Regulations and risk control in a vulnerable society: points at issue

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Abstract

The aims of the paper are to give a contribution to a more enlightened and articulated framework for designing safety and rescue institutions and regulatory regimes in a post-modern vulnerable society. The discussions are based on a case study of a Governmental report on "A vulnerable society" (Norway) and the main points at issue in the follow up public debate. The main points at issue discussed are: (1) problem identification and definition, (2) principles for organising, (3) change strategies, (4) public and/or private/market control (5) conflicting models of reality, and finally (6) some overall problems. Compared to the situation in a number of other countries the Norwegian case is not unique, i.e. the topics discussed have some general relevance for public administration and policy in societal risk and vulnerability management.

Keywords: vulnerability, regulatory regimes, risk management, control, response

1. Introduction

1.1. Challenges and points at issue

The safety and rescue institutions and regulatory regimes have developed in "muddling through" processes over more than hundred years mostly as responses to the revealed needs of the industrial society and the "Cold War". The consequence is a over-complex "jungle" of safety institutions made for the needs for risk control in the past, and not adapted to the post-industrial threats and the dynamic changes in the risk picture.

This paper describes and analyses the situation and discussions in Norway based on a report (Willoch et al, 2000) from a Governmental commission on the vulnerable society and the consecutive public debate. The Norwegian case is not unique, even though the administrative systems differ between countries. According to a comparative study in the report on how countries like Sweden, the Netherlands, Germany, Switzerland, Germany, Great Britain, Switzerland, and US have organised their safety, security, and crisis and emergency organisations, the concrete principles and ways of organising these institutions and services differ a lot, i.e. the "jungles" are different. None of them could demonstrate a superior system to the others. Behind each of the system designs one could trace traditions and contingencies specific for each country. However, what they have in common are lack of transparency, co-ordination, and unambiguous lines of responsibility.

The main points at issue in the Norwegian case are presumed to be of relevance and topicality for many countries. In fact, as Norway is a small and generally quite transparent country with few social conflicts and minor political cleavages, some of the problems and challenges dealt with can be assumed to be even greater in other countries.

The paper presents and discusses six groups of issues, which are assumed to be of general relevance. Those are:

1. Confusions on *problem identification and definition*, i.e. how it is organised today, how it functions, and what is the problem.
2. Alternative *principles of organising*, i.e. how to solve problems of fragmented responsibilities, lack of integrity and independence; ways of grouping by activity and industrial domain, types of risk phenomena, or by consequence management criteria. How to achieve simplification of regulations, and reduction in number of control authorities and down-sizing of staff without increasing the risk levels?
3. Choice of *change strategies*, i.e. an integral part of a general renewal of public administration and services or left to development processes tailored to special needs within groupings of safety institutions. Which institutions should be phased out, and which new institutions should be established? Change is risky.
4. The balance between *public care and market demands*, i.e. how to cope with the pressure for deregulation and globalisation, and with the demands for cost-effectiveness and the needs of the users. Can privatisation – by standardisation and certification, i.e. can the "audit society" substitute public care control regimes? Is such substitution cost-effective?
5. Conflicts on *models of reality,* i.e. are risk control and emergency organisations value adding or is loss prevention mainly a cost factor. Can we trust risk calculations? Whose perception of risks is true? How to balance between the frequent accidents and damages, the exceptional disasters, and the uncertainty related to new threats and risk phenomena with unknown causes and/or consequences? How to prioritise resources across sectors and domains?
6. *The overall problem:* questions related to influencing the political agenda. What are the key factors for successful renewal of safety institutions, i.e. quality and competence versus quantity, and the needs for authority and power bases for reform and implementation? How to achieve trust and confidence?

The aims of the paper are to reflect on and discuss further some of the issues listed above, not proposing specific solutions and recommendations, but rather to give a modest contribution to a more enlighten and articulated framework for designing safety and rescue institutions and regulatory regimes in a post-modern vulnerable society.

1.2. Framework and delimitation

Figure 1 illustrates the scope and variety of the subject. The vertical axis should give some associations to the model of socio-technical systems involved in risk management by Rasmussen (1997), i.e. the links between the global, international, national, regional, local and individual stressors and those actors at different levels dealing with the risks.

The horizontal axis tells that the field covers everything from “acts of God” type events and man-made, including technology caused disasters, to the intended, ill-natured acts against others and even self-destructive behaviour. At the level of managing societal vulnerabilities the frequent events of road traffic accidents, occupational accidents and traditional, everyday crime are normally excluded. Societies have to a large extent accepted these types of risks, and have means and functions for dealing with them, i.e. an ability to absorb those problems. Societal vulnerability is usually addressing problems related to the survival and recovery of vital societal functions, i.e. treats to infrastructure related to energy supply and ICT, etc.

To make the picture more complete a third axis, a time dimension, could be added to figure 1. Some events, typically accidents, have a rather short time horizon, whereas other threats to health, property and environment are evolving over longer time periods.

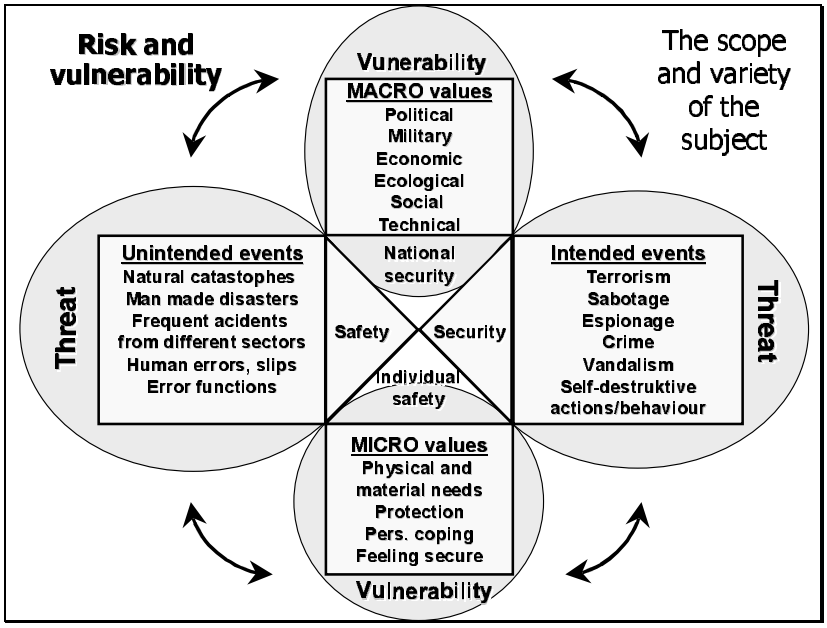

Figure 1: The vertical macro-micro perspective on risk management combined with types of threats and events (Hovden, 1998a).

The Norwegian case is briefly described in part 2. In the more general discussions in part 3, topics which are assumed special just for the Norwegian situation will be avoided, and the discussions will give priority to issues of general relevance for public policy and administration in vulnerable western countries. However, examples will be given from the Norwegian case. The discussions will focus mainly on regulatory regimes, and less on the rescue and emergency institutions.

2. Case: Analyses and recommendations from the Norwegian commission on the vulnerable society.

The Norwegian Government established a commission in September 1999 for exploring the threats and vulnerabilities of the society and making recommendations for increased preparedness and resilience. The report from the Commission was published July 2000 (NOU 2000: 24). The members of the Commission consisted of representatives from all political parties represented in the Parliament, experts from the authorities, and two external experts[1].

Contents of the report:

- The current regulatory control regimes, and the organising of emergency and crisis management
- New threats and challenges
  - Increased vulnerability and dependability:
    - technology development, specially ICT
    - globalisation, organised crime and terrorism
    - man-made disasters - transportation and "natural" catastrophes
- Means for reduced vulnerability in prioritised areas:
  - Protection of ICT and energy supply
  - Safety in transportation
  - Supply contingencies
  - Oil and gas exploration, production and distribution
  - Infection protection, pandemics
  - Food safety
  - Clean water supply
  - ABC threats
  - Mass flow of refugees (especially the border to Russia)
  - Organised crime, terror and sabotage
  - Information contingencies, information warfare and cyber war
- The need for political/administrative changes at national, regional and local levels
  - Recommendations on radical changes in the organisational structure of regulatory and rescue bodies. Principles for the division between operational functions and control functions
  - The need for research and development

The Commission states that today's society is much more vulnerable than it used to be. The failure of just a few key mainstays and functions within the modern society could result in wide-scale problems. The loss of telecommunications and energy supply would be particularly disrupting. Other aspects contributing to greater vulnerability and security problems include the following:

- Technological changes.
- Increasing complexity of modern society.
- Increasing demands for efficiency and cost effectiveness.
- Fewer personnel in numerous sectors.
- Increasing privatisation of public services.

[1] The author was one of the members

The challenges in preserving the security of modern society have changed dramatically in just a few years. With respect to certain specific actions, e.g. regarding sabotage or terrorism the threat scenario of today is characterised by a shift away from the manual towards the electronic. The tremendous changes in the use of information and communications technology have altered the meaning of national borders in the context of safety/security and national preparedness. The analyses were inspired by the "President's Commission on Critical Infrastructure Protection" (1997).

The Commission observed that there was an institutional and regulatory lag between the current control and response regimes and the needs for coping with the new threats and dynamics of the risk picture. The responsibility for societal risk management is scattered around most of the ministries and is operated through numerous directorates and control bodies. The total risk and vulnerability management system is very complex, is difficult to grasp; it has functional gaps and overlaps, and reveals inconsistencies in principles, logic and practice. This diversification in governmental safety/security and rescue bodies becomes even more confusing and ineffective at the regional and local levels of public administration.

To improve risk and vulnerability management in the Norwegian society the Commission recommends the following:

- Merging of the public safety and rescue authorities within the jurisdiction of a *single* ministry with national safety and preparedness as its main task, as a basis for
- A co-ordinated strategy for the possible merging of relevant safety and security authorities.
- A joint investigation commission for major accidents and crises.

A main objective is to split the responsibilities for controlling risk and vulnerability from the operational responsibilities of risk management at all levels and layers. A main objective for the Commission has been to establish a clear separation between the regulatory and control functions from the business interests of the activity or system.

The Commission believes that a co-ordinated strategy and method of operation should be developed for the various regulatory bodies. A number of these agencies should be merged, especially within the transportation sector. As a rule, any safety control function should be allocated to a ministry other than the one with administrative responsibility for promoting the sector in question. One ministry or directorate should be vested with the right and responsibility to assess weaknesses in the operative risk and vulnerability management of other ministries and across the different sectors.

The report's conclusions are followed up as an integral part of a governmental renewal program for the public administration. The report was sent to public hearing, and the results of the process will be a white paper to the Parliament (Storting). During the preparation of the report, two major accidents happened (a train and a high-speed ferry), plus a near catastrophe of burning gas tanks with the potential of blowing up the whole city centre at Lillestrom outside Oslo. These events exposed the subject of the report in mass media and on the political agenda.

3. Discussion of revealed points at issue

3.1. Problem identification and definition

The work in the commission quickly revealed that no one had a full overview of organisations within public administration working with safety/security related control functions and/or had specific responsibilities regarding emergency preparedness. A report from Statskonsult (1999) with the telling title "Complete by piece, and divided", citing Henrik Ibsen, gave some overview for the industrial domains, but far from compete. A new report on the organising of regulatory bodies (Statskonsult, 2000) revealed great problems regarding delimitation: Which types of risks and risk arenas should be included? What constitutes a regulatory body? Their functions regarding direct control and sanctions, advisory roles and information, writing regulation, etc. varies a lot.

The regulatory bodies are expected to be cost-effective in their use of resources. But nobody knows, and especially not when it comes to comparison of performances and cost-benefit results between the agencies. Nevertheless, it was easy to observe that some areas within traditional industry were too much regulated, whereas the new ICT sector and generally security problems in business were highly unregulated.

In briefings on the organising in other countries we got the impression that a co-ordinated, holistic overview was lacking in most countries, may be with the exception of Switzerland. However, Switzerland has a very special political and administrative culture, which makes experience transfer difficult.

3.2. Principles for organising

Fragmented and unclear responsibilities of authorities for controlling risks are a consequence of lack of transparency and a common logic in how the regulatory bodies are organised. Questions related to the integrity and independence of the regulatory regimes became part of the public debate following the two major accidents in transportation. The cabinet minister of transportation is also responsible for the regulatory bodies controlling safety in that sector, whereas in the industrial sectors the regulatory bodies for controlling safety, health and environment is assigned to a ministry without any vested interests in promoting the business of the industry. In Great Britain they learned a lesson from mixing those roles of responsibility when they experienced the Piper Alpha accident.

Generally, the organising of emergency functions seems to be more structured in most countries compared to the organising of regulatory agencies.

There is an extensive support for improved co-ordination, harmonisation and a reduction in the number of control authorities, i.e. "cutting trees and cultivating the jungle". However, it is more difficult to agree on what principles should be applied in doing that? Some success in co-ordination and harmonisation has been achieved through the meta-regulations of "internal control of SHE" in the industrial sector encompassing a number of laws and regulatory bodies (Hovden, 1998b). For one industrial domain, the oil gas industry, all control functions founded in different laws and ministries are delegated to

one authority, the Norwegian Petroleum Directorate (NPD). This is similar to the broader HSC/HSE construct in Great Britain based on the Health and Safety at Work Act, where they apply these principles for all high-risk activities in industry and transportation. The HSC/HSE construct represents the broadest scope for a governmental risk management regime according to the comparisons of the Norwegian commission.

In grouping and/or reducing the number of control bodies generally, Statskonsult (2000) proposed the following four groups:

- Safety in industry
- Transportation safety
- Free market concern - regulating/stimulating competition
- Protecting consumers against the free market

The grouping is based on three elements:

1. Primary reason/motive for the requirements
2. Target group of the regulation
3. Subject/discipline in focus (overlaps with 1)

This proposed grouping were met with lots of objections partly because the categories are not mutually exclusive, but mainly trigged by psychological and social mechanisms favouring the existing pattern of organising regardless of the factual contents of a change proposal.

Another controversy is about separating which institutions should be put down, down-sized or merged from those institutions needed and prioritised. Sophisticated analyses are needed to differentiate between institutions, which successfully have managed to reduce the risk, and those not needed any more because the external risk/threat has vanished or alternative control mechanisms are functioning. Ignorance to this distinction may result in disasters.

The structure of regulations and the structure of the administration should ideally match. This is generally not the case, and by reducing the number of regulatory bodies, the needs for simplification of regulations will increase. However, simplification is not just about numbers and volumes. Seemingly a lot of simplification can be achieved by moving from detailed requirements to functional performance criteria and references to general, external standards. However, this development makes the contents of the regulations more generic and expert dependent, and not comprehensible for layman judgement. The result can be passivity and alienation by ordinary people in dealing with societal and industrial risk management systems.

Little attention is given to the interaction between the cause and consequence side in risk management. In a way it looks like two separate worlds: control and preventive means and measures versus emergency planning/response and consequence reduction. – Can they be mixed, – and what can be achieved? Are there any synergies? If so, it should be part of the criteria applied in redesigning societal risk management systems.

3.3. Change strategies

It is a hard and difficult task to clean the "jungle" of regulatory bodies. Simplification and transparency in defining responsibilities are necessary, but wrong or too simplified approaches and strategies may give disastrous consequences. Change is risky. To obtain equal or more safety with less regulations and control activities, the down-sizing must be compensated by other resources to support a new regulatory regime with adequate knowledge and competence, power and authority to perform its functions.

In the Norwegian case two different change strategies are working in parallel. The first one, proposed by the Commission was to start at the top and making one Ministry responsible for the control and response for all high-risk activities and vulnerability problems of the society. This will establish a basis for redefining the needs for special agencies and services for prevention and control, for emergency planning and rescue capabilities, etc. Starting at the top also opens for systematic reorganisation at the regional and municipality levels for achieving more consistent vertically operating risk management systems. The other strategy, already operating partly because the process of decisions on the first one is slow, starts with adjustments within each sector by reorganising and merging some agencies in a pragmatic way without any overall policy, i.e. a sort of "muddling through" decision-making process. In recognising that the current "jungle" of regulatory agencies function reasonably well, at least not really bad, as it has developed and adapted to new threats over more than 100 years, a conservative evolutionary strategy may have some advantages in producing solutions without making big mistakes. Taking into account the value of experience, professional skill, traditions and culture in the current regulatory regimes should of cause be important in any change strategy. Somehow the two strategies should be combined.

3.4. Public and/or private/market control

Is has been a shift from centralised government regulation to more decentralised systems in which far more actors are involved. It is partly about a shift to more tasks allocated to regional and local regulatory bodies or multi-party co-operative bodies encompassing private and idealistic organisations, e.g. Red Cross and others in organising rescue operations, and partly a delegation if some tasks to certifying bodies.

In countries with an Anglo-Saxon jurisdiction, e.g. UK and USA, the insurance systems for damage claims and compensation are playing a strong regulatory role. In Norway and other European countries we can observe a strong scepticism to the power of layers and courts in handling risk problems, but there is also a pressure for approaching a more Anglo-Saxon like practice.

Within EU (and in this respect Norway is part of EU) we have since the "the New Method" for directives appeared, have had a trend towards privatisation of regulatory functions to certification and standardisation organisations, and a tremendous growth in the business of systems auditing. – The answer to the "Risk Society" by Beck (1993) seems to be the "Audit Society". A dominant (mis)interpretation is that private regulatory institutions are more value adding than government agencies, i.e. more safety at lower costs. I have seen no scientific proof of that.

There has been an increased development and use of safety related standards driven by non-governmental organisations. Ideally they are based on input from relevant industries, employee representatives and consumers. As the industry is controlling the processes and in some areas there also exist a market demand, companies quite willingly adapt to these standards. For public regulatory bodies they represents a substitute for detailed regulations, and in this way the public and the private actors reinforce each others. So far, so good, but a main concern is the democratic deficiency in controlling the standardisation. In the power-play between the relevant partners, employees and consumers are the weaker parts.

A main issue is what should be controlled by government, and what should be controlled by the market. In some areas the market mechanisms seems more and more capable of controlling safety, e.g. the safety of cars. However, generally it is a difficult task to sort out which safety problems can be handled by the (perfect) market, and which needs some regulatory control loops by government to compensate for an imperfect market. Sometimes we also have to find means to deal with gaps between what is beneficial for society and what is beneficial for business, e.g. the cost of robustness in infrastructures when operated by competing private companies on business terms.

3.5. Models of reality

In a global, liberalised economy utility models and reasoning have got superiority over alternative models of reasoning, e.g. justice, precaution, duty, democratic processes, etc. (Hovden, 1998c). Quantitative information is regarded more objective than qualitative information. And the output from risk analyses and accident statistics and other loss statistics fits well into the optimising models of economists. However, the common man does not trust risk calculations, and social scientists points at the weaknesses and manipulative effects of statistics.

Those caring for the numerous single accidents in road traffic, etc. complaint when mass media give all their attention to the rare disasters and to unknown, more speculative risk. By multiplying frequencies and losses to a risk index, it seems “rational” not to bother about or to prioritise the prevention of and response to disasters. But is that right? It is a question of values. So when it comes to prioritisation across sectors, activities and types of hazards and threats the decision-makers are faced with real dilemmas, which risk analysts and economists cannot solve for them.

3.6. The overall problem

The Norwegian case reveals the importance of influencing the political agenda. Risk management is about *power, conflicts of interests*, and political influence. This conflict perspective is usually hidden, and the debate is usually presupposing or pretending consensus on solving risk problems. This attitude can be naïve with regard to choosing the right solutions to real world risk problems.

Next, the question of what types of competence are needed is a source of disagreement. Down-sizing (of staff) seems to an inevitable sub-goal in the change

processes. In that process it is tempting to go for generalists in systems auditing rather than discipline based expertise on the risk phenomena and hazardous processes to be controlled. Believing more in virtual systems than in knowing the real world activities can fool systems auditors. Therefore, it will always be a need for the discipline-based expertise within cross-disciplinary teams in dealing with control objects, to detect failures, and for the trustworthiness of the regulatory system.

We know a lot about successful risk management within the traditional industrial domains. We know less about how to deal with *uncertainties and lack of knowledge* of new technologies in the post-modern society (van den Daele, 2000), e.g. genetic engineering, IC-technologies, the control of the "mad-cow" disease (Anand & Forshner, 1995) and the actual "foot and mouth" disease, etc. The clue is how to achieve *trust* in the societal institutions responsible for controlling these problems. Important aspects are about *risk communication* and how to cope with the important role of media for the public opinion and pressures on administrative and political systems.

Finally, – a paradox: the main topics of this paper have been on the needs for simplification of regulatory systems, - in combination with a documentation of increased dynamics, complexity and vulnerability in society. In a way, it does not make sense. The famous "Ashby's law on requisite variety" (Van Court Hare, 1967) reads: "For an analyst to gain control over a system, he must be take at least as many distinct actions, i.e. as great a variety of countermeasures, as the observed system can exhibit.". - To deal with the rapid changes and the increased complexity and uncertainty of risk problems we should ask for more regulations, more control agencies, and increased emergency preparedness and capabilities for crisis management. Otherwise we violate Ashby's law.

4. Concluding remarks

The regulatory regimes should match the risk and activity to be controlled. We do not know that for sure, neither for the quality and success of present safety institutions, nor for the result of the changes discussed. Experience transfer between countries is difficult due to differences in political culture, administrative traditions and jurisdictions. Generalising successful societal risk management between different activities and technologies may also result in fallacies. So the conclusion may seem to be quite pessimistic. On the other hand, it reveals lots of needs and challenges for risk management research. And, each point of issue in this paper should have been penetrated in separate papers.

Is the Norwegian case of any interest for the debate elsewhere? Norway is of cause an odd country in the periphery of Europe. However, some evidence for the relevance of the case can be found in the new OECD Futures Project on Emerging Systemic Risk. The scope and research questions are quite similar to the discussions in this paper.

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