Environmental Loss and Damage in a Comparative Law Perspective
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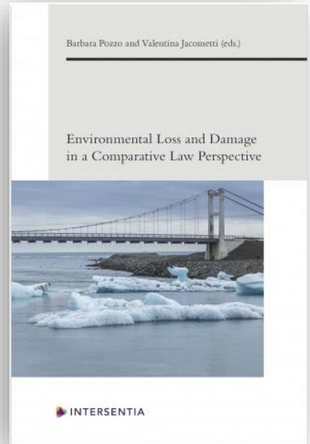

INSURANCE INSTRUMENTS FOR ADAPTING TO CLIMATE CHANGE

A Comparative Perspective

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1. INTRODUCTION: PROBLEMS AND WEAKNESSES OF *EX POST* COMPENSATION MECHANISMS FOR NATURAL DISASTERS

Despite efforts to reduce greenhouse gas emissions, the climate is changing and will continue to change globally and in Europe.[1] As is well known, climate change produces an increasing number of natural disasters[2] leading to ever more victims and ever greater economic damage.[3] Much of this damage concerns houses, whose vulnerability to extreme events depends above all on their location in dangerous areas and the use of poor-quality materials in their construction.[4]

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1 *European Environment Agency*, Climate change, impacts and vulnerability in Europe 2016. An indicator-based report, EEA Report No. 1/2017, p. 14.

2 In this light, the European Environment Agency underlines that "[t]he number of climate extremes … increased between 1980 and 2013, from around 80 per year in the 1980s to 120 in the 1990s and almost 140 in the 2000s. The contrast between the increasing incidence of climate extremes and the apparently constant number of reported geophysical events has been previously used to dismiss the possibility of reporting bias" (*European Environment Agency*, *supra*, note 1 at p. 192).

3 *European Commission*, Green Paper on the insurance of natural and man-made disasters, Strasbourg, 16 April 2013, COM(2013) 213 final, p. 2. According to the European Environment Agency: "climate extremes accounted for 82% of the total reported losses in the EEA member countries over the period 1980–2013, whereas geophysical events such as earthquakes and volcano eruptions are responsible for the remaining 18%"; "[t]he total reported economic losses caused by climate-related extreme events in the EEA member countries over the period 1980–2013 were almost EUR 400 billion … The average damage has varied between EUR 7.6 billion per year in the 1980s and EUR 13.7 billion in the 2000s" (*European Environment Agency*, *supra*, note 1 at p. 195).

4 On this issue e.g. *A. Revi et al.*, Urban areas, in C.B. Field et al. (eds.), Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate, Cambridge University Press, 2014, p. 535, 562.

Faced with these increasing risks, governments often do not take *ex ante* mitigation measures,[5] focusing on costly *ex post* interventions after every natural disaster.[6] This short-sighted approach reflects, however, accurate political calculus: from a short-term perspective, precautionary expenditures produce immediate costs and pass mostly unnoticed. On the contrary, *ex post* intervention offers a great opportunity for political visibility and can be used as "a stage for political campaigns";[7] thus, as Michael Faure points out, politicians "have the tendency to play Santa Claus", providing remarkable amounts of compensation for disaster-affected people.[8]

This *ex post* compensation (and particularly *ad hoc* compensation) reveals several problems. First of all, it discourages people from adopting preventive measures to mitigate the risks,[9] since they rely on government intervention.[10] Secondly, *ex post* compensation could "exacerbate governments' budget difficulties"[11] and be no longer financially sustainable. Moreover, the so-called *ex post* Santa Claus payment reveals a high degree of inefficiency (in quantification and timing) and inequity (since it is usually funded from general taxation and therefore also paid for by non-owners of real estate).[12] A related problem is the possible rise of negative distributional effects "since some victims (who probably purchased houses at low prices in flood prone areas) may free ride on other individuals (the general tax payers) who finance the *ex post* relief".[13]

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5 Several preventive measures can be taken at different levels of government: keeping people away from risk-prone areas through spatial planning and development control, building flood walls, elevating dikes against sea level rise, etc. See *European Commission*, Green Paper from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – Adapting to climate change in Europe – options for EU action, Brussels, 29 June 2007, COM(2007) 354 final, p. 3; *C. Suykens et al.*, Dealing with flood damages: will prevention, mitigation, and ex post compensation provide for a resilient triangle?, Ecol. Soc. 2016 (21), http://dx.doi.org/10.5751/ES-08592-210401.

6 *G. Dari-Mattiacci & M.G. Faure*, The Economics of Disaster Relief, Law & Pol'y 2015 (37), p. 180, 180.

7 Id. at p. 181.

8 *M. Faure*, The government should promote insurability of natural disasters, not play Santa Claus!, 13 December 2016, https://www.maastrichtuniversity.nl/blog/2016/12/government-should-promote-insurability-natural-disasters-not-play-santa-claus.

9 For example, not building in flood prone areas or "avoiding to put valuables in the basement" (*Faure*, *supra*, note 8).

10 E.g. *V. Bruggeman & M. Faure*, The Compensation for Victims of Disasters in Belgium, France, Germany and the Netherlands, Loy. Consumer L. Rev. 2019 (31), p. 259, 262.

11 COM(2013) 213 final, p. 12.

12 See the response of the insurance company UNIPOL to the public consultation promoted for the drafting of the Italian Climate Change Adaptation Strategy, https://www.minambiente.it/sites/default/files/archivio/allegati/clima/snacc_UNIPOL.pdf.

13 *V. Bruggeman, M.G. Faure & K. Fiore*, The Government as Reinsurer of Catastrophe Risks?, Geneva Papers on Risk and Ins. 2010 (35), p. 369, 373.

2. ROLE OF DISASTER INSURANCE AND OBSTACLES TO ITS SPREAD

There are obviously alternatives to this *ex post* compensation mechanism. First and foremost, governments should, as already mentioned, invest more in preventive measures (even if the opportunism of politicians hinders an effective preventive approach) and, in addition, encourage the development of insurance instruments in the field of natural disasters.[14]

Indeed, on several counts, insurance is an essential "form of adaptive capacity for the impacts of climate change".[15] First, insurance allows "risk pooling within a portfolio of insurance policies" and "risk spreading through reinsurance, cat bonds or other alternative risk transfer mechanisms".[16] A disaster risk insurance mechanism may also be helpful in all phases of the risk management cycle: from identification and modelling of the risks to risk transfer and, lastly, recovery.[17] Furthermore, insurers can offer market incentives for preventive actions: if the premium is calculated in consideration of the level of risk, people would be encouraged to take measures to limit those same risks (e.g. not building new houses in risk-prone areas).[18]

However, even today, insurance markets show uneven developments across countries[19] and, including in several EU Member States, coverage for natural disasters has extremely limited penetration.[20] In this regard, the European Environment Agency (EEA) reports that only around 33 per cent of the total reported economic losses from climate extremes in the EEA member countries over the period 1980–2013 were insured.[21]

Admittedly, the improvement of a functioning disaster insurance system is anything but easy. One of the most significant problems is the underestimation of the real risk of a disaster.[22] Due to limited awareness, many individuals misjudge

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14 COM(2013) 213 final, p. 12. The discussion on the role of insurance in natural disaster management has been going on for many years. See e.g. *H. Kunreuther*, The Case for Comprehensive Disaster Insurance, J.L. & Econ. 1968 (11), pp. 133–163; *D.G. Friedman*, Insurance and the natural hazards, ASTIN Bull. 1972 (7), pp. 4–58.

15 *E. Mills*, Insurance in a Climate of Change, Science 2005 (309), p. 1040, 1043.

16 *P. Picard*, Natural Disaster Insurance and the Equity-Efficiency Trade-Off, J. Risk Ins. 2008 (75), p. 17, 18.

17 COM(2013) 213 final, p. 6.

18 See *Picard*, *supra*, note 16 at p. 18; COM(2013) 213 final, pp. 12 et seq.

19 *M.D. Gavriletea*, Catastrophe risk management in Romania and Transylvania' specifics. Issues for national and local administrations, Econ. Res.-Ekon. Istraz. 2017 (30), p. 761, 762.

20 COM(2013) 213 final, p. 6.

21 *European Environment Agency*, *supra*, note 1 at p. 195.

22 *H. Kunreuther*, Mitigating Disaster Losses through Insurance, J. Risk Uncertain. 1996 (12), p. 171, 175.

the likelihood of a disaster, taking an "it will not happen to me" attitude;[23] thus, they do not understand the need to invest in protective measures such as making their houses more resilient or taking out an insurance policy.[24]

Secondly, because of this underestimation of risk, people generally prefer the uncertain damage of a natural disaster to the certain damage caused by the payment of insurance premiums.[25] This may lead to so-called adverse selection, which, according to the EU Commission, can be defined as: "the phenomenon in insurance whereby groups of people who feel that they are at a higher risk will purchase insurance to a large extent, whereas those who do not perceive such a high degree of risk will not feel it is necessary to purchase insurance".[26] This phenomenon is particularly problematic in the area of disaster insurance: if only the exposed people buy insurance, the cost of the insurance will be too high and "the pool will be too small to cope with disasters, since there is no buffer from unaffected members of the pool".[27]

Thirdly, as mentioned above, *ex post* government compensation can hinder the spread of disaster insurance.

3. POSSIBLE SOLUTION TO THE LOW PENETRATION OF DISASTER INSURANCE: COMPULSORY OR SEMI-COMPULSORY SCHEMES

A practical and obvious solution to the lack of demand for disaster insurance could be the introduction of compulsory first-party insurance offering protection against natural disasters.[28] Since it is mandatory, this type of insurance is supposed to result in high penetration with a large pool of insured people.[29] In this regard, an interesting example is represented by the Romanian compulsory insurance for dwellings that was introduced in 2008.[30] Other countries (such as France) instead opted for a mandatory catastrophe extension of voluntary

23 See *H. Kunreuther*, Disaster Mitigation and Insurance: Learning from Katrina, Annals Am. Acad. Pol. & Soc. Sci. 2006 (604), p. 208, 209; *M. Faure*, In the Aftermath of the Disaster: Liability and Compensation Mechanisms as Tools to Reduce Disaster Risks, Stan. J. Int'l L. 2016 (52), p. 95, 162.
24 *Kunreuther*, *supra*, note 23 at p. 209.
25 *Faure*, *supra*, note 23 at p. 162.
26 COM(2013) 213 final, p. 8.
27 Id.
28 See *Faure*, *supra*, note 23 at p. 163.
29 COM(2013) 213 final, p. 8. See also: *R. Van den Bergh & M. Faure*, Compulsory Insurance of Loss to Property caused by Natural Disasters: Competition or Solidarity?, World Compet. 2006 (29), p. 25, 27.
30 *Gavriletea*, *supra*, note 19 at p. 763.

first-party insurance for property damages[31] (hence the use of the term "semi-compulsory" to define these systems[32]).

Therefore, it is worthwhile to consider the systems just mentioned to try to reveal their strengths and weaknesses.

4. AN EXAMPLE OF COMPULSORY INSURANCE: THE ROMANIAN CATASTROPHE INSURANCE SCHEME

Romania is very exposed to natural perils[33] and homeowners have been generally the most affected by the several disasters that have occurred.[34] For this reason, on 4 November 2008, the Romanian Parliament passed Law no. 260[35] that introduced mandatory insurance for dwellings, covering three basic risks arising from landslides, floods and earthquakes.[36]

In accordance with the provisions of this law, Pool Against Natural Catastrophes (PAID) was set up as an insurance-reinsurance undertaking[37] in order to manage the compulsory home insurance system.[38] More specifically, PAID is intended, as the official website clearly states: to offer a simple insurance product that is accessible to any homeowner; to ensure prompt payment of the indemnity in case of damage due to a catastrophic event; to build a strong financial reserve to financially protect Romania in the face of extreme natural phenomena; to reduce the budgetary impact of natural catastrophes on the Government of Romania, so that public resources can be devoted to the reconstruction of hospitals, schools and public infrastructures; and to support the development of the financial education of the population and the promotion of home insurance as a fundamental means of protection.[39]

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31 See *O. Moréteau*, Policing the Compensation of Victims of Catastrophes: Combining Solidarity and Self Responsibility, Loy. L. Rev. 2008 (54), p. 65, 85 et seq.

32 *G. Turchetti, S. Cannizzo & L. Trieste*, Natural and Man-Made Disasters: Challenges and International Perspectives for Insurance, in A. de Guttry, M. Gestri & G. Venturini (eds.), International Disaster Response Law, T.M.C. Asser Press/Springer, 2012, p. 685, 700. See also: *R. Jongejan & P. Barrieu*, Insuring Large-Scale Floods in the Netherlands, Geneva Papers on Risk and Ins. 2008 (33), p. 250, 261.

33 *European Commission*, Insurance of weather and climate-related disaster risk: Inventory and analysis of mechanisms to support damage prevention in the EU, Final Report, August 2017, p. 135.

34 *Gavriletea*, *supra*, note 19 at p. 763.

35 Legea nr. 260/2008 privind asigurarea obligatorie a locuințelor împotriva cutremurelor, alunecărilor de teren și inundațiilor (Law no. 260/2008 on compulsory home insurance against earthquakes, landslides and floods).

36 *I.M. Dragotă, A. Semenescu & A. Gherasim*, Compulsory insurance for dwellings in Romania between mitigating the impacts of natural disasters and giving rise to social inequities, Afr. J. Bus. Manage. 2012 (6), p. 177, 182.

37 PAID was formed by the association of 12 insurance companies and uses private capital.

38 See https://www.paidromania.ro/despre-noi.

39 Id.

So, according to the law, homeowners are obliged to purchase an insurance policy against natural disasters (PAD). Depending on the quality of the building, houses are divided into two categories (class A and class B[40]), with different premiums and insured amounts.[41] The maximum amount of coverage is €20,000 for class A houses and €10,000 for class B houses, while the annual premium to be paid is €20 for class A houses and €10 for class B houses.

Therefore, the premium and the insured sum are exclusively based on the type of dwelling, not taking into account the hazard probability and the exposure, which significantly vary from region to region.[42] Several scholars object to the fact that the premium and the insured amount do not reflect the level of risk since this aspect does not encourage risk prevention.[43]

Another important issue is that the insured sum does not consider the real value of the houses. For example, the owner of a high-value house in Bucharest can receive a maximum of €20,000, which, in the event of total loss or considerable damage, could cover only a part of the damage; instead, in the case of a rural class B dwelling, the insured amount could exceed the real value of the property.[44]

In addition to these inequities, the Romanian mandatory insurance shows a (quite unbelievable) problem of low penetration:[45] according to official data provided by PAID, the penetration rate at 30 April 2020 was less than 20 per cent,[46] with higher rates in urban areas than in rural ones.[47] These data seem even more absurd if we consider that if the natural or legal persons do not insure their dwellings, they will not receive any compensation from the state or local budget for damage caused by one of the types of natural disaster considered by Law no. 260/2008.[48]

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40 "A type means the construction whose frame structure is of reinforced concrete, metal or wood, or whose exterior walls are of stone, baked brick, wood or of any other materials resulting from a heat and/or chemical treatment; B type means the construction whose exterior walls are of un-baked brick or of any other material that has not been exposed to a heat and/or chemical treatment" (Article 2, let. c, of Law no. 260/2008, as amended by Law no. 191/2015. Translation from https://asfromania.ro/files/ENGLEZA/legislation/insurance/Legea%20260_2008%20ENFinal.pdf).

41 *Gavriletea*, *supra*, note 19 at p. 763.

42 See *Dragotă, Semenescu & Gherasim*, *supra*, note 36 at p. 191; *S. Hanger et al.*, Insurance, Public Assistance, and Household Flood Risk Reduction: A Comparative Study of Austria, England, and Romania, Risk Anal. 2018 (38), p. 680, 683.

43 E.g. *Dragotă, Semenescu & Gherasim*, *supra*, note 36 at p. 191.

44 Id. at p. 183.

45 See *Gavriletea*, *supra*, note 19 at pp. 763 et seq.; *Hanger et al.*, *supra*, note 42 at p. 683; *European Commission*, *supra*, note 33 at p. 135.

46 The exact percentage is 19.27 per cent. See https://paidromania.ro/harta-pad.

47 *Hanger et al.*, *supra*, note 42 at p. 683.

48 See https://paidromania.ro/produse-si-servicii.

These low results may be caused by several factors. First, until 2015, PAD was mandatory unless homeowners had facultative insurance.[49] In 2015, an amendment to Law no. 260/2008 was passed to overcome this problem: according to the new paragraph 9 of Article 3, "[i]nsurance-reinsurance undertakings authorised to cover catastrophe risks may not conclude voluntary insurance for a dwelling for which no PAD compulsory insurance has been previously concluded".[50]

A further problem could be related to the fact that people in rural areas often cannot prove ownership of their home, which is a prerequisite for obtaining insurance coverage.[51]

Other compelling reasons for the low performance may be the lack of clear information on the policy (and especially on how to buy it) and the lack of trust in insurers.[52]

Finally, yet importantly, a role in this failure is certainly played by the ambiguous and passive behaviour of local public administrations.[53] In this regard, Law no. 260/2008 provides that non-compliance with the obligation to insure property shall be sanctioned with a fine of 100–500 lei (approx. €20–100) and entrusts the control to mayors (or their representatives). Unfortunately, public authorities do not carry out these tasks for many reasons, such as the lack of personnel to handle the fines and the concern of local politicians of losing electoral consensus.[54]

5. A WELL-KNOWN SEMI-COMPULSORY SCHEME: THE FRENCH CatNat SYSTEM

Another significant model in the field of natural disaster insurance is the French one (the so-called French CatNat system), which is well-known and internationally appreciated.[55]

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49 *European Commission*, *supra*, note 33 at p. 135.
For more details see also *D.C. Dănulețiu & A.E. Dănulețiu*, Natural disasters effects' financing through insurance in Romania (2010–2015), Ann. Univ. Petroşani Econ. 2016 (16), p. 83, 88; *European Commission*, Study on consumers' decision making in insurance services: a behavioural economics perspective, Final Report – Country fiches, May 2017, p. 191.

50 This provision is part of the wider revision of the law carried out in 2015. See Legea nr. 191/2015 pentru modificarea şi completarea Legii nr. 260/2008 privind asigurarea obligatorie a locuințelor împotriva cutremurelor, alunecărilor de teren şi inundațiilor (Law no. 191/2015 for the amendment and completion of Law no. 260/2008 on compulsory home insurance against earthquakes, landslides and floods).

51 *Hanger et al.*, *supra*, note 42 at pp. 683 et seq.

52 *I. Armas, R. Ionescu & C. Nenciu Posner*, Flood risk perception along the Lower Danube river, Romania, Nat Hazards 2015 (79), p. 1913, 1922.

53 *Gavriletea*, *supra*, note 19 at p. 770.

54 Id. at pp. 770 et seq.

55 *Bruggeman & Faure*, *supra*, note 10 at p. 299. As further proof of the fact that the French scheme is praised, Belgium has quite recently (2005) followed this model, adopting a

In France, the natural catastrophes coverage system was introduced several years ago by Act no. 82-600 of 13 July 1982.[56] From a historical point of view, this act followed the dramatic events related to the devastating floods that occurred in 1981 in the Saone and Rhone valleys:[57] these events showed the inadequacy of the *ex post* case-by-case compensation used at the time.[58]

In more detail, the first feature of the current French system is the provision of a mandatory extension of the voluntary first-party insurance policies that cover damage against property[59] (or motorised land vehicles) to include coverage of the consequences of natural disasters. Thus, catastrophe insurance has to be bundled with ordinary house or car insurance.[60]

In other words, there is no generalised obligation to insure disaster risks, but if voluntary insurance against damage to property has been taken out, it is obligatory to extend it to cover natural catastrophes.[61]

However, even though the property insurance is not mandatory, it is widespread, reaching a penetration rate of around 100 per cent and, consequently, all households have a right to compensation for the damages due to natural disasters.[62]

Act no. 82-600 does not offer a definition of the term "natural catastrophes", but the current version of the Law (as codified in the Insurance Code) states that the effects of natural catastrophes are defined as:[63] "[n]on-insurable direct material damage the determining cause of which was the abnormal intensity of

mandatory extension system that, however, presents some peculiarities compared to the French model. See, for example, *Faure*, *supra*, note 23 at p. 164.

56 Loi no. 82-600 du 13 juillet 1982 relative à l'indemnisation des victimes de catastrophes naturelles. This act is presently codified at: Code des assurances, Articles L125-1 et seq.

57 *Consorcio de Compensación de Seguros*, Natural Catastrophes Insurance Cover. A Diversity of Systems, 2008, p. 61, https://www.consorseguros.es/web/documents/10184/48069/CCS_Natural_Catastrophes_Insurance_Cover.pdf/d7cf67cc-9591-476b-87d9-728e6a57ca60.

58 *Suykens et al.*, *supra*, note 5.

59 As Faure explains, "typical example of such a policy is the so-called *multi-risque habitation*, covering most risks with respect to real estate and movables within the house" (e.g. fire, theft, etc.). See *Faure*, *supra*, note 23 at p. 164.

60 *V. Bruggeman, M. Faure & T. Heldt*, Insurance Against Catastrophe: Government Stimulation of Insurance Markets for Catastrophic Events, Duke Envtl. L. & Pol'y F. 2012 (23), p. 185, 194.

61 *Bruggeman & Faure*, *supra*, note 10 at p. 299; *Moréteau*, *supra*, note 31 at p. 85.

62 *European Commission*, *supra*, note 33 at p. 56. These data refer only to metropolitan France (the mainland and Corsica) and not to France's overseas *départements*. In this regard, Calvet and Grislain-Letrémy note that: "France's overseas *départements* (DOMs) are more exposed to natural hazards than metropolitan France (mainland + Corsica). Yet only 52% of DOM households have taken out insurance for their main residence – which includes mandatory coverage of natural disasters – compared with 99% of households in metropolitan France". See *L. Calvet & C. Grislain-Letrémy*, Home insurance in overseas départements: a low proportion of households insured, English article abstract, https://insee.fr/en/statistiques/1377347?sommaire=1377358&q=household+insurance (original article: *L. Calvet & C. Grislain-Letrémy*, L'assurance habitation dans les départements d'Outre-mer : une faible souscription, Écon. Stat. 2011 (447), pp. 57–70).

63 *V. Bruggeman*, Compensating Catastrophe Victims. A Comparative Law and Economics Approach, Wolters Kluwer, 2010, p. 304.

a natural agent, when normal measures taken to avoid such damage have been unable to prevent the occurrence thereof or could not be taken".[64]

Thus, in order to be considered a natural catastrophe, the phenomenon must not be caused by human activity, should be abnormal (that is, unusual due to the exceptional intensity or duration of the event) and should be "irresistible" in the sense that the consequences cannot be avoided with normal care.[65]

A controversial aspect of the definition is that the damage has to be "uninsurable": the use of this paradoxical word has been criticised since the risk must be mandatorily insured.[66] However, according to Bruggeman and Faure:

> [t]he paradox … disappears if one realizes that compulsory insurance allows for a sufficient spreading of risks and functions as a remedy to adverse selection, which may make natural disasters uninsurable. By imposing a duty to insure, the law transforms an uninsurable risk into an insurable one. Compulsory insurance may enable the private insurance market to cover damage caused by natural disasters in geographically limited areas.[67]

Nevertheless, there is not an exhaustive list of perils[68] covered by the mandatory extension. This absence and the open notion of "uninsurable damages due to abnormal intensity of natural hazards" could leave too much room for a subjective interpretation.[69]

The coverage for catastrophic loss is funded by an additional premium surcharge that is fixed by state decree and is currently equal to 12 per cent[70] of the property insurance premium.[71] The application of the same additional-premium

64 Code des assurances, Article L125-1. Translation from https://www.legifrance.gouv.fr/content/location/1744. As Bruggeman underlines: "Act No. 92-665 of 16 Jul. 1992 Adapting the Insurance and Credit Legislation to the Single European Market … introduced the idea of 'uninsurable damage', which had been implicit up until then, in order to prevent the Cat.Nat. scheme from being forced to cover risks which are insurable in the normal way". See *Bruggeman*, *supra*, note 63 at p. 304.

65 *M. Cannarsa, F. Lafay & O. Moréteau*, France, in M. Faure & T. Hartlief (eds.), Financial Compensation for Victims of Catastrophes. A Comparative Legal Approach, Springer, 2006, p. 81, 86.

66 Id.

67 *Bruggeman & Faure*, *supra*, note 10 at pp. 299 et seq.

68 To give some examples: floods, mudslides, landslides, earthquakes, etc. See *Cannarsa, Lafay & Moréteau*, *supra*, note 65 at pp. 86 et seq.

69 *European Commission*, *supra*, note 33 at p. 56. In fact, however, "there is likely to be a tendency to err on the side of generosity rather than caution". See id. at pp. 56 et seq.

70 For motorised land vehicles the additional premium is equal to "6% of premiums for fire and theft insurance (or, failing this, 0.50% of the property insurance premium)". See *Caisse Centrale de Réassurance*, Natural disasters compensation scheme, 3 February 2015, https://www.ccr.fr/en/-/indemnisation-des-catastrophes-naturelles-en-france.

71 The average addition for the catastrophe coverage is approximately equal to €25–30 (*European Commission*, *supra*, note 33 at p. 56).

insurance rates to all reflects the constitutional principle of national solidarity in the face of disasters.[72] However, this flat premium does not take into account the level of exposure to natural disasters and the level of loss prevention and could exacerbate moral hazard.[73]

In addition to the principle of solidarity, the French CatNat system is inspired by the principle of responsibility, which should be ensured by the provision of deductibles and risk prevention plans.[74] The deductibles are mandatory, non-redeemable – they cannot be "bought back" – and set by a state decree.[75] Nevertheless, since 2001, a sliding scale has been established to adjust deductibles (except for land motor vehicles) in communes without a risk prevention plan. The scale is a sort of multiplicative coefficient (from 1 to 4) that is applied to the deductibles, taking into consideration the number of government declarations of disaster concerning the same type of peril.[76] This is, of course, a way to incentivise municipalities to introduce risk prevention plans and, in a broader sense, to strengthen the relationship between financial compensation and risk prevention.[77] However, this link seems quite weak precisely because the

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72 This principle was set in the Preamble of the French Constitution of 1946 (which remains part of the current constitutional framework): "The Nation proclaims the solidarity and equality of all French people in bearing the burden resulting from national calamities". See *Consorcio de Compensación de Seguros*, *supra*, note 57 at p. 61; *Caisse Centrale de Réassurance*, *supra*, note 70; *Moréteau*, *supra*, note 31 at p. 81.

73 *European Commission*, *supra*, note 33 at p. 57. According to the EU Commission moral hazard "corresponds to a behavioural change of the individual who, once insured, has fewer incentives to prevent a loss from occurring and, therefore, the negative impacts of the insured event may be more likely to arise". See COM(2013) 213 final, p. 15.

74 *Caisse Centrale de Réassurance*, *supra*, note 70.

75 Id. The deductibles are currently fixed as follows: "a) For land motor vehicles, property not for professional use, and property for domestic use, the deductible is €380, irrespective of the terms in this respect in the base contract. If the damage is the result of subsidence, the deductible reaches €1,520, and in the case of vehicles for professional use, the rate to be applied is the one that is stipulated in the base policy if this is higher than the legal deductible. b) In the case of property for professional, commercial, farm or craft use, or properties owned by local communities, 10% of direct damage, per establishment and event, with a minimum of €1,140. If the damage was the result of subsidence, the deductible will reach €3,050, or the amount provided for in the base policy if higher. c) For business interruption, the deductible is 3 days worked, with a minimum of €1,140, with application of that stipulated in the base contract if the amount of this deductible is more" (*Consorcio de Compensación de Seguros*, *supra*, note 57 at p. 65).

76 See *Caisse Centrale de Réassurance*, *supra*, note 70; *Bruggeman*, *supra*, note 63 at pp. 307 et seq. The sliding scale is formulated as follows: 1–2 declarations of disaster: basic deductible; 3 declarations of disaster: basic deductible multiplied by 2; 4 declarations of disaster: basic deductible multiplied by 3; 5 declarations of disaster: basic deductible multiplied by 4. It is important to note that only the government declarations issued during the five years that precedes the "new" declaration of natural catastrophe must be taken into account (*Bruggeman*, *supra*, note 63 at p. 307). This fact could limit their potential effectiveness (*European Commission*, *supra*, note 33 at p. 57).

77 *Bruggeman & Faure*, *supra*, note 10 at p. 300.

deductibles are adjusted depending on the risk only if there is no risk prevention plan in the municipality.[78]

Another fundamental keystone of the French regime is the presence of a state reinsurance company, the Caisse Centrale de Réassurance (CCR).[79] It's important to say that CCR does not have a monopoly on the catastrophe reinsurance market[80] and insurers have the choice to contract with private reinsurance companies.[81] Nevertheless, the preferred option is to contract with CCR because the reinsurance premiums are low and there is unlimited coverage that is guaranteed by the French government in the event that CCR's resources are exhausted.[82] The contract between insurer and CCR is basically a quota-share contract: insurers generally cede half of the premium (levied to provide coverage of natural disasters) to CCR, which consequently covers half of the damage insured and pays for it.[83] So far, the system has worked well and has proven to be capable of absorbing the losses caused by natural disasters: as evidence of this, the governmental guarantee has had to be called upon only once since 1982.[84]

Lastly, it is worth mentioning that there are two conditions that must be satisfied in order to trigger the compensation scheme. The first obvious condition (which could be defined as being "of a private nature") is that the damaged property has to be covered by a property insurance policy.[85] In addition, there is a condition "of a public nature": the government must first declare (by an inter-ministerial decree published in the Official Journal) that a certain incident is a natural disaster before the insurer is bound to compensate for damage.[86] As a result, whenever a disaster occurs, the government is put under pressure by the victims and local authorities.[87] Thus, "Ministers, and even the President of the Republic, will promptly appear on the scene and promise an immediate declaration, so that the victims may be quickly compensated".[88]

78 *Suykens et al.*, *supra*, note 5.

79 *Bruggeman*, *supra*, note 63 at p. 309.

80 *Caisse Centrale de Réassurance*, *supra*, note 70.

81 *J. McAneney et al.*, Government-sponsored natural disaster insurance pools: A view from down-under, Int. J. Disast. Risk Re. 2016 (15), p. 1, 4.

82 *Bruggeman*, *supra*, note 63 at p. 309.

83 *Moréteau*, *supra*, note 31 at p. 89; *McAneney et al.*, *supra*, note 81 at p. 4. Insurers can also conclude a stop-loss contracts in which "the reinsurance company covers all claims that exceed an agreed multiple of annual premium income". However, this type of contract is reserved to "those insurance companies who also buy quota-share contracts from the CCR with a minimum participation of 40%" (*Bruggeman*, *supra*, note 63 at pp. 309 et seq.).

84 European Commission, *supra*, note 33 at p. 57. For further details, see *C. Quinto*, Insurance Systems in Times of Climate Change. Insurance of Buildings Against Natural Hazards, Springer, 2012, pp. 39 et seq.; *Bruggeman, Faure & Fiore*, *supra*, note 13 at pp. 380 et seq.

85 *Caisse Centrale de Réassurance*, *supra*, note 70.

86 See *Caisse Centrale de Réassurance*, *supra*, note 70; *Faure*, *supra*, note 23 at p. 164. Of course, a causal link must exist between the declared natural disaster and the sustained damage.

87 *Moréteau*, *supra*, note 31 at p. 86.

88 Id.

What emerges from the analysis just carried out is that the French CatNat system has worked well overall, revealing a satisfactory level of stability.[89] In this regard, it must be acknowledged that the legislative amendments that have occurred over the years cannot be considered real reforms, having simply made useful adjustments to the original structure of the Act, without however calling it into question or overturning it.[90]

However, in recent years there have been some attempts to introduce deeper changes. First of all, there is the bill deposited by the Government in the Senate on 3 April 2012.[91] This proposal, which has not been implemented, should have, *inter alia*, intervened on two aforementioned critical aspects of the legislation: the absence of a list of phenomena eligible for the compensation scheme (which can, in fact, give rise to application uncertainties and unfairly differentiated treatments) and the weakness of the preventive aspect of the system (partly due to the fact that the additional-premium insurance rate, using the logic of national solidarity, is uniform throughout the country, without taking into account the level of exposure to natural disasters or the efforts made by the policyholders to reduce their vulnerability).[92] On this last aspect, the bill proposed introducing a controlled modulation of the additional premium for natural disaster coverage, reserving, however, this modulation to subjects that, according to the government, have the tools to strengthen prevention: specifically, local communities and businesses of a certain size.[93]

The failure of this initiative did not, however, stop the discussion on the revision of the CatNat system.[94] In this regard, the President of the Republic, Emmanuel Macron, announced on 30 September 2018 (during a visit to Saint-Martin in the French Antilles a year after the devastation of Hurricane Irma) a reform of the CatNat system, though without providing precise guidelines, with the aim of ensuring a more incentivising system, "quicker indemnity payments and more generous insurance cover for overseas territories".[95]

89 *D. Cerini*, Green Insurance e cambiamenti climatici, in D. Cerini (ed.), Assicurazioni e appalti: etica, legalità, responsabilità, Giappichelli, 2016, p. 159, 177.

90 Id. at p. 171.

91 Projet de loi portant réforme du régime d'indemnisation des catastrophes naturelles (enregistré à la Présidence du Sénat le 3 avril 2012).

92 *Cerini*, *supra*, note 89 at p. 178.

93 In this light, the Impact Assessment accompanying the bill underlines that, for these subjects, the modulation could have had a real effect on the implementation of adequate prevention measures: the reduction of the premium would have made it possible to offset the cost of the preventive measures to be implemented. See Projet de loi portant réforme du régime d'indemnisation des catastrophes naturelles, Étude d'Impact, March 2012, p. 33.

94 See, in this regard: Livre blanc "Pour une meilleure prévention et protection contre les aléas naturels" (White Paper "For better prevention and protection against natural hazards"), presented in 2015 by the Fédération Française de l'Assurance.

95 See *Global Insurance Law Connect*, Risk Radar report: July 2019, p. 13, https://www.globalinsurancelaw.com/wp-content/uploads/2019/06/GILC-Risk-Radar-2019-Digital.pdf.

This project, in Macron's words, was expected to be unveiled by summer 2019. This, however, did not happen.[96] In the meantime, Nicole Bonnefoy and other members of the French Senate submitted a bill on the reform of the natural disaster regime,[97] which was unanimously adopted in the Senate on 15 January 2020.[98] The amendments introduced by the bill are aimed at ensuring a fairer treatment of insured persons – reinforcing their right and the amount of compensation to which they are entitled – and offering incentives for taking preventive measures.[99] More specifically, among the major changes, the bill amends the scheme "in order to improve the operation and transparency of the procedure for recognising a state of natural disaster" and includes "a tax credit allowing private owners of property to deduct from their income 50% of the costs of reinforcing their property against natural disasters".[100] The bill, sent to the National Assembly, is however far from being definitively approved.[101]

6. ITALY: LOW PENETRATION OF DISASTER INSURANCE AND OPPOSITION TO MANDATORY INSURANCE

Among OECD countries, Italy, along with Japan and the United States, has been "most affected by large-scale disruptive events over the past 40 years".[102] These events – not only earthquakes, but also climate-related extreme events such as floods – are responsible for annual losses approximately equal to 0.2 per cent of the national gross domestic product.[103]

These premises should certainly invite a serious reflection at the political level about the introduction of an insurance scheme in line with those just analysed. Unfortunately, the discussion only takes place when tragic catastrophes occur.[104]

96 Id.

97 Proposition de loi visant à réformer le régime des catastrophes naturelles (enregistré à la Présidence du Sénat le 27 novembre 2019).

98 The legislative dossier is available at the following link http://www.senat.fr/dossier-legislatif/ppl19-154.html.

99 *Global Insurance Law Connect*, Risk Radar report: April 2020, p. 17, https://www.globalinsurancelaw.com/wp-content/uploads/2020/04/GILC-Risk-Radar-2020-Digital-Final.pdf.

100 Id.

101 See https://www.catnat.net/gestion-des-risques/reglementation/veille-reglementaire/27253-la-reforme-du-regime-d-indemnisation-des-catastrophes-naturelles-avance.

102 *OECD*, Boosting Resilience through Innovative Risk Governance, OECD Publishing, 2014, p. 29.

103 *OECD*, Disaster Risk Assessment and Risk Financing. A G20/OECD methodological framework, 2012, p. 13, at https://www.oecd.org/gov/risk/G20disasterriskmanagement.pdf.

104 *D. Porrini*, L'assicurazione sui disastri naturali: motivi della scarsa diffusione e soluzioni di politica economica, Politica Economica 2010 (26), p. 123, 123.

As a matter of fact, starting from the 1990s, timid attempts to introduce compulsory (or semi-compulsory) insurance systems have taken place, but these proposals have never become law.[105] Indeed, it is a slippery slope for politicians: whenever the topic is discussed, opponents define compulsory disaster insurance as a "tax"[106] or even "an abdication by the State of its duty to protect its territory and citizens".[107]

This negative attitude towards the introduction of compulsory disaster insurance could be due to the fact that the citizens have very low awareness of the problem and rely on the intervention of the public authorities.

Almost certainly, these issues also explain the low penetration of voluntary disaster insurance among households. In this light, the data provided by ANIA (the Italian National Association of Insurance Companies) highlight that 91.5 per cent of voluntary fire insurance policies do not extend to natural catastrophes.[108] These data also show that there are only around 1 million residential units with catastrophe risk coverage (3.2 per cent of the total number of dwellings).[109]

Nonetheless, if we compare this value with that of 2009, we can observe a 30-fold increase in coverage, which could indicate a growing awareness of the importance of insuring against these risks.[110] This positive trend is probably influenced by the recent introduction of two forms of tax relief:[111] a tax deduction equal to 19 per cent of the insurance premium for coverage against calamitous events taken out on residential properties and the exemption of these policies from the insurance tax (equal to 22.25 per cent).[112]

However, it should be noted that the distribution of catastrophe extensions is very uneven in Italy: thus, in some cities in northern Italy (Trento, Mantua and Brescia) the percentage of dwellings insured against catastrophes exceeds 7 per cent, while in southern Italy the percentage is approximately 1 per cent.[113]

Despite these quite encouraging data, recent surveys commissioned by ANIA show that there is still much to do in relation to risk awareness: about 83 per cent of Italian families do not believe or do not know that they are exposed

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105 See *F.T. Gizzi, M.R. Potenza & C. Zotta*, The Insurance Market of Natural Hazards for Residential Properties in Italy, Open J. Earthquake Res. 2016 (5), p. 35, 36; *Porrini*, *supra*, note 104 at pp. 126 et seq.; *Cerini*, *supra*, note 89 at pp. 184 et seq.

106 See e.g. https://quifinanza.it/soldi/rc-casa-polizza-obbligatoria-contro-calamita-naturali-costi-polemiche/2052/.

107 *S. Settis*, Una ferita per la nostra storia, La Repubblica, 5 May 2012, p. 1, 11.

108 This extension can concern floods, earthquakes or both risks. See *ANIA*, Assicurazione Italiana 2018–2019, 2019, p. 242, https://www.ania.it/documents/35135/126701/LAssicurazione-Italiana-2018-2019.pdf/6975f9f6-77a4-985b-bcda-8fe835c55eee?t=1575543865117.

109 The data are updated to 31 March 2019. See *ANIA*, *supra*, note 108 at p. 243.

110 Id.

111 Id.

112 See Legge 27 dicembre 2017, no. 205 "Bilancio di previsione dello Stato per l'anno finanziario 2018 e bilancio pluriennale per il triennio 2018–2020", Art. 1 (768–770).

113 See *ANIA*, *supra*, note 108 at p. 244.

to catastrophe risk.[114] In this light, Salvati et al. conducted a specific analysis of the perception of landslide and flood risk in Italy.[115] Not surprisingly, the surveys show that Italian people feel themselves more exposed to technological risks (e.g. environmental pollution) than to natural risks.[116] More significantly, among the natural risks, people consider that their exposure to earthquakes is higher than their exposure to floods and landslides.[117] The poor awareness of disaster risk is therefore even greater with reference to climate extremes.

Another previously mentioned problem is the widespread dependency culture: when a natural disaster occurs, Italians generally expect state intervention and aid.[118] This behaviour has very deep historical roots.[119] As Monti and Chiaves candidly explain:

> [t]he traditional Italian idea of State, which developed in the last three centuries and especially after World War II (State based on the principle of solidarity, fully recognized in art. 2 of the Italian Constitution), brings people to unconsciously rely upon the State for any unexpected, unaffordable, unbearable matters, which implies that persons expect Government intervention as a right and demand full restoration of damages whenever a disaster occurs.[120]

This mentality is also persistent because many people think that the state has a sort of obligation to intervene to repay (totally or partially) the damage to private houses due to a natural disaster.[121] Yet in Italy there is no law that imposes on the state a general obligation to compensate these damages.[122]

However, this widespread misunderstanding can be explained by looking at the usual reaction of the state after a disaster, which is, of course, *ex post*

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114 *ANIA*, Assicurazione Italiana 2017–2018, 2018, p. 245, https://www.ania.it/documents/35135/126701/LASSICURAZIONE-ITALIANA-2017-2018.pdf/5b2219b5-ce05-076e-6bfa-ba700ce3561a?t=1575543855675. The analysis even shows that in some cases people who think they are insured are not insured. This is probably due to the fact that insurance contracts are often signed by the building managers and the residents in an apartment block do not know precisely the contractual clauses (id. at p. 244).

115 *P. Salvati et al.*, Perception of flood and landslide risk in Italy: a preliminary analysis, Nat. Haz. Earth Syst. Sci. 2014 (14), pp. 2589–2603.

116 Id. at p. 2601.

117 Id.

118 *A. Monti & F.A. Chiaves*, Italy, in M. Faure & T. Hartlief (eds.), Financial Compensation for Victims of Catastrophes. A Comparative Legal Approach, Springer, 2006, p. 145, 146.

119 *Gizzi, Potenza & Zotta*, *supra*, note 105 at p. 45.

120 *Monti & Chiaves, supra*, note 118 at p. 146. According to Gizzi, Potenza and Zotta, this mentality has also religious reasons. In particular, the principle of solidarity has been well developed since the end of the 19th century in the Social Doctrine of the Church (*Gizzi, Potenza & Zotta*, *supra*, note 105 at p. 45).

121 See *ANIA*, *supra*, note 114 at p. 244. In particular, the ANIA's analysis show that 46 per cent of Italian citizens think that the state has this duty. This percentage rises to 54 per cent if we consider people who believe they live in areas of high catastrophe risk.

122 *Porrini*, *supra*, note 104 at p. 123.

compensation provided through an *ad hoc* measure.[123] This practice has rarely been questioned by the entire political class, worried about losing popularity, and has instead been exploited to obtain significant political recognition. This is especially true in southern Italy, which has always been plagued by significant economic and social problems and by a strong economic disparity with the north of the country.[124] As Gizzi, Potenza and Zotta put it, "[i]n this context, any of these *ex-post* aids can be viewed by people as being 'the right chance' to solve the atavist question and politicians could benefit from such community's hope".[125]

Therefore, these elements, on the one hand, explain the persistently low demand for insurance against catastrophe risk and, on the other hand, shape the debate on this issue, complicating the possible identification of an insurance scheme to be applied on a national scale.[126] Despite this, scholars, economists and experts in the field continue to insist on the need for structural choices on the subject, especially considering that the economic sustainability of *ex post* interventions will be increasingly challenged by the need to contain public spending;[127] moreover, they underline that this type of intervention has shown serious inefficiencies and inequities, often turning into indiscriminate all-round distribution under the Italian traditional "clientelistic approach" and very long timescales.[128]

So, what can be done? Certainly, the forms of tax relief introduced for those who take out insurance against calamitous events represent a significant first step, even if they will not definitely lead to the attainment of a high penetration of insurance against natural disasters.

If we look at the two schemes analysed above, the Romanian system appears hard to replicate in Italy: beyond the problems of effectiveness (which occur in Romania), it seems particularly difficult to oblige Italian citizens to purchase specific insurance for the coverage of natural disaster risks. Past experiences seem to suggest that such a proposal could turn into a political firestorm, with strong protests against the introduction of a new "unfair tax".

Probably a "softer" approach would be preferable.[129] Indeed, the solution proposed by many would be to follow the French model, providing a mandatory extension of fire insurance, a similar reinsurance system and, in any case,

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123 *S. Paleari*, Disaster risk insurance: A comparison of national schemes in the EU-28, Int. J. Disast. Risk Re. 2019 (35), Article 101059 at p. 7.

124 *Gizzi, Potenza & Zotta*, *supra*, note 105 at p. 47.

125 Id.

126 Id.

127 E.g. *L. Buzzacchi & M. Pagnini*, Terremoti: intervento pubblico e/o assicurazione privata, Cons. dir. merc. 2012 (3), p. 74, 74.

128 In this regard, see, for example, https://www.intermediachannel.it/2017/10/13/konsumer-italia-per-le-catastrofi-naturali-agire-subito-su-prevenzione-e-coperture-assicurative/.

129 In this light, see *Cerini*, *supra*, note 89 at pp. 181 et seq.

state backing.[130] The latter is a key element: the adoption of the French model would involve, in any circumstance, the state acting as guarantor in the event of exceptional events;[131] as illustrated above, "this is of course routine in Italy in case of disasters, hence it should be easily achieved as a form of continuity with the past".[132]

However, even this option would not result in a level of disaster coverage comparable to France since in Italy only 46 per cent of housing units have an insurance policy against fire risk.[133] In addition, the data show a significant difference in penetration rates among the various Italian regions (with much higher percentages in northern Italy[134]) and, for obvious reasons, do not take into account the illegally constructed buildings that are widespread in some regions (especially in southern Italy).

Regardless of regional differences, the low penetration of this property insurance can be explained only partially by the financial difficulties that afflict many Italian families and individuals. Indeed, a crucial factor concerns the limited insurance culture (with poor knowledge of insurance, which is considered to be more an investment – or rather an expense – than an instrument providing protection against possible eventualities).[135]

7. CONCLUDING REMARKS

The increase in the number of catastrophes due to climate change requires a policy change that goes beyond the inefficient and unsustainable *ex post* compensation system to focus on the adoption of *ex ante* mitigation measures and, above all, on the control of development in risk-prone areas.[136] This obviously does not mean that the government should not act after a disaster and, in this sense, the literature that criticises *ex post* intervention does not object "to the government providing shelter and immediate help in the aftermath of a disaster".[137]

130 *Monti & Chiaves*, *supra*, note 118 at p. 184.

131 Id. See also: *Gizzi, Potenza & Zotta*, *supra*, note 105 at p. 56.

132 *Monti & Chiaves*, *supra*, note 118 at p. 184.

133 See *ANIA*, *supra*, note 108 at p. 242. These data taking into account not only single-risk policies (fire), but also other typology of insurance such as multi-risk policies (that bundle several risks such as fire, theft and civil liability) and the so-called "*polizza globale fabbricati*" (related to apartment buildings).

134 For example, Biella, Genoa, Milan and Trieste (northern Italy) exceed 80 per cent of residential units covered against fire risk, while Agrigento and Crotone (southern Italy) are still less than 8 per cent (*ANIA*, *supra*, note 108 at p. 244).

135 *G. Ursino*, La sicurezza resta un optional, Il Sole 24 ore, 11 February 2012, https://st.ilsole24ore.com/art/finanza-e-mercati/2012-02-16/sicurezza-resta-optional-190729.shtml?uuid=AaZjxzsE.

136 COM(2013) 213 final, p. 12.

137 *Dari-Mattiacci & Faure*, *supra*, note 6 at p. 202.

However, it is necessary to distinguish between immediate relief in the aftermath of natural disasters and post-disaster recovery.[138]

This last aspect should not be addressed with the obsolete *ex post* compensation methods that have revealed inefficiencies and inequities, as well as discouraging people from taking preventive actions to limit the risks to which they are exposed. Rather, the taking out of insurance against natural disasters should be promoted, perhaps with the introduction of compulsory or semi-compulsory insurance schemes, with the state as the guarantor of last resort. In this sense, the success of the French model for the management of natural disasters shows that it is possible to develop a similar solution that is able to face the challenges of most, if not all, natural disasters.[139]

However, as demonstrated by the unsuccessful attempts to introduce mandatory insurance for natural disasters in Italy and in other countries,[140] these efficient solutions are not often adopted since politicians do not want to lose the consensus, exposing "households to the payment of premiums in a time of financial crisis",[141] and, above all, they do not want to give up the formidable electoral mechanism of *ex post* compensation.[142] This is also the reason why many governments underinvest in *ex ante* disaster prevention, since, unlike *ex post* compensation, preventive policies do not contribute to increasing electoral consensus.[143]

It would take a radical change of mindset to overcome this dependency culture that characterises different countries, including Italy. Nevertheless, this operation requires public administrations and insurance companies to actively invest in financial and insurance education to shift the attention of citizens from the price to the value of insurance as a fundamental tool for managing and mitigating risks, including those related to natural disasters.

Without an adequate insurance culture, attempts to promote compulsory insurance will always be opposed by the population; without knowledge and trust in the insurance instrument, even the introduction of a compulsory insurance scheme could lead to a substantial failure, as the case of Romania shows.

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138 Id.
139 *Bruggeman & Faure*, *supra*, note 10 at p. 369.
140 Id. at pp. 368 et seq.
141 Id.
142 *Faure*, *supra*, note 8.
143 Id.