

# Environment and Health International



*Magazine of the International Federation of Environmental Health*



**INTERNATIONAL FEDERATION OF ENVIRONMENTAL HEALTH**

*President – Jerry Chaka, South Africa*



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Cover Photograph:

*Paisley Abbey, Paisley, Scotland –  
Paisley was the venue for the 2003 IFEH Council Meeting*

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## PRESIDENT'S COMMENTS

**Jerry Chaka**

It is a great honour for me to release my first communiqué to member organizations. It is also a privilege for me to focus on the IFEH 8th World Congress and challenges that are ahead of us.

We are emerging from the IFEH 8th World Congress on Environmental Health, a World Congress held for the first time on the African Continent. The 8th World Congress attracted six hundred and fifty seven (657) delegates worldwide, which was a positive spin-off for the IFEH. Twenty-six (26) countries were represented of which nine (9) were African Countries. Fifty-nine (59) speakers delivered world-class papers on environmental health matters. For the first time in the history of the IFEH we had community non-governmental organizations organized in the field of Environmental Health fully participating in the proceedings of the World Congress and participating in boycotts that resulted in the handing over of a petition to the South African government, being received by the National Minister of Health, Dr Manto Tshabalala-Msimang and the National Minister of Environment and Tourism, Mr Valli Moosa. It is important that we promote engagements and collaborations with community non-governmental organizations in our organisation's activities and regional group activities so that we refocus our efforts and ensure that we accommodate these structures in our endeavour to influence policies on environmental health. The resolutions emanating from the World Congress need to be monitored for implementation, once Council adopts them. Congress resolutions are for implementation. There should be a clear commitment from all member organization as well as periodic reporting on progress regarding implementation.

The 8th World Congress provided all of us with a good platform to share and gain expertise on environmental health matters, to network and make friends in the interest of environmental health development.

One of the challenges that I need to focus on during my term of office is to ensure that we look at addressing environmental health concerns of under developed and developing countries that

are member organizations of the IFEH without neglecting environmental health concerns of developed countries. The challenge is to identify those environmental health concerns through our member organizations and assist in identifying relevant funding organizations and other organizations and individuals with relevant expertise that are willing to assist these countries in resolving those environmental health conditions. My experience in visiting Tanzania in October 2001 was an eye opener regarding appalling environmental health conditions that endanger health in that country and that really need immediate intervention. Handling and unsafe disposal of health care waste in a rural hospital at Bagamoyo was a typical example. We need to be assisted by individuals within members organisations who have contacts that can assist in this regard. There are ventures negotiated by the Honorary Secretary and the Company Secretary at the moment around this. We need to support and strengthen these efforts. This will surely enhance the standing and the image of the IFEH as an international organization.

The other challenge is to ensure growth of the IFEH in terms of membership so that we are seen as an organization truly representing environmental health worldwide. In April this year, we had to lose one full member, the Greek Association due to non-payment of subscriptions and two academic associate members due to the merger of South African Technikon.

In June we gained one (1) full member, Rwanda Association of Environmental Health and one (1) academic associate member, College of the North Atlantic, Qatar. We are now standing at 36 full members, 7 associate members and 27 academic associate members. This, for me, is not a good picture for a world organization that has been in existence for over eighteen years. We need to all work hard in recruiting full member organizations to join IFEH. We need to do an introspection regarding our slow growth as well as reasons why we lose members. Member organizations must support the study undertaken by IFEH through completing the questionnaire sent by the President-Elect to member organization.

I hope to get full support from all member organisations during my term of office.

## **PAISLEY'S PATTERN: HOW RENFREWSHIRE COUNCIL IS DEVELOPING SUSTAINABLE DEVELOPMENT THROUGH COMMUNITY DEVELOPMENT**

by **Bernard Forteath and Jane Brooke**

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### **Introduction**

*“... sustainable development will never be achieved without good public health, while good public health requires healthy and safe environments, an end to poverty and strong civil society.”* (Church, C.J. 2003)

This is the conclusion reached by the Chartered Institute of Environmental Health, which has just completed a major review of joint working on health and the environment in the UK over the last 10 years.

My Department's own experience strongly supports this view. The United Nations Local Agenda 21 programme aims to fill the gap between global treaties and local action, encouraging local authorities and other agencies to support programmes which do not simply inform people about the existence of environmental, social or economic problems, but give them the confidence and skills to take action to resolve problems in an integrated way in their own neighbourhoods, and perhaps further afield. However, until my Department developed a partnership for sustainability with health and regeneration agencies, we were unable to engage locally with communities, and our Agenda 21 strategy remained words on paper.

### **How things started**

Renfrewshire is a medium-sized Scottish local authority centred on the historic town of Paisley. Textiles, engineering and shipbuilding made the area rich in the 19th century when Paisley shawls (the famous Paisley Pattern) were exported around the world. But the 1950s brought rapid decline, as production in the main industries transferred to developing countries with lower labour costs.

By the 1980s parts of Renfrewshire suffered from multi-generational unemployment, resulting in a degree of poverty and poor health. Local environmental conditions were poor and in need of investment. Litter, vandalism and derelict sites were evident in some communities that then felt abandoned. But Renfrewshire was not alone in experiencing the problems of globalisation. In 1996, the European Union funded a programme, which enabled learning exchanges between community organisers from South Africa, Hungary, Southern India, Nigeria and Scotland. As a result Renfrewshire residents and officers hosted a week's study visit that culminated in a community conference. Insights and conversations sparked off ideas that subsequently developed into our "Sustainable Communities" programme. In 1997 Renfrewshire began to access substantial amounts of government money for urban regeneration projects, and my Department identified this as an opportunity to "ground" its Local Agenda 21 programme for practical action in communities by developing a Sustainable Communities Team.

This paper will discuss:

- the Sustainable Communities methodology, and how it compares with conventional ways of working
- how the programme delivers on the Environmental Health agenda and how this contributes to our understanding of sustainable development
- issues around partnership working
- the programme's international links

### **The sustainable community programme – how the project works.**

The Sustainable Communities programme began as a one-worker pilot in December 1997. Project design and initial funding were agreed through the Paisley Partnership, a local urban regeneration agency which brings together a wide range of local interests and Forward Scotland, a charitable company which receives development funding from the Scottish Executive. Initial success, and repeated positive evaluations enabled us to build the team up. It now has five staff, working in all of the disadvantaged neighbourhoods in the Authority's area.

Staff use community development techniques developed by Brazilian educator, Paulo Freire to

rebuild confidence in distressed communities, improve health, improve the environment and support people into jobs - delivering “Sustainable Development”. It is a strongly “bottom up” approach, supporting communities to identify their own issues and develop strategies to address them. The project begins work in an area by project staff talking to local people on the street, in shops, or wherever seems useful; identifying activities which could bring people together in groups (bingo, line dancing, keep fit, coffee mornings, open days, fetes...) and then working with those groups to develop practical action on local issues, building confidence and community capacity.

The informal “identification of issues” which arises when people come together is reinforced by formal surveys and focus group work.

Issues are prioritised by community meetings and local conferences, and then the team supports community groups to research, design, develop, fundraise and implement their solutions to problems. Projects simply do not happen unless local residents are seriously involved and partner agencies share information and provide a wide variety of practical support ranging from checking against formal strategies, giving advice on a range of issues from funding applications to the loan of temporary fencing.

The process of needs identification, planning and action happens in neighbourhoods, at times and places negotiated with participants. Babies and children are welcome, and groups are deliberately multi-generational. This approach has been very successful in involving parents with young children, teenagers and older people - most of whom will be on low incomes. The project has a long-standing relationship with a local disability group, and regularly works with groups of wheelchair users, utilising the same techniques. Events are usually supported by several agencies - reinforcing networks of shared information and shared priorities.

Conventionally, many local programmes begin with an agency articulating its own issues and concerns in a glossy “consultation document” to which a relatively small number of people respond. This then becomes a “strategy” with associated “action plans” clearly focused on the outcomes the agency wants, not necessarily related to the needs of local people. Our project is heavily dependent on external funding - which

requires outcomes and outputs that have to be agreed with funders at the outset - and these do not necessarily correspond with what the community wants. However, careful partnership working has meant that funders have been very supportive, and willing to work flexibly to fund outcomes valued by the community. In some cases the funders have changed the agreed outcome targets in response to what has happened on site.

### **Partnership working**

The Sustainable Communities programme is based on partnership working. As well as unlocking information and help in kind, partnership working has been necessary to gain, maintain and increase funding.

It currently receives funding from:

Renfrewshire Council  
 Scottish Natural Heritage  
 The European Regional Development Fund  
 Have a Heart Paisley - a local health programme  
 Shanks Waste Solutions, a major waste disposal company  
 Glasgow Airport, and  
 Renfrewshire Environmental Trust

The project has developed a broad range of objectives and targets, each of which satisfies the needs of one or more partner agencies. In turn, it is seen as an important driver of multi-agency partnerships - living evidence that “joined up working” really works. The project aims to be transparent in its communications. Information is shared on a daily basis among a network of agencies and with the community, and expertise is also shared. Representatives from partner agencies regularly visit the project, and the stream of conference presentations, press releases, awards and photo opportunities ensure that all contributing agencies feel that their contribution is valued and their name mentioned.

### **Delivering on the environmental health agenda**

The project delivers across a range of Environmental Health concerns. It supports progress to maintain cleanliness of streets and public places through community cleanups, waste education, and by working with young people to give them a stake in the community, and the sense that their needs are important. The project has supported local groups to develop five playgrounds. One, the Knockhill Park initiative

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also included football and basketball facilities. Nineteen school and community gardens have not only been developed, but also survived in difficult circumstances, transforming dull, ugly spaces into an oasis of colour and calm. Twenty community groups have received national awards for their efforts.

Staff support food quality work by encouraging groups to grow and cook their own vegetables, run community cafes, a food co-operative and very safe barbecues, thereby reducing dependence on shops selling ready-cooked produce. This has stimulated learning within families:

“One of the Project workers reported how young people were taking home fresh vegetables that they had grown and asking their mother to cook them. In some cases the mothers did not know how and so the young people were asking their grandmothers.” (Jake Elster, Unpublished data, 2002).

The programme also supports work on clean air, clean water and improved waste management by encouraging walking and use of public transport, promotion of organic gardening techniques, waste minimisation, recycling and composting.

Underpinning this is activity on a range of broad objectives to improve household income, reduce health inequalities and increase community identity, capacity and influence.

All activities are harnessed to give participants confidence in their own abilities and stimulus to enter work or training. Specifics have included an employment club, two employment days, and work placements for local people with the project team. A number of people have entered work as a result of the project's interventions, and more were referred to other agencies or training providers.

The project's work on “Reducing health inequalities” includes support to play schemes which offer swimming and sport, and encouraging adults to garden, cycle and visit the country parks. Joint work with the Argyll & Clyde Health Board has led to three “health days”, and the community gardens, which were established, now, as a result of “health days”, produce organic vegetables.

The foundation of the project's work is building skills and confidence in the community thereby raising local people's self esteem. Surveys and

focus groups are carried out in all project areas, meetings held to prioritise issues, and groups established to work on the issues. Groups research, plan, fundraise and implement their own projects. To date around 80 groups have been established, of which about half are now self-sufficient.

### On sustainable development

The project was a case study in the Joseph Rowntree Foundation project - Local Agenda 21, Community Planning and Neighbourhood Renewal. Along with other local examples, the case study demonstrated the value of practical work in facilitating learning in communities where “Sustainable Development” is seen as a middle class fad. A project worker reported

“The more the relationships grew (between people) in these groups, the more you could talk about the effects on the environment, you could talk about economic problems in the local area, about shopping locally to keep the local shops open - you could consider all sorts of different aspects and topics that were about sustainability but they were realistic because they fitted in with the hands-on activities”. (Lucas, Ross and Fuller 2003)

Within Renfrewshire, the Sustainable Communities projects' practical work fostered support for sustainable development programmes in schools and small businesses where earlier initiatives had made little progress. For example, the projects' work with schools has become the foundation of a Council-wide Ecoschools programme, for which 46 schools are registered to date. With three schools now accredited to the European “Green Flag” level, Renfrewshire is now in the top quartile of 32 Scottish Local Authorities.

Work with school and garden projects has also spun off a small business support programme. Team members are now working with seven small businesses to help them improve their own environmental management, and one has already won an award.

### International links

The international links that inspired the project initially continue. We host overseas student placements through the World-wide Fund for Nature, and the schools programme has an international dimension - our schools will be looking for partner schools shortly.

**Achievements**

The project has been praised by residents for its capacity-building among community groups. It is welcomed for relieving them of the stress that seemed to be increasingly part of being a volunteer. The general perception is that without the Sustainable Communities project, local community groups in the pilot areas would have had little in the way of support. General effects on community organisation include:

- Groups are encouraged to become self-reliant.
- About half the groups the project has established are now thriving with little officer support
- Providing a sounding board for ideas and for encouragement in the face of difficulty
- Offering an alternative form of support
- Standing with, understanding and supporting the needs of community groups
- Promoting community groups and enabling them to build up their profile  
(Church and Elster 2002)

The project has achieved the Convention of Scottish Local Authorities Gold Award for Social Inclusion in 2002, a “Gold Award” in the Chartered Institute of Environmental Health/ Municipal Journal ‘Green Apple’ Awards, and a Silver award in the Scottish Urban Regeneration

Forum Awards. The Moorpark Community Association centred on the town of Renfrew received the Queen’s Golden Jubilee Award in 2003, and the Disability Resource Centre another “Green Apple”.

Focus group work by Hall Aitken Ltd for the European Regional Development Fund stated that the “. . . participants agreed that the Sustainable Communities Project made a substantial impact on the lives of individuals, be it in personal or social development or to a lesser extent on economic circumstances.”

Many individuals took part in the Sustainable Communities Project’s activities as first time participants in community activities. There were demonstrable instances of health improvements.

Participants took part in activities such as gardening that would not be available in the absence of the Sustainable Communities Project. By taking part, individuals took steps towards improving their economic circumstances. (Hall Aitken 2002)

A survey of volunteers active in April 2001 shows the following impact on resident perceptions of changes they have made in relation to environmental issues.

<b>Participant Perceptions</b>	<b>% of Respondents who felt there was an improvement as a result of involvement with the project</b>
Environment	52% – Now know more about recycling 54% – Less litter 60% – Improved play area 95% – View the environment differently 86% – Agree that community is a better place to live as result
Health Awareness	30% – Have taken up healthy exercise such as hill walking
Learning/Personal Development	50% – Better planning/conference levels 46% – Attend community classes 34% – Have attended bridging courses to work or further education
Economic Status	60% – Working age participants; felt encouraged to return to work/learning 20% – Return to work
Community Involvement/ Capacity Building	68% – Increased community activity 48% – Contact with other groups made 51% – Now making contact with national organisations as a result 59% – Now making contact with other groups as a result

## Results

- **For Participants**
  - 85% feel more confident
  - 50% feel they have learnt organising/planning skills
  - 30% take up healthy pursuits
- **For the Council**
  - 60% of active project participants recycle
  - Practical evidence that 'local sustainability works'
  - Mainstreaming initiatives piloted by sustainable communities
  - 46 schools running 'Eco Schools' programme
- **For Renfrewshire**
  - Voluntary Sector replication - Lochwinnoch
  - Key part of Community Plan
  - Moving towards sustainability

## Lessons

A skilled community development approach was essential to achieve high levels of community participation, and to gently raise participant's horizons so they start to see the bigger picture.

Careful marketing of the project, through participating in award schemes and external research, has been valuable in securing continuation funding.

Success has attracted success and has made attracting funding easier, but it is difficult to harmonise a community led agenda with funders' requirements for specific outcomes, targets and milestones.

Communities can work wonders and their needs are paramount.

It is very popular with politicians across the political divide, as they can see the benefits for themselves within their communities.

## ... AND AS TO THE FUTURE

The Sustainable Communities Project has guaranteed funding until the end of 2004 and we are now in the early stages of preparing bids for a further three years funding from various agencies. Also, Renfrewshire is now one of 16 UK local authorities working on a major climate protection programme sponsored by the International Council

of Local Environmental Initiatives. I hope that this paper will encourage you to look to delivering Sustainable Development through Community Development.

If we can do it, so can you.

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**Websites:** [www.renfrewshire.gov.uk](http://www.renfrewshire.gov.uk)  
[www.communitywebnet.org.uk](http://www.communitywebnet.org.uk)



Paul Luyima, Chief EHO for Uganda who visited the East Midlands earlier in the year and attended the AGM of the East Midlands Centre of CIEH, is seen with the President Paul Smith.

Paul made an unexpected visit when stopping off in the UK on his way to the USA for a Conference. He made a short speech thanking the East Midlands Centre for formalising the links between East Midlands and Uganda that had grown from the links between Daventry and Iganga.



## KOSOVO – THE GOOD, THE BAD AND THE FOOD AGENCY

By Donald MacDonald

renovation, lacking in many of the basic amenities one would normally associate with an International Airport and it is very obvious that it doubles as a military airport. The Border



How many of you could point to Kosovo on a map? How many of you have even the remotest idea of where it is?

I am sure that to most of you Kosovo is somewhere you have seen on the television news channels over the past few years and it is associated with any or all of the following: violence, death, rioting, ethnic cleansing, ethnic intolerance, NATO bombing, NATO occupancy, UN resolutions, war crime tribunals in the Hague, seemingly never ending unrest and insoluble problems.

A year ago these would certainly have been my images of Kosovo and although I knew it was in the Balkans and was part of the troubled Former Republic of Yugoslavia I too would have been hard pressed to point to the exact spot on the map which delineates the non-country of Kosovo.

First impressions of a new destination are always the arrival airport and Pristine Airport certainly makes an impression. It is small, in need of

Policeman checking your passport can be a local or from almost any country in the world as one of the large contingent of UN police on short-term secondment from their own police force. When passing through Customs you realise that something else is different. The uniforms of the customs officers all have a badge saying 'UNMIK Customs'. UNMIK is short for 'The United Nations Mission in Kosovo' and although there is a provisional Government in Kosovo it is actually UNMIK who governs although some would say that it is NATO who really governs.

The 30-minute journey from the airport to the city teaches you to tell the difference between buildings, which are ruined because of neglect, buildings which are ruined because of fire and buildings that are ruined because of NATO bombs. With an experienced guide it also teaches you how to tell the difference between Albanian areas and Serb areas. It doesn't need an experienced guide, however, to show you that the enforcement of traffic law is in its infancy compared to the sophistication of, for example,

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Western Europe and the North America! As if that wasn't enough of a bonus in all my time in Kosova I never saw a Traffic Warden nor did I ever hear anyone complaining about receiving a parking fine!

Pristine isn't what one would describe as picturesque or a tourist attraction but it is charming mixture of old red roofed buildings, modern tenement blocks, endless street trading and markets, modern boutiques, modern office blocks, western style restaurants, local kebab kiosks, myriad street cafés, congested and potholed roads and innumerable ex-German Mercedes taxis.

The people, in spite of all the recent tragedy and suffering and the uncertain future are mostly friendly, kind, helpful, generally hard working and optimistic even if they are somewhat sceptical and cynical about the UN and its (lack of) achievements there.

There is an uneasy tension between the UN who basically expend energy trying to maintain the status quo, the Albanian majority who are impatient for independence, the Serbian minority who patiently await the withdrawal of NATO and the return of the Serbian army/police and the Serbian government who publicly oppose any talk of independence but privately, in all probability, would love to find a face saving back door to get rid of the problems of Kosovo and allow them all to get on with sorting out their own internal problems.

The governing structure is complex. Leaving aside for a moment the role of NATO as the final arbiter, the top of the governing tree is UNMIK. It is headed by a UN appointed chief who is the *de facto* leader of the country although arguably the *de jure* leader is the President appointed by the provisional government. The UN has four main pillars of Government and as part of one of these pillars is the Directorate of Rural Affairs (DRA) which had until the beginning of this year responsibility for most of the agriculture, veterinary and food sectors. The DRA still has 'reserved powers' with regard to Border Control and some forestry activities, although there is a Forestry Agency under the Ministry of Agriculture, Forestry and Rural Development (MAFRD). Most of its former activities, agriculture, veterinary and food, are now part of MAFRD.

Working alongside UNMIK is the Provisional Institution of Self Government (PISG) which has several Ministries including MAFRD and the Ministry of Health (MoH). A Premier heads up the parliament or Assembly and the members of the assembly are there as a result of a democratic election. The make up of the political parties is, to any outsider, baffling and can lead to difficulties when trying to agree a way forward into the future as all the parties seem to have differing, and frequently diametrically opposing, views. The structure of the Ministries is also not straightforward. The Minister of Agriculture must by UN regulation be a Serb therefore he takes his advice from Belgrade rather than his Ministry which in effect means he is usually sidelined and that the building always has a heavy police guard. The Ministry of Health has a different Minister every 18 months – each from an ethnic minority – during my time there last winter and spring it was a Turkish lady but now I believe it is a member of the Romany (Gypsy) community.

Food control at present is carried out mainly by the Municipalities with also some controls in MAFRD, MoH, DRA and the state veterinary service. Most of the laws are ex Yugoslavian laws although these are in process of being harmonised with EU legislation. There was the normal 'discussion' which one finds in nearly every country about which Ministry and which profession should be in charge of food control but this has been largely addressed by the proposals for a new Food Agency.

I was asked in October 2003 to take over the leadership of an EU project to recommend the structure of a proposed 'food control agency'. Ned Kingcott in London and Ray Ellard in Dublin had already carried out the groundwork for this a couple of years before. It was a rather difficult and rushed project as the previous Team Leader had been asked to leave due to unsatisfactory performance and therefore I was faced with the task of taking over half way through the time and money but, as it turned out, almost at the beginning of the work.

As a managerial or institution building exercise it was fairly straightforward. What made it interesting were the complex political situation, the competing ambitions of Ministries and professions and the very tight timetable.

The solution finally proposed to and agreed by all parties was one to fit the situation and not necessarily one that would be the ideal choice in other circumstances or countries.

An executive Agency, called the Kosovo Food Safety Agency, is to be formed within MAFRD to carry out all inspection functions. This will consist of all appropriate inspection staff personnel from the municipalities and the centrally employed staff from MAFRD and MoH including Sanitary, Phyto-sanitary and Veterinary staff. It will be headed by a Chief Executive.

In order to achieve constitutional separation all policy, law making, external monitoring and auditing of the Kosovo Food Safety Agency and so on will be carried out by a new Food Safety Directorate based in MoH which will also be responsible for all International agreements.

To ensure a unified approach to both strategic planning and complete harmonisation between Ministries a Board will be appointed consisting of a representative from each of the following: Ministry of Health (but not a staff member from the Directorate of Food Safety), Ministry of Agriculture, Forestry and Rural Development (But not a staff member of the Kosovo Food Safety Agency), Ministry of Economics and Finance, Municipalities, Food Processing Industry, Hotel and Restaurant Industry and Consumers (There is at present no consumer organisation in Kosovo but the UN Office of Gender Affairs has agreed to find an appropriate representative from their networks).

In addition a Chairperson will be appointed who is independent of the above groups. This person will be appointed for his/her leadership and communication skills and will have an existing high profile background.

The Food Safety Board will be directly responsible to the Premier's Office. This will provide the necessary checks and balances between the two Ministries involved and give the public and the food industry the confidence that the public health needs, consumer needs and industry needs are being considered in a fair and transparent manner.

The scene is then set for a major step forward in food safety in Kosovo which will at least begin to serve one of the policy aims of MAFRD – to give the consumers the confidence to buy locally produced food rather than imports and therefore in

the long term attract people back to the rural areas and profitable and productive farming. The next stages, which will be covered in a follow up EU project, are to get the above proposals up and running with EU harmonised legislation and appropriately trained staff.

What does the future hold for Kosovo? Crystal ball gazing is a rather specialised skill but my guess is that independence is still a few years and a few heartaches away. Membership of the EU even further away but the healing process between the two communities needs to be more advanced before any of these two objectives can become close. Sadly, it seems that the healing process, although becoming evident in small ways, still has a long way to go.

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*Renato Mashauri, Tanzania, and Michael Halls, Scotland, in Durban at the 8th World Congress*

## WEST NILE DISEASE - A GLOBAL THREAT

by Don Lewis Regional Chairman  
Americas Region IFEH

### Background and general discussion

It has been over one hundred and twenty years since arthropods were first shown to transmit human diseases. Indeed hundreds of bacteria, viruses, protozoa and helminths have been found to require a haematophagous (blood-sucking) arthropod for transmission between vertebrate hosts (1)

Approximately 100 of the more than 520 known arboviruses cause human disease. At least 20 of these might fulfil the criteria for emerging viruses, appearing in epidemic form at generally unpredictable intervals. These viruses are usually spread by the bites of arthropods, but some can also be transmitted by other means, such as through milk, excreta or aerosols. The arbovirus infections are maintained in nature principally, or to an important extent, through biological transmission between susceptible vertebrate hosts by blood-sucking insects; they multiply to produce viraemia in vertebrates. In the tissues of insect vectors these viruses multiply and are passed on to new vertebrate host after an extrinsic incubation period. The names by which these viruses are known are often place names such as West Nile or Rift Valley, or are based on clinical characteristics like Yellow Fever. (6)

The historic evidence of the implication of haematophagous arthropods in the spread of diseases to the human population is well documented, and it is known that from the seventeenth through the early twentieth century; Malaria, Dengue Fever, Yellow Fever, Filariasis, the Plague, Leishmaniasis, Trypanosomiasis, louse borne Typhus and other vector-borne diseases, were responsible for more human deaths and diseases than all other causes combined. In addition to the disease burden, it is also a known fact that the development of large areas of the tropics were stymied because of the prohibitive effect of the disease and pests conditions caused by haematophagous arthropods. (1) One emerging global arboviral threat is the West Nile Virus, which was first isolated from a sick woman in the West Nile district of Uganda in 1937. The virus and its disease (West Nile fever or West Nile

encephalomyelitis) has become very widespread and has been detected in humans, animals and mosquitoes in countries throughout Europe, Asia and Africa and more recently the Americas.

Over the period since its isolation sporadic cases and outbreaks of West Nile fever in humans and horses have occurred in countries as diverse and geographically dispersed as the Central African Republic, Madagascar, South Africa, Egypt, France, Romania, Israel, Italy, Russia, and India. (2) Of significance is the fact that from the initial recorded outbreak in Uganda in 1937 until the summer of 1999 when the virus was first seen in New York City, outbreaks of this disease were confined to the Old World. Thus the spread of the disease to the Americas has ushered in a new chapter in the movement of this particular Arbovirus across the globe.

Prior to the entrance of the disease into the New World there have been major outbreaks or epidemics in many countries at different period of time. Such epidemics and outbreaks occurred in:

- The western Mediterranean and southern Russia - 1962-64:
- Belarus and Ukraine - 1970's and 1980's
- Cape Province of South Africa, following heavy rains; approximately 3000 reported cases - 1974
- Algeria; approximately 50 cases reported - 1994
- Romania (more than 500 cases) - 1996-97
- Czech Republic - 1997
- Italy - 1998

Of significance is the fact that hundreds of cases have been reported in Israel over the years with the last outbreak occurring in year 2000. Cases and outbreaks have also occurred in Azerbaijan, Central African Republic, Democratic Republic of Congo (former Zaire), Egypt, Ethiopia, India, Madagascar, Nigeria, Pakistan, Senegal, Sudan, and in a few European countries. The last outbreak prior to the entrance of the disease into the New World occurred in Romania in 1997 and significantly the same year that the virus entered the United States (1999) there was an outbreak in Russia. (2)

It is noteworthy that the timing of these outbreaks in the eastern parts of Europe coincided with periods of political upheaval and significant migratory movements of large portions of the populations of these countries, such factors being helpful to the spread of the virus.

## Purpose

The purpose of this paper is to review and highlight the spread and movement of the West Nile Disease Virus across the globe, so as to indicate possible future trends in spread of the disease, as well as to engender action to mitigate the further spread to countries and regions so far unaffected.

## Scope of the threat

With the entrance of the disease into the Americas, beginning with the initial out break in New York City in the summer of 1999, the disease now for the first time since the first outbreak in Uganda in 1937 has the potential to affect almost every country on the globe. Robin Mckie writing in the London Observer of September 28, 2000 says, “West Nile Fever looks ready to become a global threat of the 21st. Century”. He went on to explain that in August of the same year, there were twelve deaths in Israel due to the disease, along with outbreaks in Jordan and France. (3)

But possibly the most significant indication of the scope and deadly potential of this disease is the alarming speed of the spread and the impact on the North American continent. The reports from the Centre For Disease Control (CDC) on the outbreak in the United States of America indicate that from 1999 through 2001 there were 149 cases of human West Nile Virus infection, including 18 deaths. For the year 2002, a total of 4,156 cases were reported, including 284 fatalities. The report for year 2003 indicates that from the first recorded case in June to the last report on December 10th. there were 8,734 cases including 208 fatalities in 46 states. (4)

The Canadian experience is similar though on a smaller scale; as from one human death in 1999 it moved to 10 deaths from 416 cases in 2002. For the period January to November 2003, there were 1300 cases including 10 fatalities. (4) Arbovirus activity, particularly of flaviviruses, is well documented in the Caribbean and Mexico and as such, it is important to refer at this point to other indicators of the scope of the spread of this disease. Studies done by the Smithsonian Institute in Jamaica and other Caribbean territories in the spring of 2002, revealed that from an intensive avian sero-survey initiated in Jamaica, Puerto Rico, and Mexico, >1,600 specimens were collected from resident and non-

resident neo-tropical migratory birds before their northerly migrations. Plaque reduction neutralization test results indicated specific neutralizing antibodies to West Nile virus in 11 resident species from Jamaica. The results from this study suggest that WNV now appears to be established in Jamaica, on the basis of the neutralizing antibodies to WNV found in the resident bird population. (5)

Neutralizing antibodies to WNV in migratory birds collected in Mexico and Puerto Rico, coupled with the apparent absence of antibody to WNV in the resident bird population, indicate that infection likely occurred in an enzootic area of the United States. This observation also shows that individual birds from at least three species of neo-tropical migratory birds have survived WNV infection and may serve as hosts for spreading the virus. (5)

## Factors influencing threat

Infectious diseases are a leading cause of death, accounting for a quarter to a third of the estimated 54 million deaths worldwide in 1998. (8) The spread of infectious diseases results as much from changes in human behaviour—including lifestyles and land use patterns, increased trade and travel, and inappropriate use of antibiotic drugs—as from mutations in pathogens. (1)

The factors responsible for the emergence/resurgence of vector-borne diseases are complex. They include insecticide and drug resistance, changes in public health policy, demographic and societal changes, and genetic changes in pathogens. (1)

Public health policy decisions have greatly decreased the resources for surveillance, prevention, and control of vector-borne diseases in the 1960s and 1970s, primarily because control programs had reduced the public health threat from these diseases. Those policy decisions, which emphasize emergency response and de-emphasize prevention programs, and the technical problems of insecticide and drug resistance, as well as too much emphasis on insecticide sprays to kill adult mosquitoes, contributed greatly to the resurgence of diseases such as malaria and dengue as well as the current West Nile situation in the Americas. Decreased resources for infectious diseases in general resulted in the discontinuation or merger of many programs and ultimately to the deterioration of the public health infrastructure

required to deal with these diseases. Moreover, training programs in vector-borne diseases decreased dramatically after 1970. Thus, at present, there is a critical shortage of specialists trained to respond effectively to the resurgence of vector-borne diseases. A related problem is the lack of preventive medicine training in most medical schools, because the curative approach and emphasis on high-tech solutions to disease control have led most physicians, health officials, and the public to rely on “magic bullets” to cure an illness or control an epidemic. (1)

Major global demographic and societal changes of the past 50 years have directly affected the emergence/resurgence of vector-borne and other infectious diseases. Unprecedented population growth, mostly in developing countries, resulted in major movements of people, primarily to urban centres. This unplanned and uncontrolled urbanization (inadequate housing, deteriorating water, sewage, and waste management systems) produced ideal conditions for increased transmission of mosquito-borne, rodent-borne, and water-borne diseases. The prospects for the future are not good; it is projected that nearly all of the world’s population growth in the next 25 years will occur in the urban centres of developing countries, many of them in tropical areas where vector-borne diseases occur most frequently. (1)

Other societal changes, such as agricultural practices and deforestation, increase the risk for vector-borne disease transmission. Many irrigation systems and dams have been built in the past 50 years without regard to their effect on vector-borne diseases. Similarly, tropical forests are being cleared at an increasing rate, and agricultural practices such as rice production have also increased. (See Table 1)

In addition many consumer products make ideal breeding sites for domesticated mosquitoes. Packaged in non-biodegradable plastics, cellophanes, and tin, these products tend to be discarded in the environment where they collect water. Discarded automobile tires, many in the domestic environment, domestic environment, make ideal mosquito breeding places as well as rat and rodent harbourages. Container shipping and the global used tire industry have contributed to the increased geographic distribution of selected mosquito species that lay their eggs in used tires. (1)

Finally, the jet airplane has had a major influence on global demographics and trade. The airplane provides the ideal mechanism for transporting pathogens between population centres. The result is a constant movement of viruses, bacteria and parasites, among cities, countries, regions, and continent, as was demonstrated in the recent SARS outbreak. (1)

Climate change (e.g., global warming and El Niño Southern Oscillation) is often cited as the cause for the emergence/resurgence of vector-borne diseases, especially malaria, dengue, and yellow fever. While meteorological factors such as temperature, rainfall, and humidity influence the transmission dynamics of vector-borne diseases, climate change has not yet been scientifically proven to have caused the emergence/resurgence of any of the vector-borne diseases described above. (1)

The most serious manifestation of WN virus infection is fatal encephalitis (inflammation of the brain) in humans and horses, as well as mortality in certain domestic and wild birds. The virus infects numerous types of wild birds, over 75 species, from house sparrows to crows.

**Table 1. Influences on emergent/resurgent vector-borne diseases**

<b>Urbanization</b>	<b>Deforestation</b>	<b>Agricultural Practices</b>
Dengue fever	Loaiasis	Malaria
Malaria	Onchocerciasis	Japanese encephalitis
Yellow fever	Malaria	St. Louis encephalitis
Chickungunya	Leishmaniasis	West Nile fever
Epidemic polyarthritis	Yellow fever	Oropouche
West Nile fever	Kyasanur Forest disease	Western equine encephalitis
St. Louis encephalitis	La Crosse encephalitis	Venezuelan equine encephalitis
Lyme disease	Eastern equine encephalitis	
Ehrlichiosis	Lyme disease	
Plague		

### Implications of the threat

Considering the historical record for how viruses spread once they are established in a geographical area, North Americans should expect the disease to become an endemic problem for them as well. (7)

Mosquitoes spread it among birds, and then to people.

The most poignant impact of West Nile disease in the Americas is seen from the morbidity and mortality statistics of the United States and Canada. The combined morbidity and mortality figures indicate approximately 15,000 cases and over 500 deaths since the outbreak began in 1999. (4)

### Recommendations

Reversing the trend of emergent/resurgent vector-borne diseases and in particular West Nile Disease is a major challenge. Vaccines, available for only a few diseases (yellow fever, Japanese encephalitis, tick-borne encephalitis, tularaemia, plague), are not widely used. Vaccine prospects for major vector-borne diseases are not good. With the exception of malaria, few other vector-borne diseases have funding for vaccine research. (1)

The following recommendations are therefore put forward: -

- Enhanced vector control programmes over the ensuing years
- Research and development into new and improved environmentally safe insecticide
- Research into alternative approaches in vector control such as biological control.
- Develop and implement integrated prevention strategies for endemic/enzootic disease areas
- Provision for training of vector control specialist
- Policy changes that support Public Health approaches to disease prevention
- Greater emphasis on Public education programmes as it relates to the disease, how it is transmitted and how to reduce the risk of exposure.

The implications for the world make it imperative that action be taken at different levels: international, governmental and individual. At the international level it is important that existing agencies and institutions such as WHO/PAHO be strengthened to continue to meet the challenges

that are ahead. At the governmental level the need for the provision of resources and appropriate policy framework along with improved public education programmes is evident. And finally, individuals everywhere have a responsibility to educate and inform themselves and to be alert to the dangers posed by infectious disease like West Nile Disease.

With the effort of the peoples of the world acting in their particular niche and with the institutional and policy measures of international bodies and local governments the challenge of emerging/resurgent diseases such as West Nile can be successfully controlled.

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*The next meeting of the  
IFEH Council will be held  
in Vancouver, Canada  
on 8th & 9th October 2005*

## **REGIONAL ENVIRONMENTAL HEALTH COLLABORATION - in Västra Götaland, SWEDEN**

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### **Abstract**

The aim of this collaboration is to make environmental health work more efficient, both time and cost effective by actively supporting local authorities in the municipalities. This way of utilising local environmental health resources and effectively spreading knowledge also results in a high and level quality of protection work in our region.

The project has been running for over four years and there are now plans to make it permanent. The Västra Götaland County Administration, the four Regional Associations of Local Authorities, Region Västra Götaland, and the Environmental Health Offices in all the 49 municipalities in the region jointly finance it.

Suggestions for activities are made in the municipalities, and a steering group decides on a yearly work plan. Each activity is developed in project form. A project group is formed for each project consisting of volunteers (inspectors interested in the issue) who with the assistance of a working group collect all the necessary information to be passed on to the Environmental Health Offices wanting to participate in the projects.

Creating these projects or “campaigns”, and providing all the practical materials necessary for the local environmental health professionals to easily get started give the support for the municipalities. They get for instance summaries of the legislation involved, checklists, sample letters, and fact sheets for business owners, and advice on legal action etc. The projects have been, to name just a few, about noise in public places, waste handling, indoor climate, small waste water treatment systems, PCB, pesticide use etc.

Two leaders/ co-ordinators are employed in the collaboration. They are, together with the project groups of each activity, responsible for compiling

written reports from the results gathered from the participating municipalities. The reports are widely disseminated and the projects usually get very good media coverage. So the input from each environmental health professional/ municipality may be small, but the impact of each project is big in Västra Götaland!

### **Why do we have regional environmental health collaboration?**

It really ought to be the responsibility of the national bodies - like the Swedish Environmental Protection Agency or the National Board of Health and Welfare or the National Chemicals Inspectorate - to provide the local authorities with practical guidelines for how to implement the many complex environment and health laws and regulations effectively. They do their best, but there is simply not enough money for developing such help for improving the quality and uniformity of the local supervision in all the different topics.

(We understand that in some English-speaking countries the national Environmental Health Officers Associations sometimes produce specialist literature that might also be used in other countries, legislation permitting. In Sweden, being a very small country with an EHOA with some 1,000 members, and a board working on an honorary basis, publishing literature in our small language would be defined as a venture.)

My guess is that in many places in the world there are more or less informal groups of colleagues from Environmental Health Offices in neighbouring towns who meet and discuss environmental health work, for instance chemicals and food and other topics. This is a simple way to get help to interpret the national laws and rules, which are sometimes not always so easily digested and often lack the practical approach. Maybe the groups also agree upon the best methods and ways of carrying out the local inspections, and the inspectors might even have decided to do synchronised environmental health supervision in the area.

Environmental Health Collaboration Västra Götaland has developed this informal but very appreciated way of co-operation a bit further in their region.

### **How it all started**

County Västra Götaland in western Sweden is a merger of three administrative boards in 1998.



There are 1.5 million inhabitants in the new county, which makes it the second largest among the 21 counties in Sweden.

Region Västra Götaland was formed in 1999 by the three former county councils (health care is the major task). Promoting environmentally propelled development is one of the main tasks within the responsibility for sustainable regional development, which is a goal for the county council.

There had been active environmental co-operation groups in two of the old counties before, hosted by their Regional Associations of Local Authorities. Now when there were suddenly as many as 49 municipalities and four Regional Associations of Local Authorities in the same county, the question was how to continue the collaboration. This was not only because these so called Environmental supervision groups were appreciated as a very useful way of getting together with colleagues to talk shop, but also to help install a cooperative attitude in the new much larger region.

In the summer of 1999 it was decided that the collaboration should be developed further by creating the project "Environmental Health Collaboration Västra Götaland" (In Swedish: Miljösamverkan Västra Götaland). The project was funded mainly by the County Administration and Region Västra Götaland but also by the four Regional Associations of Local Authorities to which the municipalities pay annual fees. It was also agreed that the Region Västra Götaland Environmental Development Secretariat (which I represent) should be responsible for the administration for the project and host a web site.

The former project leader from the most active previous co-operation groups, Mr Lasse Lind, with a reputation of being extremely competent and productive, was employed part-time to be the project leader for the whole region (working also as an environmental health inspector in one of the municipalities).

Since 1999 the project has grown and each year the work extended. Now there is also a part time assistant project leader, Ms Cecilia Lunder, a very experienced environmental health professional with great capacity. Together the two project leaders take up 1.5 posts.

### **The goals for Environmental Health Collaboration Västra Götaland**

The aim is to make environmental health work more efficient in Västra Götaland and to support both supervision and information tasks involved in this work. The collaboration is meant to be resource- saving and to enable environmental health work to be more in-depth. All activities should be concrete, well defined and operational. This is achieved by:

- Producing useful information about topics of current interest
- Producing practical supervision and inspection guidelines
- Creating and running purposeful projects and campaigns
- Holding seminars and courses in connection with projects and campaigns

### **A Democratic Process**

#### **Steering group**

There is a steering group for Environmental Health Collaboration Västra Götaland that consists of eight people, one senior representative from each major funding body - for instance my employer, and from three municipalities. They are responsible for policy decisions and the yearly work plan, for budget matters and of course for reporting back to their own organisations.

#### **Working group**

There is also a working group of eight people, led by the two project co-ordinators and with representatives from the major organisations as well as from the municipalities. There is one environmental health professional from each former county plus one from Göteborg, the biggest city in Västra Götaland, to create some kind of geographical equality.

The working group prepares a draft work plan for the coming year by summing up the input about issues that the Environmental Health Offices have considered to be important to receive support. This group then puts forward the draft plan to the steering group, who eventually decide on the work plan for the next year.

For some activities this group acts as a project group, but otherwise it is the working group's responsibility to make sure that project groups are formed for each project. The working group also produces a newsletter.

## ENVIRONMENT AND HEALTH INTERNATIONAL

The project leaders are the ones who - though with support from the others – plan the different projects and campaigns in more detail.

### Contact persons

In every Environmental Health Office in the region there is a contact person for Environmental Health Collaboration Västra Götaland. This is any interested inspector/officer (of course with the approval of their colleagues and employers) who volunteers to be the link between the municipalities and mainly the project leaders.

### Project groups

Project groups are formed for most of the activities or campaigns on the yearly work plan. The person(s) who suggested a certain project in the first place, is often the first to join the group and take active part in the planning. Other environmental health officers with an interest in the issue will also volunteer to join the group to take on responsibility for the project.

One of the project leaders is always a member of each project group, often acting as the secretary. The project leader sees to it that the relevant information material is put together. The other group members contribute with comments and checking on facts and figures etc.

Apart from the project leader and the environmental health professionals, there are often representatives from the county administration and other local or regional authorities who are invited to join the groups. Sometimes other expertise is needed and people from different organisations or businesses are also made members of the project groups.

### How the projects and campaigns are chosen

Environmental Health Collaboration Västra Götaland does not engage in projects about food safety or animal welfare. These are parts of the Swedish environmental health tasks, but there are other collaboration groups engaged in these areas, though not on such a scale or as organised as our regional group. (In Sweden, by the way, occupational health is not included in our tasks.)

The topics covered by the collaboration all fall under the Environmental Code (a framework law which in 1999 replaced 15 acts, for instance the previous Environmental Protection Act, the Health Protection Act, the Chemical Products Act, the Water Act and the Natural Resources Act).

If some new piece of national legislation or a new regulation is issued, it often becomes natural to develop a project about how to implement it in the region.

The suggestions for new projects can come at any time from any environmental health inspector or other official, who wishes a certain environmental issue – that may be a local problem in a certain area- to be looked into. Each year a questionnaire is sent to all the Environmental Health Offices. They are asked to choose from a number of proposed projects with short descriptions and to grade their interest from 0 - 3 (0 being “we are not interested in this” and 3 is “very interesting, we will participate in this project”).

Project ideas that have been rejected or not given priority to by the steering group are also presented. The environmental health offices are encouraged to comment on them and make suggestions about if or how the approach to the problem could be altered, or how results might be reached with other methods. (This can sometimes make a far-fetched idea more realistic and possibly result in a project after all.)

The rest of the questions ask for any other suggestions for projects (preferably grade “3”!), and for any ideas or comments about methods, information or other practical things. This is to scan the interest and make the work plan more accurate, and to constantly strive to improve the work and organisation of the whole collaboration project.

The working group is responsible for both putting the questionnaire together and collecting and processing the data from the municipalities, and putting down the best activities in the draft yearly work plan. The steering group eventually decides which projects are chosen for the next work plan (or if any unforeseen activity is to be started during the year).

### The activities

What kinds of projects have been developed? Since Environmental Health Collaboration Västra Götaland started in 1999 about 20 projects or campaigns have been developed, ranging from environmental protection to health hazards.

These twelve projects were run during 2003:

1. Hazardous waste
2. Radon
3. Oil cisterns
4. Car washes
5. Planning of needs for resources for supervision and monitoring
6. Storm water
7. Hazardous noise (follow up)
8. Self-monitoring/internal control
9. Indoor climate
10. PCB-free buildings
11. Fires and pollution control
12. Contractors and contractor work

(the projects numbered from 8 to 12 were continued from 2002)

The collaboration is not a supervisory authority, and it is up to each Environmental Health Office /municipality (and the County Administrative Board in some cases) if they want to join in the collaboration projects or not. They also are the ones to take any legal action, if the law requires this, during the local supervision.

It is totally voluntary to participate in none or a few or all the projects and campaigns. But since most projects were suggested by the municipalities and thus must have been considered worthwhile, the participation rate is very high.

### **How the projects are run**

Depending on the type of project, the project groups decide on which kind of activities are relevant. Some projects are run on a very modest scale, mainly with documents sent through e-mail.

During the collection of background material for Environmental Health Collaboration Västra Götaland projects, contacts are made with different experts and authorities and people from trade associations etc. This is done in order to get all the facts, and receive professional input from all sides to make the guidelines and other information as complete and correct as possible. Some of the projects for instance have involved the Swedish National Testing and Research Institute, Occupational Health Authorities, Rescue services (fire-brigades), local energy planning authorities, medical professionals and others.

In most projects material is produced to help the individual environmental health inspector in her or his local supervision, for instance guidelines including:

- legislation summaries
- tips and methods for inspections
- check-lists
- fact sheets for business owners
- advice on legal action

All this information is available on the project website ready to be downloaded and used.

Other projects are accompanied by campaigns, when press releases are sent out and launch meetings are held when the support material is presented for the environmental health inspectors. Sometimes seminars are held, or information materials are distributed to special target groups, for instance business owners, rescue personnel, landlords, farmers or school authorities.

### **Communicating within the collaboration**

The project co-ordinators communicate with the contact persons mainly via e-mail. Only the printed reports and the newsletter are sent by ordinary mail.

Information is also exchanged at the regional meetings that are held a couple of times a year, when the project leaders meet the representatives from all the Environmental Health Offices in the 49 municipalities.

The Environmental Health Collaboration Västra Götaland has its own web site, which is a very important source of information both for the people who are involved in the activities in Västra Götaland, but also for many other visitors. The site is updated almost every week, and all the material produced in the different projects, reports, guidelines, fact sheets etc, is put there. The address is [www.miljosamverkan.se](http://www.miljosamverkan.se).

### **Economy**

The total budget for the Environmental Health Collaboration Västra Götaland project is 1,100,000 Swedish kronor per year (approximately 120,000 Euro or 900,000 Rand). In 2003 the cost was divided between the parties as follows: Region Västra Götaland 45%, the County Administrative Board 22%, and the Regional Associations of Local Authorities 33% divided by four.

The main part of the money goes to pay the salaries for the project leaders, and the second largest sum is for printing and distributing project reports and a quarterly four-page newsletter. The costs for seminars and courses are almost covered

at cost price by the participants, but there are some additional costs for these and other meetings.

The time spent by any environmental health professional who participates in the working group or a project group, is counted as a part of his or her ordinary job. If somebody with special expertise is needed in a project for a longer period, his or her employer can be compensated for this contribution. The collaboration is all about sharing professional ideas and helping others. If you for instance do a lot of research for producing information to use in a project, someone else will work many hours for another project, which you and all the other colleagues in the region will benefit from eventually.

### **The results**

After a project is finished, the working group, or a project group, collects all the necessary information about the outcomes from all the municipalities who participated. A report is written about the project, its aims and goals, methods and results etc, and of course suggestions for further actions are made if it is considered necessary. Such reports are made for all projects that include supervision campaigns, not for the projects where the only purpose is to produce guidelines or information for the use of environmental health professionals.

The reports are sent out to every Environmental Health Office as well as to the organisations and different authorities involved, and others who have contributed to the project. Media will also be informed about the results, usually by press releases. The projects have often generated very good media coverage, with both articles in the local and regional (sometimes also the national) newspapers and spots on the TV-news.

The printed reports are very often ordered (at cost price) by municipalities in other regions, by other County Administrative Boards in the country, and even by people at the Swedish Environment Protection Agency and the National Board of Health and Welfare!

Our web statistics show that the reports, both the "older" and the more recent ones are very popular and often downloaded by the numerous visitors to the web. (From 2004 the reports will not be printed but only available on the web.)

Some statistics from Environmental Health Collaboration Västra Götaland show that since this

project started in 1999, 22 out of the 49 Environmental Health Offices in the municipalities have participated in the working group or project groups. 37 Environmental Health offices have joined in two or more out of the five projects that were evaluated for these statistics. Around 70 people per year are active in the collaboration. Over 40 meetings a year are held in the different project groups.

### **The future?**

In January 2004 the results of an independent audit of Environmental Health Collaboration Västra Götaland will be ready. This was requested by the financiers to be able to decide which form this collaboration is to take in the future, if or how to make it more permanent. It has been run as a project for almost five years.

Hopefully the results indicate what everybody involved in this collaboration project has felt all along, that this is an extremely worthwhile and effective way of working together in the environmental health field. To be part of this regional collaboration project creates a sense of community and pride, knowing that it this is well known and respected.

The collaboration has an educational side to it, to raise the competence both of environmental health professionals and other officials from other authorities involved in different projects. The business owners and other objects of our supervision, which receive fact sheets or are sometimes even invited to seminars, also gain knowledge from the projects.

The good media coverage is also advantageous in this respect, because the environmental health issues and what is "right" to do are described and spread both to other professionals and politicians and to people involved in the problems, and not least to the general public.

Two other regions in Sweden have now started similar co-operation projects, and more are planning for it.

**Deadline for submission of articles for the next issue is 31st January 2005**

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## International Federation of Environmental Health Policy Statement No.8 - Proposed Final Draft

### Declaration on the Use of Sustainability Indicators

WHEREAS the environment is endowed with its own integrity and dynamic balance; and  
 WHEREAS each and every person and the communities of peoples bear a responsibility for the care of the environment; and  
 WHEREAS the International Federation of Environmental Health (the Federation) is committed to caring for the environment in the interest of world health; and  
 WHEREAS the Federation, in pursuing this commitment recognises the need for Sustainability(1) indicators to provide benchmarks for progress in this area; and  
 WHEREAS the Federation, recognising the dignity of the human person and in keeping with the principles of social justice, supports the Aarhus Convention(2) and, in particular, the principle of the right of citizens to “access to information on the environment”; and  
 WHEREAS the Federation strongly endorses the use of sustainability indicators to measure and assess progress toward sustainability; and  
 WHEREAS the Federation understands that sustainability indicators are multidimensional as well as sectoral measures by which it becomes possible to show the development and links among a community’s economy, environment, health, cultural and social conditions; and  
 WHEREAS the Federation understands sustainability indicators to be indicators or frameworks of indicators that follow the Bellagio(3) principles; and  
 WHEREAS to be effective, sustainability indicators should be easy to understand, relevant, reliable and based on accessible data; and  
 WHEREAS the Federation acknowledges that citizens and communities should be able to access information which is presented on the basis of sustainability indicators; and  
 WHEREAS the Federation holds that Citizens and communities should be able to participate in the selection of sustainability indicators so that they are meaningful to them; and  
 WHEREAS the Federation recognises that providing citizens and communities with access to information is a mark of good governance and a prerequisite for sustainable development; and  
 WHEREAS the Federation believes that only by

using indicators will it be possible to decide objectively whether changes over time represent a move towards or away from sustainability; and that it is only by having this knowledge that it will be possible to respond in the most effective way; and

WHEREAS the Federation believes that it is only by relying on robust indicator values that specific targets can be set and effective solutions implemented; and

WHEREAS the Federation initiated a project on Sustainability Indicators based on international sharing, co-operation and participation which is now entering a new phase in co- operation with other international partners; and now

Therefore, the Federation

- Calls upon local, regional and national authorities responsible for environment and health, in conjunction with their citizens, to set up effective monitoring systems, using sustainability indicators; and
- Calls upon its members to actively encourage local, regional and national authorities to establish such monitoring systems, to make them easily accessible to citizens and to share them through mechanisms such as the Federation’s project on sustainability indicators
- Encourages, in the establishment and implementation of such monitoring systems, the application of the social principles of solidarity(4) and subsidiarity (5); and the enculturation(6) of the monitoring programmes to satisfy local circumstances

*1 Sustainability: development today must not undermine the development and environment needs of present and future generations.*

*2 United National Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters – done at Aarhus, Denmark, 25th June 1998.*

*3 In 1996, in cooperation with a group of leading international practitioners, the International Institute for Sustainable Development (IISD) developed general guidelines for the practical assessment toward sustainable development, commonly known as the Bellagio Principles.*

*4 Solidarity: the mindset that recognises the interdependence of all human beings.*

*5 Subsidiarity: decisions are taken as close as possible to the level at which they can be effectively implemented.*

*6 Enculturation: framing as to be sensitive and relevant to the culture.*

## **UNDERSTANDING CONFORMITY ASSESSMENT AND ITS RELATIONSHIP TO ENVIRONMENTAL HEALTH**

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Underwriters Laboratories Inc. Northbrook,  
Illinois, USA**

Environmental Health professionals are familiar with requirements for “approved” products in many program areas such as drinking water additives and equipment, swimming pool equipment, and food service equipment. However, many are unfamiliar with what this “approval” really means. This presentation will provide the basic principles of product approval through conformity assessment by addressing major aspects of the certification process. These aspects include (1) what is conformity assessment and why it is important, (2) what are standards, and what is their relationship to conformity assessment, (3) the importance of certification, and (4) an example of how this certification process works.

### **What is conformity assessment?**

Simply put, it is a process whereby a product, service, process, or system is evaluated against specific requirements. For the Environmental Health field, these requirements are based mainly on health-related criteria.

### **Where does conformity assessment come from?**

It is a “need driven” process. A need to insure that products are safe to use, are not going to cause adverse health effects, or that the product is able to do what the manufacturer claims it can do.

### **Who initiates the conformity assessment need for a product?**

The need for conformity assessment can be initiated by a variety of sources. A governmental agency, whether at a Federal, State, or Local level, can initiate this need. Code organizations, such as those dealing with plumbing and mechanical codes may also initiate a need for conformity assessment. A product manufacturer or group of manufacturers may want to provide a means for the consumer or regulator to verify that their product meets certain claims they have made. To insure this, the manufacturer(s) can also initiate a need for conformity assessment services. Finally, the general public can demand products meet specific requirements, and thereby initiate the need for conformity assessment services for the product.

### **Why is conformity assessment important?**

There are product manufacturers who make claims about their products that may be misleading. Others may have products that do everything the manufacturer claims it will. How can a regulator or consumer differentiate between these two types of manufacturers?

Conformity assessment will provide a means for the manufacturer to verify that the claims made can be substantiated. In other words, it provides a means to distinguish between conscientious manufacturers and disreputable ones.

As a consumer, for example a restaurant owner, conformity assessment is important in that it provides reliability. The consumer is receiving the correct product, which meets the applicable requirements, as verified through the conformity assessment process.

As a regulator, conformity assessment provides you with the assurance that the product meets all applicable requirements, thus making your job of enforcing regulations much easier. Without conformity assessment and organizations that conduct these assessments, you, as the regulator, would need to verify each product’s compliance with the applicable standards. Almost all health departments and similar regulatory authorities lack the personnel, expertise, equipment, and funds to conduct these product verifications.

### **What activities are included in the conformity assessment process?**

This process involves numerous activities including sample testing, inspection of products, evaluation of the manufacturing process, certification of products, and possibly management system registration.

### **Why a third party?**

In the Environmental Health field, most regulations that require product conformance with specific standards, specify that this conformance be verified by a third party conformity assessment organizations. This takes the burden of verification off the regulatory authority, and provides an unbiased evaluation of the product.

In other instances, the consumer is the driving force behind third-party certification. The consumer wants the product evaluation to be conducted by a third party to assure them that the product will perform as expected, and that

complete neutrality was used in making this determination. This only makes sense. If the manufacturer conducted the evaluation of the product or its representative, how can the consumer, or regulator for that matter, be assured that the evaluation was not influenced by the relationship between the manufacturer and the evaluator?

Along this same line, the manufacturer looks to a third party for conformity assessment services as a means of market differentiation. Which manufacturer would most likely sell their product – one with third party certification product verification, or one who simply advertises compliance?

However, there are instances in which product certification is not required, nor are there standards available to evaluate products to. In these cases, both the consumer and regulator are left to make their own choices of purchase or acceptance based on what information they are able to obtain from various sources.

It should be easy to see that conformity assessment services performed by a third party are the best way to go.

These third party conformity assessment organizations may seek accreditation of their programs as a declaration of competence.

Why do they seek accreditation? To distinguish themselves from other conformity assessment organizations by having an impartial evaluation of their competence based upon internationally recognized criteria. Accreditation assures the manufacturers, consumers, and regulators that the organization has the proper personnel, equipment, processes, and ability to conduct product evaluations in the proper manner.

Conformity assessment organizations can obtain accreditation from a variety of sources. However, national accreditation is the most sought after. Examples of such accreditation would be the American National Standards Institute (ANSI), the United Kingdom Accreditation Services (UKAS), and the Japanese Ministry of Economy, Trade and Industry (METI).

Now that you have a general background of conformity assessment, let's turn our attention to the documents that are used to verify product

compliance. These documents are called Standards. A standard is a formal, published collection of requirements for evaluating a particular product or class of products, for example, commercial cooking equipment.

### **Why are standards necessary?**

When a need for a specific health or safety requirement is determined, standards provide an efficient resource to insure that these requirements are applied to all appropriate products.

In many instances, codes, regulations, and laws require compliance with specific standards.

### **How are standards developed?**

The standard development process is a lengthy and costly process. The first step in this process is the identification of a need for a standard. Due to the time and cost involved in developing a standard, the need must be strong, and must be well documented. A standard that is not needed, is not important to and accepted by the regulatory community, or one that is poorly developed is of no use to anyone.

Most standard writing organizations, many of which also conduct conformity assessment services, want their standard to be a national standard. The rationale behind this is simple. If more than one standard exists for a product, which one is the best? Which one should the regulator choose to accept? In such a situation, the regulator assumes some unnecessary liability. Having only one national standard simplifies the process, and removes the liability from the regulator.

In order to develop a national standard in the United States, the developing organization obtains a Project Initiation Notification (PIN) from ANSI. There is only one PIN given out for any standard, insuring that there is no duplication of standards, and the situation cited, as an example above should not occur.

Once the PIN has been obtained, the committee to work on the standard is developed. This committee is made up of all interested stakeholders: manufacturers, consumers, regulators, and other interested parties. The composition of the committee is such that all stakeholder groups are represented equally. No specific group is able to obtain an unfair advantage based on committee composition.

## ENVIRONMENT AND HEALTH INTERNATIONAL

After the committee has developed the final draft of the standard, it is sent out for public comment. Any comment received must be considered. Finally, the standard is ready to be balloted by the group overseeing the committee. Any negative ballots must be supported by proper documentation. It is not required that all negative ballots result in changes to the standard, however, the committee must answer all negative ballots, and support their answer.

Once a consensus has been reached, and all negative ballots answered, the standard is sent to

ANSI. ANSI does not review the content of the standard, but rather reviews the process to insure that the standard was developed in accordance with their procedural requirements. Once ANSI has reviewed the standard and it complies with their requirements, it is designated as an ANSI national standard.

In order to insure that standards are uniform in their organization, most of the standards writing organization follow a similar outline in the organization of their own standards. In general, the following format is followed:

- |    |                                     |  |
|----|-------------------------------------|--|
| 1. | Forward:                            | This section is the "legal" section of the standard. It essentially affords the standard writing organization a certain amount of legal protection with regard to use of the standard.   |
| 2. | Introduction:                       | <p>The introduction contains general information needed to correctly apply the standard. Within the introduction are the scope, glossary, and installation and operating instructions.</p> <p>The scope explains what products are covered by the standard. It often refers to nationally recognized codes or regulations. It is important to check the scope to make sure the product being investigated is covered by the standard before applying the requirements in the standard to the product.</p> <p>The glossary provides definitions of terms that are not commonly used, or terms that are used in a way that might not correspond with a generally accepted definition.</p> <p>Installation and operating instructions are used as a guide for product investigation. These instructions shall also include appropriate items of concern to users and installers of the product.</p> |
| 3. | Construction:                       | This section describes the physical characteristics needed by covered products in order to comply with the standard. For example, a piece of food service equipment may require a specific thickness of stainless steel.   |
| 4. | Performance:                        | This part of the standard describes the various tests which the covered product might need to undergo and pass in order to comply with the standard. For example, plastic pipe may be subjected to various water pressures to insure that it will not rupture under conditions of normal use. This section also describes the type of equipment required to conduct the tests.   |
| 5. | Manufacturing and Production Tests: | In this section, the standard specifies the tests required to be conducted by the manufacturer on 100% of the production before it leaves the factory.   |
| 6. | Rating:                             | The rating section specifies the units of measurements to be used in rating the product, such as "ppm" or "cfs".   |
| 7. | Markings:                           | The markings section specifies how the covered product needs to be marked. For example, the manufacturers name identifying symbol, or catalogue number. Any requirements for warning or cautionary markings also appear here, and often specify the text, location, and minimum letter height.   |
| 8. | Other:                              | Many standards also have a components section, or a clause about components. Its purpose is to clarify that if a component was evaluated by a different standard, it does not need to be re-evaluated.   |



Two other important items to remember when dealing with standards concern the ownership and use of standards, and the “living” nature of them.

Ownership of a standard is reserved for the organization that wrote the standard. Although anyone wishing to test products to a standard may do so, only the owner of a standard can make revisions to the standard. If anyone using a standard has questions about how to do something in the standard, only the owner of the standard can provide the required interpretations. This helps to insure that the standard remains virtually unchanged, unless or course, revised by the owner.

Standards are living documents. Once a standard is written, it is revised, as new technologies, processes, or other applicable information is available. Most standards are reviewed on a regular basis and revised if needed.

Now that you have a basic background in Conformity Assessment and Standards, let’s look at an example of the certification process for a product that might be used in the Environmental Health field. As with the discussion on standards, this example is a general one, and may vary somewhat between conformity assessment organizations.

The certification process begins with a preliminary meeting (or meetings) between the conformity assessment organization and the manufacturer, or its representative(s). At this meeting, all blueprints, prototypes, data, and anything else of importance are reviewed. A determination is made as to the applicable standard(s) and tests needed for certification. Depending upon the type of tests needed, a determination will be made as to the number of samples required. Finally the cost of the evaluation, and the timeline for completion will be determined. Once all parties involved agree upon these items, the actual equipment investigation can begin.

The equipment investigation may require the efforts of chemists, engineers, laboratory technicians and others. This investigation will include a construction review, a materials analysis, performance testing (if applicable), and the preparation of a report.

The construction requirements of the standard are applied to the product under evaluation. Some of these requirements might include the location of

any zones, and the acceptability of corners, joints, seams, fasteners, and other similar items. In the case of products used in many of the Environmental Health fields, there are also requirements that the product is cleanable and does not provide harborage for vermin.

An analysis of the materials used in the product is also conducted. These materials shall not impart any toxic substance, odor, color, or taste to the product. The submitter must supply a list of all materials used in the product. Additional tests are conducted to insure that the product is corrosion resistant and non-absorbent. Any coating that might be on the product is also evaluated.

This analysis of the materials is conducted following detailed procedures which include applicable certification polices for the specific product by the owner of the standard. Also, Federal regulations, toxicological resources, and other standards are also frequently used in these analyses.

Performance testing is required by some standards. If such requirements exist, the product is tested to insure that it performs as required. Some of this testing may be conducted at the manufacturing facility instead of at the conformity assessment organizations facilities.

Once the product has completed all of the required tests, and the test results have passed the criteria required in the standard, a report of the evaluation is prepared. This report includes any significant construction features and materials identification.

The report is used in numerous ways. It is used by the conformity assessment organization during field inspection at the manufacturing facility to insure that the products currently manufactured are identical to the product(s) submitted for evaluation. The manufacturer also uses it for the same purposes. Additionally, it provides a record of the tests performed on the product. This information is important in helping to provide answers to inquiries from regulatory authorities. As a note .... this information is the property of the manufacturer and therefore cannot be given to anyone, including regulatory authorities, without the permission of the manufacturer.

Once the certification process has been completed and the product has complied with all of the requirements in the standard, the product is then

considered to be certified. Depending upon the conformity assessment organization conducting the evaluation, the name “certified” may be replaced by other wording such as “Listed” or “Classified.”

It is important to remember that conformity assessment organizations **do not** “approve” products. They **verify** compliance to applicable standards.

Once the product has been certified, information concerning the product is usually published in a directory by the conformity assessment organization. Although these directories are useful for activities such as plan reviews and field inspections, it is important to remember that they may not contain completely accurate information due to additions or deletions of manufacturers or products. In order to be sure that the product is currently certified, you must either contact the conformity assessment organization or see the certification mark on the product.

In order to insure that the product leaving the factory for sale is the same product as the one evaluated in the laboratory; in other words, the product is in compliance with the standard, many conformity assessment organizations conduct follow-up factory inspections as part of their certification process. These inspections are usually unannounced visits; very similar in nature to inspections regulatory authorities conduct on their regulated facilities. During these visits, production controls are checked, samples are selected as needed, testing is witnessed, and a general inspection of the facility is conducted.

As you can see, the certification process can be an expensive and time-consuming venture. However, the time, effort, and cost that a manufacturer puts into developing a product and obtaining certification pays off when it comes to acceptance by the regulatory authority. The presence of the conformity assessment organization’s mark on the product is the regulatory authorities’ assurance that the product complies with requirements of the applicable standard.

*The next meeting of the  
IFEH Council will be held  
in Vancouver, Canada  
on 8th & 9th October 2005*

#### EDITOR’S NOTE

**The following report contains resolutions that were to be considered at the IFEH Council Meeting in Denver in September 2004. At the time of going to press the outcome of the Council’s deliberations is not known. However, a photograph of the attendees at the meeting is available (page 25).**

## 8th WORLD CONGRESS ON ENVIRONMENTAL HEALTH

At the 8th World Congress on Environmental Health organized by the South African Institute of Environmental Health and endorsed by the International Federation of Environmental Health held on the 22 - 27 February 2004 at the International Convention Centre in Durban, South Africa, the Council of the International Federation adopted the following Resolutions hereafter called the Durban Resolutions as the outcome of this Congress

### Resolutions

1. Environmental health practitioners should be committed to: (1) advocating for the right to a healthy environment; (2) working within the institutional framework and partnering with stakeholders to enhance environmental health; (3) developing and reforming policies and legislation to provide a healthy environment; and (4) incorporating these principles and ethics as part of their professional goals.
2. There is a need for public education and labelling requirements regarding genetically modified foods to provide consumers with credible information and the ability to make informed choices.
3. An effective and appropriate management system is needed to ensure food safety, food security, and the viability of non-GMO foods and crops.
4. All organizations (government and industry) should develop performance criteria and tools for accountability that include proper assessment of their impacts on society, public health and environment.
5. Because environmental health programs affect multiple departments and jurisdictions, and involve multiple competencies, a coordinated response by governmental agencies is needed.
6. There is need to allocate resources to build capacity, competencies and opportunities, specifically targeting women, minorities and

disadvantaged groups.

7. Legislation, interventions and education are needed to promote environmental justice and to protect the health of the most vulnerable populations (children, women of child-bearing age, the elderly, etc.)

8. Materials, processes and products which damage health or the environment should be controlled or phased-out so as to eliminate harmful exposure. This includes a rapid elimination of lead from fuels, paint, and other products; mercury from bleaching creams; and asbestos products.

9. Recognizing the significance of indoor and outdoor air pollution from the use of solid fuels (wood, dung, etc.) and kerosene/paraffin, alternative cooking and heating appliances/stoves which minimize air pollution should be developed, made affordable, and promoted by educational campaigns. Unsafe appliances should be outlawed.

10. Government, academia and community groups, especially in developing countries, should evaluate the environmental and health consequences of global climate change and develop a response strategy.

11. Environmental health impact assessments, environmental standards and guidelines require to be submitted to a transparent, independent and credible peer-review process prior to acceptance or implementation.

12. To protect public health (especially with regard to vulnerable populations), emission and ambient standards to control pollutants should be developed within an agreed time schedule.

13. Accessible and affordable supplies of safe water and sanitation should be provided for all

communities, particularly the poor and/or disadvantaged, by 2015.

14. Because incineration of health care waste produces persistent toxic substances, incineration, as currently practised, contravenes the Stockholm Convention aimed at eliminating these substances. The continued availability of incinerators inhibits the development and use of alternatives, hence international organizations and governments should provide a scheduled phase-out of existing health care waste incinerators, place a moratorium on the permitting/licensing of new units, and promote safer waste disposal options.

15. Recognizing the costs and health consequences of unplanned urbanization, including migration, there is a need for enhanced planning, infrastructure development, pollution control, and other processes to protect and enhance environmental and public health and the quality of life, so as to accommodate growth and economic development in both cities and rural communities.

16. Noting that environmental health involves the whole community, members of communities should be provided with the opportunity to participate meaningfully in future IFEH Congresses. They should also have the opportunity to attend Congresses and to obtain IFEH publications at reasonable cost. Future Congresses should devote sessions to research, which reflects the involvement of communities in environmental health.

17. To encourage student participation and provide educational opportunities, student attendance at IFEH Congresses should be encouraged by minimal conference fees, scholarships to attend, student awards, and student sessions.



**Hot off the press!**

Members at the Council Meeting in Denver.

Standing – Colm Smyth, Henning Hansen, William Tweh, Peter Archer, Jerry Chaka, Steen Fogde, John Beveridge, Jim Balsamo, Ron Grimes, Ray Ellard.

Front – Fred O’Brien, Isobel Stout, Diane Evans, Claudia Kurzac, Mike Halls

DURBAN 2004 ALBUM



New IFEH President addresses Congress



Zulu Warrior with two delegates



Durban International Convention Centre



Scenes from spectacular opening ceremony



**Two Ministers meet protestor at demonstration**



**You're all invited to Dublin in 2006!**

**WEST NILE FEVER IN CALIFORNIA**

– An update of the past year by Donald E.Gomsi, General Manager Coachella Valley Mosquito and Vector Control District\*



**Overview**

West Nile virus was not a new disease to the world when it arrived in the United States in 1999, but for the US, it was a new and emerging disease. It isn't often that new arboviruses present themselves as a threat for an entire region. When West Nile virus (WNV) came on the scene in the United States in 1999, it spread steadily westward for the next four years arriving in California in 2003. This disease is new to the Western Hemisphere originating from Africa, Asia, Europe, and Australia, where it is indigenous. This is a mosquito-borne flavivirus that has caused epidemics in Romania, Russia, and Israel in the recent past.

West Nile virus is closely related to St. Louis encephalitis virus, which is endemic in parts of the United States. West Nile virus may manifest itself in several forms in people. The most severe type of the disease is called neuroinvasive disease. A

type of this disease is flaccid paralysis, which may cause long-term paralysis. A milder form is West Nile fever which is characterized as febrile, influenza like illness with an abrupt onset of moderate to high fever after an incubation of 3-15 day, headache, sore throat, fatigue, and possible a rash. This disease has a low morbidity rate where less than 1% of the people bitten and infected become severely ill.

West Nile virus reservoir hosts are birds of a wide variety of species, especially of the corvid family that includes crows. Birds do not vector the disease to humans; rather, mosquitoes feed upon the birds and then transmit the disease to other birds, horses and humans. Other modes of transmission are minor in proportion that include blood transfusions, transplacental, breast-milk and laboratory workers. The numbers are low but the morbidity rate is elevated, particularly for the blood transfusions.

**Origin**

After having been first isolated from a person in the West Nile district of Uganda in 1937, it was later found in people, birds and mosquitoes in Egypt in the early 1950s. A closely related virus to West Nile virus is Kunjin virus, which is found in Australia and Southeast Asia. Several hundred cases of West Nile fever have been reported from Israel and South Africa.

No facts exist to explain the transmission to the United States. Migratory birds have long been implicated in the dispersal of this disease into new regions. Additionally, many of the mosquito species that vector the disease are ornithophilic mosquitoes. However, the strain of West Nile virus is from the Middle East, a long migratory path for birds. That being the case, other introduction methods are not ruled out

(transportation via aircraft of infected birds, mosquitoes, etc.).

Once in the New World, the disease found a susceptible population. The first reported cases in the US were in August 1999 in New York City. That year, 62 patients, 7 of whom died, acquired the disease. The move westward was fast spreading and well documented moving to Pennsylvania, Maryland, and Virginia in the year 2000, down to Florida and west to Louisiana in 2001, north to Montana and west to New Mexico in 2002, and into Nevada, Arizona and California in 2003. The distance travelled by this disease was over 2,000 miles in just four years.

**Entry in California**

The first reported finding of West Nile virus in California was done by the Coachella Valley Mosquito and Vector Control District (CVMVCD) which is located in the south-center of the State, encompassing the North Shore of the Salton Sea and nine cities including Palm Springs. During the year of 2002, CVMVCD placed sentinel chickens outside their boundaries on the southern edge of the Salton Sea. The Salton Sea is the largest body of water within California being 376 square miles in surface area and at an elevation of minus 227 feet below sea level. It is located in the southeastern part of the state in a desert region.

This placement of sentinel chickens at the southern end of the Salton Sea was to be an early warning system as it was postulated that West Nile virus would either arrive from the east (Arizona) or the south (Imperial County by way of Mexico). Figure 1 depicts the possible entry path for WNV and the spread of the disease throughout the state.



The Coachella Valley is on flight path for some migratory birds. These birds arrive both from Arizona and Mexico. At the start of this early warning system, little surveillance was being conducted in Imperial County, which lies between Riverside County (where CVMVCD is located) and Mexico. The Mexican authority on WNV surveillance was providing no data and it is not known if there is a surveillance program there. So with this little data from the south, California and CVMVCD conducted extensive surveillance to protect the citizens in the State, not knowing what may be coming.

In August of 2003, CVMVCD found West Nile virus in mosquitoes from a CO2 baited trap at Wister State Wildlife Refuge located at the southeast area of the Salton Sea. This was the first indication of West Nile virus in the State. Additionally, five sentinel chickens tested positive that same period, two from Wister State Wildlife Refuge and three from Sonny Bono Wildlife Refuge (located south of Wister).

These findings prompted the Imperial County Environmental Health Department to submit mosquito samples obtained in July of 2003, but being held for larger numbers to submit. One of those mosquito pools submitted tested positive for WNV. With this knowledge it was apparent that WNV was in the State for at least two months and present in two counties.

The virus' spread throughout the state was limited in the first year. Of 10,297 mosquito pools tested for WNV, 26 pools of mosquitoes tested positive. A total of 1,096 humans were tested for WNV that year. Three locally acquired cases were identified in Imperial, Riverside, and Los Angeles counties. Nineteen imported WNV cases were identified in 2003.

During 2003, a total of 224 horses were tested for WNV. Only one horse in San Diego County tested positive and subsequently recovered. A total of 33,097 sentinel chicken tests were conducted. Of that number 70 were positive from two counties (Imperial and Riverside).

The dead bird surveillance hot line received 8,650 reports of dead birds. Of that number, 1,762 fit the criteria for WNV testing. In 2003, 96 birds tested positive for WNV from five southern California counties: Los Angeles (65), Riverside (13), San Bernardino (10), Orange (3), and San Diego (5).

At the end of August 2004, WNV has spread throughout the state. The following counties have had mosquito pools positive (and number positive in parenthesis): Imperial (31), Los Angeles (240), Orange (95), Riverside (94), San Bernardino (121), Kern (72), Fresno (7), Stanislaus (1), Sacramento (10), Shasta (5), Sutter (5), San Luis Obispo (1), Lake (1), and Placer (1).

One probable distribution of the disease is via birds flying along flyaway zones. These birds may have transported the disease from southeastern California westward and north encompassing the state.

### Surveillance methods

The Centers for Disease Control and Prevention (CDC) has published a document titled "Guidelines for Arbovirus Surveillance Programs in the United States". In California, the State Department of Health Services (DHS) has put out their own document titled "California Mosquito-borne Virus Surveillance and Response Plan" using some of the similar methodologies. Further, each jurisdiction in California may modify this state-wide document for their area taking into consideration local geographical, ecological, meteorological, wildlife, and other factors

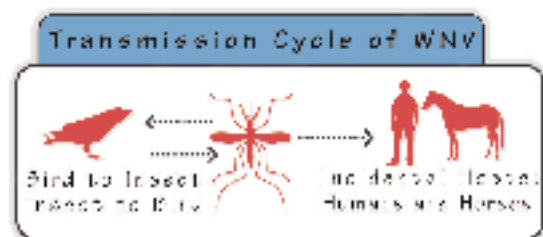
These guidelines outline basic surveillance methodologies starting with dipping for larval mosquitoes to trapping adults and on to include other factors such as human cases, wild bird die-off and other factors. In California, there are over 50 local jurisdictions that conduct surveillance for mosquito-borne viruses. These organizations coordinate with the DHS to provide a comprehensive network to aid in prevention of mosquito-borne disease spread. Another avenue of communication for these vector control agencies is through the California Mosquito and Vector Control Association. This association has five regions and coordinates meetings and conferences throughout California to enhance coordinated efforts for mosquito surveillance and control.

Along with knowledge of mosquito abundance that is gained from larval and adult mosquito collections, this data is used to assist in knowing which species are prevalent in an area and if these species may be those capable of disease transmission. As of August 2004, the following mosquito species have had WNV isolated from them in California:

*Culex tarsalis*, *Cx. erythrorhax*, *Cx. quinquefasciatus*, *Cx. stigmatosoma*, *Cx. thriambus*, *Cx. pipiens*, *Anopheles hermsi*, and *Ochlerotatus squamiger*.

Adult mosquitoes are captured via several traps. One trap (New Jersey light trap) utilizes a light source and fan to capture adults. These mosquitoes are killed and used to identify mosquito species and relative abundance in an area. Another trap (CO<sub>2</sub> baited trap) can use carbon dioxide from gas phase (cylinders) or dry ice. One other trap (gravid trap) utilizes a hay infusion to attract gravid mosquitoes and has a fan that captures these females into a net. The latter two traps captures mosquitoes alive and these mosquitoes can be sent to a lab for testing for viruses. Typically, up to 50 mosquitoes are sent in a "pool" for testing. If this pool comes back as positive for a virus, then all that can be inferred is that at least one of those mosquitoes had the virus in it. The University of California assists in laboratory analysis of these specimens.

In addition to mosquito surveillance, the arbovirus surveillance program also entails sentinel chicken flocks, wild bird studies and dead bird reporting and testing. The transmission cycle for West Nile virus involves birds as the reservoir host, mosquitoes vectoring the disease, and incidental hosts such as horses and humans (as depicted in Figure 2).



Most of the local jurisdictions throughout the state maintain surveillance on sentinel chickens. These are normal egg laying chickens obtained locally. Each flock consists of ten chickens and is bled by pricking the comb on top of the head and placing a drop of blood on filter paper. The bleeding takes place once or twice a month during the disease transmission period depending on the local agency. The filter papers are sent to the DHS laboratory for analysis. If samples are shown to be positive, the local agency is requested to draw whole blood from the chicken and submit for confirmatory analysis. Once a chicken turns positive for West Nile virus, it stays positive and is replaced in the flock with a new chicken.

A few local jurisdictions and the University of California at Davis conduct wild bird testing. Mist netting, using crow traps and other methods, captures wild birds. These birds are bled, banded, and released. The banding assists in further data once wild birds are recaptured and re-bled. Having one bleeding negative and a subsequent bleeding positive will yield data on when that bird became infected.

The DHS operates a dead bird program for West Nile virus. West Nile virus is fatal to many birds. A list of dead birds reported by DHS as of August 2004 is shown in Table 1.

**Table 1**

BIRD	No.		
Acorn Woodpecker	4	Mallard Duck	4
American Coot	1	Mourning Dove	2
American Crow	1354	Northern Goshawk	1
American Goldfinch	1	Northern Mockingbird	9
American Kestrel	4	Pine Siskin	4
American Robin	5	Red-breasted Sapsucker	1
Bank Swallow	1	Red-shouldered Hawk	3
Barn Owl	11	Red-tailed Hawk	6
Barn Swallow	1	Rock Dove	1
Black Phoebe	2	Rufous Hummingbird	1
Black-headed Grosbeak	4	Sharp-shinned Hawk	2
Brewer's Blackbird	4	Song Sparrow	1
California Gull	1	Steller's Jay	21
California Quail	1	Western Bluebird	1
California Towhee	3	Western Meadowlark	1
Common Nighthawk	1	Western Screech-Owl	2
Common Raven	25	Western Scrub-Jay	253
Cooper's Hawk	11	Western Tanager	3
Domestic Goose	1	White-tailed Kite	1
European Starling	4	Yellow-billed Magpie	137
Evening Grosbeak	1	House Finch	14
Great Blue Heron	1	House Sparrow	9
Great-horned Owl	1	Lesser Goldfinch	2
Green Heron	1		

A toll-free hotline is provided by DHS and CDC to report dead birds. These reports are routed to the local agency, which may pick-up the dead birds and submit them for analysis. This program has proved helpful in early warning of areas for the arrival of West Nile virus.

**Mosquito control activities**

The various agencies in California that control mosquitoes comprise local health departments, vector control/abatement districts, cities, counties, and the State Department of Health Services. Several strategies exist to control mosquitoes throughout the State utilizing larvaciding as well as adulticiding activities. For the large part, larval control is preferred in the State to prevent the

emergence of adult mosquitoes. Various larval control products are used such as *Bacillus thuringiensis* var. *israelensis* (Bti), *B. Sphaericus* (Bs), thin-film oil, and methoprene.

These products are applied in a variety of manners. Some are applied by ground application by an individual or vehicle mounted application equipment. Others are applied by aircraft. Large applications can be accomplished utilizing airplanes in a short span of time.

Mosquito fish are also distributed throughout the State by many agencies. Research is being conducted and field trials are underway for added biologicals such as Tadpole shrimp. These are shrimp native to the arid desert region, which eat mosquito larvae. They can survive dry periods for years in the egg stage and readily hatch when flooded. Other work will be conducted on several other biologicals.

Adulticides include malathion, permethrin, resmethrin, sumithrin, and pyrethroids. These are mostly applied by ultra low volume (ulv) fogging machines either by ground or aircraft. Some jurisdictions must rely on adulticides due to the habitat and other considerations, but in most part, agencies in California rely on the larvacidal approach to controlling mosquitoes.

With the arrival of WNV, many agencies are contemplating the use of aircraft for adult mosquito control. This will take much consideration and public meetings prior to this being used wide scale in populated areas. Some of the rural areas already use adulticiding by aircraft on a regular basis. While all the mosquitoes cannot be killed, the numbers can be brought down to a number that is below that which has been shown necessary to transmit the disease.

**Public education**

The State Department of Health Services and all the local agencies are involved in public education for West Nile virus. Each agency takes slightly different approaches but, in general, brochures are distributed, presentations are given to groups, public service announcements are shown on television and on the radio, information is distributed in newspapers and via mail, plus direct contact with the public by technicians, office staff and everyone else involved with the programs. With this being the most severe vector-borne disease to arrive in California in the past 50 years,



the public has been made quite aware of its presence.

### **Future**

With 2004 not finished yet, the prognosis for this year is unclear but not promising. The mosquito season runs through the months of September and October for large areas of the state, in particular Southern California. Cooler areas will have a shorter mosquito season ending when the weather cools. The wave of WNV through the country has shown to have a pattern of one to two severe years then the disease appears to cause few cases. With all the mosquito and vector control districts working in California, it will be interesting over the next couple years to see the impact the mosquito control agencies have on the spread of this disease. If nothing else, through good public education, the public has been made aware of personal protective measures they can take to protect themselves.

### **Biographical details for Don Goms**

Donald E. Goms is the General Manager of Coachella Valley Mosquito and Vector Control District. This district is 2,400 sq. miles in size and encompasses nine cities in the south-center of California including the city of Palm Springs. Donald is a Past-President of the California Environmental Health Association (CEHA) and is on the Legislative Committee for the California Mosquito and Vector Association. He is also a Registered Environmental Health Specialist in California and a former member of the California Environmental Health Registration Committee. Contact: Donald E. Goms, Coachella Valley Mosquito and Vector Control District 43-420 Trader Place, Indio, CA 92201 USA Phone: (760) 342-8287 FAX (760) 342-8110 Email: dgoms@cvmvcd.org

## **SECOND COMMONWEALTH PROFESSIONAL FELLOWSHIP**

by Peter Minhinnet

Peter Minhinnett, Principal Environmental Health Officer, Daventry District Council and Vice-Chairman of the NGO Daventry Friends of Iganga, is pleased to advise that they have been successful in obtaining another Commonwealth Professional Fellowship.

In 2003 Daventry obtained the first Professional Fellowship of this kind offered for a Commonwealth Citizen in the Public Health Field. Muzamiru Bidondole, a Health Assistant with Iganga Town Council, received that award and spent 3 months in Daventry between February and May 2003.

This year Peter applied to the Commonwealth Scholarship Commission on behalf of John Lule, a Senior Health Inspector with Kampala City Council, who had been nominated by the Ugandan Public Health Officers Association and the Ugandan Chief EHO Paul Luyima.

John Lule arrived in the UK at the start of October 2004 and immediately commenced his study period in the Environmental Health Department at Daventry DC. In addition to his time at Daventry, John will also study with other Local Authorities across East Midlands, one being Leicester City Council.

At its AGM earlier this year the East Midlands Centre of the Chartered Institute of Environmental Health formed a new International Committee. The Committee has a duty to develop the initial links formed with the Ugandan Public Health Officers Association, which is a new Member of the International Federation of Environmental Health. It is hoped that John Lule will be able to meet Members of the Committee during his 3 months in the East Midlands and further the exchange of ideas between the UK and Uganda.

### **Daventry Friends of Iganga, Uganda and Water for Kids**

To further the links between East Midlands Health Professionals and their Ugandan colleagues and to further the good work being done in Uganda by Daventry Friends of Iganga a 'Study Tour' is being arranged for between 2 & 3 weeks travelling sometime in May or June 2005. This trip will include meetings with Ugandan Health Professionals and Students, visits and workshops at Makerere University, Kampala; also field trips and work to assist the provision of a new water source. In addition there will be the chance to see plenty of this beautiful country including Lake Victoria and the source of the Nile. If interested in joining this party contact Peter Minhinnett at Daventry DC on 01327 302549 or email pminhinnet@daventrydc.gov.uk

## RECYCLING A REFUSE TRUCK



This refuse truck is being sent to Uganda in the next two weeks by 'Davertry Friends of Iganga'. The second hand truck was purchased at the end of 2003 and has been refurbished by Onley Young Offenders Institute, situated within Daventry District.

'Davertry Friends of Iganga' is an NGO and now a registered charity with a vision of developing links with Daventry District and Iganga, Uganda.

When the truck leaves it will be sent in a container for its 10-week trip to Uganda, both the truck and the space around it in the container will be filled with gifts from the people of Daventry and district. This will include sewing machines, tools, bicycles, gardening equipment and typewriters. In addition local schools in Daventry District linked with Ugandan schools are sending books and school materials.

Further projects being developed are;

- The provision of a lending library to store the books being sent.
- Land is being purchased to build accommodation for Aids orphans and street children where they can live and learn to look after themselves, study and work

**Deadline for submission of articles for the next issue is**

**31st January 2005**

**Contact John Stirling, 11 Muirwood Drive,  
Currie, Edinburgh EH14 5EZ  
SCOTLAND**

**e-mail: [j.stirling@btinternet.com](mailto:j.stirling@btinternet.com)**

## MIKE HALLS RECEIVES ERIC FOSKETT AWARD



### Acceptance speech

Mr President, honoured guests, ladies & gentlemen.

I entered the environmental health profession in 1959 and that year proved to be one of the best and most memorable of my life. Not only did I take up the job that would last me for over 44 years but I also met a very attractive young woman called Sheila who eventually ended up as the present Mrs Halls.

I have never regretted either of these occasions, indeed, I count my blessings on a regular basis that I have been given the opportunity to be as happy and contented as I am in both my working and my family lives.

During my career, there have been many defining moments – my move to England to take up my first post after qualification – my being headhunted back to my home town by my former boss – and my being appointed in 1975 to be the Director of Environmental Services for a District containing some of the most scenic and attractive parts of God's own country. That was to be my final post which I retained until I took early retirement in 1996.

In time there would be more defining moments - and none more so than my meeting for the first time, in 1982, with the one and only Eric Foskett. By then I was a member of the Council of the Scottish Institute of Environmental Health (the predecessor of REHIS) and Bernard Forreath and I represented the Institute at the Annual Congress of the Institution of Environmental Health Officers in Bournemouth, England. We were asked by Eric,

who was at that time Chairman of the Institution's General Council, to meet him for lunch. Now, it does not sit well with a Scotsman to turn down the offer of a free meal, so along Bernard & I trotted. That was the start of my involvement with Eric and, in due course, the International Federation. At very few times in the past 21+ years have I regretted that decision to meet Eric. OK, there were times when he could be very frustrating and it was not unusual in those early days for Eric to ring me at home about something very important to him in the affairs of the IFEH, but it invariably was not something that I needed to think about at 11.00 pm or midnight.

However, that was the kind of guy he was - enthusiastic, generous with his time and his advice and wise to the extent that it sometimes amazed me that he could be so well read. We became firm friends and he had lots of those. Eric was a true English gentleman but he had friends all over the World. This was never truer than at his funeral when I well remember sitting in the front row with colleagues from all over the British Isles and beyond and I can assure you that there were a few tears shed that day. He was the inspiration for IFEH and he certainly instilled in me some of his dreams for the organisation.

He often said, when we would meet up in those early days of IFEH in Carlisle (this involved my driving 60 miles – about an hour and a bit – and Eric getting up with the lark to catch three different trains and involving at least 2½ hours travelling) that he wanted, before he died, for IFEH to have 50 members, a target we reached a few years before he passed away. Needless to say, when that milestone had been passed he was not content and he set his cap at having 100, a situation that I regret to say we have not yet attained but, before I leave the service of IFEH in two years time, I want to see if we can get to the target that Eric aimed at. That would be a fitting memorial to a thoroughly decent, honourable and loveable man.

Not that we necessarily need another memorial. The reason I am addressing you this evening is because the Federation agreed five years ago to institute the Eric Foskett Award as a permanent reminder of the life and aims of the late Eric. I can tell you that Eric was immensely pleased and proud to be given the first award in Oslo in 2000 and I will never forget his opening remarks, which followed a series of dire warnings from me that he

had five minutes or no more than 10 to say his piece. He alluded to the warnings and then produced an alarm clock, which he placed before him. For a person the length of whose speeches was legendary and whose timing on occasion could have been measured better on a calendar his abiding by my request was magnificent.

No one has needed to tell me to confine my remarks to five or 10 minutes – I am conscious of the fact that we have other business to conclude tonight. I shall therefore close by expressing my very deep sense of humility and my very great pleasure at being given this award. It is not enough that you as the Federation over the past 20 years have facilitated me visiting around 20 different countries, making 200 or more aeroplane journeys and making some of the best friends a man could have in all corners of the World. I have also been privileged to attend every one of the eight World Congresses thus far held and intend to go on for a few more (as my mother used to say) “if I'm spared”! You have now given me something that a professional should value above all else – the respect and gratitude of his peers.

From the bottom of my heart – thank you.

**REPORT ON THE ACTIVITIES OF  
THE INTERNATIONAL FACULTY  
FORUM (IFF) MEETING  
HELD AT THE INTERNATIONAL  
CONFERENCE CENTRE  
DURBAN, SOUTH AFRICA  
ON SUNDAY 22 FEBRUARY 2004  
(original report by Koos Engelbrecht and Jerry  
Chaka)**

**Background**

At the Fourth IFEH World Congress held in Scotland in 1994 the academics who attended decided that, due to the fact that no specific body or organization then existed in the world that could act as a forum for environmental health education, such a forum should be established. Since then the forum has met during all the World Congresses organized by the IFEH. Congresses where such Forum meetings were held were:

Scotland  
Sweden  
Norway  
California (San Diego)

### **Purpose and functions of the IFF**

At previous Congresses numerous debates between academics, professionals and the IFEH were held on the purpose, functions and operation of the IFF. The following is a summary of the decisions taken until now:

The IFF is a loose body of academics involved in the training of environmental health professionals as well as other interested professionals. The IFF is not formally linked to the structures of the IFEH.

The IFF has no formal structure. It convenes prior to or during an IFEH World Congress. The academics from the country where the Congress is held take responsibility for organizing the programme. Traditionally the forum meets the Sunday before the start of the IFEH World Congress.

Normally an academic of the country in which the IFEH Congress is held acts as the Chairperson of the IFF.

During such meetings, issues that relate to training and education are discussed and debated.

Over the past years an electronic communication network has been set up by the University of Washington (USA) which functions as a discussion forum for academics.

There is however a strong feeling that the IFF can play a more prominent role in assisting the IFEH with training and education matters such as evaluating environmental health programmes to determine for example compliance with minimum international standards and recognition.

### **Outcomes of the IFF meeting in Durban**

The following is a summary of the main outcomes of the meeting held on Sunday 22 February 2004:

The meeting was attended by 33 academics, the largest ever turnout since the start of the IFF.

There were representatives from at least 10 countries where environmental health programmes are presented (see below for a list of those presenting papers).

The presentations by the various academics identified the challenges faced by the presenters together with their successes and were of great benefit to all present. The discussions that flowed from the presentations were also of benefit in the drive towards the improvement of environmental health education around the world. Of particular note were the presentations from academics from Kenya and Malawi, which gave an insight into their unique challenges and initiatives to ensure a

high quality of teaching under difficult circumstances.

During the open discussion forum a number of issues were raised and deliberated upon. The most important included the following:

There was consensus amongst the academic delegates that the present relationship with the IFEH should be continued and that, due to financial constraints, meetings be co-ordinated to take place during / before the IFEH World Congresses. The request by the IFEH on the possibility of the IFF being a validating authority for environmental health training programmes around the world was debated in detail. Due to the fact that training institutions throughout the world have a fair degree of autonomy (in regard to programmes etc.) and having regard to the differences in the duties and responsibilities of environmental health practitioners in different countries, the Forum felt that it would not be possible to draw up a single curriculum that would secure the approval of the IFEH. The proposal agreed to, therefore, is that a draft a set of generic competencies for environmental health should be drawn up and that that should be regarded as a minimum for environmental health programmes to comply with. The following academics were appointed to a working committee to draft such core competencies:

Mr. Erik Lovgren – Sweden (Convener)

Mr. Chuck Treser – USA

Mr. Koos Engelbrecht – South Africa

Mr. Steven Taulo – Malawi

Mr. Paul Robinson – Chartered Institute of Environmental Health (England, Wales & Northern Ireland)

They were requested to report back to the Council of the IFEH by September 2004.

Mr. Koos Engelbrecht from South Africa was also officially elected as the incoming Chair of the IFF till the next meeting due to take place in Ireland in 2006.

An Irish academic delegation also invited all present to the next meeting in Ireland and assured the meeting that they are confident that it will be a great success.

The network that has existed since the last IFF meeting held in San Diego in 2002 was even stronger than it had been then and there was a general view that it was encouraging to meet academic colleagues from around the world, especially those that had attended for the first time.

**Speakers**

Diane Evans, (National Environmental Health Association, USA) President IFEH

Jerry Chaka, (South African Institute for Environmental Health) President Elect IFEH

Michael Halls, Honorary Secretary IFEH

Chuck Treser, Dept of Environmental & Occupational Health Sciences, University of Washington, USA (Chairperson International Faculty Forum)

Erik Lovgren, Royal Institute of Technology, Sweden (also representing Umea University)

Steve Tauro, Department of Environmental Health, Malawi University, Malawi

Paul Robinson, Director of Education, Chartered Institute of Environmental Health (England Wales & Northern Ireland)

Stephen Bell, Massey University, Wellington, New Zealand

Tom Bell, Director of Professional Services, the Royal Environmental Health Institute of Scotland

Dr Tony Grimason, Division of Environmental Health, University of Strathclyde, Glasgow, Scotland

Koos Engelbrecht, Tshwane University of Technology, South Africa

William Kitagwa, Dept of Environmental Health, Moi University, Kenya

## **BIBLIOGRAPHY OF ARTICLES APPEARING IN IFEH MEMBER MAGAZINES**

**Anyone wishing a copy of any of the following articles should contact me by e-mail or post with their name and address.**

**Hon. Editor John Stirling**

**J.Stirling@btinternet.com**

**11 Muirwood Drive, Currie, Edinburgh, Scotland EH14 5EZ**

**New Zealand Journal of Environmental Health**  
**Microbiological quality of tahini and tahini-containing foods at retail in New Zealand – T L Wong, R J Whyte and J A Hudson, Food Safety Programme, ESR Ltd, PO Box 29-181, Ilam, Christchurch, New Zealand.**

Tahini (sesame seed paste) has been shown, on occasion, to be contaminated by Salmonella.

Halva, which contains tahini, has been associated with international outbreaks of salmonellosis, and isolation of Salmonella from imported tahini and locally produced tahini-containing hummus has previously been reported in New Zealand. Because of the paucity of data regarding these foods their current quality was assessed. 256 samples of tahini and tahini-containing products were tested for the presence of Salmonella and numbers of Bacillus cereus and other Bacillus spp. No salmonella was detected. Bacillus cereus was present at levels which were of no public health concern, while B. subtilis and B. licheniformis were most frequently present and at higher numbers. The samples tested were of acceptable microbiological quality, but since these foods are eaten without further cooking, contamination with salmonella is a perennial hazard.

### **Investing in Environmental Health Practitioners – Stephen Dowling, Assistant Director, Environment and Public Protection, Nottingham City Council, England.**

The paper explains how Nottingham City Council has established processes to 'grow its own' EH Practitioners by a programme of student training and professional development. There is scope for expanding such work to help tackle increasing shortages in the EH profession.

### **Biomonitoring under Hazardous Substances and New Organisms Act 1996 – Richard M Fisher and Koay, V**

Some good news for a change: a 2001 follow up of 1980's research into the presence of organochlorine contaminants in New Zealand breast milk showed levels of toxic chemicals, including various dioxins and pesticides, had declined by approximately 70% over a 10 year period, from 1988-98 (Bates et al. 2001). This is especially good news, because breast milk studies are an excellent example of the power of biomonitoring. The term refers to scientific measurement of what is actually in the body, and thus offers a better assessment of exposure than other indirect measures of contaminants in soil, water and air. Breast milk studies in particular tend to capture the public's attention, and have been "the canary in the mineshaft" for a number of chemicals in need of regulatory attention throughout the world, most notably acting as a major contributor to the banning of atmospheric nuclear testing associated with strontium 90 exposure (Hooper and She 2003).

**Disinfecting ship ballast water with ultra violet light –**

Ultraviolet (UV) disinfection specialist Hanovia has received many enquiries from ship operators about the potential of its UV treatment systems to treat ballast water prior to discharge.

**Staphylococcal food poisoning: the importance of an infected food handler policy – Megan Callaghan, Dr Greg Simmons and Maurice Wilson**

Auckland Regional Public Health Service investigated two outbreaks of gastrointestinal illness involving three families 11 days apart in February 2003. The implicated food was barbecued and roast pork purchased from the same Auckland food outlet.

**Sustainable wastewater management –**

The introductory pages giving the background and content of a handbook developed for smaller New Zealand communities that face choices about the kind of wastewater system they will use, and how it will be managed. The publication is available online at [www.mfe.govt.nz](http://www.mfe.govt.nz)

**Journal of Environmental Health – NEHA**

**Developing a local comprehensive environment and health tracking system: Using what we know to improve health and the environment –**

**Jo Ann M Glad, RN, MPH, Sarah B Kotchian, Ed M, MPH, PhD and Gerald M Barron, MPH**  
Recent national reports have highlighted the absence of a coordinated local, state, and national environmental health tracking system/Local environmental health agencies are struggling to design and implement data systems that will allow them to evaluate environmental exposures, ecological trends, and health outcomes in order to formulate more effective prevention strategies. This paper articulates the need for local environment and health-tracking systems, discusses efforts under way around the nation, and describes the initiative being undertaken in one county health department to address this need. It provides information on attributes of indicators to be included in such a system, sources of data, criteria for evaluating the usefulness of indicators, suggestions for involving the community and staff, management strategies for implementing a data system, and recommendations for resolving common barriers to data sharing and use. This

information will be useful to agencies that wish to develop their own robust environment and health tracking systems to support the three core functions of public health and the 10 essential public health services.

**Breast cancer and environmental risks: Where is the link? –**

**Amal K Mitra, MD, MPH, DrPH, Fazlay S Faruque, PhD, PG and Amanada L Avis, MPH**  
Environmental factors may play an important role in the etiology of female breast cancer. This paper reviews existing evidence to compare and analyze environmental agents in relation to breast cancer. The authors have reviewed multiple studies focusing on xenoestrogens, organochlorines, polychlorinated biphenyls, and other environmental agents, and the results are cited. Current use of oral contraceptives and prolonged use of hormone replacement therapy moderately increase risk. Evidence regarding organochlorine exposure and breast cancer risk is mixed. Atrazine is not associated with breast cancer risk, but dieldrin and lindane are. The effects of polychlorinated biphenyls vary according to specific congeners. An observational study has linked benzene to breast cancer, but another case control study has refuted the association. Risk of breast cancer with smoking is strong in families with a history of breast cancer, ovarian cancer, or both. Studies have shown a positive association of breast cancer with heterocyclic amines in women who eat well-done meat. Thus, many environmental factors have been significantly associated with breast cancer. Differing distribution of sociodemographic factors, including race/ethnicity, parity, and, possibly, nutritional status, may explain some of the inconsistencies across studies. Further research is needed to verify associations.

**Cryptosporidiosis: A brief literature review and update regarding Cryptosporidium in feces of Canada Geese (Branta Canadensis) –**

**Hailu Kassa, PhD, MPH, MSOH, RS, Brian J Harrington, PhD, MPH, and Michael S Bisesi, PhD, REHS, CIH**

Canada geese are increasingly abundant in Ohio, with large nesting populations throughout the state, and goose feces contaminate grassy areas and pavements in many public, commercial, and residential sites. In 1999 the authors found a high prevalence of Giardia, Campylobacter, and especially Cryptosporidium in collected feces of Canada geese. The purpose of this follow-up study

was to survey known Canada geese sites in three counties in Ohio (Lucas, Ottawa, and Wood) and to determine the prevalence of sites testing positive for *Cryptosporidium*. The sites included golf courses, cemeteries, public parks, and health care and teaching facilities. At each of 11 sites, 12 goose faeces of wet and loose appearance were collected and manually compressed into one composite sample representing that site. The samples were tested for *Cryptosporidium* with a sensitive monoclonal enzyme immunoassay (EIA) method. In 2000 and 2001, nine of 11 sites (81.8 percent) and nine of 10 sites (90 per cent), respectively, were positive for *Cryptosporidium*. The species or genotypes of *Cryptosporidium* found in the geese faeces and their potential to infect humans is unknown. A survey of the literature indicates, however, that while *C. parvum* (human genotype) is the main cause of cryptosporidiosis in humans, *C. parvum* (zoonotic genotypes), *C. meleagridis* (bird genotype), and *C. felis* (cat genotype) have occasionally been isolated from infected people. Further research is required to define the public health importance of *Cryptosporidium* in faeces of Canada geese and other bird species.

**Determination of the solids retainment effectiveness of disposable swim diapers – Richard P Mass, PhD, Steven C Patch, PhD, Jacob F Berkowitz and Holly Johnson**

In light of recent and increasing incidences of pathogenic *E. coli* outbreaks at public bathing facilities non-toilet-trained infants and toddlers, many such facilities are restricting water contact for this age group. A number of manufacturers are now offering disposable “swim diapers,” which claim to effectively retain faecal material under typical pool play conditions. The study reported here examined the solids retention effectiveness of three major brands of swim diapers as well as of conventional disposable diapers, under simulated water play conditions. Swim diapers of all three brands exhibited an approximately equal fine-solids retention capability of about 98 to 99 percent over 30 minutes of water immersion activity. Conventional disposable diapers invariably fell down or came apart during the experiments, resulting in very limited solids retention. This study indicates that commercially available swim diapers represent a vast improvement reduce the potential for faecal material release in public pool facilities, but that some release will still generally occur with these products.

**Aerobic residential onsite sewage systems: An evaluation of treated-effluent quality – Melissa Maxfield, REHS/RS, MPH, William E Daniel, MD, MPH, Charles D Tresser, MPH and Jim VanDerslice, PhD.**

This retrospective cohort study used existing data to evaluate the quality of effluent from three of the most common types of onsite residential aerobic treatment sewage systems (Multi-Flo™, Norweco™, and Whitewater™) installed in Kitsap County, Washington. Five-day biochemical oxygen demand (BOD<sub>5</sub>), and TSS total suspended solids (ISS), and fecal-coliform-bacteria parameters were used to determine performance. Although most (77 percent) of the systems were less than one year old at the time of sampling, over a third failed to meet NSF certification standards for BOD<sub>5</sub> and TSS in effluent (<30 milligrams per litre [mg/L]). Over two-thirds of systems failed to meet Washington State Board of Health treatment Standard 2 criteria for BOD<sub>g</sub> and TSS (<10 mg/L). Furthermore, an average of 59 percent of the systems failed to meet state standards for faecal coliform (<800 faecal coliform bacteria per 100 millilitres).

**Evaluating Trihalomethane content in drinking water on the basis of common monitoring parameters: Regression models – Miguel Espigares, PhD, Pablo Lardelli, PhD, and Pedro Ortega PhD.**

The presence of trihalomethanes (THMs) in potable-water sources is an issue of great interest because of the negative impact THMs have on human health. The objective of this study was to correlate the presence of trihalomethanes with more routinely monitored parameters of water quality, in order to facilitate THM control. Water samples taken at various stages of treatment from a water treatment plant were analyzed for the presence trihalomethanes with the Fujiwara method. The data collected from these determinations were compared with the values obtained for free-residual chlorine and combined-residual-chlorine levels as well as standard physico-chemical and microbiological indicators such as chemical oxygen demand (by the KMnO<sub>4</sub> method), total chlorophyll, conductivity, pH, alkalinity, turbidity, chlorides, sulfates, nitrates, nitrites, phosphates, ammonia, calcium, magnesium, heterotrophic bacteria count, *Pseudomonas* spp., total and faecal conforms, and faecal streptococci. The data from these determinations were compiled, and statistical analysis was performed to determine which variables correlate best with the presence and

quantity of trihalomethanes in the samples. Levels of THMs in water seem to correlate directly with levels of combined residual chlorine and nitrates, and inversely with the level of free residual chlorine. Statistical analysis with multiple linear regression was conducted to determine the best-fitting models. The models chosen incorporate between two and four independent variables and include chemical oxygen demand, nitrites, and ammonia. These indicators, which are commonly determined during the water treatment process, demonstrate the strongest correlation with the levels of trihalomethanes in water and offer great utility as an accessible method for THM detection and control.

**Practicing environmental health in a down economy: “Put on your superman cape” - Rebecca Berg, PhD.**

**Beyond general fund: Environmental health revenues in a down economy – Rebecca Berg, PhD.**

As the *Journal of Environmental Health (JEH)* reported in this space last month, demands for environmental health services are up while traditional sources of revenue are stagnant or declining. How are health departments coping with the situation? Many are looking to fee-for-service arrangements and grant funding to support revenue-starved programs. In some cases, these strategies offer health departments a measure of independence from the politically driven budget decisions made in statehouses. They also, however, bring with them a new set of challenges and controversies for the profession.

**Messages in the dust: Lessons learned, Post 9/11, for environmental health – Francesca Lyman**

Two years after September 11, 2001, when terrorist attacks levelled the World Trade Center, killing thousands of people, and hit the Pentagon, killing hundreds more, NEHA is issuing a report assessing the lessons for environmental health that can be learned from these disasters—widely regarded as the worst and largest international terrorist events in our nation’s history. The article represents the executive summary of the report.

**Environmental-temperature injury in a Canadian metropolis – Athanasios Tom Koutsavlis, MD, CM, LMCC, MSc, CSPQ, FRCPC and Tom Kosatsky, MD, MPH**

This study performed a preliminary investigation of the incidence and determinants of environmental-temperature injury among residents of Montreal Island, Quebec, Canada. Incidence rates, mortality rates and determinants of environmental-temperature injury were estimated for Montreal Island’s 1,802,309 urban and suburban residents. Sources of information included coroner’s reports, death certificates, hospital discharge summaries, and hospital chart reviews. The estimated incidence rate for environmental-temperature injury requiring hospitalization on Montreal Island was 3.1 per 100,000 person-years. The estimated mortality rate for all environmental-temperature injuries on Montreal Island was 0.3 per 100,000 person-years. The majority of hospitalizations and deaths were due to cold injury. Male gender, alcohol intoxication, psychiatric illness, older age, and homelessness were suggestive of important risk factors in cold injury. All deaths due to heat injury occurred in elderly females. Montreal Island’s ambulance transport service, with its unique database, was identified as a novel surveillance design for environmental-temperature injury. Knowing more about the incidence and determinants of environmental-temperature injury may suggest priorities for interventions to decrease morbidity and mortality.

**Minimizing pathogenic bacteria, including spores, in indoor air – Linda J Utrup, PhD, Kenneth Werner and Allan H Frey, PhD**

Five experiments were conducted to assess whether aerosolized bacteria, including spores, respond like particulate contaminants to the primary (electrical) forces that control the distribution of small particulate contaminants in indoor air. Such response would suggest an approach to minimizing infection in offices, hospitals, nursing homes, and other facilities. It also would have implications for protection against intentionally introduced pathogenic bacteria, including spores. The experiments used two different genera and five different strains of bacteria, including spores. *Micrococcus luteus* was used as a surrogate for Gram-positive cocci, because *M. luteus* is similar in size, shape, and cell wall composition to staphylococci, streptococci, and enterococci. Similarly, spore-forming and vegetative *Bacillus subtilis* were used as surrogates for Gram-positive bacilli such as *Bacillus anthracis*. The experiments were conducted in a dedicated aerosol physics test facility with culture-



based measurements made at timed intervals. The results indicate that the organisms do respond like particulate contaminants to typical electrical forces in a room.

**Helping the auto repair industry manage hazardous waste: An education project in King County, Washington –**

**Laurence L McKendrick, MSA, RS, Keiko Ii, MSW, REHS/RS, Bill Lawrence, MSPH, RS, Michael Kaufmann, RS, and Mark Marshall, RHSP**

From January 1, 2000, to August 31, 2001, a team of environmental health specialists from Public Health-Seattle & King County, a partner in King County's Local Hazardous Waste Management Program, made educational visits to 981 automotive repair shops. The purpose was to give the auto repair industry technical assistance on hazardous waste management without using enforcement action. Through site inspections and interviews, the environmental health staff gathered information on the types and amounts of conditionally exempt small-quantity generator (CESQG) hazardous wastes and how they were handled. Proper methods of hazardous waste management, storage, and disposal were discussed with shop personnel. This report focuses on nine major waste streams identified in the auto repair industry. Of the 981 shops visited, 497 were already practicing proper hazardous waste management and disposal. The remaining 484 shops exhibited 741 discrepancies from proper practice. Environmental health staff visited these shops again within six months of the initial visit to assess changes in their practices. The educational visits and technical assistance produced a 76 percent correction of all discrepancies noted.

**Decontamination of *Bacillus thuringiensis* spores on selected surfaces by chlorine dioxide – Y Han, PhD, Bruce Applegate, PhD, R H Linton, PhD and P E Nelson, PhD**

The work examined the efficacy of chlorine dioxide (ClO<sub>2</sub>) gas for the decontamination of *Bacillus thuringiensis* spores on paper, wood, epoxy, and plastic surfaces. Spores representing an inoculation level of approximately 6 log colony-forming units (CFU) per surface were treated with 5,10,15, 20,25, or 30 milligrams per liter (mg/L) ClO<sub>2</sub> gas for 12 hours under 85-92 percent relative humidity and at 22 ± 1°C. Under the tested treatment conditions, the highest population of surviving spores was found on the paper surface and the lowest was found on the plastic surface (p

< .05). The 5 mg/L ClO<sub>2</sub> gas treatment inactivated 2.5,3.6,4.0, and 4.9 log spores per surface on paper, wood, epoxy, and plastic surfaces, respectively. A greater than 5-log reduction of spores was achieved on each surface after the 15 mg/L ClO<sub>2</sub>, gas treatment. The minimum ClO<sub>2</sub> gas concentration needed to completely inactivate the inoculated spores was 30 mg/L for paper and wood surfaces, 25 mg/L for epoxy surfaces, and 20 mg/L for plastic surfaces. The results of this study may provide insight into the parameters of effective decontamination procedures for *Bacillus* spores.

**A gastroenteritis outbreak due to norovirus associated with a Colorado hotel – Laura Dippold, MPH, Robin Lee, MPH, Carol Selman, Steve Monroe, PhD and Chuck Henry, MS, RS**

Describing the system components of norovirus outbreaks is important in understanding how to prevent future outbreaks. Investigation of these components includes environmental, epidemiologic, and laborator perspectives. This study describes how an investigation from these three perspectives was conducted and the significance of each component in understanding norovirus outbreaks. On May 23,2000, members of a professional group attending two meetings at a local hotel in Englewood, Colorado, began to complain of gastrointestinal illness. Sixty-nine illnesses were reported among 133 attendees. Eight hotel employees also complained of illness. Staff from the Tri-County Health Department and the Centers for Disease Control and Prevention investigated the outbreak. Three stool specimens collected from ill attendees contained norovirus. While the epidemiologic component did not identify a specific vehicle of transmission, the environmental investigation revealed food-handling practices, food handler perceptions, and hotel policies that may have contributed to disease transmission.

*The next meeting of the  
IFEH Council will be held  
in Vancouver, Canada  
on 8th & 9th October 2005*

## Environmental Health Journal CIEH

### Shifting attitudes – Stuart Spear

Ireland did it first, Norway was next and Sweden has plans to do it. Stuart Spear visits the first European country to ban smoking in public places to find out how the Irish government managed to pull off Europe's biggest public health coup.

### Fly-tip blues – Nick Warburton

From 16 July 2004, co-disposal of hazardous waste will be banned under EU legislation. But as the deadline approached, the UK faced a potential shortfall in hazardous waste sites, prompting fears of a rise in fly tipping.

**Draining Europe's growing mercury lake – Tina Garrity** reports on the EU draft strategy which aims to resolve what should be done with the mounting stocks of mercury that are causing Europe an environmental headache.

**Planning our future** – The CIEH is calling for sustainable development to be made a statutory duty. **Kim Willis** summarises her research findings, which led to the policy decision.

**London moves on** – February 04 marked the anniversary of congestion charging. **Stuart Spear** looks at the effect on air quality and what Britain's regional cities can expect if it comes their way.

### Bingeing Brits – Nick Warburton

Alcohol misuse in the UK is growing at an alarming rate with serious repercussions for crime and disorder, health and workplace productivity. The new licensing regime provides new opportunities for local authorities to address health issues around nightlife and incorporate safer practices into licensing policies.

**Gull colonies** – March marks the start of the breeding season for urban gulls. **Peter Rock**, an acknowledged expert on seagulls, explains what action local authorities should be taking to combat a growing menace.

**Children at risk** – Nine out of every 10 children employed in part-time work are working illegally, with many getting no health or safety protection. **Stuart Spear** reports on a growing crisis in child employment.

## Environmental Health Scotland – REHIS

### Factors affecting the microbial quality of private water supplies in Northeast Scotland – Allan Lilly, Macaulay Land Use Research Institute, Craigiebuckler, Aberdeen, Scotland

The majority of the Scottish population has ready access to clean and reliable sources of water. However, there is a sizeable minority of the population (estimated at 60,000; Reid et al, 1999) whose water does not come from a statutory water supplier but is, instead, from a private source. There are an estimated 31,000 to 38,000 of these private water supplies in Scotland (Reid et al, 1999; DWI, 1993) and, as treatment is often minimal or non-existent, they are often at risk of microbial and chemical contamination. Although the majority of these supplies serve only one household (Reid et al, 1999), there are many others that serve businesses such as hotels, campsites and residential schools. The frequency of monitoring by local authorities varies from one sample in five years to 24 samples per annum, depending on water use and volume supplied, however, there is no statutory requirement to monitor sources supplying a single household (Category 1 F). Clearly there is considerable potential for any microbial contamination to go undetected in these supplies, particularly as the contamination is often sporadic and associated with other environmental conditions such as rainfall. During 2002, a project was established to quantify the microbiological quality of some private supplies in the northeast of Scotland and to quantify the relationships between contamination by microbes and environmental conditions such as rainfall and land use. A better understanding of these relationships may help in the derivation of more risk-based assessments of water quality.

### Reservations on the use of boil water notices in the battle against cryptosporidium incidents and outbreaks of cryptosporidiosis – Dr Helen Irvine, Consultant in Public Health Medicine, Greater Glasgow NHS Board and Jim Blair, manager, Public Health Unit, Environmental Protection Services, Glasgow City Council.

Environmental Health Scotland Volume 15, Number 4 contained an article entitled 'Outbreak of Cryptosporidium in a Public Water Supply in County Westmeath, Ireland'. Part of the control strategy for this outbreak was a Boil Water Notice. In this commentary, the authors discuss some of the disadvantages of Boil Water Notices.

**Many thanks to all contributors to this issue of Environment and Health International**

**Deadline for submission of articles for the next issue is**

**31st January 2005**

**Contact John Stirling, 11 Muirwood Drive, Currie, Edinburgh EH14 5EZ, SCOTLAND**

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## **Journal of Environmental Health – Chartered Institute of Environmental Health**

This is a peer-reviewed journal published quarterly and which the IFEH is associated with. Further information is available from the website: <http://www.tandf.co.uk/journals>.

### **AIMS AND SCOPE**

The Journal of Environmental Health Research is a peer-reviewed journal published in three formats; Printed full journal, printed abstracts and electronic journal. JEHR publishes original research papers, review articles, technical notes and professional evaluations covering the diverse range of topics which impinge on environmental health including; occupational health and safety, environmental protection, health promotion, housing and health, public health and epidemiology, environmental health education, food safety, environmental health management and policy, environmental health law and practice, sustainability and methodological issues arising from the design and conduct of studies.

JEHR provides a communications link between the diverse research communities, practitioners and managers in the field of environmental health and aims to promote research and knowledge awareness of practice-based issues and to highlight the importance of continuing research in environmental health issues.

All CIEH members and other subscribers have full access to the electronic version of JEHR at [www.jehr-online.org](http://www.jehr-online.org)

# Sustainability Indicators

[www.ifeh.org/indicators](http://www.ifeh.org/indicators)

The International Federation of Environmental Health is running a project with the target to build up an internet based example collection on how indicators until now have been used by the local environment and health authorities across the World.

The project has been presented at the World Summit on Sustainable Development, Johannesburg 2002 , at the World Conference on Environmental Health 2002, San Diego, USA and 2004 in Durban, South Africa.

Many national IFEH member organisations around the World are by now represented in the project – and several examples from local authorities and organisations can be found on the project website: [www.ifeh.org/indicators](http://www.ifeh.org/indicators)

We would like very much to expand the example collection even more. Check out the project website to see how your authority or organisation can contribute to the collection with your experience in the field of using indicators, or mail to [indicator-project@ifeh.org](mailto:indicator-project@ifeh.org)

By using indicators it should be easier to answer some basic questions related to a sustainable development at the local level:

What is the actual pressure on - and state of the environment and health in our local / regional community ?

On which topics should we focus our efforts ?

Does our effort show to result in measurable changes on the pressure, or on the state of the environment and/or health ?

Do we contribute to move towards a sustainable development - both locally as well as globally ?

## Sustainability Indicator Project

IFEH

### Aims of the project:

To build a collection of initiatives and activities undertaken primarily by local and regional environment and health authorities, World-wide, in order to demonstrate how indicators can be used as a tool for planning and monitoring.

To share the experience of using indicators, primarily at the local and regional level.

The use of indicators will allow for a more accurate assessment, performed by the local authority and others, on whether progress has been made towards a sustainable development.

