

## **THE ROLE OF THE STATE IN DETERMINING THE EFFECTIVENESS OF ENVIRONMENTAL INSURANCE**

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**Key words:** environmental insurance, environmental risk management, insurance programme.

### **A b s t r a c t**

The concern for the natural environment gives rise to the need for corporate developments toward systemic management tools for environmental risk management, including private insurance. The purpose of this research was to answer the questions: what are the premises for the effectiveness of insurance in environmental risk management and what is / should be the role of the state in the moulding of these premises? It was assumed that effectiveness is a multidimensional concept linked to the subject-centred idea of risk. Description and clarification were performed on the basis of inference as a method of logical reasoning.

The attributes of the natural environment and the external effects of human activity validate the state's intervention in the system of environmental risk management. Additionally, the passive attitude of insurers and the potentially insured increases the need for governmental activity. It may amount to substantive, factual participation or providing stimuli and organising a common platform for cooperation of competent entities. The effectiveness of a macroeconomic risk management system depends on the system's effectiveness on the micro-level (the degree of fulfilment of goals for insurers and the insured). This argument should be decisive with regards to the selection and structure of the state insurance strategy and its instruments.

### **ROLA PAŃSTWA W DETERMINOWANIU SKUTECZNOŚCI UBEZPIECZEŃ ŚRODOWISKOWYCH**

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**Słowa kluczowe:** ubezpieczenia środowiskowe, zarządzanie ryzykiem środowiskowym, polityka ubezpieczeniowa.

## A b s t r a k t

Troska o środowisko naturalne rodzi konieczność rozwoju organizacyjnego (konstrukcyjnego) systemowych narzędzi zarządzania ryzykiem środowiskowym, w tym ubezpieczeń gospodarczych. Celem badań była odpowiedź na pytanie: jakie są przesłanki skuteczności ubezpieczeń w zarządzaniu ryzykiem środowiskowym i jaką rolę w ich kształtowaniu pełni/powinno pełnić państwo? Przyjęto założenie wielowymiarowości pojęcia skuteczności i podmiotocentryczną koncepcję ryzyka. Przeprowadzono opis i wyjaśnianie, realizowane na podstawie dedukcji jako metody wnioskowania logicznego.

Atrybuty środowiska naturalnego – dobra wspólnego oraz występowanie efektów zewnętrznych działalności człowieka uzasadniają ingerencję państwa w system zarządzania ryzykiem środowiskowym. Dodatkowo bierność ubezpieczycieli i potencjalnych ubezpieczonych wzmaga konieczność aktywności władz. Może ona mieć wymiar czynnościowy (aktywne, merytoryczne uczestnictwo w wykonywaniu czynności) bądź inicjujący lub organizacyjny (budowanie bodźców i platformy współpracy). Skuteczność systemu zarządzania ryzykiem (w ujęciu makroekonomicznym) jest warunkowana jego skutecznością na poziomie mikro (stopniem osiągnięcia celów ubezpieczycieli i ubezpieczonych). Teza ta powinna determinować dobór i konstrukcję instrumentarium polityki ubezpieczeniowej państwa.

**Introduction**

The need for prevention against and the remedy of damage caused to the natural environment is becoming a paradigm of present-day societies. Fulfilment of this proposition involves overcoming numerous obstacles which result from, among other things, the inability to predict and measure the scope of environmental damage as well as the divergent goals set forth by various stakeholder groups. Science must conceive environmental management instruments which will be quite effective in solving problems related to natural environment issues despite the existing barriers. This is because scientists are unanimous about the urgent need to act now regardless of the unsolved problem of the measurability of the external environmental implications of human activity, thus fighting humanities greatest enemy – time. “The problem does not consist in whether we will manage to deal with environmental issues; it is whether we will manage to deal with them within the time we have left” (TAYLOR as in: SEMKOW 1989, p. 151).

Therefore, bearing in mind the continuous necessity to develop techniques for assessment of the likelihood of environmental damage occurrence, its implications and remedy costs, it is indispensable to improve the systemic tools which facilitate damage prevention and remedy. It is obvious that these instruments will reflect the current state of knowledge about nature and engineering, regardless of which their relentless organisational (constructional) development should be seen as a priority.

Private insurance is one of the instruments which can be successfully used in managing the risk of the occurrence of environmental damage. The functions which are attributed by the doctrine to this type of insurance, i.e.

protective and preventive functions, are in line with the general goals of the state environmental policy (*II Polityka ekologiczna...* 2000, points 18, 19, *Polityka ekologiczna...* 2008, p. 21). The degree to which these functions are fulfilled by individualised contracts between the insured and the insurers depends on the structure of particular insurance products.

As a result, it seems justified to seek an answer to the question about the premises concerning the effectiveness of insurance within environmental risk management and what role the state has /should have in the creation of this insurance. The multi-dimensional nature of the effectiveness and the subject-centred concept of risk were assumed (MICHALAK 2009, p. 5–9). Environmental risk means the future state of affairs, unacceptable to the subject, emerging due to occurrences which pollute elements of the natural environment. The description and clarification were performed on the basis of inference as a method of logical reasoning. The analysis of the literature related to this subject as well as operating solutions practised on insurance markets, as well as potential implementation opportunities on the Polish market – all of this will be the reason for selecting only the most essential items out of the abundant portfolio of effectiveness determinants. This current article deliberately moves away from the model and standard perspective. The previous attempts at measuring the effectiveness of insurance protection did not result in developing a satisfactory assessment methodology (KREID 1979, p. 115–127, ŁAŃCUCKI 1975, p. 83–100 and the literature cited), they only proved the problem to have multiple aspects. Moreover, an increasing number of economists point to the fact that a persistent use of mathematical constructions in social research seems unjustified, especially in areas where the effects depend on a number of individualised decision-making premises. (HARDT 2009, p. 168, 170)<sup>1</sup>.

This article assumes an arrangement of environmental insurance which eliminates the state financing contribution. The analysis of the effectiveness of insurance products will only refer to third party insurance (based on civil and administrative law) against environmental damage.

## **The concept of effectiveness of environmental insurance**

The economic understanding of effectiveness has been interpreted and re-interpreted multiple times (MATUSZAK-FLAJSZMAN 2010, p. 13–18). More often than not, the term is incorrectly used as a synonym of such indicators of

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<sup>1</sup> An overview of forces affecting the decision-making apparatus of business entities prepared on the basis of scientific works on enterprises and the science of management (BOROWSKI 2013, p. 79–89).

business activity as its efficiency or operationality. Mostly, effectiveness is defined in the context of assessment of organisational operations within various areas of its results (GRIFFIN 2008, p. 19). Product (tool, instrument) effectiveness should be analysed according to the functions which it should perform for the subjects while fulfilling their goals. An assessment of effectiveness through the prism of organisational goals puts this notion in the subject-centred, evaluative economic category. Consequently, an instrument which is effective in reference to the goals of one entity does not need to remain the same with regard to others<sup>2</sup>. General effectiveness (referring to all the subjects using the same instrument), then, is achievable either through unification of goals or through multi-functionality of the tool itself, thus making it suitable for the fulfilment of varied (albeit uncompetitive) goals of the subjects.

In the light of contemporary economic works, it is certain that the unification of goals of all the stakeholders is impossible (JEŻOWSKI 2000, p. 10, 11, 15). The actual challenge is to develop a multi-functional instrument which would consider the stakeholders' varied goals and affect the determinants of the degree of achievement of these goals (effectiveness), so that the instrument could be considered applicable and commonly used in trading. Insurance products are predestined to reach macroeconomic goals, while they simultaneously remain microeconomic instruments. Intentional and justified application of regulatory solutions and insurance technical tools makes it possible (through insurance) to reach the goals which are defined on all levels of economic systems. The effectiveness of private insurance is determined by the degree to which the structure of an insurance product incorporates solutions which take into account goals at every level of the economy.

### **State insurance strategy as a source of factors determining the effectiveness of environmental insurance**

The effectiveness of third party insurance is particularly susceptible to non-contractual determinants. The object of insurance in this case is a conventional occurrence which is confined by legal regulations. Insurance relationships are not only determined by the will of both parties but also by the will of the state expressed in legal acts. Furthermore, if these regulations are a part of the "conscious moulding of developmental processes which ultimately lead to awakening, shaping, transforming and fulfilling the insurance needs of various

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<sup>2</sup> This assertion also served as a basis for research on effectiveness of private insurance (KREID 1979, p. 115).

economic entities”, one can begin discussing the basics of an insurance state strategy (HANDSCHKE 1998, p. 63).

A state insurance strategy does not constitute a separate subject of state activities and is closely related to i.e. the state environmental policy<sup>3</sup>. The latter has a clear-cut purpose of the actions undertaken, the sources of which can be found in decisions taken on the global, international and domestic level. They are the ones which create the axiological basis for environmental insurance. Regulations regarding environmental damage prevention and remedy should be dynamic. They should effectively implement the findings of scientific research on nature, especially those which deal with defining the justified scope of remedy to an instance of environmental damage. The goals of environmental policy (directly) and insurance strategy (indirectly) should be socially justified in the first place, which increases (albeit does not guarantee) their technical and economic feasibility. As a sign of the implementation of the above principles into the Polish legal order, there is a departure from the strict rules for re-cultivation of polluted soil in favour of its remediation based on the analysis of risk generated by the pollution to the surrounding environment (Ustawa z 11 lipca 2014 roku o zmianie ustawy Prawo ochrony środowiska oraz niektórych innych ustaw, Journal of Laws of 2014, item 1101, article 1, point 2h). Re-cultivation, which consists in the restoration of the acceptable soil condition described by a rigid set of indicators, more often than not remains socially and environmentally unjustified. Additionally, it may be technically impossible or economically difficult to conduct, while action taken towards it (including environmental insurance) is usually ineffective. This is a proof that the goal itself which is a defining element of effectiveness, simultaneously determines the effectiveness of many instruments, including insurance products.

Aside from the construction of axiological factors of an environmental risk management system, the state also has the competency to create a collection of operating determinants, i.e. to suggest instruments, which will be beneficial for fulfilment of the set goals. Insurance, by its nature, is “a service-offering institution which fulfils the functions it has been assigned” (HANDSCHKE 1989, p. 103). In areas of the economy where the market does not provide sufficient resource allocation mechanisms, the array of measures taken within the framework of the insurance state strategy may be relatively wide. This is particularly applicable in reference to public goods and the occurrence of external effects<sup>4</sup>. The elements of the natural environment which are a subject

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<sup>3</sup> In its principles, environmental policy is similarly planned to be integrated with sector policies (*The European Union's (EU) 7th Environment Action Programme*, point 85, *II Polityka ekologiczna...* 2000, point 14).

<sup>4</sup> Representatives of the environment and natural resources economy believe that the notion of public good and public external effects mostly refer to identical situations and can be used interchangeably. However, in economic science, dissimilar methods of analysis have been developed

of insurance activity meet the distinguishing criteria of public goods<sup>5</sup>. The market is unable to ensure a supply of most public goods (ŻYLICZ 2004, p. 36). Moreover, insurers actually deal with mutual relations between human activity and the elements of the environment in terms of the former generating external effects. Microeconomic analysis leads to a conclusion that the occurrence of external effects results in establishing a balance at a higher level of supply than it would be if the social cost of developing the good was considered. A lack of state intervention causes external effects to be ignored. State interventionism must therefore amount to an imposition of the obligatory inclusion of social cost in market mechanism operations. Hence, mandatory insurance seems to be the most obvious suggestion for an insurance state strategy instrument in this situation. Insurance cost constitutes a value-related equivalent of the social cost in microeconomic analysis. However, the doctrine (*Stan prawny ubezpieczeń...* 2013, p. 5 and the works cited there), insurance market stakeholders (*Comments on the BioIS...* 2010, p. 3) and finally the legislators (*Report from the Commission...* 2010, p. 10) are rather clear about their objection to the legal obligation, asserting that the market of mandatory insurance is quite ineffective<sup>6</sup>. With a view to the above, a system is recommended in which insurance is voluntary by law but economically enforced, which is justified and moreover, advisable in the conditions of a market economy. It is because economic freedom should always be coupled with financial liability for the outcomes of one's operations, including the removal of consequences of the produced external effects (WILCZYŃSKI 1987, as in: HANDSCHKE 1998, p. 69). The market of voluntary insurance faces the challenge of becoming effective (from the state's point of view), which will depend on a number of individual decisions made by economic entities. These are greatly affected by the non-regulatory activities of the state which reflects political culture. This regards i.e. consistency in the enforcement of legal liability principles, depending on which "the polluter pays" principle should be established in the insurance awareness of the entities held responsible for damages.

Besides the axiological and operating determinants of environmental insurance effectiveness, the state can create a wide array of aid determinants. Their character and scope should be compiled on the basis of the analysis of goals and preferences depending on which the environmental insurance market participants make their decisions. The effectiveness of insurance in fulfilment of

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for them. The purpose of research should determine the selection of the method – either through the prism of public good or the external effect (ŻYLICZ 2004, p. 38).

<sup>5</sup> More on identification of public goods (*Zarys ekonomii...* 2010, p. 46, 47, SEMKOW 1989, p. 146, 147).

<sup>6</sup> Insurance obligation reduces product's adaptability, its susceptibility to innovation or the capacity to absorb effective insurance technical tools as well as technological solutions.

macroeconomic goals depends on the degree of fulfilment of the principle relating to universality and completeness of insurance protection<sup>7</sup>. These, in turn, are contingent upon the adaptation of the insurers' offer (price and structure of insurance product) to the needs and abilities of the entities which may potentially be included in the insurance protection.

## **The insurance company as a producer of insurance protection**

Article 14 of the directive on environmental liability (Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, OJ L 143/56 2004) obliges member states to foster the development of financial instruments which will support the fulfilment of the principle of the "polluter pays". The directive clearly distinguishes between insurance and other products of the financial market. A similar solution can also be found in the European legislation in article 98 of the Treaty establishing the European Atomic Energy Community – Euratom (Treaty establishing the European Atomic Energy Community (Euratom), consolidated version – OJ C 84/01 30.03.2010)<sup>8</sup>, and in the Polish legal system – in article 103 of the Atomic Law – the obligation to sign a third party insurance contract to cover the nuclear damage done to the environment (Ustawa z 29 listopada 2000 r. Prawo atomowe, consolidated text, Journal of Laws of 2014, item 1512) as well as in article 187 section 1 and 2 of the act of 27 Apr 2001 Law on Environmental Protection – the possibility of establishment by the environmental protection authority a provision for claims regarding the occurrence of negative environmental effects and environmental damage (Ustawa z 27 kwietnia 2001 r. Prawo ochrony środowiska, consolidated text, Journal of Laws of 2013, item 1232, hereinafter: e.p.).

Compared with the above expectations, the insurers' response is a rather limited product range. They exclude high-risk sectors from insurance protection (*Study on the Implementation...* 2009, p. 58). Moreover, they actively use all the insurance technical tools, which limit the insurer's scope of liability (MINOLI, BELL 2002, p. 357, 358, *Green paper...* 2013, p. 23, 24). Additionally, the number of products available on the Polish market is rather small: only two insurance companies (branches of foreign companies notified in Poland) present stand-alone environmental insurance products. Other companies

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<sup>7</sup> One must assume feasibility of protection which is guaranteed by the prudential supervision of insurance operations and availability of litigation for the purpose of legitimacy verification.

<sup>8</sup> "Member States shall take all measures necessary to facilitate the conclusion of insurance contracts covering nuclear risks".

generate supply by attaching an environmental clause to a third party insurance contract, where protection is offered only in the case of civil (not administrative) liability for the damage done to the environment. Analysis of the phenomenon makes it possible to identify quite a few reasons (barriers for market development) for this situation: the unpredictability of the scope of environmental damage, interpretational difficulties in the area of defining the liability of the author of the damage, difficulties in calculating the costs of damage remedy, lack (or shortage) of precedents which would affect judicature in the studied subject area, legal risk, extending the scope of liability (a gradual shift from the guilt principle to the risk principle in defining liability), and making the damage remedy more adaptable (a shift from soil re-cultivation to remediation). The latter limits the predictability of the cost of such actions.

Environmental insurance results from economic operations of an insurance company. In the neo-classical sense, its main goal will be either profit (or another financial measure) maximization in the case of commercial insurance, or fulfilment of the needs of mutual insurance company members. Even in the latter case (mutual insurance), though, meeting the demand for insurance coverage cannot be considered with complete disregard for economic performance categories<sup>9</sup>. Detractors of neo-classical economics point at the necessity to take a number of institutional factors into account when determining insurers' operations. There is a wide array of cognitive biases which affect the insurance sector's decisions concerning insurance protection covering particular types of perils. These are, according to Swiss Re, among other things: the tendency to rely – during decision-making process – on one trait or piece of information, the tendency to overestimate the likelihood of events with greater “availability” in memory, information structure (drawing different conclusions from the same information, depending on how or by whom that information is presented), the ability to distinguish between a trend and an occasional occurrence, the tendency to search for, remember or interpret information that confirms one's own opinions, and the tendency to underestimate the possibility of a rare event<sup>10</sup>. The biases above often make operations in the area of environmental insurance to be seen as unfavourable (ineffective) from the insurers' subjective point of view. As a result, if the status quo of the Polish insurance policy remains unchanged, both the voluntary and mandatory market of environmental insurance will continue to be ineffective in reaching macroeconomic goals. A sine qua non condition for effectiveness to take place on a macroeconomic level is to overcome the barriers to effectiveness on a microeconomic

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<sup>9</sup> Mutual and commercial insurance differ in fact with respect to the economic surplus and its allotment, while the goal of business activity remains the same (LEMKOWSKA 2010, p. 51–53).

<sup>10</sup> Swiss Re calls them biases or effects of: anchoring, availability heuristic, framing, sunk costs, confirmation and normalcy bias.



level. Consequently, there is a need for activation of an insurance state strategy in the area of the environment, especially by generating aid determinants encouraging insurance operations<sup>11</sup>.

State interventionism should aim to eliminate barriers to market development when insurance companies cannot or are not willing to undertake individual or sector-related action. Primarily, an effort should be made to compile operating interpretational guidelines for concepts like: environmental damage or scope of liability for its prevention and remedy. The meagre number of interpretations made in the course of application of laws in Europe show how complex and vast an area is the issue of identifying the scope of the damage and the amount of compensation in environmental damage liability (LOUREIRO 2014, p. 20–25). Particular solutions of individual countries are of huge importance here. Directive regulations are only harmonized to a minimum, which encourages member states to build their own unique systems of environmental risk management. Development of domestic insurance markets will be insufficiently stimulated by the compilation of interpretational guidelines for directives, such as the REMEDE project (<http://www.envliability.eu/index.htm>). At the same time, accomplishments of the European initiatives should be properly incorporated into the process of guideline compilation at the domestic level<sup>12</sup>.

Resulting from the interpretation of legal regulations are the construction premises of the general insurance conditions (GIC). The barriers to the market development justify undertaking common initiatives in the area of GIC (ORLICKA 2010, p. 21). The regulation of the European Commission (Commission Regulation No 267/2010 of 24 March 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to certain categories of agreements, decisions and concerted practices in the insurance sector, OJ L 83/1 30.3.2010) and a compatible initiative of the Polish Council of Ministers (Rozporządzenie Rady Ministrów z 22 marca 2011 r. w sprawie wyłączenia niektórych rodzajów porozumień, zawieranych między przedsiębiorcami prowadzącymi działalność ubezpieczeniową, spod zakazu porozumień ograniczających konkurencję, Journal of Laws of 2011, no 67, item 355) abolished automatic exclusion of agreements on standard insurance conditions from the banning of competition-limiting agreements. This does not

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<sup>11</sup> Lack of action from the state may lead to a dramatic reduction or even total withdrawal by insurance companies from offering environmental insurance. If within the economy management system there is no clear-cut and appropriate association between common interest and individual interest, one of the two prevails; in most cases individual goals dominate the common ones (FEDEROWICZ 1971, p. 1–11, as in ŁAŃCUCKI 1975, p. 93).

<sup>12</sup> The European Parliament makes it clear that environmental risk management is strongly affected by domestic particular interests and therefore should be organized on the local level of each member state and regional authorities (*European Parliament Resolution...* 2014, point 18).

mean, however, that such agreements are forbidden. The European Commission sees the wide range of benefits of standardisation which it brings to the supply and demand on the insurance market. Especially, the emphasis is placed on the effect of standards on facilitating comparisons between products (demand side), limiting barriers to entering markets (supply side) lowering the costs of offering insurance services and increasing legal certainty of clauses (both sides) (*Guidelines...* 2011, point 312). The interpretation of EC guidelines leads to a conclusion that non-binding agreements, openly available in the preparatory (participation of both interested parties) and application stages, which do not pertain to the price of an insurance product, are a legally acceptable and desirable institution of the insurance market (*Guidelines...* 2011, points 270–272, 300–307, 324). The specific situation in the market of environmental insurance requires initial encouragement from the Polish state. It will be a proof of “establishing circumstances conducive to financial instruments development” and compliance with article 14 of the environmental directive.

Initiative of the state and co-operation of insurance companies should also refer to measures preventing environmental damage. The institution of intangible prevention necessary to ensure the due approach of the insured may appear insufficient. On the one hand, it reduces the risk of occurrence of motivational hazard, but if applied vastly, intangible prevention may violate the principle of completeness of insurance protection. Moreover, contractual obligations of the insured to undertake preventive measures may become too burdensome, which, in a voluntary system, may reduce their willingness for purchasing insurance. The initiative of the state and the insurance sector stakeholders’ co-operation may support the insured in fulfilment of contractual requirements. Until March 2011, Polish legislation (in the wake of European legislation) allowed for a sector-wide exclusion of agreements on compilation, recognition and proliferation of technical specifications, rules and codes of practice regarding protective devices from the ban on competition-restraining agreements (Rozporządzenie Rady Ministrów z 30 lipca 2007 r. w sprawie wyłączenia niektórych rodzajów porozumień, zawieranych pomiędzy przedsiębiorcami prowadzącymi działalność ubezpieczeniową, spod zakazu porozumień ograniczających konkurencję, *Journal of Laws* of 2007, no 137, item 964, paragraph 3). Similarly in the area of standard insurance conditions, a lack of sector-wide exclusion (since 2011) in the area of aspects of preventive activities does not mean that such agreements are forbidden. What is more, such agreements do not need to pertain to technical devices only; they may concern organizational (systemic, managerial) activities of a preventive character. Additionally, they should not be limited to the insurance sector, and an integration of institutions (e.g. ISO or Polish Committee for Standardisa-

tion) whose statutory activity is related to standardisation is suggested in this area. Non-binding standard, openly available, which has been compiled by numerous insurance companies' stakeholders, will not be legally banned as a competition restraining agreement. The degree and scope of utilising such standards as a result of obligations arising from the contents of an insurance contract, may contractually determine the effectiveness of environmental insurance products<sup>13</sup>.

All of the aforementioned initiatives require an intense commitment of natural science experts. It is indispensable at every stage of the production cycle of an environmental insurance product, starting from its design (operationalization of legal notions through the prism of natural and technical sciences, the reference of particular legal regulations to the anticipated – on the basis of present-day knowledge about nature – factual states), to premium calculation (estimates of insurance technical indicators, such as damage probability, maximum loss probability etc.) to loss adjustment (estimates of costs pertaining to restoration of the initial / the secure state of the elements of the environment).

### **The polluter as the potentially insured**

The Law on Environmental Protection (e.p.) and the act on environmental damage prevention and remedy (Ustawa z 13 kwietnia 2007 roku o zapobieganiu szkodom w środowisku i ich naprawie, Journal of Laws of 2007, no 75, item 493, hereinafter: d.p.r.) provide – at a variety of scopes and terms – the liability of any entity which affects the environment in a way which causes a damage or poses a threat of damage (article 3, points 20, 39; article 248; article 322–328 e.p.; article 2, 3, 6 point 11 d.p.r.). The system of liability means that the analysis of economic efficiency must take into account the effects of entities' generating external costs and the gains of their activities.

The idea of environmental economics based on neo-classical assumptions indicates that one of the aspects of a market imperfection is the lack of an entities' willingness to incur any (internal) cost contributing to the development of an external benefit (ŻYLICZ 2004, p. 33, 34), which may amount to damage prevention or remedy. The potential emergence of legal liability leads

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<sup>13</sup> Environmental management standards, particularly including the ISO 14001 norm, assume aside undertaking prevention and remedy-related actions a number of informative duties. It would be advisable to consider such duties in the standards compiled for insurance purposes. This would be a counterpart to the postulates of the European Parliament pertaining to environmental information standardization (*European Parliament Resolution...*, 2014, point 11).

to a situation in which the issue of cost is no longer a matter of individual decision. However, as the obligation to pay the compensation is rather uncertain, delayed in time and dependent on the claim being made and executed or not, it may not be a sufficient stimulus for incurring a certain and current cost of the insurance premium.

According to neo-classical thought in economic sciences, the goals of the entities liable focus on maximisation of the surplus gains above the costs resulting from completion of an insurance contract. Assessment of these gains through the prism of the polluters' interest will not be limited to the scope of the purchased protection. It is also vital to consider the perception of the scope of financial commitments resulting from the insured liability and reality of their emergence. Insurance products will be seen as effective by the polluter if the practice of execution of financial commitments proves them to be real and very costly<sup>14</sup>. While neo-classical theory understands gains mainly in the context of financial aspects, it is also possible to broaden the scope with an institutionalist perspective. Research shows that in the area of environmental management, pro-environmental activity has its social dimension and the action is taken in order to create the entity's image (MATUSZAK-FLAJSZMAN 2007, p. 51). Insurance, so far, has not performed image-building functions. Nothing stands in the way, though, of making insurance, alongside other instruments of environmental risk management (e.g. certified environmental management systems ISO 14001) a proof of the entity's socially rewarded activities<sup>15</sup>. Compilation of rules and criteria for displaying proof of the completion of an environmental insurance contract is still another task proposed.

The cost-related aspect of insurance effectiveness assessment (as seen from the polluters' perspective) is affected by a number of actions indicated in the previous parts of this article. The factors reducing the costs of providing insurance protection are directly translated into the level of the insurance premium. Moreover, the actions indicated above lead to an increase in market competition, which has an indirect effect on costs and the availability of insurance protection.

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<sup>14</sup> Research conducted on over 600 risk managers in 6 EU countries gives evidence that the strongest incentive for taking action within environmental risk management is knowledge about the scope and implications of environmental disasters caused by humans (*Environmental Risk* 2012, p. 5).

<sup>15</sup> Making information about insurance public is also suggested due to protection of potential victims and their right to be informed about the author of the damage's insurance. Inclusion of this duty amongst informative obligations is considered with regard to SEVESO III (2012/18/EU) (*Green Paper...* 2013, p. 25).

## Conclusion

An analysis of the effectiveness of environmental insurance must be conducted on the assumption of the servitude of insurance towards its wide range of beneficiaries. The condition of the environment is a source of particular concern for those who obtain definite profits, both tangible and intangible, from its quality<sup>16</sup>. There is an entire community of such entities, which is derived from the fact that the natural environment is also a communal good. The point is that when common goals are at stake (i.e. common goods) group activity is also indispensable (OLSON 2012, p. 26). Therefore, the state's engagement becomes unconditional (as a representative of the stakeholders' community). It is not sufficient to confine the state intervention to issuing regulations which oblige actual and potential polluters to take financial liability for prevention and remedy of environmental damage. It is necessary – according to the directive on damage – to take action towards the development of financial markets which will facilitate fulfilment of the "polluter pays" principle. Financial market instruments are intended to assist and aid the state environmental policy and aid in fulfilling its goals. However, their effectiveness in this respect depends on the insurers and potentially insured goals being taken into consideration in the structure and development techniques of insurance products. Effectiveness as seen through the prism of these entities is a sine qua non condition for effectiveness on a macroeconomic level. State intervention may either take the form of active, substantial participation in certain operations or merely amount to initiating or organising actions (creating stimuli and a platform for co-operation of competent entities). Co-operation should encompass, alongside insurers, the potentially insured, their associations, standardisation related organisations (ISO or the Polish Committee for Standardisation) as well as experts in the natural sciences. The actions which may essentially improve the effectiveness of environmental insurance for all stakeholders include i.e. compilation of interpretational guidelines for the scope of environmental damage, preparing standards for general insurance conditions or establishing standards (both technical and organisational) for environmental damage prevention for insurance purposes.

Translated by EWA POREBA  
Proofreading by MICHAEL THOENE

Accepted for print 31.05.2017

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<sup>16</sup> Natural environment is increasingly perceived as a subject of human rights protection (LEWANDOWSKI 2014, p. 149-163).

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