# The ANSFR Project

## Workshop 1 – Northumberland
## 18th – 21st May 2009

## "Cross-Border Exchange of Good Practice in Accidental, Natural and Social Fire Risk Assessment and Management"

**Report compiled by Northumberland Fire and Rescue Service**

**24th August 2009**

Northumberland County Council

Pelastusopisto
Emergency Services College

*This report documents the sessions and findings of the Northumberland Workshop, the first of four workshops to be delivered during the ANSFR Project. The workshop and the ANSFR Project are co-funded by the European Commission Directorate-General for Environment under the Civil Protection Financial Instrument, 2008 Call for Proposals (grant agreement number: 070401/2008/507848/SUB/A3).*



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# Executive Summary

This handbook documents the sessions delivered and the material produced during a European workshop hosted by Northumberland Fire and Rescue Service (UK) on 18th-21st May 2009. The workshop was the first of four workshops to be delivered over the course of the two-year ANSFR Project: ***"Accidental, Natural and Social Fire Risk (ANSFR): The prevention and diminution of the human and financial costs of fire through effective risk assessment and management".*** The information presented in this handbook will be of interest to all organisations in Europe with a responsibility for fire prevention and fire risk assessment and management.

The ANSFR Project is being managed and coordinated by Northumberland Fire and Rescue Service (UK) working in close partnership with Frederikssund-Halsnæs Fire and Rescue Department (Denmark), Corpo Nazionale dei Vigili del Fuoco – Nucleo Investigativo Antincendi (NIA) (Italy), the Emergency Services College (Finland), South West Finland Emergency Services (Finland) and Kanta Häme Fire and Rescue Service (Finland). The project is co-funded by the European Commission Directorate-General for Environment under the Civil Protection Financial Instrument, 2008 call for proposals (Grant Number: 070401/2008/507848/SUB/A3). The ANSFR project aims to develop new frameworks for the identification, assessment and management of accidental, natural/environmental and social fire risk. The materials developed during the project will help Fire and Rescue Services in Europe to protect life, property and the environment through the effective assessment and management of fire risks.

The aim of the Northumberland workshop was "for participants to share knowledge and experience of fire risk assessment and management practices currently adopted by the partner organizations and to discuss and debate potential synergies and improvements". In order to achieve this aim, the organisers identified four learning objectives and four desirable outputs in the workshop plan. The event was organised so as to facilitate plenary presentation sessions and small group work exercises, providing a suitable balance between the presentation of information, the exchange of ideas and opinions, and team building between the multinational project team members.

The content of the Northumberland Workshop was deliberately broad and inclusive, ensuring that all of the partners on the project had an opportunity to contribute their experiences on a wide range of issues connected to fire risk. Subsequent ANSFR Project workshops will be designed to be more focused and tailored to specific strategies and techniques for assessing and managing three types of fire risk: project workshops 2, 3 and 4 will take the information collected during the Northumberland Workshop and use this as a foundation for developing new and innovative techniques and frameworks for accidental, natural/environmental and social fire risk assessment and management. Additional handbooks will document the three remaining workshops and the European conference to be hosted in Northumberland in the summer of 2010.

Based on the evidence presented and analysed in the full Post-Event Evaluation Report, Northumberland Fire and Rescue Service concluded that the workshop successfully fulfilled all four of its learning objectives and delivered all four desirable outputs. Consequently, it was concluded that the event achieved its key aim. It was decided that the success of the workshop was in part due to the design, preparedness and high quality delivery work of NFRS officers and the other project partners, and in part due to the enthusiasm of all of the individuals and organisations that attended and contributed.

The delivery of the Northumberland Workshop does not represent a conclusion, but rather a beginning for the ANSFR Project. Many questions, problems and ideas were created and suggested during the event and, although the project will be unable to address all of them, the remainder of the project will work towards developing responses to many of the issues and problems raised in Northumberland. In view of the success of the first workshop, and the strong working relationship that has now developed between the four project partners, the prospect for the three remaining ANSFR workshops is extremely good.

# Overordnet Referat

Denne håndbog dokumenterer de møder og materialer, der blev produceret under et europæisk seminar holdt af Northumberland Fire and Rescue Service (Storbritannien) – den 18. – 21. maj 2009. Seminaret var det første af fire seminarer, der vil blive afholdt under dette toårs ANSFR-projekt: ***Tilfældig, Naturlig og Social Brandrisiko (ANSFR): "Forebyggelse og formindskelse af de menneskelige og finansielle omkostninger ved brand gennem effektiv risikovurdering og administration".*** Oplysningerne fremstillet i denne håndbog vil være af interesse for alle organisationer i Europa med ansvar for brandforebyggelse og brandrisikovurdering og administration.

ANSFR-projektet administreres og koordineres af Northumberland Fire and Rescue Service (Storbritannien), som arbejder i tæt samarbejde med Frederikssund-Halsnæs Brand og Redningsberedskab (Danmark), Corpo Nazionale dei Vigili del Fuoco – Nucleo Investigativo Antincendi (NIA) (Italien), Emergency Services College (Finland), South West Finland Emergency Services (Finland) og Kanta Häme Fire and Rescue Service (Finland). Dette projekt er støttet af Europa Kommissionens Generaldirektorat for Miljø under det Finansielle Civil Beskyttelses Instrument, indkaldelse af 2008 for forslag (Legat: 070401/2008/507848/SUB/A3). ANSFR-projektets mål er at udvikle nye rammer for identificering, vurdering og administrering af tilfældig, naturlig/miljømæssig og social brandrisiko. Materialerne udviklet under dette projekt vil hjælpe Brand og Redningsberedskaber i Europa med at beskytte liv, ejendele og miljøet gennem den effektive vurdering og administration af brandrisici.

Målet med Northumberland-seminaret var "at deltagere ville dele viden og erfaringer om brandrisikovurdering og de nuværende administrationsvaner indført af partnerorganisationerne, og at diskutere og debattere potentielle synergier og forbedringer". For at opnå dette mål, identificerede arrangørerne fire målsætninger for lærdom og fire ønskværdige udfald i seminarplanen. Arrangementet var organiseret på en måde, der muliggjorde fremlæggelser i plenum og små gruppearbejdeopgaver, der gav en passende balance mellem fremlæggelsen af information, udveksling af ideer og meninger, og *team building* mellem det multinationale projekts holdmedlemmer.

Indholdet af Northumberland-seminaret var bevidst bredt og inklusivt for at sikre, at alle projektpartnere fik mulighed for at bidrage med deres egne erfaringer på en lang række emner forbundet med brandrisiko. Følgende ANSFR-projektseminarer vil være beregnet på at være mere fokuseret og skræddersyet til specifikke strategier og teknikker for vurdering og administration af tre typer indenfor brandrisiko: projektseminarer 2, 3 og 4 vil tage den information, der blev samlet under Northumberland-seminaret og bruge denne som grundlag for at udvikle nye og innovative teknikker og rammer for tilfældig,

naturlig/miljømæssig og social brandrisikovurdering og administration. Yderlige håndbøger vil dokumentere de tre resterende seminarer og den europæiske konference planlagt for sommeren 2010 i Northumberland.

Baseret på de beviser, der blev fremsat og analyseret i den komplette Post-Arrangement-Evalueringsrapport, konkluderede Northumberland Fire and Rescue Service, at seminaret opfyldte alle dets fire målsætninger for lærdom og leverede alle fire ønskværdige udfald. Følgelig, blev det konkluderet, at arrangementet opnåede sit hovedformål. Det blev besluttet, at seminarets succes til dels skyldtes udformningen, beredskabet og den høje kvalitet af leveringsarbejde fra officerer fra NFRS og de andre projektpartnere, og til dels skyldtes den entusiasme som alle de deltagende individer og organisationer bidrog med.

Udførelsen af Northumberland-seminaret betegner ikke en afslutning, men snarere en begyndelse for ANSFR-projektet. Der blev fremlagt og foreslået mange spørgsmål, problemer og ideer under arrangementet, og selvom projektet ikke vil være i stand til at besvare dem alle, vil resten af projektet arbejde imod udviklingen af svar på mange af de spørgsmål og problemer, der blev rejst i Northumberland. I betragtning af det første seminars succes, og det stærke arbejdsforhold, der nu er blevet udviklet mellem de fire projektpartnere, ser udsigten for de tre resterende ANSFR-seminarer særdeles god ud.

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# Riepilogo esecutivo

Nella presente guida sono documentate le sessioni tenute e il materiale prodotto durante un workshop europeo, condotto dal Northumberland Fire and Rescue Service (Regno Unito) che si è tenuto dal 18 al 21 maggio 2009. Questo workshop rappresenta il primo di una serie di quattro, che si svolgeranno durante i due anni previsti dal progetto ANSFR: “Rischio d'incendio accidentale, naturale e sociale, ***(ANSFR, Accidental, Natural and Social Fire Risk): la prevenzione e la diminuzione dei costi umani e finanziari dell'incendio attraverso la corretta valutazione e gestione del rischio”.*** Le informazioni presentate in questa guida sono rivolte a tutte quelle organizzazioni in Europa, responsabili nella prevenzione d'incendi e nella valutazione e gestione dei rischi d'incendio.

Il progetto ANSFR è gestito e coordinato dal Northumberland Fire and Rescue Service (Regno Unito) in stretta collaborazione con Frederikssund-Halsnæs Fire and Rescue Department (Danimarca), Corpo Nazionale dei Vigili del Fuoco – Nucleo Investigativo Antincendi (NIA) (Italia), ed Emergency Services College (Finlandia). Il progetto è co-finanziato dalla Commissione europea - Direzione generale dell'ambiente alla voce Strumento finanziario per la protezione civile, invito alla presentazione di proposte 2008 (numero concessione: 070401/2008/507848/SUB/A3). Il progetto ANSFR ha come obiettivo lo sviluppo di nuove piattaforme attraverso le quali migliorare l'identificazione, la valutazione e la gestione dei rischi di incendio accidentali, naturali/ambientali e sociali. I materiali sviluppati durante il progetto dovranno agevolare i Servizi antincendio di tutta Europa a proteggere la vita, le proprietà e l'ambiente mediante una valutazione e una gestione efficace di tali rischi.

È possibile riassumere lo scopo dello workshop tenuto da Northumberland come “fare in modo che i partecipanti potessero condividere il sapere e l'esperienza delle pratiche attualmente adottate nella valutazione e gestione del rischio d'incendio dalle organizzazioni

partner, in modo da poter creare un dibattito sulle sinergie e i miglioramenti potenziali". Per questo motivo, gli organizzatori hanno individuato quattro obiettivi di apprendimento e quattro prodotti auspicabili da distribuire nel prospetto del workshop. L'evento è stato organizzato in questo modo per facilitare le sessioni plenarie di presentazione e le esercitazioni con piccoli gruppi di lavoro, offrendo un equilibrio adeguato tra la presentazione delle informazioni, lo scambio delle idee e delle opinioni, e la creazione di team tra membri del team specifico del progetto multinazionale.

I contenuti del workshop Northumberland sono stati deliberatamente generici e inclusivi, permettendo a tutti i partner del progetto di avere l'opportunità di contribuire con la loro esperienza a un'ampia gamma di questioni collegate al rischio d'incendio. Gli workshop del progetto ANSFR successivi verranno impostati per essere più adatti e per porre maggiormente l'attenzione sulle strategie e le tecniche specifiche per la valutazione e la gestione di tre tipi di rischio di incendio: i workshop del progetto 2, 3 e 4 raccoglieranno le informazioni del workshop Northumberland e le utilizzeranno come base per sviluppare nuove tecniche innovative e piattaforme per la valutazione e la gestione dei rischi di incendio accidentali, naturali/ambientali e sociali. Nelle guide successive, verranno documentati i tre workshop rimanenti e la Conferenza europea che si terrà a Northumberland nell'estate 2010.

In base all'evidenza presentata ed esaminata nella relazione di valutazione post-evento completo, Northumberland Fire and Rescue Service è giunto alla conclusione che il workshop ha raggiunto in maniera soddisfacente tutti e quattro gli obiettivi di apprendimento e distribuito i quattro livelli di risultato ottimale. Di conseguenza, l'evento ha ottenuto i suoi obiettivi chiave. Questo è stato possibile sicuramente grazie alla struttura del progetto, alla preparazione e all'alta qualità di lavoro offerta dai responsabili NFRS, a tutti i partner del progetto, oltre anche all'entusiasmo dimostrato da tutti coloro, singoli individui e organizzazioni, che hanno partecipato e contribuito alla sua realizzazione.

Il workshop di Northumberland non rappresenta una conclusione, bensì l'inizio del progetto ANSFR. Durante lo svolgersi di questo evento, sono stati sollevati molti problemi e questioni, sono state suggerite nuove idee e, sebbene il progetto non potrà affrontarle tutte, le parti rimanenti del progetto verranno sviluppate per fornire risposte concrete a molte delle questioni e dei problemi sollevati a Northumberland. Visto del successo del primo workshop e della forte collaborazione consolidatasi tra i quattro partner del progetto, l'attesa dei prossimi tre workshop ANSFR è sicuramente delle migliori.

# Yhteenveto

Tähän käsikirjaan on dokumentoitu eurooppalaisessa työpajassa pidettyjen kokousten ja esitysten tiedot ja niissä tuotettu materiaali. Työpajan isäntänä toimi Northumberland Fire and Rescue Service (UK), ja se pidettiin 18.5–21.5.2009. Työpaja oli ensimmäinen neljästä työpajasta, jotka pidetään kaksivuotisen ANSFR-hankkeen aikana. ANSFR tulee sanoista ***“Accidental, Natural and Social Fire Risk (ANSFR) eli tulipalojen henkilövahinkojen ja taloudellisten vahinkojen ehkäiseminen ja vähentäminen tehokkaan riskinarvioinnin ja -hallinnan avulla.*** Tässä käsikirjassa esitetyt tiedot tulevat kiinnostamaan kaikkia niitä eurooppalaisia organisaatioita, joiden vastuulle palonehkäisy ja paloriskien arviointi ja hallinta kuuluvat[1].

ANSFR-hanketta johtaa ja koordinoi Northumberland Fire and Rescue Service (UK) tiiviissä kumppanuussuhteessa Frederikssund-Halsnæs Fire and Rescue Departmentin (Tanska), Corpo Nazionale dei Vigili del Fuoco – Nucleo Investigativo Antincendin (NIA) (Italia) ja Pelastusopiston (Suomi) kanssa. Hankkeen on yhteisrahoittanut vuoden 2008 ehdotuspyyntöjen perusteella Euroopan komission ympäristöasioiden pääosasto, väestönsuojelun rahoitusinstrumentti (tukipäätöksen numero: 070401/2008/507848/SUB/A3). ANSFR-hankkeen tavoitteena on kehittää uusia menetelmiä onnettomuuksista ja luonnosta/ ympäristöstä aiheutuvien sekä sosiaalisten paloriskien tunnistamista, arviointia ja hallintaa varten. Hankkeen aikana tuotettu aineisto auttaa eurooppalaisia palo- ja pelastuspalveluita suojelemaan henkeä, omaisuutta ja ympäristöä paloriskien tehokkaan arvioinnin ja hallinnan kautta.

Northumberlandin työpajan tavoitteena oli ”jakaa tietoa ja kokemuksia osallistujien kesken paloriskien arvioinnin ja hallinnan käytännöistä, joita ollaan parhaillaan ottamassa käyttöön kumppanuusorganisaatioissa sekä keskustella ja vaihtaa ajatuksia mahdollisista keskinäisistä synergioista ja kehitysmahdollisuuksista”. Tämän tavoitteen saavuttamiseksi järjestäjät määrittivät työpajan ohjelmaan neljä oppimistavoitetta ja neljä toivottua tulosta. Tapahtuma oli suunniteltu sisältämään yhteisiä kokouksia esitysten pitämiseksi ja pienryhmätöitä, jotka tarjosivat sopivan tasapainon tiedon esittämiselle, ideoiden ja mielipiteiden vaihdolle ja yhteishengen rakentamiselle monikansallisten projektiryhmien henkilöiden välillä.

Osallistujien täyttämät arviointilomakkeet sisältävässä täydellisessä jälkiarviointiraportissa (Post-Event Evaluation Report) esitettyjen ja analysoitujen tietojen perusteella Northumberland Fire and Rescue Service totesi, että työpaja täytti onnistuneesti kaikki neljä asetettua oppimistavoitetta ja kaikki neljä toivottua tulosta saatiin aikaan. Näin ollen tapahtuman todettiin täyttäneen päätavoitteensa. Todettiin, että työpajan onnistuminen oli osittain seurausta sen suunnittelusta, valmistelusta ja NFRS-henkilöstön ja muiden hankepartnereiden korkealuokkaisesta työpanoksesta sekä osittain seurausta kaikkien osallistuneiden ja työpanoksensa antaneiden yksittäisten henkilöiden ja organisaatioiden innostuneisuudesta.

Northumberlandin työpajan anti ei ole lopputulos vaan pikemminkin ANSFR-hankkeen alku. Tapahtuman aikana asetettiin ja ehdotettiin monia kysymyksiä, ongelmia ja ideoita. Vaikka näitä kaikkia ei voida käsitellä ja ratkaista, projektin loppuaikana pyritään saamaan ratkaisu moniin niihin asioihin ja ongelmiin, jotka tuotiin esille Northumberlandissa. Ensimmäisen työpajan onnistumisen valossa – ja sen seurauksena, että neljän hankepartnerin välille on nyt kehittynyt vahva työskentelysuhde – kolmen jäljellä olevan ANSFR-työpajan onnistumismahdollisuudet vaikuttavat erittäin hyviltä.

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# 1. Introduction

This handbook documents[1] the sessions delivered and the material produced during the European Workshop hosted by Northumberland Fire and Rescue Service (UK) on 18th-21st May 2009. The full title of the workshop was ***"Cross-Border Exchange of Good Practice in Accidental, Natural and Social Fire Risk Assessment and Management"*****,** from this point forward referred to as the Northumberland Workshop. The information presented in this handbook will be of interest to all organisations in Europe with a responsibility for fire prevention and fire risk assessment and management[2]. The handbook will be of particular interest to Fire and Rescue Services in Europe, although it will also be of interest to fire and rescue services, civil protection authorities and other government agencies in Europe and the wider world that are responsible for preventing and reducing fires.

The Northumberland Workshop was the first of four workshops to be delivered during the two year European Commission-funded ANSFR Project. The ANSFR Project is currently being delivered by four partners working in four European countries: United Kingdom, Denmark, Italy and Finland. The project will develop new frameworks for the assessment and management of accidental, natural and social fire risk in Europe. The general premise of the first workshop, as outlined in the project plan and application, was to stimulate the process of sharing ideas, experiences and good practices between the four project partners. The event was the first time that all of the project participants had come together in one location to collaboratively work on the project.

The content of the Northumberland Workshop was deliberately broad and inclusive, ensuring that all of the partners on the project had an opportunity to contribute their experiences on a wide range of issues connected to fire risk. Subsequent ANSFR Project workshops will be designed to be more focused and tailored to specific strategies and techniques for assessing and managing three types of fire risk: accidental fire risk; natural/environmental fire risk; and social fire risk. Additional handbooks will document the three remaining workshops and the European conference which will be delivered as part of the project in the summer of 2010. ANSFR Project Workshops 2, 3 and 4 will take the information collected during the Northumberland Workshop and use this as a foundation for developing new and innovative techniques and frameworks for accidental, natural/environmental and social fire risk assessment and management.

This handbook is separated into six chapters. The following chapter provides a summary of the ANSFR Project, including a description of the partners, aims, objectives and outputs that will be produced. Chapter 3 outlines the aim, objectives and outputs of the Northumberland Workshop. The subsequent chapter presents detailed summaries on all of the plenary presentations that were delivered during the workshop. Chapter 5 then presents information about the group work sessions delivered during the workshop, making specific reference to the feedback and conclusions of these sessions. The final chapter outlines the conclusions that were formed as a result of the workshop activities, making specific reference to the future activities and workshops that will be completed during the ANSFR Project.

[1] For the sake of brevity, acronyms and abbreviations have been used throughout this handbook. A full list of acronyms, abbreviations and their meanings can be found in Appendix 1 on page 97.

[2] If you would like further information about the Northumberland Workshop or the ANSFR Project, please contact Dr. Robert Stacey, the ANSFR Project Manager, using the contact details on page 1.

# 2. ANSFR Project Summary

## 2.1 ANSFR Project Partners and Funding

The ANSFR Project will run between 1st January 2009 and 31st December 2010. The project will be coordinated and delivered by Northumberland Fire and Rescue Service[3] (UK) working in close partnership with Frederikssund-Halsnæs Fire and Rescue Department[4] (Denmark), Corpo Nazionale dei Vigili del Fuoco – Nucleo Investigativo Antincendi[5] (NIA) (Italy), the Emergency Services College[6] (Finland), Kanta-Hame Fire and Rescue Service (Finland) and South West Finland Emergency Services (Finland). The project is co-funded by the European Commission Directorate-General for Environment[7] under the Civil Protection Financial Instrument, 2008 call for proposals (Grant Number: 070401/2008/507848/SUB/A3).

**Northumberland Fire and Rescue Service** is the coordinating partner on the project. NFRS provides fire and rescue service cover to the County of Northumberland in North East England. The Northumberland Arson Task Force, a multi-agency department within NFRS, will be responsible for managing and delivering the ANSFR Project, although multiple departments will contribute to and benefit from the project.

**Frederikssund-Halsnæs Fire and Rescue Department** provides fire and rescue services to the municipalities of Frederikssund and Halsnæs in the centre of the island of Seeland, in Denmark. Frederikssund-Halsnæs is a municipal fire and rescue service and its activities, like all fire and rescue services in Denmark are overseen at the national level by the Ministry of Defence.

The **Corpo Nazionale dei Vigilii del Fuoco (CNVVF)** is the Italian Fire Fighters Corps within the Ministry of Interior in Italy. The CNVVF provides fire and rescue services to the country of Italy through various central and local sub-departments and divisions. NIA is the department that will be involved in delivering the ANSFR Project. Nulceo Investigativo Antincendi (NIA) is a department based in Rome within the central technical core of the Italian Fire Fighters Corps and is responsible for fire investigation and other related issues.

The **Emergency Services College** (ESC) is situated in Kuopio in central Finland and provides education, vocational training and further training to the Finnish Rescue Services. The ESC also provides courses and consultancy in preparedness training for disturbances in normal and emergency conditions, international emergencies and civil crisis management. The Research and Development Unit at the ESC will be responsible for coordinating the ESC's contribution to the ANSFR Project. ESC will be assisted by officers from Kanta-Häme Fire and Rescue Service[8] and South West Finland Emergency Services[9].

[3] Website: http://www.northumberland.gov.uk/default.aspx?page=1304
[4] Website: http://www.fh-brand.dk/
[5] Website: http://www.vigilfuoco.it/
[6] Website: http://www.pelastusopisto.fi/
[7] Website: http://ec.europa.eu/environment/index_en.htm
[8] Website: http://www.pelastuslaitos.fi/portal/fi/
[9] Website: http://www.turku.fi/Public/default.aspx?nodeid=8600

## 2.2 ANSFR Project Aim, Objectives and Outputs

The key aim of the ANSFR project is to reduce the human, financial and environmental cost of fires in Europe. This will be achieved by developing innovative tools and techniques for European Fire and Rescue Services. These collaboratively developed tools will aid Fire and Rescue Services to identify, assess and manage fire risks and enable them to be better prepared to prevent and reduce the factors that can contribute to high levels of fire risk in their communities.

In order to achieve this aim, the project team have devised 5 key objectives and plan to produce four key deliverables. The five project objectives are to:

1. **Undertake a comparison of research techniques and tools used by the project partners;**
2. **Develop tools, techniques and procedures for an effective and innovative risk assessment framework capable of being implemented in all European Union Member States;**
3. **Create an innovative, secure access knowledge portal with document library;**
4. **Create and develop a multilingual training tool for fire risk assessment;**
5. **Draw upon, disseminate and implement best practice and expertise in fire prevention techniques and procedures, and fire risk assessment tools from Europe.**

The four key project deliverables are:

1. **Deliver four workshops, one to be hosted by each partner organisation;**
2. **Create an electronic web-based system that will facilitate the EU wide exchange of good practice in effective fire risk assessment and management;**
3. **Create an exemplary online web-based training tool for good practice methods in fire risk assessment and management;**
4. **Deliver a conference for practitioners from across Europe to promote and debate fire risk assessment and management practices.**

## 2.3 The ANSFR Project Workshops

One of the key outputs of the ANSFR Project is to design and deliver four workshops, each to be hosted by one of the project partners. As coordinating partners of the project, NFRS decided to host the first workshop in Northumberland. The first workshop provided a general introduction to the project and project themes. The remaining workshops will be themed around the three key categories of fire risk outlined in the project plan:

- **Workshop 1: Introduction to the ANSFR Project and Fire Risk**
- **Workshop 2: Environmental Fire Risk**
- **Workshop 3: Accidental Fire Risk**
- **Workshop 4: Social Fire Risk**

Each of the remaining workshops will involve the collaborative development of fire risk assessment and management frameworks which can be adopted by the partners. These frameworks will later be shared with and promoted to other Fire and Rescue Services in Europe.

# 3. The Northumberland Workshop

## 3.1 Overview of the Northumberland Workshop

**The Location of the Workshop and Participants**
The Northumberland Workshop was the first of four workshops to be delivered during the ANSFR Project. The event was organized and hosted by the ANSFR Project coordinating partner, Northumberland Fire and Rescue Service. The workshop was held at Longhirst Hall, near Morpeth, Northumberland. Longhirst Hall was chosen as a suitable site because of its proximity to NFRS headquarters in Loansdean, Morpeth and to key transport routes, including Newcastle International Airport. It also provided an ideal base for NFRS officers to provide delegates with a short tour of the surrounding area highlighting some of the diverse landscapes and communities of the County.

All of the ANSFR Project partners were represented at the event. In addition, representatives from Kanta-Häme Fire and Rescue Service (Finland) and South West Finland Emergency Services attended the event to contribute as part of the team from the ESC. At least four individuals from each partner organisation were in attendance. All of the partners contributed to the event by delivering presentations and by participating and contributing to the other sessions of the workshop.

**Overview of the County of Northumberland**
Northumberland is the most northerly County in England, situated in the North East of England. Northumberland borders the County of Cumbria to the West, the counties of Tyne and Wear and Durham to the South, and the Scottish Borders to the North. Northumberland covers a land area of almost 2,000 square miles (approximately 500,000 hectares) and is home to approximately 310,000 people. Northumberland is the most sparsely populated county in England and remains largely rural. The population of the County is not, however, uniformly distributed: the South East corner of the County is very densely populated while the North and West of the County are much more sparsely populated.

The geographic landscape of Northumberland is also diverse. In the East, Northumberland's 100 mile coastline contains mile upon mile of long sandy beaches and is designated as an Area of Outstanding Natural Beauty (AONB). Kielder Water and Forest Park and the Northumberland National Park can be found in the West of the Park. Kielder is the largest human-made water and forest park in Europe. The Northumberland National Park was created in 1956, covers a land area of 1049km or 450 square miles, and is inhabited by just 2,000 people. This makes the Northumberland National Park the least populated of all the National Parks in England and Wales. The National Park is a historical landscape containing Iron Age hill forts, Hadrian's Roman Wall and structures from the Middle Ages. The Park contains a wide variety of landscapes, including heather moorland, hay meadows, bogs, ancient woodlands and rivers and burns. Many of these landscapes are of national and international significance.

**Figure 1 – The Location of the County of Northumberland**

| | |
|---|---|
| NORTHUMBERLAND<br>Northumberland County Council | Date: 21.08.09<br>This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown Copyright. Unauthorised reproduction of infringes Crown Copyright and may lead to prosecution or civil proceedings.<br>Northumberland County Council – O.S. Licence No. 100049048 (2009) |

## 3.2 The Aims, Learning Objectives and Outputs of the Northumberland Workshop

The workshop was designed so as to promote the exchange of information and ideas, and to enable the development of a closer working relationship between the officers working on the project from the four partner organisations, none of whom had ever worked together on a project of this nature prior to the ANSFR Project. With this in mind, the following aim was devised:

> **"to provide a suitable forum to allow participants to share knowledge and experience of fire risk assessment and management practices currently adopted by the partner organisations and to discuss and debate potential synergies and improvements"**

The project team decided that four learning objectives would need to be satisfied in order to successfully achieve the central aim of the workshop. The development of learning objectives, as opposed to simply the development of objectives, is deliberate on the part of the project team. The key reason is that all of the ANSFR Workshops will be viewed as a learning exercise. All of the partners will attend the workshops to share and to learn from one another. The workshops will involve learning the processes and techniques that have been both successful and unsuccessful in particular circumstances. The partners will then

be able to collaboratively devise improved synergetic frameworks that take into account the knowledge and experiences that have been exchanged.

The four learning objectives for the Northumberland workshop stated that all participants attending would:

1. Obtain a good basic understanding of the fire risk assessment and management practices currently adopted by the project partners.
2. Obtain a good basic understanding of the specific fire risks and challenges that face the project partners.
3. Obtain a basic understanding of some of the national priorities and strategies for fire risk assessment and management in the project countries (Denmark, Finland, Italy and the United Kingdom).
4. Develop an awareness and appreciation of examples of best/good practice in fire risk assessment and management from the project countries.

In addition to satisfying the four learning objectives, the workshop would be evaluated in terms of the production of four key outputs:

1. A list of names and contact details of all individuals participating in the workshop.
2. A handbook documenting the sessions delivered and the specific findings/conclusions of each session.
3. A revised conceptual diagram outlining the key categories of fire risk that will be focused on during the project.
4. Confirmation of which partners will host the proceeding project workshops: the Accidental Fire Risk Workshop, the Natural Fire Risk Workshop and the Social Fire Risk Workshop.

## 3.3 The Workshop Agenda

The workshop agenda was designed to provide an open forum for the delegates in attendance to exchange ideas, knowledge and experiences regarding fire risk assessment. It was decided that the agenda would include plenary presentation sessions and small interactive group work sessions. The full detailed workshop agenda can be viewed in Appendix 2.

The next section of this handbook now summarises the plenary presentations that were delivered by members of the project partners.

# 4. Plenary Presentations

All of the partner organisations contributed to the plenary sessions of the Northumberland workshop by delivering at least one presentation. The following presentations were delivered:

- Official Welcome and Opening Presentation by Northumberland Fire and Rescue Service
- The ANSFR Project and Workshop 1
- The Northumberland Arson Task Force
- Presentation by Frederikssund-Halsnæs Fire and Rescue Department
- Presentation by Corpo Nazionale dei Vigili del Fuoco – Nucleo-Investigativo Antincendi (NIA)
- Presentations by the Emergency Services College (ESC), Kanta Häme Fire and Rescue Service and South West Finland Rescue Services, Finland

All of the presentations were extremely interesting and informative and the information presented formed the basis for many productive discussions and exchanges of experience over the course of the workshop. The informal nature of the workshop allowed delegates to ask questions during the presentations and to discuss any emergent issues as they were identified.

The following sub-sections now present summaries of each of the individual presentations delivered at the workshop, beginning with the opening presentation.

## 4.1 Official Welcome and Opening Presentation by Northumberland Fire and Rescue Service

This presentation was delivered by Brian Hesler, Chief Fire Officer and Director of Community Safety for Northumberland Fire and Rescue Service (NFRS).

Brian Hesler welcomed all of the delegates to Northumberland and expressed his thanks for their dedication and commitment to the project. In his introduction, he emphasised the importance of partnership working at the local, national and international level for fire and rescue work.

**Geographic location and areas of responsibility for NFRS**
The area that NFRS provides Fire and Rescue Services is the whole County of Northumberland in North East England. The County covers an area of almost 2,000 square miles (approximately 500,000 hectares) and is home to approximately 310,000 residents. There are approximately 138,000 dwellings within the County, and approximately 11,000 non domestic premises. On average, NFRS attends approximately 5000 emergency incidents a year.

The population of Northumberland is highly concentrated in the South East corner of the County. The highly concentrated population distribution, combined with the varying landscapes of the County, presents NFRS with unique challenges and opportunities. In order to provide fire and rescue cover to the whole County, and to overcome some of the challenges presented by the area's geography, NFRS has 19 strategically located fire

stations (see Figure 2, below). Of these stations, 4 are staffed with wholetime fire fighters (i.e. full-time fire fighters), 2 are day staffed (part time at night), and 12 are staffed by retained fire fighters (individuals who work part-time as fire fighters and who often have other forms of employment)[10]. In addition, NFRS has a garaged fire appliance on Holy Island. Holy Island is a small island linked to the mainland via a tidal causeway. In the case of a fire on the island, officers from NFRS are airlifted onto the island by the Royal Air Force based at RAF Boulmer, near Alnwick. They then use the equipment based on the island to extinguish fires and perform rescues.

**Figure 2 – Fire Stations in Northumberland**


NFRS works to reduce risk for the communities of Northumberland by delivering a range of services focused on the three key concepts of **preventing**, **protecting** and **responding.** NFRS has a long term strategic aim of improving the social, economic and environmental well being of the residents of the county it serves. Central to this is "preventing fires and other emergencies happening" and in doing so "reducing death, injury and damage to property". It is NFRS's aim to share knowledge and expertise, and to learn from the successful practices and initiatives implemented by other organisations, in order to improve the safety of residents living and working in Northumberland. In order to achieve these aims, NFRS performs a number of key roles, some of which are presented in Table 1 (overleaf).

**Risk Assessment and Management – NFRS's Integrated Risk Management Plan**

Fire and Rescue Authorities have a statutory duty under the National Framework[11] to produce a local Integrated Risk Management Plan (IRMP) that sets out the authority's strategy, in collaboration with other agencies, for reducing the commercial, economic and social impact of fires and other emergency incidents. The IRMP must be made publicly available and cover a time span of at least 3 years. The Government stipulates that IRMPs should be dynamic documents, reviewed and revised regularly as circumstances change and new information becomes available.

[10] Some of NFRS's fire stations are staffed with both wholetime and retained fire crews, for instance Morpeth.
[11] The National Framework outlines the UK Government's priorities and objectives for the Fire and Rescue Service. It can be viewed at the following website:
www.communities.gov.uk/publications/fire/nationalframework200811

**Table 1 Northumberland Fire and Rescue Service's Role: Preventing, Protecting and Responding**

| Community Safety (PREVENTING) | Legislative Fire Safety (PROTECTING) | Emergency Response (RESPONDING) |
|---|---|---|
| • Home Risk Assessments<br>• Smoke Alarm Fitting<br>• Schools Education Programme<br>• Arson Task Force – Preventing and Investigating Arson<br>• Smoke Detector Installation Partnerships<br>• Crime and Disorder Reduction Partnerships (CDRPs)<br>• Road Traffic Collision Reduction Initiatives<br>• Youth Engagement Activities<br>• Vulnerable Adults Initiatives | • Regulatory Reform (Fire Safety) Order<br>• Building Regulations<br>• Petroleum Licensing<br>• Licensing Applications<br>• Residential Care Home Inspections<br>• Inspection and Enforcement in Business and Commercial Premises | • Fire<br>• Road Traffic Collisions<br>• Chemical, Biological, Radiation and Nuclear Incidents<br>• Flooding Incidents<br>• Urban Search and Rescue<br>• Special Service Requests[12]<br>• Emergency Call Handling (Control Room)[13] |

The UK Government has highlighted that IRMPs should do the following fundamental things:

- Identify existing and potential risks to the community within the authority area
- Evaluate the effectiveness of current preventative and response arrangements
- Identify opportunities for improvement and determine policies and standards for prevention and intervention
- Determine resource requirements to meet these policies and standards

The Communities and Local Government Department within the UK Government provides guidance on what IRMP's may contain[14], however, the list provided is not intended to be prescriptive nor exhaustive. Fire and Rescue Authorities must decide what they include in their IRMP based on locally identified needs.

NFRS's current IRMP (2008-2011) outlines the Services' current priorities, which are to:

- Reduce fire-related injuries, deaths, false alarms and arson.
- Continue the professional execution of duties to ensure the right people are in the right place at the right time to provide an effective response to emergency incidents.

[12] For instance, rescues and incidents other than fire.
[13] NFRS continues to work as part of the national government project towards a move from the current control room at Morpeth to a Regional Control Centre at Belmont Business Park in Durham. The Regional Control Centre will deliver greater resilience to deal with large incidents as part of a national network of 9 Regional Control Centres.
[14] The various IRMP guidance documents can be viewed at the following website: http://www.communities.gov.uk/fire/developingfuture/integratedriskmanagement/

- Extend our involvement and interaction with the people of Northumberland to improve community safety.
- Develop employee's abilities and effectiveness to improve services to the people of Northumberland.
- Use all opportunities to communicate electronically where possible.
- Work with our partners to improve safety and reduce the severity of injuries in fires, road traffic collisions and other emergencies.

Alongside the key priorities, NFRS outlines its current key objectives, which are to:

- Reduce the number and severity of fires, road traffic collisions and other emergencies occurring.
- Reduce the severity of deaths and injuries in fires, road traffic and other emergency incidents.
- Reduce the number of accidental fire-related deaths in the home and the number of deliberate fires.

**Fire Service Emergency Cover and Lifestyle Data**

One of the tools utilised by NFRS within the IRMP process is the Fire Service Emergency Cover (FSEC) toolkit to determine risks to communities. NFRS is now also integrating lifestyle data into this risk data, which is further improving NFRS's ability to identify individuals at risk enabling mitigation of risk in a more targeted and cost effective way. Risk identification, assessment and management are key to the IRMP process and it is for this reason that NFRS is leading on the ANSFR Project. Through the ANSFR Project, NFRS can share good practice and experience in this field with project partners across Europe and further develop and improve its fire risk assessment and management techniques, thus making communities in Northumberland even safer. Further details about the IRMP, FSEC and Lifestyle Data are presented later in this handbook.

**New Fit-for Purpose Fire Stations in Northumberland**

As part of the modernisation agenda within the UK Fire and Rescue Services, NFRS has undergone a significant period of change over the last decade and this has meant that fire stations built a number of decades ago are no longer suited to the work of the modern service. NFRS is now completing a substantial facilities development programme of modifying existing fire stations and creating new and fit-for-purpose community fire stations. As part of this process, a new combined community fire and ambulance station has already been built and was recently opened in Rothbury. Two new fire stations are also under construction: a new Headquarters site at West Hartford near Cramlington; and a new community fire station at Pegswood, near Morpeth. Plans are now being drawn for the creation of new/modification of existing fire stations in Alnwick, Hexham and Berwick to ensure that all of NFRS's fire stations are designed to fulfil the requirements of the modern Fire and Rescue Service.

**Specialist Equipment Used by NFRS**

The physical remoteness and isolation of some rural communities in Northumberland presents NFRS with some significant challenges to delivering fire and rescue services across the entire County. NFRS is often called to attend fire and other emergency incidents in areas that sometimes are not accessible to traditional fire appliances. In order to access some of these more remote areas, NFRS has a fleet of highly adaptable and flexible 4 x 4 utility vehicles. These utility vehicles are used for rapid response on difficult terrain for fires, wildfires, RTCs and other emergency situations. The vehicles also provide additional flexibility and capacity for the provision of community safety.

The utility vehicles can quickly be converted to carry a range of specialist equipment. The units can carry specialist cutting and extrication equipment for use at RTC incidents. The units can also be easily converted to carry Fire Fogging Units (FFU) which can hold 400 litres of water. The special fire-fogging technology is designed to use a small amount of water which is transformed into a water fog or mist. The tiny water droplets that are produced quickly turn into steam (and therefore the droplets significantly expand in size) which rapidly replaces or reduces the oxygen around the fire area. By removing the oxygen, the FFUs can quickly extinguish fires with minimal water and a reduction in the spread of burning debris. In the flick of a switch the FFUs can also use foam to tackle more complex fuel fires. This is an extremely useful resource for less accessible locations, particularly for tackling wildfires in the more remote areas of Northumberland.

**Northumberland Specialist Wildfire Team**

Wildfire is a subject that is currently attracting a lot of attention across the United Kingdom, Europe and at a wider scale. This is evidenced in the creation of the English and Scottish Wildfire Forums, groups that have been formed to address national wildfire issues, and in the publication of the UK Wildfire Statistics document (forthcoming). A very large wildfire in April 2007 in Harbottle (see Figure below) highlighted the fact that there is a real risk of dangerous wildfires in Northumberland and that NFRS must be suitably equipped and trained to deal with such incidents. The risk and potential danger of wildfire incidents is growing and wildfires of varying magnitudes are included within the Northumbria Community Risk Register (see Chapter 5).

**Figure 3 – Images of a Wildfire in Northumberland in 2007**

Northumberland's Specialist Wildfire Group has been created to provide NFRS with fire managers that have the necessary skills and knowledge to successfully manage wildfire incidents. The aims of the group have included the formulation of a Fire Suppression Plan which provides safe systems of work for all personnel and the provision of knowledgeable managers to supervise risk critical areas of the Incident Command System or to be deployed onto the fire ground to carry out specialist operational duties.

**The Northumberland Fire Group**

The Northumberland Fire Group[15] aims to protect and minimise the damage to the Northumbrian environment, economy and rural community. In order to achieve this goal, the group engages in wildfire prevention and preparedness activities.

To minimise the risk of wildfire occurrence, the group delivers 'wildfire prevention' activities, including:

- High Wildfire Risk Signs
- High Wildfire Risk Press Releases
- Wildfire Public Awareness DVD

In order to minimise the damage caused by wildfires, the Northumberland Fire group is working to facilitate an effective response to wildfires through the delivery of wildfire preparedness activities, including:

- Live wildfire exercises
- Basic and Advanced Wildfire Fighting Training Courses
- Wildfire Standard Operating Procedures Manual and Handbook
- Improved Heather Burning Practices
- Wildfire Equipment Sharing

Members of the group include, among others, NFRS, the Ministry of Defence, the Northumberland National Park, the Forestry Commission, landowners, land agents, and farmers. The group is funded by Northumberland Fire and Rescue Service, Dräger, DEFRA, Natural England, the North Pennines AONB Sustainable Development Fund, the Northumberland Coast AONB Sustainable Development Fund, the Northumberland National Park Sustainable Development Fund, and the Forestry Commission. The group has brought a wide range of partners together and delivered a range of activities, including the production of dozens of fire plans to a common template, and the development and delivery of Basic and Advanced Wildfire Fighting courses. The group has already delivered real benefits on the ground, with a test of its new networks and techniques during the major wildfire at Harbottle in April 2007. This fire was the most intense wild land fire in the UK in recent memory, and the speed with which it was brought under control was a testament to the skills of NFRS and the public and private sector members of the Northumberland Fire Group.

The Northumberland Fire Group holds biannual meetings to discuss past and current fire group activity and current wildfire issues or concerns of its members that might be addressed in the future. Meetings are open to any member of the public with an interest in wildfire. Further information about the wildfire risk assessment and management work of the Northumberland Fire and Rescue Service Wildfire Team and the Northumberland Fire Group will be presented and discussed at the Environmental Fire Risk Workshop in Frederikssund-Halsnaes in September 2009.

[15] Website: http://www.northwoods.org.uk/fire-group-northumberland

## Northumberland Marine Incident Response Group (MIRG)

An increasing decline in resilience for dealing with fires at sea in the UK provided the impetus for the 'sea of change' project which was launched by the Maritime and Coastguard Agency (MCA)[16] in partnership with the Chief Fire Officers Association (CFOA) in January 2003. The primary aim of the project was to formalise a fully trained, equipped and integrated Fire and Rescue Service response to assist the MCA in dealing with incidents involving fire, chemical hazards and accidents at sea.

The project culminated in an integrated strategy for dealing with incidents at sea and the launch of the UK Fire and Rescue Service Maritime Incident Response Group (MIRG) in April 2006. The MIRG mission statement is to save life; to reduce loss and mitigate environmental and ecological damage; and, to render where appropriate all humanitarian services. MIRG currently consists of fifteen strategically located shore-based Fire and Rescue Services that provide a 24/7 response[17] to incidents "at sea". Northumberland Fire and Rescue Service is one of the fifteen specially trained and equipped MIRG teams. The equipment and training given to the NFRS MIRG team, in combination with the equipment and training for the new Swift Water Rescue Team, has also enhanced NFRS's inshore water-related incident response capability.

## Conclusion

Brian concluded his presentation by stating that the recent developments within NFRS outlined during his presentation have and will contribute towards improvement in the service that NFRS provides to the residents of, and visitors to, Northumberland. He also stated that NFRS is continually looking at ways to improve the service it delivers and to ultimately make Northumberland a safer place to live, work and visit. An important part of this improvement process involves NFRS communicating and sharing ideas, experiences and good practice with colleagues working in the UK, Europe and across the world. The ANSFR Project is just one example of a number of international projects that NFRS is engaged in and ANSFR presents all four partners with some extremely important and productive opportunities that can be used as a basis for further improving the services they deliver. Brian urged the partners to make the most of the opportunities presented by the project and expressed his hope that the mutually beneficial partnership developed between the four ANSFR partners continues beyond the life of the project.

[16] Website: http://www.mcga.gov.uk/c4mca/mcga07-home.htm

[17] The MCA is responsible throughout the UK for implementing the UK Government's Maritime Safety Policy, under the motto *Safer Lives, Safer Ships and Cleaner Seas*. The MCA has statutory duty for the initiation and co-ordination of civil maritime search and rescue within the United Kingdom Search and Rescue Region (UKSSR). HM Coastguard, an on-call emergency organisation within the MCA, is responsible for mobilisation, organisation and tasking of adequate resources to respond to persons either in distress at sea, or to persons at risk of injury or death on the cliffs or shoreline of the United Kingdom. All incidents attended by Fire and Rescue Service MIRG Teams are coordinated by Her Majesty's Coastguard through its 19 Maritime Rescue Coordination Centres.

## 4.2 The ANSFR Project and Workshop 1

This presentation was delivered by Dr. Robert Stacey, ANSFR Project Manager and Arson Task Force Project Officer at Northumberland Fire and Rescue Service.

Robert delivered a short presentation which covered three associated topic areas: the ANSFR Project; the ANSFR Northumberland Workshop; and the future work of the ANSFR Project. Robert began by providing a concise summary of the aims, objectives and activities of the ANSFR Project. He then outlined the specific aims, objectives and desired outcomes for the Northumberland Workshop, emphasising how the event had been designed. Robert then concluded by highlighting the tasks that the partners would be required to complete in the short, medium and long term.

**ANSFR Project Aim, Objectives, Outputs**
The information regarding this topic has already been presented earlier in this report (page 10) and, consequently, will not be discussed again here.

**ANSFR Project: Contribution from the Partners**
After providing a summary of the aim, objectives and outputs of the ANSFR Project, Robert outlined the key activities that all of the partners were expected to complete to fulfil their obligations to the ANSFR Project:

- To collect relevant documents/information
- To circulate a short questionnaire within partner countries
- To contribute to/ approve any guidelines documents produced
- To submit and approve material for the web system and training portal
- To publish information on the project/workshops – through press releases and journal/magazine articles
- To take ownership of one of the two-day workshops
- To contribute to the design & delivery of the project conference in Aug/Sept 2010
- To design and deliver at least one presentation/workshop session for the project conference

Robert then presented the partners with a list of NFRS's obligations to the project:

- All of the previous obligations (as presented for the other project partners)
- Project and financial management
- Communication with the European Commission
- To provide support and assistance to the partners for the design and delivery of the 3 remaining workshops
- To manage the design and delivery of the project conference

In addition to outlining these key activities, Robert also highlighted a small number of activities that NFRS would deliver with the assistance of one or more of the other partners:

- The design of a questionnaire survey
- The creation of a web system
- The creation of an online training portal

**Workshop 1 - Northumberland**
Robert then directed the delegates' attention to the specifics of the Northumberland Workshop, the first of four ANSFR Project workshops. He discussed with the group the learning outcomes of the event and the anticipated outcomes.

The learning outcomes of the event were to:

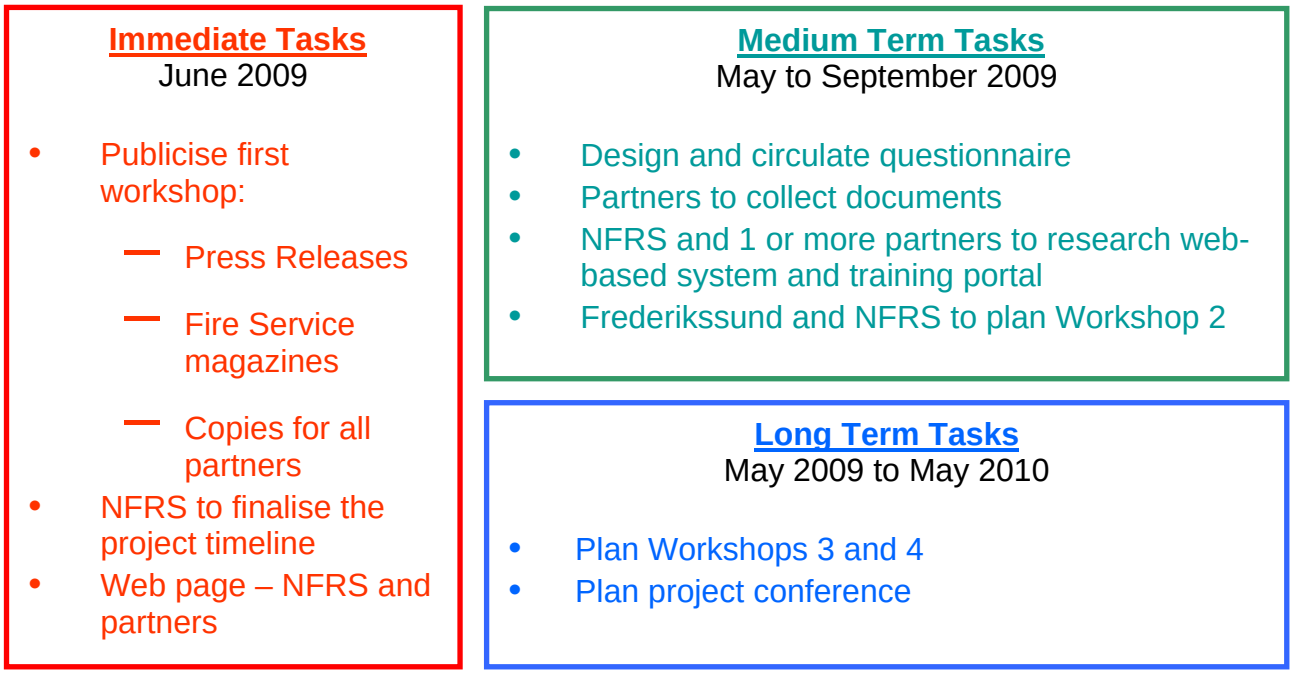
- Obtain a good basic understanding of the fire risk assessment and management practices currently adopted by the project partners.
- Obtain a good basic understanding of the specific fire risks and challenges that face the project partners.
- Obtain a basic understanding of some of the national priorities and strategies for fire risk assessment and management in the project countries.
- Develop an awareness and appreciation of examples of best/good practice in fire risk assessment and management from the project countries.

The anticipated outcomes of the workshop were:

- A list of names and contact details of all individuals participating in the workshop.
- A handbook documenting the sessions delivered and the specific findings/conclusions of each session.
- A revised conceptual diagram outlining the key categories of fire risk that will be focused on during the project.
- Confirmation of which partners will host the proceeding project workshops.

**Things to do next on the ANSFR Project**
Robert took the opportunity to suggest to the partners the key activities that would need to be completed by the project team in the immediate, medium and long-term periods following the completion of the Northumberland workshop (see Figure 4, below).

**Figure 4 – Immediate-, Medium- and Long-Term Key Tasks for the ANSFR Project**



## 4.3 The Northumberland Arson Task Force

This presentation was delivered by Dave Myers, Manager of the Northumberland Arson Task Force (ATF) within Northumberland Fire and Rescue Service.

Dave opened his presentation by placing the Northumberland ATF within a broader context of arson reduction and prevention in the UK. The Northumberland ATF was created in 2004.

**A History of Arson Reduction and Prevention in the UK**
Dave provided a brief overview of the legislation and guidelines produced by the UK Central Government which have influenced arson reduction and prevention over the previous two decades. This provided some context to the creation and ongoing activities of the Northumberland ATF. The following were highlighted as being particularly significant:

- 1996 Safe as Houses[18]
- 1998 Safer Communities – The Home Office Arson Scoping Study[19]
- 1998 Crime and Disorder Act[20]
- 1999 Northumberland Arson Scoping study
- 2000 Northumberland Arson Reduction Initiative
- 2002 Police Reform Act[21]
- 2004 Evaluation of the Arson Control Forum's New Projects Initiative[22]
- 2006 Crime and Disorder Act Review.

**The Northumberland ATF**
The Northumberland (ATF) is a multi-agency task force that currently consists of 12 personnel from Northumberland Fire and Rescue Service (NFRS), a hydrocarbon detector dog, and a Detective Constable seconded from Northumbria Police. The team from NFRS consists of: the ATF Manager, a researcher, a project officer, a manager of the Northumberland Community Wardens and 8 Community Wardens. The department is dynamic in its response to changes and problems as they occur, and proactive through its anticipation of potential future problems related to arson and, more generally, to crime and anti-social behaviour.

**Arson Prevention Strategies**
Using a problem solving approach the ATF works closely with partner agencies to develop and implement arson reduction and prevention initiatives. The ATF's prevention strategy involves three key strands:

a. Education
b. Deterrence
c. Removal of Opportunity

[18] Available at: www.communities.gov.uk/archived/publications/fire/safeashouses
[19] Available at: www.communities.gov.uk/publications/fire/safercommunitiestowards
[20] Available at: www.opsi.gov.uk/acts/acts1998/ukpga_19980037_en_1
[21] Available at: www.opsi.gov.uk/acts/acts2002/ukpga_20020030_en_1
[22] Available at: www.communities.gov.uk/publications/fire/evaluationarsoncontrol

## Education

The ATF sits within a larger department within Northumberland Fire and Rescue Service called the Community Safety Academy (CSA). The principle objective of the Community Safety Academy is to improve safety in the community and reduce risks to life through effective partnerships with other agencies. The structure of the CSA has been developed to create three distinct, but mutually supportive teams: the Programme Delivery Team; the Programme Development Team; and the Arson Task Force. The work of the CSA focuses primarily on the high risk, vulnerable and hard to reach groups, e.g. young offenders, unemployed, and disabled; whilst at the same time supporting operational personnel to engage with, and improve safety within their local communities. Members of the ATF assist in the delivery of Fire and Security Awareness training courses given to school caretakers. These courses aim to educate and raise awareness among school caretakers of potential targets for arson attacks and how they can reduce opportunities for arson by implementing simple preventative measures. In addition to this form of education, the CSA Development Team has designed a Schools Education Programme to be delivered in all schools within Northumberland. This programme is a long-term initiative that educates young people in community safety issues (including fire safety and the dangers of deliberately setting fires). The programme has been designed to mutually support the National Curriculum and is structured to deliver appropriate and relevant messages to children and young people throughout their school lives.

## Deterrence

The investigation of fires is a key element of the ATF's deterrence strategy. No strategy can prevent all criminal fires from occurring. Consequently, when criminal fires do occur, it is of vital importance that thorough fire scene investigations are completed in order to ascertain the origin and cause of the fire, as well as potential evidence that can be used to identify criminal fire setters. By conducting through investigations in partnership with other organisations, the ATF is working to increase the detection rate for arson and prevent and reduce future arson fires. By thoroughly investigating fire scenes and bringing more fire setters to justice through the courts, the ATF has helped increase the number of successful prosecutions for criminal fire setting. The ATF is also helping to deter some would-be fire setters by making examples of those who have been caught and punished through the use of targeted publicity campaigns.

The deterrent aspect of the ATF's preventative work also includes engaging in focused publicity campaigns that warn against the dangers and potential ramifications of fire-setting (particularly during the Bonfire Period around Guy Fawkes Night[23] on November 5th each year). The ATF also coordinates periodic "letter drops" to homes and businesses within recorded arson hotspots around the county. The letters request that residents pass any information they may have about incidents of fire-setting to the ATF via a confidential telephone number. Any information received is passed directly to Northumbria Police. While these letter drops often yield important information that the Police can act upon, there is also an important deterrent element – individuals who are setting fires are notified that the Fire Service and Police are working together to stop fire setting behaviour in the area and that if they continue to set fires they may be caught and punished.

[23] In 1605, thirteen men planned to blow up the Houses of Parliament in London. This event is now known as the Gunpowder Plot, because the plotters filled the cellars of the Houses of Parliament with gunpowder (their plan was to a light a fuse and blow up the Houses of Parliament). One of the plotters was Guy Fawkes, a man who was found in the cellars of the Houses of Parliament when the authorities searched it on the morning of 5th November. Guy was tortured and executed for his part in the plot. Every year on the night of November 5th, people in Britain commemorate the capture of Guy Fawkes with bonfires and fireworks. These annual festivities cause a significant amount of work for all of the Fire and Rescue Services in the UK.

**Removal of Opportunity**

A significant proportion of the work completed by the Northumberland ATF involves the identification and removal of potential arson risks. This involves continual analysis of the Fire Service Incident Database and the Police Crime and Incident Databases by the Arson Task Force Researcher and Police Officer. The ATF also relies upon information about potential risks being conveyed by the team's 8 Community Wardens, partner agencies (for instance, the local authority), fire crews attending incidents or completing other duties, and observations made by the team while on duties throughout the county. The ATF also rely upon intelligence provided by members of the public. Where arson risks are identified, the ATF does everything in its power to ensure that the risks are removed as soon as possible.

Some of the common arson risks that are identified by the Northumberland ATF are:

- Refuse/flytipping
- Abandoned vehicles
- Derelict properties (see for instance, right)
- Bonfires

A relatively common arson risk within some areas of the county is the existence of fully-laden skips[24] that are not promptly collected. Skips fully-laden with combustible waste offer a prime opportunity for would-be fire-setters and, consequently, represent a significant arson risk. The skip shown in Figure 5 (overleaf) is an arson incident waiting to happen, while Figure 6 (also overleaf) shows the damage and devastation that can be caused by an arson fire of this type. The ATF has now developed a policy to get fully-laden skips removed from the streets as quickly as possible. When the ATF identifies a vulnerable skip it notifies the company that owns the skip and requests that they remove it as soon as possible. This proactive approach towards risk removal has contributed to a significant reduction in the number of rubbish fires set within the county.

Another specific initiative aimed at removing opportunities for arson which has been set up with the assistance of the Northumberland ATF has been the AVAIL Scheme – Abandoned Vehicle Action Information and Liaison. This initiative involves the rapid removal of abandoned vehicles from the streets of Northumberland. Any abandoned vehicle reported through the central hotline telephone number is removed and impounded within 24 hours. This has helped to significantly reduce the number of criminal fires within vehicles across the county.

[24] A skip is a large container for unwanted rubbish or rubble.

**Figure 5 – A Fully Laden Skip Vulnerable to an Arson Attack**

**Figure 6 – Damage Caused by an Arson Fire in a Skip**

**Where Does Arson Occur in Northumberland**

NFRS uses a Geographic Information System (GIS) in order to plot the locations of all incidents that the organisation's officers are called to attend. The GIS system allows research analysts within NFRS to plot the location of all incident types or a selection of incident types onto detailed maps of the County of Northumberland.

Dave showed the group some screenshots taken from an interrogation of the GIS mapping system. The maps showed the location of a number of different types of deliberate fires, presented at a number of different geographical scales. The maps showed that deliberate fires tended to be quite concentrated within the County. At the smaller scale, the varying geographical scales indicated a micro-geography to the spatial distribution of deliberate fires, with particular concentrations evident within particular towns and within particular neighbourhoods of some towns. It was emphasised that it is extremely important to map and analyse the location of deliberate fires within the County in order to ascertain potential hot spots (high concentrations), to facilitate the effective targeting of resources and help to identify where new initiatives may be required to address emerging problems.

**The successes of the Northumberland ATF**

Dave concluded his presentation by stating that the multi-agency partnership approach adopted by the Northumberland ATF has been extremely successful for reducing and preventing arson in the County of Northumberland. The statistics show that significant reductions have been achieved since 2003 (see Figures 7 and 8, overleaf). The significant reductions that have been achieved will have had a significant positive impact for many people living in Northumberland. The ultimate goal of the Northumberland ATF is to reduce deliberate fires, make Northumberland a safer place and to improve the quality of life for those that live in Northumberland's communities. The Northumberland ATF will continue to complete this much-needed work and will aim to achieve further reductions in arson fires within the short-, medium- and long-term.

**Figure 7 – Deliberate Fires of Refuse, Derelict Properties and Vehicles in Northumberland 2003 – 2008** [25]

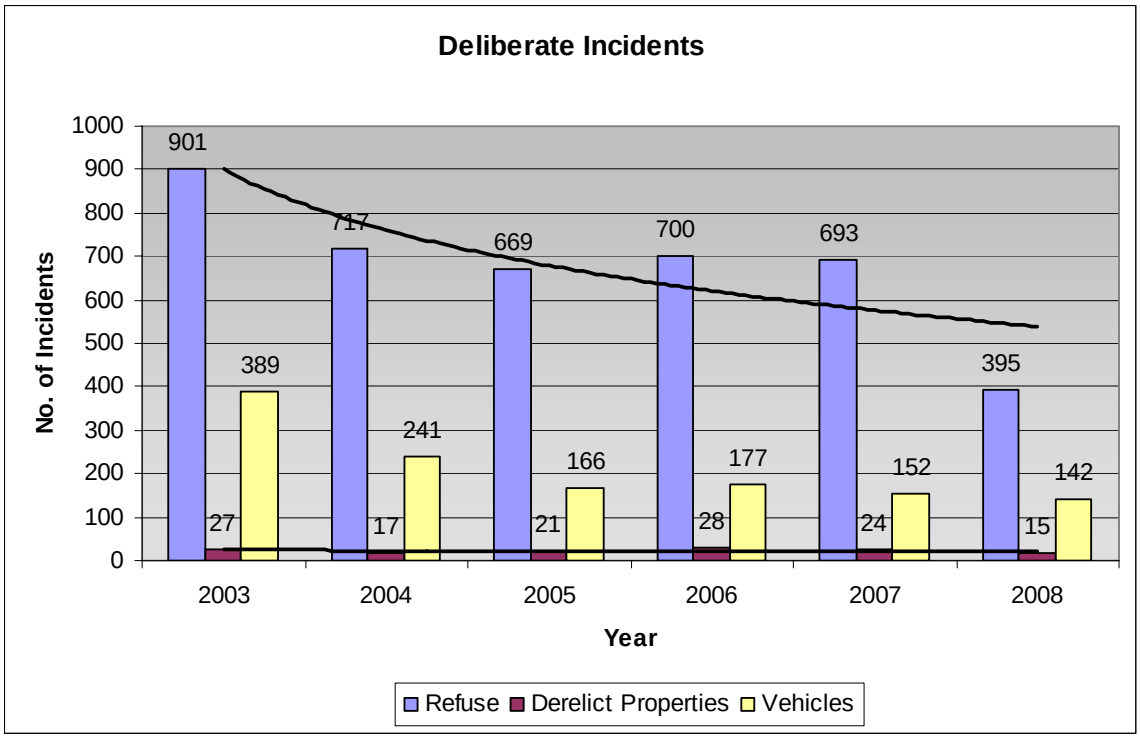
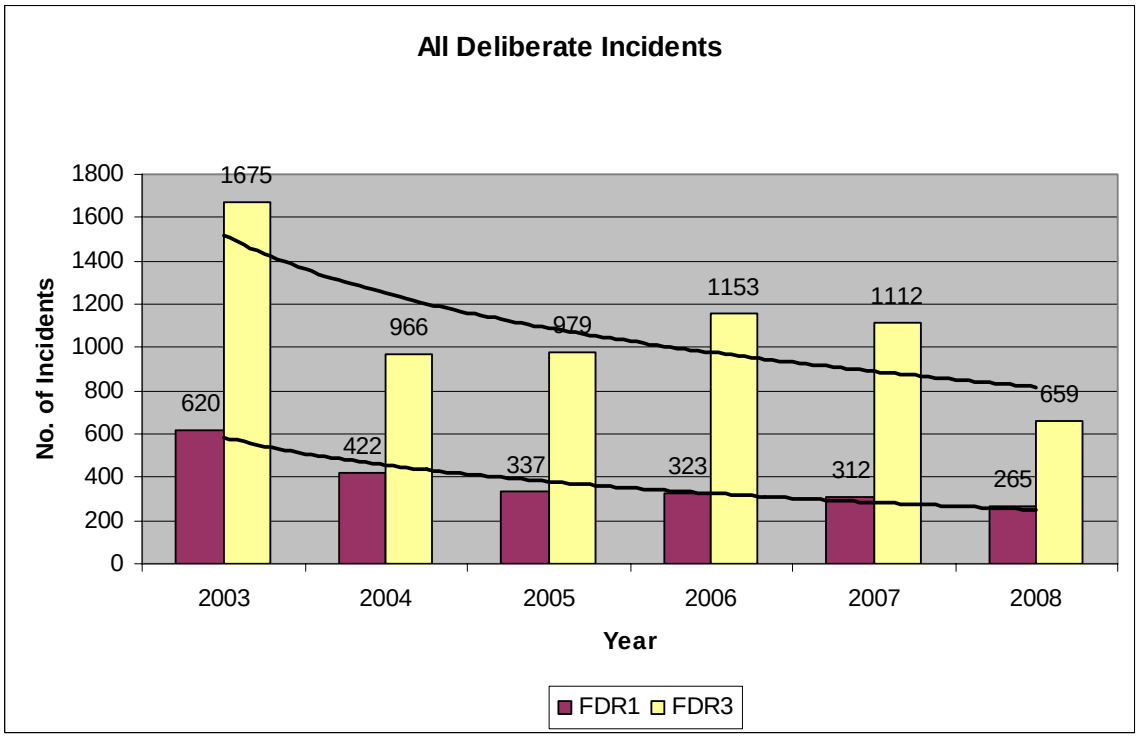



**Figure 8 – All Deliberate Fire Incidents in Northumberland 2003 – 2008** [26]




[25] Source: NFRS Incident Data.
[26] Source: NFRS Incident Data.

## 4.4 Presentation by Frederikssund-Halsnæs Fire and Rescue Department

This presentation was delivered by Kim Lintrup, Beredeskabschef (Chief Fire Officer) Frederikssund-Halsnæs Fire and Rescue Department.

Kim described Frederikssund-Halsnæs Fire and Rescue Department's area of responsibility and pin-pointed the location of Frederikssund in relation to other key cities in Denmark (see Figures 9 and 10, overleaf). He introduced the key members of the Frederikssund delegation attending the workshop and briefly introduced their roles within the organisation. Kim then described the structure of the organisation and its daily management.

**Frederikssund-Halsnæs Municipality**
Frederikssund-Halsnaes Fire and Rescue Department provides fire and rescue services to approximately 75,000 inhabitants living within a land area of 382 square miles.

Frederikssund-Halsnæs Fire and Rescue Department has:

- 6 fire stations with part-time fire fighters
- 2 fire stations with volunteer fire fighters
- 17 full-time employees
- 100 part-time fire fighters
- 100 volunteers

The key preventive tasks of the organisation include:

- Burning treatment of construction
- Fire inspections of approx. 1250 buildings (schools, industry, nursing homes, etc.)
- Treatment of fireworks applications
- Fire prevention campaigns
- Control of the companies covered by the Seveso Directive, in cooperation with police, Labor and Environment
- Evacuation Planning in cooperation with the police - civil contingencies
- Civil emergency planning
- Planning of water supply for fire fighting

The key operational duties of the organisation include:

- Fire fighting
- Unlocking Tasks to traffic accidents jammed with people
- Rescue of peoplen, animals and the values of damage locations
- Control of acute injuries of an environmental nature
- Follow Injury Prevention
- Boat preparedness

**Figure 9 (right) – Map of North East Denmark**

**Figure 10 (below) Frederikssund-Halsnæs Fire and Rescue Department's Area of Responsibility**

Some of the other activities completed by Frederikssund-Halsnaes Fire and Rescue Department are:

- Monitoring of municipal care alarms
- Monitoring of municipal anti-theft devices and technical alarms
- Monitoring of Automatic Fire Alarms
- Running for alarm systems
- Helping municipalities usually home by heavy lifting
- Organisation of first aid courses
- Organisation of courses in basic fire fighting
- Inspection of firefighting equipment in municipal institutions.
- Inspection and installation of emergency in part of Frederikssund Municipality.
- Parking control for the Frederikssund Municipality.
- Follow Injury Prevention
- First responder - Hundested
- Accommodation and catering service

**Political Organisation of Frederikssund-Halsnæs Fire and Rescue Service**

Figure 11 presents the political organisation of Fire and Rescue Services in Denmark. The Ministry of Defence has overall responsibility for Fire and Rescue activities. Below the Ministry of Defence is the Danish Emergency Management Agency (Beredskabsstyrelsen). According to the Danish Preparedness Act, which came into force in 1993, the principal task of the Danish Emergency Management Agency is to manage the National Rescue Preparedness Corps, to supervise national and municipal rescue preparedness and to advise the authorities on matters of preparedness. The next level of the hierarchy is the City Council, followed by the Municipality's Emergency Committee. This emergency committee comprises: the Mayor, Police Director, a number of Politicians and a Secretary (which is the Fire and Rescue Chief).

**Figure 11 – The Political Organisation of Fire and Rescue Services in Denmark**

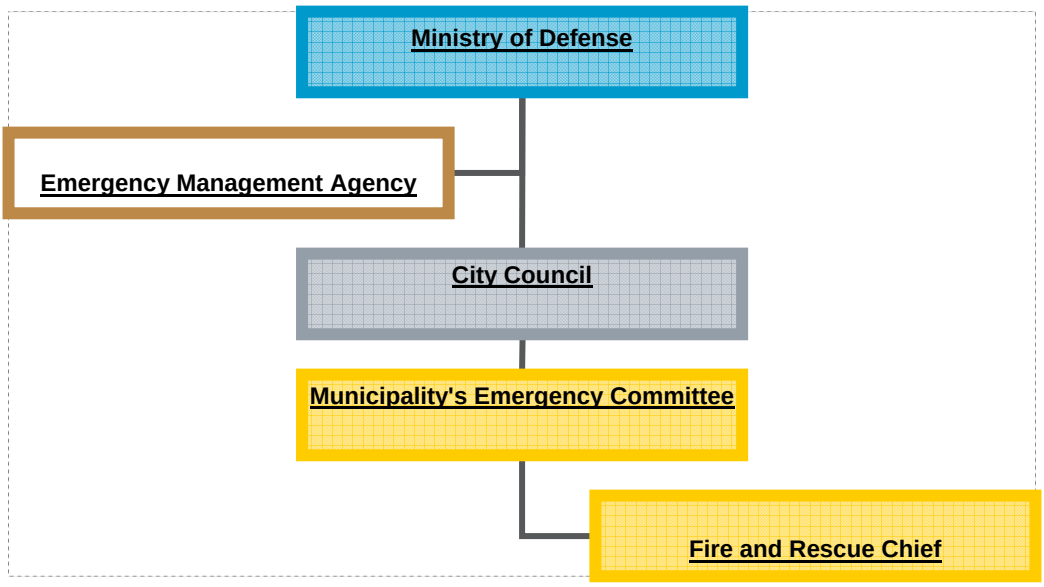
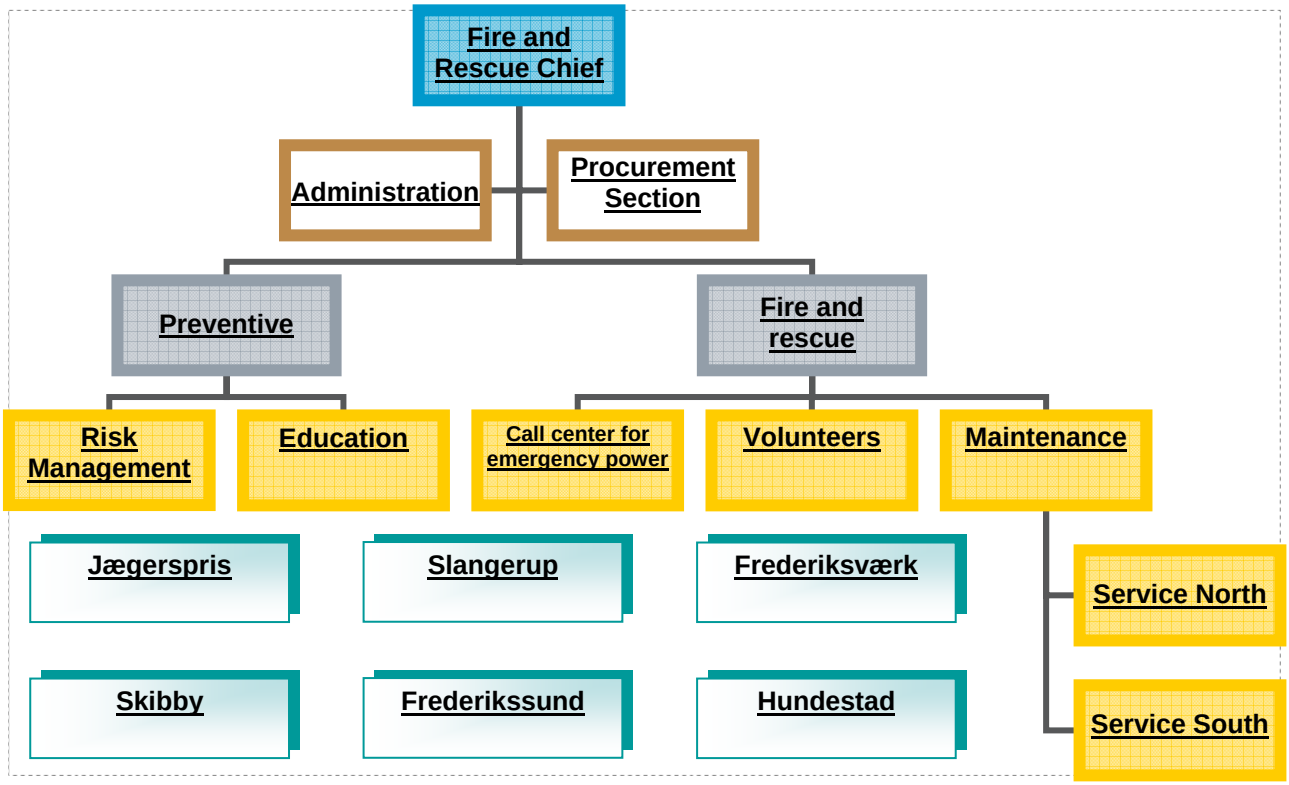


Figure 12 is an organisation chart of Frederikssund-Halsnæs Fire and Rescue Department. Outside of the leadership and support services (administration and procurement), the organisation is split into two key departments: the preventive section and the fire and rescue operational section. Each of these departments has their own responsibilities. The six fire stations with part-time fire fighters are presented on the chart in the green boxes.

**Figure 12 – Organisation Chart of Frederikssund-Halsnæs Fire and Rescue Department**




**Emergency Preparedness**

Both the Beredskabsstyrelsen (the Danish Emergency Management Agency, DEMA) and the municipalities are responsible for emergency preparedness in Denmark. According to Danish Preparedness Act:

> ”the Rescue response task is to prevent, reduce and mitigate damage to persons, property and environment by accidents and disasters, including acts of war or imminent threat thereof”.

Municipal fire brigades must be able to provide, in relation to local risks, sound prevention, mitigation and remedial action against damage to persons, property and the environment by accidents and disasters, including acts of war. Municipal fire brigades must also be able to receive, accommodate and feed evacuees and others in distress.

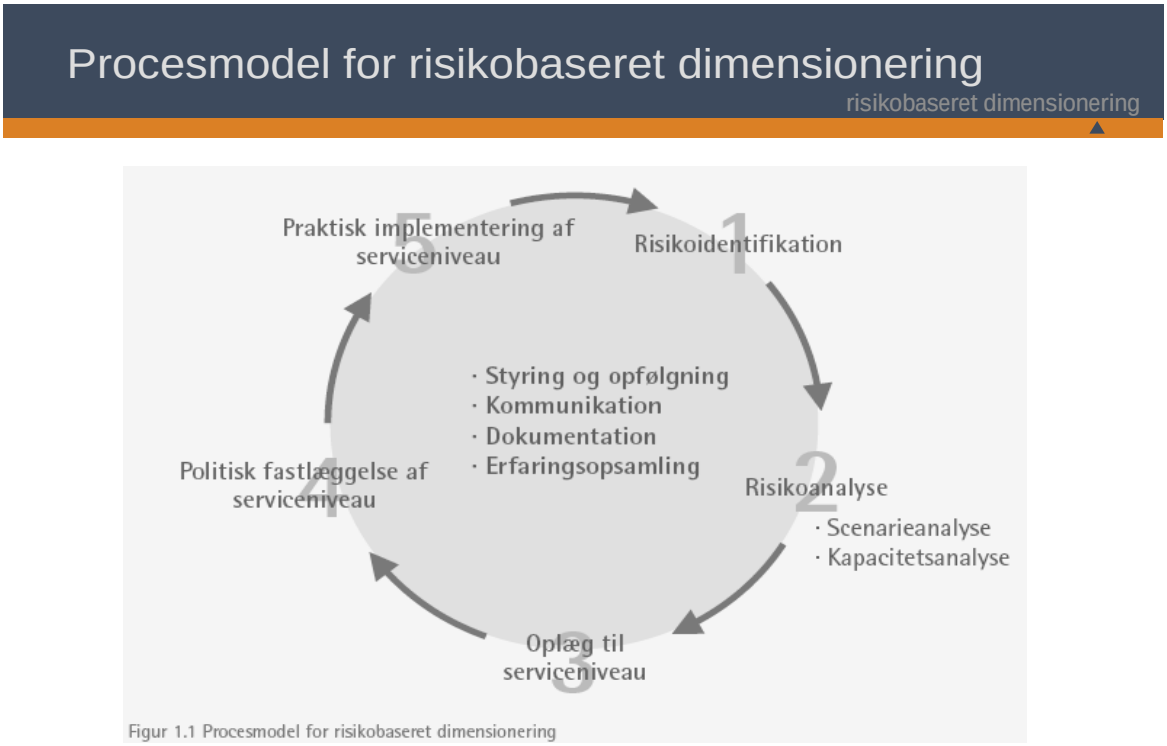
In addition, the muncipal fire brigade must:

- Identify and analyze local risks to be considered for the dimensioning of the emergency risk.

- Define the level of the municipal emergency preparedness task performance (service) based on the risk profile.
- Define the emergency rescue organisation, business, design and equipment based on the risk profile and service levels

The municipality must prepare a comprehensive plan for emergencies and this must adopt a risk-based design. The Process Model for Risk-Based Dimensions is used to guide the emergency planning process (see Figure 13).

**Figure 13 - Procesmodel for Risikobaseret Dimensionering (approximate translation: Process Model for Risk-Based Dimensions)[27]**




[27] Approximate translation of the five stages of the Risk-Based Dimensions Model:
1. Risk identification;
2. Risk analysis, including analysis of scenarios and analysis of capacity;
3. Presentation of service level model;
4. Political target setting of service level;
5. Practical implementation of service level.
The words listed in the centre of the diagram, are translated into English (from top to bottom) as: follow up guidance/direction; communication; documentation; experience. These four elements underpin the whole process.

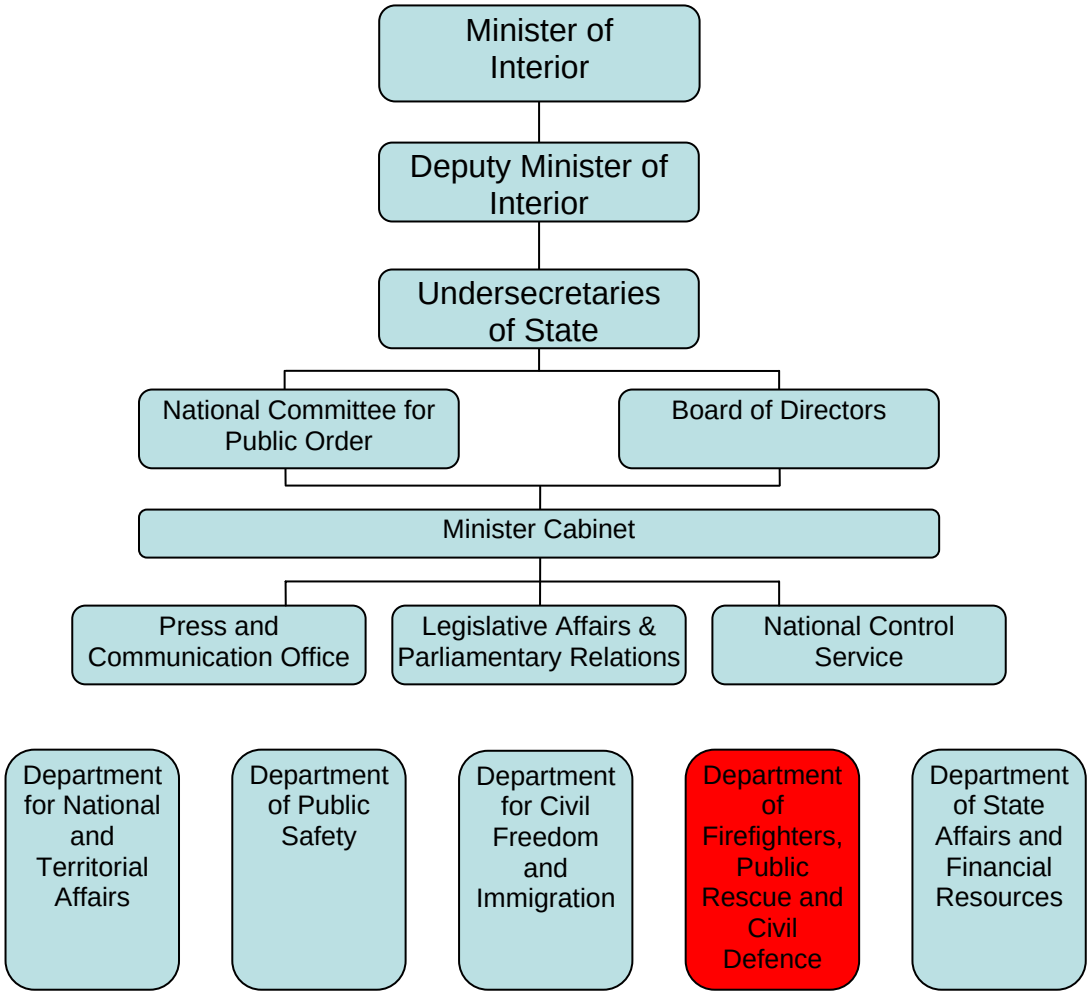
## 4.5 Presentation by Corpo Nazionale dei Vigili del Fuoco – Nucleo Investigativo Antincendi (NIA)

This presentation was delivered by the following officers from Corpo Nazionale dei Vigili del Fuoco: Cristina D'Angelo (Head of NIA); Saverio La Mendola (Passive Protection Area[28] within NIA); Fabio Alaimo Ponziani (Active Fire Protection Area[29] within NIA); and Biancamaria Cristini (Fire Investigation Area within NIA).

**Organisation of the Corpo Nazionale dei Vigili del Fuoco**

Cristina D'Angelo described the organisation of the Corpo Nazionale dei Vigili del Fuoco (CNVVF) to the workshop. She illustrated how the CNVVF falls within the Ministry of Interior of Italy and is one of five key departments within the Ministry (see Figure 14).

**Figure 14 – Organisation of the Ministry of Interior of Italy**

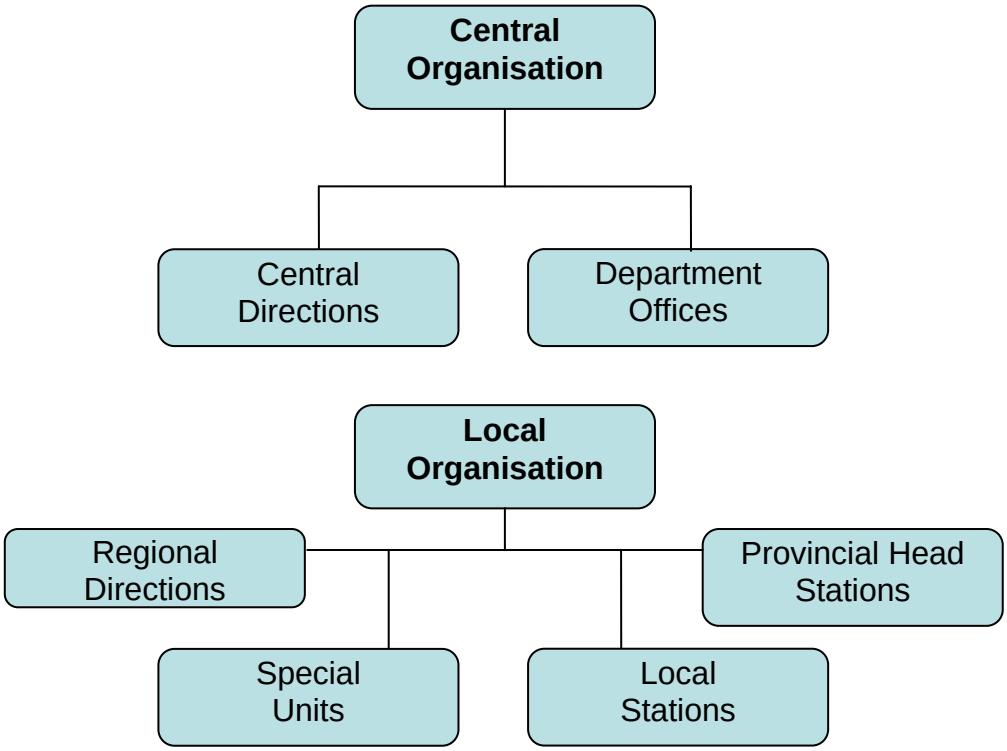



[28] The Passive Fire Protection Area completes work related to fire behaviour, fire reaction and resistance to fire. The work of this area concentrates on containing or slowing the spread of fire through the use of fire resistant materials (such as fire resistant flooring, doors etc.), among other things.

[29] The Active Fire Protection Area completes work related to equipment, materials and technological systems, including fire suppression systems.

Cristina then described how the CNVVF is organised with functions at the central and local level (see Figure 15). Cristina then showed two diagrams to illustrate that her department, Nucleo Investigativo Antincendi (NIA), is one of eight departments within the Central Direction for Prevention and Technical Safety division of the CNVVF (see Figures 16 and 17, overleaf).

**Figure 15 – Organisation of the Department of Firefighters, Public Rescue and Civil Defence**




**Firefighter National Legislation**

Saverio La Mendola followed Cristina by describing the legal foundations for the National Fire Service in Italy. On 27th December 1941, new legislation introduced new rules for the fire service in Italy. The legislation had five key areas: general organisation of the fire service; personnel; fire prevention; fire extinction and technical rescue; and particular dispositions. Fire prevention has therefore been a statutory responsibility of the Italian Fire Service since 1941.

Another piece of legislation was produced on 8th March 2009 which has instigated further changes to the organisation of the Department of Firefighters, Public Rescue and Civil Defence. The category of fire extinction and technical rescue has now been replaced with the category of “public rescue”.

**Figure 16 Central Organisation of the Department of Firefighters, Public Rescue and Civil Defence**

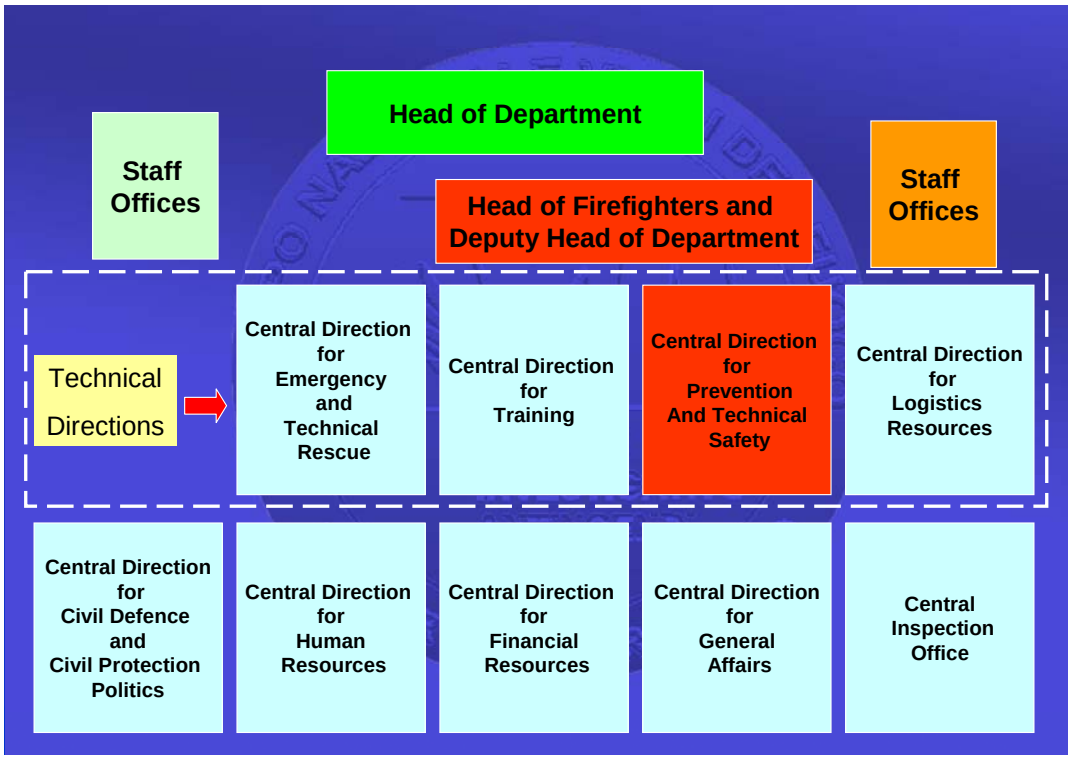



**Figure 17 – Departments within the Central Direction for Technical Prevention and Safety of the Department of Firefighters, Public Rescue and Civil Defence**

**Fire Prevention and Public Rescue Activities**
Saverio continued his presentation with a discussion of the fire prevention and public safety activities completed by the Department of Firefighters, Public Rescue and Civil Defence.

In terms of fire prevention, the CNVVF is involved in:

- Publication of national fire prevention regulations and contributions to international regulations;
- Issuing fire prevention certificates;
- Abilitation of laboratoire for fire tests;
- Inspections in laboratories;
- Tests, studies and research into fire;
- Internal and external training;
- Supervision for fire prevention.

In terms of public rescue, the CNVVF is responsible for saving human life, animal life and protecting property in any emergency scenario. The CNVVF employs approximately 30,000 firefighters. Firefighters complete their work with the assistance of specialists (scuba divers, sailors, radio engineers, pilots) and specialist units (Speleological-Alpinistic-Fluvial (SAF), Dog units, CBNR, USAR, PWC, Airport, BLS).


**Figure 18 (left) Symbols of some of the Specialist Units within the Department of Firefighters, Public Rescue and Civil Defence**

Saverio explained that the Department of Firefighters, Public Rescue and Civil Defence uses a basic equation in order to calculate risk:

**Risk = Frequency x Damage**

According to this equation, if frequency and damage can be reduced then the overall risk of a type of incident can be reduced. More specifically, fire prevention activities are designed and implemented in order to reduce the frequency of emergency incidents (for instance, to reduce the frequency of fires) and public rescue operations are implemented in order to reduce the damage (to life and property) or emergency incidents that do occur.

**Local Priorities and Practices for Fire Risk Assessment and Management**

Fabio Alaimo Ponziani followed Saverio and delivered a short presentation on local priorities and practices for fire risk assessment and management. Fabio explained that the Decree of the Ministry of Interior, 2nd February 1982, outlined 97 categories of building in Italy that represent dangerous potential for fire risk. Some of the these categories are presented in Table 2.

**Table 2 - Categories of Building that represent Dangerous Potential for Fire Risk**

| NR. | OCCUPANCIES |
|---|---|
| 4 | COMPRESSED GAS (> 0,75 m3) or LIQUEFIED GAS (> 0,3 m3) TANKS |
| 15 | FLAMMABLE LIQUID TANKS (> 0,5 m3) |
| 18 | GAS FUEL STATIONS |
| 25 | ARMORIES |
| 43 | PAPER STORAGE BUILDING (> 5 tons) |
| 64 | ELECTRIC POWER SUPPLY (> 25 kW) |
| 83 | PUBLIC ENTERTAINMENT BUILDINGS (> 100 occ.) |
| 84 | HOTELS (> 25 occupants) |
| 85 | SCHOOLS (> 100 occupants) |
| 86 | HOSPITALS (> 25 occupants) |
| 87 | SHOPS (> 400 m2) |
| 88 | STORAGES (> 1000 m2) |
| 90 | HERITAGES |
| 91 | THERMAL POWER SOURCES (> 100 kW) |
| 92 | CAR PARKS (> 9 cars) |
| 94 | HIGH RISE BUILDINGS (> 24 m) |
| 95 | HIGH RISE ELEVATORS (> 24 m) |

Owners of all 97 categories of building deemed to be at dangerous potential for fire risk must obtain a fire prevention certificate from the Department of Firefighters, Public Rescue and Civil Defence.

Fabio then discussed some of the local challenges to fire risk assessment and management. These challenges were presented in three categories:

- *Heritage* – The Decree of the Ministry of Cultural Heritage and Activities, 20th May 1982, defines the minimum requirements that are needed for heritage buildings to be able to obtain a certificate of fire prevention.

- *Major accidents within hazardous industries* – The CNVVF complies with European Directives on this type of incident: 2003/105/CE and 96/82/CE.

- *Fire safety engineering (for not ruled complex activities or for particular problems of fire prevention)* – The Decree of the Ministry of Interior, 9th May 2007, stipulates that it is now possible to use a performance-based approach to risk assessment for

complex activities and for not ruled activities in fire prevention. In other cases, the prescriptive approach must be used.

**Standard Operative Procedures (SOPs)**

Biancamaria Cristini completed the presentation by CNVVF NIA with a discussion of Standard Operative Procedures (SOPs) which are used to structure and guide all activities undertaken by the Department of Firefighters, Public Rescue and Civil Defence.

All SOPs adopt a standard format to enable ease of reference. Each SOP must also include the following:

- Types of scenario and mandatory rules
- Operational conditions and available means
- Goals and results versus state of the art
- Technical issues and minimum safety standards
- Administrative fulfilments

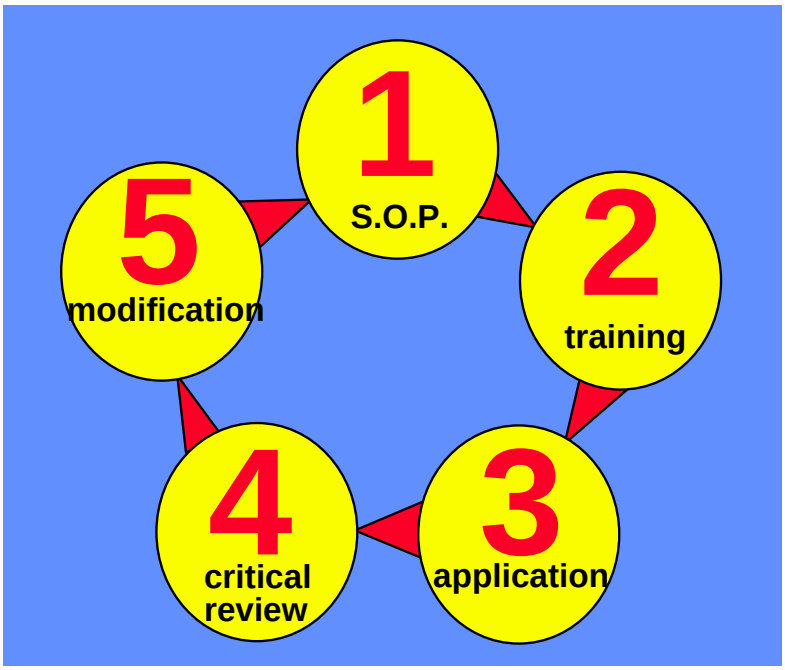
The most important underlying principle of SOPs is provided by the Deming Wheel[30], which states there are four key stages for continual improvement:

**PLAN DO CHECK ACT PLAN**

SOPs are systematically reviewed to ensure that policies and procedures remain current and appropriate. The development, implementation and reviews of all SOPs are structured using the principles of the Deming Wheel, as shown in Figure 19.

Bianca concluded by presenting delegates with a specific example of a SOP used by CNVVF (this example is presented in Appendix 2).

**Figure 19 - The Principles of the Deming Wheel Applied to the Development, Implementation and Review of Standard Operative Procedures**




[30] The Deming Wheel was developed by William Edwards Deming, an American professor and statistician. See: Deming, W.H. (1986) *Out of the Crisis* (MIT Center for Advanced Engineering Study)

## 4.6 Presentations by the Emergency Services College and representatives from Finland

Four presentations were delivered by representatives from Finland. Each will be described individually below.

### 4.6.1 Presentation on the Emergency Services College (ESC) Finland

This presentation was delivered by Dr. Esa Kokki, a Research Specialist at ESC.

Esa introduced the group to the work of the Emergency Services College in Kuopio, Finland. Esa then introduced the staff of the Research and Development Department at the ESC and explained the key research currently being undertaken. He also explained the arrangement and significance of the 22 Regional Rescue Services in Finland.

**Introduction to the ESC Finland**
Esa explained that the ESC operates within the Ministry of Interior in Finland. The ESC is a nation-wide college which plans and provides basic vocational training, work-related continuous training[31], training in emergency preparedness for authorities and persons responsible for civil defence, and tailored training both nationally and internationally.

The ESC was built in Kuopio in 1992, with subsequent expansions in 1995 and 2005 (see Figure 20). The College takes nearly 500 students a year working towards a diploma and approximately 300 further education courses are delivered a year. There are approximately 130 members of staff, 80 of which are employed in education-related roles. In 2006 it was calculated that 100,500 course days were delivered at the College.

**Figure 20 – The Emergency Services College Campus and Training Ground in Kuopio**

[31] Work-related continuous training is provided to personnel at regional rescue services and emergency response centres and to personnel working for voluntary and industrial fire brigades.

**Research and Development Department**
The Research and Development Department is coordinating the ESC's involvement in the ANSFR Project. It is also the department to which Esa belongs. Esa presented the structure of the Research and Development Department and introduced the individual members of staff. He then described the key activities of the department:

The tasks of the department are:

- Carry out an analysis of research and development needs.
- Coordinate research and development activities within the Rescue Services in Finland.
- Collect information on research and development activities being undertaken elsewhere.
- Participate in research and development activities.
- Facilitate the implementation of research results.

Esa then listed some of the key research areas of the ESC and the Regional Rescue Services. The ESC is currently researching three key topic areas:

1. Social development and rescue services within it
2. Application of information technology in rescue services
3. Education methods and assessment of effectiveness of education

In addition, the ESC is involved in research into high quality training grounds (fire research, applications of emergency services) and expertise on dangerous and hazardous substances.

The Regional Rescue Services are currently completing research on the following topics:

- Social development and rescue services within it
- Prevention of accidents
- Methods on rescue services
- Fire research
- Hazardous substances and environmental risks
- Other accidents
- Ability to work and stress of work
- Application of information technology
- Education methods and assessment of effectiveness of education
- Emergency preparedness
- Behaviours in persons in the situation of an accident

**Regional Rescue Services in Finland**
Regional rescue services are responsible for rescue services within their area (see Figure 21, overleaf, for a map of the rescue service areas in Finland). Municipalities have statutory responsibility to collectively organise rescue services in rescue service regions (i.e. to organise these services together). They must provide services in the fields of rescue services, accident prevention and civil defence.

**Figure 21 - Regional Rescue Departments in Finland**


## 4.6.2 Presentation on Legislation in Finland for Accident and Fire Prevention

This presentation was delivered by Dr. Esa Kokki, a Research Specialist at ESC.

Esa discussed some of the key pieces of legislation that impact upon accident and fire prevention in Finland. The presentation included the following key sections: tasks for authorities in the prevention of accidents and fires; design, construction and maintenance of buildings in Finland; legislation for self-preparedness and Duty of Care; fire inspections; prevention of open fires and chimney fires. A summary of the material covered in each section is now presented below.

**Tasks for Authorities in the Prevention of Accidents and Fires**
In relation to the prevention of accidents and fires, the Finnish Rescue Authorities should:

- follow trends in accident risks, in amounts of accidents and in causes of accidents
- taking action over to prevent accidents if needed
- promoting other authorities if needed
- education and guidance of citizens so that they
  - recognise risks
  - are able to prevent accidents

  - are able to function in case of accidents
  - know how to be prepared for unusual conditions
- co-operating with other authorities, with communities and with citizens

**Design, Construction and Maintenance of Buildings in Finland**
All buildings in Finland must be designed, built and maintained so that:

- The risk of fire occurring or spreading is minimal.
- In the case of an emergency, rescue operations can be carried out.

All buildings must be maintained on a regular basis. For example, building and dwelling owners and occupants are required to keep the fire fighting equipment, as specified by the authorities, in working order at all times. The signs indicating escape routes and exits, security labels and the supplies in emergency shelters must be operational and appropriately serviced and inspected. Fireplaces and smoke flues must be swept, and ventilation ducts and devices must be serviced and cleaned regularly.

**Legislation for Self-Preparedness and Duty of Care**
Legislation in Finland stipulates that there should be a level of self-preparedness for the prevention of accidents and fires. Owners and occupants of buildings, business entrepreneurs, government offices and agencies, and other organisations are obliged to prevent adverse incidents from occurring. The obligation to prevent accidents and adverse incidents applies to both the care of buildings and the operations that are conducted within them. Readiness must also be maintained for protecting persons, property and the environment and the undertaking of rescue operations in the event of an adverse incident.

Individuals also have a duty of care, with a Universal Duty to Act. This means that:

- Each person should act responsibly in situations where there is a risk of fire or other accident.
- The Rescue Act specifically mentions open fires, prescribed burning, fire safety in peat production areas, and the risk of forest fires.
- Each individual is obliged to take part in rescue operations in the event of a fire or other accident.
- Persons in danger should be warned and an emergency call made, and everyone should undertake rescue operations to the best of his or her ability.

**Fire Inspections**
Fire Inspections are conducted by the Finnish Rescue Services in order to confirm that buildings, their surroundings, and their circumstances are safe and that property owners or occupants have made provision for preventing accidents and mitigating damage, and for civil defence. In residential buildings, fire inspections are performed at intervals determined by the service standard decision. In buildings in which personal of fire safety risk are greater than normal, fire inspections are performed annually or, when necessary, more frequently. A fire inspector has the right to order that any deficiencies identified during an inspection be rectified within a specific time or even immediately if this is deemed necessary.

**Prevention of Open Fires and Chimney Fires**
Esa concluded the presentation by describing legislation which is aimed at reducing two common fire risks in Finland: the risk of open fires and the risk of chimney fires.

To prevent open fires there is local and national legislation:

- There are local regulations on burning of waste
- Camp fires or other open fires in a forest are not allowed if:
  - the weather is dry
  - there is a lot of wind
  - danger of forest fire is given
- There are other local regulations if the risk of fire is possible
- In criminal law, an open fire is forbidden if it creates risk to the health or property of another person.

To prevent chimney fires:

- Fireplaces and smoke flues must be swept every year.
- Their condition must be inspected to make sure that any residue accumulating in them does not pose a fire risk.
- Regional rescue services are responsible for arranging chimney sweeping services in their region. They can take care of chimney sweeping themselves or obtain these services from a private contractor.
- Building owners and occupants are responsible for ordering chimney sweeping services for the building regularly

## 4.6.3 Presentation on Risk Management of Home Safety of Disabled People

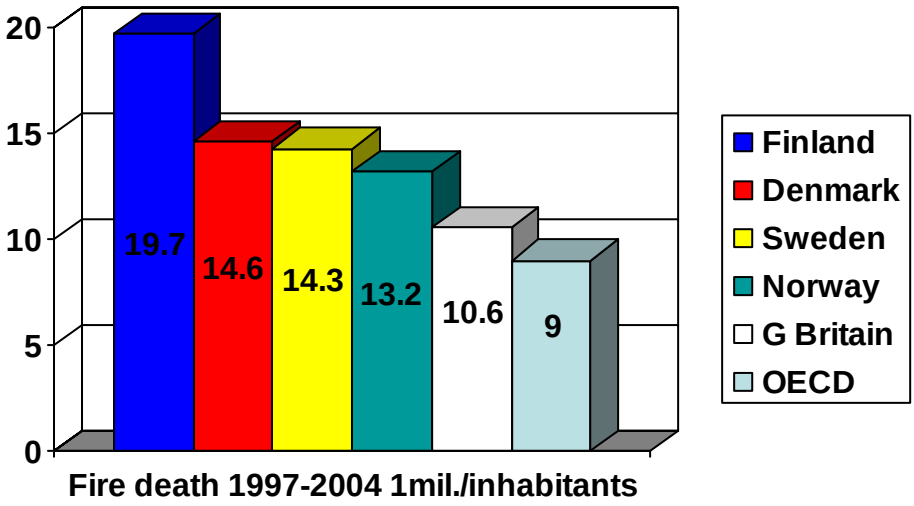
This presentation was delivered by Knut Lehtinen, Senior Fire Inspector for the South West Finland Rescue Services.

Knut described a project that he is working on in collaboration with the Finnish National Rescue Association (SPEK). The project focuses on developing effective risk management for home safety for elderly and disabled people in Finland. Knut began by outlining the background to the project and presented statistics on recorded fire deaths in Finland. He then outlined some of the reasons why the elderly and disabled are particularly vulnerable to fires within the home and outlined some of the factors that increase the risk of fires in their homes. Knut then described a simple risk assessment and evaluation that has been designed during the project and which will now be used by health care professionals who go to the homes of elderly and disabled people. Health care professionals will use the tools created during the project in order to assess risks of fire and to decide upon measures that can be put in place to reduce fire risk.

**Fire Deaths in Finland**

Knut emphasised that fire deaths in Finland are particularly high in Finland at 19.7 deaths per million inhabitants compared to other European countries (see Figure 22, overleaf). It is currently a key priority for the Finnish government and Rescue Services to reduce the number of deaths caused by fire each year. This is one such project which has been developed in order to help achieve this objective. The ESC are also involved in projects aimed at reducing fire deaths in Finland.

**Figure 22 - Fire deaths per 1 million inhabitants between 1997and 2004 for Finland, Denmark, Sweden, Norway, Great Britain and OECD countries**




Knut then described some of the common characteristics of fire deaths in Finland. According to statistics collected, most deaths due to fire tend to occur in detached properties (Figure 23) and the victims are mostly aged over 40 years old (Figure 24, overleaf).

**Figure 23 - Fire Deaths in Finland according to Location 1.01.02 – 31.12.06**

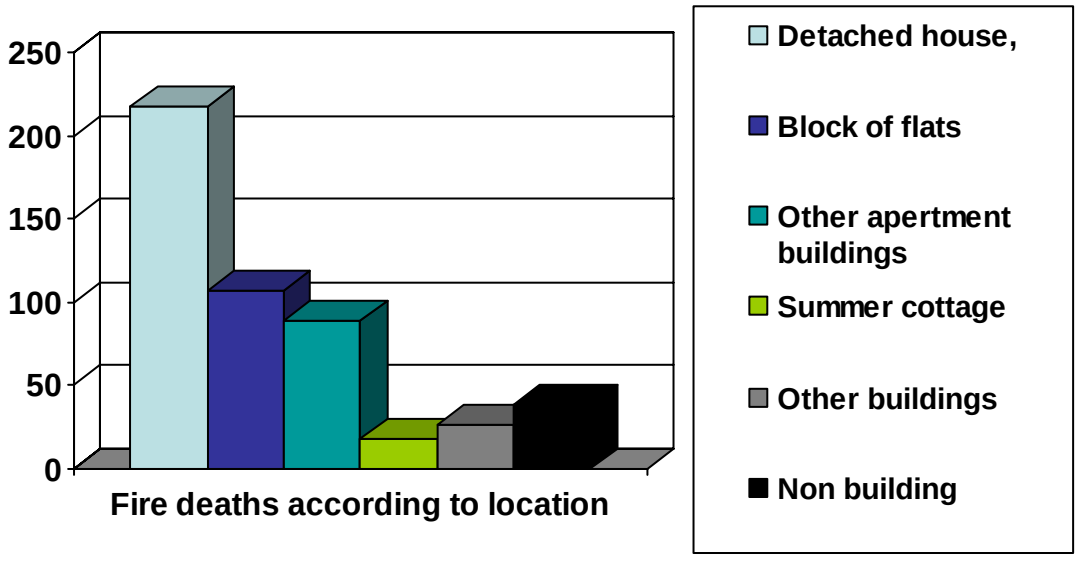
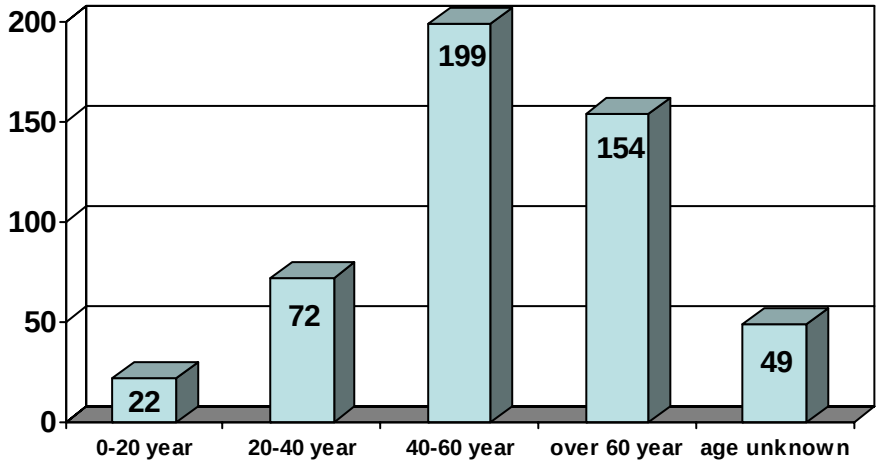


**Figure 24 - Fire Deaths in Finland according to Age 1.01.02 – 31.12.06**




**High Risk Groups for Home and Fire Accidents**

Knut highlighted some of the problems for groups within Finnish society that are at high risk of home and fire accidents. Disabled people (mentally and physically), elderly people and people with alcohol and drug problems are often at high risk due to decreased physical, psychological and social ability. It is important for home safety that the home environment designed and can be adjusted according to the disabilities and their daily living circumstances an individual. Knut mentioned that the challenge is to see the imbalance between the abilities of daily living and the home environment in order to be able to prevent home accidents.

**Changes in Performance that Affect Risk of Home and Fire Accidents**

Knut outlined some of the key categories of changes in an individuals' performance that may lead to a higher risk of accidents and fire in their home:

- **Physical ability** – for instance: decreased muscle strength, dysfunction of joints, decreased coordination; balance problems; decreased ability to move.

- **Perception** – for instance: deteriorated eyesight; decrease in hearing; decreased power of observation; possible effects of medication; effects of alcohol and drugs; several simultaneous stimulus/ signals that are very much alike can prevent a person noticing important stimulus/ signals.

- **Ability to react** – motions become slower; physical disabilities; ability to understand situations can be reduced (eg. Dementia); effects of medication, alcohol or drugs.

- **Ability to understand the situation** – for instance: an individual may not understand the situation correctly (they may hide if they see a fire start rather than evacuate), they may engage in inappropriate activities or they may incorrectly evaluate their skills and/or the danger.

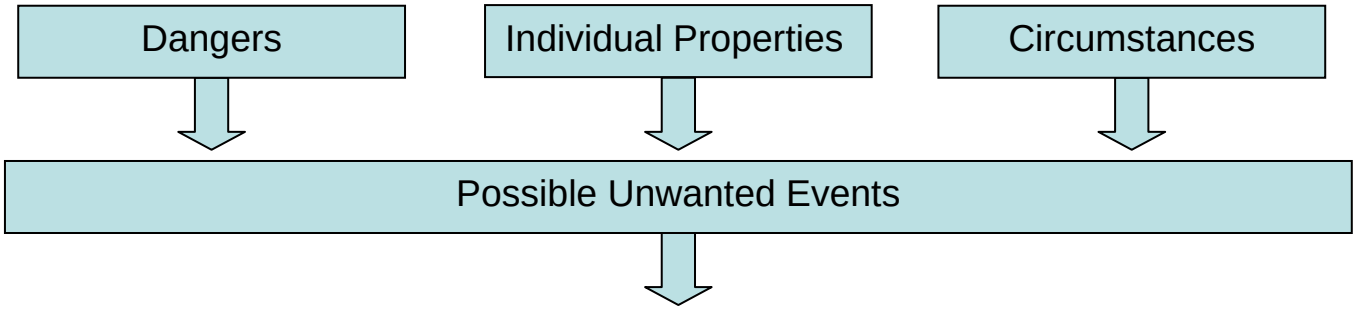
**Simple Risk Assessment**
The project has designed three questions for health care professionals to ask themselves to assess the risk of fire in the home of an individual.

1. Is the resident able to call for help?
2. Is the resident able to move to safe place?
3. If the resident is unable to move to a safe place, can the resident quickly (within three minutes) get help from the rescue services, a neighbour, or someone else?

If one of the questions receives a negative response then the risk of fire is elevated.

Knut then presented a risk assessment matrix that is used to quantify the risk of fire within an individual's home (see Figure 25). The matrix looks at the possibility of an unwanted event occurring and the potential harm that may be incurred if that event occurs. By measuring these two key elements, the risk of individual unwanted events can be calculated and measures can be implemented to reduce this risk. Colours are used to provide a strong visual element to the matrix, with a gradient of colours from green (indicating the lowest risk) to red (indicating the highest risk).

**Figure 25 - Fire and Accident Risk Assessment Matrix**




| **HARM AND POSSIBILITY** | MEANINGLESS | HARMFUL | SERIOUS |
|---|---|---|---|
| LOW POSSIBILITY | | | |
| POSSIBLE | | | |
| PROBABLE | | | |

**Risk Evaluation**
After the risk has been assessed and evaluated:

- There must be a search for methods that can be used to remove or reduce the danger.
- Responsibility for implementing these methods must be established – who will take responsibility for removing or reducing the risk?
- A timetable for removing/reducing risks must be established.
- The results must be evaluated to check that the risk has been appropriately and adequately reduced/removed.

Importantly, risk evaluation is a continuous activity.

**Tools for Evaluation**
A number of evaluation tools have been developed during the project:

- Different gauges of disabilities in daily activities
- A checklist for home accidents and fire safety (see Figure 26)
- Checklists for evaluating the risk of a fall
- Discussion in different situations of safety problems in the home environment gives important information

**Figure 26 - Kontrollformulär för Boendesäkerhet[32] (approximate translation: Home Safety Checklist)**

**KONTROLLFORMULÄR FÖR BOENDESÄKERHET**

Namn_____ Födelsedatum _____

Adress_____

Boendeform: Enfamiljshus ☐ Radhus ☐ Höghus ☐

Egen bostad ☐ Hyresbostad ☐ Servicebostad ☐

Datum ___/_____ Den som utfört kontrollen_____

Ett kryss i den mellersta kolumnen förutsätter alltid åtgärder

| | JA | NEJ | Åtgärd |
|---|---|---|---|
| 1. **Förmår den boende tillkalla hjälp i en nödsituation?** | | | |
| • Finns det ett nödnummer i närheten av telefonen? | | | |
| • Kan den boende uppge adressen, förklara varifrån han eller hon ringer och beskriva vägen till platsen? | | | |
| • Förmår den boende slå larm i en farlig situation vilken tid på dygnet som helst (t.ex. inverkan av medicinering)? | | | |
| 2. **Förmår den boende utföra första släckning?** | | | |
| • Finns en brandsläckare/släckningsfilt tillgänglig? | | | |
| • Kan den boende använda den, har den boende övat med den? | | | |
| • Är den boendes funktionsförmåga tillräcklig för första släckning? | | | |
| 3. **Kan den boende ta sig ut ur bostaden vid nödfall på 2–3 minuter?** | | | |
| • Fysisk och psykisk funktionsförmåga under olika tider på dygnet (medicinering/alkohol!) | | | |
| • Låssystem – lätt, snabbt och logiskt att öppna (man måste kunna komma ut utan nyckel eller verktyg) | | | |
| • Vägen ut är lätt att hitta | | | |
| • Vägen är obehindrad | | | |
| • Vid vägen finns behövliga ledstänger och det finns ingen risk för att snubbla | | | |
| • Har man instruerat den boende om hur man ska agera vid brand? | | | |
| 4. **Finns det en ändamålsenlig och fungerande brandvarnare i bostaden?** | | | |
| • Förstår den boende vad som ska göras när varnaren larmar? | | | |
| • Är larmanordningen lämplig för den boende (synskada, hörselskada)? | | | |
| • Har brandvarnaren kopplats så att den larmar också någon annanstans? | | | |
| 5. **Finns det en automatisk släckanläggning i bostaden?** Ifall den boende inte kan rädda sig inom 2–3 minuter, och ingen kan rädda den boende inom denna tid, är en automatisk släckanläggning den enda möjligheten för att rädda den boende när det uppstår brand i bostaden. | | | |

[32] In Swedish. Finland has two official languages: Finnish and Swedish. Around 91% of Finns speak Finnish while around 5.5% speak Finland Swedish (Finlandssvenska). A small population of around 1,700 people speak Sami (Lappish). Swedish is most commonly used on the South and West coasts of Finland.

## 4.6.4 Presentation on Fire Investigation in Finland

This presentation was delivered by Heikki Harri, Fire Investigator for Kanta Häme Fire and Rescue Service.

Heikki discussed some of the specific details concerning fire investigation in Finland. Specifically, his presentation looked at changes brought about by the introduction of the Rescue Act in 2003. The topics he covered in his presentation included: fire investigation in Finland before 1st January 2004; fire investigation after 1st January 2004; current fire investigation projects. He concluded his presentation with some comments about the possible future of fire investigation in Finland. A summary of the material covered in each of these topics is now presented below.

**Fire Investigation in Finland before 1st January 2004**
Heikki provided a brief description of fire investigation prior to important legislative changes of 2004:

- The Police were the only organisation allowed to investigate fires, according to legislation on:
    - crime (police act 1987/449 2§)
    - deceased (act of investigation death 1973/459 7§)
    - accidents in work
- The Police investigated fires longer than they were obligated (i.e. after they had determined a fire had not been the result of criminal activity).
- Upon request, Fire Departments provided assistance to the Police during their investigations.
- The Fire Departments would “hard clean” fire scenes with the sole goal to extinguish the fire. Sometimes fire extinguishing would lead to the destruction of evidence which might indicate the cause of the fire. This caused extra work for the Police and insurance investigators.
- There were over 450 municipalities/local fire authorities in Finland with individual investigations and projects being completed.
- There was no real data available on the causes of fires.

**Fire Investigation in Finland after 1st January 2004**

The Rescue Act 2003 brought into force legislation to improve fire investigation in Finland. The Act included the following clauses:

- Rescue Authorities must at least asses the cause of fire and investigate the cause deeply if necessary (fire officer in charge / regional fire investigators)
- Rescue Authorities must inform the police about a possible arson
- 87 § also gives the "tools" to Rescue Authorities to investigate; stay on scene after the rescue work is over, take samples, and the right to obtain information from the owner etc.
- 87 § also allows a special investigation to be ordered by the Ministry of Interior.

The Rescue Act led to the creation of 22 Regional Rescue Authorities. Each of these Authorities has its own fire investigators. There are 3 investigators in Kanta Häme, all of whom have attended a basic training course which is the same course attended by police officers.

As a result of these improvements in fire investigation practices:

- The causes of a greater number of fires have been identified and the results have guided inspections and arson prevention initiatives.
- There is now a much greater volume of data on the causes of fires.
- There have been good results in some of the Regional Fire Departments.
- There is now better cooperation between the Fire and Rescue Services and Police (Crime Scene Investigation Units, tactical investigators, local police).

The Fire and Rescue Departments have a slightly different reason for investigating fires (which is one of the reasons why it is important that the Fire and Rescue and Police Services both investigate fires). They investigate to prevent accidents and fires in general and they have a national target of reducing fire deaths from the current total of 100 per year by 2015.

**Fire investigation Projects in Finland**

There are approximately 100 deaths from fire in Finland every year. There is a national aim to radically reduce the number of deaths from fire by 2015. The ESC Research and Development Unit is responsible for implementing projects to help achieve this aim.

Heikki concluded by stating that fire investigators in Finland must be hard working and very motivated, because they complete investigations in addition to other duties. Heikki believes that in future fire investigators in Finland should be employed fulltime to investigate fires.

# 5. Group Work Sessions

## 5.1 Overview of the group work sessions

Five sessions were designed by the workshop organisers in order to facilitate small group exercises. The first of these sessions was designed to "break the ice" between the delegates, few of whom knew each other personally prior to the workshop. The other four sessions were all designed around a particular theme relevant to fire risk assessment and management: "performance management", "fire safety in the home", "emergency planning and community risk registers" and "fire risk: common agreed definitions". The four themed sessions were designed so as to facilitate the exchange of information and experiences between the partners and to produce outputs to contribute towards the aims of the workshop and the wider ANSFR Project.

### General aim of the group work sessions

The general aim of all of the group work sessions was:

> **"To facilitate and develop a good working relationship and understanding between all project personnel."**

In addition to this generic aim, each group work session had its own specific desired learning outcomes. These are outlined in more detail within the subsequent sub-sections.

### Methodology for selecting small group members

A specific methodology was devised and implemented to select the individuals assigned to the small groups within each of the sessions. The individuals selected for each group were chosen using a quota selection system[33]. The logic behind this approach was that it would ensure that all individuals attending the workshop would have an opportunity to work with all other individuals who were in attendance and who would be involved in the ANSFR Project. This approach would maximise the level of interaction between all of the individuals involved.

The specific learning outcomes of each session and the methodology employed to select individuals within each group were employed in order to ensure each session contributed towards the successful completion of the generic aim of the group work sessions.

The following sub-sections of this handbook now provide specific details about each of the individual group work sessions, starting with an overview of the "icebreaker session".

[33] The basic quota was that each of the three groups would contain at least one person from each partner organisation (all four of the project partner organisations were represented at the workshop). In addition, groups were created in order to ensure that every individual in attendance would, at least at one point during the workshop, work in a group with all other individuals present (with the only exception being that those attending from the same partner organisation did not always work together in a group, as this was not logistically possible).

## 5.2 “Icebreaker session”

This session was designed and developed by Helen Guy and Nina Livings, and was delivered by Matthew Thomas, all of Northumberland Fire and Rescue Service.

**Session description**
The designers of this session had developed icebreaker sessions for other similar events and, using their experience, opted for a two-part session. The first part of the session involved a short quiz to test the delegates’ knowledge about the County of Northumberland. The second part involved the completion of a morality judgement exercise by three small groups of participants. Icebreaker sessions often involve activities that prompt thought and debate among individuals and groups. The theory behind this type of exercise is that by providing small groups with a difficult and perhaps contentious predicament to discuss and debate, participants soon get to know one another a little better and begin to feel more confident conversing and debating with one another.

**Aim of the session**
The aim of the session was fairly basic, but no less important:

> **“to “break the ice” between the project participants and to enable close group working throughout the Northumberland workshop and the remainder of ANSFR Project.”**

The delivery of this session was especially important because some of the participants had never met and/or had never worked together before.

**Delivery of the session**
The session began with a short quiz on the County of Northumberland. The entire quiz is not presented within this document, although three of the questions are included in Figure 27 (overleaf) as an example of the types of questions that were posed to the delegates.

The second section of the session involved a judgement exercise. The groups were given a contemporary story structured around the mythical tale of Robin Hood (see Figure 28, on page 53, for the story presented to the groups). The groups were then tasked with discussing their opinions about the story and were tasked with categorizing the four characters (Robin Hood, the Sheriff of Nottingham, Little John and Maid Marion) according to the level of morality that they exhibited during the story. In order to do this, the groups were given cards depicting each character and were tasked with positioning all of the characters on a scale of morality. This scale ran between the polarities of most moral to least moral. The exercise was designed so as to not be straight forward, right or wrong. Indeed, there were numerous possible answers to the question of which characters were most moral and which were least moral. The challenge for the groups was for each individual to express their opinions and for the groups to debate and decide upon a united response. The exercise proved to be an excellent way of getting individuals to begin discussing and debating issues and in breaking down some of the barriers between project personnel who had only meta short while before. Consequently, the exercise was a good precursor and “warm-up” to the other small group work activities that were delivered later in the workshop.

**Figure 27 - Example Questions from the Icebreaker Quiz[34]**

**What is a 'stottie'?**

A A nickname for an elderly gentleman
B A type of bread
C A person who plays bowls

**Which of these 'artistic' pursuits is traditional to Northumberland?**

A Northumbrian Pipes
B Northumbrian Clog Dancing
C Rapper Sword Dance

**Which of these does Northumberland have more of than any other county in England?**

A Castles
B Sheep
C Elderly Gentlemen

**Conclusions of the session**

The session was designed and executed well. The organisers noted that the interaction between individuals in the groups was excellent and that this interaction continued at a larger scale when the groups presented their decision to the whole delegation during the plenary feedback session. The exercise allowed individuals to get to know one another a bit better while completing a fun exercise which had an important underlying message and premise. As such, the session worked as a good precursor to the delivery of the four themed group work sessions. The success of the session was further substantiated when some participants requested copies of the session material so that they could use it to deliver similar sessions to members of their own organisation. NFRS was more than happy to share the materials with the partners and officers have offered to provide further assistance if required.

[34] The correct answers to these questions are shown in yellow highlight.

**Figure 28 - Moral Judgement Icebreaker Exercise**

**The Newest Adventures of Robin Hood – A Modern Tale of Morality**

**A)** Please read the story below and discuss, with your group, your honest opinions about the morality of the 4 characters.

**The Story:-**

The Sheriff of Nottingham captured Little John and Robin Hood and imprisoned them in his maximum security prison. Maid Marion begged the Sheriff for their release, pleading her love for Robin. The Sheriff agreed to release them, but only if Maid Marion spent the night with him.

After some deliberation, to this she agreed.

The next morning the Sheriff released his prisoners. Robin at once demanded that Marion tell him how she persuaded the Sheriff to let them go free.

Marion confessed the truth, and was bewildered when Robin abused her and said that he never wanted to see her again.

At this, Little John defended her, inviting her to leave Sherwood with him and promising life-long devotion. She accepted and they rode away together.

**B)** After discussion; put Robin, Marion, Little John and the Sheriff in the order in which you consider that they showed the most morality on the A3 chart on your table.

## 5.3 "Performance Management" Session

This session was led by Phil Barry of Northumberland Fire and Rescue Service.

**Session description**
Phil's session was divided into two key sections: an informative presentation on performance management techniques and practices adopted by NFRS and a small group work exercise. The two key topics addressed in Phil's presentation included, firstly, NFRS's Performance Reporting Framework and, secondly, NFRS's Service Planning Process. Phil highlighted that risk assessment and management is central to performance management at NFRS. Phil then led a small group working exercise focused on using performance data to produce a risk profile for a theoretical fire station area in Northumberland[35].

**Sessions aims**
There were two pre-determined aims for the session on performance management:

1. **To obtain an understanding of how Northumberland Fire and Rescue Service measures and evaluates its performance.**
2. **To identify geographical information system (GIS) methods/approaches used by the project partners to identify, assess and manage fire risks.**

**Presentation**

**NFRS's objectives and measurement of performance**
NFRS must measure its performance and achieve objectives at various levels. Internally, NFRS performance objectives are set at 4 levels which all aim to address the visions and values of Northumberland County Council (NFRS is a part of the larger organisation of Northumberland County Council). The four levels are:

- Fire Service level
- Station/Department level
- Watch level
- Individual level (i.e. individuals within the organisation. These objectives are identified during the staff appraisal scheme.)

All objectives that are set must be SMART, which means they are measurable at all levels and that they all feed upwards to collectively meet the organisational objectives and ultimately the vision and values of Northumberland County Council.

More specifically, SMART stands for:

**S** = **Specific** – they should specify what you want to achieve
**M** = **Measurable** – can you measure whether you are achieving your objectives?
**A** = **Achievable** – the objectives must be achievable and attainable
**R** = **Realistic** – can these objectives be achieved with the resources you have?
**T** = **Timely** – there must be a timescale to your objectives

Phil mentioned that identifying suitable performance measures is not always an easy task. A lot of thought and effort needs to be put into developing appropriate performance measures and targets that are realistic but challenging. It is important that targets are "just

[35] The data used for this exercise was fabricated for the purpose of the activity.

targets". They are important in that they provide something to focus on and aim for, but they are not always exact given the nature of the social data that is collected. If targets are not met then this is not necessarily a bad thing, however, the reasons for not meeting a target must be identified and evaluated. Measurement of performance is further complicated by seasonal changes and the involvement of other agencies completing the same or similar activities. Cross-cutting issues and impacts should be taken into account when devising targets and measuring performance, although this can all be difficult to quantify. Taking all this in to account, target setting is ultimately a learning process.

**Statutory performance measures and local indicators**

In addition to the internal objectives and performance measures, in the UK there are statutory performance measures (called National Indicators (NI)) that are determined by central government and which help to inform the government if the intended impact of policy and frameworks are being achieved. These performance measures are also used to benchmark against other Fire and Rescue Services in the UK. "Family groups" of Fire and Rescue Services have been created by the Government, with the members of each group serving areas of a similar locality type (for instance, areas with similar population characteristics). The system of comparing within family groups means that, for instance, Fire and Rescue Services serving more rural areas are not unfairly benchmarked against larger metropolitan Fire and Rescue Services. While a Fire and Rescue Service's performance may be excellent internally, it is important that the performance is compared with other Fire and Rescue Services to compare performance with the external environment. In addition, target setting now takes into account seasonal variation.

Statutory NIs and local indicators of performance now focus more on outcomes rather than outputs. (in basic terms, an output can be defined as "something that is produced", while an outcome can be defined as "a conclusion reached through a process of logical thinking".). This represents simple change of terminology represents a significant shift in the theoretical context underpinning performance management.

In order to make objectives and performance measures more meaningful at every level of the organisation, NFRS has also developed local indicators to measure if station/watch level initiatives are achieving their objectives (a diagram showing how NFRS local indicators influence organisational level indicators is shown in Figure 29, overleaf). Primary and secondary indicators are created for each objective. These indicators provide a measurement for whether an objective is being met, with most objectives having a number of indicators.

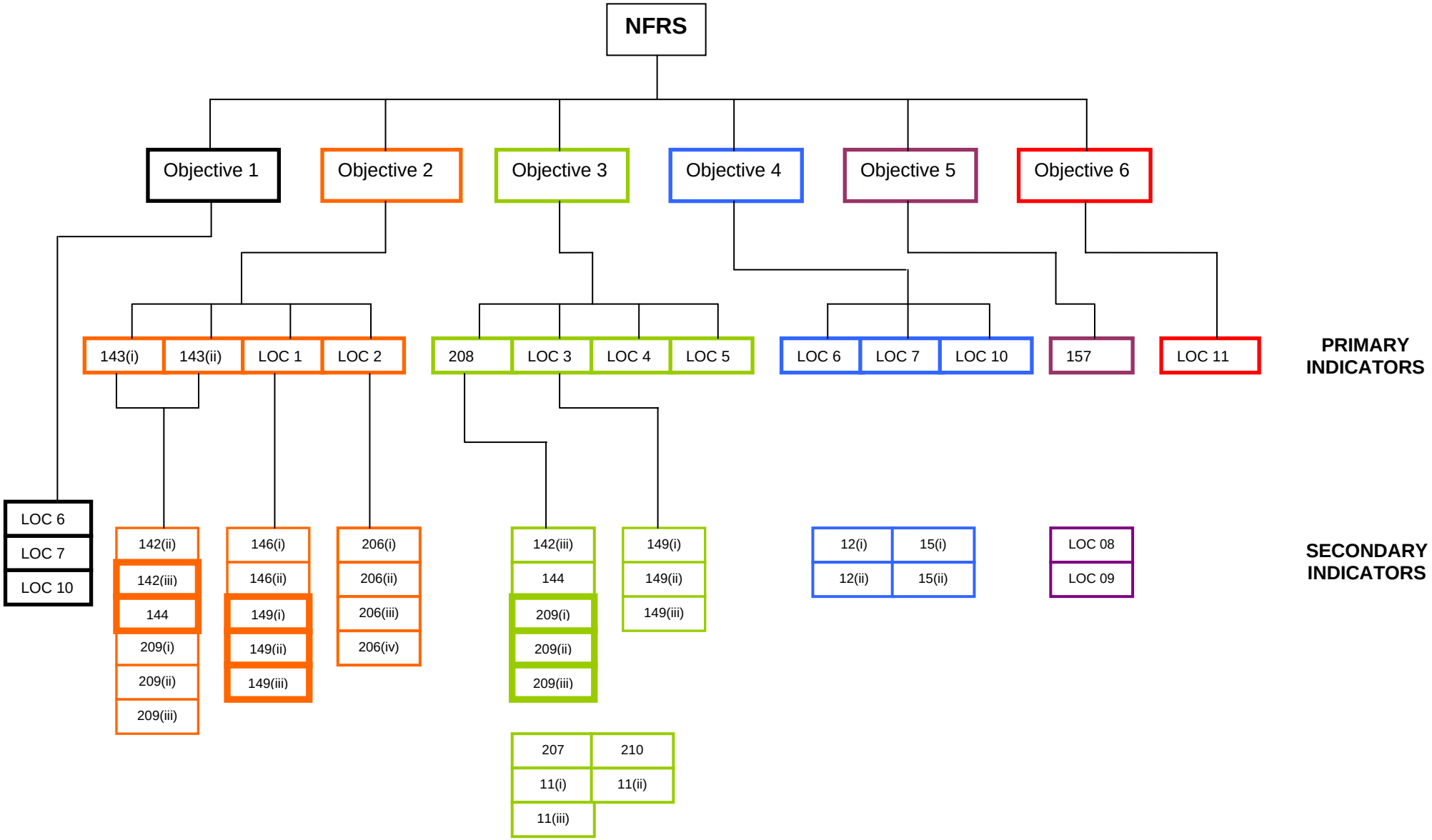
NFRS uses a standard process to develop local performance indicators:

1. **Identify the performance measure**
2. **Identify the data to be collected**
3. **Develop primary and secondary indicators**
4. **Set targets**
5. **Ensure personnel understand the targets**

**Performance reporting**

It is important that performance is regularly reported and measured. Consequently, Community Protection Performance Meetings (CPPM) are held every quarter to bring together all areas of NFRS to discuss performance by exception (where targets have not been met) at the station/department level. These targets are those outlined in the

## Figure 29 – NFRS Objectives and Primary and Secondary Indicators



station/department service plan, the document which outlines what the station/department will achieve during the financial year (discussed in more detail later in this section of the report). The performance is then discussed at the Senior Management Team meetings and the impact of the performance upon primary and secondary indicators is assessed. The reasons and/or comments about why the performance target has been missed are then recorded in the meeting minutes and signed off by the Principal Officers. This process ensures that there is a constant check on the status of performance targets at all levels. Service plans and performance measures are all presented on the NFRS intranet system. This means that all individuals within the service have access to performance data.

**Balanced Scorecard Approach**
NFRS is currently developing a more holistic approach to managing performance. The approach that is being developed incorporates the balanced scorecard approach. This approach will link internal processes (performance indicators and measures), financial information (budgeting information), development needs (i.e. the percentage of development needs identified in individual appraisals, and the percentage competency), and customer perspective to really identify what is impacting upon organisational performance.

This approach is going to be trialled at the management level at first and then a simplified

version will be trialled at the station level. It is hoped that the approach will lead to improved customer satisfaction surveys and consultation. The key for NFRS is to find out what the public actually want. NFRS has consulted on a number of things and is evaluating responses from members of the public about the various services it delivers. NFRS needs to make sure that any safety messages it tries to communicate with the public are appropriately and accurately received.

What is of key importance to performance is evaluation. NFRS are still learning and this is really important.

**Service planning process**
Service Plans are produced at two levels:

- Corporate (Northumberland County Council) level – this determines the strategic objectives for NFRS
- Stations/Department level – these service plans contain the detail on which the objectives for the stations/departments/watches must achieve in order to contribute towards the corporate objectives.

Stations/departments are responsible for reporting progress against agreed objectives on a quarterly basis within the performance management reporting framework.

It is important that there are named individuals for each objective and initiative included in the Service Plans as this ensures accountability. The appraisal system identifies agreed objectives for every member of staff so everybody has a contribution to make towards achieving Service Plan objectives. Each member of staff is also accountable for objectives.

**Use of Geographical Information Systems (GIS) in Station Service Planning and Performance Management**

The old adage, a picture paints a thousand words is relevant here. NFRS uses GIS for a number of key tasks associated with performance:

- Plots incidents
- Map risk areas
- Map where Home Risk Assessments have been completed
- MOSAIC lifestyle data is used at individual house level

Incident data (literally information about incidents that NFRS are called to attend) is available on GIS systems at station level. Incidents are mapped out for each station area and are used to identify concentrations of particular types of incidents and where prevention work may need to be targeted.

NFRS's risk assessment process utilises the Fire Service Emergency Cover (FSEC) toolkit to determine risk to communities of fires and other types of emergencies. FSEC continues to evolve to take into account changing environments and diverse communities. FSEC is used to assess the risks in dwellings, other buildings, road traffic collisions (RTCs) and special service incidents. MOSAIC Lifestyle data is now integrated into the system to further improve the ability to identify individuals at risk, enabling mitigation of risk in cost effective way.

MOSAIC is a geo-demographic segmentation system which is available in a number of countries. The basic premise of the system is that people tend to gravitate towards individuals and communities with similar backgrounds and interests and that society can be divided into a number of distinct groups that display their own personal characteristics and behaviours. For instance, one element of the MOSAIC data relates to people's reaction/response to different marketing techniques. The data shows that different sub-groups of society respond better to different types of marketing (i.e. leaflet drops, telephone marketing etc. etc.). Consequently, retailers can identify their target group(s) and then identify what marketing techniques may be most effective. The system has been developed by the private sector; however, it is also very useful for the public sector and is now being used by Fire and Rescue Services in the UK. By identifying different characteristics of the population within the County of Northumberland, NFRS can identify which methods are likely to be most effective when delivering fire and accident prevention work and other education initiatives.

Here is one example of where MOSAIC has been used to good effect - Cambridge Fire and Rescue Service (in the UK) used MOSAIC lifestyle data to target a chip pan campaign in bookmakers/betting shops. Traditionally, Fire and Rescue Services might have considered a leaflet drop through people's doors; however, MOSAIC identified that this would probably be an ineffective approach to the problem. Instead, the MOSAIC data showed that a common element for those individuals who had experienced a chip pan fire was the use of bookmakers/betting shops. It was therefore concluded that a group at risk of this type of fire could be targeted through a campaign focused on a common location. As a result of this campaign, Cambridgeshire FRS saw a significant decrease in chip pan

fires. This example shows how MOSAIC lifestyle data can be used to great effect for target.

Phil then showed those present some images produced from the GIS systems. The various maps produced indicated high and low risk areas in particular locations in Northumberland. Phil showed how the maps produced could show the risk level down to individual house level.

The examples of GIS technology presented by Phil show how technology is brought together by NFRS to help prioritise work and to more effectively plan where resources should be deployed for maximum benefit. By using all of the GIS systems, NFRS can gain a better understanding of the public that it serves – including a better understanding of the needs and risks faced by individuals and communities. By improving performance, NFRS improves its service to the communities of Northumberland. Central to all this is identifying, assessing and managing fire risks.

**Group activities**

The group work exercise was designed to give delegates the opportunity to look at data collected by NFRS and how it is presented in a form for various stations/departments to use during the performance management process. By viewing this information and completing an interactive exercise associated with the data, the session leader believed that delegates would be able to obtain a good understanding of how NFRS measures performance and how NFRS performance data can be used to assess and manage fire risks at the level of individual station grounds.

The three small groups were all presented with two documents for use during the exercise: a Station Profile document and a question sheet. The Station Profile contained all of the sections included in the real profiles that are created for each station in Northumberland, although the statistics were invented for the exercise. The document included pie charts, bar graphs, statistical tables and maps created using the GIS systems. These tables, charts and maps presented information about different types of incidents recorded within the station ground during the previous financial year. The sheet of questions included a brief introduction[36] to the contents of the Station Profile and a list of questions for the groups to answer using data contained within the Profile. The question sheet included both closed and open questions. The closed questions tasked groups with scrutinising the data presented in the Profile in order to identify the correct answers. The open question included at the end of the exercise asked the groups to identify and discuss any initiatives/actions that could be taken in order to address any of the issues/problems identified in the Profile. For this final question, the groups were instructed to take the whole profile into consideration, and not just the answers to the closed questions that they had already answered.

After completing the exercise, the groups delivered feedback to the whole group and were given the correct answers to the closed questions. The groups were informed that there

[36] The Introduction stated: The Station Profile document provides statistical information about the station. This includes pie charts and tables detailing the breakdowns of incidents, a risk map and hotspot maps for primary fires and RTC incidents. The Station Profile will help you, with your background knowledge, to identify issues that require further focus or attention.

were no ‘correct’ answers to the final open question because different initiatives might be equally effective or ineffective and the relative success of different initiatives would be dependent upon local and national circumstances. By including this question, the session leader had attempted to stimulate debate of potential actions that could be implemented to manage any risks that had been identified in the Station Profile. This seemed to work to good effect, with the groups discussing possible initiatives that could be implemented. The suggestions were often based upon the experiences of the individual delegates that were present. Unfortunately, time constraints cut short these discussions.

**Conclusions of the session**

The general conclusion to make was that the session was well received and contributed towards the aims of the entire Northumberland workshop. Those in attendance were given a detailed overview of the performance management procedures and techniques used by NFRS. The group work exercise also provided a useful point for discussion, facilitating the exchange of information concerning some of the practices adopted by the partner organisations. It was the overall conclusion of this session that performance management is a key theme for fire risk assessment and management and that it should be integral to future activities completed within the ANSFR project.

The only slight limitation of the session was that discussions on the performance practices adopted by the partner organisations seemed to be cut short. In response to this, the organisers conclude that there is both scope and need for further discussions about the respective performance management practices adopted by the four project partners. In order to continue discussions on this topic, NFRS sent all partner organisations copies of its current Integrated Risk Management Plan (IRMP) document after the event. The IRMP is a three year plan that satisfies the requirements of the UK central government. In simple terms, the IRMP outlines what NFRS aims to do and how it will do it. The document is made available to the public. The project partners have been tasked with collecting similar documents from their own organisations that can be exchanged with the other partners.

Finally, it was revealed during the concluding part of the session that the ESC is considering using MOSAIC lifestyle data in Finland. While NFRS uses data at individual house level, representatives from ESC mentioned that this might not be acceptable in Finland due to privacy laws. Debates are still ongoing about whether MOSAIC data could be used at other scales in Finland, for instance at a neighbourhood- or larger-scale. Certainly the identification of detailed data at an individual house level is not something that is permitted in all countries, although the very specific nature of the software has been extremely useful for pin-pointing resources in Northumberland. An additional conclusion of the session is that subsequent fire risk assessment and management frameworks that will be devised during the project must take into account any such differences between countries in order to ensure the project outputs can be implemented within all of the participating countries and within other European countries.

## 5.4 Session on "Fire Safety in the Home"

This session was led by Dr. Robert Stacey, Northumberland Fire and Rescue Service, and Stewart Barnett, Northumberland County Council.

**Session description**
This session approached the topic of fire risk assessment and management from the perspective of fire safety in the home. This is a key topic of concern for all Fire and Rescue Services in the UK and for Fire and Rescue Services in many other European countries. The session included a presentation that outlined the UK context of fire safety in the home, including a presentation on some basic statistics concerning incidents of fire within the home. This presentation was then followed by a small group work exercise which aimed to facilitate discussion between the project partners on three common home fire safety problems in the UK. The idea was that these discussions would allow delegates to compare and contrast the home fire safety problems and prevention initiatives of the four project countries.

**Session learning outcomes**
There were four predetermined learning outcomes for the Fire Safety in the Home session:

1. **To identify how all of the project partners currently attempt to reduce fire risks in the home.**
2. **To identify how the project partners could achieve further reductions in fire risks in the home.**
3. **To identify common methods/approaches that can be used by all partners to reduce the risk of fire in the home.**
4. **To identify any scenarios/situations where partner countries may need to adopt/implement different approaches due to societal differences.**

**Domestic fires in a UK context**
Rob Stacey and Stewart Barnett delivered a short presentation at the start of the session in order to provide some context to the topic of fire safety in the UK and to introduce some common themes and ideas that would be explored during the session. It was assumed during the planning phases for the session that fire safety in the home would be an important topic for all of the participating partner organisations.

Delegates were informed that Fire and Rescue Service statistics show that from July 2007 to June 2008 there were 362,000 fires in the UK[37], the lowest total in recent years since 1988. Of this total number of fires there were:

- 51,000 dwelling fires in the UK - 42,000 of which were accidental dwelling fires

Delegates were then presented with alternative statistics compiled from two surveys[38]: the Housing Survey and the British Crime Survey. Between April 2004 and March 2005, evidence from these surveys estimated:

[37] Source: Communities and Local Government (2009) *Fire Statistics Monitor*, Issue No. 02/09 (London: Communities and Local Government) www.communities.gov.uk/documents/statistics/pdf/1225083.pdf

- There was at least one domestic fire in 308,000 households in England
- 273,000 households had fires inside the home
- 35,000 households had fires outside the home

It was emphasised that there is a difference between statistics collected by different organisations (even when taking into account the slightly different time frames of the data sources). The Fire Service statistics show 51,000 fires within homes in the UK as a whole over a one year period, while the other surveys indicate there were 308,000 fires in England/England and Wales over a one year period. The argument was made that the Fire and Rescue Services are not informed of all fires that occur within the home. Many fires may be small and may be extinguished without the need for calling the Fire and Rescue Service. The problem for the Fire and Rescue Services, however, is that there are a number of fires occurring within the home that they do not know about and this makes it difficult to comprehensively quantify the problem and the risks. This shows that Fire and Rescue Services cannot just rely on their own databases to assess fire risk problems: on occasions they must consider using external data sources in order to adequately assess fire risks within their communities.

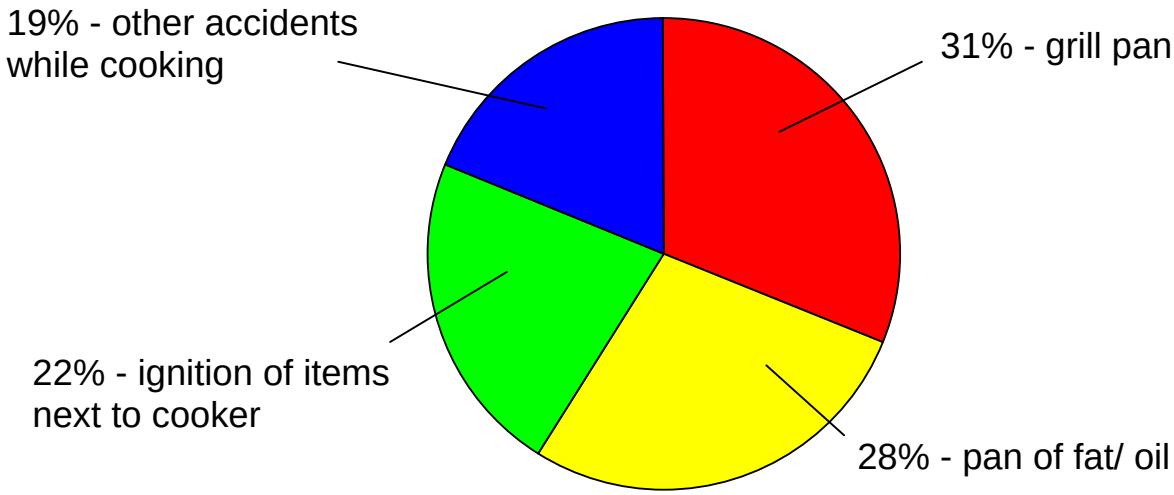
Rob and Stewart then presented more specific data on the location and causes of domestic fires in the UK, as recorded by the Fire and Rescue Services. The dominant place for domestic fires to start in the UK is within the home, with only a small percentage starting immediately outside the home (see Table 3). Going down to room level, the predominant room to experience a fire is the kitchen. In extension to this, over half of all domestic fires in the UK are caused by cooking, with grill pans, pans of oil/fat and items left next to a cooker being the most common fire-causing practices (see Figure 30, overleaf).

**Table 3 – Location/Place of Domestic Fires in England in 2004/05** [39]

| ***Location*** | ***%*** |
|---|---|
| Kitchen | 60 |
| Lounge or dining room | 13 |
| Bedroom | 7 |
| Elsewhere in house | 6 |
| **Total inside the house** | **89** |
| **Total outside the house** | **11** |

[38] Source: Office of the Deputy Prime Minister (2006) *Fires in the Home: Findings from 2004/05 Housing Survey* (London: Office of the Deputy Prime Minister)
[39] Source: Office of the Deputy Prime Minister (2006) *Fires in the Home: Findings from 2004/05 Housing Survey* (London: Office of the Deputy Prime Minister)

**Figure 30 – Cause of Domestic Fires in England in 2004/05** [40]




**Group Activity: Identifying and Managing Home Fire Safety Problems**

The activity[41] for this workshop began with a brief presentation of three common home fire safety problems in the UK. The common problems are described individually below:

1. **Cooking while intoxicated –** it was explained how consumption of alcohol can often be a contributory factor for fires starting within the home, particularly if an individual has consumed alcohol and then begins to cook. Consumption of alcohol can impair an individual's judgement and cause of loss of consciousness. Excessive consumption of alcohol over a long period of time can also lead to mental health problems. Statistically, alcohol can be a common factor involved in domestic fires and serial arson.

   Rob and Stewart then emphasised how cooking while intoxicated had led to a number of fatalities in Northumberland. In the preceding year (2008/09) there were 3 incidents over 7 months which caused 4 fatalities, all in different areas of the county. All of the incidents involved intoxicated individuals trying to cook with pans of hot oil/fat.

   It was emphasised that while this is a local problem in Northumberland, the problem is also being experienced in other areas of the UK. A number of campaigns have been designed and delivered by Fire and Rescue Services in the UK to try to inform

[40] Source: Office of the Deputy Prime Minister (2006) *Fires in the Home: Findings from 2004/05 Housing Survey* (London: Office of the Deputy Prime Minister)

[41] The session leaders prepared two activities for this session, however, only one was completed within the allotted time period. The first session took longer to complete than had originally been anticipated, primarily because the groups spent longer discussing the questions than had been anticipated. The session leaders decided to remove the second activity from the schedule to allow the groups longer to discuss and debate the first activity. Some very useful information and experience was exchanged and, as a result, the session still produced some excellent results.

people of the risks of consuming excessive amounts of alcohol prior to or while cooking[42]. NFRS are currently developing their campaign response and included this scenario in the workshop activity in order to gathering ideas and any past experiences of the project partners.

2. **Maintenance and appropriate use of domestic utilities –** this category of fire safety problems included fires caused by electricity, gas, and oil and fires occurring within chimneys. Faulty electrical equipment/wiring is the second most common cause of domestic fires in UK (11%), and is consequently a problem that could be reduced if homes were serviced and maintained to a higher standard. Electricity in some guise is a common cause of fire across Europe. In Norway, for instance, nearly 50% of domestic fires are caused by electricity/misuse of electricity and this has prompted initiatives aimed at improving investigations of and prevention initiatives aimed at reducing this type of fire. It was suggested that "ownership" and "responsibility" are possibly some of the key challenges that must be overcome in order to reduce the number of these types of fires.

3. **Fires in domestic exteriors (gardens/yards) –** fires within domestic exteriors (most often referred to gardens or yards) account for 11% of domestic fires in the UK. There are a variety causes for this type of fire, including but not limited to:
    a. Burning waste
    b. Cooking – barbeque
    c. Anti-social/criminal behaviour
    d. Refracted sunlight

    While this type of fire accounts for a fairly small percentage of domestic fires within the UK, it was emphasised that this type of fire can be particularly dangerous. For instance, wheelie bins may often be positioned next to or close to people's properties. If one of these bins is set alight the fire may spread to neighbouring buildings or combustible items and cause an extremely serious fire, which may put lives at risk. In recent years there have been a number of deaths caused by wheelie bins being set alight next to domestic properties[43].

Once the three domestic fire safety problems had been described, the delegates were divided into three small groups, each of which was allocated one of the three problems. The groups were tasked with answering a list of questions related to their particular problem. The questions posed were:

- Is this a problem in your country/region?

[42] See, for instance, the "Drinking and Cooking Don't Mix" advertisements by Mid and West Wales Fire and Rescue Service (http://www.mawwfire.gov.uk/press_media_eng/news_details.asp?id=462) and the "Don't Give Fire a Home" campaign by Strathclyde Fire and Rescue Service (http://www.dontgivefireahome.com/fire_safety/controller?p_service=Content.show&p_applic=CCC&pContentID=1156).

[43] Further information about this current problem in the UK can be found by viewing the following sites: www.chilternfire.co.uk/case-studies/view/the-fight-against-wheelie-bin-fires ; www.northants.police.uk/default.aspx?id=18691&db=old ; www.syfire.gov.uk/archive_news_batch_3_84C3D01820FB46449E4578B19FF11420.asp.

- How would you identify this as a problem? (this applies if this is or is not a current problem)
- How do you currently try to prevent/reduce this problem? (if at all)

The questions were designed so as to collect information about the three fire safety problems from all four project countries and to allow comparison and discussion of respective problems, approaches and techniques.

**Feedback from the group presentations**
The feedback from each of the groups is presented on the following pages in Tables 4, 5 and 6 (overleaf)**.** The tables have been created using the information recorded by the groups during the session.

**Conclusions of the session**
It was revealed during the session that at least some issues related to home fire safety were of concern to all of the project partners, supporting the idea that fire safety in the home should be treated as one of the important topic areas of the ANSFR Project.

Workshop delegates from Finland told delegates that fire safety in the home is a particular priority in Finland. A recent report by the ESC has calculated fire deaths in Finland to be very high at 18 deaths per 1 million inhabitants per year (Kokki and Jäntti, 2009[44]). In comparison, in 2007, the UK's fire death rate stood at 10.8 per 1 million inhabitants, Italy's was 12.8, Denmark's was 14.3, Norway's was 14.4, and Sweden's was 15.7 [45]. During this period, Finland's fire death rate stood at 16.6 per 1 million inhabitants, with just five other countries in the EU with higher rates of deaths from fire (Hungary at 16.7; Romania at 20.7; Lithuania at 62.9; Latvia at 114.4; and Estonia at 122.0). The Emergency Services College (Finland) Research and Development Unit is currently in control of a national project that aims to significantly reduce the number of fire deaths in Finland by 2015.

[44] Kokki, E. and Jäntii, J (2009) *Vakavia Henkilövahinkoja Aiheuttaneet Tulipalot 2007 – 2008* (Pelastusopisto, Kuopio).
[45] Fire Service Academy (2009) Fire Statistics Europe (Netherlands Institute for Safety NIBRA). Last accessed on 13.07.09 at: www.europeanfireacademy.com/cms/show/id=675053

## Table 4 - Feedback from Fire Safety in the Home Group 1 – The Problem of Cooking While Intoxicated

| Question | UK | Denmark | Finland | Italy |
|---|---|---|---|---|
| **Is this a problem in your country/region? Discuss.** | This is a problem for a broad range of age groups – mid 20s, 30s, 40s, 50s and 60s (particularly those living alone within the older age group, although some of the recent fatalities in Northumberland have been from younger age groups). | This is a problem in Denmark. It is mostly single, elderly men using log fires – producing a smoke hazard. | This is a problem for the older members of the population. The problem is not necessarily alcohol-related – a number of incidents have occurred when a person has turned a cooker on and forgotten about it. Fires started by smoking are a bigger problem than drinking. | This is not a problem. Most kitchens do not contain many combustible materials. A current problem in Italy regarding alcohol is young people drinking alcohol and being involved in road traffic accidents (RTAs) |
| **How would you identify this as a problem?**[46] | Statistics and fire reports. | Fire Services feel the need to raise awareness, but this is difficult. Social Services are responsible for ensuring safety of individuals and visiting those reported as at risk, but some people do not want these visits. | Statistics. | In Italy, current home fire safety problems include: electrical appliances (e.g. electric blankets); gas bottles; smoking in bed; natural gas boilers. Legislation exists for public buildings whereby gas/oil boilers are installed on site in separate building, but not for domestic properties. |

[46] Additional questions/rows have been included in the feedback presented here due to the information that was discussed and recorded during the session.

Continued from overleaf…

| Question | UK | Denmark | Finland | Italy |
|---|---|---|---|---|
| **What cooking methods are used in your country?** | Electric and gas predominantly. | Different cooking methods are used throughout Denmark. | All electricity (no gas) in Finland, a lot of people use microwaves. | Electric and gas cooking methods used. |
| **Legislation on kitchen design** | Recent surveys have suggested 10% of households in the UK do not have a working smoke alarm. The UK government aim to ensure all households in the UK have working smoke alarms. | There is legislation (similar to that in Finland) for buildings – all houses must have 1 battery operated alarm, but new buildings must have one on each floor. The recommendation is for one smoke alarm for every 60 sq. metres. | Recent legislation in place now for new buildings from 2010 – fire alarm on every floor of a property. | Legislation exists for fire prevention for public buildings, such as schools and hospitals, but not for domestic properties. |
| **How do you currently try to prevent/reduce this problem?** | 1. Fit smoke alarms<br>2. Raise awareness<br>3. Media campaigns<br>4. Micro chips<br>4. Posters inside/outside bars | 1. Neighbours can report those they think are at risk of drinking and causing home fires, however, there is a reluctance to do anything about people drinking in their own homes – it is felt an invasion of people's privacy. | 1. A Programme called FIRE STOP which deals with juveniles who behave anti-socially. | 1. There are actions to stop intoxication in schools, offices, and hospitals (where there have been problems) but not in the home. |

**Table 5 - Feedback from Fire Safety in the Home Group 2 – The Problem of Maintenance and Appropriate Use of Domestic Utilities**

| Question | UK | Denmark | Finland | Italy |
|---|---|---|---|---|
| **Is this a problem in your country/region? Discuss.** | Yes this is a problem. The problem is identifiable in statistics, however, there is a possibility that it is "over-reported" - it is a common cause put down in fire investigations, but there is not always a lot of supporting evidence. | Yes this is a problem, particularly with halogen lights and Overloading heaters and appliances in outhouses. There are currently no regulations. | Yes this is a problem. Televisions have been a problem in the past and all other electrical equipment. | Yes this is a problem. Recent regulations have been developed to address this problem. They have improved the situation. |
| **How would you identify this as a problem?** | 1. Fire and Rescue Service Incident Recording System (IRS) (formerly the Fire Data Report Form)<br>2. Geographic Information System (GIS) (linked to IRS) | 1. Fires<br>2. Fire fighters<br>3. Databases<br>4. Investigations | 1. Databases<br>2. Investigations<br>3. Statistics are currently very good | 1. Investigations<br>2. There are currently no statistics |
| **How do you currently try to prevent/reduce this problem?** | 1. Education<br>2. Publicity<br>3. Information<br>4. Home Risk Assessments (assessing risks in individual homes)<br>5. Target campaigns | 1. Building regulations<br>2. Publicity or information is sporadic | 1. Dwelling inspections carried out every 10 years.<br>2. Public buildings are inspected once a year.<br>3. Building regulations.<br>4. Information. | 1. PU Foam (not regulated in the home)<br>2. Building regulations were introduced in 1990.<br>3. Potential new regulations for PU Foam. |

## Table 6 - Feedback from Fire Safety in the Home Group 3 – The Problem of Fires in Domestic Exteriors

| Question | UK | Denmark | Finland | Italy |
|---|---|---|---|---|
| **Is this a problem in your country/region? Discuss.** | This is a problem in the UK. There are lots of rubbish fires, which are sometimes set by children/young people. Other problems include furniture set on fire in gardens and bonfires. | This is not a significant problem. The only problem that does occur is individuals burning grass in their gardens. | This is not a problem in Finland. It is illegal to have rubbish fires. | This is not a domestic problem in Italy. |
| **How would you identify this as a problem?** | Statistics | Statistics | Statistics | Statistics |
| **How do you currently try to prevent/reduce this problem?** | 1. Collecting rubbish in a few separated places<br>2. Having clubs for young people (divert from fire setting)<br>3. Educational programmes for young people at school | This is not a problem in Denmark, but the Danish experience may be useful to others. New regulations for furniture recently came into effect and there were amnesties for the old furniture that was not up to current standards. The amnesties involved wagons driving around and removing old furniture left by the roadside, all free of charge. | Legislation prevents this problem – legislation states that you cannot have rubbish fires in Finland and this is adhered to. | n/a |

## 5.5 "Emergency Planning and the Northumbria Community Risk Register"

This session was led by Ian Clough of Northumberland Fire and Rescue Service.

**Session description**
This session approached the topic of fire risk assessment and management from the perspective of resilience and emergency planning. The session focused on the statutory responsibilities of Fire and Rescue Services and other stakeholder organisations in the UK, but was also designed to facilitate the exchange of information regarding statutory responsibilities and techniques in other partner countries. The session involved an informative presentation and interactive group-work.

**Session aims and delivery**
There were four pre-determined aims for the Emergency Planning and the Northumbria Community Risk Register session:

1. **To gain a basic understanding of the Civil Contingencies Act 2004 (United Kingdom).**
2. **To gain an understanding of the risk assessment and management processes adopted by Northumberland Fire and Rescue Service (NFRS).**
3. **To gain an understanding of the Northumbria Community Risk Register (CRR) and how it is compiled.**
4. **To discuss risk assessment and management practices adopted by partner organisations in the field of emergency planning.**

**Presentation**
Ian began his presentation by introducing himself as the Head of Resilience at Northumberland Fire and Rescue Service and Chair of the Northumbria Local Resilience Forum (LRF) Risk Assessment Working Group (RAWG). He summarised that the Resilience Team is responsible for identifying, assessing and managing risks so as to plan for emergencies and to prevent and reduce the impact of emergencies that occur. Fire risk is one risk that the Resilience Team must plan for. Other risks that the Resilience Team plan for include (but are not limited to): flooding, chemical-biological incidents, influenza epidemics etc. The following sub-sections outline key topics addressed in Ian's presentation.

**The Civil Contingencies Act 2004**[47]
Ian then outlined key aspects of the Civil Contingencies Act 2004 that introduces powers and responsibilities for organisation involved in resilience and emergency planning.

The Act has two key parts:

Part 1 – Local Arrangements for Civil Protection
Part 2 – Emergency Powers

[47] An electronic copy of the Civil Contingencies Act is available at: www.cabinetoffice.gov.uk/media/132751/finalregs.pdf

Ian's session focused on elements associated with Part 1 of the Act as this was of most relevance to the workshop and to those in attendance. Part 1 of the Act was created to establish a new statutory framework for civil protection at the local level[48].

The definition used within the Act for "an emergency" is based upon consequences:

> **"An event or situation which threatens serious damage to human welfare in a place in the UK, the environment of a place in the UK, or war or terrorism which threatens serious damage to the security of the UK"[49]**

The Act and the accompanying statutory guidance, a document entitled: "Emergency Preparedness", state that integrated emergency management comprises six related key activities:

- **Anticipation**
- **Assessment**
- **Prevention**
- **Preparation**
- **Response**
- **Recovery**

The Act makes a distinction between two types of responders that must be involved in emergency planning: Category 1 Responders and Category 2 Responders. Category 1 Responders are those at the core of emergency response (eg. emergency services, local authorities). Category 1 Responders are subject to the full set of civil protection duties, as outlined below:

- Assess local risks and use this to inform Emergency Planning.
- Put in place emergency plans.
- Put in place Business Continuity Management arrangements.
- Put in place arrangements to inform, warn and advise the public in the event of an emergency.
- Share information with other local responders.
- Co-operate with other local responders to enhance co-ordination.
- Provide advice assistance to businesses and voluntary organisations on business continuity (Local Authorities only)

Category 2 Responders are classified as "co-operating bodies" that, while less likely to be involved in the heart of the planning process, will be heavily involved in incidents that affect their sector. Examples of Category 2 Responders include transport and utilities companies and the Health and Safety Executive. Category 2 Responders have lesser duties compared to Category 1 Responders, with their key role to co-operate and share information with other Category 1 and 2 Responders.

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[48] "Civil Contingencies Act 2004: A Short Guide (revised)" produced by the Civil Contingencies Secretariat within the Cabinet Office. Available at: www.cabinetoffice.gov.uk/media/132428/15mayshortguide.pdf

[49] s. 2(3) (and see s. 4 and s. 6) of the Civil Contingencies Act 2004.

**Training and Exercises**
Other important elements of the Act include:

- Plans should be sound and appropriate to Risks
- Places a duty on all Category 1 Responders to carry out Risk Assessments
- The Community Risk Registers
- Statutory Duty to publish Risk Assessments
- Local, Regional and National Risk Assessments

**The Northumbria Local Resilience Forum (LRF)**
Under the Civil Contingencies Act 2004, Category 1 and 2 responders are also required to come together to form 'Local Resilience Forums', which, outside of London, are based on police force areas. These forums have been established to ensure there is co-ordination and co-operation between responders at the local level.

The Northumbria LRF was established under the Civil Contingencies Act 2004. The Northumbria LRF area is coterminous with the Northumbria Police Force area and comprises the County of Northumberland and the area of Tyne and Wear. It stretches from the border with Scotland around Berwick-upon-Tweed in the north to the City of Sunderland in the south. It also stretches from the North Sea coast in the east to the border with Cumbria in the west and has borders with County Durham in the south west. Northumbria sits within the Government Office for the North East region which contains similar LRFs at Cleveland and County Durham and Darlington.

Northumbria has an overall population of approximately 1,381,000 (Office for National Statistics mid-year estimate 2002), clustered mainly in and around the Tyne and Wear conurbations. The main populated area of Northumberland is the south-east corner of the county and in rural parts of Northumberland, market towns are centres of population serving surrounding smaller villages.

Northumbria is served by the following transport links:

- Major roads: A1 (M), A1, A19, A189, A68, A69, A696, A697 and others
- Major rail links: East Coast mainline to and from London and Scotland, Newcastle/Carlisle east-west link
- Newcastle International Airport
- Ports of Tyne, Sunderland and Blyth
- Metro
- Tyne Tunnel

Northumbria boasts the Northumberland National Park and Northumberland has several miles of coastline designated Areas of Outstanding Natural Beauty (AONB) as are parts of the North Pennines. There is a fine heritage of historic buildings, archaeological sites and monuments, including Hadrian's Wall which is a World Heritage site.

There are several large shopping complexes, the largest being the Metrocentre, Gateshead, and there are large entertainment venues such as The Sage Gateshead and Newcastle Arena. Northumbria boasts two Premiership football clubs with stadium

capacities of up to 52,000 and several smaller sporting venues, including a premiership rugby union stadium and an international athletics stadium.

A list of the Northumbria LRF Category 1 and 2 Responders is included in Appendix 3.

**Risk Assessments and The Northumbria Community Risk Register (CRR)**
The Northumbria CRR is an important document produced following extensive work by the partners within the Northumbria LRF area. The CRR provides a basis for local responders to consider which emergency plans are required and whether any existing plans should be modified in the light of the risk assessments.

The guidance document for the Civil Contingencies Act 2004, titled "Emergency Preparedness"[50], recommends that LRF's use a 6 step risk assessment process:

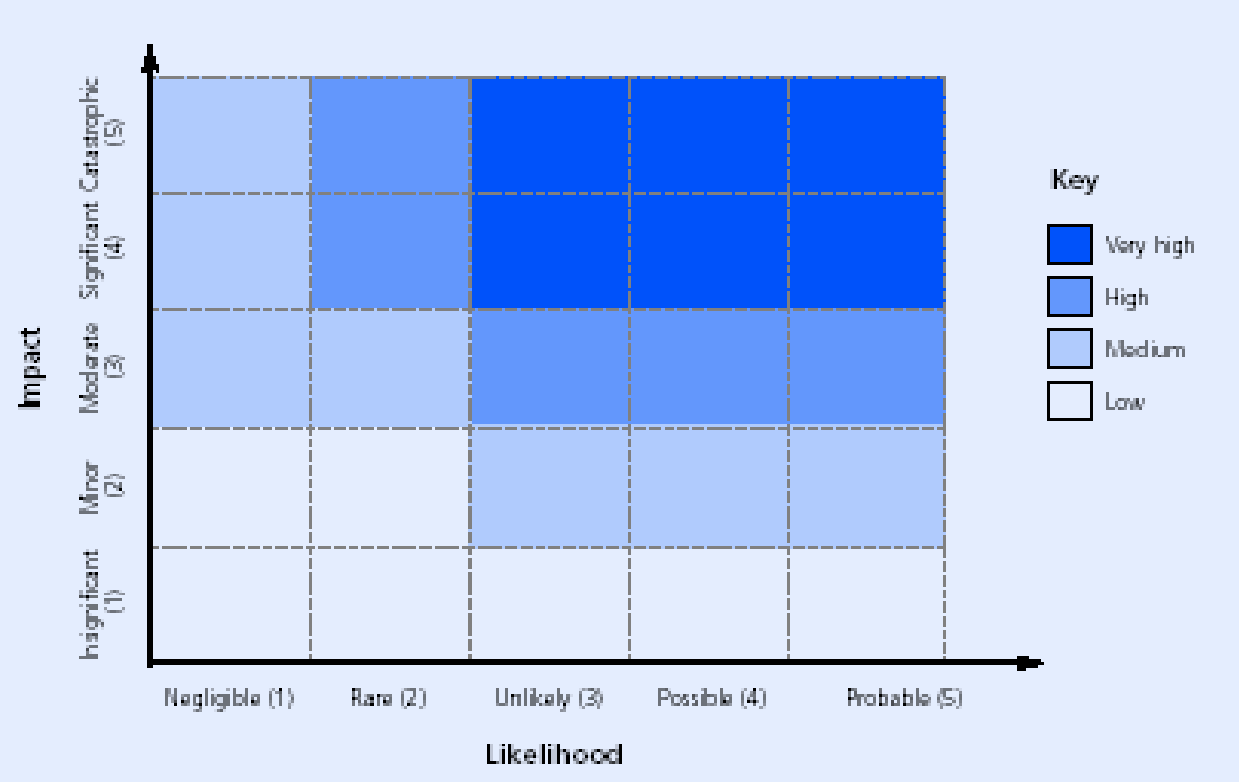
- **Step 1: Contextualisation –** defining the nature and scope of the risk and agreeing how the risk management process will be undertaken.
- **Step 2: Hazard review and allocation for assessment –** category 1 responders should consider local context and identify those non-malicious hazards that present significant risks. There are separate processes for threats identified by central government.
- **Step 3: Risk analysis –** includes, assessing the likelihood of hazards and assessing the impact of hazards.
- **Step 4: Risk evaluation –** covers the identification of those threats and hazards that present significant risks, analysis of their likelihood and impacts, and the combination of these values to produce overall risk scores.
- **Step 5: Risk treatment –** involves deciding which risks are unacceptably high, developing plans and strategies to mitigate these risks, and then testing the plans and associated capabilities.
- **Step 6: Monitoring and Reviewing** – risks should be reviewed regularly. It is recommended that a full and formal review of all risks is completed every four years.

Individual Category 1 Responders are identified as lead assessors on particular risks identified within the Northumbria area. The Environment Agency, for instance, is assigned as the lead assessor on flooding risk because of its existing professional responsibilities and specialist knowledge. It is the responsibility of the lead assessor to complete a risk assessment for their allocated risk(s). The risk assessment is then included in the Northumbria CRR. As part of Step 3 of the 6 Step Risk Assessment Process, LRFs must assess the likelihood and impact of all risks identified in their risk assessments. The likelihood assessments relate to the risk occurring over a five-year period. The impact is based on an assessment of a reasonable worse case scenario. Once the likelihood and impact assessments are calculated, assessors then move on to step 4: Risk evaluation. During this phase, assessors feed the likelihood and impact assessments for each risk into a risk rating matrix (presented in Figure 31, overleaf). This matrix allows assessors to identify the severity and impact of each individual hazard.

[50] Source: HM Government (2005) "Emergency Preparedness: Guidance on Part 1 of the Civil Contingencies Act 2004, its associated Regulations and non-statutory arrangements". Available at: http://www.cabinetoffice.gov.uk/media/131903/emergprepfinal.pdf

All LRFs must, by law, make their CRR available to the public. All CRRs adopt the same format and can be easily compared when viewed together. The idea behind this is to promote consistency and comparability between regions. However, there are limitations to the information that should be made public. The risk assessments that the LRFs must make publicly available only cover non-malicious events (for instance, hazards) rather than threats (for instance, terrorist incidents). This does not mean that these threats are not considered by the LRF's risk assessment work, but given the sensitivity of the information supporting these risk assessments, Central Government has advised that specific details should not be made publicly available.

**Figure 31 - The Risk Rating Matrix[51]**




The definitions for the four risk ratings presented in Figure 31 are[52]:

- **Very High Risk =** primary or critical risks requiring immediate attention. They may have high or low likelihood of occurrence, but their potential consequences are such that they may be treated as a high priority. It should be considered to make plans specific rather than generic.

[51] Source: HM Government (2005) "Emergency Preparedness: Guidance on Part 1 of the Civil Contingencies Act 2004, its associated Regulations and non-statutory arrangements", p199. Available at: http://www.cabinetoffice.gov.uk/media/131903/emergprepfinal.pdf

[52] See pp199-200 of HM Government (2005) "Emergency Preparedness: Guidance on Part 1 of the Civil Contingencies Act 2004, its associated Regulations and non-statutory arrangements". Available at: http://www.cabinetoffice.gov.uk/media/131903/emergprepfinal.pdf

- **High Risk =** these risks are classed as significant. They may have high or low likelihood of occurrence, but their potential consequences are sufficiently serious to warrant appropriate consideration after those risks classified as “very high”.
- **Medium Risk =** these risks are less significant but may cause upset and inconvenience in the short term.
- **Low Risk =** these risks are both unlikely to occur and are not significant in their impact. They should be managed using normal or generic planning arrangements and require minimal monitoring (unless subsequent risk assessments indicate substantial change).

**Group activity**
After completing his presentation, Ian then introduced a short group exercise for the three small groups to complete. The aim of the group work was to give delegates a chance to assess a risk using the approach used by NFRS. In addition, the group work aimed to stimulate discussions among the delegates regarding their own approaches to emergency planning and resilience.

The small groups were given an example of a Single Hazard Risk Assessment (for forestry fire) and were tasked with devising a Single Hazard Risk Assessment for another type of risk that may exist in their home areas. Some of the groups decided to complete a risk assessment for earthquake incidents, while others chose relatively more common and less location specific hazards such as flooding. The groups were given a basic structure for their risk assessment (see Figure 32, overleaf).

**Conclusions of the session**
This session approached the topic of fire risk assessment and management from a different perspective to the other sessions delivered at the workshop. Instead of approaching the topic of fire risk assessment and management from the perspective of “prevention”, the session approached from the perspective of resilience and emergency planning. Central to the underlying premise of the session was that fire emergencies will occur and that sound and comprehensive plans must be put in place in order to effectively address situations that occur so as to limit the negative impact(s) of any emergency (for instance, to reduce loss of life, damage to property, and or to reduce damage and disruption to infrastructure etc.).

All of the session’s aims were achieved, with delegates obtaining a good understanding of NFRS’s techniques and responsibilities regarding resilience and emergency planning. Interaction during the group sessions was good, although more time was required for the group exercise in order to allow more detailed exchanges of information and ideas. Also, it may have been more effective to orientate the group exercise specifically towards fire risk, rather than allowing the groups to select any type of hazard that may occur within their area. This may have focused the session on issues more specific to the ANSFR Project, although the benefit of gaining practical experience of the risk assessment process undertaken by NFRS and other Category 1 Responders was by far the most important element of the exercise. By gaining knowledge and a bit of practical experience of the process, delegates were able to learn more about NFRS’s approach than if they were to simply observe a presentation.

A lot of interest was generated during the session. Ian has subsequently provided some of the project partners with further information about NFRS's approach to and techniques for resilience and emergency planning. The theme of resilience and emergency planning will be incorporated into other elements of the project alongside the central theme of "prevention".

**Figure 32 - Single Hazard Risk Assessment[53]**

1. **Overview of the hazard**
   A summary of the hazard.

2. **Key historical evidence**
   A list containing the location and dates of any previous events involving this type of hazard.

3. **Likelihood**
   A calculation of the likelihood of the hazard occurring (including a calculation of the likelihood of different scales of the hazard. For instance, in the case of a forest fire this includes a calculation of the likelihood of forest fires of varying sizes).

4. **Impact**
   A calculation the predicted impact of the hazard (including a calculation of the impact of different scales of the hazard).
   Including a list of primary and secondary impacts.

5. **Vulnerability and resilience**
   List of factors that may increase vulnerability to this type of hazard. For instance, forests may have increased vulnerability towards forest fires with right to roam, leisure pursuits and climate change.

6. **Overall assessment**
   A summary of the risk assessment outlining the impact, likelihood and risk rating for the hazard (and different scales of the hazard) and the controls put in place to plan for this type of emergency, and additional risk treatment required.

[53] Source: HM Government (2005) "Emergency Preparedness: Guidance on Part 1 of the Civil Contingencies Act 2004, its associated Regulations and non-statutory arrangements". Available at: http://www.cabinetoffice.gov.uk/media/131903/emergprepfinal.pdf

## 5.6 “Fire Risk: Common Agreed Definitions”

This session was led by Bernie Quinn of Northumberland Fire and Rescue Service.

**Session Description**
The “Fire Risk: Common Agreed Definitions” was a particularly important session within the workshop because it involved exercises specifically related to the structure and organisation of future ANSFR project activities.

**Session Aim and Delivery**
The aim of the session was:

> **To discuss and test ideas and opinions on what constitutes the main categories of FIRE RISK and to agree common definitions that can be used by all participants throughout the project**.

The summary session plan overleaf provides a more comprehensive outline of the activities included within this session.

**Tree Diagram of Fire Risk**
All of the activities delivered during this session were focused on critiquing and revising a tree diagram of fire risk. A picture can speak a thousand words, and it was decided that a tree diagram would be an effective visual aid that would provide an easy reference for the project team when designing and delivering key elements of the project, including the remaining workshops and project conference.

Bernie Quinn and Rob Stacey of NFRS devised a diagram to present to the groups of delegates during this session. Bernie and Rob purposefully did not put a significant amount of time and effort into the selection and positioning of the various fire risk categories and sub-categories (Figure 33, on page 79). The idea was not to produce an “end product”, but to produce a diagram that would be discussed, debated and critiqued. NFRS did not want to dictate how the project would be structured and which fire risk categories would be included. Instead, NFRS wanted to gather the thoughts and ideas of all the partners and combine these to create a single diagram devised through real, rather than tokenistic, collaborative working. Indeed, Rob and Bernie hoped that elements of the diagram that they presented to the delegates might be contentious, or highly debatable, in order to foster some productive discussions and substantial suggested revisions. Past experience has shown that this technique can be extremely useful for promoting good collaborative working, certainly at a local or national level. The experience of this workshop revealed that it was also a successful technique for facilitating and stimulating cross-border collaborative working, with most of the delegates freely debating their ideas and visibly enjoying the session. The very visual nature of the diagram was perhaps one of the key success factors. Even when there were slight language barriers during the group work, as there always will be when working on multinational projects, the diagram provided something visual that could be discussed by all delegates present.

## Session Plan – Fire Risk: Common Agreed Definitions

**Introduction to the session**:

Discussion of basic definitions of "risk", beginning with the English dictionary definition of risk:

"a chance or possibility of danger, loss, injury or other adverse consequences"

**Session Aims:**

To discuss and test ideas and opinions on what constitutes the main categories of FIRE RISK and to agree common definitions that can be used by all participants throughout the project.

**Method: 1. Silent Brainstorm: In small groups (20 minutes)**

a) Examine the tree diagram of familiar causes, influences and factors that can result in fire.
b) Consider the three main categories of fire risk, ACCIDENTAL, SOCIAL AND NATURAL in turn.
c) Place 'post – it notes' on the diagram where you wish to add to, or amend, the diagram.

**Method: 2. Discussion: In small groups (30 minutes)**

a) Discuss your findings and agree any changes or additions.
b) Prepare flip charts of your group's proposals, identifying key issues and changes to the tree diagram your group wishes to make.
c) Elect a leader to present flip charts and provide feedback to the main group.

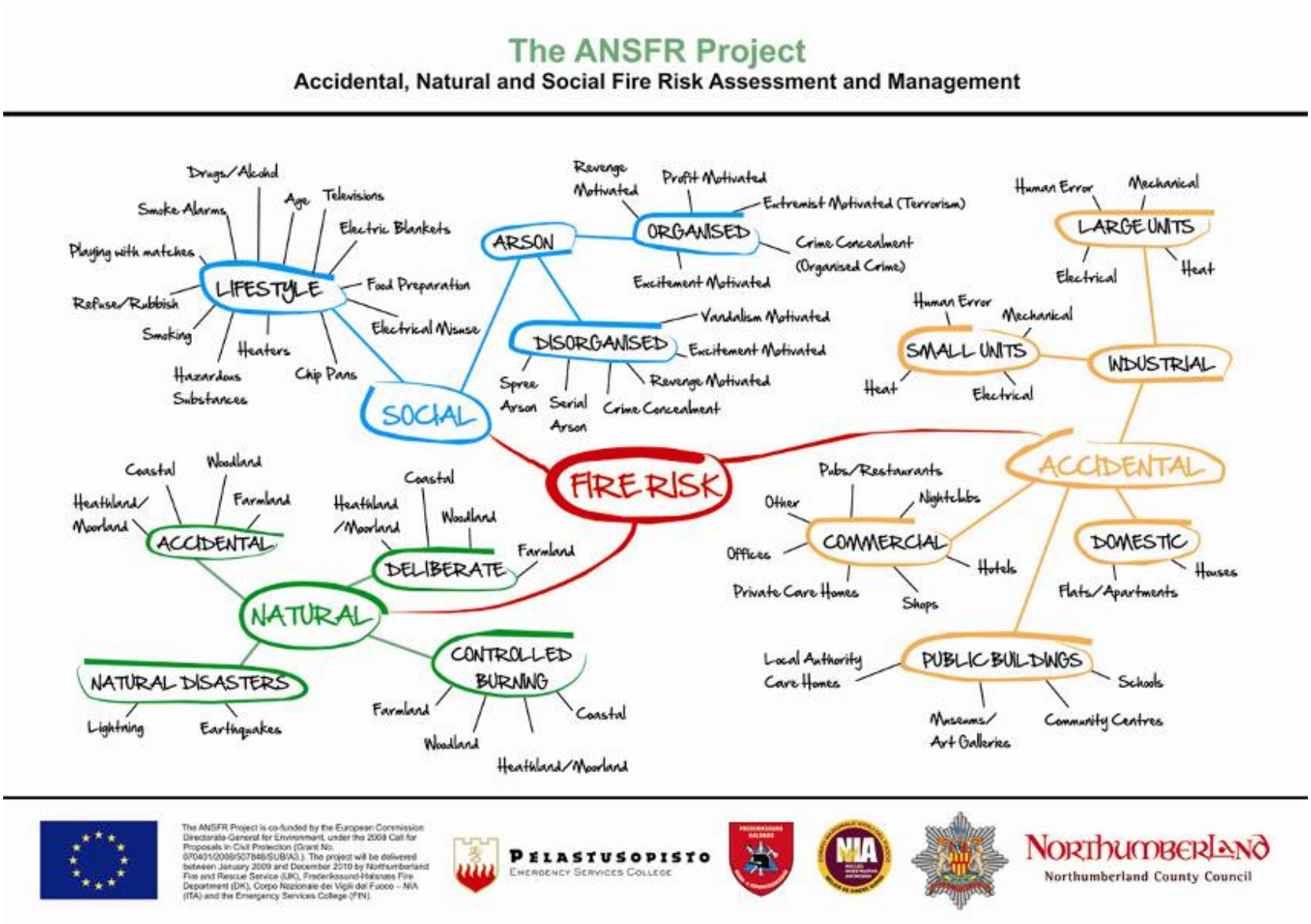
**Method: 3. Plenary: Feedback from each group in turn (30 minutes)**

a) Group leaders present findings.
b) Take questions from the whole group.

**Method: 4. Next Steps (10 minutes)**

a) Open discussion on way forward and action points for ANSFR Project

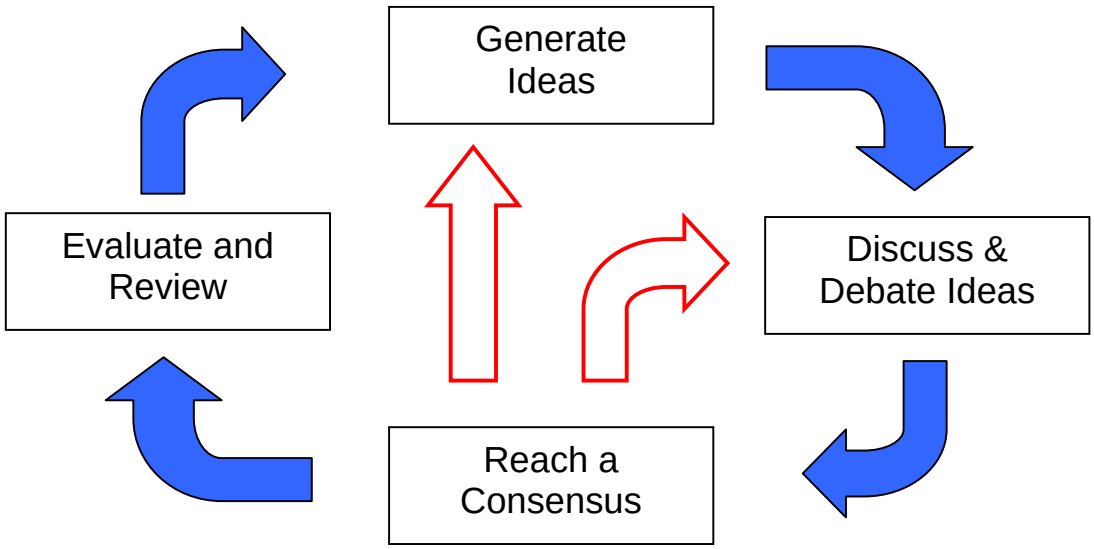
## Figure 33 – Fire Risk Tree Diagram (original proposal)



**Feedback from the Plenary Presentations**
Feedback from the three groups is presented in Figures 35, 36, and 37 on the subsequent three pages. Each photograph shows a tree diagram that was modified (using post-it notes) by one of the groups. More detail concerning the suggestions and recommendations of the three groups is presented on page 87. These further details are included within the sub-section labelled “Future Action Points Agreed During the Session”.

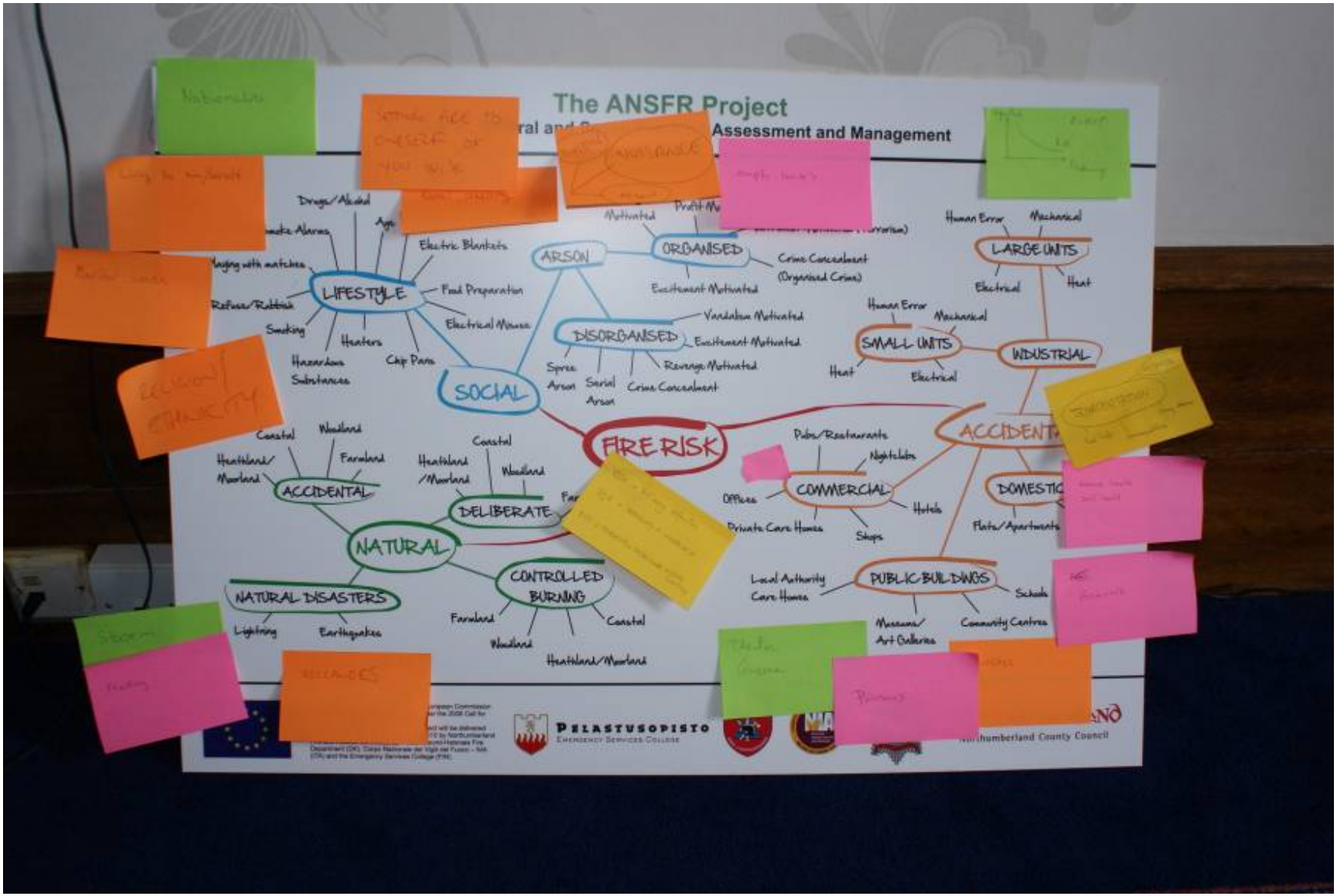
**Outputs from the Session**
The key output of the session was the achievement of consensus on a modified fire risk diagram to help guide and structure the remainder of the project. The amendments discussed and approved during the plenary feedback session were applied to the diagram after the event by the Project Manager. The revised diagram was then circulated to all participants to obtain their approval and/or to include any further additions or suggested modifications. This process gave the workshop participants the opportunity to return to the diagram after spending a period concentrating on other issues. This near cyclical process of a) generating ideas, b) discuss ideas, c) analyse and critique ideas and d) evaluating and reviewing ideas, can often be a very effective technique for this type of collaborative activity. The basic process is illustrated in Figure 34. The red outlined arrows within the centre of the diagram indicate that a consensus may not always be reached on a particular issue (at least immediately) and that new ideas may need to be generated or existing ideas may need to be discussed and debated at greater length. This was certainly the case during the plenary feedback discussions during this session of the workshop.

**Figure 34 – A Cyclical Process for Project Collaboration[54]**

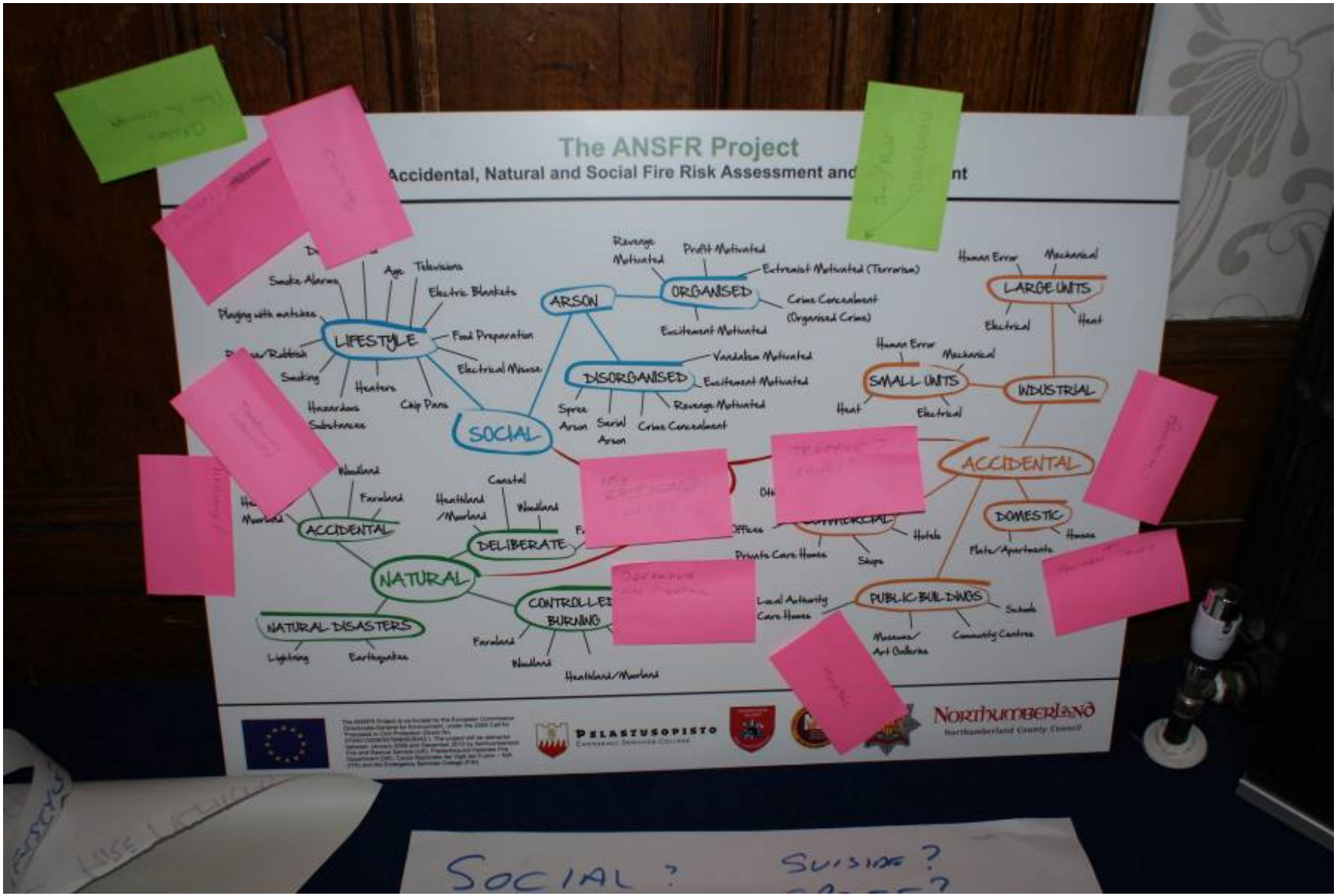



[54] The cyclical nature of Figure 34 indicates that the collaboration process will continue over the course of the project. Consequently, the revised fire risk diagram produced during the workshop session may be subject to subsequent revisions and modifications over time. The project’s current requirements for the diagram may change over time and future modifications may be required so that the diagram fulfils the requirements of the later stages in the project.

## Figure 35 – Feedback on the Fire Risk Tree Diagram Exercises: Group 1



## Figure 36 – Feedback on the Fire Risk Tree Diagram Exercises: Group 2



## Figure 37 – Feedback on the Fire Risk Tree Diagram Exercises: Group 3

The actual revised fire risk diagram is included overleaf (see Figure 38). All of the partners agreed upon the modifications that were made to the original proposal presented by Bernie. As can be seen, the revised and improved diagram is reduced in size and complexity to the original proposal: there are now fewer categories, fewer hierarchical levels and fewer branches. One of the key noticeable changes from the original diagram is the replacement of the term "natural" with the group's preferred term of "environmental". The group decided that the category incorporated fires started by both natural and human causes, and thus use of the term "natural" might exclude some important risk areas. It was deemed more appropriate to use the term "environmental" which could encompass all natural risks (for instance, lightning and volcanic eruptions) and all risks to natural/rural environments directly associated with human actions (for instance, controlled and prescribed burning of grassland).

The other key issue the group identified concerning the original diagram was that a number of the categories presented within one of the three key categories of fire risk (accidental, natural or social) may actually be important categories and/or factors contributing to fire risk within one or more of the other key categories or sub-categories. It is useful to illustrate this with a specific example. Three categories of possible causes/contributory factors were specifically allocated within a particular sub-category. "Heat", "electricity", and "mechanical" were located within the "Accidental Fire Risk" key risk category and within the subcategory of "Industrial" and the further subcategories of "Small Units" and "Large Units". In essence, "heat", "electricity" and "mechanical" can be contributory factors in any accidental fires, not just those within industrial premises (for instance, in domestic fires, commercial fires, public building fires etc.). In addition, all of these factors could cause or contribute towards a "social" fire and, if taken to a basic level, some of the factors could also contribute to or cause an environmental fire (for instance, a fire caused by a lightning strike is essentially a fire caused by electricity). The group began to discuss some of these crossover categories and realised there were just too many potential causes and contributory factors within each key fire risk area. It would be both difficult and undesirable to try to comprehensively present all of these on one diagram. Consequently, it was agreed by the participants that the revised diagram would be stripped back to a very basic form and separate appended documents would be produced. These separate appended documents are presented on pages 86-90 and include:

- Potential Causes/Contributory Factors for Accidental, Environmental and Social Fires.
- Potential Location Types for Accidental, Environmental and Social Fires.
- "At Risk"[55] Social Groups for Causing/Experiencing Accidental, Environmental and Social Fires.

[55] Those social groups at high or higher risk of experiencing or causing accidental, environmental or social fires.

**Figure 38 – Fire Risk Tree Diagram (revised and improved)**

## Additional Documents Appended to Figure 38

# Potential Causes/Contributory Factors for Accidental, Environmental and Social Fires[56]

- Access to fire safety knowledge and education
- Alcohol consumption
- Animals and pets (e.g. rodents biting through cables)
- Ash
- Biological (e.g. peat)
- Boredom
- Buildings of multiple occupancy
- Building ownership (e.g. owner occupier or rented to tenants)
- Buildings of sole occupancy
- Burning of waste/rubbish
- Camping
- Candles
- Civil unrest (e.g. riot)
- Controlled burning[57]
- Coal and wood burning stoves/fire places
- Chemical
- Cigarettes and smoking materials
- Chimneys and flues
- Climate
- Cooking (inside and outside)
- Deliberate fire-setting (arson/fire crime)
    - a) Organised arson[58]
        - Crime concealment[59]
        - Extremist motivated
        - Profit motivated
        - Revenge motivated
    - b) Disorganised arson[60]
        - Crime concealment
        - Excitement motivated
        - Revenge motivated
        - Serial arson
        - Spree and mass arson[61]
        - Vandalism motivated

[56] A distinction has been made regarding some causes/contributory factors. The different colours used on pages 86 and 87 denote a cause/contributory factor specific to a particular fire risk category. Green denotes a cause/contributory factor predominantly for environmental fires, blue for social fires, and black for any accidental, environmental or social fire.

[57] A basic definition of a controlled burn is: burning an area of vegetation under supervision as part of a prescribed burn or as a suppression tactic to extinguish wildfire.

[58] Based on the classification of arson by Kirkpatrick, S (2002) 'Arson' in the *International Encyclopaedia of Justice Studies.* (Last accessed on 2.07.09 at: www.iejs.com/Law/Criminal_Law/arson.htm ).

[59] Specifically connected with organized crime.

[60] Based on the classification of arson by Kirkpatrick, S (*ibid*).

[61] Kirkpatrick (2002) states that "a spree arsonist sets fires at three or more separate locations with no emotional cooling-off period between them. Mass arson involves one offender who sets three or more fires at the same location during a limited period of time."

- Drug taking
  a) Illegal drugs; b) Prescription drugs
- Electricity/Electrical
- Empty/void properties
- Excluded members of society
- Explosions/explosives (e.g. gas explosions, nuclear explosions etc.)
- Failure to apply common sense
- Fascination with fire/play with fire
- Fire work (i.e. welding)
- Fireworks
- Frictional heat
- Hazardous substances (e.g. flammable and explosive substances)
- Heat
- Human error
- Lighting (artificial)
- Maintenance of equipment
- Marital status
- Mechanical
- Mental health difficulties
- Misuse of equipment/machinery
- Negligence
- Non-compliance with building regulations
- Non-compliance with health and safety regulations
- Open fires
- Overheating of an object (for instance, of a machine and/or electrical appliance)
- Ownership of fire safety measures
- Personal/domestic crises
- Physical impairment
- Poor (or no) maintenance (i.e. of machines, of chimneys/fire places, saunas etc.)
- Prescribed burning[62]
- Racial/hatred
- Recession (economic downturn)
- Re-ignition of earlier fire
- Religious practices
- Saunas and steam rooms
- Self-excluded members of society (e.g. hermits, some homeless people etc.)
- Self immolation[63]
- Smoking materials (cigarettes, tobacco, lighter, matches etc.)
- Spark (for instance, from fire place or machine)
- Suicide[64]
- Sunlight (refracted)
- Terrorism and Extremist groups
- Weather conditions (including: storms and high winds, lightning, volcanic eruptions, earthquakes, draught, cold)
- Other

[62] A basic definition of a prescribed burn is: the use of fire to burn vegetation as part of a land management programme.
[63] A basic definition for self immolation is “deliberate self sacrifice/suicide by setting fire to oneself, often in a public place”.
[64] This is a more general category of suicide by fire compared to the more specific act of “self immolation”.

# Potential Location Types[65] for Accidental, Environmental and Social Fires

## Property Types

- Agricultural buildings (barns etc.)
- Care homes for the elderly
- Caravans
- Camp sites
- Club rooms
- Community centres/buildings
- Day care centres
- Dormitories/other residential properties
- Electricity sub stations
- Empty/void properties
- Festivals/events
- Holiday/summer homes
- Hospitals
- Hotels/Guest Houses
- Homes/dwellings
- Illegal drug farms (cannabis farms etc.)
- Leisure centres/sports halls
- Libraries
- Museums
- Oil rigs/extraction plants
- Offices
- Entertainment venues (cinemas, theatres, dance halls/discos and nightclubs)
- Petrochemical processing plants
- Places of worship (for instance, churches, synagogues, mosques etc.)
- Power plants
- Prisons
- Pubs and restaurants
- Shops
- Storage facilities (other than warehouses)
- Temporary/mobile homes
- Transport centres (airports, bus stations, train stations, ports)
- Warehouses
- Waste centres (for instance, waste storage sites, recycling facilities etc.)
- Other

[65] Location types have been divided into three categories: property type; landscapes/environments; and modes of transport. These categories will not always be mutually exclusive – for instance, a fire in a car in a campsite will overlap at least two of the location categories (mode of transport and property type). The categories that have been identified have been selected on the grounds that they represent particular conditions that have a degree of influence on the context and characteristics of particular fire risks. Knowledge and understanding of these contexts is vital for assessing and managing fire risk and ultimately to preventing fires from occurring in the first place.

## Landscapes/Environments

- Coastland
- Grassland
- Heathland
- Moorland
- Peat
- Wildland[66] (Wildfire[67])
- Woodland/forest[68] (both natural and man-made/managed)
- Other

## Modes of Transport

- Aeroplanes
- Bicycles
- Bulk carrier ships (for instance, container ships, oil tankers etc.)
- Buses/coaches
- Car transporters
- Cars
- Construction vehicles (i.e. excavators, cranes etc.)
- Cross-country vehicles (snowmobile, quad bike etc.)
- Ferries/Cruise Ships
- Fishing boats
- Inshore boats/ canal boats
- Jet ski
- Lorries/heavy goods vehicles
- Motorbikes
- Offshore pleasure boats
- Tractors and farm vehicles (including combine harvesters)
- Trains
- Trailers
- Other

[66] Wildland is defined as "An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered", according to the National Wildfire Coordinating Group Incident Operations Standards Group (2006) *Glossary of Wildland Fire Terminology* , National Wildfire Coordinating Group (NCWG). Last accessed on 2.07.09 at www.nwcg.gov (p179).

[67] A wildfire is "An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.", according to the National Wildfire Coordinating Group Incident Operations Standards Group (2006) *Glossary of Wildland Fire Terminology* , National Wildfire Coordinating Group (NCWG). Last accessed on 2.07.09 at www.nwcg.gov (p179).

[68] These terms are used to refer to predominantly tree covered land, whether in large tracts (generally called forests) or smaller units (known by a variety of terms such as woodlands, woods, and copses), as outlined by Gazzard, R. (2008) *United Kingdom Vegetation Fire Standard: Data fields and terminology for wildfire incidents and prescribed burning operations within Great Britain and Northern Ireland* (forthcoming).

## "At Risk" Social Groups for Causing/Experiencing Accidental, Environmental and Social Fires

Individuals who are:

- Alcohol/drug abusers
- Divorced
- Economically/socially deprived
- Landowners, land managers and land workers (including farmers and farm workers)
- Mentally impaired
- Migrant workers[69]
- Neo-unskilful[70]
- Physically impaired
- Single
- Smokers
- Elderly
- Very young (infants, children)
- Working in high risk occupations (for instance, steel smelting/production, oil rig workers, quarry workers, miners (particularly those blasting for stone or other minerals) etc.
- Unemployed
- Widowed

According to basic logic, individuals who occupy multiple 'at risk' social groups are perhaps at a higher risk of causing/experiencing a fire than those individuals who are in fewer or none of the 'at risk' groups.

[69] "The term "migrant worker" refers to a person who is to be engaged, is engaged or has been engaged in a remunerated activity in a State of which he or she is not a national" (UN Convention on the Rights of Migrant Workers, 1990. Last accessed on 3.07.09 at http://www2.ohchr.org/english/law/pdf/cmw.pdf).

[70] The category neo-unskilful refers to a group of individuals who have not learnt and/or are not interested in learning the knowledge and skills required to act and behave safely particularly (although not solely) around fires, the safe use of fire and fire prevention. The knowledge and skills that were traditionally passed on from generation to generation, and to a degree via closer contact with fire during everyday life (for instance, cooking on open fires, open fires for heating etc.), are no longer widely possessed by the general public. This social group has been identified as 'at risk' in Finland and also in other European countries.

**Future action points agreed during the session**

The fourth section of the session involved an open discussion on the way forward and the mutual agreement of action points for definitions and the overall framework to be used for the ANSFR Project. Although the session lasted 20 minutes longer than was originally scheduled, it was extremely productive. Lots of ideas were formed and discussed, and key action points were agreed upon.

Two key categories of action points were mutually decided by the participants during the open discussion at the end of the session. These were:

1. Development of definitions for fire risk and fire risk categories:
    - The partners will all submit definitions of fire risk to the project manager. These will then be combined to develop a comprehensive working definition of fire risk for the project. It was suggested that this may be in the form of more than one definition – for instance, one as a qualitative definition and one as a quantitative definition. The basic premise is to theorise fire risk to create a good theoretical foundation for the project.
    - Rob Stacey to gather definitions of fire risk from NFRS and to complete some background research into definitions of fire risk.

2. Modifications to be made to the fire risk diagram:
    - The diagram will be modified to include fewer sub-categories. Rob Stacey, ANSFR Project Manager, will make the modifications and circulate the revised diagram to the partners for approval and further modifications.
    - A master list of potential causes will be created and put in an attached sheet, rather than try to include all of these on the one diagram. The reason for this is that there are a number of the causes which cross-over two or more of the three key categories of fire risk (i.e. natural/environmental, accidental and social).
    - A master list of potential location types will be created and put in an attached sheet. Again the reason for this is that there are a number of location types that cross-over with two or more of the three key categories of fire risk.
    - Partners will use the diagram to structure and guide the remaining project activities.

The exercise on modifying the fire risk diagram and including the three appended master lists has been completed and the results of this exercise have already been presented in Figure 38. The exercise on gathering specific fire risk definitions is currently ongoing. All partners will submit fire risk definitions to the project manager by 31st July 2009. The definitions will then be appraised and some suggestions will be formed as to appropriate definitions to use for the project. The same cyclical process presented in Figure 34 will be employed to provide all partners with the opportunity to provide an input to the process.

# 6. Conclusions

## 6.1 Concluding comments of the Northumberland workshop

Rob Stacey completed the workshop by summarising the findings of the two days and by suggesting some issues to consider for future ANSFR project activities and workshops. Rob thanked everybody for attending and for their enthusiasm and commitment to the ANSFR Project. Rob noted that there had been some extremely interesting presentations and discussions during the workshop and that future ANSFR Workshops hold much promise for some excellent collaborative work.

Rob highlighted that, over the course of the two days, it had become apparent that the four project partners have both similar and contrasting problems and challenges with regards to fire risks, and that some fire risks are of more significance to some partners than others. This situation was not unexpected. Rob also expressed to the delegates that even if a partner does not currently have a problem with a particular type of fire risk, all partners need to be involved and contribute to all elements of the project because problems/issues may arise in future. It is also vital that all partners contribute because the very reason that they do not have a problem may be because their approach and strategy has reduced the risk of a type of incident from occurring. Their experience and knowledge may be vitally important to the other partners and to the project as a whole.

Rob concluded by stating that the end of the workshop did not represent a conclusion, rather that many more questions and ideas had been created than had been answered and that there was still a lot to do during the ANSFR Project. To illustrate this further, Rob mentioned that not all of the tasks that were started during the Northumberland Workshop were actually completed by the concluding session. The final modifications and final approval process for the fire risk tree diagram, for instance, were completed after the event, as had been anticipated by the workshop organisers. The premise of this session was to begin dialogue between the partners during the workshop and to begin the collaborative process of refining and honing the tree diagram. The session was only ever envisaged as a start to the whole process, with a conclusion coming further down the line when partners had returned to their home countries. By making final modifications and seeking final approval from all of the partners after the event, it gave all members of the project team the chance to extract themselves from the exercise, take some time to think about the diagram and its applications during the project, and perhaps to approach the diagram from a different perspective. The diagram is now in a format that has been approved by all of the project partners and it is believed that it will suit the needs and requirements of the project at this point in time. Should refinements and modifications to the tree diagram be required or suggested in future, the project team can decide to modify it if all partners agree the need for the change(s).

The partners identified a number of activities that should be completed in the immediate-, medium- and long-term periods following the conclusion of the Northumberland workshop.

The agreed immediate-term activities to be completed were:

- All partners to publicise the Northumberland Workshop in their local media and national Fire Service magazines/publications.

- NFRS were tasked with finalising the project time plan and distributing to all partners for suggested amendments and additions. This diagram maps details all of the tasks, both small and large, that need to be completed by the project partners over the course of the ANSFR Project. Responsibility for individual tasks is clearly defined within the diagram to provide ease of reference.
- NFRS were tasked with creating a web-page for the project on the Northumberland County Council site. All project partners were invited to present the same information on their own organisations' websites.

The agreed medium-term activities to be completed were:

- NFRS to design, and all of the partners to assist in circulating, a short questionnaire survey aimed at collecting information on fire risk assessment and management techniques used in European countries.
- All partners to collect fire risk assessment and management documents from their local area, their country and, if possible, from other European countries.
- All partners to collect together definitions for terms used for fire risk assessment and management. These definitions will be collected by NFRS and definitions with common foundations will be suggested for use during the ANSFR Project. In particular the project team will aim to more precisely define Accidental Fire Risk, Environmental Fire Risk and Social Fire Risk.
- NFRS and other volunteers to research options for a web-based system and training portal for the project.
- Frederikssund-Halsnæs Fire and Rescue Department and NFRS to plan and deliver Workshop 2 on "Environmental Fire Risk Assessment and Management" in Frederikssund-Halsnæs, Denmark.

The agreed long-term activities to be completed were:

- Corpo Nazionale dei Vigili del Fuoco – NIA and NFRS to plan and deliver Workshop 3 on "Accidental Fire Risk Assessment and Management" in Rome, Italy.
- Emergency Services College and NFRS to plan and deliver Workshop 4 on "Social Fire Risk Assessment and Management" in Kuopio, Finland.
- NFRS and all partners to plan and organise the ANSFR Project Conference to be delivered in Northumberland in the summer of 2010.

All of the immediate-term activities have been successfully completed on target. NFRS is now managing and monitoring the delivery of all of the medium- and long-term activities.

## 6.2 Results of the post-event evaluation

An important element of the workshop was the completion of a post-event evaluation. This thorough evaluation looked at all key elements of the workshop design and delivery to assess whether the conference aim and objectives had been achieved. The full post-event evaluation report is available upon request from the project manager (details on page 2 of this handbook), however, it is useful to summarise the findings of the report here.

**Evaluation of the event by the workshop participants**

NFRS routinely evaluates workshop sessions that it delivers to ensure continual assessment and improvement. A key part of this process is to request that all workshop participants complete a one-page evaluation form providing their opinions and experiences of the event. The form presented to participants contained 7 statements and a space for any additional comments and suggestions. Participants were requested to rate the degree to which they agreed with each statement on the form, using an attitudinal measurement scale. The responses available to them were: unsure; strongly agree; agree; disagree; strongly disagree. Evaluation forms were completed anonymously to ensure that participants felt secure providing their true opinions about the event. The strategy employed for this evaluation process is widely regarded as good practice for obtaining constructive feedback on this type of event.

Evaluation forms were completed by 13 individuals who attended the workshop. Responses were provided by all delegates from Denmark, Finland and Italy. In addition, one delegate from Northumberland County Council also completed and returned an evaluation form. Workshop participants from NFRS did not complete and return evaluation forms because all of the participants from NFRS who attended were involved in the event planning and delivery. In general terms, all of the responses on the evaluation forms were very positive, with most participants either “agreeing” or “strongly agreeing” with the statements presented to them. From the evidence provided in the forms, it was concluded by the workshop organisers that:

- The workshop presenters were engaging and informative
- The activities were stimulating and relevant
- Interest was held throughout the workshop
- The workshop was relevant to participants’ professional roles
- Participants had learnt something from the event
- Participants would recommend the workshop to others

One respondent stated that they did not agree that the aims and objectives of the workshop had been clearly outlined. While this was not a significant failure, in future workshop organisers need to place more emphasis, and perhaps spend more time discussing, the aims and objectives of the event during the opening session(s).

**Conclusions of the post-event evaluation**

In order to measure the success of the workshop, it was important to return to the aim, learning outcomes and anticipated outputs that were devised prior to the event. With the assistance of those who attended the event from the other three partner organisations, NFRS determined that all of the learning outcomes were successfully achieved to at least a satisfactory level during the event. Those who attended:

- obtained a good basic understanding of the fire risk assessment and management practices currently adopted by the project partners;
- obtained a good basic understanding of the specific fire risks and challenges that face the project partners;
- obtained a basic understanding of some of the national priorities and strategies for fire risk assessment and management in the project countries (Denmark, Finland, Italy and the United Kingdom);

- and, developed an awareness and appreciation of examples of best/good practice in fire risk assessment and management from the project countries.

The workshop also delivered all of its four predetermined outputs:

- A list of names and contacts of all of those who attended the workshop was produced and circulated to all who participated. Those who attended the workshop are now able to contact any or all of the other participants directly.
- A handbook documenting the workshop is currently being produced by NFRS. All workshop participants have agreed for their documents and presentations to be included in this publicly available document.
- During the workshop, participants collaboratively agreed upon a substantially revised conceptual diagram to be produced and used to frame and structure the project activities. NFRS are currently making amendments to this document and will circulate it to all partners for their approval. This was a particularly challenging activity which required obtaining a consensus from a large group of people with a variety of different experiences and professional fields. It is a substantial achievement that all participants have come to agreement on the revisions for the diagram.
- The partners came to a mutual decision regarding which organisations would host the three subsequent workshops and the dates for these workshops. The remaining three workshops will be hosted by:

    - Frederikssund-Halsnæs Fire and Rescue Department (Denmark) to host the Natural/Environmental Fire Risk workshop in 28th September – 1st October 2009.
    - Corpo Nazionale dei Vigili del Fuoco – NIA (Italy) to host the Accidental Fire Risk Workshop in 30th November – 3rd December 2009.
    - Emergency Services College (Finland) to host the Social Fire Risk Workshop in 19th – 23rd April 2010.

Based on the evidence presented throughout the full Post-Event Evaluation Report, the Northumberland ATF concludes that Workshop 1 of the ANSFR Project was successful in achieving its key aim[71]. The workshop successfully "allowed participants to share knowledge and experience of fire risk assessment and management practices currently adopted by the partner organisations and to discuss and debate potential synergies and improvements." The success of the workshop was in part due to the design, preparedness and high quality delivery work of NFRS officers and the other project partners. It was also due in part to the enthusiasm of the individuals who attended and contributed to the sessions. In view of the success of the first workshop, and the strong working relationship that has now developed between the four partners, the prospect for the three remaining ANSFR Project workshops is extremely good.

[71] Even though the event has been evaluated as a success, the workshop organisers have critically identified key "successful elements of the workshop" and specific "areas for improvement" for future workshops.

## 6.3 The Remaining ANSFR Project Workshops

It was decided during the concluding session of the workshop that the three remaining workshops will be themed around the three key categories of fire risk outlined in the project plan:

- **Workshop 2: Environmental Fire Risk**
  To be hosted by Frederikssund-Halsnæs Fire and Rescue Department on 28th September – 1st October 2009 in Frederikssund, Denmark.

- **Workshop 3: Accidental Fire Risk**
  To be hosted by Corpo Nazionale dei Vigili del Fuoco – NIA on 30th November – 3rd December 2009 in Rome, Italy.

- **Workshop 4: Social Fire Risk**
  To be hosted by the Emergency Services College on 19th – 23rd April 2009 in Kuopio, Finland.

Each of the remaining workshops will involve the collaborative development of new fire risk assessment and management frameworks which can be adopted by the partners. These frameworks will later be shared with and promoted to Fire and Rescue Services in Europe.

Northumberland Fire and Rescue Service will provide assistance to Frederikssund-Halsnæs Fire and Rescue Department who will host the second ANSFR Project workshop in September 2009. Held og lykke Frederikssund-Halsnæs!

# Appendix 1 – List of Abbreviations

| | |
|---|---|
| ANSFR | Accidental, Natural & Social Fire Risk Assessment & Management |
| AONB | Area of Outstanding Natural Beauty (a term used in the UK) |
| ATF | Arson Task Force |
| CFOA | Chief Fire Officers Association (UK) |
| CNVVF | Corpo Nazionale dei Vigili del Fuoco |
| CPPM | Community Protection Performance Meeting |
| CRR | Community Risk Register |
| CSA | Community Safety Academy |
| DEMA | Danish Emergency Management Agency |
| ESC | Emergency Services College (Finland) |
| FSEC | Fire Service Emergency Cover Toolkit/Model |
| GIS | Geographic Information System |
| IRMP | Integrated Risk Management Plan |
| IRS | Incident Recording System (used by UK Fire and Rescue Services) |
| LRF | Local Resilience Forum |
| MCA | Maritime and Coastguard Agency |
| MIRG | Marine Incident Response Group |
| NI | National Indicators |
| NIA | Nucleo Investigativo Antincendi (a central department within the CNVVF) |
| NFRS | Northumberland Fire and Rescue Service |

Continued from overleaf…

| | |
|---|---|
| PCT | Primary Care Trust |
| PU | Polyurethane foam (fire resistant material used in soft furnishings) |
| RAWG | Risk Assessment Working Group |
| RTC | Road Traffic Collision (also sometimes referred to as a Road Traffic Accident - RTA) |
| SAF | Speleological-Alpinistic-Fluvial |
| SOPs | Standard Operative Procedures |
| SPEK | Finnish National Rescue Association |
| UKSRR | United Kingdom Search and Rescue Region |
| USAR | Search and Rescue |

# Appendix 2 – The Northumberland Workshop Schedule

## The ANSFR Project

**Accidental, Natural and Social Fire Risk Assessment and Management**

## Workshop 1 – Cross-Border Exchange of Good Practice in Accidental, Natural and Social Fire Risk Assessment and Management

**Hosted by Northumberland Fire and Rescue Service, England, 18th - 21st May 2009**

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## *Workshop Schedule*

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### Monday 18th May 2009 – Arrival into Northumberland

**Times to be confirmed with partners (dependent upon flight arrival times) –** Officers from NFRS will meet workshop participants arriving into Newcastle International Airport and provide transport between the airport and Longhirst Hall Hotel (www.longhirstvenues.co.uk/longhirst ), near Morpeth. This will be the venue for the workshop. Delegates travelling from Denmark, Italy and Finland have rooms and breakfast reserved for the nights of 18th, 19th and 20th May 2009 at Longhirst Hall.

### Tuesday 19th May 2009 – Day One of the Workshop

**0700 – 0900 –** English breakfast served in the Russell Room at Longhirst Hall.

**0900 –** The workshop begins in the Joicey Room at Longhirst Hall. Housekeeping and name badges to be distributed.

**0910 -** Workshop participants will be welcomed to Northumberland by Brian Hesler, Chief Fire Officer and Director of Community Safety, Northumberland Fire and Rescue Service (NFRS).

**0920 –** Presentation on "Northumberland Fire and Rescue Service" by Brian Hesler, Chief Fire Officer and Director of Community Safety.

**0950 –** Summary of the aims of the ANSFR Project and the Northumberland workshop – to be delivered by Rob Stacey (NFRS).

**1000 –** Team building/ice breaker exercises (small group tasks, rotation of groups).

**1040 -** Introduction to the Northumberland Arson Task Force and deliberate fire risks in Northumberland – to be delivered by Dave Myers (NFRS).

**1100 –** *tea/coffee break*

**1130 -** Delivery of presentation by Frederikssund-Halsnæs Fire and Rescue Department.

**1200 –** Delivery of presentation by Corpo Nazionale dei Vigili del Fuoco – NIA.

**1230 -** Delivery of presentations by Emergency Services College.

**1300 –** Lunch (provided by NFRS).

**1415 – 1700 (approximately) -** Fieldtrip to view towns and countryside of Northumberland – highlighting fire risks and challenges and introduction to fire risk management on the ground (led by Norman Morton, Community Warden, NFRS).

**1930 –** Evening meal for overseas delegates, to be hosted by Brian Hesler, Chief Fire Officer and Director of Community Safety, NFRS (venue: Boyson Restaurant, Longhirst Hall).

## Wednesday 20th May 2009 – Day Two of the Workshop

**0700 – 0900 -** English breakfast served in the Russell Room at Longhirst Hall.

**0900 –** Workshop begins in the Joicey Room, Longhirst Hall. Introduction to the day by Rob Stacey (NFRS).

**0915 –** Performance, Quality Assurance and Fire Risk Assessment and Management (presentation followed by exercise(s)) - session to be delivered by Phil Barry (NFRS).

**1030 –** *tea/coffee break.*

**1100 -** Discussion and formulation of common definitions for terms to be used throughout the project. Session to be facilitated by Bernie Quinn, NFRS.

**1230 –** Lunch (provided by NFRS).

**1345 –** Emergency Planning and the Northumbria Community Risk Register (presentation followed by exercise(s)). Session to be delivered by Ian Clough (NFRS).

**1500 –** *tea/coffee break*

**1530 –** Fire Safety in the Home – session to be delivered by Rob Stacey (NFRS) and Stewart Barnett (Northumberland County Council).

**1630 –** Concluding comments concerning the workshop. Discussion about future workshops, the project conference and other key project tasks. Completion and submission of workshop evaluation forms – to be led by Rob Stacey (NFRS).

**1700 –** The workshop ends.

**1900 –** Evening meal for overseas delegates (arrangements to be made by NFRS).

## Thursday 21st May 2009 – Departure from Northumberland

**Times to be confirmed with partners (dependent upon flight departure times) –** Officers from NFRS will meet workshop participants at Longhirst Hall Hotel and provide transport to Newcastle International Airport for departure.

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This workshop is co-funded by the European Commission Directorate-General for Environment, under the 2008 Call for Proposals in Civil Protection. The workshop forms an important part of the "ANSFR Project", Grant No. 070401/2008/507848/SUB/A3.

# Appendix 3 – Category 1 and 2 Responders in the Northumbria Local Resilience Forum

## Category 1 Responders

Newcastle City Council
Sunderland City Council
Gateshead Council
North Tyneside Metropolitan Borough Council
South Tyneside Metropolitan Borough Council
Northumberland County Council
Northumbria Police
British Transport Police
North East Ambulance Service
Northumberland Fire and Rescue Service
Tyne and Wear Fire and Rescue Service
Marine and Coastguard Agency
Environment Agency
Tyne Port Health Authority
River Blyth Port Health Authority
Health Protection Agency
Health Services:
North of Tyne Primary Care Trust (PCT)
South of Tyne Primary Care Trust (PCT)
Northumberland Hospital Trust
Newcastle Hospital Trust
Gateshead Hospital Trust
Sunderland Hospital Trust
South Tyneside Hospital Trust
North Tyneside Hospital Trust

## Category 2 Responders

Northumberland and Tyne and Wear Strategic Health Authority
CE Electric
Scottish Power
British Telecom
TeleWest
National Transcommunications Limited
Network Rail (GNER, Virgin, Northern Spirit, Arriva)
Health and Safety Executive
Northumbria Water Limited
Nexus
Port of Tyne
Newcastle International Airport
Highways Agency
Cellular Airtime Providers – 02, Orange, T Mobile, Vodafone

# Appendix 4 – An Example of a Standard Operative Procedure Developed and Implemented by CNVVF

## Standard Operative Procedure for a Fire in a Car in the Open – No Injured Persons

**Scenario:**
Car Fire. This applies to fire in a car in the open, with no injuried person on board.

**Rules:**
- Questions (site, address, phone numbers, people involved, injured, type of car engine, hazardous substances ..)
- Organisations/companies to be alerted (police, health rescue, ..).

**Means:**
- Those appropriate for the scenario involved. Eg. Fire Engine, Bulk Water Tanker.

**Technical Issues: during the arrival, on site.**
- Planning (establishing roles and preparing for unforseen event ..).
- Executing (stopping at a distance, getting people not involved away ..).

**Actions to be adopted:**
- Checking people if inside the car.
- Checking immediate hazards present.
- Beginning fire quenching from protected position.
- Getting near with caution (possible explosion of lpg tanks, of light alloy wheels, of airbags)

**Safety:**

***General safety:***
- Keeping area free from people not involved.
- Contacting as soon as possible road police and support assistance.
- Signaling presence of obstruction on the site.

***Staff safety:***
- Wearing appropriate protective clothes and head/eyes protections.
- Using breathing appliances when exposed to combustion products.
- Keeping awareness of potential hazardous projections (fragments, liquids ..).

# Appendix 5 – Workshop Evaluation Form

## Workshop Evaluation Form
## Northumberland Fire and Rescue Service

| Event title: The ANSFR Project Workshop – hosted by Northumberland Fire and Rescue Service | Date: 18th – 21st May 2009 |
|---|---|

Please answer the following as honestly as possible, rating areas of the workshop from 1-4
1 – Strongly Disagree, 2 - Disagree, 3 – Agree, 4 – Strongly Agree

The workshop aims and objectives were clearly outlined

| Unsure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

The workshop presenters were engaging and informative

| Unsure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

The activities were stimulating and relevant

| Unsure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

My interest was held throughout the workshop

| Unsure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

The workshop was relevant to my role

| Unsure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

I have learnt something from the workshop

| Unsure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

I would recommend this workshop to others

| Unsure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

Please provide any additional comments or suggestions below e.g., suggested changes about particular sessions?

**Northumberland Fire and Rescue Service (NFRS) provides fire and rescue cover to the County of Northumberland in northern England. The County covers an area of almost 2,000 square miles (approximately 500,000 hectares) and is home to approximately 310,000 residents. NFRS has a long term strategic aim of improving the social, economic and environmental well being of the residents of the county it serves. Central to this is "preventing fires and other emergencies happening" and in doing so "reducing death, injury and damage to property". It is NFRS's aim to share knowledge and expertise, and to learn from the successful practices and initiatives implemented by other organisations, in order to improve the safety of residents living and working in Northumberland.**

Northumberland County Council

Pelastusopisto
Emergency Services College