



WASTE LEGISLATION IN GERMANY AND ITALY. TWO DIFFERENT PATHWAYS

di Francesca Rosignoli *

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Abstract

Il contributo che segue offre un quadro complessivo dei diversi approcci e strategie attuate rispettivamente in Germania e in Italia nel settore dei rifiuti. Utilizzando un doppio binario di comparazione che combina, da un lato la prospettiva della filosofia del diritto e dall'altra quella più strettamente giuridica, l'analisi qui proposta evidenzia l'esistenza di due modelli distinti che ruotano attorno a una diversa interpretazione del termine 'responsabilità' e una diversa interpretazione e implementazione della normativa comunitaria sui rifiuti.

1. Introduction

Current waste policies in Germany and Italy can be briefly described as follows. Over the years, Germany has successfully moved beyond the phase of landfilling of waste without further treatment, by providing different ways of recovery and re-use in a manner that the percentage of pre-treated waste going to landfills is about 0,5%¹. Accordingly, landfilling is not a much-debated topic in Germany. By contrast, nuclear waste issue and its complementary political response *Energiewende* (energy transition)², not covered by this analysis, represent a major field of interest among scientists, policymakers and public opinion. Unlike other European countries, still pursuing landfill-

* Dottore di ricerca in "Diritto pubblico, comparato e internazionale" - Dipartimento di Scienze politiche, Università di Roma "Sapienza".

¹ ISPRA- Rapporto Rifiuti Urbani. Edizione 2015.

² German strategy to replace nuclear and fossil energy with renewable energy economy.

based-waste-management-policy, Germany has successfully promoted other kinds of waste management policies based on prevention principle (*Abfallvermeidung*), product responsibility (*Produktverantwortung*) principle, and circular economy (*Kreislaufwirtschaft*). The factors that enable Germany to achieve these results are, above all, coherent legal and administrative provisions, and a high level of technology concerning waste facilities. Those factors led for instance Germany to ban the landfilling of untreated waste already in 2005. Such coherent legal and administrative framework, as well as population's active involvement that will be described in terms of social connection model of responsibility in the following paragraph, have definitely favoured the development of investment in waste sector. Finally, information and awareness campaigns aimed at promoting population's active involvement have also led to a rational and better informed approach to waste-to-energy plants. However, shortfalls in complying with the EU legislation on waste can be well observed. First, Germany is the fifth country in Europe in terms of per capita waste generation and the biggest waste generator (*Abfallverursacher*) in the EU with regard to municipal waste³.

Second, due to incineration overcapacity (*Überkapazität*) and perverse price incentives, a significant amount of waste is incinerated. Such significant use of waste-to-energy plants is, however, not in line with the European waste legislation, being a departure from the priority order of the waste hierarchy (*Abfallhierarchie*) provided for by Article 4 of Directive 2008/98/EC⁴.

Unlike Germany, landfilling is still the most common system of waste management in Italy. In 2013, 38% of waste has been disposed in landfill, which is quite above the EU average of 31% (ISPRA, 2015). Indeed, despite the significant heterogeneity in terms of environmental performances at the level of regions⁵, wastes are still largely considered in terms of 'waste problem', or 'waste crisis' (*emergenza rifiuti*). Among the factors influencing different environmental performances and implementation some scholars observe: (1) different technological and management choices; (2) results from negotiations involving different actors of private as well as of public sector; (3) the successful or unsuccessful cooperation of several parties usually having powerful interests⁶.

In practice, degrees of success to implement effective, efficient and sustainable waste management policy largely depend on the interaction between political (including local authorities), economic, social and cultural actors, in relevant sectors. Among the factors

³ In 2013, municipal waste generation was 617 kg per year per German citizen, which is well above the EU average of 481 kg per year (Eurostat, 2015).

⁴ Article 4 of Directive 2008/98/EC enshrines the following waste hierarchy: (a) prevention; (b) preparing for re-use; (c) recycling; (d) other recovery, e.g. energy recovery; and (e) disposal. As can be observed, priority should be given to waste prevention since energy recovery by the means of waste-to-energy plants and disposal by landfilling are considered the last options in waste legislation and policy.

⁵ For a clear understanding of drivers influencing different waste management performances among Italian provinces see Mazzanti, M., and Montini, A. (2014). Waste Management beyond the North-South Divide: Spatial Analyses of Geographical, Economic and Institutional Dimensions. In *Handbook on Waste Management*. (pp. 1–22). Cheltenham, UK: Edward Elgar Publishing.

⁶ See Cerrina Feroni, G. (2014). Produzione, gestione, smaltimento dei rifiuti in Italia, Francia e Germania tra diritto, tecnologia, politica. Torino: Giappichelli.

affecting efficiency in this sector can be listed: bureaucratic problems associated with difficulties arising from the interpretation of the concept of wastes; the weakness of national policies; few investments in the sector; little legal-administrative coherence; and ineffective control system⁷.

2. Different pathways

As emerged out of the two above mentioned waste policies, in addressing waste-related issues Germany and Italy appear to have taken different pathways in terms of theoretical as well as legal approach. Whereas Germany apparently gives more emphasis on prevention, basing its policies either on the philosophical ‘responsibility principle’ (*das Prinzip Verantwortung*) and precautionary, and prevention principles provided for in Article 191(2) TFEU; Italy has developed an urgency-based model, characterized by collective actions of affected population⁸, and largely grounded on polluter pays principle listed in Article 191(2) TFEU⁹.

In this regard, an interesting perspective for understanding such different approaches in dealing with waste management can be found in the analysis provided by Iris Young's article on Responsibility and Global Justice¹⁰. According to her understanding of the issue, two models based on two different interpretations of the term responsibility can be identified: *social connection model* of responsibility and *liability model*.

By analysing the *social connection model* of responsibility, she lists the following key features which distinguishes it from the liability model: “it does not isolate perpetrators; it judges background conditions of action; it is more forward looking than backward looking; its responsibility is essentially shared; and it can be discharged only through collective action¹¹”.

Indeed, at the core of the social connection model of responsibility there is a different conception of responsibility in relation to injustice conceived as deriving from the participation in the diverse institutional processes that produce structural injustice, rather than from the simple fact of living under a common constitution¹². In such different understanding of the problem, the traditional liability model, which aims at isolating the perpetrators of injustice, does not take into due account the existing connection that agents, to a greater or lesser degree, have to structural injustices.

⁷ It is a well-known fact that organized crime has deeply infiltrated the rubbish collection industry.

⁸ Cf. Maggiolini, M., and Pomatto, G. (2014). *Conflitti ambientali e legittimazione della strategia inclusiva*, p.119; among the numerous cases, see for instance waste crisis case in Campania and citizens' reaction described in Avallone, G. (2014). *Terra di conflitti. Rifiuti, espropriazione e movimenti socio-ecologici in Campania*, p.89; and Malagrotta Landfill case in Rome, as reported in Borrelli, G., and Guzzo, T. (2011). *Tecnologia, rischio e ambiente*, p.83; and Alagia, P., and Iervolino, M. (2011). *Con le mani nella monnezza*. Roma: Reality Book, pp.71-82.

⁹ Law No. 68 dated 22 May 2015 on Eco-crimes confirms such political guidance based on polluter pays principle.

¹⁰ Young, I. M. (2006). *Responsibility and Global Justice: a Social Connection Model*.

¹¹ *Ibid.*, p.160.

¹² *Ibid.*, pp.175-176.

By contrast, the social connection model is based on the idea that injustices take place because of accepted and expected rules as well as conventions of the communities and institutions in which the agents act. In this perspective, the agents contribute to produce unjust outcomes because they are part of a system of interdependent processes of cooperation and competition in which they act to seek benefits and to realize projects¹³. According to this model, judging background conditions of action is crucial in realizing that injustice does not (or at least not always) derive from an event that breaks the normality conceived as the set of just/ordinary processes, rather it often stems from such normal and accepted background conditions of action which are not morally acceptable. For this reason, social connection model gives more emphasis to forward looking issues:

the injustices produced through structures have not reached a terminus, but rather are ongoing. The point is not to blame, punish, or seek redress from those who did it, but rather to enjoin those who participate by their actions in the process of collective action to change it¹⁴.

It follows that, not only the agents judged as perpetrators (if any) are responsible, but “all those who contribute by their actions to the structural processes producing injustice share responsibility for these harms¹⁵”. Although partially, each agent has played a role in producing harmful outcomes and since such specific part of responsibility cannot be easily identified, the responsibility must be considered as shared. As a result, the only way to reform the structures which create such unjust outcomes is the organization of collective action.

The structural processes can be altered only if many actors in diverse social positions work together to intervene in them to produce different outcomes.

Responsibility from social connection, then, is ultimately political responsibility¹⁶.

Unlike the social connection model, which promotes a political responsibility emphasizing forward looking issues, the *liability model* assigns responsibility by using the traditional legal reasoning to establish guilt or fault for a harm.

Such fault or blame model aims at isolating and punishing the agent judged liable for a harm, even if the agent did not intend or was unable to control the outcome¹⁷, when actions of such particular agent can be shown as causally connected to the circumstances for which responsibility is sought¹⁸.

¹³ Ibid.

¹⁴ Ibid., p.178.

¹⁵ Ibid., p.179.

¹⁶ Ibid.

¹⁷ Ibid., p.116.

¹⁸ Ibid., p.172.

Under the liability model, obligations of justice derive from living under a common constitution within a single political community, rather than from being part of a system of interdependent processes of cooperation and competition across the globe.

As a consequence, the agent has to be punished for having committed an action that breaks the normality - conceived as the set of just/ordinary processes. It follows that, the liability model is primarily backward looking because of the major importance given to the punishment of a particular agent once found responsible for a *past* (harmful) event which has violated the obligations of justice provided by the Constitution.

In identifying such different models, the analysis provided by Young helps to frame the different pathways taken by Italy and Germany. Indeed, whereas the social connection model better reflects German strategy to deal with waste management based on an *ex-ante* regulation, the liability model seems more in line with the Italian approach which conversely favours an *ex-post* regulation.

The following paragraphs provide a detailed analysis concerning those two approaches with a particular focus on the aforementioned kind of regulations including their impact.

3. German Approach

As discussed above, the German approach to waste management, can be seen through the lens of the social connection model of responsibility.

The cultural background of such social connection model of responsibility, indeed, is rooted in the idea of the scientific uncertainty related to environmental issues. The unforeseen impacts of techno-scientific advancement on social relations, human health and the environment entail the need of a governance able to address structural injustices and inequalities¹⁹. In Germany, such lack of sufficient scientific and societal knowledge on environmental issues has generated the need of involving all the actors having both personal and shared responsibility in the decision-making process. The German answer to environmental challenges characterized by such scientific uncertainty has been, therefore, a major emphasis on the precautionary and prevention principles.

Unlike other positions arguing that the precautionary principle will stifle innovation or compromise scientific research²⁰, the German approach largely supports the *Vorsorgeprinzip* (precautionary principle) which is conceived as an action principle: “a guide for policy-makers and a means for persuading society to take the future into account²¹”.

The role of scientists is particular crucial in the earlier stages of policy-making, since “science appears to function more as a provider of threat perceptions, and hence as legitimation for *Vorsorge*²²”.

¹⁹ Pellizzoni, L., and Ylönen, M. (2008). Responsibility in Uncertain Times: An Institutional Perspective on Precaution, p.51.

²⁰ O’Riordan, T., Cameron, J., and Jordan, A. (Eds.). (2001). *Reinterpreting the Precautionary Principle*. London: Cameron May, p.53.

²¹ Ibid., p.38.

²² Ibid., p.53.

Accordingly, looking at the German experience is important not only because it was the originator of the idea of *Vorsorge*, but also because of its strong influence on the EU environmental legislation.

As pointed out by Moltke²³, the precautionary principle came into use in the European directives as the translation of the German *Vorsorgeprinzip*, one of the foremost core principles of the German socio-legal tradition of democratic socialism in the 1930's, based on the concept of good household management²⁴. However, as Boehmer Christiansen argues, the English translation of the term *Vorsorge* as 'foresight planning' fails to meet its more complex meaning "that combines caution with caring for the future, as well as providing for it²⁵". Such sustainability dimension of the precautionary principle was indeed neglected by EU leaders who rather preferred to promote technological advancement and innovation. Although included in the Maastricht Treaty, as it is in the Rio Declaration of Principles, its actual political influence remains actually very marginal²⁶.

By contrast, Germans interpret precaution as an instrument to stimulate both federal participation in the social market economy, and "fresh markets in low waste and environmentally restoring technologies aimed at conserving energy, reusing waste materials, cleaning old waste dumps, restoring contaminated land and improving the monitoring of any changes in environmental conditions²⁷". In line with this interpretation, the *Vorsorgeprinzip* was used not only to promote environmental protection, but also to encourage sustainable development.

First traces of its application to environmental policy can be found in the 1970s when the first provisions to prevent harmful impacts on air quality were enacted. Part of a broader scope of industrial restructuring and modernisation, such measures were to be initially taken in West Germany under the guidance of precautionary principle with the hope to apply the same process to East Germany in a second time²⁸.

In this regard, it is worth mentioning the clean air legislation adopted by the Parliament in 1974 aimed at preventing long term and possibly irreversible habitat damage associated with acid rain and photochemical smog²⁹. Also, by incorporating the *Vorsorgeprinzip* as a general guideline for administrators in their negotiations with polluters, the 1976 Act enshrined the entry of the *Vorsorgeprinzip* as a cornerstone of German environmental policy³⁰.

Finally, the 1984 Report from the Government to the Federal Parliament on the Protection of Air Quality provides the official definition of *Vorsorge*, that Boehmer Christiansen translates as follows:

²³ Von Moltke, K. (1987). The *Vorsorgeprinzip* in West German Environmental Policy. In Twelfth Report of the Royal Commission on Environmental Pollution (p. 57). H.M. Stationary Office.

²⁴ O'Riordan, T., Cameron, J., and Jordan, A. (Eds.). (2001). *Reinterpreting the Precautionary Principle*, p.16.

²⁵ Ibid., p.38.

²⁶ Ibid., p.23.

²⁷ Ibid.

²⁸ Ibid., p.32.

²⁹ Ibid., p.36.

³⁰ Ibid.

the principle of precaution commands that the damages done to the natural world (which surrounds us all) should be avoided *in advance* and in accordance with opportunity and possibility. Vorsorge further means the early detection of dangers to health and environment by comprehensive, synchronised (harmonized) research, in particular about cause and effect relationships..., it also means acting when conclusively ascertained understanding by science is not yet available. Precaution means to develop, in all sectors of the economy, technological processes that significantly reduce environmental burdens, especially those brought about by the introduction of harmful substances³¹.

In brief, six key concepts enshrined in the precautionary principle can be identified:

(1) *preventative anticipation* (take action in advance of scientific proof); (2) *safeguarding of ecological space* (refrain from undesirable resource use); (3) *proportionality of response or cost-effectiveness of margins of error* (questioning conventional cost benefit analysis); (4) *duty of care, or onus of proof on those who propose change* (formal duties of environmental care, and strict liability for any damage); (5) *promoting the cause of intrinsic natural rights* (the legal notion of ecological harm includes also the protection of natural processes essential for all life on earth); (6) *paying for past ecological debt* (precaution is essentially forward looking but it can also be interpreted in reverse for claiming a compensation for past errors of judgement based on ignorance or an unwillingness to be cautious by taking responsibility for the future³²).

However, notwithstanding its indubitable importance, the *Vorsorgeprinzip* is just one of five principles of German environmental policy, such as *Verursacherprinzip* (polluter pays principle), *Gemeinlast Prinzip* (common burden principle), *Wirtschaftliche Vertretbarkeit* (principle of proportionality in cost and gain), *Kooperation* (consensus), which jointly contribute to shape German environmental policy by counteracting and overruling precaution.

Indeed, a purely precautionary environmental policy could have perverse effects, such as to create areas in which scientific experimentation is inhibited, so as to encourage the relocation, and create global inequalities. In doing so, scientific experimentation would be carried out where precautionary principle is not applied and environmental standards are lower³³.

In this context, German waste legislation (*Abfallrecht*) certainly represents a good example of such wise combination of the aforementioned principles. Whereas precautionary, and above all prevention principles are used to justify measures to prevent the generation of waste at source, such as *Verpackungsverordnung* (Packaging Ordinance), *Kreislaufwirtschaftsgesetz* (Germany's Waste Management Act), including implementations of *Produktverantwortung* (responsibility for the product), provisions enacted to combat environmental crimes such

³¹ Ibid., p.37.

³² Ibid., pp.17-18.

³³ In this regard, a typical example is the illegal trafficking of waste electrical and electronic equipment (WEEE) in developing countries.

as *Gesetz zur Bekämpfung der Umweltkriminalität* and *Strafrechtsänderungsgesetz* (Law of 6 December 2011) seem to give more emphasis on polluter pays principle.

Nevertheless, *Vorsorge* represents a philosophical principle as well as a crucial instrument of persuasion “to justify the setting of ambitious environmental targets that may become the responsibility of every citizen, industrialist and administrator³⁴”.

This particular concept of responsibility has also permeated the waste legislation in Germany.

The important role played by *Produktverantwortung* principle in waste management as well as its numerous areas of application, e.g. packaging ordinance (*Verpackungsverordnung*), Ordinance on the Disposal of End-of-Life Vehicles (*Altfahrzeug-Gesetz*), Waste Oil Ordinance (*Altölverordnung*), Waste Wood Ordinance (*Verordnung über die Entsorgung von Altholz*), are evidence of that.

Evolved out of the most German influential literature, such as Jonas’ *Prinzip Verantwortung* (Responsibility Principle) and Weber’s *Verantwortungsethik* (the ethic of responsibility), the meaning of responsibility within German waste legislation encompasses numerous elements listed by Young as key features of the social connection model of responsibility. In particular, by involving all the actors having both personal and shared responsibility in the decision-making process, and by giving more relevance to the precautionary and prevention principles, German environmental law can be considered as an example of a modern legal system based on prevention and risk assessment definitely more forward-looking than backward-looking.

For better understanding the German approach, a deeper analysis from both legal and philosophy of law perspectives is therefore required.

From a legal perspective, the main idea of precautionary principle that policymakers should give priority to prevent adverse impacts rather than redressing or remediating them after they have occurred³⁵, for instance by providing firms with an incentive to meet a desired (environmental) standard of “care” (thresholds), it is usually correlated to an *ex-ante* regulation.

As argued by Shavell³⁶, having regard to environmental policies, two different instruments of environmental cost internalisation can be identified: *ex-ante* regulation and *ex-post* legal intervention.

As for the *ex-ante* regulation that will be discussed below to describe the German approach, the key features are the following: (1) provision of economic incentives for costs of monitoring care to prevent accidents by a regulator (agency) that enforces a verifiable standard of precautionary effort for the firm; (2) imposition of sanctions when failures in

³⁴ O’Riordan, T., Cameron, J., and Jordan, A. (Eds.). (2001). *Reinterpreting the Precautionary Principle*, p.55.

³⁵ Montague, P. (1998). The Precautionary Principle. *Rachel’s Environment and Health News*, 586(19); cf. Turner, R. L., and Wu, D. P. (2002). Environmental justice and environmental racism: an annotated bibliography and general overview, focusing on u.s. literature, 1996–2002, p.11.

³⁶ Shavell, S. (1984). A model of the optimal use of liability and safety regulation. *RAND Journal of Economics*, 15(2), 271–280. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=5159907&site=ehost-live&scope=site>.

meeting predefined standards of care occur³⁷. Examples of this kind of regulation are measures such as setting of standards, imposition of Pigouvian taxes, sale of permits³⁸.

Among them, of particular importance is the setting of standards by an agency that requires the firms to hold preventive conducts when their risky activities could cause accidents and harms. Such standards are set out by making use of statistics indicating the danger of certain conducts in terms of an increased probability of accidents³⁹. Statistics, however, cannot completely remove existing information asymmetries between agencies and firms. Due to their different know-how, a proper assessment of the level of risks of certain industrial activities (by agencies) can become very problematic. Unlike agencies, indeed, firms better know their conducts and activities, the costs of preventive measures, and the value of the potential damage⁴⁰. A further weakness of an *ex-ante* regulation is that agencies can be subjected to significant political influence and pressure, as it is the so-called *captured regulator* phenomenon⁴¹. This latter is particularly relevant considering difficulty in observing/controlling agencies' conducts when monitoring firms' compliance with predefined standards of care⁴². Finally, by giving more relevance to compliance with such standards of care rather than monitoring accidents, deterrence effect under a pure *ex-ante* regulation is definitely lower than under an *ex-post* regulation, since no liability is imposed for harm actually done⁴³.

Accordingly, since the government neither monitors accidents, nor observes whether or not remediation has taken place, it can offer firms no incentive to remediate⁴⁴.

Notwithstanding such weaknesses, in support of an *ex-ante* regulation numerous advantages can be listed as follows: (1) low government monitoring effort⁴⁵; (2) relatively low-cost since "it can be less costly to monitor care than to monitor the occurrence of accidents, whether because accidents are hard to detect or because it is hard to assign responsibility for harm⁴⁶"; (3) efficient exploitation of enforcement resources "by *always* sanctioning negligent conduct (when a firm is monitored) rather than only sanctioning such

³⁷ Innes, R. (2004). Enforcement costs, optimal sanctions, and the choice between ex-post liability and ex-ante regulation. *International Review of Law and Economics*, 24(1), p. 30; cf. Hiriart, Y., Martimort, D., and Pouyet, J. (2004). On the optimal use of ex ante regulation and ex post liability. *Economics Letters*, 84(2), p. 231.

³⁸ Porrini, D. (2001). Regolazione ex ante, regolazione ex post e autoregolazione: il caso ambientale. *Liuc Papers*, 93(3), p.1; concrete examples of initiatives ascribable to the ex-ante regulation in Europe are to be found in the establishment of EEA (European Environmental Agency). Its tasks are, indeed, to provide relevant and comparable information to the Member States or to the Community aimed at developing measures to protect the environment; to evaluate the results of these measures; to provide information on the environment. However, it has little influence on Community environmental measures.

³⁹ Porrini, D. (2001). Regolazione ex ante, regolazione ex post e autoregolazione: il caso ambientale. *Liuc Papers*, 93(3), p.5.

⁴⁰ Ibid., p.7.

⁴¹ Ibid., p.4.

⁴² Ibid., p.6.

⁴³ Innes, R. (2004). Enforcement costs, optimal sanctions, and the choice between ex-post liability and ex-ante regulation. *International Review of Law and Economics*, 24(1), pp.35; 40.

⁴⁴ Ibid., p.45.

⁴⁵ Ibid., pp.31; 39.

⁴⁶ Ibid., p.31.

conduct when an accident occurs⁴⁷"; (4) small government investments in monitoring allow to achieve requisite care⁴⁸.

An optimal use of the *ex-ante* regulation occurs when (1) the probability of free detection is smaller, (2) accident harm is higher, and (3) accident risk is lower⁴⁹.

Having briefly described shortfalls as well as advantages of the *ex-ante* regulation, one can conclude that German approach to waste management is more likely to be framed through this kind of regulation, since its key features can be found in many aspects of German waste legislation. Particularly, monitoring care to protect environment as well as public health by setting environmental quality standards is one of the major strengths of the German strategy to deal with waste management. The core idea of preventing the generation of waste at source is also in line with the prevention-based-model of the *ex-ante* regulation.

However, as said above regarding the major emphasis on prevention and precautionary principles, labelling the German strategy to waste management as a pure *ex-ante* regulation it would be a mistake. Existing legislation based on polluter pays principle against environmental crimes, in fact, contributes to balance and to adjust its lower deterrent effect, by providing penalties concerned with the unauthorised handling of waste⁵⁰.

Furthermore, waste sector is also not regulated by an independent authority such as a regulator *sensu stricto*. In Germany, indeed, the monitoring and surveillance of waste disposal is a matter of the federal states (*Bundesländer*). Each state (*Bundesland*) has its own national law (*Landesgesetz*) on waste. This *Landesgesetz* supplements the *KrWG*⁵¹. This means that the *Landesgesetz* cannot depart, but can only regulate all subject matters that can be left open in *KrWG*.

This includes the fee collection. The *Landesgesetz* establishes how waste management companies have to determine fees and charges. It follows that, the respective companies fix the fees. If the company fails to comply with the legislation, the public authority (*die Behörde*) may request a possible amendment thereof. However, fees and charges shall not be approved in advance.

Under German law, the regulation of the market (*Marktüberwachung*) is considered as unnecessary, because § 17 *KrWG* lays down sufficiently clear provisions concerning which tasks are to be carried out by public municipal enterprises (*öffentliche kommunale Unternehmen*) and which tasks are to be carried out by private waste management companies (*private Abfallentsorgungsunternehmen*).

Accordingly, the aim of this analysis is not to classify German approach as an example of pure *ex-ante* regulation, rather to show its main features in the light of the two major kinds of regulation. Having examined that the majority of its features are more likely to be framed

⁴⁷ Ibid.; see also p.39: "the incentive advantage of ex-ante regulation derives from penalizing negligent behaviour even when an accident does not occur".

⁴⁸ Ibid., p.31.

⁴⁹ Ibid., p.43.

⁵⁰ See section 326 of the chapter 29 of the German Criminal Code and the analysis provided in chapter 3 of this dissertation.

⁵¹ 2012 Waste Management Act (Kreislaufwirtschaftsgesetz – *KrWG*).

by an *ex-ante* regulation, it is possible to conclude that, from a legal perspective, German approach seems ascribable to an *ex-ante* regulation, although traces of *ex-post* liability-based provisions can be found in chapter 29 of German penal Code concerned with the unauthorised handling of waste and despite the absence of a regulator *sensu stricto*.

In turn, having in mind the philosophy of law perspective, the German legal approach to waste management, mainly (but not exclusively) based on preventive and precautionary principles and ascribable to the *ex-ante* regulation, can be associated with entitlements approach.

The main idea of a precautionary principle-based-strategy that policymakers should give priority to prevent adverse impacts by providing firms with economic incentives to meet environmental standard of ‘care’ (thresholds), rather than monitoring accidents, is usually correlated to entitlements approach, such as Nussbaum's version of Capabilities Approach. The main reason for associating Nussbaum's theory of justice with a precautionary principle-based-strategy and therefore to an *ex-ante* regulation, is to be found in the crucial role played by the concept of deliberation in Nussbaum's theory. Indeed, according to Nussbaum, a deliberative process involving the public as well as legislative and judicial actors, aims at removing tragic trade-offs⁵² and establishing appropriate threshold levels of the central human functional capabilities.

Elements like the setting of threshold levels (environmental standards), shared responsibility achieved by a deliberation process which involve the major stakeholders, are a substantial part of the German strategy aimed at anticipating conflicts by taking preventive measures (on the base of *Vorsorgeprinzip*) and involving all the actors having both personal and shared responsibility in the decision-making process.

However, despite numerous similarities, the ambitious goal of Nussbaum's theory, i.e. establishing minimum standards to achieve just outcomes (entitlements), would require changes both in procedures and in distribution of benefits and hazards: a goal only partially achieved by Germany. While many efforts for changing procedures within German legislation can be observed, very little has been done to ensure concrete changes in the distribution of environmental benefits and hazards.

This shortfall of German legislation is more likely to reflect the major limitation of procedural justice approach: the ‘mistaken’ assumption that fair procedures will automatically ensure the equal distribution of environmental burdens and benefits.

4. Italian Approach

Unlike Germany, Italian approach to waste management can be better framed through the liability model: a particular kind of legal reasoning based on fault or blame. In this view,

⁵² See Nussbaum, M. C. (2000). The Costs of Tragedy: Some Moral Limits of Cost-Benefit Analysis, p. 1027; see also Nussbaum, M. C. (2011). Capabilities, Entitlements, Rights: Supplementation and Critique, p.27; cf. Holland, B. (2008). Ecology and the Limits of Justice: Establishing Capability Ceilings in Nussbaum's Capabilities Approach, p.416.

its primary aims are to isolate the one or ones liable (polluters) from the others; to restore normality (background situation conceived as morally acceptable, if not ideal) or evaluate harm that deviates from the baseline circumstance; to assign responsibility for a past action or after an accident occurs (backward-looking sanctions)⁵³.

All these elements can be actually found in the Italian approach to waste management, generally described by media, politicians, academics and environmentalists by the expression ‘waste disposal crisis’ (*emergenza rifiuti*)⁵⁴. The so-called *stato di emergenza ambientale* (State of Environmental Emergency) declared several times and in different regions of Italy⁵⁵, indeed, makes the Italian approach ascribable to a conflict-based strategy which rarely takes into due account either scientists and public’s voices during the earlier stages of policy-making⁵⁶.

Rather than preventing conflicts by involving the major stakeholders in the decision-making process, as Germans do, the Italian approach is characterized by the centrality of the conflict due to a top-down exercise of power, which disempowers local communities in decision-making procedure⁵⁷. The lack of procedures ensuring a meaningful involvement as well as participation of concerned communities and scientists (or mechanisms aimed at disempowering participation procedures) has generated the strong activism of grassroots movements which often consider conflicts as the only way of resistance and participation⁵⁸.

The cultural background of such centrality of conflict can be seen in the light of the *Italian theory* proposed by Esposito⁵⁹. Having examined the influence of Machiavellian republicanism on the emphasis on struggle within the Italian cultural tradition, Esposito indicates the ‘immanentization of antagonism’, i.e. the immanent relation between struggle and order, among the three paradigmatic theoretical axes of the specificity of Italian thought.

⁵³ Young, I. M. (2006). Responsibility and Global Justice: a Social Connection Model, pp.176-178.

⁵⁴ See among others Fortini, D., and Corona, G. (2009). Ormai sono venti anni che il Paese è in emergenza rifiuti. *Meridiana*, (64), 41–69. Retrieved from <http://www.jstor.org/stable/23204236>

⁵⁵ See among the others, regions such as Campania, Lazio, Puglia, Calabria, and Sicilia.

⁵⁶ Cf. Caspretti, S. (2013). La strategia del consenso nel caso della discarica di Peccioli. *Partecipazione e Conflitto*, 6(1), pp.115-116; the only examples of provisions governing public’s involvement in decision-making process are laws on participation of the Tuscany region (by Regional Law 69/2007 as repealed by Regional Law 46/2013) and of the Emilia Romagna region (by Regional Law 3/2010); the only case described as an exception to the marginal role of scientists and citizens in decision-making concerns the case of Gronda railway in Genova analysed in Maggiolini, Mi., and Pomatto, G. (2014). Conflitti ambientali e legittimazione della strategia inclusiva, pp.125-128.

⁵⁷ See Maggiolini, M., and Pomatto, G. (2014). Conflitti ambientali e legittimazione della strategia inclusiva, pp.119-120; Di Nucci, M. R. (2015). Breaking the Stalemate. The Challenge of Nuclear Waste Governance in Italy, p.316.

⁵⁸ The limited range of existing formal procedures of democratic participation have been frequently disempowered by top-down exercise of power. In this regard, see for instance the special authority, i.e. the Committee for the Waste Emergency (Commissariato di governo per l'emergenza rifiuti), created in Campania region to solve the waste crisis. The regional waste emergency declared by the government in 1994 endured indeed until 2009 (about 20 years). In this regard see Armiero, M., and D’Alisa, G. (2012). Rights of Resistance: The Garbage Struggles for Environmental Justice in Campania, Italy, p.59; and Avallone, G. (2014). Terra di conflitti. Rifiuti, espropriazione e movimenti socio-ecologici in Campania, pp. 78; 86.

⁵⁹ Esposito, R. (2012). *Living thought: The origins and actuality of Italian philosophy*. Stanford, California: Stanford University Press.

Actually, a major strength of participative democracy related to environmental issues is exactly the role of the communities involved.

The creation of numerous homeowners' associations, then became local groups of NGOs like Legambiente, citizens' networks and other environmental associations, confirms a particular kind of participation that, in the absence of any meaningful involvement of the citizens in the policymaking, occurs in conflicts. Conceived as the inevitable clash of interests within and among diverse competing political forces, such conflicts, enacted by grassroots movements in order to safeguard democracy, reflect a practical development of the EJ by a bottom-up process.

Indeed, although excluded from decision-making process and political arena, the affected population plays an important role by the means of collective actions (e.g. self-help initiatives).

In this regard, of particular importance is also the marginal role of scientists in policy-making⁶⁰.

The Italian answer to the aforementioned question of scientific uncertainty on environmental issues has been to promote technological advancement and economic growth by rarely balancing it with precautionary principle⁶¹.

Characterized by a major emphasis on the polluter pays principle, at the core of the Italian 'liability model strategy' there is the assignment of liability to the perpetrators (when their conducts are found causally linked to harm) in order to seek redistribution or compensation for accidents or damages. As a result, the primary aim is not about preventing harm/accident, but about assigning liability for it.

Despite the lack of (successful) implementation of precautionary and prevention principles, as it is in Germany, looking at the Italian experience is likewise important because of its significant influence on the EU environmental legislation for improving environmental standards.

Seveso disaster, for instance, gave impulse to numerous scientific studies and standardized industrial safety regulations in order to provide a new system of common industrial regulation: European Community's Seveso Directive(s). In doing so, a new EC-wide regulatory framework for ensuring the safety of hazardous installations replaced the fragmented national legislations for managing industrial safety.

Based on preventive action, public participation, public information, and precautionary principles, the so-called 'Seveso Directives' had the merit to provide a legal framework for governing major accident hazards in Europe. The impact of Seveso disaster on European legislation confirms that care standards can be also improved by enacting an ex-post legal

⁶⁰ For a critical examination of the marginal role of scientists in policy-making see among the others Armiero, M. (2011). *A Rugged Nation: Mountains and the Making of Modern Italy*, p.174; Caspretti, S. (2013). La strategia del consenso nel caso della discarica di Peccioli. *Partecipazione E Conflitto*, 6(1), pp.115-116. For a critical analysis concerning the relationship between expertise and politics see Pellizzoni, L. (2011). The politics of facts: Local environmental conflicts and expertise. *Environmental Politics*, 20(6), 765–785.

⁶¹ See chapter 1 of this dissertation.

intervention. Precaution, including higher standards of care, can be (paradoxically) achieved thanks to the greater deterrence effect of the ex-post regulation.

As for the national legislation, Italy has recently reaffirmed its favour for a polluter pays principle as well as an ex-post legal intervention strategy by the Law 22 May 2015, No. 68 introducing first provisions dealing with crimes against environment in Italian Criminal Code.

Environmental restoration/rehabilitation, land reclamation and remedy to environmental damages to be carried out by polluters are instruments designed, on the one hand, for redressing and compensating for the damage caused to the environment, and, on the other hand, for discouraging environmentally damaging behaviours. The optimal implementation of such ex-post liability regime (provided by Law No. 68) should stimulate a sort of *over-care*: due to uncertain (or unknown) legal standards used by the judge for assigning environmental liability, agents are encouraged to adopt a level of prevention even higher than that they would have chosen according to least-cost criteria.

It follows that, the *over-deterrence* of diligence standard established by an *ex-post* regulation can stimulate agents' *over-care*, achieving care standards even higher than those achieved under an *ex-ante* regulation⁶².

The resulting approach embodies, therefore, a different understanding of the term 'responsibility' definitely closer to its Latin origin from the verb 'respondere' (to answer), mainly used at juridical level "to justifying one's own conduct in front of a judge"⁶³.

Rather than a shared, political responsibility aimed at reforming structural processes producing injustice through collective action, this more traditional interpretation of the term refers to the possibility of tracing an action back to an agent as its causal factor⁶⁴ and it is used as a legal instrument of deterrence from potentially agents' harmful conducts.

In other words, responsibility can be imputed before (Germany) or after (Italy) a certain situation (accident) has actually materialised. Such different interpretation of the term has given rise to different thinking and policies.

Therefore, in the same way as it has been done for examining the German approach, the Italian strategy to waste management will be analysed by taking into account both legal and philosophy of law perspectives.

From a legal perspective, the main idea of polluter pays principle that policymakers should impose sanctions that force polluters to pay for the costs of adverse impacts they have caused (rather than preventing them from being produced in the first place⁶⁵), it is usually correlated to an *ex-post* regulation. This different instrument of environmental costs internalisation portrays an environmental policy based on the following key features: damages resulting from an accident are to be internalized by engaging a lawsuit in which a

⁶² Porrini, D. (2001). Regolazione ex ante, regolazione ex post e autoregolazione: il caso ambientale, p.10.

⁶³ Pellizzoni, L. (2004). Responsibility and Environmental Governance. *Environmental Politics*, 13(3), pp.546-547.

⁶⁴ Ibid., p.546.

⁶⁵ Faber, D. (1998). *The struggle for ecological democracy: environmental justice movements in the United States*. (D. Faber, Ed.) *Democracy and ecology*, p.14.

judge tries to discover the true harm level⁶⁶; responsibility for environmental damage is to be assigned by the *judge*.

Problems arising from this kind of regulation are largely related to existing information asymmetries as the judge is not always able to correctly determine if firms have (not) complied with some norms or have (not) met predefined standards of care⁶⁷. Sufficient evidence, numerous variables, and responsibility are not easily verifiable ex-post by a third party. Indeed, imputing the responsibility after a certain situation, such as an accident, has occurred can be particular hard for the judge because of the so-called *hindsight bias effect*: discrepancy between diligence standard established ex-post and the one established ex-ante⁶⁸.

In the European legal context, such discrepancy has been adjusted by providing for a strict liability based on the polluter pays principle according to which compliance with diligence standards established ex-ante cannot entirely exonerate the polluter from its responsibility⁶⁹.

However, the lack of a public fund for decontamination operations has made this adjustment ineffective.

Further shortfalls of the *ex-post* regulation stem from: (1) little motivation of victims for environmental harms to take legal actions as individuals against industries which are liable to damage⁷⁰; (2) difficulty in isolating the perpetrator/polluter; (3) difficulty in proving the causal link; (4) trial delays and high legal costs (e.g. for advocates and experts)⁷¹; (5) possible insolvency of the polluter (this could be adjusted by enacting corrective measures such as compulsory insurance, lender's liability, financial responsibility⁷²).

Notwithstanding the above mentioned limitations, essential incentive advantages of ex-post regulation over ex-ante regulation are: (1) it can be more economically attractive to sanction conducts only when an accident occurs and if/when the lawsuit is undertaken (rather than by always sanctioning negligent conduct); (2) it can achieve a given level of deterrence with a lower enforcement cost⁷³.

By looking at the shortfalls as well as the advantages of *ex-post* regulation, it is possible to conclude that Italian approach to waste management is more likely to be framed through this kind of regulation. Despite the significant heterogeneity in terms of environmental performances at the level of regions⁷⁴, landfilling is still the most common system of waste management in Italy. According to such landfill-based-waste-management-policy, wastes

⁶⁶ Hiriart, Y., Martimort, D., and Pouyet, J. (2004). On the optimal use of ex ante regulation and ex post liability, p. 231.

⁶⁷ Porrini, D. (2001). Regolazione ex ante, regolazione ex post e autoregolazione: il caso ambientale, p.7.

⁶⁸ Ibid., p.6.

⁶⁹ See White Paper on environmental liability COM (2000) 66 final 9 February 2000, p.19; cf. Porrini, D. (2001). Regolazione ex ante, regolazione ex post e autoregolazione: il caso ambientale, p.14.

⁷⁰ Porrini, D. (2001). Regolazione ex ante, regolazione ex post e autoregolazione: il caso ambientale, p.3.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Innes, R. (2004). Enforcement costs, optimal sanctions, and the choice between ex-post liability and ex-ante regulation, p.40.

⁷⁴ See Mazzanti, M., and Montini, A. (2014). Waste Management beyond the North-South Divide: Spatial Analyses of Geographical, Economic and Institutional Dimensions. In *Handbook on Waste Management*. (pp. 1–22). Cheltenham, UK: Edward Elgar Publishing.

are still largely considered as disaggregates that are to be distributed. In other words, wastes are commonly treated as externalities that are to be internalized. From this perspective, environmental issues have to be addressed by applying taxes and subsidies that force polluters to pay for the negative impacts of their activities on the environment.

Yet, this short-sighted approach which ignores the importance of waste as potential resources has caused a growing number of waste crisis cases resulting in national and European legal actions.

In this regard, the situation of non-compliance of the regional waste management system in Campania (Italy) with the EU legislation has become the symbol of the failure of this approach, being object of the action introduced by the Commission against Italy before the Court (Case C-297/08). Thus, according to the Court⁷⁵, Italian Republic has failed to adopt, for the region of Campania, all the necessary measures to ensure that waste is recovered or disposed of without endangering human health and the environment; and to prohibit the abandonment, dumping or uncontrolled disposal of waste.

The major limitation of such an approach, ascribable to the liability model, is that the harm or circumstance for which we seek to hold agents responsible is not an isolable action or event that has reached a terminus, rather is ongoing⁷⁶. It follows that, even when found and punished the polluter, irreversible damages caused to human health or the environment may not be remedied.

In turn, from a philosophy of law perspective, this strategy can be easily associated with Rawls' theory of justice – which gives more relevance to the distribution of social primary goods without including a fair allocation of environmental goods and burdens.

Whereas green politics aims at reducing aggregates (for instance by avoiding the waste production at source), a Rawlsian approach is primarily concerned with the distribution of disaggregates.

As argued by Holland,

as such, environmental problems are commonly treated merely as cases in which externalities need to be internalized. For example, in his original formulation of *A Theory of Justice*, John Rawls refers to the environment as a special kind of economic good; one that is public in nature, and therefore subject to the dangers of underproduction and unsustainability. From this economic perspective, to address environmental problems we merely need to apply taxes and subsidies that force polluters to pay for the (true) social cost of their negative impacts on the environment.⁷⁷

⁷⁵See Judgment of the Court (Fourth Chamber) of 4 March 2010 in Case C-297/08: “the Commission of the European Communities claims that the Court should declare that, by failing to adopt, for the region of Campania, all the measures necessary to ensure that waste is recovered or disposed of without endangering human health and without harming the environment and, in particular, by failing to establish an integrated and adequate network of disposal installations, the Italian Republic has failed to fulfil its obligations under Articles 4 and 5 of Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on waste (OJ 2006 L 114, p. 9)”.

⁷⁶Young, I. M. (2006). *Responsibility and Global Justice: a Social Connection Model*, p.122.

⁷⁷Holland, B. (2008). *Ecology and the Limits of Justice: Establishing Capability Ceilings in Nussbaum's Capabilities Approach*, p.404.

As a result, the greater relevance given to the development conceived as economic growth to the purpose of ensuring a certain amount of social primary goods seems to be in line with an approach which largely favours a landfill-based-waste-management-policy as well as the technological advancement even if at the expense of precaution.

Despite that predominant approach, structural inefficiencies, too complex bureaucracy, too many long-winded regulations and misaligned national policies, including local maladministration and infiltration by organised crime into the entire waste cycle and into the public administration, have led to envisage a different model encompassing criminal law in addition to administrative law.

In this perspective, the scope of this model goes beyond a sole focus on environmental protection from the perspective of administrative law. Rather, it aims at including the perspective of criminal law, by introducing a specific Title in Criminal Code on *Crimes against the Environment*.

In doing so, primary aim of this renovated approach is the fight against the delay in implementing proper waste-management policies and legislation, as well as the low public awareness regarding the threat posed by eco-crimes.

For this reason, Law No. 68 on Eco-crimes represents a radical change in the traditional conception of the environmental law as a mere branch of administrative law. In the long-term, this change might hopefully replace an approach that conceives waste as problems as well as disaggregates to be distributed, with an approach which considers waste as potential resources, by (1) ushering a new phase of waste reduction at source⁷⁸; and (2) scaling up best practices and good environmental performances already in place in some Italian towns⁷⁹.

5. Conclusions

The analysis provided above shows that German approach to waste management has particularly emphasized the *Vorsorgeprinzip* (precautionary principle) and prevention principle, by enacting a coherent legal and administrative framework, as well as scientists' and population's active involvement described in terms of social connection model of responsibility. Ascribable to an *ex-ante* regulation, despite traces of *ex-post* liability-based provisions in chapter 29 of German penal Code and the absence of a regulator *sensu stricto*, German approach radically diverges from the Italian urgency-based model largely grounded on polluter pays principle and collective actions of affected population. More in line with the liability model, Italian approach seems more likely to be framed by an *ex-post* regulation

⁷⁸ Strategies concerning the waste reduction at source have been implemented by the National Waste Prevention Program (*Programma Nazionale di Prevenzione dei Rifiuti*) adopted by Directorial Decree 7 October 2013, described in chapter 3.

⁷⁹ For a comprehensive examination of the best practices in place in Italy see Boschini, M., and Orzes, E. (2014). *I rifiuti? Non esistono! Due o tre cose da sapere sulla loro gestione*. Bologna: EMI.

although preventive strategies concerning the waste reduction at source have been implemented by the National Waste Prevention Program (*Programma Nazionale di Prevenzione dei Rifiuti*) adopted by Directorial Decree 7 October 2013.

Finally, the two-track analysis combining legal and philosophy of law perspectives also suggests the association of Nussbaum's version of capabilities approach with the German precautionary principle-based-strategy and Rawls' theory of justice with the Italian landfill-based-waste-management-policy favouring the technological advancement even if at the expense of precaution.

Indeed, the present paper outlines that key elements of German environmental policies aimed at anticipating conflicts (such as, the setting of environmental standards and the major stakeholders' involvement in the decision-making process) can be partly associated with the concepts of deliberation and threshold level in Nussbaum's theory.

In turn, the Italian landfill-based-waste-management-policy considering wastes as disaggregates/ externalities to be distributed/internalized is compatible with the Rawlsian approach, primarily concerned with the distribution of disaggregates. Applying taxes and subsidies that force polluters to pay for the negative impacts of their activities on the environment reflects Rawls' major limitation in dealing with environmental issues: a sole focus on the distribution of social primary goods without taking into account a fair allocation of environmental goods and burdens.