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The Use of ISO 14001 Environmental Management Systems in the Process of Preparation and Provision of Environmental Insurance

Abstract: The purpose of the research is to assess usefulness of the implemented and certified management systems for preparation and provision of insurance. Data was collected by means of non-real-time, time-extended, text-based online focus groups, obtained via Bulletin Board platform. Respondents were selected according to judgmental sampling, and were insurance sector experts. The template analyses of the interview transcript supported by a narrative approach were conducted.

The research demonstrated that environmental insurance and ISO 14001 environmental management systems (EMSs) at present, remain in Poland almost entirely independent of each other. Representatives of insurance industry do not use the information about the system implementation while preparing and providing insurance cover. ISO 14001 EMSs present little credibility for insurance experts and according to the respondents, their implementation does not significantly and undoubtedly affect the level of the covered risk. Consequently, insurance buyers do not profit from insurance (lower premiums, improved insurance scope) resulting from the implementation of ISO 14001 systems. Industry representatives, however, use – albeit unconsciously – systemic documentation in the process of preparation and provision of insurance cover. They also examine systemic processes performed in the organisation at the stage of risk assessment. Improvement of credibility of certification process, based on profound cooperation between certification institutions and insurance industry may increase the importance of ISO 14001 EMSs for the process of preparation and provision of insurance cover.

Keywords: environmental insurance, ISO 14001 management systems

JEL: G22, Q50, K21

1. Introduction

The paradigm of sustainable development has exerted significant influence on a lot of political decisions, legislative actions and scientific activities. There is no doubt that in order to guarantee the well-being of the current and future generations it is necessary to prevent environmental damage. If prevention should prove ineffective, taking remedying action – which may often be very costly – may turn out to be indispensable.

In most cases, the polluter is directly liable for bearing the costs of the remedying action. The regulators are still broadening the scope of obligatory compensation. Firstly, they have extended the ways of compensation, which encompass not only the remediation of baseline condition of natural resources and/or their services (primary remediation), but also the compensation for the interim losses of resources and/or services, that occur from the date of damage occurring until primary remediation has achieved its full effect as well (compensatory remediation) and complementary remediation taken to compensate for the fact that primary remediation does not result in fully restoring the damaged natural resources and/or services (Appendix 2 of Directive 2004/35/CE). Secondly, regulators have been moving gradually from the rule of fault based liability to strict liability. Thirdly, the obligation to compensate is more often created not by the claim of the entitled party, but stems just from the regulation itself. The above mentioned aspects and the constantly growing environmental awareness of society (injured parties) could significantly increase the scope of financial liability of polluters in the future.

Despite the broad liability of the polluter, there are lots of cases in which the state becomes the actual payer, i.e. the case of polluter's insolvency or the damage, which definitely requires immediate remedying. Therefore, establishment of an efficient system of environmental insurance lies in the interest of two (micro and macro) levels of the economy.

There are lots of barriers to the development of environmental insurance market (Lemkowska, 2018a: 364–371). One of them is the limited awareness of the demand side concerning environmental and insurance issues. Insurance contracts are primarily signed by large entities which face increased or large environmental risks. The truth is, however, that environmental damage can be inflicted by practically anybody¹. On the other hand, the barriers to development on the supply side are connected with difficulties in estimating the likelihood and scope of the damage and the catastrophic extent of the environmental damage. The analyses of the European Commission point to strengthening environmental risk management systems as one of the crucial ways of overcoming such barriers (European Commission, 2016: 10; 2017: 13). Sustainable development should be accomplished

1 The notion of environmental damage and the scope of liability for it (Lemkowska, 2013: 59).

through integration of various instruments of environmental risk management. The above is an incentive to starting an analysis of the relation between environmental insurance² and standardised environmental management systems in conformity with ISO 14001: 2015³. The purpose of the study is to evaluate usefulness of the implemented and certified management systems for the process of preparation and offering of insurance cover.

2. Literature review

The market for environmental insurance in Poland is clearly divided into two areas: environmental clause system and stand-alone environmental insurance. Numerous insurers enable a broader option of civil liability insurance, with so called ‘environmental clause’. Although the environmental clause is commonly offered (Maśniak, 2014: 149), it provides a very narrow cover, limited to liability for property damage or personal injury and very often only for the damage occurring shortly after the polluting accident (Doś, 2011: 123–139; Bednarczyk, Jańska, 2013: 50–52; Hęćka, Łyskawa, 2016: 64; Hęćka, 2017: 47; Rutkowska, Popławski, 2017: 52). Environmental clauses do not normally encompass liability for remedying damage to natural resources and their usefulness. The above is covered by three insurance companies, which offer specialised, independent, stand-alone environmental insurance products. Additionally, there are two insurers, who provide contracts for environmental insurance guarantee.

The research of demand site of Polish insurance market is very rare. The research based on the data from 2003 showed the relatively low number of companies, which decided to add the environmental clause to the general liability policy. A level higher than average was indicated in the industry sector, especially the electricity, water and gas supply branches (Sordyl, Płonka, 2010: 100). The more current analysis of demand site was performed in 2015 and concerned the usage of stand-alone environmental insurance products by the big entities whose operations pose special threat of environmental damage in Poland. It showed that only a little over 20% of the analysed companies bought the environmental insurance (Hęćka, 2017: 49).

The international studies concerning the relation between environmental insurance and ISO 14001 certified systems are infrequent as well. The first institu-

2 For the purpose of this paper the term environmental insurance is understood narrowly and defined as an economic instrument by means of which an insurer undertakes to pay out a certain provision in the event of materialisation of liability (civil or administrative) for impact on the environment (environmental liability insurance). More about the scope of environmental insurance (Lemkowska, 2017: 476–478).

3 More about ISO 14001 EMS (Lemkowska, 2018b: 2–4).

tion to address the issue was Swiss Re. In response to the standard's publication in 1996, as early as in 1998 the reinsurance company expressed insurers' commercial interest in a standardised EMSs. It was assumed that as long as insurance companies were not provided with a harmonised interpretation of ISO 14001 standard, certified systems' value for insurance companies would be rather limited (Swiss Re, 1998: 41). The basic conclusion remained valid for many consecutive years.

Another milestone in the analysis of the above relation was a research of the British market in the early 2000s. It showed that although insurance sector recognised the potential benefits of EMSs, which could be obtained both at the stage of drawing up an insurance contract (setting the terms, premium calculation) and loss adjustment, it was not interested in exploiting this potential. Respondents believed that standard implementation did not guarantee taking measures relevant from the point of view of underwriting. Additionally, insurers were not interested in ISO 14001 due to a generally poor level of underwriting procedure with respect to environmental risk (it was usually simplified, non-technical, based on assessment questionnaires without a site inspection) (Minoli, Bell, 2002a: 337). Instead of developing EMSs, they used technical and insurance tools to limit their responsibility (Minoli, Bell, 2002a: 351; 2002b: 357).

The research carried out in the USA by the Environmental Protection Agency (EPA, 2006: 9, 11) seems to corroborate the above findings. Again, the belief in the potential benefits of standardised EMSs was confronted by insurance sector's scepticism. Although a positive attitude to benefits of systemic management was recognised with regard to the financial sector, EPA indicated the specific needs of insurers (i.e. the necessity to inspect environmental liability of the company) which were not always met. Most insurers however put potential benefits of the effect of ISO 14001 compliant systems before the uncertainty and expressed the intention to incorporate systemic solutions in underwriting process. Until 2006, when the quoted research was conducted, no principles of such operations had been established.

Despite the scepticism of the above research conclusions, insurance market analysts have been continuously returning to the subject of environmental risk management systems. The theoretical analysis of the environmental insurance and ISO 14001 EMS, as different tools of environmental risk management, identifies the great potential of the complementarity of the above (Lemkowska, 2011: 172–179), the potential influence of ISO 14001 at the risk level and the scope of information provided by the insurance seeker and the insured party (Lemkowska, 2018b: 4–5). As the most serious barrier to the usefulness of ISO 14001 EMS for insurance purposes, the heterogeneity of certified organizations was theoretically indicated, which means the different results of ISO 14001 implementation (Lemkowska, 2015: 80–87).

In the very few empirical studies of the Polish market an expectation of a lower insurance premium was identified in organisations which implemented

ISO 14001 system. Nevertheless, the studied organisations very seldom confirmed actual discounts being granted by the insurer (Matuszak-Flejszman, 2009: 417; 2010: 263–264; Hajduk-Stelmachowicz, 2013: 652). It is, however, probable that insurers took implementation of systemic solutions into consideration during calculation of the premium implicitly in the underwriting process, but they did not automatically credit premiums to the system implementation itself.

However, the development of EMSs is currently identified as an important growth factor for environmental insurance market and systemic management is perceived as a way to overcome barriers both on the demand and the supply side (European Commission, 2016: 10, 48; 2017: 13; FERMA, 2017: 4, 5). What is more, in selected legal systems of European countries ISO 14001 certified environmental management has become a determinant for the scope of obligatory insurance against environmental liability (*Country Profile: Spain*, 2009: 2; Spanish report, 2014: 6; European Union Network for the Implementation and Enforcement of Environmental Law, 2016: 23).

The interest of international institutions in this relation shows the still valid need for additional research. It is especially justified because of the evolution of the ISO 14001 standard. The new version of the standard from 2015 contains changes which are relevant from the point of view of the insurer, namely, the obligatory declaration, in the environmental policy, of efforts aimed at the protection of the environment. The environmental policy determines, in turn, identification of the significant environmental aspects, environmental objectives and their measurement indicators. Therefore, one can presume that systems implemented in accordance with the new version of the standard will refer to a broader scope of relevant, from an insurer's point of view, elements of organisation's impact on the environment. Additionally, the standard currently urges organisations to identify stakeholders' expectations and needs. Insurance sector may/should be identified in an organisation's EMS as a stakeholder. Finally, the new version of the standard puts much more emphasis on monitoring the degree of accomplishment of environmental objectives, and, consequently, keeping a record of this process. Such documents may enhance the process of providing insurance cover.

3. Research methods

The article presents the findings of the research in which data was collected by means of non-real-time, time-extended, text-based online focus groups, and obtained via Bulletin Board platform⁴. The platform was opened for respondents

4 The other stage involves a survey of organisations which have implemented a standardised environmental management system ISO 14001.

between 19th and 28th of March 2018. The respondents were selected according to judgmental sampling, based on the criteria resulting from the research objective, and were insurance sector experts (underwriters, risk managers and brokers) in environmental insurance in Poland⁵. The attributes of the respondent group determined the choice of data collection method – online focus groups are selected for respondents who are not easily accessible, like top executive managers (Olcoń, 2006: 405). It was assumed that insurance sector experts had limited knowledge of the issues connected with systemic management in conformity with ISO 14001 standard. This was the main reason for selecting the focus group method, as opposed to the individual one, thus attempting to achieve group synergy (Olcoń, 2006: 397; Mazurek-Łopacińska, 2016: 175). Eleven respondents participated in the interview, including five representatives of insurance companies which offer either specialised environmental insurance products or environmental insurance guarantee, further two representatives of insurance companies which only include the environmental clause in their civil liability insurance, two insurance brokers, one risk manager and one expert specialising in systemic management in conformity with ISO 14001.

The process of respondents' recruitment reflects the poor development of the market for environmental insurance. In line with nonprobability sampling, it was assumed that an initiatory group would be created out of representatives of insurance companies offering independent environmental insurance products and insurance guarantees (4 insurance companies⁶), five biggest insurers (based on the gross written premium in the division II insurance in 2017) who may include the environmental clause in the civil liability insurance (with the exception of insurers who were counted into the first group), representatives of two risk evaluating institutions (which belonged to insurance holding groups), as well as representatives of five biggest insurance brokers (considering premiums collected in 2017), as long as they mentioned environmental risk specialisation on their websites. Thus created initiatory group was supposed to continue nonprobability sampling by means of the snowball sampling technique (Kaczmarczyk, 2011: 99).

Respondents' recruitment did not generate problems only in the first nonprobability group. Unfortunately, respondents from other insurance companies and insurance brokers were not recruited easily. When answering questions, they asserted that even though formally it had been possible to include environmental clauses among their products or to intermediate in environmental insurance contracts, they had no sufficient knowhow or experience to participate in the focus group. The above is a proof that environmental insurance market in Poland does not include

5 The cover for environmental risk is provided on the market in Poland both by Polish insurers and the branches of foreign insurers in Poland. The experts (respondents) came from both types of these institutions.

6 One insurer provides both the environmental insurance and the environmental guarantee.

a large group of experts. Environmental risk is poorly recognised among insurers, insurance intermediaries and risk managers alike.

The interview was unstructured and the measurement instrument was a scenario which had been prepared in order to meet the research objective. The transcript of the interview was subject to processing procedures appropriate for qualitative data, with the use of template analysis (King, 2004: 256) supported by narrative approaches (Saunders, Lewis, Thornhill, 2009: 497)⁷.

Template analysis involves preparing a priori data categories according to which the information gained in the interview is grouped (King, 2004: 259). Flexibility of this research tool enables modification of data categories in the course of the research to match the collected information most adequately. Template analysis also makes it possible to use a content analysis technique in which the data is presented in the originally recorded form, and with reference to the individual participant's organisational context (Saunders, Lewis, Thornhill, 2009: 497).

In the course of discussion the questions were grouped into four consecutive categories referring to: barriers to development of environmental insurance market, significance of ISO 14001 systems implemented by insurance seekers for the underwriting process, importance of ISO 14001 systems implemented by the insured in loss adjustment and finally, identification of system elements essential to the insurance sector as well as recommendations for the methods of system implementation.

Probably because of the limited knowledge of environmental management systems of ISO 14001 and their implementation and certification, the experts in their statements focussed on the barriers to development of environmental insurance market and barriers to application of standardised environmental management systems in the process of providing insurance cover, pointing at a very small number of useful components in the systems (without any reference made to the factors regarding underwriting and loss adjustment). The experts neither addressed any definite, essential system elements, nor formed any recommendations for methods of systems implementation in the future. Consequently, having modified the preliminary criteria for data grouping, the researcher settled for the following categories: barriers to development of the market for environmental insurance and insurance guarantees, barriers to application of systems in conformity with ISO 14001 for providing insurance cover and finally, usefulness of systems in conformity with ISO 14001 for the process of providing insurance cover.

7 Both King (2004: 256) and Saunders, Lewil, Thornhill (2009: 497) point to the possibility of blending the two methods of analysis.

4. Results

4.1. Barriers to development of the market for environmental insurance and insurance guarantees in Poland

Insurance market organisation (supply side)

First of all, research participants pointed to a limited access to human capital with sufficient level of know-how and experience as one of the reasons for poor development of insurance market. Because of the above, there are limited opportunities for creation of insurance cover which would be adapted to the individual attributes of the local market, especially with respect to emerging risk, a part of which is environmental risk. Environmental insurance products available on the Polish market are mostly copied from services offered on the foreign markets by parent companies of branches or subsidiaries located in Poland. They should, however, in each case, be adapted to the threats occurring on a given market. Due to the global regulatory and awareness-related discrepancies, the product range for the Polish market turns out to be inconsistent and incomprehensible for the customers. Offering products which are not tailored to the Polish market conditions is perceived by research participants as a short-term business strategy, aimed at satisfying particularistic interest of insurance groups. In the respondents' opinion, environmental insurance is not seen as a way to solve the social problem of financing environmental damage.

During the discussion on the Bulletin Board platform a need was voiced to create standard insurance patterns (which would be a middle way between the customers' needs and insurers' capabilities) as a tool for development of environmental insurance market in Poland. Mainly, respondents pointed to the educational functions of such a solution. Nonetheless, the above aim would most probably be hard to achieve, as – in the opinion of the research participants – the representatives of environmental insurance market are not likely to expend any effort to strengthen the sector through various forms of cooperation, both informal and formal ones (involving insurance market institutions). The association of insurers does not offer any substantive developments to the market concerning environmental risk (e.g. creating data bases, sample tariffs etc.). Involvement of an institution which would build up a platform for cooperation between insurers and other insurance market stakeholders is recommended in order to enhance protection against environmental risk. The examples from foreign markets seem to corroborate effectiveness of thus organised collaboration for market development.

Barriers within the demand side

Limited activity of insurers in creating new, well-adapted insurance products for the Polish market may result from i.e. low awareness concerning environmental damage liability combined with low awareness of accessibility and range of insur-

ance cover (mentioned by the respondents as the essential barriers to the market development on the demand side). The main reasons for low awareness of environmental liability, according to the respondents, lie in feeble activity of public administration bodies which are in charge of liability execution or imposition of sanctions for environmental damage. One can also blame insufficiently developed channels of information flow between various entities which apply procedures to react to environmental damage (State Fire Service, Police and Regional Directorate for Environmental Protection). The crucial importance of public entities was emphasised for enforcement of administrative liability due to a problem with defining the claimant in the case of occurrence of environmental risk. Such a problem does not appear in the case of civil liability, which is claimed by the directly injured party (entity whose property or personal interest has been infringed), often backed up by activities of commercial organisations i.e. compensation offices.

Public administration bodies' low activity involving claims for taking preventive or remedying action with respect to environmental damage is partly explained by polluters' technical and organisational conditions. Administrative supervision over damage is hampered by errors in the emission measurement system. Poor preparation of potential polluters makes it difficult for public administration bodies to respond and take action in direct prevention, repression and damage remedying (the remark concerning the errors of emission measurements was made by a risk management expert).

Deriving from the inefficient activity of the public administration bodies, as a result of which, in numerous cases, polluters manage to avoid paying compensations (bearing the costs of remedying environmental damage) or minimise the costs caused by environmental damage to minuscule amounts, is the modest interest of the public opinion (including the media) in the issue of environmental damage. In the respondents' opinion, a stimulus for development of environmental insurance market could be a properly exposed and publicised precedent, i.e. ordering polluters to pay compensations which might lead to their financial instability or even bankruptcy.

Meagre awareness concerning environmental damage liability is additionally exacerbated by poor knowledge about accessibility of insurance cover and its scope. According to the respondents, the latter is caused by lack of obligatory environmental insurance, including the public administration bodies' failure to exercise their power to impose an insurance obligation on companies applying for environmental permits. The issue of obligation was raised by an expert in environmental management systems. The respondent's experience proves that the percentage of environmental permits issued which imposed the obligation to provide financial collateral is very low.

Attributes of environmental damage

Identifying the factors which determine the occurrence of damage in the natural environment is, in the insurance sector experts' opinion, a very complex process. Environmental risk analysis from the insurer's point of view requires detailed knowledge about physiochemical phenomena. Hence, it becomes necessary to develop complex mathematical models of pollutants' dispersion in the environment, which are based on ample input information to guarantee proper results. Therefore, preparation of an environmental insurance product is a time-consuming and costly task for the insurance sector. Complexity of the factors determining environmental damage additionally constitutes a barrier to the analysis of the insurance product by clients, whose competencies to do so are rather insufficient. The analysis is all the more difficult due to the fact that the products which are voluntarily selected by potential polluters do not undergo standardisation and assessment of the insurance scope. The assessment of liability exclusions and other terms and conditions of the insurance contract must be performed by the insurance seeker or their representative. The above is caused by the absolute lack of obligation for insurance contracts (except for the economic necessity) combined with shortcomings in co-operation within the insurance sector.

Experts see insurers' exposure to environmental risk as very high (mainly because the entities which sign insurance contracts usually face an increased or high risk of a major industrial accident⁸ or their operations may constitute risk of environmental damage⁹). Simultaneously, environmental damage not infrequently has a catastrophic dimension due to the frequent knock-on effect caused by relatively large mobility of pollution in the environment. Another problem for insurers is the origin of the environmental damage. Such phenomena may occur slowly and gradually, and generate serial and cumulative damage which often becomes apparent only after secondary damage has been detected.

Barriers to development of environmental insurance market vs. systems of ISO 14001 environmental management

Respondents did not directly point to the lack of environmental management systems implemented in organisations which are potential purchasers of insurance cover as a barrier to market development. The research participants, however, referred to the low level of awareness regarding environmental liability as well as knowledge about accessibility and scope of the insurance cover. These, in turn, are closely tied to implementation of environmental management system in an organisation. Additionally, one of the risk managers suggests that there are – among

8 The classification is based on the act of 27th April 2001 Law on Environmental Protection.

9 The classification is based on the act of 13th April 2007 on prevention and remedying environmental damage.

the limitations of environmental insurance – difficulties in measurement of emissions which may cause environmental damage. Assessing the level of emissions is crucial not only to taking preventive, repressive and remedying action but also to activating public administration bodies. Environmental management systems in conformity with ISO 14001 standard require measurements reflecting the degree of accomplishment of targets which have been set in the course of system implementation. The fact that likelihood of environmental damage occurrence would be taken into account when considering the criteria for selection of individual system elements meets the market need in terms of emission measurement.

4.2. Barriers in application of systems in conformity with ISO 14001 to the process of providing insurance cover

Attributes of insurers' operations

Environmental risk is relatively poorly recognised in the insurance sector, giving rise to two attitudes among insurers. The first group assumes (based on the external reports available) huge exposure to this kind of risk, anticipates a catastrophic scope of the damage and, therefore, resigns from offering insurance cover in this area. Others, conversely, do complete insurance contracts, albeit sometimes without a thorough analysis, using simplified underwriting, which is probably the expression of a subjective economic rationale. A public statement from an underwriter of one of the major insurers providing environmental risk protection on the Polish market proves the latter attitude:

A book could be written about the rules of underwriting, but practice shows that there is never sufficient time or opportunity to carry out a thorough analysis and one must focus on the most important issues on the basis of which a reasonable decision can be made about the shape of insurance offer. To this effect, specialised questionnaires are used (Jastrzębski, 2018: 79).

A standard insurance application form in environmental insurance or an application form for an insurance guarantee contract includes a question whether an environmental management system has been implemented in conformity with ISO 14001. Establishment of this fact is referred to as a relevant component of the underwriting process (Aon, 2011: 20). Some respondents (an underwriter and a risk analyst) asserted however that such a question is irrelevant from the point of view of the underwriting process, (unless one considers the context of civil-law sanctions for providing false information), others (an expert in systemic environmental management) claimed that potential clients, when responding to the questionnaire,

do not know how a system implementation may convert into risk assessment and the premium level.

On the one hand, the minimalist underwriting, does not generate any interest from insurers in EMSs. On the other hand, the encouragement from risk manager – the respondent to the research – to carry out in-depth, individual analyses of environmental risk before finalising an insurance contract, reaches far beyond the informative potential of systems in conformity with ISO 14001.

Attributes of the process of environmental damage occurrence

In the respondents' opinion, an essential barrier to ISO 14001 systems' usefulness for insurance purposes are the qualities of environmental damage determinants. If one assumes unchangeability of legal regulations which define the notion of damage and liability for the damage (which is only true for a short-term analysis), the probability of risk occurrence (arising of environmental damage and generating liability for the damage) and the scope of the damage are affected by two groups of factors: exogenous and endogenous, with regard to the organisation's operations. Implementation of ISO 14001 systems, and its quality is one of the numerous endogenous factors. For insurance purposes, however, environmental risk should be considered within a broader context of intrinsic factors (scale of operations, accepted technical solutions, the type of pollutants used in the organisation) or exogenous aspects, i.e. so called environmental vulnerability, which is derived from the organisation's location of operations. In this context, even highly evaluated quality of system implementation does not suffice to make underwriting decisions on the basis of information about its certificate.

Attributes of the demand side

Demand for insurance is usually reported by companies which create a threat of a major industrial accident (companies presenting increased or large risk of an industrial accident). Such companies, being hedged by additional regulations derived from the Seveso III directive (Directive 2012/18/UE), implement actions for coping with environmental risk which are alternative to ISO 14001¹⁰. Operations undertaken both by companies presenting increased risk and those posing large risk of a major industrial accident must be reported to the National Fire Service (NFS) office and the regional environmental verifier. Both types of companies, additionally, are required to develop a prevention programme against major industrial accidents which must be submitted to the above offices. The programme should contain guidelines for taking preventive action against a major accident as well as define ways of containment of the implications to the people and the

10 The regulations of the directive have been implemented in the act on Law on Environmental Protection (Title IV, Division II).

environment if a major industrial accident should occur. Additionally, companies presenting a high degree of risk are obliged to develop and implement a security system, which will be a component of a company's general management and organisation system. The companies prepare an internal emergency plan, approved by the regional National Fire Service Chief, who may also require the company to provide the necessary information to develop an external emergency plan. The key document which combines all the companies' actions is the Safety Report which is submitted to both the regional Fire Service Chief and the regional environmental verifier.

Systems which are organised according to regulations (not voluntarily, like ISO 14001), inspected by the NFS and public administration bodies appear to be, in respondents' opinion, more credible to the insurance sector rather than the non-mandatory systems checked by certification-issuing organisations which compete against one another.

Respondents seem to be highly sceptical about the usefulness of ISO 14001 for insurance purposes. Their scepticism originates mainly from a negative assessment of how the system has been implemented by insurance agencies' customers, which largely derives from the motivation behind the original decision to introduce the system. According to the research participants:

ISO 14001 is mostly fiction on paper.

The picture of implementation quality is varied. ... it is up to a particular entrepreneur how thoroughly the standard regulations are implemented.

ISO does not guarantee safety.

ISO 14001 management systems touch upon the issues important to risk assessment to a negligible degree.

All of the above, according to the respondents, makes it impossible to treat organisations which have implemented and certified the system, as those who are introducing "better" risk into the insurance portfolio. One of the respondents intentionally compared information about the system implementation to the knowledge about the application of a certain type of technical devices (e.g. automatic sprinklers) in fire insurance. The underwriter claimed that the fact itself of the installation being applied should not be the basis for making underwriting decisions without checking if the devices are operational and the whole installation is properly assembled. To comment on the above, however, one can mention insurance procedures especially in mass arrangements, which exclusively concentrate on information about the application of particular technical means. Hence, moving beyond the assumption according to which environmental insurance can

be solely connected with large enterprises, large scale operations and increased environmental risk, it seems that in insurance for entities which generate a small likelihood of environmental damage and perform small-scale operations, the information about ISO 14001 standard being implemented might have a definite importance for the underwriting process.

The scepticism visible in the aforementioned statements has never been corroborated by any market studies, while the respondents' utterances are merely subjective expressions of their opinions. Respondents to the survey emphasised that because of the attributes of demand for environmental insurance cover (the scope of demand, entities signalling demand), insurance sector cannot perform research of the influence of implementation of a system in conformity with ISO 14001 standards on the scope of risk contributed into the insurance portfolio. Such research would have to juxtapose systemically managed entities in conformity with ISO 14001 with other companies, nonetheless similar in terms of scale, type of activity, owned infrastructure, location etc. As currently the demand is rather limited, creation of a homogeneous research sample is impossible.

Quality of certification process

Correctness of ISO 14001 environmental management system implementation should be verified in the course of the certification process. Respondents expressed their lack of trust in certification process of EMSs. An assertion from a specialist in systemic environmental management complemented the opinion of insurance sector representatives. The expert remarked that there is fierce competition between certification bodies and the source of their competitive advantage is the ability to satisfy their clients' needs as effectively as possible. What the clients sometimes expect, is not the reduction of the likelihood and scope of environmental damage (which is important from the insurer's point of view). More often than not, the system-implementing organisation needs the certificate as such, in order to create a suitable image or to satisfy the expectations of its clients, suppliers or other partners. This group of system-implementing entities pays most attention to such factors as readiness and low price of certification service, minimum implementation cost, followed by reduced inconvenience of auditing process, which, consequently, may imply a low quality of certification process. The same expert on systemic environmental management claims that in order to overcome the above difficulties, insurers should be included amongst stakeholders of certification market. In order for this movement to be successful, firstly, it is essential that effects of implementation of the system are visible both to the insurance seeker and the insured in the area of availability and provision of insurance. Secondly, to achieve better quality certification and its usefulness for insurance purposes a close cooperation between insurance sector and certification bodies is indispensable.

4.3. Usefulness of the systems in conformity with ISO 14001 for the process of providing insurance cover

Principles of ISO 14001 standard (effect on risk magnitude)

The essential purpose of establishment of environmental management system is to minimise the risk of undesirable occurrences which result in extensive effect on the environment (environmental management specialist). Insurance sector experts, in turn, assert that ISO 14001 offers organisation, structure and tools and these, theoretically, should convert into a betterment of risk attributes. Nonetheless, risk engineers, with whom the interviewed underwriters cooperate, do not assess how the system has been implemented and how it is working; they concentrate on the main risk factors (identified by the internal guidelines of the organisation which has employed them) and also those which they may predict on the basis of their knowledge, experience and common sense. At the same time, however, knowing the principles of the standard and assuming a correct implementation of the system one can believe that the implemented system, via its effects, influences the result of risk assessment conducted before finalisation of an insurance contract.

The process of the assessment of insurance risk may be hampered by shortages in the organisation's equipment. The risk analyst pointed out that there are situations when emitters are poorly gauged (the instance of a chemical plant). Standardisation requirements referring to measurements concerning the established targets of the system should prevent such market limitations.

Although it has not been explicitly voiced, it seems that the system principles mentioned by the systemic management specialist as well as the belief maintained in the insurance sector referring to the standard-based establishment of the organisation, structure and tools (twice repeated by the underwriter and the risk analyst) are speaking in favour of ISO 14001 system raising awareness of environmental liability and, to a smaller degree, awareness of accessibility and scope of insurance cover.

Systemic documentation (source of input data)

Environmental management systems in conformity with ISO 14001 standard provide a documentation record. The documentation includes both procedures (descriptions of processes performed in the organisation) and records (data concerning the effects of the processes and the degree of achievement of the systemic management goals). One of the interview respondents (the systemic management specialist) remarked that documentation facilitates an assessment of the organisation's preparedness for unwanted situations, and consequently, aids evaluation of risk, as it converts into the cost of insurance policies (author's comment: the cost of preparation of insurance cover). Due to the simplified forms of underwrit-

ing (see above) informative potential of the systemic documentation may not, still, be fully exploited. A single respondent (the underwriter) mentioned that he considered information about system implementation to be meaningful only in the case of insuring companies which were not classified as those which present a large / increased risk of causing a major industrial accident.

By contrast, if in-depth underwriting form is undertaken, insurers utilise systemic documentation (mainly emissions and nuisance inspection schedules and their results), without really knowing what it is that they are actually using (the risk analyst). The respondents' attitude seems however adequate for the low level of development of environmental insurance market in Poland. Parallel to this, concentration on the so called "soft" aspects of company operations (i.e. labour organisation, procedures, applied documentation, holding training sessions) which are at the core of systemic environmental management is believed to be a recommended element of advanced underwriting and a subsequent stage of insurance market development (Dzięcioł, 2017: 15).

The systemic management specialist stated that a system based on ISO 14001 standards may be the source of input data for environmental risk evaluation models. As systemic information is (unconsciously) utilised in the process of preparation for insurance agreement finalisation and it is recommended for creation of complex mathematical models to evaluate environmental risk (the risk analyst), the above statement indicates the form which the relation between environmental insurance and ISO 14001 standardised environmental management systems will most probably take.

5. Conclusions

The information obtained in the focus group interview shows that at present, elements of the system are hardly used in the process of offering insurance cover, and if they are, it is often done unconsciously. Limited confidence in the quality of system implementation and certification process brings the respondents to a conclusion that ISO 14001 environmental management systems should not have any importance in the context of insurers' analyses and all the more should not serve as exclusive basis for insurers' decisions.

Usefulness of systemic environmental management for the insurance sector is contingent upon reaching a situation in which the system would guarantee correctness and reliability of processes implemented according to the insurers' guidelines. This would require close cooperation between insurance companies and certification bodies, which would, in turn, result in quality improvement with regard to certification audits. Such cooperation should diminish pressure from certification bodies' clients to reduce auditors' requirements and to lower certification prices.

es; at the same time, the clients would be shown the added value of more beneficial insurance terms and conditions. A problem remains, however, of a low demand for insurance cover and lack of interest in the above solution on the insurers' part.

Low demand for insurance cover is determined by i.e. meagre awareness of environmental damage liability and insufficient knowledge about accessibility and scope of insurance cover. There are no studies, however, which would corroborate a positive effect of system implementation on the decision to sign an insurance contract. On the contrary, systemic management may be treated as a substitute of cover or a reason for limiting its scope.

The results of the research are consistent with the previous international and Polish empirical studies, but remain still in contradiction to theoretical analysis. The research allowed to identify the practical barriers to the usefulness of ISO 14001 EMS for the insurance purposes and the current practices on the Polish market in that area. The respondents were not able to discuss the detailed elements of the EMSs because of their insufficient experience concerning the ISO 14001 standard. Because of the above, the ultimate assessment of the usefulness of ISO 14001 systems for the insurance purposes was not possible. However, the results could help to indicate the ways of overcoming identified obstacles in the future. ISO 14001 system elements will not be useful for the insurance sector without its active involvement. Insurers' current short-term business strategies, along with lack of willingness to cooperate and develop the market, present poor prospects for exploiting this potential within a short period of time.

In the opinion of a systemic management specialist, ISO 14001 standard is prepared in the way which meets the requirements of the insurance sector. The key system elements relevant to the process of offering insurance cover are: the requirement regarding identification of potential accidents and preparedness for them; a requirement to identify threats and opportunities and the need to apply this identification for planning actions to diminish the volume of risk. It was remarked that there was no need for complementing the standard with the view to use it for insurance purposes. The problems lie not in the scope and content of the requirements, but in the degree of their enforcement.

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References

- Act of 13th April 2007 on prevention and remedying environmental damage / Ustawa z dnia 13 kwietnia 2007 r. o zapobieganiu szkodom w środowisku i ich naprawie o zapobieganiu szkodom w środowisku i ich naprawie (Dz.U. 2018, poz. 954).
- Act of 27th April 2001 Law on Environmental Protection / Ustawa z dnia 27 kwietnia 2001 r. Prawo ochrony środowiska (Dz.U. 2018, poz. 799).
- Aon (2011), *Commercial Risk Europe Technical Briefing: Insuring pollution and environmental damage*, http://www.aon.com/risk-services/environmental-articles/article_cre-env-ins-briefing.jsp [accessed: 6.12.2018].
- Bednarczyk T.H., Jańska A. (2013), *Ubezpieczenie jako metoda ograniczania ryzyka szkód środowiskowych małych i średnich przedsiębiorstw*, "Problemy Zarządzania", vol. 11, no. 2, pp. 45–59, <https://doi.org/10.7172/1644-9584.42.3>
- Country Profile: Spain* (2009), Willis International Allert, June.
- Directive 2004/35/CE of the European Parliament and of the Council of 21st April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (OJ L 143, 30/04/2004).
- Directive 2012/18/EU of the European Parliament and of the Council of 4th July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (OJ L 197/1, 21.07.2012).
- Doś A. (2011), *Ryzyko ekologiczne przedsiębiorstw na rynku ubezpieczeń majątkowych*, Poltext, Warszawa.
- Dzięcioł W. (2017), *Wczoraj i dziś*, "Miesięcznik Ubezpieczeniowy", no. 5, pp. 14–15.
- EPA (2006), *Financial Incentives from Environmental Management Systems (EMSs), Project Findings from Phase I*, U.S. Environmental Protection Agency, Washington.
- European Commission (2016), *REFIT Evaluation of the Environmental Liability Directive*, Commission Staff working document, Brussels, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0121&from=EN> [accessed: 6.12.2019].
- European Commission (2017), *Multi-annual ELD Work Programme (MAWP) for the period 2017–2020: "making the Environmental Liability Directive more fit for purpose*, version: 28/02/2017, Brussels, https://ec.europa.eu/info/sites/info/files/mawp_2017_2020_1_en_0.pdf [accessed: 6.12.2019].
- European Union Network for the Implementation and Enforcement of Environmental Law (2016), *Financial Provision Protecting the Environment and the Public Purse*, Brussels, <http://www.impel.eu/wp-content/uploads/2016/12/FR-2016-20-Financial-Provision-2016.pdf> [accessed: 6.12.2019].
- FERMA (2017), *Environmental Liability Directive: FERMA's views on the Multi-Annual Work Programme for 2017–2020*, "Position Paper", <https://www.ferma.eu/app/uploads/2017/09/2017.04-FINAL-FERMA-Statement-ELD.pdf> [accessed: 6.12.2019].
- Hajduk-Stelmachowicz M. (2013), *Environmental Management System According to ISO 14001 as a Source of Eco-Innovations in Enterprises – A Case of Podkarpackie Voivodeship*, "International Journal of Economics and Management Engineering", vol. 7, no. 3, pp. 650–655.
- Hęcka A. (2017), *Świadomość ubezpieczeniowa przedsiębiorców polskich w zakresie ryzyka środowiskowego – wyniki badań*, "Wiadomości Ubezpieczeniowe", no. 4, pp. 41–51.
- Hęcka A., Łyskawa K. (2016), *Ubezpieczenia zagrożeń środowiskowych w gospodarstwie rolnym*, [in:] *Ubezpieczenia wobec wyzwań XXI wieku*, "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu" no. 415, pp. 55–66, <https://doi.org/10.15611/pn.2016.415.05>
- ISO 14001: 2015, *Environmental management systems – Requirements with guidance for use*, International Standard, 3rd ed.

- Jastrzębski Ł. (2018), *Ubezpieczenia środowiskowe to szkody*, "Miesięcznik Ubezpieczeniowy", 4.04.2018, pp. 78–79.
- Kaczmarczyk S. (2014), *Badania marketingowe. Podstawy metodyczne*, Polskie Wydawnictwo Ekonomiczne, Warszawa.
- King N. (2004), *Using Templates in the Thematic Analysis of Text*, [in:] C. Cassell, G. Symon (eds.), *Essential Guide to Qualitative Methods in Organizational Research*, Sage Books, <https://doi.org/10.4135/9781446280119.n21>
- Lemkowska M. (2011), *System zarządzania środowiskowego ISO 14011: 2004 a ubezpieczenia ryzyka środowiskowego – próba oceny relacji*, [in:] J. Łańcucki (ed.), *Rola znormalizowanych systemów zarządzania w zrównoważonym rozwoju*, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań, pp. 166–182.
- Lemkowska M. (2013), *Ubezpieczenia odpowiedzialności administracyjnej za szkody w środowisku – problemy prawne*, "Prawo Asekuracyjne", no. 1, pp. 57–71.
- Lemkowska M. (2015), *Przydatność wdrożenia systemu zarządzania środowiskowego zgodnego z normą ISO 14001 dla celów ubezpieczenia środowiskowego*, "Studia Oeconomica Posnaniensia", vol. 3, no. 11, pp. 78–96, <https://doi.org/10.18559/soep.2015.11.6>
- Lemkowska M. (2017), *Environmental Insurance in Poland – the Notion, Scope and Legal Determinants*, [in:] J. Nesleha, T. Plihal, K. Urbanovsky (eds.), *European Financial Systems: Proceedings of the 14th International Scientific Conference*, Masaryk University, Brno, pp. 475–483.
- Lemkowska M. (2018a), *Environmental Risk Insurability Issues – The EU Perspective*, [in:] J. Nesleha, F. Hampl, M. Svoboda (eds.), *European Financial Systems: Proceedings of the 14th International Scientific Conference*, Masaryk University, Brno, pp. 364–371.
- Lemkowska M. (2018b), *Implementation of ISO 14001 Certified Environmental Management System in an Insurance Seeker and an Insured set against the Process of Providing Environmental Insurance*, [in:] A. Karasavvoglou, P. Polychronidou, A. Sliwiński, K. Łyskawa, M. Janowicz-Lomott (eds.), *Proceedings of the 10th International Conference "The Economics of the Balkan and the Eastern European Countries in the Changing World"*, Warszawa, pp. 1–7.
- Maśniak D. (2014), *Ubezpieczenia jako instrument zarządzania katastrofami spowodowanymi przez człowieka – perspektywa unijna*, "Prawo Asekuracyjne", no. 3, pp. 138–152.
- Matuszak-Flejszman A. (2009), *Benefits of Environmental Management System in Polish Companies Compliant with ISO 14001*, "Polish Journal of Environmental Studies", vol. 18, no. 3, pp. 411–419.
- Matuszak-Flejszman A. (2010), *Determinanty doskonalenia system zarządzania środowiskowego zgodnego z wymaganiami normy ISO 14001*, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań.
- Mazurek-Łopacińska K. (ed.) (2016), *Badania marketingowe. Metody, techniki i obszary aplikacji na współczesnym rynku*, Wydawnictwo Naukowe PWN, Warszawa.
- Minoli D.M., Bell J.N.B. (2002a), *Composite insurer consideration and attitudes on environmental management systems concerning public liability policies for pollution risks*, "Journal of Environmental Assessment Policy and Management", vol. 4, no. 3, pp. 329–347, <https://doi.org/10.1142/s1464333202001042>
- Minoli D.M., Bell J.N.B. (2002b), *Insurer perception of environmental management systems regarding insurance for pollution*, "Journal of Environmental Assessment Policy and Management", vol. 4, no. 3, pp. 349–366, <https://doi.org/10.1142/s1464333202001078>
- Olcoń M. (2006), *Zogniskowane wywiady online – charakterystyka techniki badawczej*, [in:] Ł. Jonak, P. Mazurek, M. Olcoń (eds.), *Internet – społeczne aspekty medium. Polskie konteksty i interpretacje*, Wydawnictwa Akademickie i Profesjonalne, Warszawa, pp. 395–412.
- Rutkowska M., Popławski Ł., *Instrumenty ekonomiczne w ochronie środowiska ze szczególnym uwzględnieniem ubezpieczeń ekologicznych*, "Studia i Prace WNEIZ US", no. 47/1, pp. 47–55, <https://doi.org/10.18276/sip.2017.47/1-04>

- Saunders M., Lewis P., Thornhill A. (2009), *Research methods for business students*, 5th ed., Prentice Hall, Harlow.
- Sordyl G., Płonka M. (2010), *Ubezpieczenie ekologiczne jako metoda finansowania ryzyk w górnictwie*, "Wiadomości Ubezpieczeniowe", no. 1, pp. 91–105.
- Spanish report (2014), *Questionnaire on the experience gained in the application of the Directive pursuant to Article 18(1) in conjunction with Annex VI of the ELD*, Brussels.
- Swiss Re (1998), *Environmental management systems and environmental impairment liability insurance. Two areas in strained relations or in harmony?*, Zurich.


Systemy zarządzania środowiskowego zgodne z normą ISO 14001 w procesie przygotowania i świadczenia ochrony w ubezpieczeniach środowiskowych

Streszczenie: Celem badania jest ocena przydatności wdrożonych i certyfikowanych systemów zarządzania dla procesu przygotowania i świadczenia ochrony ubezpieczeniowej. Metodą zbierania danych był asynchroniczny, zogniskowany wywiad grupowy, oparty na komunikacji pisemnej, realizowany na platformie Bulletin Board. Respondenci wywiadu zostali dobrani celowo – byli nimi eksperci sektora ubezpieczeń. Transkrypcja wywiadu poddana została analizie szablonowej, wspartej przez techniki narracji.

Badanie wykazało, że ubezpieczenia środowiskowe i systemy zarządzania środowiskowego ISO 14001 pozostają w Polsce obecnie niemal niezależne. Przedstawiciele sektora ubezpieczeń nie wykorzystują informacji o wdrożeniu systemu na etapie przygotowania i świadczenia ochrony ubezpieczeniowej. Systemy ISO 14001 pozostają dla ekspertów sektora ubezpieczeń niewiarygodne, a ich wdrożenie nie wpływa – zdaniem respondentów – istotnie na wielkość ryzyka obejmowanego ochroną. W konsekwencji nabywcy ochrony ubezpieczeniowej nie doświadczają korzyści ubezpieczeniowych (obniżenia składki, poprawy zakresu ochrony) jako efektu wdrożenia systemu zgodnego z ISO 14001. Przedstawiciele sektora wykorzystują jednak – najczęściej w sposób nieświadomy – dokumentację systemową w procesie przygotowania i świadczenia ochrony ubezpieczeniowej, a także badają realizowane w organizacji systemowe procesy na etapie oceny ryzyka ubezpieczeniowego. Poprawa wiarygodności procesu certyfikacji, oparta na głębokiej współpracy jednostek certyfikujących i sektora ubezpieczeń, może w przyszłości zwiększyć znaczenie systemów zarządzania środowiskowego ISO 14001 dla procesu przygotowania i świadczenia ochrony ubezpieczeniowej.

Słowa kluczowe: ubezpieczenia środowiskowe, systemy zarządzania ISO 14001

JEL: G22, Q50, K21

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