



# COMMEMORATING 25 YEARS OF AWARENESS AND PREPAREDNESS FOR EMERGENCIES AT LOCAL LEVEL (APELL)

*Achievements and  
Way Forward*

UNITED NATIONS ENVIRONMENT PROGRAMME



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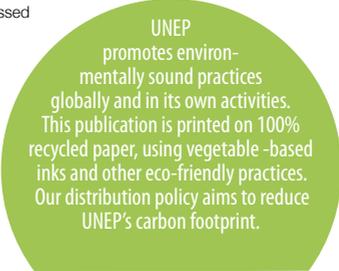
Main writer and editor: Ms. Fran Schulberg  
Editors: Mr. Tomas Marques, UNEP  
Ms. Katsiaryna Paulavets, UNEP

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# Commemorating 25 Years of Awareness and Preparedness for Emergencies at Local Level

## *Achievements and Way Forward*



*“The UNEP APELL Programme has achieved many real and tangible results over the past 25 years. As industrial operations shift towards the developing world, promoting cooperative risk awareness and risk reduction will take on ever increasing relevance for countries, companies and communities. One reason why I welcome new ways of communicating and sharing lessons learnt as an important pathway towards greater resilience within societies.”*

**Achim Steiner**  
**UN Under Secretary General**  
**and Executive Director of UNEP**

# Introduction

In the late 1980's, the United Nations Environment Programme (UNEP) initiated the **Awareness and Preparedness for Emergencies at Local Level (APELL)** Programme in response to a number of industrial accidents that resulted in deaths and injuries, environmental damage, and extensive economic consequences for the surrounding communities. These accidents demonstrated the need for improved systems for preventing and responding to environmental emergencies.

To address this need, the APELL process was developed to assist communities in preventing and preparing for industrial accidents. The APELL process is a methodological tool focusing on the local level for identifying possible industrial hazards, raising awareness of these hazards, and building local capacity for immediate, multi-party response in the event of an emergency.

Since many of the components of the APELL process are applicable to emergency preparedness regardless of the specific hazards, the process can help communities address them in an integrated way, taking into account the various industrial and natural hazards that may pose a threat, as well as the potential interactions between them.

Since its inception, UNEP has made significant efforts to raise awareness worldwide of the effectiveness of the APELL approach for improving local level preparedness for industrial accidents and natural disasters. APELL has been introduced in more than 30 countries, and implemented in more than 80 communities. This has resulted in long-lasting partnerships, including some that have been active for more than 15 years, and led to successful multi-stakeholder emergency preparedness. Specific guidance materials have been prepared for the chemical, mining, and transport sectors, port areas and storage facilities which have been applied in industrial communities worldwide.

Over the years, APELL has proven to be a successful approach for addressing emergency preparedness for industrial accidents, natural disasters and multi-hazard risks, thereby preventing loss of life, significant health impacts and damage to communities as well as protecting the environment. UNEP's longstanding commitment to promoting APELL through partnerships with governments, private sector and civil society has been instrumental to APELL's success and sustainability. UNEP is planning to continue collaborative efforts with partners with proven excellence in emergency preparedness to further the dissemination and application of the APELL approach in relevant sectors and communities throughout the world.

**30 countries**

**80 communities**

# History of APELL

The development of the APELL process and related guidance materials began in 1986 after the major industrial accidents in Seveso (Italy), Bhopal (India), Mexico City (Mexico), and Schweizerhalle (Switzerland) resulted in serious adverse impacts on local communities and the environment.

The APELL Handbook was published in 1988 providing guidance to government agencies, local authorities and plant managers for establishing well co-ordinated actions of individuals and institutions in order to build greater awareness of hazardous installations in a local community and to prepare appropriate emergency plans.

Beginning in 1989, UNEP initiated world to help communities described in the APELL projects have been introduced representing more than 30 at the regional, national, and communities, initial activities maintain and expand efforts replication of the seminars/ locations, amendments to laws/ (such as the establishment of an organisation to support emergency activities are listed in the Timeline below.



a series of activities around the implement the practical steps process. To date, APELL in at least 80 communities, countries, including events local levels. In a number of led to continuous efforts to including, in some cases, workshops in additional policies, or institutional changes "APELL Centre" or a new local preparedness efforts). Sample APELL

Initially, the focus of APELL was on industrial accidents that threaten to extend beyond the fence-line of a hazardous installation. Since 1996, the scope of the APELL process has expanded to address accident risks in other contexts including transport of hazardous goods, port areas, mining operations, and tourism.

Most recently, the scope of the APELL Programme was extended to incorporate a multi-hazard approach, in light of a number of recent natural disasters that caused extensive damage to health, property and the environment, as well as to align with efforts to address climate change adaptation.



# What is APELL?

APELL was created to help save lives and minimise adverse impacts resulting from environmental emergencies. APELL empowers communities by providing a clear process to increase awareness of, and preparedness for, industrial accidents and natural disasters.

Specifically, APELL is a practical, focused framework for action, not a theoretical guidance. It consists of a flexible methodological tool leading to the development and maintenance of an integrated emergency response plan for a community.

APELL prescribes a ten-step process that is designed to:

- identify possible hazards in the community;
- raise awareness of such hazards and the steps taken by industry and authorities to protect the community;
- train the public on actions to take should an accident occur and thereby build communities' resilience to environmental emergencies;
- promote co-ordinated preparedness among the stakeholder groups in a community;
- develop or update local emergency response plans (integrating existing plans to address all types of emergencies); and
- build local capacity for multi-party co-ordinated response in the event of an emergency.

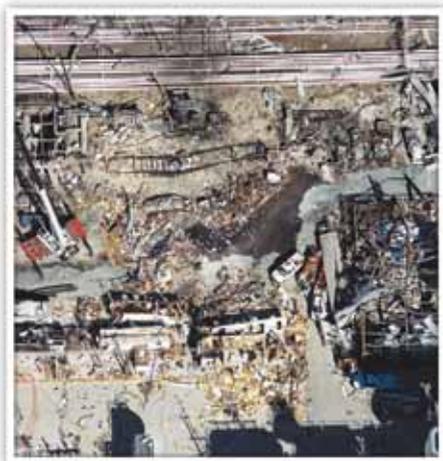
One aspect that distinguishes APELL from other international initiatives is the local focus; the process is intended to be owned, implemented and maintained by individual communities. Because the risks, capabilities, stakeholders and regulatory situation of different communities will vary, the APELL process was designed to be adapted to local conditions.

**The heart of the APELL process is the co-ordinating group, bringing together the various stakeholders in the community** including decision-makers from industry, government, response organisations, and others who may be affected by emergencies or can provide valuable expertise or information, including the public.

The role of the co-ordinating group is to act as a bridge among the various stakeholders and to drive the hazard assessment and emergency planning process, with a view to developing a single integrated community emergency plan that builds upon existing plans. There are many stakeholders in any community who should be part of this group including: industry representatives; local



# What is APELL?



*BP Texas City Refinery Explosion, 2005 (source: US Chemical Safety and Hazard Investigation Board)*

government officials including those responsible for public health, and environmental protection; emergency response personnel; military and civil defense units; volunteer organisations; technical specialists such as engineers, geologists, and scientists; community leaders and representatives of the public potentially affected in the case of an emergency.

The APELL process can be initiated by any individuals or organisations potentially affected by local hazards and risks; there need not be involvement from UNEP or other external organisation. Often, a national government ministry, possibly in association with industrial organisations and municipal authorities, will initiate the process and support local-level efforts.

The APELL Programme is managed by UNEP's Division of Technology, Industry, and Economics (UNEP-DTIE), under the Sustainable Consumption and Production Branch's Business and Industry Unit (BIU).

APELL-related activities are now part of UNEP's Safer Production Programme, which also includes the Flexible Framework Initiative for Chemical Accident Prevention and Preparedness and the Responsible Production approach for Chemical Hazards Management in Small and Medium Sized Enterprises (SMEs). For further information about UNEP's Safer Production Programme and APELL please visit: <http://www.unep.org/resourceefficiency/Business/CleanerSaferProduction/SaferProduction/tabid/78851/Default.aspx> and the Global APELL Platform at <http://www.apell.eecentre.org>



# Colombia

## CASE STUDY

HELLO!  
I AM APELITO  
LEARN WITH ME TO  
PREVENT AND DEFEND  
YOURSELF  
IN A EMERGENCY



In Colombia, APELL activities began in Barranquilla in 1990 when the local chemical industry, with the institutional support of the National Association of Industries of Colombia (ANDI) undertook to plan and implement the APELL methodology. To date, a group of companies (consisting of the most important industrial sectors of the city and its metropolitan area) along with the representatives of the Government and communal leaders support this process.

APELL Barranquilla, in its 20 years of activities, has reached important achievements. These include: a training programme aimed at industry, government and the community; the development of pedagogical resources such as the APELL primer, the character 'ApeLito' and related videos for educating the community; involvement of the various universities; the emergency response plan – SIMET (integrated system for management of technological emergencies); development of emergency drills; and a 24-hour activated communications network.

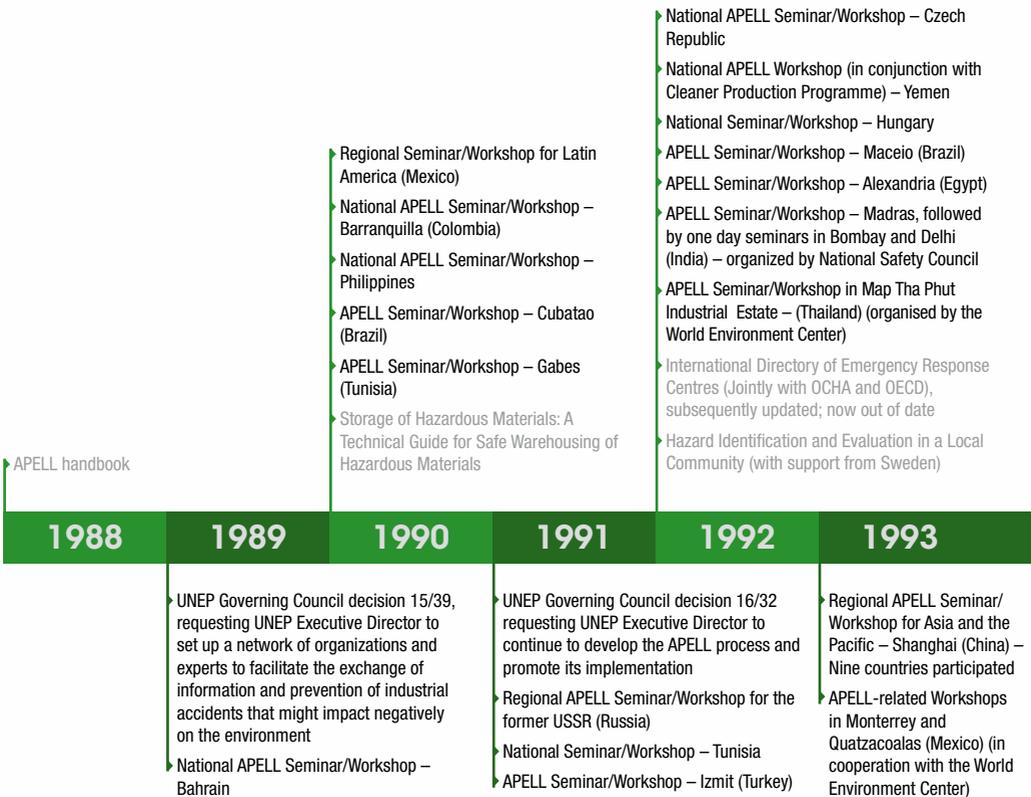
APELL Barranquilla has been recognised by the national system of prevention and emergency response as being leaders in technological emergency management as well as by the US Government's Office of Assistance for Disasters for Latin America and the Caribbean as an institutional linkage in training activities. The APELL Barranquilla group has also provided

support to the local authorities to respond to emergencies that occur in the region.

To date, several companies (representing the most important industrial sectors of the city) along with the representatives of the government and community leaders support the APELL process.

In 1996, the Mamonal Foundation began the APELL process in the Mamonal Industrial Zone (comprising different companies including refineries, cement manufacturing plants, chemical and petrochemical companies, and port services) in Cartagena de Indias. In 2001, ANDI started leading the process. The occurrence of a maritime emergency in the same year led to the establishment of an emergency plan for the port area based on APELL. Recent APELL activities in Cartagena de Indias include a community training and a project for implementing Emergency Committees (the COMBAS project) and Emergency School Plans (PLEM) in several communities located in the bay of Cartagena de Indias, reaching thousands of people including children, and benefiting local educational institutions. This project involves among others Ecopetrol (the largest company in the country and the principal oil and gas company in Colombia), ANDI, and the Mamonal Foundation. In 1998 the Colombian company Ecopetrol started applying the APELL across the company.

# APELL TIMELINE



The following timeline provides a historic overview of the APELL Programme by identifying key activities (workshops, seminars and training sessions), major publications, and other milestone events. Through consultation with APELL practitioners and experts, UNEP attempted to be inclusive and to identify relevant events that took place over two and half decades. However, given the nature of APELL and the extent of activities, this timeline cannot provide a complete picture. UNEP apologises for any omissions and invites any suggestions for amending/updating this timeline (contact: [apell@unep.org](mailto:apell@unep.org)).



- ▶ Regional APELL Seminar/Workshop for Baltic States – Riga (Latvia)
- ▶ National APELL Seminar/Workshop – Indonesia
- ▶ APELL Seminar/Workshop – Ciliegong/Bandung (Indonesia)
- ▶ APELL Seminar/Workshop – Tula (Russia)
- ▶ APELL Seminars/Workshops – Kanpur, Cochin, Madras (India) (by the National Safety Council in cooperation with the World Environment Center)
- ▶ APELL/REMPEC Workshop on Port Safety – Barcelona (Spain)
- ▶ APELL Annotated Bibliography

- ▶ Regional APELL Workshop – Iquique (Chile)
- ▶ National APELL Seminar/Workshop – South Korea
- ▶ APELL Seminar/ Workshop – Bahia Blanca (Argentina)
- ▶ APELL Seminars/Workshops – El Tablazo, Jose, Puerto La Cruz, Maracaibo (Venezuela)
- ▶ APELL Seminar/Workshop – Cartagena (Colombia)
- ▶ APELL Seminar – Petrozavodsk, Karelia (Russia) (by the Swedish Rescue Services Agency – SRSA – & Ministry of Emergencies of the Russian Federation – EMERCOM)
- ▶ Workshop on APELL for Port Areas – Valparaiso (Chile)
- ▶ APELL for Port Areas: Preparedness and Response to Chemical Accidents in Ports Management of Industrial Accident Prevention and Preparedness: A Training Resource Package

- ▶ APELL Seminar – Murmansk (Russia) (by the SRSA & EMERCOM)
- ▶ National APELL Seminar – China
- ▶ National APELL Seminar – Trinidad and Tobago
- ▶ Senior-Level Advisory Group meeting to mark the 10th Anniversary of the APELL Programme (Rosersberg, Sweden)

1994

1995

1996

1997

1998

1999

- ▶ Regional International Disaster Workshop – Chile
- ▶ National APELL Seminar/Workshop – Chile
- ▶ APELL Seminar/Workshops – Concepcion and Valparaiso (Chile)
- ▶ APELL Seminars/Workshops – Baroda and Haldia (India) – (coordinated by the World Environment Center)
- ▶ APELL Seminars/Workshops – Moron/Puerto Cabello and Puerto La Cruz (Venezuela)
- ▶ APELL Seminars/Workshops – Poza Rica and Orizaba (Mexico)
- ▶ APELL Seminar/Workshop – Chilegon (Indonesia) – (coordinated by the World Environment Center)
- ▶ TransAPELL Workshop – Daugavpils (Latvia) sponsored by Sweden
- ▶ TransAPELL Pilot Project – Kristenhann (Sweden)
- ▶ Post-APELL Seminar/Workshop – Maceio (Brazil)
- ▶ US CAMEO (“Computer Aided Management of Emergency Operations” internationalized to help implement APELL). Training for 10 representatives from developing countries
- ▶ CAMEO Workshops – Rampur and Phulpur (India)
- ▶ CAMEO Workshops (Poland) – (in cooperation with the World Environment Center)
- ▶ APELL Worldwide (twelve national overviews of APELL or APELL-like activities)

- ▶ APELL Regional Seminar and Workshop – Durban (South Africa)
- ▶ APELL/Cleaner Production Seminar – Jia Xing (China)
- ▶ APELL/Cleaner Production Seminar – Bahrain
- ▶ National Seminar on APELL for Transport – Tunisia
- ▶ APELL Seminar – Archangelsk (Russia) (by the SRSA & EMERCOM)
- ▶ APELL and the Cleaner Production Programmes combined under the umbrella of “Cleaner and Safer Production”

<ul style="list-style-type: none"> <li>▶ TransAPELL Workshop – India</li> <li>▶ National APELL Seminar – Jordan</li> <li>▶ National APELL Seminar – Qatar</li> <li>▶ Training on APELL and Cleaner Production – La Havana (Cuba)</li> <li>▶ Training on APELL and Cleaner Production in the textile, leather, painting, automotive, pharmaceutical and chemical sectors – Quito (Ecuador)</li> <li>▶ Seminar on Emergency Preparedness in Industrial Estates (with the Asian Disaster Preparedness Center – ADPC)</li> <li>▶ Special seminar on Emergency Response and Safety at Mine Sites – Brussels (Belgium)</li> <li>▶ “International Cyanide Management Code” published; its text on emergency planning is based on the APELL process</li> <li>▶ TransAPELL: Guidance for Dangerous Goods Transport Emergency Planning in a Local Community</li> </ul>	<ul style="list-style-type: none"> <li>▶ Regional APELL Seminar – Barents Sea (Russia) (with Nordic countries on co-operation of rescue services in the arctic region)</li> <li>▶ Seminar on “APELL and Other Community Awareness and Preparedness Programmes,” – Odense (Denmark) (in conjunction with Seveso Directive Committee of Competent Authorities, co-hosted with the EC)</li> <li>▶ Workshop on APELL for Port Areas – Santos (Brazil)</li> <li>▶ APELL Workshops – Carabobo and Zulia Estates (Venezuela)</li> <li>▶ APELL Seminar – St Petersburg (Russia) (by the SRSA &amp; EMERCOM)</li> <li>▶ APELL in Industrial Estates – brochure</li> <li>▶ First National APELL Center established in Mumbai, India hosted by the National Safety Council (NSCI)</li> <li>▶ Development of APELL Centre, in collaboration with the Co-operative Council for the Arab States of the Gulf (GCC)</li> </ul>	<ul style="list-style-type: none"> <li>▶ APELL Workshop – Kaliningrad Oblast (Russia)</li> <li>▶ APELL Capacity Building Workshop for the Petrochemical Industry – Trinidad and Tobago</li> <li>▶ Iberoamerican Conference on Preparedness of Mining Communities for Emergencies from Technological Disasters – Bolivia</li> <li>▶ International Forum on Preparedness and Awareness of Industrial Disasters – Colombia</li> <li>▶ International Conference on the 20<sup>th</sup> Anniversary of the Bhopal Gas Tragedy – Kanpur (India)</li> <li>▶ APELL Seminar – Svetlogorsk (Russia) (by the SRSA &amp; EMERCOM)</li> <li>▶ The application of the APELL Framework for Earthquakes, Floods, Tsunamis, School Protection and Education (brochure with UNESCO)</li> <li>▶ APELL sub-center established in Tuticorin, Tamil Nadu State (India)</li> <li>▶ Ministry of Environment of Brazil signed an agreement with UNEP to establish a national APELL network</li> </ul>
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2000	2001	2002	2003	2004	2005
	<ul style="list-style-type: none"> <li>▶ First meeting of a Regional APELL Expert Network for Latin America, organized by the UNEP ROLAC (members of the network act as advisors and consultants to organizations wishing to start APELL at the local level) – Mexico City (Mexico)</li> <li>▶ APELL Seminar/Workshop – Muscat (Oman)</li> <li>▶ APELL Seminar Workshop – Abu Dhabi (UAE)</li> <li>▶ Training on APELL and Cleaner Production – Ecuador</li> <li>▶ APELL Seminar/Workshop – Osiek (Croatia)</li> <li>▶ Demonstration Project evaluating application of APELL, cleaner production, and environmental management systems in large industrial estates – Dalian (China)</li> <li>▶ Pilot Project in industrial Estates – Bang-Po Industrial Estates (near Bangkok, Thailand)</li> <li>▶ The 2<sup>nd</sup> Informal Consultative Group Meeting on APELL – Paris (France) – (new partnerships established with ADPC, the International Strategy for Disaster Reduction and the Economic Commission for Europe)</li> <li>▶ APELL for Mining: Guidance for the Mining Industry in Raising Awareness and Preparedness for Emergencies at Local Level (with ICMM)</li> <li>▶ Explaining APELL – brochure</li> </ul>		<ul style="list-style-type: none"> <li>▶ APELL Workshop – Leningrad Nuclear Power Plant and Petersburg Nuclear Physics Institute (Russia)</li> <li>▶ High Level Meeting on APELL – Peru</li> <li>▶ APELL for Mining Workshop (National) – Peru (in cooperation with UNDP)</li> <li>▶ Seminar on Promoting APELL Locally and Regionally – Bogota (Colombia)</li> <li>▶ APELL Workshops/Seminars to promote APELL in Czech Republic, France, India and Turkey</li> <li>▶ APELL Informal Workshop for Mining – in conjunction with APELL Expert Advisory Group – Geneva (Switzerland) (in cooperation with ICMM)</li> <li>▶ Joint AGEE*/APELL Meeting on the implementation of the “Partnership on Integrated Approach to Prevention, Preparedness for and Response to Environmental Emergencies in Support of Sustainable Development” – Geneva (Switzerland)</li> <li>▶ APELL Worldwide – brochure</li> <li>▶ Explaining APELL for Mining – brochure with ICMM</li> </ul>		<ul style="list-style-type: none"> <li>▶ APELL Workshop – Ukhta (Komi Republic of Russia)</li> <li>▶ TransAPELL Implementation – Peru</li> <li>▶ AGEE Meeting in association with the APELL Programme – Geneva (Switzerland) (addressed the interfaces between environmental and humanitarian aspects in responding to natural disasters)</li> <li>▶ Good practice in emergency preparedness and response</li> <li>▶ APELL for Coastal Communities – brochure</li> </ul>

- ▶ National APELL seminar/training session, plus two training sessions within the framework of a capacity-building and awareness-raising project – Koggala Export Processing Zone and Ekala Industrial Estate (Sri Lanka)
- ▶ National APELL training session and site demonstration projects – Mohammedia (Morocco)
- ▶ APELL Workshop – Arkhanglesk (Russia) (with SRSA & EMERCOM)
- ▶ International Workshop “The Need and Importance of Implementing the APELL Programme in Romania” – Cluj-Napoca (Romania)
- ▶ International conference ELSEDIMAR-RO 2006 “Environmental Security Management” – Baia-Mare (Romania)
- ▶ Community Risk Profile Tool (with INERIS)
- ▶ Final Report published on the APELL Programme in the North West Region of Russia (2003-2005) (prepared by Sweden)
- ▶ Engaging Business and the Supply-Chain in Safer Production and Emergency Preparedness – A joint project of UNEP, AccountAbility, ICCA and ICMM to promote application of APELL, corporate responsibility and safer production at the site level and through the supply-chain
- ▶ EC/UNEP multi-partner project for the implementation of APELL to tourist destinations through the adaptation of APELL to tourist destinations
- ▶ APELL sub-center established in Pune, Maharashtra (India)

- ▶ APELL Workshops – Cajamarca (Peru) (focus on mining & transport)
- ▶ DENATEH project promoting APELL in Baia Mare and Ramnicu Valcea (Romania)
- ▶ Assessing the Vulnerability of Local Communities to Disasters – An Interactive Guide and Methodology. Community Risk Profile Tool (CRP)
- ▶ Disaster Risk Reduction – A Toolkit for Tourism Destinations. Practical examples from coastal settlements in Asia
- ▶ Guidelines for establishing Crisis Communication Centre for the Tourism Industry at the Local Level

- ▶ APELL study visit of delegation of Chinese officials to the US, hosted by the US EPA, Houston LEPC and The Dow Chemical Company
- ▶ APELL and Process Safety Management Training Workshop – Zhangjiagang (China)
- ▶ Regional meeting: “Return of Experience on APELL applications in Latin America” – Buenos Aires (Argentina)
- ▶ National Dissemination Workshop – Beidaihe (China)
- ▶ APELL Multi-Hazard Training Kit For Local Authorities – For Community Vulnerability Reduction, Prevention, and Preparedness (with INERIS)

2006	2007	2008	2009	2010	2011
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- ▶ Training Workshop hosted by India’s NSC on preparation of emergency plans, in the framework of APELL activities in Sri Lanka – Mumbai (India)
- ▶ Disaster Risk Reduction workshops in Patong and Pi Pi Island (Thailand) and Mumbai (India) as part of the project on “Disaster Reduction through Awareness, Preparedness and Prevention Mechanisms in Coastal Settlements in Asia – Demonstration in Tourism Destinations”
- ▶ AGEE Meeting in association with the APELL Programme (Rosersberg, Sweden)
- ▶ APELL Workshop – Transcarpatia Region (Ukraine) (by the Swedish Rescue Services Agency)
- ▶ Disaster Risk Reduction in Tourism
- ▶ Establishment of the APELL National Center for Disaster Management (CN APELL RO) in Romania

- ▶ International Seminar on Promoting Safer Operations and Emergency Preparedness in the Value Chain of the Chemical Sector – Beijing (China)
- ▶ APELL Local Launch and Awareness Raising Workshop – Zhangjiagang (China)
- ▶ APELL Closure Workshop – Cajamarca (Peru) (focus on mining & transport)
- ▶ Disaster Risk Management for Coastal Tourism Destinations Responding to Climate Change – A Practical Guide for Decision Makers

- ▶ National & Sub-regional Workshop: “Lessons Learned in the Implementation of APELL for improved local emergency preparedness in Asia and Southeast Asia” – Colombo (Sri Lanka)
- ▶ Global APELL 25<sup>th</sup> Anniversary Forum – Beijing (China)
- ▶ Case study publication on APELL promotion in China
- ▶ APELL Launching in a natural gas treatment plant – Caraguatubua (Brazil)

 <b>APELL Events</b>	 <b>Publications</b>	 <b>Other Milestones</b>
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\***AGEE** – the **Advisory Group on Environmental Emergencies** – is an international forum held every two years bringing together environmental and disaster experts from around the world to share experience to improve prevention, preparedness and response to environmental emergencies, and to provide guidance for the work of the Joint UNEP/OCHA Environment Unit.

# Why is APELL Needed?

Virtually all countries have facilities with the potential for significant chemical accidents (i.e., fixed facilities where hazardous chemicals are produced, used, stored or otherwise handled including facilities used in the transport of hazardous substances such as port areas). Some hazardous installations may be obvious, such as a refinery or large manufacturing plant. But significant chemical accidents can also occur at places which may not appear to pose a risk such as a refrigeration facility, a grain silo, a liquefied petroleum gas distribution facility, or a warehouse that intermittently holds pesticides or other hazardous chemicals.

Chemical accidents often have serious, even devastating consequences, including:

- workers are hurt or killed;
- the public is exposed to chemicals or fires resulting in immediate injury or long-term health impacts;
- rivers and underground water sources are polluted affecting drinking water supply and industries that rely on the water including fisheries and agriculture;
- lasting economic consequences for the community near the accident, affecting not only the enterprise where the accident occurred but also neighbouring enterprises and others along the supply chain; and
- other adverse effects to health, the environment, and/or property.

There have also been many examples of transboundary environmental impacts, especially when accidents occur near international waterways or close to borders.

*“Moving towards global APELL is creating awareness and preparedness of chemical risk prevention for safer communities and sustainable industrial development.”*

**Helen Arromdee**  
**Senior Expert on Chemical Safety**  
**Department of Industrial Works**  
**Ministry of Industry, Thailand**



In addition, every year, there are tragic events such as earthquakes, tsunamis, cyclones, floods, landslides, or other disasters that cause the death and displacement of many people, as well as substantial economic, social and environmental damage. Climate change adaptation is also more and more on the disaster management agenda.

Natural disasters such as the Indian Ocean Tsunami or cyclone Nargis in Myanmar have shown just how devastating the implications of a general lack of preparedness and risk awareness can be. When combined with highly vulnerable populations in developing countries, economic recovery from natural disasters is often slow. Along with the loss of industries and infrastructure, there is also the loss of development opportunities as international funds are diverted into relief and rehabilitation, preventing more vulnerable communities to escape from chronic day-to-day poverty.

APELL provides a way for communities to address hazards in an integrated way, taking into account the various industrial and natural hazards that may pose a threat, as well as the potential interactions between them, such as:

- interconnected natural disasters (such as tropical cyclones that create flooding);
- industrial domino effects, where an accident in one facility damages an adjacent facility; and
- NATECH events, where a natural hazard triggers or worsens an industrial/ technological accident.

The occurrence of industrial disasters in recent years, as well as the growing concern about the impacts of natural disasters and the potential consequences of climate change on health and social infrastructure, underscore the continuing importance of supporting communities' efforts to improve their resilience by increasing awareness of, and preparedness for, natural and man-made disasters.

### Hyogo Framework for Action and APELL

In 2005, governments around the world committed to take action to reduce disaster risk and reduce vulnerabilities to natural hazards, adopting the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters.

To achieve its goals, the HFA recognises the need for building national and local capacities for disaster risk reduction and for stronger community involvement and engagement in emergency preparedness at local level. Focusing on local level community preparedness to industrial and natural hazards, UNEP's APELL Programme continues to be relevant to address multi-hazards and to build the preparedness of local communities, thus contributing to achieving the goals of the HFA.

Beyond 2015, the Hyogo Framework for Action will continue its disaster risk reduction efforts, building on the current HFA and focusing on those elements that are still in need of further action. Local level implementation and multi-stakeholder participation in disaster preparedness are likely to be a strong focus of the post-2015 framework. Intergovernmental organisations such as UNEP can play a significant role in fostering local resilience and preparedness to industrial and natural hazards by building local capacity and engaging multiple stakeholders in emergency planning processes.

# Peru

## CASE STUDY



Two APELL workshops were initially held in Peru in 2003, a High Level Meeting on APELL and a National APELL for Mining Workshop organised with UNDP. Some years later, a consultation meeting with the inter-agency “Technical Group of Chemical Substances” led by the National Environment Council of Peru (CONAM, now the Ministry of Environment of Peru) helped re-start the dialogue on local level emergency preparedness related to the transport of hazardous substances in mining operations. This was in the context of a new Peruvian regulation on the transport of hazardous substances and wastes, and of a new pilot project and APELL training programme launched in 2008 in the Cajamarca region of Northern Peru, bringing together UNEP, CONAM, and other partners.

As a result of the 2008 APELL training programme in Cajamarca, the Ministry of Transport and Communication, the new

Ministry of Environment of Peru (MINAM), the National Society of Industry (SNI) and the National Society of Mining Petroleum and Energy (SNMPE) created a technical group to further promote the implementation of APELL and selected elements of UNEP’s Responsible Production approach (such as hazard mapping and stakeholder engagement), and to provide extensive inputs into a new TransAPELL planning and communication tool, developed under the scope of the Cajamarca pilot.



At the local and regional levels, a working group was formed in Cajamarca in order to establish an APELL Co-ordinating Group and develop an APELL Strategy for the Region. A pilot programme was carried out, including local meetings with the key mining companies operating in Peru and training activities. Based upon the stakeholder engagement and communication aspects common to APELL, TransAPELL, and UNEP’s Responsible



Production approach, the training programme helped to develop a dialogue between transporters, mining companies, responders/fremen and government representatives. The training programme received significant support from numerous stakeholders including the Ministry of Environment of Peru (MINAM), the Ministry of Energy and Mines (MEM), the Ministry of Transport and Communications (MTC), the National Institute of Civil Defence (INDECI), the District Government of Hualgayoc, and the Regional Government of Cajamarca. The support of industry bodies such as the National Society of Mining, Petroleum and Energy (SNMPE) and the National Society of Industry (SNI) was instrumental, as was that of the companies Gold Fields La Cima, Yanacocha, Compania Minera Antamina, S.A., Rio Tinto, Barrick, Consolidada de Hualgayoc, S.A., and of the NGO RAPID LatinoAmerica.

As a result of the pilot, the Ministry of Environment of Peru developed new guidance and a regional strategy on TransAPELL for Mining Operations, in close partnership with key national and regional stakeholders in Cajamarca. Furthermore, meetings were

held with other relevant stakeholders, such as the National Society of Industries (SNI) and representatives from mining companies, which led to a process to further assess current needs with a view to up-scaling APELL-related initiatives in other regions of Peru.

A closure workshop was held in Cajamarca in 2009, which included a discussion of the new guidance and regional strategy on TransAPELL for Mining Operations developed by the Ministry of Environment of Peru through technical consultations with key national and regional stakeholders. Other highlights included the presentation of a knowledge platform on TransAPELL and APELL in the Peruvian mining sector.

The initiatives of private mining sector based on APELL guidelines have promoted greater involvement of government on potential risk management for mining activities, as well as increased the synergies of government institutions that collect specialised information and improved prevention measures for any emergency.

# The Keys to APELL's Success

There are a number of characteristics that have made APELL such a successful approach for addressing emergency preparedness for industrial accidents, natural disasters and multi-hazard risks.

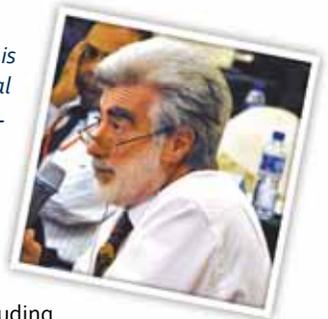
Two of the most important are: the focus on the local community and the creation of a co-ordinating group, bringing together representatives of the different stakeholders in the area.

The local focus means that the process is owned, implemented and maintained by individual communities. Each community can adapt the steps of the APELL process to its specific conditions and create an emergency plan and an education / outreach policy that is tailored to its needs.

The APELL process, managed by a local co-ordinating committee, provides an effective, inclusive mechanism to get the input and support necessary for successful emergency preparedness and response.

*“One of the key factors that allow APELL to continue working is that the APELL Process encourages to sit at the same table local authorities, owner of risks and community. Secondly, APELL involves the community from the very beginning.”*

**Nestor Spósito**  
APELL process coordinator  
Bahia Blanca, Argentina



Another reason for APELL's success is the work of UNEP and its partners in providing support. A number of organisations, including UN agencies, other international organisations, regional bodies, donor countries, national and international industry associations, universities/research institutions, technical institutions and NGOs have supported APELL activities through a variety of different projects.

Communities benefit from the insights of international experts during workshops and other trainings activities and get support from the various guidance documents prepared in response to identified needs. Through its publications, the APELL website, and the new Global APELL Platform website, UNEP keeps facilitating the sharing of lessons learned.

*“Anyone can start the APELL process, as it does not depend on a specific authority!”*

**Giuseppe Damiano**  
General Manager  
RAPID LA, Peru



Many communities that have adopted the APELL process have discovered unexpected benefits, such as improved trust between the stakeholder groups, greater general safety consciousness and an increased concern for environmental issues. In fact, some communities have taken what they learned from the APELL process to develop mechanisms to improve communication and education activities, and establish new partnerships, in other contexts.



*“APELL has been the tool that has given a level playing field for the community, industry and regulators to come in to one table to discuss the country’s disaster risk management aspects.”*

**Jayavil Fernando**  
**Project Director**  
**Central Environmental Authority**  
**Sri Lanka**

It is impossible to know the true reach of APELL, as the process and related guidance has been used by many communities, countries, and industries to improve emergency preparedness and response without the involvement (or knowledge) of UNEP. In fact, it was intended from the outset that the APELL process be presented in such a way that it can be used without the support of UNEP.

UNEP knows that APELL activities have been replicated in a number of communities after an initial UNEP workshop or seminar, with one community supporting the efforts of others in their country. In addition, some national government agencies have found the APELL guidance and tools valuable, incorporating APELL principles into their national regulations, policies and programmes. Furthermore, some industry associations and individual companies have taken on board many aspects of APELL for their policies for improved accident prevention and preparedness, and some industrial estates are using APELL concepts in their management plans.

*“The key to local emergency preparedness, as practiced by both the APELL Programme and Local Emergency Planning Committees (LEPCs), is understanding the risks in the community and then working with everyone in that community to establish roles and responsibilities associated with those risks.”*

**Timothy R. Gablehouse**  
**Past-president and director of government relations**  
**National Association SARA Title III Program Officials**  
**USA**



# Global APELL 25th Anniversary Forum



The 25th Anniversary Forum was organised by UNEP in partnership with China's Ministry of Environmental Protection (MEP) and Renmin University of China. It provided an opportunity to review UNEP's APELL Programme, exchange experience, and gather feedback to inform future planning.

The Forum was a three-day event with approximately 170 participants from 17 countries with representatives from various stakeholder groups including local and national authorities, individual enterprises and industrial organisations, international and regional organisations, professional associations, universities/ research institutes, technical institutions, non-profit organisations, independent experts and civil society.

The Forum focused on commemorating the past quarter-century of achievements and presenting an opportunity to share experiences and lessons learned.

It also served as a platform for expanding public-private partnerships with the goal of increasing the application of APELL-related approaches worldwide and for collecting recommendations for improving the APELL process and expanding its application, based on the experience of APELL practitioners.



As part of the Forum, UNEP and Renmin University of China signed a Memorandum of Understanding to promote wider cooperation, research, and capacity building in the areas of environmental emergency management and chemical accident prevention and preparedness policy and regulation in China. Other spinoffs of the Forum include the establishment of an 'APELL and Responsible Production Research Center' at the Chemical Process Accident Prevention and Emergency Response Research Center of Tsinghua University in Beijing.

# 15-18 November 2011 Beijing, China



One of the main conclusions from the Forum was that APELL remains a sound and useful tool for improving community awareness and preparedness for emergencies, and that it has good synergies with other related approaches. Speakers congratulated UNEP on the remarkable progress that has been made in many communities, especially in light of the limited resources available to support UNEP's efforts.

In addition, participants provided a number of specific suggestions to UNEP for improving the APELL process and expanding its application, based on the experience of APELL practitioners including, for example: prepare follow-up studies to learn why APELL succeeds in some communities, but doesn't take root in others; broaden the participation in future meetings to include geographical areas not represented and individuals from communities where APELL implementation was not successful; improve accountability and develop indicators to measure the value of the APELL Programme and local APELL projects; and increase support (from UNEP and external sources) for APELL activities.



*“I deeply feel that the community should play an important role in the process of preventing emergencies and securing environmental safety. In China, there is a view that safety is something that concerns only government and enterprises; the community is not so related. Through this international forum and our previous activities in China, we are fully aware that in order to prevent emergency situations, the government, enterprises and community, all should take responsibility.”*

**Ren Longjiang**  
Division Chief  
Environmental Emergency Response and  
Accident Investigation Centre  
Ministry of Environmental Protection,  
China

# China

## CASE STUDY



*“The China collaboration of Dow-MEP-UNEP demonstrated the power of APELL to coordinate and help assure community safety in chemical intensive areas. Safety, planning, and transparency are key to a ‘harmonious society’. APELL can make a difference.”*

**Neil Hawkins**  
Vice President of Sustainability and  
Environment, Health & Safety  
The Dow Chemical Company

APELL-related activities have been conducted since the early 1990's, with a number of different workshops and seminars. In 2005, after the chemical accident along the Songhua River, China's government increased its efforts to improve prevention and preparedness for chemical accidents triggering closer co-operation between China's Ministry of Environmental Protection (MEP) and UNEP to address safety and emergency preparedness issues in the chemical industry.

In 2008, UNEP, MEP and the Dow Chemical Company initiated a two-year project in China entitled "Promoting Safer Operations and Emergency Preparedness in the Value Chain of the Chemical Sector". This project was carried out by UNEP with support from the Dow Chemical Company; additional expertise was provided by the US EPA, the US National Association of SARA Title III Program Officials (NASTTPO), the Swedish Civil Contingencies Agency (MSB), Dow Quimica Argentina, and Tsinghua and Renmin Universities of China.

The project aimed to improve local awareness and preparedness for industrial emergencies,



and local authorities' understanding of how to develop and implement community emergency plans with a multi-stakeholder, participatory approach.

Under the scope of the project a series of training workshops and seminars on industrial accident prevention, preparedness and response were delivered to China's authorities and chemical industries located in or near the Yangtze International Chemical Industry Park in Zhangjiagang Free Trade Zone (ZFTZ). These activities led to the undertaking of an emergency exercise involving multiple stakeholders from Zhangjiagang, including Dow Chemical, Dow Corning, the Zhangjiagang Environmental Protection Bureau, the Safety Bureau of Zhangjiagang, and the fire brigade. Designed to test ZFTZ's integrated emergency plan, the exercise engaged several local and regional governmental agencies, providing a platform for evaluating and discussing actions needed to further improve local capacities for emergency preparedness and response to chemical accidents in China.

As part of the project, a study visit by Chinese officials to a state-of-art Dow Chemical facility in the United States was also organised to share the best current practices in chemical safety and emergency preparedness.

The project resulted in significant outputs, which were shared with representatives from province and city-level authorities and chemical companies at a dissemination workshop in Beidaihe, China in September 2010. These include a Guideline for Environmental Emergency Management in Chemical Industrial Parks, which was disseminated at national level and a Training Manual on Emergency Prevention and Preparedness for Chemical Industries building upon the APELL approach. Other outcomes of the project include the establishment of a new "Policy and Regulation Research Institute on Environmental Emergency Management and Chemical Accident Prevention and Preparedness" at Renmin University of China, and an APELL/Responsible Production Research Centre at Tsinghua University in Beijing.

# The Role of UNEP

The APELL Programme is managed by **UNEP's Division of Technology, Industry, and Economics (UNEP-DTIE), under the Sustainable Consumption and Production Branch's Business and Industry Unit (BIU)**. It is one of three main initiatives managed within BIU to enhance risk reduction by strengthening institutional capacity on chemical accident prevention and preparedness at national and local levels.

UNEP plays a catalytic role in promoting APELL for use by communities at risk, and **provides technical support** – upon request – to national and local authorities, industries and others that wish to start APELL in their communities or to expand the use of the APELL process. **UNEP takes the lead in preparing additional guidance documents** and other materials in response to identified needs. It also **helps with the creation of national (or regional) APELL centres**.

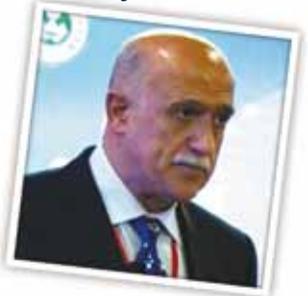
***A key UNEP function is to reach out to other organisations (public and private) to engage them and facilitate the provision of financial, technical and in-kind support for the APELL Programme and related activities.***

UNEP also **disseminates information on APELL and facilitates the sharing of experience** through, for example, maintenance of the international networks of APELL experts, periodic APELL seminars, publication of case studies and similar documentation, and making information on APELL easily accessible on its website and on the newly created Global APELL Platform website. The APELL website is the official online window to UNEP's APELL Programme, providing quick links to publications (including translations) and tools for risk assessment and emergency planning. It also contains information on worldwide implementation of APELL, latest developments, and upcoming events. The Global APELL Platform website includes additional materials in support of the APELL community of practitioners.

Aiming to promote improved chemical accident prevention and preparedness **on a national level**, particularly in fast-growing economies and developing countries that are experiencing rapid industrialisation and need support to address the increased risks of chemical accidents, UNEP launched the Flexible Framework Initiative for Addressing Chemical Accident Prevention and Preparedness (CAPP). The Initiative, started in 2007 building on the APELL approach and experience, is designed to: increase countries' understanding of issues related to CAPP; improve the capacity of relevant institutions, agencies and experts to address the risks of chemical accidents; and help countries to develop and implement an appropriate CAPP programme at national level. (<http://www.unep.org/resourceefficiency/Business/CleanerSaferProduction/SaferProduction/FlexibleFrameworkInitiative/tabid/78875/Default.aspx>).

*“APELL has proven to be a successful approach in promoting community resilience and local preparedness for industrial accidents and natural disasters. UNEP is now putting its efforts in further increasing the dissemination and application of APELL by building upon existing partnerships and by seeking further engagement of government and companies.”*

**Arab Hoballah**  
Chief of Sustainable Consumption and Production Branch, UNEP



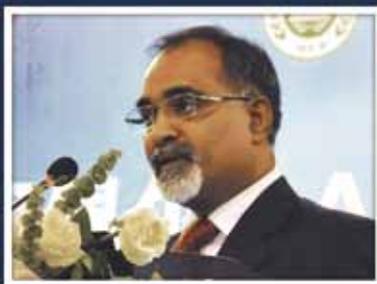
# India

## CASE STUDY



A partnership with the National Safety Council of India (NSCI) has been in place since 1992 with the successful implementation of the APELL-LAMP Programme in six high risks industrial areas and at the national level from 1992 - 1997.

One of the lasting outcomes was a new set of rules called «The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules 1996” to provide legal backing to the formation of APELL-like co-ordination groups called Local Crisis Groups (LCGs) in all industrial areas having hazardous installations, as well as strengthening their capabilities through training, equipment and networking. Furthermore, the APELL process has been recommended in the National Disaster Management Guidelines on Chemical (Industrial) Disasters issued by the National Disaster Management Authority in April 2007.



The APELL Programme has been growing in India ever since, characterised by the implementation of the TransAPELL Programme in 2000 and by the launching in 2002 of the first national APELL Center in Mumbai (hosted by the NSCI). This was followed by the creation of sub-centers in Tuticorin, Tamil Nadu State (2004) and in Pune, Maharashtra (2006).

Initiatives undertaken include specific activities on APELL and the mining industry conducted at the TERI Centre in Goa in 2002, and the NSCI projects in five major Indian States – West Bengal, Maharashtra, Gujarat, Tamil Nadu, and Kerala (2005-2008). In addition, from 2006-2008 the NSCI was a local project partner in UNEP’s project on “Disaster Risk Reduction through Awareness, Preparedness and Prevention Mechanisms in Coastal Settlements in Asia - Demonstration in Tourism Destinations.”

# The Role of Strategic Partners

The issue of prevention and emergency preparedness related to natural disasters and industrial accidents is too large to be addressed by any single entity and requires the concerted efforts of all sectors of an increasingly interconnected global society. Thus, UNEP recognises the important role played by partnerships in promoting and replicating APELL worldwide. UNEP's longstanding commitment to promoting APELL through partnerships with governments, private sector and civil society has been instrumental in its success and sustainability over the past quarter century<sup>1</sup>.

It is not possible to fully describe the time, expertise, money and other assistance provided in support of the APELL Programme and related activities. UNEP has worked with other inter-governmental organisations (global and regional), individual countries, industrial associations and enterprises, universities and research institutions, and other non-governmental organisations to expand the reach of APELL. Furthermore, many experts have contributed their time to participate in various training activities and seminars.

This brochure can only provide a few illustrative examples of the strategic partnerships that contributed to the success of APELL during its first twenty-five years:

 **Chemical Industry support:** APELL was initiated with the support of key chemical industry partners. In response to the Bhopal tragedy, the US chemical industry association<sup>2</sup> created its Community Awareness and Emergency Response («CAER») programme with the goal of having an emergency response plan, co-ordinated with the local community, for every plant of CMA member companies. The CMA along with the European Chemical Industry Council (CEFIC) worked with UNEP to create the APELL Handbook based on the CAER approach. The global chemical industry has adopted CAER, as part of Responsible Care®.

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<sup>1</sup>Direct support for the APELL Programme has been received from: the International Council of Chemical Associations (ICCA) representing numerous national chemical industry associations; large international corporations, such as the Dow Chemical Company, Petrobras; the governments of Canada, France, Germany, Norway, Sweden, Switzerland, the USA, and China; and international organisations, including the Organisation for Economic Co-operation and Development (OECD) and the Commission of the European Communities.

Special agreements have been signed and joint projects undertaken with: the International Atomic Energy Agency (IAEA), the International Programme on Chemical Safety (IPCS), the World Health Organisation (WHO), the UN Centre for Human Settlements (HABITAT), the United Nations Industrial Development Organisation (UNIDO), the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the International Labour Organisation (ILO), and the International Maritime Organisation (IMO).

<sup>2</sup>Then called the Chemical Manufacturers Association (CMA), now the American Chemistry Council (ACC).

The chemical industry has been actively partnering with UNEP throughout the twenty-five years of the APELL Programme. For example, for many years, the International Council of Chemical Associations (ICCA) supported the services of a senior industry consultant from a chemical company to be on assignment to UNEP. The expertise and experience of these industry experts were vital to the successful implementation of APELL, and helped to gain the participation of industry in developing countries. The ICCA and other industry associations continue to support the further development and elaboration of APELL materials.

In addition, national industry associations and individual companies have participated in APELL workshops and planning efforts at the local level.



*“The fact that we are celebrating 25 years of APELL shows that it was not only necessary but the Programme has actually flourished to the point now where it is quite clear that we could not have done without it.”*

**Barry S Dyer**  
Chief Executive  
Responsible Care New Zealand  
International Council of Chemical Associations

*“The APELL process is very useful for an individual company as well as for an industrial area especially in China as the country is promoting chemical industry parks where many industries will be clustered together. So the APELL methodology can be applied to teach the industry on how we can have prevention, on how to do education and communication with the public. In case of any event that comes we can be prepared and have very safe evacuation, and the public will know what to do in case of an emergency.”*

**Ken Tsang**  
Senior Advisor of Responsible Care  
Association of International Chemical Manufacturers, China



# The Role of Strategic Partners

**Mining Industry Support:** The efforts to expand APELL to address issues related to the mining industry were undertaken in partnership with the International Council on Mining and Metals (ICMM). The ICMM worked together with UNEP to develop specific technical materials, and to implement joint demonstration projects in several countries.

UNEP is also a partner of the International Cyanide Management Institute (ICMI) which has developed the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold, which is consistent with the APELL framework and its ten-step process.

**United States:** The US Environmental Protection Agency (EPA) has supported APELL from the outset, providing funds and expertise in connection with the development of the Programme and related guidance materials, as well as participating in training activities and seminars. It has also made significant in-kind contributions such as making available the CAMEO system to any community implementing APELL (see below).

The US Chemical Safety and Hazard Investigation Board has also supported the APELL Programme by providing videos, free of charge, on investigations of chemical accidents, which have been used during APELL training activities.



*“The APELL process is sound!”*

**David Speights**  
**Former Associate Director**  
**Chemical Emergency Preparedness and**  
**Prevention Office**  
**USEPA**

## United States and CAMEO

The US has made a significant contribution by making “CAMEO” available to any country using the APELL process. CAMEO - Computer-Aided Management of Emergency Operations - is a system of software applications used widely to plan for and respond to chemical emergencies. CAMEO can be used to access, store, and evaluate information critical for developing emergency plans. The CAMEO system integrates a chemical database and a method to manage the data, an air dispersion model, and a mapping capability. All modules work interactively to share and display critical information in a timely fashion.

- **Sweden:** Sweden has also participated from the outset, in the development of technical materials, in the organisation of workshops and special meetings, and in leading efforts to promote APELL in the Baltic Region, Russia, Armenia and Ukraine. Sweden took the lead in developing two publications: "Hazard Identification and Evaluation in a Local Community" and "TransAPELL". The TransAPELL report was developed as the result of a cross border project between Sweden and Latvia. Sweden has participated with experts in a number of APELL workshops in several countries, ranging from Eastern Asia to Central and South America, as well as in UNEP's pilot projects in India and Thailand.

The promotion of APELL in the Northwest region of Russia, including seminars in seven cities, was carried out in co-operation between EMERCON of Russia, the Swedish government, and with other Nordic countries (through the Swedish Rescue Services Agency (SRSA)<sup>3</sup>), with financial support from the Nordic Council of Ministries. The government of Sweden also provided technical experts for other workshops and hosted APELL-related activities, including the 1998 Rosersberg meeting to mark the 10th anniversary of the APELL Handbook. In 2007 SRSA hosted in Rosersberg the seventh meeting of the Advisory Group on Environmental Emergencies (AGEE) which was jointly convened by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and UNEP. More recently, the new Swedish Civil Contingencies Agency (MSB) provided in-kind support providing expert trainers for APELL promotion activities in China.

*“My immediate reflection at the 25th Anniversary APELL Meeting in Beijing, after hearing stimulating reports from many countries in South America and Asia, was that when we started APELL it was an outreach activity from industrialised to developing countries. Now APELL has evidently grown to become an important and valuable instrument for sharing local level experiences and knowledge on national policies as well as learning from each other at a valuable common global forum for all involved in managing industrial or chemical risks, in Sweden and other countries and including local level communities.”*

**Ulf Bjurman**  
**Former Head of Department and Senior Advisor on**  
**International Affairs**  
**Swedish Rescue Services Agency (SRSA, now MSB)**  
**Sweden**



<sup>3</sup>Now renamed the Swedish Civil Contingencies Agency (MSB)

# The Role of Strategic Partners

- **Norway:** In 2006, UNEP initiated a new project entitled “Engaging business and the supply-chain in safer production and emergency preparedness: A commitment to Corporate Social Responsibility at the site level.” This project, funded by the Norwegian government within a wider framework on Sustainable Production and Consumption (SCP) and Poverty Reduction, brought together UNEP-DTIE with its Regional Offices for Latin America and the Caribbean (ROLAC) and Asia and the Pacific (ROAP), AccountAbility, the ICCA and the ICMM, in an effort to promote application of APELL at the site level, displaying corporate responsibility through community and stakeholder engagement in local level emergency preparedness, and to promote safer production and APELL along the value-chain. This project aimed at engaging businesses, supply-chains, distributors, traders and buyers in accident prevention, emergency preparedness and disaster management.
- **France:** France, via its Ministry of Ecology, Sustainable Development, Transport and Housing (MEDDTL), has also supported APELL by providing funds and expertise in connection with the development of guidance materials and the organisation of workshops. For instance, two publications (APELL Multi-Hazard Training Kit For Local Authorities - For Community Vulnerability Reduction, Prevention, and Preparedness and Assessing the Vulnerability of Local Communities to Disasters - An Interactive Guide and Methodology. Community Risk Profile Tool) were developed with financial support provided by France. MEDDTL also provided technical experts for APELL-related workshops and seminars, including the International Seminar on Promoting Safer Operations and Emergency Preparedness in the Value Chain of the Chemical Sector in China that was held in Beijing, 2009.



*“For PETROBRAS it is our main focus to build confidence in the communities where we believe that the APELL process helps us to improve our oil and gas operations in Brazil and that these are run in a safe and credible way.”*

**Leonardo Mitidiero Mansor**  
**Articulation and Contingency Regional Manager**  
**Sao Paulo and Midwest Region**  
**Petrobras, Brazil**

UNEP's APELL Programme has also been supported by **universities and research institutions**, such as Renmin University of China, Tsinghua University (China), the Babes-Bolyai University (Romania), Mahidol University (Thailand), the Thailand Environment Institute and the Institute of Mining Engineers of Peru as well as by **non-governmental organisations** such as the Colorado Emergency Preparedness Partnership (US) and the Peru-based NGO RAPID LA. Most recently, UNEP and Green Cross International have agreed to jointly promote improved local emergency preparedness in selected communities in developing countries through the APELL process.

Over the years, the APELL Programme has benefitted from the following types of support from partnering organisations:

- promoting APELL through partners' networks and country offices;
- identifying communities and industrial estates that are interested in enhancing their local emergency preparedness efforts;
- reaching out to various stakeholders groups to engage them in the APELL process and to facilitate the provision of financial, technical and in-kind support for APELL and related activities;
- partnering with UNEP on pilot demonstration and capacity building activities (or directly managing/implementing these individually in coordination with UNEP) on emergency preparedness through the APELL process;
- facilitating national and regional replication of APELL projects;
- supporting the development and application of APELL tools;
- supporting the translation of APELL-related tools and guidance materials into local languages; and
- facilitating sharing the lessons learned through own networks and country offices, so that communities can benefit from the experiences of others.

UNEP intends to continue collaborative efforts with partners with a proven excellence in emergency prevention and/or preparedness to further the dissemination and application of the APELL approach in relevant sectors and countries.

# Brazil

## CASE STUDY



APELL in Brazil began in 1990 with a seminar and drill in Cubatão, organised by UNEP with the active support of CETESB, the São Paulo State EPA, CIESP, the São Paulo State Industry Confederation and ABIQUIM, the Brazilian Chemical Industry Association. The APELL Manual was translated into Portuguese by ABIQUIM and distributed to chemical, oil and steel companies, the Civil Defense and local as well as national authorities. In 1991 was initiated the APELL process of Campos Elíseos in Duque de Caxias municipality in the state of Rio de Janeiro (today is coordinated by an association of 14 companies, ASSECAMPE). In 1992, a seminar was held in Maceió, followed by the creation of a local APELL co-ordinating group. There were successful training drills involving the local community, TRIKEM-UCS-AL (now part of BRASKEM, which had the largest chlorine production plant in Latin America) and governmental institutions.

At the same time, the APELL process was adopted by ABIQUIM as an integral part of the Brazilian version of the Responsible Care Programme called Atuação Responsável. The APELL manual was an important reference for the Community Awareness and Emergency Response - CAER Code of Management Practices Guide - used by ABIQUIM's members to model their own emergency plans. Since then ABIQUIM recommends that its members use APELL in discussions with communities, whenever they want to introduce (or reinforce)

the discussion on emergency planning. Using APELL as a model for emergency preparedness increases the interest of local governments to participate in emergency activities. Experience has shown that participating in a UN programme is politically more appealing than joining similar initiatives coming from other sectors.

In 2000, implementation of the APELL process started in the maritime terminals of Santos and of Sao Sebastiao, with strong leadership and support from the local authorities, from the industry (Transpetro) and from civil defense. In 2004, the Ministry of Environment of Brazil signed an agreement with UNEP to establish a national APELL network. The same year the UNEP Brazil Office and the Government of Minas Gerais State signed a Memorandum of Understanding aimed at fostering the co-operation between the institutions. In addition, UNEP formed a partnership with CYTED (Science and Technology for Development) to carry out capacity-building courses in the region and to publish APELL manuals in Spanish and Portuguese.

More recent efforts have been made by Brazil National Oil Company Petrobras to initiate a new TransAPELL project at its natural gas treatment plant in Caraguatatuba. This effort involves the local community municipal government, civil defense, and other local stakeholders.

# A Vision for the Future

APELL is a proven approach, shown to be valuable for helping communities create a locally-owned and implemented system for co-ordinated preparedness and response to chemical accidents and other emergencies.

Therefore, taking into account the feedback received from countries and others involved with APELL, UNEP will continue to support the promotion, dissemination and implementation of the APELL process, both by reaching out to those countries that have not yet been involved with the APELL Programme as well as by facilitating the application of APELL in additional communities in those countries that have some experience with APELL. UNEP will also be looking at how to improve the APELL process and identify improved ways to measure success.

In addition to supporting countries and communities to understand and implement APELL, UNEP is planning to:

- develop additional guidance materials and related tools that will be valuable to communities implementing APELL;
- improve the systematic sharing of experience/lessons learned so that communities can benefit from the experience of others; and
- develop improved mechanisms to measure the success of the APELL Programme and individual community-based projects.

The extent of this effort will depend on the level of support from its strategic partners. Thus, UNEP is looking for additional partners to work with and/or to take the lead in expanding the application of the APELL process. Such partners could include public and private-sector organisations and companies that can provide financial, technical or in-kind contributions or that can disseminate and/or use APELL in their own activities

## UNEP welcomes:

- *suggestions on how to improve the APELL process and how to expand its application*
- *requests for assistance in implementing APELL*
- *offers of financial, technical or in-kind support for the APELL Programme*

# Argentina

## CASE STUDY

Initiated in 1996, the story of the APELL Process in Bahía Blanca has been a very successful one, resulting in serious stakeholder engagement and community outreach. The APELL implementation project started at a large petrochemical site, involving among others Dow Argentina, Solvay, Profertil, Petrobras Argentina, MEGA, CARGILL and TGS industrial sites. In addition, representatives from local government, hospitals, civil defense, navy, army, coast guard, police, universities, schools, and community also actively participated in the project.

Within the framework of the APELL Process in Bahía Blanca, an “Emergency Communications Center” vigilance system was implemented, covering 24 hours a day, 365 days per year, according to the Technological Emergency Response Plan (TERP). Additional activities within the APELL Process at Bahía Blanca include the undertaking of training, awareness and confinement drills in schools, clubs, and community institutions. Within this scope, more than 100 safety drills have been conducted in 2010-2011, and confinement kits were distributed to the community.

Subsequent activities within the APELL Process at Bahía Blanca include: the organisation of the Week of Celebration “10 Years of APELL Process in Bahía Blanca”; the signing of a co-operation agreement with the local municipality (APELL Process Río Tercero); a general census of the places of major population in the risk area; the undertaking of audits related to the response

and communication equipment; the organisation of the first training course for teachers on “Identification of Risks and Emergency Management at Educational Institutions”; table drills and field drills according to the TERP; special training in local schools; the Bahía Blanca Risk Assessment study, done by Bahía Blanca APELL Process; and the more than 30 integrated emergency drills carried out since the establishment of the process.

One of the key achievements of Bahía Blanca APELL was updating the TERP according to the NFPA 1600 standard, a process that occurred in 2009. In 2010, Bahía Blanca APELL process celebrated its 14th anniversary, which was attended by UNEP and by numerous APELL experts from other countries the region.



To further support the APELL process in Bahía Blanca and replicate it to other industrial sites in Argentina, an APELL center established at the National Technological University, Regional Faculty of Bahía Blanca in 2012. As part of the new center’s activities, the Regional Faculty of Bahía Blanca is translating the latest version of US EPA’s CAMEO software platform into Spanish for further application in the region. Furthermore, the Regional Faculty of Bahía Blanca is cooperating with UNEP in the carrying out of a review of lessons learned from APELL implementation in the Latin American region.

# Support APELL Implementation and help make countries safer and more resilient

UNEP is seeking to expand its network of strategic partners providing financial, technical or other support for APELL activities in order to help communities prepare for industrial accidents and natural disasters.

APELL has proven to be a very practical tool which is easy to adapt to local circumstances. Building on the extensive experience with the APELL process throughout the world, and the guidance available to support communities' efforts, this is an effective and efficient way of helping those communities to better understand the risks they face, to improve public awareness, and to learn how to respond should an accident occur.

Thus, potential strategic partners can be confident that their efforts to help communities to improve awareness and preparedness can be undertaken at a relatively low cost and effort, with confidence in using a proven approach.

There are many ways that individual countries, international or regional organisations, development banks, industrial or professional associations, companies, research institutes, non-governmental and community-based organisations, and independent experts can support the APELL Programme. This includes, for example:

- contributing funds to UNEP earmarked for APELL;
- providing experts to be instructors for training activities;
- helping to develop APELL-related materials;
- working directly with communities to initiate and implement APELL activities, providing financial assistance and/or technical support; and/or
- promoting APELL and using related materials to the extent appropriate.

*“One of the most important lessons from all environmental emergency operations is the clear need for APELL. APELL is an example for us all - countries and international organisations – on how to design and implement an activity with very modest financial resources, which brings practical results and makes a difference for communities.”*

**Vladimir Sakharov**  
**Former Chief, Joint UNEP/OCHA Environment Unit**  
**Director, Environmental Emergency Preparedness**  
**at Green Cross International**



# APELL Publications

Since the publication of the APELL Handbook in 1988, UNEP has prepared a series of additional guidance documents as part of the APELL Programme. Many publications have been translated into several languages; for example, French, Spanish, Arabic, Chinese, Russian, Croatian, Czech, Estonian, Hindi, Italian, Korean, Latvian, Lithuanian, Polish, Portuguese, Swedish, Romanian, Thai, and Turkish.

In addition, APELL has published meeting reports, case studies and other materials to facilitate sharing of experience and provide further support to countries and communities. UNEP maintains a website to facilitate access to these materials. Further details can be found at <http://www.unep.org/resourceefficiency/Business/CleanerSaferProduction/SaferProduction/APELL/Publications/tabid/102617/Default.aspx>



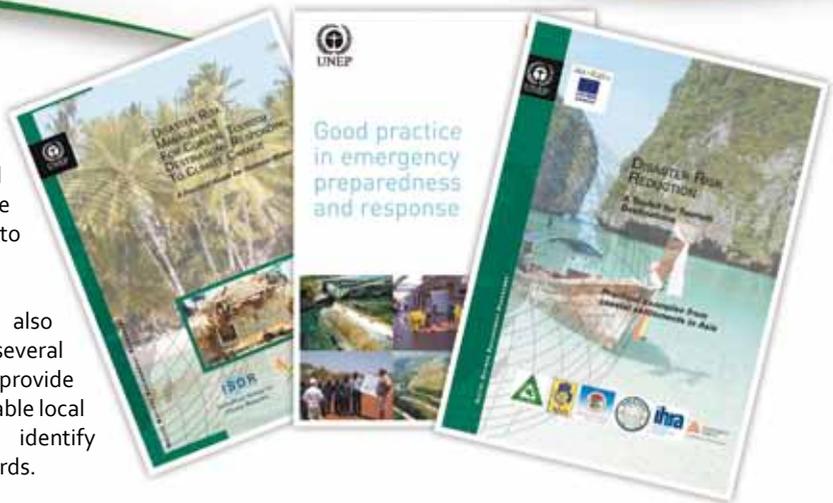
**Awareness and Preparedness for Emergencies at Local Level: a Process for Responding to Technological Accident** (1988) This “APELL Handbook” provides the basic concepts for the development of emergency response plans at the local level, with an emphasis on community awareness of potential dangers and preparedness for all contingencies.

**Storage of Hazardous Materials: A Technical Guide for Safe Warehousing of Hazardous Materials** (1990) introduces practical guidelines for safe storage of hazardous materials, including information on key responsibilities, legal frameworks, product evaluation, warehouse siting and management, and fire and environmental protection.

**Hazard Identification and Evaluation in a Local Community** (1992) describes a hazard analysis

method and gives concrete examples of how to implement it.

The report also contains several annexes that provide information to enable local communities to identify and evaluate hazards.



**APELL for Port Areas: Preparedness and Response to Chemical Accidents in Ports** (1996) sets out a procedure to improve community awareness of activities involving hazardous substances in port areas and to improve or create co-ordinated emergency response plans.

**Management of Industrial Accident Prevention and Preparedness: A Training Resource Package** (1996) builds on and supports the APELL process. It can also be used as a freestanding trainers' package, addressing selected issues.

**TransAPELL: Guidance for Dangerous Goods Transport Emergency Planning in a Local Community** (2000) expands the APELL guidance beyond the risks associated with fixed facilities to include those arising from the shipping, distribution and transport of dangerous goods.

**APELL for Mining: Guidance for the Mining Industry in Raising Awareness and Preparedness for Emergencies at Local Level** (2001) provides a framework for the preparation of an Emergency Response Plan for communities near mining operations.

**Good Practice in Emergency Preparedness and Response** (2005) is a companion to "APELL for Mining". In 2003, the International Council on Mining and Metals (ICMM) decided to take the APELL process further by analysing emergency preparedness and response capabilities within both its corporate and association membership.

**Disaster Risk Reduction – A Toolkit for Tourism Destinations, Practical examples from coastal settlements in Asia** (2008) provides information and resources for local municipalities and others involved in emergency planning and response. It includes information on steps such as: preliminary assessment; capacity building; disaster prevention; preparedness planning; and communicating and disseminating key information.

# APELL Publications

## **Assessing the Vulnerability of Local Communities to Disasters - An Interactive Guide and Methodology.**

**Community Risk Profile Tool** (2008) provides communities with a means of making a rough estimate of the various types of risks they are exposed to, supporting the decision-making process, especially as to whether or not further assessments are needed. It is also a tool that can be used to support awareness raising, risk communication and capacity building activities.

**Disaster Risk Management for Coastal Tourism Destinations Responding to Climate Change – A Practical Guide for Decision Makers** (2009) provides disaster managers, local and municipal planners, as well as other stakeholders in the tourism sector, with practical guidance on how to better prepare for disasters in coastal destinations.

**APELL Multi-Hazard Training Kit for Local Authorities – For Community Vulnerability Reduction, Prevention and Preparedness** (2010) consists of 15 modules containing information regarding a specific aspect of community preparedness for emergencies or a common industrial or natural hazard. It provides a summary of the most important principles and steps in improving emergency preparedness, as well as some of the most common hazards found worldwide.

## **Promoting Safer Operations and Emergency Preparedness in the Value Chain of the Chemical Sector - Case Study on APELL**

**Implementation in China** (2011) captures results and lessons learned from a 2-year pilot project implemented by UNEP, the Ministry of Environmental Protection (MEP) of the People's Republic of China, and The Dow Chemical Company in the Yangtze International Chemical Industry Park in Zhangjiagang, China.



# Thailand

## CASE STUDY



The APELL process was introduced in Thailand in 1992 through a seminar/workshop organised by the World Environment Center. APELL was then adopted and implemented at Map Ta Phut Industrial Estate (Rayong province) which was one of the highest risk industrial sites in the country.

In 1995, the APELL process was integrated into the National Emergency Response Plan of the 8th National Economic and Social Development (1997-2001) Plan. In 2004, following the successful implementation of the APELL process in Map Ta Phut, the Department of Industrial Works (DIW) of the Ministry of Industry of Thailand, the Industrial Estate Authority of Thailand (IEAT) and Mahidol University on behalf of the Royal Thai Government jointly conducted a project with support from the German Government via German Technical Cooperation (GTZ) on "Risk Management for handling of Hazmat by SMEs in the Bangpoo area (Samutprakarn province)". In 2006, a follow-up project was carried out in Bangpoo industrial estate, promoting APELL and risk reduction measures in selected SMEs through UNEP's Responsible Production approach for chemical hazards management.

Project partners included DIW, Samutprakarn Provincial government, IEAT, the Thailand Environment Institute (TEI), Faculty of Public Health of Mahidol University, the Federation of Thai Industries, and GTZ.

In parallel, other APELL promotion activities were initiated in 2006 involving the Department of Disaster Prevention and Mitigation of Thailand (Ministry of Interior) which partnered with UNEP's in an APELL demonstration project on "Disaster Reduction through Awareness, Preparedness and Prevention Mechanisms in Coastal Settlements in Asia - Demonstration in Tourism Destinations".

More recently, an APELL expert workshop took place in Bangkok in February 2012, organized by UNEP, DIW and the Asian Disaster Preparedness Center, and co-hosted with the Federation of Thai Industries. During the workshop, a series of presentations and discussions promoted debate on the effects of the recent Thai floods in industrial estates in the country, and on the usefulness of the APELL approach in improving industries preparedness to natural hazards that may trigger industrial accidents.

# Romania

## CASE STUDY



In Romania, work on APELL began in 2006, in light of widespread interest in the country to examine possibilities for restoring and/or ensuring environmental integrity at mining sites. In that year APELL for Mining was translated into Romanian, with the support of UNEP. The translation was welcomed by the interested parties including mining companies, local authorities and communities.

The same year, two APELL-related events were held in Romania: an international workshop on "The Need and Importance of Implementing the APELL Programme in Romania" in Cluj-Napoca and an international conference ELSEDDIMA-RO2006 on "Environmental Security Management" in Baia Mare (the site of the accident in the year 2000, when a tailing dam collapsed leading to a release of hazardous chemicals into a local waterway which fed into international rivers).

In 2007, Romania established the APELL National Center for Disaster Management Foundation which activities focus on risk prevention, mitigation strategies and community training and preparedness. As part of the Denateh Project on mitigation of vulnerability and consequences of natural and technological disasters, carried out during 2008 – 2010, two areas were selected for implementation of the APELL process: Baia Mare (an important mining area) and Ramnic Valcea. As part of the project, efforts were made to ensure the information flow between stakeholders as well as identify response procedures and logistical support. Being welcomed by the various stakeholders, the APELL process contributed to the improvement of existing emergency plans by involving and training members of the local community.

# Contact Details

## **APELL WEBSITE**

*<http://www.unep.org/resourceefficiency/Business/CleanerSaferProduction/SaferProduction/APELL/tabid/78881/Default.aspx>*

## **APELL PUBLICATIONS**

*<http://www.unep.org/resourceefficiency/Business/CleanerSaferProduction/SaferProduction/APELL/Publications/tabid/102617/Default.aspx>*

## **GLOBAL APELL PLATFORM**

*<http://www.apell.ecentre.org>*

## **FOR FURTHER INFORMATION, PLEASE CONTACT:**

United Nations Environment Programme (UNEP)  
Division of Technology, Industry and Economics  
15 Rue de Milan, 75441 Paris Cedex 09, France

### **Mr. Arab Hoballah**

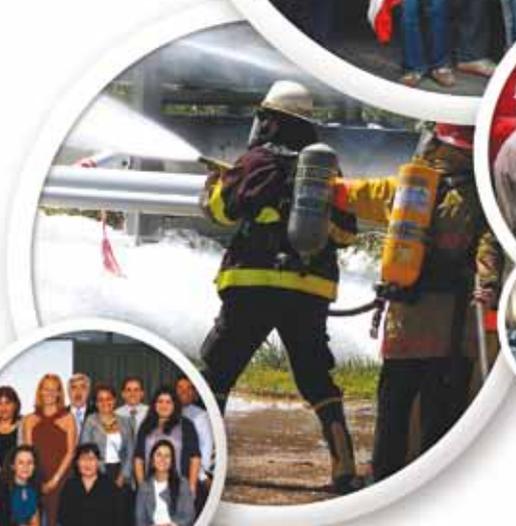
Chief, Sustainable Consumption & Production Branch  
E-mail: [arab.hoballah@unep.org](mailto:arab.hoballah@unep.org)

### **Ms. Johanna Suikkanen**

Associate Programme Officer, Business & Industry Unit  
Sustainable Consumption & Production Branch  
E-mail: [johanna.suikkanen@unep.org](mailto:johanna.suikkanen@unep.org)  
[apell@unep.org](mailto:apell@unep.org)

# **APELL**





## About the UNEP Division of Technology, Industry and Economics

Set up in 1975, three years after UNEP was created, the Division of Technology, Industry and Economics (DTIE) provides solutions to policy-makers and helps change the business environment by offering platforms for dialogue and co-operation, innovative policy options, pilot projects and creative market mechanisms.

DTIE plays a leading role in three of the six UNEP strategic priorities: **climate change, harmful substances and hazardous waste, resource efficiency.**

DTIE is also actively contributing to the **Green Economy Initiative** launched by UNEP in 2008. This aims to shift national and world economies on to a new path, in which jobs and output growth are driven by increased investment in green sectors, and by a switch of consumers' preferences towards environmentally friendly goods and services.

Moreover, DTIE is responsible for **fulfilling UNEP's mandate as an implementing agency for the Montreal Protocol Multilateral Fund** and plays an executing role for a number of UNEP projects financed by the Global Environment Facility.

### **The Office of the Director, located in Paris, coordinates activities through:**

- > **The International Environmental Technology Centre** - IETC (Osaka), which implements integrated waste, water and disaster management programmes, focusing in particular on Asia.
- > **Sustainable Consumption and Production** (Paris), which promotes sustainable consumption and production patterns as a contribution to human development through global markets.
- > **Chemicals** (Geneva), which catalyses global actions to bring about the sound management of chemicals and the improvement of chemical safety worldwide.
- > **Energy** (Paris and Nairobi), which fosters energy and transport policies for sustainable development and encourages investment in renewable energy and energy efficiency.
- > **OzonAction** (Paris), which supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition to ensure implementation of the Montreal Protocol.
- > **Economics and Trade** (Geneva), which helps countries to integrate environmental considerations into economic and trade policies, and works with the finance sector to incorporate sustainable development policies. This branch is also charged with producing green economy reports.

*DTIE works with many partners (other UN agencies and programmes, international organizations, governments, non-governmental organizations, business, industry, the media and the public) to raise awareness, improve the transfer of knowledge and information, foster technological cooperation and implement international conventions and agreements.*

For more information,  
see [www.unep.org/dtie](http://www.unep.org/dtie)

***The Awareness and Preparedness for Emergencies at Local Level (APELL)***

***Programme was launched by the United Nations Environment Programme in 1986 in response to a series of major industrial accidents that resulted in serious adverse impacts on local communities and the environment.***

***The main purpose of APELL is to save lives and minimise adverse impacts on health, property and the environment. Over the years, APELL has been empowering communities worldwide by reducing their vulnerability to industrial accidents and natural disasters, and improving local emergency preparedness efforts.***

***This publication has been developed to capture both the main achievements of UNEP's APELL Programme over the past 25 years, as well as the outcomes of the Global APELL 25th Anniversary Forum that was held in Beijing, China on 15-18 November 2011.***

**www.unep.org**

United Nations Environment Programme  
P.O. Box 30552 Nairobi, 00100 Kenya  
Tel: (254 20) 7621234  
Fax: (254 20) 7623927  
E-mail: [unepub@unep.org](mailto:unepub@unep.org)  
Web: [www.unep.org](http://www.unep.org)



For more information, contact:

**UNEP DTIE  
Sustainable Consumption  
and Production Branch**

15 rue de Milan  
75441 Paris CEDEX 09  
France  
Tel.: + 33 1 44 37 14 50  
Fax: + 33 1 44 37 14 74  
E-mail: [unep.tie@unep.org](mailto:unep.tie@unep.org)  
[www.unep.org/dtie](http://www.unep.org/dtie)



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