

Research for a safer society

Programme
Research Programme on Societal Security and Risk – SAMRISK



About the programme

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The Research Programme on Societal Security and Risk – SAMRISK seeks to enhance knowledge about threats, hazards and vulnerability, prevent undesirable events and strengthen crisis management, while at the same time safeguarding fundamental human rights and the protection of privacy. The programme works to promote the development of new knowledge, build networks and qualify research groups to participate in international cooperation, including under the Security theme of the EU Seventh Framework Programme.

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Research makes a vulnerable society more resilient

“The SAMRISK programme can be compared to the whistle of a tea pot when it boils: The pressure finally became so great that the programme burst onto the scene. We live in a world that is increasingly exposed to many types of risk, and we sorely need more insight into how we can create a more resilient society,” says professor Jon Bing.

Two extensive public reports on societal security in Norway both concluded that we should do more to reduce vulnerability. “The first report had no practical consequences, while the second one at least resulted in the implementation of a few measures. At the same time, developments today are making society ever more advanced and complex, but this also results in a greater impact if an incident occurs. Thus, it is no longer controversial to say that we need greater insight into how we can create a more resilient society. This research programme was warranted a long time ago,” says Professor Bing.

Official Norwegian Report 1986:12, “Computer technology and the vulnerability of society”, includes the example of a fire in a telephone exchange at Skøyen in Oslo, which left an entire section of the city without telephone service for about one week. “This incident illustrates many of the issues related to societal security and risk. For instance, there were no back-up exchanges, so a telephone exchange from the 1930s

had to be used temporarily. Also, fire extinguishing equipment in the exchange was located behind a locked door. In other words, one security measure negated the other,” he explains.

More insight needed

Professor Bing can cite many examples which show that we live in a society exposed to a multitude of types of risks and that we need more insight into how we can improve resilience. “My daily work focuses on the information technology infrastructure. We have seen examples of online banks and cell phone networks breaking down, and it has been documented that at least one large Norwegian company is subjected to more than 1,000 attacks by computer hackers each day. We also face many challenges related to natural disasters, terrorism, aviation security and the like. But the SAMRISK programme cannot cover all the areas of societal security, so we have focused on highlighting some examples of what can be achieved with this type of research,” says Professor Bing.



Societal security deals not only with technical and natural science-related issues, but also with social science-related and organisational issues. “For example, there was a technical explanation for the malfunction in a relay at a New York transformer station in 2003, which caused over 50 million Americans and Canadians to lose power in what has come to be known as the ‘Northeast Blackout’. But the failure had an organisational explanation as well because it could have been avoided with better maintenance,” Professor Bing emphasises.

We have been lucky

“Have we simply been lucky in Norway since, after all, everything has gone well up until now?”



Five people died in Ålesund in March 2008, when a large boulder broke off the hillside and crushed the ground floor of an apartment building. Many Norwegian municipalities have not done enough to secure against rock slides. (Photo: Tore Kristiansen, Scanpix)

“Yes, we have been lucky! But we also have many skilled people who do a good job, and the organisations have a great deal of valuable experience. Nonetheless, it is clear that there have not been adequate systematic efforts to ensure societal security. One of the SAMRISK projects, for example, has shown that organisational changes in the form of privatising and outsourcing maintenance work may increase risk because the responsibility lies with the organisation that commissions the maintenance work while the experience is accumulated by the organisation that carries out the work. Outsourcing is not necessarily a bad idea, but it was easier to safeguard the knowledge and experience accumulated by skilled employees in an integrated organisation.”

“It should not be luck when things function well! Instead we should have sufficient insight to know when we have a tolerable risk level in society, and that is insight we do not have today,” adds Professor Bing.

Interdisciplinary programme

Because the SAMRISK programme is small, the programme board has stipulated that the projects in most cases must have an interdisciplinary basis. Importance has also been attached to international cooperation and participation in the EU Seventh Framework Programme for Research. Both interdisciplinarity and EU participation help to get more out of the funding allocated to the SAMRISK programme.

“When the programme concludes, we will end up with better contact between the research communities that work with societal security in Norway, with better contact between the disciplines, and with better contact between the Norwegian research groups and colleagues in the Nordic region and internationally. We will have achieved quite a lot,” says Professor Bing.

“If it is not controversial to say we know too little about societal security, why have we not made more progress in this area?”

“I believe that our politicians are not given the freedom to take sound decisions since the decisions must be built on a foundation of public opinion. To put it another way: The concerns of most people are not so great that it will give rise to political pressure to focus more on societal security. And we as researchers face a difficult educational task if we want to tell people there is cause for concern but that they should not be worried! It would not be accurate to describe Norway as a high-risk country to live in, but we can make Norway a safer country if we acquire more knowledge and work more systematically with societal security. For instance, many Norwegian municipalities have not done enough to secure against rock slides, plans for evacuation in case of disaster and the like,” he concludes.

Societal security in two dimensions

The Research Programme on Societal Security and Risk (SAMRISK) seeks to enhance knowledge about threats, hazards and vulnerability, prevent undesirable events and strengthen crisis management, while at the same time safeguarding fundamental human rights and the protection of privacy. The programme works to promote the development of new knowledge, build networks and qualify research groups to participate in international cooperation, including under the Security theme of the EU Seventh Framework Programme.

Societal security entails the ability of society to maintain critical societal functions and safeguard the life, health and basic needs of its citizens during events that pose various types of stressors. The point of departure for societal security efforts is that crises can and must be prevented. This implies understanding their causes and preventing threats or hazards from manifesting themselves. In the event that crises nonetheless arise, they must be dealt with in the best possible manner.

The SAMRISK work programme focuses on several thematic priority areas,

including technologies in interaction with society, organisations and individuals; patterns and magnitude of risks and threats, vulnerability and society's risk tolerance; policies, controls and regulation; and crisis management and risk communication.

The programme seeks to establish an annual conference for researchers on the topic of societal security. In this and other contexts, the programme will draw on Norwegian and international researchers who are participating in relevant EU-funded projects.

The first of its kind in Norway, the SAMRISK programme seeks to generate new knowledge about the new security issues arising at the interface of national and individual security – between law, order and traditional national defence on the one hand and preparedness, rescue services, emergency relief and crisis management on the other.

The Ministry of Justice and the Police and the Directorate for Civil Protection and Emergency Planning (DSB) have the coordinating responsibility for efforts related to societal security.



Jon Bing, Professor at the Norwegian Research Center for Computers and Law, Faculty of Law, University of Oslo, is the chair of the SAMRISK programme board. (Photo: BR Media)



SAMRISK researcher projects

Politicians must make the value judgments

The field of risk management deals with more than scientific analysis. It also involves value judgments, and this must be left up to the politicians.

Many of those who work with risk analysis believe that part of their professional responsibility is to assess whether the risk is too high or acceptable. But Professor Terje Aven of the University of Stavanger disagrees.

“It is the job of our politicians to establish what is good enough in terms of the level of security and preparedness we need to have – not the experts in the field. The professionals can offer advice, but the politicians are responsible for weighing the risks and uncertainties and determining an acceptable level of safety and security,” says Professor Aven, who has worked with risk analysis and risk management for 30 years.

He points to the petroleum activity in the Barents Sea as one example. The various political parties weigh the risks and uncertainties differently; the Social Left Party (SV), for instance, gives these much greater emphasis than the Conservative Party. For SV, the cautionary and precautionary principles take precedence over aspirations relating to value creation and growth. “In this case, there is no scientifically correct answer. It is a matter of value judgments and politics,” says Professor Aven.

Vital uncertainty factors are camouflaged

All risk management activities go through two phases. First comes the actual analysis, in which scenarios are identified and risk is expressed. In this phase the professionals try to look into the future and say something meaningful about what could happen. This may be, for example, geologists who are studying a mountainside prone to rock slides and calculating the probability that a rock slide will occur and what the effects would be. Or it might be the intelligence service and terrorism experts who are assessing whether there will be a terrorist attack and what the ramifications of this would be.

These analyses have a tendency to “camouflage” key uncertainty factors, according to Professor Aven. “Traditionally, risk analysts have often focused on probabilities and expected values, but have forgotten to include vital uncertainty factors that lie more or less hidden in the background knowledge. The analyses are based on many assumptions, but these may prove wrong. More attention must be paid to these uncertainty factors,” he says.

Such uncertainty factors are often referred to as “black swans”. In his book “Black Swans”, author and risk analyst Nassim Taleb discusses how Europeans used to believe that all swans were white. Black swans do exist in other locations, such as Australia, but the Europeans were quite simply unaware of this.

“Today many risk analysts only see ‘white swans’”, explains Professor Aven. The potential ‘black swans’ must be included if we are to enhance the quality of the analyses. We must think in broader terms than doctors, engineers and economists often do.”

Politicians on board

The second phase in risk management is to assess the threats and the scenarios that have emerged from the analysis. How serious is the risk to society and what should be done about it? What is an acceptable level of risk?

“Some claim that there are purely rational answers to these questions, but they involve value judgments that cannot be obtained mechanically,” Professor Aven emphasises. The task is to weigh

the uncertainties, and a technical-scientific approach by itself is not enough.

He takes a potential influenza epidemic as an example. The authorities are presented with a measure that costs NOK 100 million. The effect of the measure is difficult to estimate, but risk analysts calculate that it will save on average about one human life during the course of a year. In other words, the cost is high, and normally it would be concluded that the measure is too expensive in relation to the benefits. But the process of weighing uncertainties involves value judgments, and at this point the politicians would step in.

“So the question is, of course, whether the politicians are ready to take this responsibility or whether they will push it onto the experts,” he states.

The project



Terje Aven

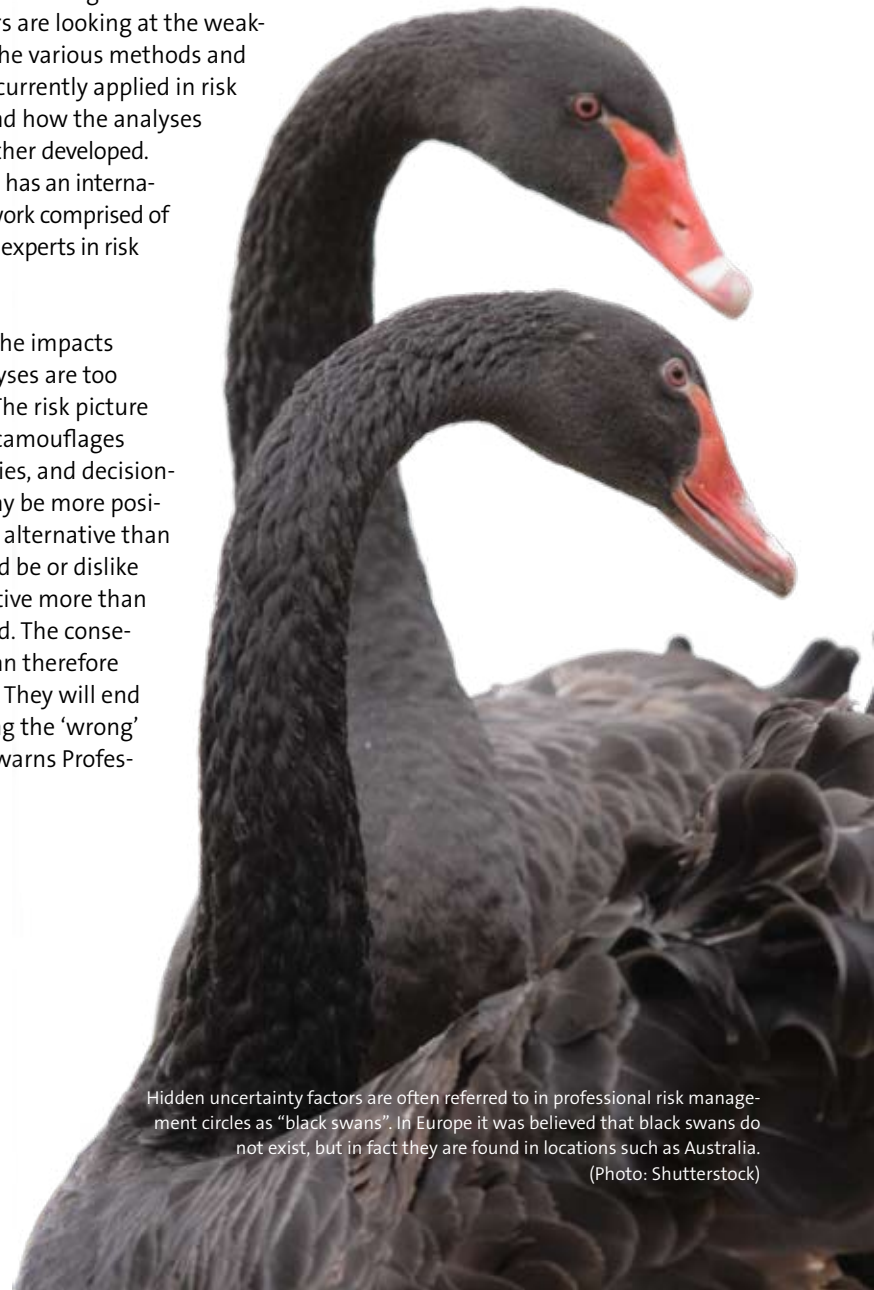
Principles, methods and models for determining the right level of investments in societal safety and security

Contractual partner: International Research Institute of Stavanger AS
Project manager: Professor Terje Aven
In the core team: Professors from University of Stavanger, University of Newcastle, University of Stuttgart and John Hopkins University (USA).

Thinking in broader terms

To better define the boundaries between scientific and political responsibility, risk analyses and the related assessment processes must be improved. A broader perspective on risk analysis is needed, according to Professor Aven. Researchers are looking at the weaknesses in the various methods and principles currently applied in risk analysis and how the analyses can be further developed. The project has an international network comprised of recognised experts in risk research.

What are the impacts if risk analyses are too narrow? “The risk picture produced camouflages uncertainties, and decision-makers may be more positive to one alternative than they should be or dislike an alternative more than they should. The consequences can therefore be serious. They will end up choosing the ‘wrong’ solution,” warns Professor Aven.



Hidden uncertainty factors are often referred to in professional risk management circles as “black swans”. In Europe it was believed that black swans do not exist, but in fact they are found in locations such as Australia.
(Photo: Shutterstock)

SAMRISK researcher projects

Seeing risks across sectors

A power blackout could bring railway traffic to a standstill – which in turn would prevent freight trains delivering jet fuel to airports, resulting in cancellation of flights. Thus, infrastructures such as electricity, water, transport and ICT must be viewed as interconnected.

“Coordination is the key, so we try to get people from different sectors and disciplines to talk to each other,” says Senior Scientist Per Hokstad. “We also hope to promote the use of a common method when identifying risks for the critical infrastructures.”

Among the critical infrastructures are ICT, electricity, water and sewage,

railways and roads. Hokstad is heading a SAMRISK project to find good methods for a collective risk assessment of these sectors. A broad cooperation across disciplinary boundaries is new in the field of risk analysis. Municipalities and other users of risk assessments are also participating.

“A common meeting place is important. Different sectors share many of the same problems, and it is beneficial to think of the broader picture and to view the consequences from many different angles. We will then see the connections more clearly and gain a stronger sense of the individual spheres of responsibility,” says Hokstad.



A cable fire in 2007 at Oslo's central train station led to an electrical shutdown, bringing all railway traffic to a halt. Thousands of subscribers also lost access to the Internet. (Photo: Morten Holm, Scanpix)

This is illustrated by a real-life incident – a fire in a cable culvert at Oslo’s central train station. There were many parties involved: one owned the actual electrical and ICT cables, another had responsibility for the culvert itself, and a number of different cable users were affected, including the central control office of the Norwegian National Rail Administration. After investigating the incident, the Directorate for Civil Protection and Emergency Planning concluded there was a genuine need to clarify the distribution of responsibility.

Greater detail

Cooperation across sectors is primarily what makes this SAMRISK project special. The methodological component has consisted largely of adapting existing models, but has also involved methodology development. “Devising the most advanced methods was not the point here, but rather to find something that is suited to the users,” explains Dr Hokstad.

Traditional risk and vulnerability (ROV) analyses are the starting point. These are rough analyses used to identify potential undesirable events and the impact of these on life and health, the economy and the accessibility of infrastructure services. But this is where the researchers take their analysis a step further.

“We go into greater detail,” says Dr Hokstad. “We select certain incidents with potentially major consequences and investigate them more in depth, illustrating with various analytical methods. For example, we look not only at what would happen if a location’s water sup-

ply were cut off, but also at how that would impact other infrastructures.”

Scenarios for Oslo

Oslo Municipality is used as a case study. Large infrastructure companies such as Hafslund (electricity) and Telenor (ICT) were also involved. “This is how we combine our scientific knowledge with the municipality’s knowledge of the system,” says Dr Hokstad.

“Four different events in Oslo are analysed in detail. One analysis was based on the central train station’s 2007 cable culvert fire. Many train passengers were affected, and the terminal halls were evacuated due to the spread of smoke. But in addition, several thousand customers lost access to the Internet. The cut in electricity knocked out the computer-operated central control office so that the trains could not run. Here we see the interconnection between electricity, ICT and the rail network.”

Three more potential events were analysed: a power outage in the regional grid, a cut in water supply to Ullevål University Hospital, and a breakdown in petroleum deliveries from the Sjursøya oil terminal to the planes at Oslo Gardermoen Airport.


“To get an overview of the overall impact of a potential power blackout, we look at which parts of the city would lose electricity and which functions such as water supply, railway operations and so on would be affected.”

Encourage politicians to plan, not just react

Hokstad asserts that media tend to chase isolated events and accidents. “Thus, politicians and authorities often feel pressure to introduce measures against the most recent incident. But usually it is far better to start with the overall picture and assess potential critical events collectively before they occur. We want to encourage this approach and help politicians to resist the pressure to respond to isolated events.”

“We are working on user-friendly analytical methods. These are intended to help municipalities, infrastructure owners and other decision-makers to gain insight into the pattern and magnitude of risks and threats and choose the most suitable measures to take. This will reduce risk in the long run. So far the analytical methodology has only been tested on a small scale in Oslo Municipality,” says Dr Hokstad, but he hopes that ultimately other large municipalities, urban centres and counties will sign on.

The project



Per R. Hokstad

DECRIIS: Risk and Decision Systems for Critical Infrastructures

www.sintef.no/samrisk

Contractual partner: SINTEF Technology and Society
 Project manager: Senior Scientist Per R. Hokstad
 Partners: Norwegian Defence Research Establishment, Norwegian University of Science and Technology (NTNU), SINTEF Energy Research, SINTEF ICT, Post-doctoral research fellow: Ingrid B. Utne, Department of Production and Quality Engineering, NTNU

SAMRISK researcher projects

New thinking about risk poses challenges to fundamental rights

The increased focus on risk in recent years has led to changes in legislation. More information about individuals is flowing across national borders, and activities that once were lawful are being criminalised. The result represents a challenge in relation to fundamental rights.

The overall patterns and magnitudes of risks and threats have become more complex and difficult to grasp. Terrorism, pandemics and natural disasters are among the dangers that threaten us. In an effort to gain control, the authorities are turning to the legal system and more stringent legislation.

“We have seen a trend toward greater use of coercive measures, more exchange of information and criminalisation of activities that once were lawful,” says Professor Ragnhild Hennem. One of the most recent trends is the criminalisation of preparatory acts, which means planning or preparing to carry out an unlawful act. If two people sit down together and make plans to blow up the Storting, their actions could be unlawful. A presumed threat or risk is sufficient.

“What before were lawful preparations have now become criminal offences. This means a move away from punishment as a reaction to punishment as a means of prevention. We have seen this move from reactive to proactive criminal law since the mid-1990s,” says Professor Hennem.



There is a trend to criminalise activities that used to be lawful – for instance, an action may be deemed a crime before any assault has occurred. (Photo: Shutterstock, Liv Friis-Larsen)

Mistrust of people's morals

An example is the legislation against sexual grooming, adopted in Norway in 2007. The term "grooming" in this context means developing a relationship of trust with a child for the purpose of exploiting the child sexually. For instance: A person has established contact with a child under 16 years of age via the Internet and has arranged a meeting. On the way to the meeting, the person considers whether he will or will not assault the child. If he decides "yes he will" by the time he arrives at the meeting place, he has already committed a criminal act.

"Actions may be deemed a crime long before any assault has actually occurred. This in turn means, among other things, that we do not recognise the individual as a moral agent to the extent we used to – after all, he could change his mind. The sexual grooming legislation may also serve to shift the focus from where most of the assaults occur, that is, within personal relationships," says Professor Hennem.

She also points out the problem relating to the burden of proof. What if a person has chatted on the Internet with a child and arranged a meeting, but does not intend to commit a sexual offence? How can that be proven? The presumption of innocence, that a person is innocent until proven guilty, is a fundamental principle which is at stake in a proactive criminal law such as this.

Information without control

Professor Hennem heads a SAMRISK project comprised of two sub-projects. A researcher project will examine the legal language used in anti-terror and anti-grooming legislation. How is the language – and thus the legislation – influenced by more recent thinking about risk? The parallel doctoral degree project will look at police cooperation in the Schengen area. A growing amount of information about individuals is being entered into databases to which all European police have access, and this implies poorer control over the information.

"First of all, we have no control over how the information we enter in Norway will be used in other countries. Second, we do not know how the information we have access to from other countries has been obtained. Have the individuals' rights been safeguarded? How can we find this out?"

The system is based on trust, and this type of information flow poses a challenge to important rights, including the right to have private relationships without interference.

Need to ask questions

Some risks, such as terrorism, are so overriding that there is widespread agreement that stricter laws and more information about individuals are needed. But according to Professor Hennem, much of what is taking place is of a different nature, such as the expanded use of covert audio surveillance, video surveillance or road traffic surveillance data.

"We like to think that this only concerns the 'bad guys' and that nobody will take a picture of us in the bathroom. The debate in Sweden on the Data Retention directive shows something else. We leave many more tracks behind us now than we did 50 years ago, which creates enormous opportunities for monitoring us electronically," she says.

When the UN Security Council and the EU encourage countries to introduce stricter anti-terrorism laws, it is difficult for a country like Norway to go against the tide. However, Professor Hennem believes that we need to ask some key questions. "This concerns all of us and what we view as fundamental values in society. We must therefore ask ourselves: What will we use this information for? What will be the outcome? Is it important enough to violate people's right to privacy, for example?"

The project



Ragnhild Helene Hennem

JURIS: Justice in the Risk Society

<http://www.jus.uio.no/forskning/grupper/samfunnskontroll/juris.html>

Contractual partner: Faculty of Law, University of Oslo

Project manager:

Professor Ragnhild Helene Hennem

Project co-worker:

Researcher Heidi Mork Lomell

Partners: University of Central Lancashire

Research fellow: Cand. jur. Synnøve Ugelvik

SAMRISK researcher projects

Reorganisation raises efficiency but creates new problems

Outsourcing and other reorganising within the energy, telecommunications and waterworks companies have led to higher efficiency and the professionalisation of operations. But reorganisation can also compromise the ability to deal with a crisis and other unforeseen events.

Today's society is completely dependent on the smooth functioning of critical infrastructures. The impact of breakdowns in telecommunications, water or energy supplies is enormous. So how is supply security affected when these companies reorganise their operations with outsourcing, privatisation and the introduction of Buyer-Supplier models? The CISS research project has shown that the ability of energy companies to handle a crisis may become diminished. Now the project's researchers are examining whether this same trend may apply to waterworks and telecommunications companies as well. This is research that requires expertise in both technology and the social sciences.

"The Norwegian energy industry was restructured pursuant to the Energy Act of 1991," explains project coordinator Petter Almklov. "This led to the partial privatisation or outsourcing of many functions of the publicly owned energy companies. To study the consequences of this, we interviewed 49 managers and employees at two large Norwegian

grid companies. Our conclusion was that the restructurings yielded higher efficiency, better control over specific tasks, and a greater degree of standardisation in daily operations. But this has likely come at the expense of some factors that are important for preparedness in relation to unintended events."

Integral knowledge can be lost

The energy companies' installers, for example, no longer have cohesive responsibility for sections of the grid. "When those who order the maintenance and those who carry it out are from different organisations, it is difficult to preserve the experience with and comprehensive knowledge about the facilities. The energy companies used to have many employees with lengthy experience, a broad personal network, and much of what we call 'tacit knowledge'. The new models do not reproduce this kind of knowledge or these networks in the same way," explains Dr Almklov.

Almost by definition, increasing efficiency means that fewer people work on the same tasks, which may be fine for daily operations. "However," adds project manager Per Morten Schiefloe, "if the operation of a facility is outsourced with stringent contracts, then the capacity and competence will not be present to deal with major problems that may arise from time to time. All this contributes to raising the risk of infrastructure failure, which in turn raises the risk to society."

The Norwegian Water Resources and Energy Directorate (NVE) has already noted this trend and tightened the restrictions on the grid companies' outsourcing of services and reduction of manpower. Moreover, new legislation is being drawn up that will in practice mandate public ownership of the water and sewage infrastructure.

Capacity, competence, insurance

The CISS researchers stress that sufficient capacity and competence in societal infrastructure can be thought

of as an insurance plan. For instance, we have essentially zero tolerance for breakdowns in the electricity supply. It doesn't take many minutes before a blackout causes serious consequences. So it is critical to find the right balance of economics and ideology on the one hand, and security and surplus capacity on the other. The wrong balance can be very costly to society.

With reorganisations, one should consider that infrastructure companies often make investments that exceed traditional business-related assessments. "The waterworks have pipes that can last up to 150 years," cites Dr Almklov as one example. Water and electricity in particular are special infrastructures in the sense that the costs of a stoppage are greater than the service's economic value. If supply were cut for a week, the energy company would lose revenue, but all of society would bear costs of a far greater magnitude. This is another reason for the infrastructure companies to think very far ahead.

Dr Almklov and Professor Schiefloe point out that these organisations have not previously paid enough attention to the significance of personal relationships that develop over time within an organisation. "While a Buyer-Supplier model may yield higher efficiency and orderliness within the organisation," notes Dr Almklov, "it also has a tendency to cut straight through that experience based tacit knowledge about how to solve problems, who to turn to, and so on – knowledge which is critical in dealing with the unexpected."

Diverts attention

It also appears that a reorganisation often acts as an "attention hog". As Professor Schiefloe puts it, "When changes are made, much of the focus is directed at organisational and financial conditions, while less emphasis is placed on technical and security-related considerations. In the 'old-style' energy companies, management was carried out by technical experts. Reorganisations give more power to the financial experts and the focus shifts more to sales and profits."

"This is not to say that all reorganisations are disadvantageous. In many contexts it may be natural to separate, say, ownership from maintenance. But we recommend using thorough expert security assessments as the basis for defining the new organisation's core processes and choosing which services to outsource. For instance, tasks such as clearing the woods along power lines are fine for outsourcing, but technical maintenance could be kept within the organisation," he adds.

The CISS project's first report does not draw conclusions about which organisational models work best from the standpoint of societal security. But the report does state that organisational changes lead to changes in the patterns and magnitude of risks and threats, and that the short-term effects will differ from the longer-range impacts. These are points that both grid companies and public authorities will have to consider.



An energy company would lose revenue if the electricity supply were cut off for a week, but the societal costs would be of a far greater magnitude. (Photo: BR Media)

The project



Petter Almklov

Per Morten Schiefloe

CISS: Critical infrastructures, public sector reorganization and societal safety

www.sintef.no/samrisk

Contractual partner: NTNU Social Research AS Studio Apertura
 Project manager: Professor Per Morten Schiefloe
 Project coordinator:
 Senior Researcher Petter Almklov
 Partners: SINTEF Energy Research, SINTEF Byggforsk Water and Environment

SAMRISK researcher projects

Logistical boost for emergency relief

Helping people in the wake of a disaster is a complex and chaotic affair. Still, relief efforts can be carried out more efficiently – for example through better preparedness. This is where experts in traditional logistics have valuable knowledge to contribute.



Thanks to regionalisation, relief efforts after the 2006 earthquake in Indonesia were launched in record time. (Photo: Olav A. Saltbones/International Federation)

In the span of less than a year, from December 2004 to October 2005, the world witnessed the tsunami in South Asia, the earthquake in Pakistan, and Hurricane Katrina in the USA. In the aftermath, it was evident that relief efforts were often hampered by logistical breakdowns, and this has focused more attention on how relief efforts are organised. Clearly, better logistics can save lives and help more victims.

“There is great potential for improving relief logistics,” says Associate Professor Marianne Jahre. “Being well-prepared is the best start. Experiences and data from prior relief operations are extensive and should be used systematically to map potential disasters as well as their effects. With floods, for instance, we often know when to expect them, the type of destruction they cause, and what kind of help the victims need.”

Having worked with logistics for 20 years, Professor Jahre is now coordinating a project aimed at developing knowledge about disaster relief logistics and improving the network between the humanitarian organisations and “tradi-

tional logisticians” from more commercially oriented fields and academia.

More planning needed

Relief logistics is about organising efficient lifelines. This is what the disaster relief organisations have been attempting for many years, but Professor Jahre believes the perspective is often too narrow.

When most people think of disaster relief logistics, the first things that often come to mind are building roads and transporting supplies to the victims by helicopters. But relief efforts involve much more: deciding where to pre-position stocks of relief items such as tents, mosquito nets and kitchen equipment and where to procure the supplies, delegating responsibilities, and making the entire operation as cost-effective as possible. Preparing for disasters for instance involves knowing where and when to buy what is needed and making sure the right competence is in place. Then come issues pertaining to the actual relief operation, such as whether victims should be provided with tents or tools to enable them to begin repairing their own homes.

“Whenever a disaster strikes, the relief organisations have had a tendency to rush everything and to think it all has to be done immediately. This is a function of their being accustomed to receiving funds once a disaster hits, and of the ongoing difficulty in achieving a more stable flow of funds. Regardless, they as well as donating governments and organisations need to change their thinking to focus more on preparedness,” asserts the professor.

Implementing good ideas

The professor believes that the humanitarian sector is on the verge of big changes with many good initiatives in the offing. More cooperation through cluster thinking and coordination between the organisations is one. Finding new ways to transport and stock the items, for example using ships as “floating warehouses” that can be immediately directed towards a disaster when it occurs, is another. A third is to locate essential supplies nearer high-risk disaster areas, like the Red Cross movement did when it established three regional logistics centres with pre-positioned goods and trained logisticians in Kuala Lumpur, Dubai and Panama.

“This is the right kind of development, and several organisations are taking similar steps. The Red Cross has also transferred responsibilities for operations to the regional centres, which brings them closer both geographically and culturally.”

Strategic thinking by the Red Cross

Studies confirm that regionalisation is a good idea. After the 2006 earthquake in Indonesia, the Red Cross mounted a relief operation that was later compared with similar Red Cross operations in the aftermath of the 2005 earthquake in Pakistan and the 2004 tsunami in Indonesia. Relief efforts were fully underway in a sixth of the time compared to the tsunami relief operation. Recipients in Indonesia received help three times faster for 30 % of the delivery cost compared to those in Pakistan. So the higher expenses in the initial phase following regionalisation were quickly recovered.

Disaster relief organisations are often criticised for having high administrative costs – which Professor Jahre finds partly unjustified. “Much of the administrative costs are vital for proper disaster relief! Investments are required to put good systems in place, but once this is done, relief efforts are more efficient and costs go down for subsequent operations.”

Lessons from industry

Professor Jahre says that while the organisations are quite good at “moving things and building roads”, most fall short when it comes to strategic thinking. “There are useful logistics tools and models that are clearly transferable from other fields. One example is the postponement principle, a commonly used model in commercial logistics in which production and transport are

delayed until customer demands are known. In the automobile industry, when a new car is ordered, the extra accessories are not assembled until the buyer has decided on the details. This principle is already being applied in relief efforts. For instance, items are often not labelled with the destination, disaster and donor until it is absolutely clear where they should be sent.”

“The relief organisations could also learn more about outsourcing: what they should do themselves and what is best left to others. Not every organisation can maintain its own complete disaster relief logistics set-up. Cooperating with commercial service providers may not only be more cost-effective but also provide better and faster relief. I believe this is a trend that will gain stronger footing even though there is resistance due to the fear of losing control and apprehension about involving commercial interests.”

The project



Marianne Jahre

HUMLOG-NET:
Humanitarian
Logistics Networks

www.humloggroup.org

Contractual partner:
BI Norwegian School of Management
Project manager: Associate Professor
Marianne Jahre
Partner: Norwegian Defence
Command and Staff College

SAMRISK researcher projects

Climate change is redefining ROV analysis

More extreme weather in the future could damage infrastructure such as tunnels, roads, port facilities, and water and waste water systems. Current risk analysis methods are too general to incorporate the threat posed by climate change.

Many buildings and other infrastructures here in Norway are built to “take a pounding”, and severe weather is nothing new to us. Nevertheless, climate change will create a need for new precautions, since we can expect more floods, storms, landslides and extreme heat waves.

“The climate is changing. We have to anticipate more severe and more frequent extreme weather events, as well as more flooding due to increased precipitation. Most structures considered sufficiently safe today will be hit more often by flooding,” says Kristina Heilemann, a research scientist and geologist. There are many risk and vulnerability analysis (ROV) methods used to prevent accidents and develop preparedness plans for when accidents do occur, but these analyses are no longer adequate.



“Most analyses are general and do not take into account the issue of climate change – which is why we seek to develop an ROV analysis specially modified to incorporate climate change.” Dr Heilemann is heading a SAMRISK project focused on developing just such an analytical method. This method is expected to be further refined internationally under the auspices of the EU.

Detailed analysis

The working group members represent a variety of scientific backgrounds: geography, psychology, engineering, geology and technology. They have surveyed existing methods and are basing their efforts on risk analysis software developed under the DECRIS project (see page 7). The software is customised to feature climate change as the main risk-level component. Dr Heilemann and her colleagues have chosen the waste water system of Trondheim Municipality as their test case. The municipality previously took part in an ROV analysis that provided a good initial overview

but is not detailed enough with respect to climate change.

“We have to go into more depth to incorporate the climate scenarios,” she explains. “It’s a completely new approach to select a single area, a waste water system in this case, and analyse it in detail. We are in the testing phase now, but eventually we hope to develop risk assessments of other areas as well, such as rail transport, the road network and coastal zones.”

Sharing information

The researchers interviewed municipal employees to collect the entry data required for the software. If the sea were to rise half a metre in the next 50 years, how would the municipal water and waste water system be affected? What problems are created by flooding? What preparedness plans are in place, and what sort of countermeasures are ready for implementation?

“We need this input from the infrastructure owners. They have clear answers and



Climate change will bring more frequent and more powerful extreme weather events to Norway. Photo from Stavanger in August 2004. (Photo: Alf Ove Hansen / SCANPIX)

opinions about these issues. Our work also serves to raise awareness of where to set the security level. For instance, what is considered a disaster: One person dying? Or ten homes being flooded?”

Does the municipality have reliable, adequate information about climate change?

“No, but the warnings about extreme weather events come from research projects under the NORKLIMA programme, for example, or from the authorities responsible for continuously monitoring changes in weather. We help the municipality to interpret and apply the climate scenarios, and there is a reciprocal exchange of information.”

Limiting damages

By the year 2100, precipitation in Trondheim will have increased by 10 to 20

per cent – raising the risk of floods and flood damage that can lead to overflow in parts of the waste water system. This in turn leads to increased pollution. So the better prepared a community is for different scenarios, the more it can do to limit the damage.

“The great flood in Poland and Germany in 2002 surprised the public and authorities alike. It truly pays to be prepared, but unfortunately it does not look as if Poland and Germany have learned much from all that transpired. It would be interesting and very worthwhile if Norway can step into the breach here,” says the SINTEF geologist.

“We know that climate change is coming. By taking that into account when we construct new infrastructure or renovate older infrastructure, we can at

least curb and possibly prevent major damage.”

The project



Kristina Heilemann

AdaptCRVA: Adapting Community Risk and Vulnerability Analyses for Climate Change

www.sintef.no/samrisk

Contractual partner:
SINTEF Building and Infrastructure
Project manager:
Research Manager Kristina Heilemann
Partners: Department of Sociology and Human Geography, University of Oslo; Vestlandsforskning; Det Norske Veritas; Faculty of Humanities, Norwegian University of Science and Technology (NTNU); Federal Research Centre for Fisheries, Rostock, Germany

SAMRISK researcher projects

Not the same risk in Frankfurt and Sandane

Today's concept of risk is strongly influenced by mathematics and statistics. As a result, the security measures used at small Norwegian airports and in Frankfurt are roughly the same. "We need an understanding of risk that takes social and cultural differences into account," says Research Professor J. Peter Burgess.



According to EU regulations, Frankfurt international airport (photo) and small Norwegian local airports must have the same security measures.

It is a bit odd that EU regulations stipulate that the same security measures must be used at enormous Frankfurt international airport and tiny Sandane airport in Sogn and Fjordane county in Norway. "These are completely different airports. At small Norwegian airports the security workers know many of the passengers personally, and this leads to situations in which your neighbour has to search your luggage even though she

knows you are not a terrorist," he explains.

The security checkpoints at airports – and at other facilities in need of this type of security – would be both better and more effective if social and cultural differences could be taken more into account, according to Professor Burgess.

Risk as a social phenomenon

The concept of risk used in modern risk and security analyses is based on a technological, statistical and mathematical approach, and is defined as the product of the probability of an undesired incident and the consequence of the incident. Professor Burgess heads the SAMRISK research project, in which one of the objectives is to define risk as a social phenomenon.

“While the mathematical risk may be the same in a given situation, Norwegians’ perception of risk will, for example, be quite different from that of Germans or Americans – due to cultural differences. Moreover, not only the perceived risk, but the risk itself, may be different due to social and cultural differences. For instance, Norway is less vulnerable to international terrorism than the USA because we do not have facilities with the same international symbolic value as the Twin Towers in New York had. It is likely that only large-scale, high-profile international events can make Norway an interesting target for terrorists,” Professor Burgess believes.

“Risk is also a subjective and individual phenomenon because you and I may consider different things to be risky. Nonetheless, Norwegians share many of the same assessments, and this means we can study risk as a social phenomenon,” he adds.

Object-oriented aviation security

With support from the airport operator Avinor, anthropologist Elise Olsvik has studied the perception of risk and security measures at Norwegian airports. There she found a complex world of security workers who have a variety of duties and different perceptions of responsibility and framework conditions. One of the observations is that the potential for danger varies widely between different airports. It may be easier to carry out a terrorist attack in Bodø than at Gardermoen, but it is also far less interesting from a terrorist’s point of view. Olsvik has also found that there are a series of organisational subcultures at the airports. The perception

of risk among security guards differs from that of Avinor’s representatives which again are different from that of the pilots and passengers. There is no clear-cut perception of what the threats are and what can be done to decrease them. This just goes to show that we get an imprecise picture if we think of risk in mathematical, statistical and technological terms alone.

As a general rule, airline security throughout Europe is very object oriented. Focus is placed on the items located in the passengers’ luggage or pockets rather than on assessing how a potential terrorist might think, act or behave. The danger is associated with things, not with people.

“Do security measures lose their meaning when security workers stop a petite woman with lip gloss in her pocket while an unarmed man, who is large, strong and trained in martial arts, is allowed to pass through?”

“No, we are not saying that the measures become meaningless, but we believe that security should focus more on people. On that specific point I agree with the American National Rifle Association (NRA), whose motto is ‘guns don’t kill people, people kill people’. But that is the only thing I agree with the NRA about,” answers Professor Burgess.

Anthropologists instead of detectors?

There are security measures which, mathematically speaking, do not improve security but can enhance the general public’s feeling of security. Professor Burgess believes there is nothing wrong with

this because people’s feelings should be respected. “But in some cases, security measures can also create a feeling of insecurity, such as if you land at Heathrow and are met by heavily armed security guards.”

“Are Norwegian airports unsafe?”

“No, I don’t think so, for one reason because our facilities are not high profile enough. But I believe that the security measures at many airports could be both less costly and more effective if we had a different understanding of risk. For instance, the security departments could employ a few anthropologists who could monitor passengers’ behaviour at a low cost instead of buying more new, expensive sensors and detectors!”

The project



James Peter Burgess

SORISK: The Social Determination of Risk: Critical Infrastructure and Mass Transportation Protection in the Norwegian Civil Aviation Sector

<http://www.prio.no/sorisk>

Contractual partner: International Peace Research Institute, Oslo (PRIO)

Project manager:

J. Peter Burgess, Research Professor, PRIO

Project coordinator:

Ass. professor Kenneth Pettersen, University of Stavanger

Partners: Avinor, Universität Stuttgart,

Ludwig-Maximilians-Universität (LMU)

Munich, Lancaster University, Open University

Research fellows: Elise Anonby Olsvik

(University of Stavanger), Nina Boy (PRIO)

SAMRISK researcher projects

We can learn more from accidents – but how?

Major accidents often prompt investigations and the introduction of new measures, but this does not necessarily mean that society has learned much about prevention of future accidents. “We must also consider what types of processes are needed to promote learning from experience,” says Senior Researcher Ove Njå.



The railway accident at Tretten station is Norway's worst since WWII. On 22 February 1975, an express train collided with a local train, killing 27 people. (Photo Erik Thorberg / NTB / SCANPIX)

“Investigations of major accidents are currently conducted rather arbitrarily. One investigation may be comprehensive and formalised, while another is more superficial and routine. Objectives can range from disclosing regulatory violations to a desire to learn from bad arrangements and conditions,” says Dr Njå.

The ACCILEARN research project is based on the hypothesis that accident investigations as currently conducted do not play an important role in learning for individuals or organisations across societal sectors. “It is a challenging hypothesis. Once we begin examining this,

it is obvious that those directly involved in the accident as well as the investigators learn from the experience. But it is not as clear that many others who could have benefited from the process have actually gained any learning. Our group claims that investigations as a rule yield a good deal of new knowledge that could be put to better use. If we could improve our ability to learn from major accidents, then it is reasonable to expect that we would also improve our ability to prevent more accidents in the future.”

Change not always indicative of learning

Dr Njå is comparing two of Norway's worst railway accidents: the 1975 collision at Tretten, in which 27 persons died, and the 2000 collision at Åsta, which killed 19. Dr Njå is studying a large amount of data from the National Archives and other sources to examine how learning actually took place within the rail transport sector in the years between the two accidents.

At the same time, a doctoral fellow at UiS is examining the learning processes of the police, fire and rescue services,



(photo: Shutterstock)



(photo: Shutterstock)

and ambulance services in the wake of accidents, while another, at Lund University, is comparing the respective accident investigation boards of Norway and Sweden to study their organisation and methods, and how their overall investigative processes incorporate considerations relating to learning.

Are regulatory changes following an investigation report proof of learning?

“Not necessarily,” responds Dr Njå. “There are examples of investigation reports that have given the authorities a pretext to adopt new regulations that the bureaucrats had already considered introducing before the accident. So while the accident served as the impetus for change, in our view this is not synonymous with learning. To truly achieve effective learning after an investigative process, a number of different aspects must be considered, including presentation of the material. More is

needed than just a report that relatively few people are going to read.”

Difficult to quantify learning

The concept of “learning” must thus be defined in a way that will lead to valid and reliable findings under the project. “It is an extremely complex matter to associate learning with an investigation. One could take the easy route and say that measures implemented equals learning, but that quickly becomes meaningless. For instance,” explains Dr Njå, “learning may also take place even when an investigation has not been launched, nor any measures taken. We wish to apply the more meaningful, modern concept of learning as the processes that lead to a greater understanding of a phenomenon. This will enable the project to provide recommendations on new types of processes for following up investigations into major accidents. Our efforts will lead to a deeper understanding of the role played by various in-

vestigative bodies, with respect to both individual and organisational learning from accidents.”

The project



Ove Njå

ACCILEARN: Accident investigation and learning effects within emergency organisations and across societal sectors

Contractual partner: International Research Institute of Stavanger (IRIS)
 Project manager: Ove Njå, Senior Researcher at IRIS and Associate Professor at the Department of Industrial Economics, Risk Management and Planning at UiS
 Partners: Lund University, Sweden, Norwegian Board of Health Supervision, Accident Investigation Board Norway
 Doctoral research fellows: Alexander Wilhelmsson, Lund University; Morten Sommer, University of Stavanger

The project also receives funding under the Research Programme RISIT (see page 36).

SAMRISK networking projects

Community efforts crucial after a natural disaster

When a natural disaster occurs, most of the relief efforts during the first few days are typically carried out by local groups, which are then pushed aside when the international relief organisations arrive. “It would be much better and more sustainable if the efforts of the local communities were supported rather than undermined,” says Professor Arne Olav Øyhus.

In many parts of the world, natural disasters are a greater threat to life and the standard of living than armed conflict. It is almost always the poorest of the poor who are hit hardest because they live in the most exposed areas. According to reports from the UN’s Intergovernmental Panel on Climate Change (IPCC), the number of natural disasters in the form of hurricanes and floods is on the rise due to climate change.

“But many observers say that the greatest disaster occurs after the natural disaster itself, when the ‘cowboys’ from the international relief organisations come in with helicopters and turn all the local initiatives upside down,” explains Professor Øyhus.

Professor Øyhus has more faith in a different approach. “There are two main ideas underlying this project. One is that relief efforts following a natural disaster

should be based on the local structures in the communities affected; we call this ‘community-based disaster management’. The other idea is that both those who work with disaster relief and those who provide long-term development assistance should have two thoughts in mind at the same time. Disaster relief workers should be aware that their measures need to be sustainable in the long term, and development assistance workers must keep in mind that their measures need to



Most local communities have developed some type of preparedness for dealing with natural disasters, and the international relief organisations should do more to incorporate this into their activities. (Photo: Shutterstock)

be resistant to crises or natural disasters should these occur in their area,” says Professor Øyhus.

Community efforts pushed aside

The tsunami that struck Indonesia, Sri Lanka and many other countries on December 26, 2004 proves many of points made by Professor Øyhus. “I conducted a survey of the local population in Sri Lanka afterward, and they said that the local people mobilised and implemented a major effort in the days immediately following the tsunami, cleaning up, carrying away the dead, transporting the injured to schools and temporary hospitals, and the like. When the national authorities and international NGOs arrived, most of the emergency relief operations had already been carried out by the local population. But a large number of measures were implemented which pushed aside the local relief efforts and generated dissent within the local community. Some people received a new fishing boat, others got nothing. Some people were given a nice new house, others got a hut. The NGOs rented cars and employed people at wages no local authorities could compete with. After two or three months, most of the crisis experts left the area, leaving behind many ad-hoc projects that could not remain functional in the local communities in the long term.

Many of the disaster relief operations are dominated in part by a certain type of tough male, often with a military background, who comes to a disaster area without knowledge of the local culture and with no understanding of the local structures. “These ‘cowboys’ have good intentions, of course, and believe strongly

that they are doing a good job. But they also think that there is little to learn from the local population. This is where I believe they are wrong. Most local communities are just as interested in helping as we are, if not more, and usually they have developed or have the opportunity to develop some type of preparedness plan. Take, for example, the people of Tikopia, who knew exactly what they should do in case of an earthquake and who went up to mountain caves to avoid the tsunami. Not one person from these communities was injured,” says Professor Øyhus.

Study the local structures

Professor Øyhus believes that the relief organisations should instead take time to study the existing structures in the local communities and build further on these. He has personal experience with disaster relief efforts, including during the severe drought in Sudan in 1984-1985, and he is convinced that a more respectful approach will save more lives and have more constructive, long-term effects. “It would even be more cost-effective,” he adds.

Disasters are blown out of proportion

“But it is also unfortunately the case that the NGOs to some extent have an interest in blowing potential disasters out of proportion because then it will be easier to get the attention of the TV cameras and receive large amounts of funding. After the massive earthquake in Kashmir, for example, it was often stated that 80,000 people would die during the winter if the NGOs were not allowed to deliver relief assistance. But when winter came – without much relief assistance – almost nobody died.

This was largely due to the excellent job done by the local structures,” he says.

The main objective of the EPM project is to establish a network of international researchers with special, interdisciplinary expertise on the relationship between sustainable development and management of natural disasters. The researchers in Norway and their partners in Indonesia and Sri Lanka will design mechanisms that can transfer knowledge and information about natural disasters and crisis situations in both directions between the local communities and the research groups.

“Imagine if Bulgarian relief workers came to Norway following a rock slide on the west coast and pushed aside the local police, Norwegian People’s Aid and the local Red Cross! There is nothing wrong with Bulgarian relief workers, but local knowledge is what counts in cases like this. It is much too easy to underestimate the knowledge found in developing countries,” adds Professor Øyhus.

The project



Arne Olav Øyhus

EPM: Emergency Preparedness and Management Network

Contractual partner: Faculty of Economics and Social Sciences, University of Agder
 Project manager: Professor Arne Olav Øyhus, head of the Centre for Development Studies
 Partners: Universitas Gadjah Mada, Indonesia; University of Ruhuna, Sri Lanka; University of Stavanger

SAMRISK networking projects

Safer food through new ICT technology

Food safety efforts can be made more effective – thanks to new mobile telephones and digital map technology. Research institutions are joining together in a network to coordinate their use of “Smartrap” technology.

Smartrap – short for smart reporting – is doing away with binders and paper maps, and ushering in the use of digital tools for a faster, more efficient and “smarter” flow of information. A field inspector who discovers a disease on a plant, for example, can go online with a modern mobile telephone and report it immediately to an automated central system, which relays the incident to food producers and other concerned parties in the area.

“When a situation arises that poses a threat to food safety, we can use ICT and broadband technology to automate the response needed. Incidents are entered onto a digital map, then a voicemail or text message sends out the word to everyone who may need it,” says research coordinator Trond Rafoss.

This new reporting technology attracted much attention when its first pilot project concluded in 2007. Dr Rafoss explains that the initial solution allowed for reporting via Internet browser from an office computer. The next development was to make the technology oper-

able from handheld devices for field use, made possible by today’s GPS-enabled mobile telephones.

Field-tested on destructive fruit disease

In 2008 Smartrap was field-tested in western Norway in connection with surveys on fireblight, a bacterial disease that attacks pear and apple trees as well as many ornamentals. The disease has been found in private gardens and public parks but has not yet reached Norway’s important fruit districts. The Norwegian Food Safety Authority has implemented a number of countermeasures to contain its spread.

“Smartrap has performed well,” says Dr Rafoss. “The incidence of susceptible plants has now been mapped, which will make countermeasures effective in case of outbreak. We have an accurate overview, so next time we can clear away plants that are prone to fireblight or are already infected.”

The Norwegian Food Safety Authority is responsible for containing outbreaks of plant disease and pests, and foodborne



diseases in humans – so Dr Rafoss feels the agency urgently needs to begin using the new technology. “The Food Safety Authority is a fairly new agency and has a lot to deal with. Many of the district offices that have tried out the solution are asking why they did not get it sooner.”

Many advantages

“This solution is important because it can hinder and contain the outbreak of diseases, which improves food safety. This technology would also increase efficiency by freeing up Food Safety Authority resources for other work. From a research perspective this is exciting since the solution will give researchers a new basis for compilation of data, meaning greater opportunity to understand disease outbreak and the spread of infection. In the long run, the new research findings obtained will rationalise the agency’s efforts.”

Plant and animal health in Norway is facing major challenges, driven by globalisation and climate change. Better tools will be essential in meeting these challenges. This SAMRISK project is designed to develop a network comprised of research groups and public and private institutions. Several seminars will be held in 2009.

The project

Trond Rafoss

SMARTRAP: Smart reporting for food safety, networking measures and competence-building



http://www.statkart.no/Norge_digital/

Contractual partner:
 Norwegian Food Safety Authority – Regional Office for Buskerud, Vestfold and Telemark
 Project coordinator: Research Coordinator Trond Rafoss, Norwegian Institute for Agricultural and Environmental Research (Bioforsk)
 Partners: Bioforsk, National Veterinary Institute, Institute of Marine Research, Norwegian Mapping and Cadastre Authority

SAMRISK networking projects

A close look at insurance

The US researcher Evan Mills has pointed out that if the insurance industry were a nation, it would have the world’s third largest economy.

“But the insurance industry is vastly under-researched given its economic and societal significance,” says Professor Johannes Brinkmann.

Professor Brinkmann is one of the driving forces behind the BI Centre for Risk and Insurance Research, which was created to increase national and Nordic research on risk and insurance. Not long after the centre was established, one of its project proposals was granted funding under the SAMRISK programme. The project is designed to promote network-building between Norwegian and international risk researchers, public employees and insurance industry personnel. Project activities include the organisation of five seminars over the course of one year, with a focus on topics such as societal security and disasters from an insurance perspective and discussions around corporate social responsibility efforts within the insurance industry.

Few read it, even fewer understand it

“Even though insurance is essential for most of us, it is a product only few people can truly appreciate. As a result, many consumers spend a great deal of money

on something they know almost nothing about,” explains Professor Brinkmann. “The only material evidence of the purchase is a piece of paper with a contract that few actually read and even fewer understand. Most people hope never to make use of the agreement, since it means something has gone wrong.”

“Moreover, insurance brokers often have little grasp of what they are selling. What they sell as risk often does not correspond to an actual risk. In addition, most people have a flawed perception of what is dangerous. Many are worried about ‘serious incidents’ like dying in a plane crash, for instance, yet statistically you are more likely to die crossing the street. This type of distorted perception is one of the reasons why many people are over- or under-insured.”

One important issue in the network’s discussion of insurance is the role of the state. Where do the responsibilities of the insurance companies end and those of the state begin? How can insurance companies and re-insurance companies share risks and responsibilities for societal security - with one another, with the state, with others?

The project



Johannes Brinkmann

Societal risks and risk society in a cross-disciplinary and cross-stakeholder dialogue perspective

<http://www.bi.no/roff>
http://www.bi.no/Content/Article___73533.aspx

Contractual partner: Centre for Risk and Insurance Research, Norwegian School of Management (BI)
 Project manager: Professor Johannes Brinkmann

SAMRISK networking projects

Being liberal means taking risks

Western democracies are based largely on liberal values, although the word “liberal” is frequently used as an insult in the USA (about left-wing softies) and in Europe (about right-wing free market extremists).

“We do not always think about the fact that to some extent being liberal means accepting risk,” says Research Professor J. Peter Burgess.

The Norwegian municipalities involved in the Terra Securities scandal, the large British bank Northern Rock and the US investment bank Lehman Brothers were among the first victims of the subprime mortgage crisis. US banks had securitised a large number of mortgages given to homeowners with poor credit ratings, and these mortgage-backed securities containing rotten loans were then sold and removed from the banks’ balance sheets, enabling the banks to lend even more money. The entire system disintegrated when housing prices in the US began to fall.

“It turned out that a financial operation intended to diminish risk served to increase it instead. We need to learn more about how this could happen,” says Professor Burgess.

Risky liberalism

The international financial crisis tends to be presented as an undesired deviation from the free market economy, but Professor Burgess has his doubts. “It is rather the case that both the finance industry and capitalism as a whole are based to some extent on the willingness to take risks. Capitalism and liberal values are also closely connected, and it is not possible to have a liberal society without accepting risk. We have therefore launched a research project in which we look more closely at the connections between risk and liberal values,” he explains.

Liberals often emphasise the right to deviate from social norms and political or religious traditions, and liberalism focuses on the individual as the driving force in society. Liberalism therefore is the polar opposite of totalitarian and collectivist ideologies. But Professor Burgess suspects that liberalism is not well entrenched among the general population: “We may be liberal when it serves our own interests, but we do not like the ramifications in the form of a



The US subprime mortgage crisis had a global impact, illustrating that capitalism and liberal values are associated with risk. (Photo: Shutterstock)

financial crisis. For example, there is also great opposition to a liberal immigration policy,” he notes.

Finance industry workers like risk

“We will also examine the social function served by the financial concept of risk. We can take the insurance industry as an example, where obviously an individual’s risk of dying is not reduced by taking out an insurance policy. If you want to be a bit cynical, insurance is really about placating society. It should also be pointed out that risk is not a clear-cut negative concept in the finance industry, nor is security a clear-cut positive concept. In fact, people in finance are looked up to by their colleagues if they dare to take risks. In short, we need a new, more interdisciplinary understanding of the concept of risk in this sector,” says Professor Burgess.

The project

James Peter Burgess

Understanding “financial security” in an age of uncertainty

Contractual partner: International Peace Research Institute, Oslo (PRIO)

Project manager: J. Peter Burgess, Research Professor, PRIO

Partners: Vrije Universiteit Amsterdam and City University London

SAMRISK networking projects

We must stipulate requirements for technology

“It’s true what they say – personal privacy and information security are in retreat in the new information society. The most important reason for this is that no legal requirements have been laid down for the technology,” says Chief Research Scientist Dag Haug.

Haug is head of a SAMRISK project which will begin building a Nordic network and organising seminars and forums for government authorities, trade and industry, companies that develop ICT solutions, and research groups in Norway, Sweden, Denmark, Finland and Iceland. The participants work with compilation as well as dissemination of information about electronic information security.

“We must avoid a situation in which researchers sit alone in dark rooms and develop solutions without knowing what the needs of society are. We want to promote cooperation on developing new solutions, but we also will disseminate information about existing solutions,” he says.

Protection of personal privacy and legislation

When using the Internet, private individuals may be exposed to identification theft, unwarranted profiling, criminal organisations that track their bank accounts or travel habits and the like. Quite simply, technological advances have created many new opportunities for misuse and criminal activity. Accord-

ing to Haug, however, there is no inherent technological reason why privacy protection and information security for private individuals and organisations should be weakened. The problem is that legislation has fallen behind.

“The Internet entails an ongoing danger. The main reason for breach of personal privacy is a lack of understanding of personal integrity. The Internet is a tool that has very few built-in functions for controlling and blocking unlawful activity. Blocking functions are not a commercially profitable product, so we cannot expect much effort from the private sector,” says Haug.

“In my opinion, there are two ways to improve the situation. Either government authorities must pay the bill as part of their social responsibility or they must require that measures be implemented to incorporate blocking and control functions into electronic communication, storage and copying. The legislation for this is actually in place, but it needs better follow up with technological solutions. One task of the RISKnet project is to stimulate the development of such solutions,” explains Haug.



The project

Dag Haug

RISKnet: Norwegian and Nordic network in information security and societal risk

<http://risknet.nr.no/>

Contractual partner:
Norwegian Computing Center
Project manager:
Chief Research Scientist Dag Haug

EU funding for security research

Security Programme

Security is one of the research themes under the EU Seventh Framework Programme (FP7) for research and technological development (2007-2013). The main objective of the Security theme is to develop the technologies and knowledge for building capabilities needed to ensure the security of citizens from threats such as terrorism, natural disasters and crime, while respecting fundamental human rights including privacy.

Other objectives are to ensure optimal and concerted use of available and evolving technologies to the benefit of civil European security, to stimulate the cooperation of providers and users for civil security solutions, improving the competitiveness of the European security industry and delivering mission-oriented research results to reduce security gaps.

The programme issues calls for proposals every summer within seven main mission areas. Areas 5-7 can either stand alone or can be linked to one of the areas 1-4:

Security missions:

1. Security of citizens
2. Security of infrastructures and utilities
3. Intelligent surveillance and border security
4. Restoring security and safety in case of crises

Cross-cutting missions:

5. Security systems integration, interconnectivity and interoperability
6. Security and society
7. Security research coordination and structuring

Following the first two calls for proposals there are Norwegian participants in 12 projects, of which one is coordinated by the International Peace Research Institute, Oslo (PRIO). Norwegian researchers are also set to participate in an additional five projects currently being negotiated with the European Commission. The participants are from social science and technological institutes and from industry. PRIO and SINTEF ICT participate in three projects, and Norwegian Defence Research Establishment (FFI) in two.

The programme is mainly oriented towards industry and towards producing technological solutions to security problems. The calls are focusing increased attention on the impact of proposed new technology on society, on organisational processes and on respect for human values. These components must be incorporated into all project proposals. Increasing importance is also attached to legal aspects of security research.

Research on ethics, behavioural psychology or understanding of culture, gender and religion is also needed in several of the mission areas. All projects must



(Photo: NTB/AP)



(Photo: Shutterstock)

involve the participation of end-users to ensure that solutions may be applied in practical terms. End-users can be public bodies, companies or non-governmental organisations. They may participate as partners in the R&D activities or take part in reference groups etc.

Two of the topics encompass large-scale demonstration programmes: on security of urban public mass transportation in large cities and on a European-wide integrated maritime border control system. The latter is in line with the increased importance that is being placed on border controls by the EU, particularly along coastlines, in its plan to create an Area of Freedom, Security and Justice in Europe (AFSJ). In these programmes the development and use of sensors and surveillance play an important role.

Other programmes

Under previous framework programmes the EU has primarily funded projects on international security questions relating to conflicts, conflict resolution, peace and human rights through its Socio-economic Sciences and Humanities programmes. Under the Sixth Framework Programme there was also a focus on internal and international security questions. Most of these projects will be concluded in 2009-2010 and have resulted in interesting papers, see <http://cordis.europa.eu/fp7/ssh/> and “Find a project.” Norwegian researchers participated in five of these projects. Norwegian participants are currently involved in two such projects under the FP7.

Under the FP7 all the thematic programmes fund research on questions relating to security. This applies in par-

ticular to research on pandemics under the Health theme. There is also a focus on security questions in the thematic programmes such as Food, ICT, Transport (here by plane and ship), the Environment, Socio-economic and humanities research and Space research.

See <http://cordis.europa.eu/fp7> and www.forskingsradet.no, International and Europe/European research

Since 11 September 2001, a number of researcher networks have been set up through the European Cooperation in Science and Technology (COST) on new security topics and threat perceptions, all involving Norwegian participation, see http://www.cost.esf.org/domains_actions/isch and Actions.

EU projects with Norwegian participation

Detection technologies versus human rights



Concerns about terrorism have prompted the introduction of many new monitoring and security measures throughout Europe. Researchers from seven countries are now studying how detection technologies may violate personal privacy and other human rights, and will submit recommendations on how the EU could develop a less invasive security approach in future.

“There is a great deal of work to do in this area,” says Professor Geir Ulfstein, who serves as Norwegian partner in the project. “This is an interdisciplinary project that involves both philosophers and legal experts. One challenge in the initial phase is to familiarise ourselves with the existing technology in this field. But technology is only one aspect; it is just as important to understand how the technology is actually used by commercial players and the various national authorities.”

“Most people probably find it annoying to wait in airport security lines, but in terms of human rights, it is not necessarily the most irritating technologies that are the most critical. We are more concerned about the monitoring that can invade people’s privacy – and there are many different technologies out there, from Internet

monitoring to urban surveillance cameras. It is my impression,” says Professor Ulfstein, “that many monitoring measures are implemented without thoroughly considering their legal and ethical aspects.”

The project will run through 2011 and seeks to provide legal and ethical input that will help to shape the EU’s future counter-terrorism measures. “The Norwegian research fellow affiliated with the project will establish criteria for determining how the various technologies may encroach upon human rights, while I will explore the issue of clandestine over-flights and secret detention centres, a topic the Council of Europe and others have been concerned with,” explains Professor Ulfstein.

The project



Geir Ulfstein

DETECTOR: Detection Technologies, Counter-Terrorism Ethics, and Human Rights

<http://www.detector.bham.ac.uk/>

Project coordinator: University of Birmingham
 Norwegian partner: Geir Ulfstein, Professor of international law, Department of Public and International Law, University of Oslo
 Research fellow: Rozemarijn van der Hilst, University of Oslo

EU projects with Norwegian participation

Digitalised border controls in “Fortress Europe”

European security companies are already busy developing high-tech surveillance equipment and huge systems that will be used to standardise and connect all border crossing points into the EU. “We are trying instead to promote the idea that local social and cultural conditions provide a better foundation on which to base effective border monitoring,” says J. Peter Burgess, Research Professor at the International Peace Research Institute, Oslo (PRIO).

The primary objective of the large-scale EU project GLOBE (Global Border Environment) is to assist the development of what is being called an integrated border management system, or “system of systems”, which should be up and running in 2015. “The EU’s aim is that we should coordinate and integrate all external borders both organisationally and technologically. This means that border controls in Sicily and Hammerfest, for example, will be identical, using the same surveillance cameras, biometric identification systems and other technical equipment. Information about anything that happens at the Portuguese border with the Atlantic Ocean will immediately be made available to a border guard in Poland,” says Burgess.

GLOBE is a technology-intensive project dominated by European telecommunications and surveillance groups. PRIO, however, is heading a work package that will

supply the technologists with assessments of the social and cultural aspects involved. “You could say that we are serving a corrective function. We do not want to provide an alibi at any rate,” Burgess adds.

Border controls tailored to local conditions

There are, of course, not many boat refugees arriving in Hammerfest from Morocco. Thus, Burgess thinks that it would be more sensible to develop border controls suited to local conditions. “Border controls will probably be more effective if they are based on assessments of the particular situation of each individual place. ‘Where do these people come from and where are they headed? Why are they willing to take the huge risk of leaving their home countries in small and overcrowded fishing boats?’ These are very good questions.”

“But at PRIO we are also sceptical about immigration into the EU being perceived as a security threat and one that is being used to justify the construction of ‘Fortress Europe’. Most immigrants are just as concerned with their own security as we are. Our impression is that security thinking in the EU system is being driven more by the security industry than by the politicians. The result is that we end up with technological solutions to problems that could have been solved more effectively in other ways,” Burgess points out.



(Photo: Shutterstock)

The project

James Peter Burgess

GLOBE: Global Border Environment

<http://www.globe.ti-projects.com>

Project coordinator: Telvent Interactiva S.A., Spain
 Norwegian partner: Research Professor
 J. Peter Burgess, International Peace
 Research Institute, Oslo (PRIO)

EU projects with Norwegian participation

Nature of threats shift – how about ethics?



(Photo: Shutterstock / Sergey Kamshylin)

When the EU was founded (as the European Economic Community) in 1957, Europe presented a security problem to itself. During the Cold War the primary enemy was to be found beyond the borders of the European Community, whereas today the EU faces potential threats from both external and internal threats. This calls for a reassessment of the ethical premises that underpin European security measures.

Ethically speaking, it was not difficult to justify the establishment of the EU in light of the desire to reduce the risk of renewed hostilities, particularly between Germany and France. During the Cold War the Soviet Union and the satellite states of Eastern Europe were defined as the primary external threats, and the ethical questions became more complex. Nowadays it appears that there is a complete lack of clarity when it comes to the underlying ethical principles and value judgments of EU security policy. It is this question that researchers seek to address in the INEX project.

Coordinated from Norway

INEX is the first project under the Security theme of the EU Seventh Framework Programme to be coordinated by a Norwegian institute and the first EU project to be coordinated by PRIO.

“We will study the ethical and value conflicts that have arisen as a result of the changes in the European security landscape. This was easier in the ‘old days’ when the threat to Europe was relatively clearly defined, but today the picture is much less distinct. We have found that the internal security authorities, such as the police and the national intelligence organisations, have become increasingly concerned with external issues. At the same time, the diplomatic service and the military, which have traditionally focused on external threats, have become more and more concerned with the internal situation. In this project we will study the ethical and value conflicts arising as a result of this development. Is it ethically correct, for

example, to turn away desperate refugees from North Africa? Are security controls that threaten our own right to free movement in the EU area wholly unproblematic?” asks J. Peter Burgess.

The aim of the project is to generate new analyses of the EU’s security challenges and to provide policy proposals that take into consideration the ethical and human aspects of security issues.

The project

James Peter Burgess

INEX: Converging and Conflicting Ethical Values in the Internal/External Security Continuum in Europe

<http://www.inexproject.eu/>

Project coordinator: Research Professor J. Peter Burgess, International Peace Research Institute, Oslo (PRIO),

EU projects with Norwegian participation

Better communication in crises

Good communication among the crisis response services, as well as with the media and the general public, is all-important in a crisis. Five European research groups are in the process of developing a digital platform that will improve the flow of communication during and after a crisis.

“This project sets out to map out how communication should be handled in a crisis according to European experts in the field. Then we will systematise this knowledge and develop a practical tool,” explains Professor Ragnhild Lund of the Norwegian University of Science and Technology (NTNU).

Researchers from Finland, Israel, Estonia and Norway are collaborating on a project to study how to streamline the flow of communication during and after a crisis – primarily with the use of virtual media. A technical platform as well as manuals for communication strategies will be developed, with the objective of enabling

the authorities to communicate better in crisis situations.

Professor Lund will contribute her experience from a large-scale project she led in Sri Lanka after the tsunami in late December 2004. “We helped a disaster relief organisation to improve its crisis management capacity during rebuilding efforts. That was an interdisciplinary project with architects, planners, social scientists and a psychologist,” she recounts.

While Norway contributes knowledge and substantive insight to the present project, the Finnish researchers have the main responsibility for the tool’s technical structure. “Our intention is to propose a tool that will be useful for many types of crises. We are examining communication both internally within the crisis response services and to the media, but the most important aspect involves civil preparedness and communication to the general public.”

The project



Ragnhild Lund

CrisComScore:
Developing a Crisis
Communication Scorecard

http://ec.europa.eu/enterprise/security/index_en.htm

Project coordinator:
University of Jyväskylä, Finland
Norwegian partner: Ragnhild Lund,
Professor of Geography, Faculty of Social
Sciences and Technology Management, NTNU
Post-doctoral research fellow in Norway:
Camillo Boano, NTNU

(Photo: Shutterstock)



EU projects with Norwegian participation



Improved security in public transportation

The aim of the DEMASST project (Demo for mass transportation security: roadmap-ping study) is to produce a roadmap for the development and integration of systems that can improve security in urban public transportation systems in Europe.

Public transportation systems in and around a large number of European cities, with their high concentration of people in small areas, are potentially attractive targets for intentional malevolent acts. The various means of transport are easily accessible and weapons or explosives can be hidden in bags carried by passengers. Public transportation systems are also part of the critical infrastructure for society because a vast number of people rely on them to carry out their daily work. Malevolent acts can have far-reaching human and economic ramifications.

The DEMASST project is phase 1 of a larger demonstration programme for security in mass transportation. Phase 2 will develop innovative solutions designed to enhance security. Partners from Finland, France, Germany, Italy, Norway, Spain, Sweden and The Netherlands are participating in the project.

<http://www.demasst.eu>



Automatic detection of threatening behaviour

The ADABTS project (Automatic Detection of Abnormal Behaviour and Threats in crowded Spaces) aims to facilitate the protection of civilians, property and infrastructure against threats of terrorism, crime and riots (including at football matches), by developing systems for the automatic detection of abnormal human behaviour.

The ADABTS project will develop models for abnormal and threat behaviours as well as methods for the automatic detection of such behaviours. The aim is to be able to use data from surveillance systems to chart deviations from what is considered to be normal behaviour. The ADABTS project aims to develop a real-time evaluation platform based on commercially available hardware in order to develop high-performance low-cost surveillance systems. Partners from Bulgaria, Norway, Sweden, The Netherlands and United Kingdom are participating in the project.

http://ec.europa.eu/enterprise/security/doc/fp7_project_flyers/adabts.pdf



Improved maritime security systems

The SECTRONIC project (Security System for Maritime Infrastructures, Ports and Coastal Zones) focuses on observation and protection of critical maritime infrastructures for passenger and goods transport, energy supply, and port infrastructures.

The project aims to collect data from all accessible means of observation (off-shore, onshore, air, space) via a network connected to a central control centre. The end-users or permitted third-parties will be able to access a composite of infrastructure observations in real-time. The end-users will be able to shield the infrastructure by protective means in security-related situations. The proposed system is a small area surveillance system that is designed to be used on any ship, platform, container/oil/gas terminal or harbour. The overall objective of the SECTRONIC research project is to develop an integrated system designed to ensure the ultimate security of maritime infrastructures against acts of terrorism, damage due to natural disasters, negligence, computer hacking, and other criminal activity. Partners from Italy, Norway, Sweden, The Netherlands and United Kingdom are participating in the project.

www.sectronic.eu

EU projects with Norwegian participation

An economic perspective on security measures

The EUSECON research project (A New Agenda for European Security Economics) seeks to create an analytical framework for complementary research within the field of security economics. This framework will relate human-induced insecurity (terrorism and organised crime) to other forms of insecurity such as industrial accidents and natural disasters. The EUSECON project will use this as a basis for providing advice to political decision-makers, researchers and analysts working in the field of security.

Partners from Austria, Czech Republic, Germany, Greece, Israel, Norway, Spain, The Netherlands and United Kingdom are participating in the project.

www.economics-of-security.eu/eusecon

Information and protection

Today threats to Europe's security come from a huge number of different sources. This new situation has not only created a greater need for information but also a greater need to share and effectively control access to that information.

Participants in the STRAW project (Security Technology Active Watch) aim to supervise technological development in the field and to provide advice for potential end-users as well as the public at large. Partners from Belgium, France, Germany, Italy, Norway and Spain are participating in the project.

www.straw-project.eu

Improved surveillance of European coastlines

Nowadays surveillance of coastlines is largely carried out by ships, aircraft or helicopters. Surveillance activity is both fragmented and costly and detection of small vessels in large sea areas is unfeasible. In addition, it is not possible to carry out around-the-clock surveillance to prevent illegal immigration.

The AMASS project (Autonomous Maritime Surveillance System) seeks to develop automatic surveillance platforms fitted with active and passive sensors. The primary objective is to strengthen European maritime security by facilitating continuous surveillance at reduced cost.

Partners from Czech Republic, Germany, Malta, Norway, Poland, Spain and United Kingdom are participating in the project.

www.amass-project.eu

Coordinating research efforts

The CRESCENDO project (Coordination action on Risks, Evolution of threatS and Context assessment by an Enlarged Network for an r&D rOadmap) will further develop the researcher networks established in two previous EU projects (Security Network for Technological Research in Europe (SeNTRE) and Stakeholders Platform for Supply chain Mapping, Market Condition Analysis and Technologies Opportunities (STAC-CATO)). The participants will analyse the evolution of threat (aggressions) and

risk (accidents) assessment taking into account the balance between security and civil liberties. The project will also provide recommendations for the development of key themes in the Security Research Programme and will assess the implications for future programmes.

Partners participating in the CRESCENDO project are from Austria, Belgium, Finland, France, Greece, Ireland, Italy, Norway, Spain, Sweden, The Netherlands and Turkey.

http://ec.europa.eu/enterprise/security/doc/fp7_project_flyers/crescendo.pdf

Security research network

The aim of the SEREN project (SEcurity REsearch Ncp network) is to develop a network between the different national contact persons (NCPs) of the EU's Security Research Programme. The primary objective is to strengthen cooperation among the NCPs and to enhance the quality of national contact efforts vis-à-vis researchers.

Partners participating in the SEREN project are from Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, France, Greece, Hungary, Israel, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Portugal, Romania, Slovakia, South Africa, Spain, Sweden, Switzerland, The Netherlands and United Kingdom.

www.seren-project.eu/

Related Research Council programmes

Democracy and Governance in Regional Context – DEMOSREG

Duration: 2005 – 2010
www.rcn.no/demosreg

Political participation, governance and power structures, settlement patterns and trade and industry are all areas currently undergoing wide-reaching change. These changes are generating significant challenges for policy formation and governance. The interconnections between technological, economic, political and cultural processes of change are growing more and more complex. The DEMOSREG programme seeks to generate knowledge about the local and regional consequences of national and international development trends with regard to social participation, settlement, readiness to serve, industrial development and identity. Particular emphasis is given to research related to policy-making and governance. One of the projects is examining how societal security efforts and crisis preparedness are organised in Norway and how this functions in the interface between different levels of the public administration and various sectors and specialised fields.

ICT Security – IKTSoS

Duration: 2003 – 2007
www.rcn.no/iktsos

The ICT Security research programme (IKTSoS) sought to generate and make available new knowledge and expertise that could contribute to improving security and to reducing the vulnerabilities encountered when using current and future ICT systems. The IKTSoS programme supported research that examined, analysed and developed solutions for improved information security. The aim was to increase access to specialist expertise in order to develop ICT systems for use in promoting information flow in organisations.

There have been huge developments in ICT over the past 20 years. Technology of this type is increasingly being introduced into new areas, which in turn means that we are becoming more vulnerable to breakdowns. Therefore, security solutions need to be developed alongside new products and services.

An overview of the many interesting publications generated by the projects can be found in the final report of the IKTSoS programme, which is published on the programme webpage (Norwegian only).

Norway – A Global Partner – NORGLOBAL

Duration: 2005 – 2013
www.rcn.no/norglobal

The research programme Norway – A Global Partner (NORGLOBAL) seeks to strengthen Norwegian research on the South. The programme has incorporated a number of existing activities including the former research programme Poverty and Peace Research (POVPEACE). The primary objective of the POVPEACE programme is to generate new knowledge as a basis for strategies to promote poverty reduction and peace-building, thereby strengthening Norway's international involvement in these fields. A number of the current projects address questions of security and destabilisation in areas of conflict in developing countries.

Climate change and impacts in Norway – NORKLIMA

Duration: 2004 – 2013
www.rcn.no/norklima

The primary objective of the NORKLIMA programme is to generate vital new knowledge about the climate system, about climate trends in the past, present and future and about the direct and indirect impacts of climate change on the natural environment and society, as a basis for adaptive responses by society. In 2007 the UN Intergovernmental Panel on Climate Change (IPCC) presented its strongest conclusions yet about global warming. Several researchers from the NORKLIMA programme participated in the work of the IPCC. The IPCC received the Nobel Peace Prize for its work, together with former Vice President of the United States Al Gore for his efforts in disseminating knowledge on climate change.

In Norway climate change can lead to an increasing incidence and risk of landslides even in built-up areas, which could undermine the safety and security of Norwegian society if countermeasures are not put in place.

Optimal Management of Petroleum Resources – PETROMAKS

Duration: 2004 – 2013
www.rcn.no/petromaks

The Programme for Optimal Management of Petroleum Resources (PETROMAKS) is one of the programmes under the Research Council's Large-scale Programme initiative. The programme seeks to enhance value creation in society through the development of knowledge, increased industrial development and strengthened international competitiveness.

The overall objective of PETROMAKS is to enhance the next 50 years of oil-related activity and secure gas production in a 100-year perspective. It is crucial that the Norwegian petroleum industry be further developed as an internationally competitive industry; this will ensure that the sector continues to play a key role in the sustainable growth and financing of the Norwegian welfare society and promote sound management of Norway's natural resources. Seven of the ongoing projects address key research issues related to safety and security in the petroleum industry with regard to technological development, organisation and risk assessment.

HSE in the Petroleum Sector – HMSFORSK

Duration: 2007 – 2011
www.rcn.no/hmsforsk

The research programme HSE in the Petroleum Sector (HMSFORSK) is an integral part of the PETROMAKS programme. It is a stated government objective that Norway is to be at the forefront of health, safety and environment (HSE) efforts in the petroleum sector. This overall objective requires that we develop oil and gas resources in a long-term perspective by ensuring the safety of people and the environment, that we achieve increased recovery of petroleum resources from the oil and gas fields in accordance with efficient management of resources based on good HSE procedures, and develop technologies that ensure cost-effective and secure operation of the facilities. The focus of the initiative is the further development of knowledge and methods that can play a part in mitigating risks and increasing the resilience of the sector. The aim is to generate new knowledge and promote new solutions related to the complex interplay between HSE, risk and people, organisations and technology in the petroleum industry. There is also an underlying aim to increase our understanding of cultural conditions as a basis for risk development and management in the interaction between humans, technology and organisations.

Social Science Petroleum Research – PETROSAM

Duration: 2007 – 2012
www.rcn.no/petrosam

During the period 2007 – 2012 the main priority for the programme will be research that can provide users and the public administration with increased insight into what constitutes good management of the Norwegian Continental Shelf and into the factors that affect the value of future Norwegian petroleum resources. The programme continues the activities of previous research initiatives in the field of social science-related petroleum research that since 1982 have been carried out under the Oil and Society, Petro, and PETROPOL research programmes. One of the projects focuses on constraints and risks associated with investment in the Persian Gulf.

Risk and Safety in the Transport Sector – RISIT

Duration: 2002 – 2009
www.rcn.no/risit

Every year almost 350 people are killed in transport accidents in Norway, and more than 80 per cent of all accidents in which there were more than five casualties occurred in the transport sector. The risk of dying or being injured while travelling is 4-10 times higher than for other leisure activities or activities in the home.

It is against this backdrop that the RISIT programme was established. The programme also focused on the transportation of dangerous goods. The programme's objective was to produce knowledge which could provide a better understanding of transport risk and a better basis for risk management within the transport sector.

The programme has demonstrated the importance of examining transport security across sectors, both because a number of the issues, such as security culture and risk perception, are common to several sectors, and because some security problems can only be solved by several sectors working together.

Core Competence and Value Creation in ICT – VERDIKT

Duration: 2005 – 2014
www.rcn.no/verdikt

The VERDIKT programme is the Research Council's large-scale programme for ICT. The programme seeks to enhance ICT-based interaction in a broad sense. The programme has the following overall objectives:

- to generate and apply new technology and knowledge in the area of ICT-based innovation and interaction in the networked community
- to strengthen fundamental and interdisciplinary competence development in ICT in areas of particular importance
- to promote innovation and value creation in the Norwegian ICT sector, as well as innovative use of ICT in trade and industry and society at large
- to help Norwegian ICT researchers to strengthen their contacts with leading international research communities and to achieve a high international standard of scientific merit
- to promote closer cooperation between the research community and the ICT sector

Security, privacy protection and vulnerability together form an important pillar of the programme, which also addresses questions related to societal, economic and cultural challenges and opportunities.

SAMRISK 2006 – 2011: Project Overview

SAMRISK researcher projects

JURIS: Justice in the Risk Society

<http://www.jus.uio.no/forskning/grup-per/samfunnsk kontroll/juris.html>
University of Oslo, Department of Public and International Law, Faculty of Law
Project manager: Professor Ragnhild Helene Hennem

SORISK: The Social Determination of Risk: Critical Infrastructure and Mass Transportation Protection in the Norwegian Civil Aviation Sector

www.prio.no/sorisk
International Peace Research Institute, Oslo (PRIO)
Project manager:
Research Professor J. Peter Burgess

ACCILEARN: Accident investigation and learning effects within emergency organisations and across societal sectors

International Research Institute of Stavanger (IRIS), Social Science and Business Development
Project manager:
Associate Professor Ove Njå

DECRIIS: Risk and Decision Systems for Critical Infrastructures

www.sintef.no/samrisk
SINTEF Technology and Society
Project manager:
Senior Scientist Per R. Hokstad

AdaptCRVA: Adapting Community Risk and Vulnerability Analyses for Climate Change

www.sintef.no/samrisk
SINTEF Building and Infrastructure
Project manager: Research Manager Kristina Heilemann

CISS: Critical infrastructures, public sector reorganization and societal safety

www.sintef.no/samrisk
NTNU Social Research AS,
Studio Apertura
Project manager: Per Morten Schiefloe

Principles, methods and models for determining the right level of investments in societal safety and security

International Research Institute of Stavanger (IRIS)
Project manager: Professor Terje Aven

HUMLOG-NET: Humanitarian Logistics Networks

www.humlog.org
BI Norwegian School of Management
Project manager: Associate Professor Marianne Jahre

SAMRISK networking projects:

EPM: Emergency Preparedness and Management Network

University of Agder

Project manager:
Professor Arne Olav Øyhus

RISKnet: Norwegian and Nordic network in information security and societal risk

<http://risknet.nr.no/>
Norwegian Computing Center
Project manager: Chief Research Scientist Dag Haug

SMARTRAP: Smart reporting for food safety. Networking measures and competence-building

http://www.statkart.no/Norge_digital/
Norwegian Food Safety Authority, Regional Office for Buskerud, Vestfold and Telemark
Project manager: Researcher Trond Rafoss

Societal risks and risk society in a cross-disciplinary and cross-stakeholder dialogue perspective

<http://www.bi.no/roff>, http://www.bi.no/Content/Article___73533.aspx
BI Norwegian School of Management
Project manager:
Professor Johannes Brinkmann

Understanding “financial security” in an age of uncertainty

International Peace Research Institute, Oslo (PRIO)
Project manager:
Research Professor J. Peter Burgess

Projects funded under the EU 7RP – Security theme:

http://ec.europa.eu/enterprise/security/index_en.htm

ADABTS: Automatic Detection of Abnormal Behaviour and Threats in crowded Spaces

http://ec.europa.eu/enterprise/security/doc/fp7_project_flyers/adabts.pdf

Project coordinator: Swedish Defence Research Agency (FOI), Sweden
Norwegian partner: SINTEF IKT, Chief Scientist Tom Kavli

AMASS: Autonomous Maritime Surveillance System

www.amass-project.eu

Project coordinator: Carl Zeiss Optronics GmbH, Germany
Norwegian partner: Fugro OCEANOR

CRESCENDO: Coordination action on Risks, Evolution of threatS and Context assessment by an Enlarged Network for an r&D rOadmap

http://ec.europa.eu/enterprise/security/doc/fp7_project_flyers/crescendo.pdf

Project coordinator: French Atomic Energy Commission (CEA), France
Norwegian partner: SINTEF IKT, Research Manager Elfrid Øvstedal

STRAW: Security Technology Active Watch

<http://www.straw-project.eu>

Project coordinator: Atos Origin SAE, Spain
Norwegian partner: SINTEF IKT, Research Manager Elfrid Øvstedal

CrisComScore: Developing a Crisis Communication Scorecard

http://ec.europa.eu/enterprise/security/doc/fp7_project_flyers/criscomscore.pdf

Project coordinator: University of Jyväskylä, Finland
Norwegian partner: Norwegian University of Science and Technology (NTNU), Professor Ragnhild Lund

DEMASST: Demo for mass transportation security: roadmapping study

<http://www.demasst.eu>

Project coordinator: Swedish Defence Research Agency (FOI), Sweden
Norwegian partner: Norwegian Defence Research Establishment, Researcher Håvard Fridheim

DETECTER: Detection Technologies, Counter-Terrorism, Ethics, and Human Rights

<http://www.detecter.bham.ac.uk/>

Project coordinator: University of Birmingham, United Kingdom
Norwegian partner: Department of Public and International Law, University of Oslo, Professor Geir Ulfstein

EUSECON: A New Agenda for European Security Economics

www.economics-of-security.eu/eusecon

Project coordinator: German Institute for Economic Research (DIW), Berlin
Norwegian partner: International Peace Research Institute, Oslo (PRIO), Research Professor Scott Gates

GLOBE: Global Border Environment

http://ec.europa.eu/enterprise/security/doc/fp7_project_flyers/globe.pdf

Project coordinator: Telvent Interactiva S.A, Spain
Norwegian partner: International Peace Research Institute, Oslo (PRIO), Research Professor J. Peter Burgess

INEX: Converging and Conflicting Ethical Values in the Internal/External Security Continuum in Europe

http://ec.europa.eu/enterprise/security/doc/fp7_project_flyers/inex.pdf

Project coordinator: International Peace Research Institute, Oslo (PRIO), Research Professor J. Peter Burgess,
Norwegian partner: Ericsson Security Systems

SECTRONIC: Security System for Maritime Infrastructures, Ports and Coastal Zones

<http://www.sectronic.eu/>

Project coordinator: Marine & Remote Sensing Solutions Ltd, United Kingdom
Norwegian partners: Det norske Veritas (DnV), Chief Researcher Rolf Skjong;
Norwegian Defense Research Establishment (FFI), Researcher Richard Olsen; BW Offshore; BW GAS ASA

SEREN: Security REsearch Ncp network – phase 1

www.seren-project.eu/

Project coordinator: French Atomic Energy Commission (CEA), France
Norwegian partner: Research Council of Norway, Adviser Steinar Kvitsand

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www.rcn.no/samrisk

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