimo verso una sede estera, o li faccia transitare attraverso il territorio nazionale, è punito con la pena dell'arresto fino a tre anni e della multa sino ad euro trentamila.

(3) Le pene sono aumentate da un terzo alla metà qualora le condotte di cui ai commi precedenti riguardino rifiuti dichiarati come pericolosi.

(4) Qualora il soggetto attivo agisca colposamente, la pena è ridotta nella misura da un terzo a due terzi.

(5) Il fatto non è punito, qualora gli effetti dannosi sull'ambiente o vantaggi economici possono essere esclusi a causa della quantità o della qualità dei rifiuti.

The same provision, in the German legal system, would require an additional paragraph to address the punishment of attempt, as the relevant statutes do not include clauses extending criminal liability to attempted offences; rather, they provide definitional rules (§ 23 dStGB) that describe the phenomenology of the institution.

In German, it could therefore be formulated as follows:

Un erlaubt umweltgefährdender Umgang mit Abfällen

(1) Wer entgegen einer Rechtsvorschrift zum Schutz der Kreislaufwirtschaft oder einem behördlichen Auftrag oder einem Verwaltungsakt Abfälle so sammelt, befördert, behandelt, verwertet, auf organisierte Weise bewirtschaftet oder beseitigt, diese Tätigkeiten betrieblich überwacht oder so kontrolliert, dass dadurch

- 1. eine Gefahr für das Leben oder für die Gesundheit oder körperliche Sicherheit einer größeren Zahl von Menschen, oder für den Tier- oder Pflanzenbestände in erheblichem Ausmaß,*
 - 2. eine lange Zeit andauernde Verschlechterung des Zustands eines Gewässers, des Bodens oder der Luft,*
 - 3. eine Gefahr für die Unversehrtheit des Gebietes;*
 - 4. ein wirtschaftlicher Vorteil, der in Bezug auf die Geschäftstätigkeit oder die Menge der behandelten Abfälle erheblich ist und sich aus der Verletzung administrativer Anforderungen ergibt;*
 - 5. ein Beseitigungsaufwand, der 50 000 Euro übersteigt,*
- entstehen kann, ist mit Freiheitsstrafe von eins bis zu fünf Jahren zu bestrafen.*

- (2) *Mit der Freiheitsstrafe bis zu drei Jahren wird bestraft, wer Abfälle entgegen einem Verbot oder ohne die erforderliche Genehmigung, die vom Recht der Europäischen Union vorgesehen sind, in den, aus dem oder durch den Geltungsbereich dieses Gesetzes verbringt.*
- (3) *Die Strafen werden von einem Drittel auf die Hälfte erhöht, wenn die in den vorstehenden Absätzen genannten Verhaltensweisen Abfälle betreffen, die als gefährlich eingestuft wurden.*
- (4) *Handelt der Täter fahrlässig, so ist die Strafe um ein Drittel bis zwei Drittel zu mildern.*
- (5) *Die Tat ist dann nicht strafbar, wenn schädliche Einwirkungen auf die Umwelt oder wirtschaftliche Vorteile wegen der geringen Menge der Abfälle offensichtlich ausgeschlossen sind.*
- (6) *In den Fällen der Absätze 1, 2 und 3 ist der Versuch strafbar.*

Finally, this could be the English version:

(1) Whoever, in violation of a legal provision for the protection of the circular economy, or contrary to an administrative order or act, collects, transports, treats, recycles, actively manages in an organized manner, or disposes of waste, or supervises or controls these activities in such a way that it may result in:

1. a danger to life or to the health or physical safety of a large number of people, or to animal or plant populations to a significant extent;
2. a long-lasting deterioration of the condition of a body of water, the soil, or the air;
3. a danger to the integrity of the territory;
4. an economic advantage, significant in relation to the business activity or the quantity of waste treated, arising from the violation of administrative requirements;
5. a disposal cost exceeding €50,000,

shall be punished with imprisonment from one to five years.

(2) Whoever transports waste in violation of a prohibition or without the required authorization provided for under European Union law, within, from, or through the scope of this Act, shall be punished with imprisonment of up to three years.

(3) The penalties provided in the preceding paragraphs shall be increased by one-third to one-half if the behaviors referred to therein concern waste classified as hazardous.

(4) If the offender acts negligently, the penalty shall be reduced by one-third to two-thirds.

(5) The act shall not be punishable if harmful effects on the environment or economic advantages are clearly excluded due to the small quantity of waste.

If the legal system considered does not foresee any general punishability of the attempt, this additional paragraph could be necessary:

(6) In the cases referred to in paragraphs 1, 2, and 3, attempt shall also be punishable.

It could be noted that the proposal does not adhere to the “triad of conduct” presented in Article 3, § 1, letter f) of Directive (EU) 2024/1203, but rather follows the “quadriad” of the repealed directive (with the insertion of “organized traffic” in place of the periphrasis for commercial or intermediary activity), while still insisting on concentrating the offences in a single provision. After all, the “minimum criminal rule” enacted at the European level – unlike those of the delegated law within the Italian legal system – does not provide for forms of “excessive transposition.” Furthermore, in the perspective

adopted here, it seems useful for the criminal provision to “accompany” the phases of waste management.

The closing provision of the system could instead be drafted in the following manner, critically adopting § 330 *dStGB* and consequently proposing its amendment:

Compromissione all’ambiente ed alle sue componenti

(1) *Qualora un fatto doloso che integra i reati previsti dal Titolo VI-bis del codice penale o dal codice dell’ambiente causino la compromissione dell’ambiente o delle sue componenti, l’autore è punito con la reclusione da due a dieci anni.*

(2) *Una compromissione ambientale si verifica quando il fatto commesso:*

1. *causa l’inquinamento di uno o più bacini idrici, dell’aria, del suolo, dell’integrità del territorio in modo tale da che la compromissione non possa essere riparata, o possa esserlo solamente con un impiego di mezzi straordinario, ovvero solo al trascorrere di un periodo minimo di cinque anni;*
2. *causa la morte o le gravi lesioni di una pluralità di esseri umani, oppure di una o più specie di animali o di piante, specie se di un tipo protetto con particolare attenzione;*
3. *compromette l’integrità del terreno, dando luogo a frane e smottamenti.*

(3) *La pena è aumentata da un terzo alla metà quando il fatto sia commesso per brama di profitto.*

(4) *La pena è diminuita da un terzo a due terzi qualora il fatto sia stato commesso colposamente.*

In German, it could therefore be formulated as follows:

(1) *In besonders schweren Fällen wird eine vorsätzliche Tat nach den §§ 324 bis 329 mit Freiheitsstrafe von sechs Monaten bis zu zehn Jahren bestraft.*

(2) *Ein besonders schwerer Fall liegt in der Regel vor, wenn der Täter*

1. *ein Gewässer, den Boden, die Luft oder die Unversehrtheit des Gebietes derart beeinträchtigt, daß die Beeinträchtigung nicht, nur mit außerordentlichem Aufwand oder erst nach einer Zeit von mindestens fünf Jahren behoben werden kann,*
2. *den Tod oder schwere Verletzungen einer Vielzahl von Menschen oder einer oder mehrerer Arten von Tieren oder Pflanzen, insbesondere, wenn sie von einem Typ sind, der mit besonderer Aufmerksamkeit geschützt wird, verursacht, oder*
3. *die Integrität des Bodens gefährdet, sodass Erdbeben und Schlammlawinen verursacht.*

(3) *Die Strafen werden von einem Drittel auf die Hälfte erhöht, wenn der Täter aus Gewinnsucht handelt.*

(4) *Handelt der Täter fahrlässig, so ist die Strafe um ein Drittel bis zwei Drittel zu mildern.*

Then, this could be a model provision in English:

(1) *Where a intentional act constituting the offences provided for under Title VI-bis of the Penal Code or the Environmental Code causes impairment to the environment or its components, the perpetrator shall be punished with imprisonment from two to ten years.*

(2) *Environmental impairment shall be deemed to occur when the act committed:*

1. *causes pollution of one or more water basins, the air, soil, or the integrity of the territory to such an extent that the impairment cannot be remedied, or can only be remedied through the use of extraordinary means, or only after a minimum period of five years;*

2. *causes the death or serious injury of multiple human beings, or of one or more species of animals or plants, particularly if of a protected type deserving special attention;*
3. *compromises the integrity of the land, resulting in landslides or soil subsidence.*
- (3) *The penalty shall be increased by one-third to one-half when the act is committed for profit-seeking purposes.*
- (4) *The penalty shall be reduced by one-third to two-thirds where the act was committed negligently.*

Finally, the provision on active repentance is proposed in a single Italian version, as an interesting model already exists in the German *StGB*. It could be structured in four paragraphs, distinguishing as clearly as possible the cases in which the institution operates as a mitigating circumstance from those in which it operates as a true cause of non-punishability, also dedicating a paragraph to remediation agreements:

- (1) *In relazione ai reati dolosi previsti dal Titolo VI-bis e dal d. lgs. n. 152 del 2006, la pena può essere ridotta da un terzo a due terzi qualora il soggetto attivo si impegni a porre rimedio alla situazione di fatto da lui cagionata prima che si verifichi un danno grave all'ambiente, o al sistema dell'economia circolare.*
- (2) *La punibilità è esclusa in caso di ravvedimento operoso conseguente a reati colposi o in caso in cui l'impegno del soggetto attivo miri al completo ripristino dell'equilibrio ambientale perturbato, o in caso di completa prevenzione volontaria del pericolo.*
- (3) *Qualora il pericolo sia evitato o le circostanze antigiuridicamente cagionate siano attenuate o eliminate a prescindere dall'intervento del soggetto attivo, è sufficiente l'impiego di un impegno attivo e volontario da parte di quest'ultimo al fine di raggiungere tale risultato.*
- (4) *Ai fini dell'identificazione delle misure di ripristino, il giudice può favorire il raggiungimento di accordi con i soggetti che vivono nelle aree riguardate dall'inquinamento causato dalle condotte del soggetto attivo, qualora essi si siano costituiti parte civile.*

Then, this could be the model provision on active repentance in English:

- (1) In relation to intentional offences provided [under Environmental/Criminal code], the penalty may be reduced by one-third to two-thirds where the active subject undertakes to remedy the factual situation caused by them before serious damage occurs to the environment or to the circular economy system.
- (2) Punishability shall be excluded in the case of diligent remediation following negligent offences, or where the active subject's intervention aims at the complete restoration of the disturbed environmental balance, or at the full voluntary prevention of the risk.
- (3) Where the risk is averted, or the unlawfully caused circumstances are mitigated or eliminated independently of the active subject's intervention, it is sufficient that the active subject makes a voluntary and diligent effort to achieve such result.
- (4) For the purposes of identifying restoration measures, the judge may facilitate the conclusion of agreements with the persons residing in areas affected by the pollution caused by the active subject's conduct, provided they have appeared as civil parties.

In conclusion, it may be permitted to express a hope. The guiding idea for legislators at every level should be that, through such a reform, the circular economy – with its fertile corpus of values, innovations, and legal principles – may finally make its entry into the criminal law system, thereby

fostering the rapid development of a branch of law that increasingly appears decisive for the economic and social advancement of developed societies, if not for humanity.

The underlying concept, therefore, is that of an environmental criminal law capable of adopting a system of protection adequate to encompass the multi-faceted harmfulness of criminal activity in the field of waste, with its attendant dangers and damages both to the economy and the environment. This system would render the protective objective more readily identifiable, surpassing a vision framed as a balance between two coessential goods for human development.

A society capable of reusing discarded materials and of targeting those criminal activities that thrive on the supposed opposition of competing needs – thereby proportionally reducing its assault on nature to obtain raw materials – would be a society able to harmonize economic development with the respect for a fundamental good for all humanity, namely the environment. Based on this lesson, it would also be capable of safeguarding other foundational values for the development of organized societies and – above all, from the perspective of the author – of the human person, the true “supreme” legal subject of criminal protection, *“both as an individual and within the social formations in which their personality unfolds”* (Article 2 of the Italian Constitution).