COMMUNICATION IN LOCAL EMERGENCY MANAGEMENT NETWORKS (PART 2)

Barbara Kożuch*, Katarzyna Sienkiewicz-Małyjurek**,
Artur J. Kożuch***

Abstract

Background. Emergency management requires flexibility and adaptation to dynamic and changing circumstances. The urgent requirements and high standards of responsiveness in terms of emergency management depend on horizontal and vertical communication since this is of the main factors associated with the appropriate coordination of many essentially independent organisations.

Research aims. The paper attempts to identify the determinants of effective communication, particularly in regard to close coordination, as well as the role played by these processes in the management of local emergency networks.

Method. This work consists of a theory-based empirical study. It is qualitative in nature and the research method is based on both desk research and field research. The research was conducted as part of a research project entitled "Coordination, communication and trust as factors driving effective inter-organisational collaboration in the public safety management system " (DEC-2012/07/D/HS4/00537) financed by the National Science Centre.

Key findings. As a result, the new role of communication as a factor associated with the appropriate coordination in local emergency networks was identified.

Keywords: Emergency management, Organisational communication, Coordination, Organisational behaviours, Network theory

RESULTS

Effective Communication as a Basis for Appropriate Coordination with Regard to Local Emergency Networks

Communication aims to clarify the nature of events and to obtain information on essential operations that must be conducted. Its purpose is to mitigate uncertainty as to current and future events. In the literature, emergency communication is defined as sending and receiving messages which explain the specific event, identify its probable consequences and

* Prof. dr hab. Barbara Kożuch, Jagiellonian University, Poland.

** Dr Katarzyna Sienkiewicz-Małyjurek, Silesian University of Technology, Poland.

*** Dr Artur J. Kożuch, University of Agriculture in Krakow, Poland.

outcomes, and providing specific harm-reducing information to affected communities in an honest, candid, prompt, accurate, and complete manner (Palttala & Vos, 2012). The research issues in this respect arose from the practical execution of activities with regard to such catastrophes as the accident in Chernobyl in 1986, the terrorist attack on the World Trade Centre in 2001 or Hurricane Katrina in 2005 (Palttala et al., 2012).

Crisis situations take various forms and courses, thereby generating diverse needs with regard to operations to be launched in particular cases. The review of best practices in the USA in respect of communication with regard to emergency management was conducted by M.W. Seeger (2006), who covered the operations carried out by the Centers for Disease Control, Departments of Public Health, the United States Department of Agriculture, and the Federal Emergency Management Administration. This included events such as the anthrax episode of 2000, the Florida hurricane season of 2004, and the outbreak of E. coli poisoning from contaminated school lunch strawberries in 1997 (Seeger, 2006). M.W. Seeger argued that communication and coordination provide the foundation for effective operations to be executed in terms of emergency management. Their lack triggers chaos, additional uncertainty and increased losses. Such a thesis is corroborated by errors in communication between fire brigades and police in the wake of the World Trade Centre catastrophe, contradictory communiqués released by government agencies in the aftermath of the anthrax attack, or deficiencies in communication during hurricane Katrina (Moe, 2010; Waugh & Streib, 2006; Seeger, 2006).

The analysis of findings from studies conducted in Poland allows for the ascertainment that communication processes in emergency networks in Poland run as part of both a horizontal and a vertical structure. Vertical communication is largely informative and directive in nature, and it sets the stage for launching initiatives. Responsibility is delegated to persons designated by heads of units, e.g. operational officer on duty or the coordinator of rescue actions. This communication may be one-way or two-way. One-way communication primarily involves:

1. Formulating the principles for the accomplishment of tasks by central organs, and communicating them to lower organisational levels;
2. Preparing reports on operations in order to identify potential alternatives for selecting a specific strategy, and assessing the accuracy of the operations accomplished;
3. Communicating information as to current operational capabilities and the quantity of resources possessed;
4. Communicating information on operations conducted within a specific administrative area;
5. Reporting the demand for extra support and resources for operations from other operational areas.

On the other hand, vertical two-way communication covers, for example:

1. Practical implementation of the principles for operations to be executed, and passing on remarks and opinions to higher organisational levels;
2. Explaining inconsistencies and circumstances with regard to a particular course of events.

While developing the theoretical fundamentals of emergency management, and improving practice in this respect, horizontal communication increasingly gains in importance. It runs across particular units within a given organisation, as well as through inter-organisational configurations. It enables the tailoring of operations to specific circumstances. This pattern was confirmed by the studies conducted. All respondents indicated that communication with other units takes place every day on an ongoing basis during the execution of the operation. One-way communication pertains to the transfer of information as to the need for disposing intervention teams from other units. However, multi-way communication includes, among others:

1. Formulating and preparing operations to be jointly performed, and discussing needs in this respect;
2. Formulating a common concept for operations during the course of rescue actions in crisis situations;
3. Planning of joint execution of activities to underpin their course of action;
4. Communicating during normal meetings, drills and training.

This overview reveals that vertical communication in emergency management is chiefly uni-directional in nature, whereas horizontal communication is multi-directional. Furthermore, communication methods depend, on the one hand, on the type of ventures undertaken, as discussed above, and on the other hand, the phases of emergency management.

Actions taken during each phase of crisis management are tailored to current conditions and requirements. To ensure that the actions taken are appropriate and adequate to the risks, it is necessary to guarantee a smooth flow of information between all operators involved (Sienkiewicz-Małyjurek, 2013).

The communication process in emergency management is a cohesive element, the "bloodstream" for executing activities during both the stabilization and the realization phases. Thus, it is adjusted to the emergency management process and mostly covers:

1. Mitigation phase: communicating information on the degree of potential threats, resources possessed, current state and needs with regard to security rescue potential, as well as remarks and experience from previous operations;

2. Preparation phase: warnings on the upcoming threat, its scope and scale; communicating information on the need for operational mobilization, as well as for ongoing and planned operations;
3. Response phase: verification of current level of threats, communicating information on activities previously launched and strategy adopted, potential for accomplishing activities, need for operational support and other needs (e.g. with regard to humanitarian aid);
4. Reconstruction phase: communicating information on the quality and compliance of operations conducted within operational rules, level of losses and destruction, needs and potential sources of funding, reconstruction of destroyed infrastructure, current needs of affected people.

The results of the studies complete and add to the body of academic output with regard to the role of communication in emergency management (Palttala & Vos, 2012; Veil & Husted, 2012). They demonstrate that this process directly affects the level of coordination of operations (Jaatinen & Lavikka, 2008; Salmon et al., 2011). Furthermore, they show that the intensity of the communication level proceeds in a different manner between specific entities, and is variable in terms of time. It is largely determined by operational requirements that generate the need for establishing inter-organisational relationships. Table 2 illustrates the volume of communication levels between the entities surveyed, and other organisations involved in emergency management. Only the entities indicated by those surveyed have been outlined. However, they emphasised that they also communicate with other units of emergency management which are not included in the table, though these cases are incidental, fewer than once every ten years. Moreover, they also reported sporadic communication with social organisations, media, private entities (e.g. power distribution companies, gas companies) and inhabitants of the region.

Our own studies conducted in 2013 showed that the Fire Brigade, the Police and the Municipal Police are the units that mostly communicate in emergency management. Information sharing between these services occurs on an ongoing basis because they are the units that typically undertake actions in the field of local security. These entities also communicate with other units, though not so often, depending on the needs that arise. For instance, during supervision of establishments with a high and increased risk of industrial disaster, the Fire Brigade communicates with the Environmental Protection Inspectorate. During a summer when rainfall is scarce, joint initiatives are discussed with the Plant Protection Service and the State Forest Administration. Similarly, when securing against floods, communication processes proceed between the public administration, the Fire Brigade, the Police, the Rescue Services, the Construction Supervision

Inspectorate, the Environmental Protection Inspectorate, the General Directorate for National Roads and Motorways, etc.

Table 2. Levels of Communication in Emergency Management

	Medical Rescue	Police	National Fire Service
Medial Rescue	+++	+++	+++
Police	+++	+++	+++
National Fire Service	+++	+++	+++
Local government administration		+	++
Municipal Police	+	++	
Border Guards		+	++
Military police		++	++
Railway Protection Guards	+	+	+
Pharmaceutical Inspection		+	++
Sanitary Inspection		+	++
Veterinary Inspectorate		+	++
Plant Protection Service			+
Construction Supervision Inspectorate		+	++
Environmental Protection Inspectorate		+	++
Commercial Inspection		+	+
Mining Rescue Services			+
National Atomic Energy Agency			+
State Forest Administration			+
General Directorate for National Roads and Motorways			+

Designation in table: (+++) –ongoing communication; (++) – frequent communication; (+) – sporadic communication

Source: own survey conducted in 2013 in terms of medical rescue, police and fire service units.

Local emergency networks create conditions for effective organisational communication. Nevertheless, communication processes do not always proceed without disruption and in accordance with the expectations of the stakeholders involved in the process. The reasons behind such situations mostly include communication barriers and organisational behaviours in emergency management.

Communication Barriers and Organisational Behaviours in Emergency Management

Similarly for each venture, the communication process in emergency management is also fraught with risk. This risk essentially results from potential disruptions in the process likely to occur in each phase of emergency management. Drawing on the literature review and our own research, the many barriers occurring in communication have been identified.

Technical-organisational barriers encompass:
1. Non-compatibility of systems exploited by particular services,

2. Vulnerability to failure of communication systems.

Barriers directly related to management comprise:

1. Too many communication channels,
2. Shortage of current and complete information,
3. Excess of information,
4. Lack of procedures and principles regulating communication,
5. Divergent hierarchies of values,
6. Encroachment on the preserve of other services,
7. No respect for expectations or willingness to understand a stance held by other stakeholders in the communication process,
8. Unwillingness to be involved in operations,
9. Reluctance to collaborate outside own organisation,
10. Inconsistency of laws.

During stabilization, when it is required to plan and orchestrate operations tailored to potential hazards, the causes of communication barriers may lie in divergent perceptions of problems, a lack of interest, or lack of motivation. Besides, specific emergency management units routinely focus on fulfilling their statutory tasks, and the intensity of communication with regard to preparing additional securities, operational procedures or specific arrangements is voluntary, and hinges on the initiative of specific unit heads. A survey conducted in the Netherlands in 2010 on communication in disaster situations shows that even though persons involved in response efforts are aware of the importance of information sharing, they often limit themselves to only obtaining information, while ignoring the need for sharing their own information with other persons. Based on the survey it was concluded that such a situation results from a:

> (...) lack of incentives at institutional, organisational and individual levels, a lack of understanding with regard to the overall operational dependencies between the various agencies, organizational norms and values, emotional reward, system usability, integration of systems in the daily routines, and information and system quality (Bharosa et al., 2010, p.63).

Meanwhile, the surveys carried out in 2004 with regard to hurricane threats found that the elimination of barriers in the communication process is at the core of operational effectiveness in terms of emergency management (Kapucu, 2008).

Effective communication processes in emergency management are marked by flexibility, and they require a consideration of cultural differences and the perception level of the entities and social groups involved (Veil & Husted, 2012). It also calls for adjustment to the needs of entities engaged in operations, media and society (Lewandowski, 2011). The monitoring of expectations and methods of interpreting information by specific entities and groups has an important role to play (Palttala et al., 2012).

Accordingly, the communication process rests on openness, clear channels for relaying information, and simple methodology to avoid misunderstandings and further problems (Seeger, 2006). Basically, it is aligned to background, culture, experience, values and the individual needs of specific entities (Reynolds & Seeger, 2005). Therefore, information-sharing networks are effective and efficient ways of obtaining new insights that can then be incorporated into the planning process (Seeger, 2006).

Yet, the quality and frequency of communication is mostly driven by willingness, good intentions and understanding of the significance of the process for a functioning organisation in the environment, as well as expectations of the stakeholders involved in the process. Hence, both formal and a posteriori relationships prove to be equally important. A posteriori relationships are largely established during previous operations, and they have implications for the organisational behaviour of individual entities. Though they have a complementary character, they may significantly facilitate, or conversely, impede the course of operations.

Another noted pattern is that effective communication reinforces coordination through enhanced mutual understanding between people and the relaying of information within and between organisations (Kapucu et al., 2010). These determinants are manifested in the level of organisational trust and involvement in the success of operations (Tubin & Levin-Rozalis, 2008; Moynihan, 2009). Moreover, relationships in networks are based on trust and commitment (Mandell & Keast, 2006). According to Kożuch and Dobrowolski (2014), only effective organisational communication and a sharing of information could foster the creation of organisational trust. They wrote that "The significance of trust in public organisations results from the fact that those organisations undertake certain actions in the public interest and accomplish their main aims by exerting influence on other organisations or directly on citizens so that they undertake activities which will enable the realisation of both their own aims and goals of the organisation which influences them" (Kożuch & Dobrowolski, 2014, p.28). Typical features of trust are shared experiences, common history, shared values, predictable behaviour, and a good level of competence (Seppänen et al., 2013; Ansell et al., 2010). In crisis management, trust promotes adaptive behaviours, fosters the quick creation of workgroups as well as boosts the readiness of specific organisations for engaging in commitment with regard to operations (Ansell & Gash, 2008; Uhr et al., 2008). This commitment involves willingness and motivation for the best possible fulfilment of specified tasks. The studies conducted in 2012 in Australia with regard to bushfire incidents from a social network perspective, show that increased commitment has a positive impact on the capacity to adjust operations to the specific situation and the ability to taking unusual decisions (Hamra et al., 2012). Commitment is facilitated by interdependence, which is a con-

stant element of emergency management, and organisational awareness. The awareness is defined as a capability for a proper understanding of the situation and an ability to be reflective, purposeful and values-oriented (Pees et al., 2009). Moreover, findings from the studies completed in Australia in 2013 during flooding indicate that networks present during emergency situations are built based on relationships forged during the stabilization period. They allow for bolstering inter-organisational trust and diminishing difficult ties (Kinnear et al., 2013). The implications of trust for effective operations was also emphasized in analyses of flood and storm hazards that took place in Sweden in 2004 and 2005 (Uhr et al., 2008). They are supported by other studies conducted in the United States of America with regard to establishing collaboration between public and non-governmental organisations in crisis situations. It was found that central to effective emergency management is partnership and trust between government agencies at all levels of the state organisation (Kapucu, 2006).

Effective communication, which fosters trust and involvement, provides the basis for development and for bolstering societal resilience. This resilience requires the active involvement of rescue services to hand over information about management principles in emergency situations, as well as the role of self-help processes and mutual aid in this regard (O'Brien, 2008; Paton & Johnson, 2001). These processes involve the inclusion of local communities and social organisations in rescue actions. Due to increasing resources, they may significantly enhance the response capacity of the emergency management system (Jackson et al., 2011). The literature specifically emphasizes that self-help as well as mutual aid should be regarded as fundamental functions performed in management immediately after the catastrophe has taken place (Zhang et al., 2013). Research focused on emergency management processes during earthquakes in China indicate that in the aftermath of the earthquake in 2008, 84,000 persons were rescued, with 80% rescued by families or neighbours through mutual help (United Nations, 2008). Evidently, this proves the significance of self-help and mutual aid at a communal level as characterized by relatively intense formal and informal forms of communication.

The analyses made corroborate the view that communication is a vital element of the new approach to emergency management. Furthermore, effective communication is the basis of the appropriate coordination of operations, mostly because it establishes inter-organisational relationships which prove to be a critical element for all operations launched as part of the emergency management process.

Appropriate Coordination as an Effect of Good Communication

The significance of communications is also underlined by a theory of co-ordination which has extensive interdisciplinary fundamentals (Malone & Crowston, 1990; Malone, 1998; Crowston & Osborn, 1998), and it is dynamically developed in respect to emergency management. Based on relationships between military and civilian agencies, the determinants hampering inter-organisational coordination within an area examined were identified. They include (Salmon et al., 2011, p.153): organisation, information management, communication, situation awareness, equipment, cultural issues and training.

Communication has a specific meaning in collective activities. However, the coordination of operations in emergency management is executed by a single man. Our own empirical research showed that in Poland, responsibility for that is devolved on the Rescue Action Supervisor who is, in most cases, a fireman. Only in the event of a terrorist attack or demonstration is command taken over by a policeman with sufficient powers. Such coordination involves collecting, analysing and verifying information, as well as assigning a sequence of operations performed and entities engaged. A classic example illustrating the coordination of operations in emergency management is the flooding that took place in May and June of 2010 which engulfed the Czech Republic, Slovakia, Poland, Hungary, Ukraine, Austria, Germany and Serbia. It was one of the largest floods in Poland in that during the period 14 May to 30 June 2010, around 76,800 interventions related to relief and recovery actions were reported (The National Headquarters of the State Fire Service of Poland, 2012). At that time there was an increased demand for pumps with higher capacity than those the services already possessed. Efforts at the national level were launched, and firemen from other EU states took part in the operations. Persons charged with rescue actions in this event accomplished the following tasks based on communication processes:

1. Prepare scenarios for potential situations, analyses, weather forecasts, collect information, anticipate demand;
2. Calculate forces and resources, assess potential, analyse situations, prepare proposals for disposing forces depending on the demand, examine potential for requesting external forces;
3. Contribute to the formulation of solutions intended to accomplish operations, raise forces, dislocation of forces, put forces into operation, continue monitoring the situation and its reporting;
4. Monitor efficacy of solutions formulated, participate in the work of military staff and teams, monitor the situation's progress, collaborate with commanders with regard to specific actions;

5. Control efficacy of operations conducted by operational groups, verify information handed over, e.g. by phone, with a factual situation.

Summing up the results of the discussions held, it may be stated that communication and coordination are the bases of effective emergency management but, on the other hand, these processes depend on many factors (Figure 2).
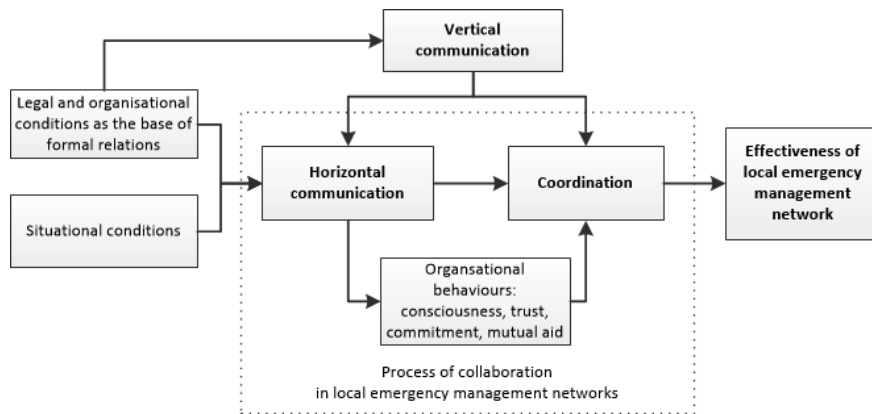

Figure 2. The Significance of Communication in the Coordination of Local Emergency Networks

Source: own development.

As shown in Figure 2, local emergency networks operations are set up at the long-established public management level within organisational units. They encompass organisational and legal determinants and also situational conditions. These factors affect the level of effective communication which is then one of the primary indicators of organisational behaviours. Organisational trust and awareness of the urgency for operations' execution strengthens the level of involvement. Collectively, communication and organisational behaviours affect the coordination level. In consequence, communication, organisational trust, awareness, commitment and coordination in emergency management are the foundation of local emergency networks, and they determine the effectiveness of activities launched in these networks.

CONCLUSIONS

Studies and analyses conducted enable to draw the following conclusions:
1. Communication is one of the primary processes underpinning the functioning of every organisation, as well as international relationships. This is initiated to mitigate uncertainty, determine principles

for action, and set new goals. Within local emergency networks, communication is a priority in modelling organisational behaviours and coordinating actions.

2. In emergency management, both vertical and horizontal communication play a vital role. Whereas vertical organisation creates norms and guidelines for operational accomplishments, horizontal communication allows for the creation of organisational flexibility, and for forging relationships to enable alignment to variable and uncertain conditions to permit functioning.

3. The communication process proceeds differently between individual entities. The strongest relationships link the following units: police, fire brigade, local police and emergency medical rescue services. Communication processes between these units takes place on an ongoing basis, because these are the fundamental entities tasked with taking action within the realm of public security. These entities also communicate with other units, services, local police, social organisations, private entities, although on a less frequent basis, depending on the occurring needs.

4. In emergency management, inter-organisational relationships rest on both legal and organisational regulations, as well as formal and informal connections resulting from operations under daily circumstances. For specific connections, these relationships are individual in their character and intensity. Management networks formed in crisis situations tend to be more effective when relationships occur on a daily basis, which foster such organisational behaviours as trust, consciousness, commitment and mutual aid.

5. Effective communication enhances relationships within emergency networks. Appropriate coordination is the result of communication processes and operations undertaken in the planning and preparation phases, as well as the method for verification of network performance. These processes are closely intertwined and complementary, and they establish frameworks for emergency management.

6. Communication conditions rely on emergency management phases. During a stabilization period there is a need to consult on the initiatives so as to optimally prepare for hazards which have occurred. A different situation takes place during the realization phase. Furthermore, the significance of communication rises commensurate with the scale of the hazard – the higher the hazard level, the greater the requirement to deploy advanced communication systems and methods. This results from the necessity of processing the vast amounts of information available in real time and obtaining information essential for making adequate decisions.

7. Communication has an influence on the efficacy of actions taken in emergency management, both in a direct as well as in an indirect way. Overall, this leads to direct benefits through allowing the transfer of the information required to coordinate actions. This has also an indirect impact through shaping informal inter-organisational relationships, thereby determining the efficiency level of actions launched in emergency management.

REFERENCES (2)

Ansell, C., Boin, A., & Keller, A. (2010). Managing Transboundary Crises: Identifying the Building Blocks of an Effective Response System. *Journal of Contingencies and Crisis Management, 18*, 195–207.

Ansell, C., & Gash, A. (2008). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory, 18(4)*, 543–571.

Bharosa, N., Lee, J.K., & Janssen, M. (2010). Challenges and obstacles in sharing and coordinating information during multi-agency disaster response: Propositions from field exercises. *Inf Syst Front, 12*, 49–65.

Crowston, K., & Osborn, C. (1998). *A coordination theory approach to process description and redesign*. Sloan School of Management. Massachusetts: Center for Coordination Science, Available at: http://ccs.mit.edu/papers/pdf/wp204.pdf.

Hamra, J., Hossain, L., Owen, C., & Abbasi, A. (2012). Effects of networks on learning during emergency events. *Disaster Prevention and Management, 21(5)*, 584-598.

Jaatinen, M., & Lavikka, R. (2008). Common understanding as a basis for coordination. *Corporate Communications: An International Journal, 13(2)*, 147-167.

Jackson, B. A., Sullivan, F.K., and Willis, H. H. (2011). Are We Prepared? Using Reliability Analysis to Evaluate Emergency Response Systems. *Journal of Contingencies and Crisis Management, 19*, 147–157.

Kapucu, N., Arslan, T., & Demiroz, F. (2010). Collaborative emergency management and national emergency management network. *Disaster Prevention and Management, 19(4)*, 452-468.

Kapucu, N. (2008). *Collaborative emergency management: better community organising, better public preparedness and response*. Blackwell Publishing, 9600 Garsington Road, Oxford, Available at: http://cstl-cla.semo.edu/wmiller/ps691/Kapucu.pdf.

Kapucu, N. (2006). Public-Nonprofit Partnerships for Collective Action in Dynamic Contexts of Emergencies. *Public Administration, 84*, 205–220.

Kinnear, S., Patison, K., Mann, J., Malone, E., & Ross, V. (2013). *Network governance and climate change adaptation: collaborative responses to the Queensland floods*. National Climate Change Adaptation Research Facility, Australia: Gold Coast.

Kożuch, B., & Dobrowolski, Z. (2014). *Creating public trust, organisational perspective*. PETER LANG, Internationaler Verlag der Wissenschaften.

Lewandowski, M., (2011). Sprawność zarządzania z perspektywy humanistycznej. *Współczesne Zarządzanie, 10(1)*, 106-115.

Malone, T.W. (1998). *What is Coordination Theory?*. The National Science Foundation Coordination Theory Workshop, Massachusetts Institute of Technology, Cambridge, Massachusetts, Available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi= 10.1.1.86.8170&rep=rep1&type=pdf.

Malone, T.W., & Crowston, K. (1990). *What is Coordination Theory and How Can It Help Design Cooperative Work Systems*. Proceedings of the Conference on Computer Supported Cooperative Work, Los Angeles, California.

Mandell, M., & Keast, R. (2006). *Evaluating Network Arrangements: Toward Revised Performance Measures*. Draft Paper for Conference: A Performing Public Sector: The Second Transatlantic Dialogue, Leuven, Belgium: 1-3 June.

Moe, T.L. (2010). Cleanup after Katrina: an analysis on policy, process, priorities, problems, and politics. *Disaster Prevention and Management, 19(3)*, 314-332.

Moynihan, D.P. (2009). The Network Governance of Crisis Response: Case Studies of Incident Command Systems. *Journal of Public Administration Research and Theory, 19(4)*, 895–915.

O'Brien, G. (2008). UK emergency preparedness: a holistic response? *Disaster Prevention and Management, 17(2)*, 232-243.

Palttala, P., & Vos, M. (2012). Quality Indicators for Crisis Communication to Support Emergency Management by Public Authorities. *Journal of Contingencies and Crisis Management, 20*, 39–51.

Palttala, P., Boano, C., Lund, R., & Vos, M. (2012). Communication Gaps in Disaster Management: Perceptions by Experts from Governmental and Non-Governmental Organizations. *Journal of Contingencies and Crisis Management, 20*, 2–12.

Paton, D., & Johnston, D. (2001). Disasters and communities: vulnerability, resilience and preparedness. Disaster Prevention and Management, *10(4)*, 270-277.

Pees, R.C., Shoop, G.H., & Ziegenfuss, J.T. (2009). *Organizational consciousness*, Emerald 23.

Reynolds, B., & Seeger, M.W. (2005). Crisis and emergency risk communication as an integrative model. *Journal of Health Communication, 10*, 43-55.

Salmon, P., Stanton, N., Jenkins, D., & Walker, G. (2011). Coordination during multi-agency emergency response: issues and solutions. *Disaster Prevention and Management, 20(2)*, 140-158.

Seeger, M.W. (2006). Best Practices in Crisis Communication: An Expert Panel Process. *Journal of Applied Communication Research, 34(3)*, 232-244.

Seppänen, H., Mäkelä, J., Luokkala, P., & Virrantaus, K. (2013). Developing shared situational awareness for emergency management. *Safety Science, 55*, 1-9.

Sienkiewicz-Małyjurek, K. (2013). The Flow of Information About the Actions Required in Emergency Situations: Issues in Urban Areas in Poland. *The International Journal of Social Sustainability in Economic, Social and Cultural Context, 8(2)*, 61-71.

The National Headquarters of the State Fire Service of Poland (2012), Available at: http://www.straz.gov.pl/page/index.php?str=3086

Tubin, D., & Levin-Rozalis, M. (2008). Interorganizational cooperation: the structural aspect of nurturing trust. *International Journal of Public Sector Management, 21(7)*, 704-722.

Uhr, C., Johansson, H., & Fredholm, L. (2008). Analysing Emergency Response Systems. *Journal of Contingencies and Crisis Management, 16*, 80-90.

United Nations (2008). *Implementation of the Hyogo framework for action in Asia and the Pacific: Case study: The national disaster management system of China and its response to the Wenchuan earthquake*. United Nations Economic and Social Council, Bangkok.

Veil, S.R., & Husted, R.A. (2012). Best practices as an assessment for crisis communication. *Journal of Communication Management, 16(2)*, 131-145.

Waugh, W.L. & Streib, G. (2006). Collaboration and Leadership for Effective Emergency Management. *Public Administration Review, 66*, 131–140.

Zhang, X., Yi, L., & Zhao, D. (2013). Community-based disaster management: a review of progress in China. *Natural Hazards, 65*, 2215–2239.

KOMUNIKOWANIE SIĘ W SIECIACH ZARZĄDZANIA KRYZYSOWEGO NA POZIOMIE LOKALNYM

Abstrakt

Tło badań. Zarządzanie kryzysowe wymaga elastyczności i dostosowywania się do dynamicznie zmieniających się warunków. Wysokie wymagania i standardy w tym zakresie zależą komunikacji poziomej i pionowej, które są jednym z głównych czynników koordynowania działań wielu niezależnych organizacji.

Cel badań. W pracy podjęto próbę określenia czynników wpływających na skuteczne komunikowanie się w odniesieniu do koordynowania działań, a także rolę tych procesów w zarządzaniu lokalnymi sieciami zarządzania kryzysowego.

Metodyka. W artykule przedstawiono wyniki badań teoretycznych i empirycznych. Badania przeprowadzono w ramach projektu badawczego "Koordynacja, komunikowanie i zaufanie jako czynniki skutecznej współpracy międzyorganizacyjnej w systemie zarządzania bezpieczeństwem publicznym" (DEC-2012/07/D/HS4/00537), finansowanego przez Narodowe Centrum Nauki w Polsce.

Kluczowe wnioski. Rezultatem przeprowadzonych badań jest identyfikacja roli komunikowania się w koordynowaniu działań w sieciach zarządzania kryzysowego na poziomie lokalnym.

Słowa kluczowe: zarządzanie kryzysowe, organizacyjne komunikowanie się, koordynowanie, zachowania organizacyjne, teoria sieci