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**THE STATUS OF IMPLEMENTATION OF ARTICLE XI
OF THE CHEMICAL WEAPONS CONVENTION
AS AT 31 DECEMBER 2010**

1. INTRODUCTION

This report on the status of implementation of Article XI of the Chemical Weapons Convention (hereinafter “the Convention”) covers the period from 1 January to 31 December 2010. Unless otherwise stated, all dates given herein fall within this reporting period.

2. ACTIVITIES UNDER ARTICLE XI

2.1 During the reporting period, the OPCW implemented Article XI of the Convention through the following programmes:

- (a) Associate Programme
- (b) Conference-Support Programme
- (c) Internship-Support Programme
- (d) Programme for Support of Research Projects
- (e) Laboratory-Assistance Programme
- (f) Analytical-Skills-Development Courses
- (g) Industry Outreach
- (h) Equipment-Exchange Programme
- (i) Information Service
- (j) OPCW Programme to Strengthen Cooperation with Africa on the Chemical Weapons Convention



- 2.2 In accordance with the results-based approach that the Technical Secretariat (hereinafter “the Secretariat”) took during the reporting period, the effectiveness of these programmes was assessed according to whether skills and capabilities were enhanced in the four focal areas relating to the peaceful application of chemistry: integrated chemicals management, chemical knowledge and the exchange of information, enhancement of laboratory capabilities, and outreach to industry.

Associate Programme

- 2.3 The Associate Programme facilitates capacity building and industry-related national implementation of the Convention. It also aims to promote trade by encouraging the adoption of good practices in chemical manufacturing and safety, as well as to increase the pool of human resources upon which the National Authorities and the OPCW can draw in the future. The Associate Programme provides a unique opportunity for scientists and chemical engineers from countries whose economies are developing or in transition to observe modern chemical-industry practices and to learn more about the Convention.
- 2.4 The 2010 edition of the Associate Programme was held from 22 July to 30 September 2010. Twenty-seven participants from the following 27 Member States successfully completed the programme: Azerbaijan, Bangladesh, Belarus, Bolivia, Burkina Faso, the Czech Republic, Djibouti, Ethiopia, India, Jordan, Kenya, the Lao People’s Democratic Republic, Lesotho, the Libyan Arab Jamahiriya, Malaysia, Mauritius, Morocco, Mozambique, Nepal, Nigeria, Oman, Pakistan, Peru, Sierra Leone, Sudan, Tunisia, and Zimbabwe. In accordance with the objectives of the Programme to Strengthen Cooperation with Africa on the Chemical Weapons Convention (hereinafter “the Africa Programme”), 14 of the participants came from African Member States.
- 2.5 The programme received financial and in-kind contributions from Japan and the United Kingdom of Great Britain and Northern Ireland, and in-kind industry support from companies located in the following Member States: Belgium (ExxonMobil and Solvay Chimie S.A.), Denmark (Danisco), Germany (BASF The Chemical Company), India (Hikal Limited), Italy (VINAVIL S.p.A and Endura S.p.A.), Japan (Asahi Glass Co. Ltd and Showa Denko K.K.), the Netherlands (DuPont de Nemours BV and Croda), Poland (Azoty Tarnow) Qatar (Qatar for Fertilisers (QAFCO) and Qatar Vinyl (QVC)), and Spain (Ube Castellón).
- 2.6 As part of the programme, participants undertook a three-week university module organised by the University of Surrey in the United Kingdom of Great Britain and Northern Ireland. The participants benefited from an intensive laboratory-based training programme and gained additional knowledge in chemistry and chemical processes, as well as in skills related to the national implementation of the Convention.
- 2.7 The programme also benefited from the support of the European Chemical Industry Council (CEFIC) under their “Responsible Care®” policy, the Committee on Chemistry Education of the International Union of Pure and Applied Chemistry (IUPAC), the European Chemicals Agency (ECHA), the World Customs Organization (WCO), the Netherlands Customs Authority, the library of the Delft

University of Technology in the Netherlands, and the Port of Rotterdam Authority, also in the Netherlands. Support was also provided by the National Authority of Germany.

- 2.8 The Associate Programme has five distinct components, each of which is evaluated by the participants and the tutors, and by mentors in the chemical industry, thus enabling a holistic assessment of the programme to be carried out. For the current year under review, the evaluations indicated that 96% of the participants deemed the course to be either very good or excellent. The participants were particularly appreciative of the experience of being a part of the real environment in a modern chemical plant.
- 2.9 The overall assessment was that the 2010 Associate Programme had been successfully conducted, and that the future editions of the programme could be carried out along the same lines; this opinion was shared by the representatives of those Permanent Representations to the OPCW that had provided substantial support, with an agreement that more should be done to consolidate and expand this programme.

Conference-Support Programme

- 2.10 The Convention encourages the fullest possible exchange of scientific and technical information relating to the development and application of chemistry for purposes not prohibited under the Convention. The Conference-Support Programme provides financial support for conferences, workshops, and seminars on special topics relevant to the Convention. The support is generally in the form of sponsorship of scientists, technical personnel, and resource persons from Member States to attend such events and to enable the cost of publications to be met. Sponsorship is channelled through scientific institutions and conference organisers in Member States.
- 2.11 In 2010, 23 events in 23 different Member States were supported, with a view to facilitating the exchange of scientific and technical information in areas relating to the peaceful use of chemistry. The events covered a variety of subjects, ranging from “Environmental Chemistry”, “Nanoscience for Solar Energy Conversion”, “Chemistry for Sustainable Development”, “Electrochemistry”, “Creating Green Solutions”, “Marine Natural Products”, “Chemical and Biological Medical Treatment”, “Pesticide Chemistry”, and “Biocatalysis and Biotransformation” to “Research in Chemistry Education”, “Risk Assessment”, and “The Contributions of African Women Scientists”.
- 2.12 During the period under review, the OPCW supported the following events:
- (a) One participant from Argentina attended the “Fifth International Symposium on Brominated Flame Retardants, BFR2010” in Kyoto, Japan, from 7 to 9 April 2010. The Congress provided an opportunity for chemists to present their recent research findings and to articulate the required synergies between environmental preservation and economic development, as well as to discuss brominated flame retardant (BFR) issues related to the Asian region.
 - (b) Seven participants from Australia, Indonesia, Japan (2), Singapore, Thailand, and the United States of America attended the “25th Philippine Chemistry

Congress: Creating Green Solutions through Chemistry”, which was held in Zambales, the Philippines, from 8 to 10 April 2010. The meeting provided a platform for researchers to exchange ideas and information on recent developments in the various fields of chemistry. It also provided an opportunity for local scientists and researchers to enhance their collaborative efforts and to meet international experts from the different fields of chemistry.

- (c) Six participants from Argentina, Chile, Colombia, Peru, Uruguay, and the United States of America attended the “III Latin America Risk Assessment Workshop” in São Paulo, Brazil, from 11 to 18 April 2010. The workshop sought to offer toxicologists in Latin America unique opportunities to broaden their knowledge and experience in the field of chemical-risk assessment and to better understand data-evaluation processes.
- (d) Eight participants from Croatia, India, Iraq, the Islamic Republic of Iran, Kenya, Kyrgyzstan, Nigeria, and Ukraine attended the “CBMTS VIII – Eighth International Chemical and Biological Medical Treatment Symposium”, which was held in Spiez, Switzerland, from 2 to 7 May 2010. The symposium explored the medical and scientific facets of the problems and possibilities associated with the medical treatment of victims of chemical-, biological-, and radiological-agent exposure. Preventive measures against, and responses to, chemical, biological, and radiological terrorist attacks were considered. The meeting brought together scientists from developing countries, countries whose economies are in transition (from Africa, Asia, Eastern Europe, the Pacific Rim, and South America) and fellow professionals from Western Europe and from North America.
- (e) Three participants from Austria, China, and Germany were sponsored to attend the “African School on Nanoscience for Solar Energy Conversion” in Addis Ababa, Ethiopia, from 3 to 7 May 2010. The meeting provided a forum for the discussion of the fundamental principles, basic processes, and technological challenges related to solar-energy conversion in nano-structured materials, and gave scientists from developing countries an opportunity to familiarise themselves with state-of-the-art research and initiate regional and continental collaboration.
- (f) Five participants from the Central African Republic, Chad, the Congo, Equatorial Guinea, and Gabon attended the conference on “Pesticides’ Management for Regulatory Risk Assessors and Risk Managers of the Economic and Monetary Community of Central Africa (CEMAC) and the Central Africa Inter-State Pesticides Committee (CPAC)”, in Yaoundé, Cameroon, which was held from 24 to 27 May 2010. The objective of the conference was to enhance the knowledge of the participants in the relevant scientific processes, as well as to enhance their skills in the interpretation and management of risk assessments.
- (g) Eight participants from Greece, Italy (3), Romania, the Russian Federation, Slovenia, and Switzerland received support that enabled them to participate in the “Second Regional Symposium on Electrochemistry: South-East Europe”, held in Belgrade, Serbia, from 6 to 10 June 2010. The congress brought

together researchers from South-East Europe and other professionals who work in the field of electrochemistry, in order to promote electrochemistry and enhance its visibility as a field of analytical chemistry. The meeting further promoted international cooperation and personal contacts among researchers in electrochemistry.

- (h) Eight participants from Colombia, Germany, India, the Russian Federation, South Africa, Thailand, Ukraine, and the United Kingdom of Great Britain and Northern Ireland attended the “10th European Conference on Research in Chemistry Education (ECRICE)”, which took place in Krakow, Poland, from 4 to 7 July 2010. The conference focused on improving chemical education at all levels, starting from the primary level up to the tertiary level, through the implementation of a life-long learning approach. The conference provided opportunities for the dissemination of results of research on the following topics: safety issues, new technologies, green chemistry, and environmental chemistry, as well as the ethical and social aspects involved. Teachers, researchers, curriculum developers, and education authorities exchanged their experience in these fields and shared new teaching and learning methods; in addition, they established new mechanisms for collaboration among institutions from different countries.
- (i) Four participants from China, Colombia, Viet Nam, and Zimbabwe attended the “12th IUPAC¹ International Congress of Pesticide Chemistry”, which took place in conjunction with the National Convention of the Royal Australian Chemical Institute in Melbourne, Australia, from 4 to 8 July 2010. The congress focused on newly emerging issues for scientists in the field of pesticide chemistry and crop protection, and explored regulatory requirements, the delivery of chemicals for crop protection, and public and environmental health.
- (j) Three participants from India, Malaysia, and Pakistan attended the “International Conference on Pure and Applied Chemistry (ICPAC 2010),” whose theme was “Chemistry for Sustainable Development”, in Balaclava, Mauritius, from 26 to 30 July 2010. The conference promoted collaborative work in the field of chemistry and afforded participants an opportunity to keep abreast with the latest research findings in chemistry.
- (k) One participant from Algeria took part in the “18th IUPAC International Conference on Organic Synthesis (ICOS-18)”, in Bergen, Norway, from 1 to 6 August 2010. The conference served as a platform for representatives from government, businesses, and academia to exchange ideas, observe current trends in research, and present their findings in their areas of expertise covering all areas of synthetic organic chemistry. The conference further provided an opportunity for synthetic chemists from developing countries to attend and also provided mentorship to these scientists.

¹ IUPAC = International Union of Pure and Applied Chemistry.

- (l) Four female participants from Burundi, Cameroon, and Nigeria (2) attended the conference entitled “A Decade into the 21st Century: The Contribution of African Women Scientists and Engineers”, held in Nairobi, Kenya, from 18 to 20 August 2010. The goals of the conference were to highlight the contribution of the chemical sciences to society, to feature the contribution of African women scientists and engineers to the achievement of the United Nations Millennium Development Goals, and to promote dialogue with policy-makers, donors, and international organisations.
- (m) Three participants from the Russian Federation attended the EMLG-JMLG² Annual Meeting 2010, entitled “Complex Liquids: Modern Trends in Exploration, Understanding and Application”, held in Lviv, Ukraine, from 5 to 9 September 2010. The meeting presented the most recent advances in the field.
- (n) Six participants from Italy, the Netherlands, Turkey, and the United States of America (3) attended the “11th EURASIA Conference on Chemical Sciences,” held at the Dead Sea, Jordan, from 6 to 10 October 2010. The main aims of the conference were to highlight important recent advances in chemistry, particularly those relevant to the developing world, and to strengthen the interaction and collaboration between scientists in the region, which should lead to joint research projects in fields of mutual interest.
- (o) Two participants from Serbia and Slovenia attended the “International Scientific and Professional Conference (13th Ružička days)”, held in Vukovar, Croatia, on 16 and 17 September 2010. The aim of the meeting was to present scientific and professional achievements in the following fields: chemistry, chemical and biological engineering, food technology, biotechnology, medical biochemistry, pharmacy, agriculture and forestry, environmental protection, and other related disciplines.
- (p) Two participants from Indonesia and the Philippines attended the “16th Malaysian Chemical Congress (16MCC) 2010”, held in Kuala Lumpur, Malaysia, from 12 to 14 October 2010. The congress addressed the latest developments in all major areas of chemistry, and enhanced cooperation and collaboration in research between educators, researchers, and other professionals in chemistry in Malaysia and throughout the rest of the world.
- (q) Three participants from Kenya, the Sudan, and the United Republic of Tanzania attended an African Regional Workshop on “The Right to Adequate Food and Nutrition: Implications for Food Science and Nutrition Education, Public Policy, Food Fortification and Distribution Activities in Africa”, which was held in Addis Ababa, Ethiopia, from 7 to 9 October 2010. The event brought together personnel from higher-education and research institutes in Africa, who are involved in food science and nutrition in order to share experiences, information, and resources. Research findings on the challenges experienced in areas such as food toxicology, food security, food fortification, sustainable development, the effects of climate change, and the role of the

food science and nutrition education in Africa were shared amongst the participants. The meeting included a discussion on the establishment of “The African Food Forum” and how it will contribute to the enhanced collaboration between African research institutes.

- (r) Nationals of two Member States—Japan and the United States of America—took part in the “13th International Symposium on Marine Natural Products”, held from 17 to 22 October 2010 in Phuket, Thailand. The symposium provided a platform for the participants to exchange research experiences, and discuss recent findings in the topic of marine natural-product chemistry.
- (s) Participants from two countries—Cameroon and the Democratic Republic of Congo—attended the “14th Scientific and International Meeting of the University of Lomé”, held in Lomé, Togo, from 25 to 29 October 2010. The meeting provided a forum for a discussion about eliminating poverty in sub-Saharan Africa, finding solutions to many crop diseases in Africa, and promoting the importance of crop-protection research.
- (t) Two participants from Venezuela and the United States of America participated in the “International Symposium on Biological Nitrogen Fixation in Africa”, held in Cape Town, South Africa, from 21 to 28 November 2010. This symposium afforded scientists the opportunity to share research findings from various laboratories that are working on biological nitrogen fixation in Africa, Europe, and North America. Furthermore, leading international academics and scientists were honoured for their outstanding contributions to the training of research scientist/academics in the field of the biological nitrogen fixation.
- (u) Participants from four Latin American Member States—Argentina, Brazil, Chile, and Mexico—attended the “4th Regional Meeting on Biocatalysis and Biotransformation,” held in Montevideo, Uruguay, from 8 to 10 December 2010. The meeting provided an opportunity for scientists working in these fields to interact with students from the region and afford them the opportunity to share their research results with more senior international scientists and to promote future collaboration.
- (v) Seven participants from Bangladesh, Kenya, the Islamic Republic of Iran, Malaysia, Nigeria, South Africa, and the Sudan attended the “12th International Symposium on Natural Products Chemistry”, held in Karachi, Pakistan, from 22 to 25 November 2010. The meeting aimed to bring together leading experts in the field of natural-products sciences at the international level and forge global partnerships for the sustainable utilisation of natural resources for the common benefit of humanity.
- (w) Nine participants from Ethiopia (2), Kenya (2), South Africa, Uganda, the United Republic of Tanzania (2), and Zimbabwe attended the “Ninth Eastern and Southern Africa Laboratory Managers Association Workshop”, the theme of which was “Leadership in the Laboratory: Who Cares for Laboratory Quality” held in Khartoum, the Sudan, from 18 to 22 December 2010. The purpose of this workshop was to improve the participants’ laboratory-testing

and calibration skills so that they could contribute to the formation of an accreditation body in the region, to the growth of inter-laboratory testing services, and to the implementation of good laboratory practices.

Internship-Support Programme

- 2.13 The Internship-Support Programme assists scientists and engineers from countries whose economies are developing or in transition, to gain experience by working for a limited period in more advanced research laboratories and facilities in other Member States. A key objective of this programme is to facilitate the exchange of scientific and technical information, while at the same time strengthening the institutions in the targeted countries through capacity building. A total of 15 internships were undertaken in 2010 (including one by a Nigerian national, which was undertaken from 16 November 2009 to 15 May 2010 at the Delft University of Technology in Delft, the Netherlands). A table containing details of internships carried out in 2010 is provided in Annex 2 (and has been listed alphabetically according to the State Party of the interns).
- 2.14 During the period under review and in support of the Africa Programme, a generous voluntary contribution from the Government of the Netherlands enabled the Secretariat, in cooperation with Delft University of Technology, to offer two six-month internships at the university's "ChemTech" department. The interns, from Cameroon and Nigeria (mentioned above), studied "Adsorptive, photolytic and photocatalytic removal of pollutants from drinking water" and "Geopolymer, a new cement with low CO₂ emissions", respectively. A third internship undertaken at Delft University of Technology was by an Argentinean national, who also studied aspects of "Adsorptive, photolytic and photocatalytic removal of pollutants from drinking water." The internships of the Argentinean and Cameroonian nationals were undertaken from 4 January to 31 May 2010.
- 2.15 During the period under review, under a "Training Programme on Chemical Engineering for African Countries", China provided a generous voluntary contribution that enabled one national of Botswana and one Kenyan national to take up a six-month internship at the Beijing University of Chemical Technology in Beijing, China, starting in September 2010.
- 2.16 The other internships that were supported by the OPCW during the period under review (in alphabetical order of the participants' nationality) were: a Botswana national at the Polo Tecnológico de Pando, Facultad de Química, Universidad de la República (UDELAR), Uruguay; a Cameroonian national at the Department of Chemistry, University of Botswana, Gaborone, Botswana; an Ethiopian national at the SensorLab, Faculty of Natural Science, University of the Western Cape, Bellville, South Africa; a Ghanaian national at Spiez Laboratory, Spiez, Switzerland; a Kenyan national at the School of Chemistry, University of Kwa Zulu Natal, Durban, South Africa; a Malawian national at the Natural Resources Institute (NRI), University of Greenwich, Greenwich, United Kingdom of Great Britain and Northern Ireland; two Nigerian nationals, one at the Department of Chemistry of the University of Botswana, Gaborone, Botswana, and the other at the Department of Chemistry, Katholieke Universiteit Leuven, Leuven, Belgium; a Serbian national at the Geological Survey of Denmark and Greenland, Copenhagen, Denmark; and a South

African national at the Finnish Institute for the Verification of the Chemical Weapons Convention (VERIFIN) in Helsinki, Finland.

Programme for Support of Research Projects

- 2.17 Under this programme, support is extended for small-scale research projects in countries whose economies are developing or in transition, in order to promote the development of scientific and technical knowledge in chemistry for industrial, agricultural, research, medical, pharmaceutical, and other peaceful purposes relevant to the Convention. Funding for such projects may be provided either solely by the OPCW or jointly with another organisation.
- 2.18 During the period under review, the OPCW provided direct funding for three new research projects by nationals from Ecuador, Pakistan, and South Africa.
- 2.19 The OPCW also co-funded 24 new research projects with the Stockholm-based International Foundation for Science (IFS), a non-governmental organisation (NGO) that supports capacity building in relation to applied scientific research in developing countries. Details of these projects are given in Annex 3.

Laboratory-Assistance Programme

- 2.20 The objective of this programme, an important element in the implementation of Article XI of the Convention, is to support analytical laboratories in countries whose economies are either developing or in transition that already have adequate infrastructure, but wish to improve their technical capabilities to strengthen their national capacity for chemical analysis and monitoring.
- 2.21 Under the programme, from 3 to 6 August 2010, a technical-assistance visit (TAV) was undertaken to six laboratories in the Congo to identify individual institutional strengths and needs with a view to capacity building with the assistance of various International Cooperation Branch (ICB) activities.
- 2.22 The OPCW also supported a course on the “Running and Interpretation of GC-MS³ Spectra”, held at the Department of Chemistry at the Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya, from 23 to 27 August 2010 for 16 participants drawn from seven different African countries. Additional support was extended by the OPCW to five analytical chemists from Burkina Faso, Ghana, Nigeria, Uganda, and the United Republic of Tanzania to attend. The course was a collaborative effort between the Pan-African Chemistry Network (PACN) and the Royal Society of Chemistry (United Kingdom of Great Britain and Northern Ireland).
- 2.23 From 9 to 13 October 2010, a TAV was undertaken by an expert from the Secretariat to the Ben Hayyan-Aqaba International Laboratories in Jordan. The purpose of the visit was to conduct a technical audit of the laboratory in order to assess how the laboratory could improve its level of competence. Since the laboratory wishes to prepare to apply for participation in the OPCW proficiency-testing scheme, its in-house quality system and public safety measures were also assessed. During the

3 GC-MS = gas chromatography-mass spectrometry.

same period, the expert visited other laboratories in Jordan. These were the Toxicology Laboratory and the National Drug and Poison Information Centre, both in the Faculty of Medicine at the Jordan University Hospital.

- 2.24 During the period from 10 to 16 July 2010, the Secretariat sent an expert from Rhodes University, Grahamstown, South Africa, to conduct seminars and provide coaching clinics in sample-preparation techniques for one week at the Polo Tecnológico, Facultad de Química, Universidad de la República (UDELAR), in Pando, Canelones, Uruguay.

Analytical-skills-development courses

- 2.25 During the period under consideration, four international courses were organised to provide training in the analysis of chemicals related to the Convention. A total of 46 qualified analytical chemists from 33 Member States were trained through these courses. Three courses were arranged with VERIFIN in Helsinki, Finland. One two-week analytical-skills-development course was conducted at the VERIFIN training facility in Helsinki from 28 May to 11 June 2010. Twenty qualified chemists participated from the following Member States: Algeria, the Bahamas, Bangladesh, Dominica, Gambia, Ghana, Indonesia, Iraq, Jordan, the Libyan Arab Jamahiriya, Malaysia, Pakistan, Samoa, Serbia, the former Yugoslav Republic of Macedonia, Tunisia, Turkey, Ukraine, the United Republic of Tanzania, and Zambia. The main objectives of the course were to enhance the ability of participants to analyse chemicals related to the national implementation of the Convention, to increase national capacities in areas relating to analytical chemistry, to promote the adoption of good laboratory practices, and to expand the pool of human resources that the National Authorities and the Secretariat can draw upon in the future.
- 2.26 In addition, as a result of the great demand for training in advanced analytical techniques on the part of Spanish-speaking personnel from laboratories in the Group of Latin American and Caribbean States (GRULAC) region, through a voluntary contribution from the Government of Spain and with the active support of the National Authority of Spain, the Secretariat held the “Basic Course on the Analysis of Chemicals related to the Chemical Weapons Convention in the Framework of OPCW Proficiency Testing”, at the Laboratorio de Verificación del Instituto Tecnológico La Marañosa (LAVEMA), in Madrid, Spain, from 14 to 25 June 2010. The course accommodated 12 participants from the following 10 countries: Argentina (2), Bolivia, Brazil, Chile, Cuba, Ecuador (2), Mexico, Peru, Spain (one local participant), and Uruguay.
- 2.27 Furthermore, two training courses at the national level on sample preparation for trace analysis of compounds related to the Convention and the reporting of the results using mass spectrometry were organised in Malaysia by the Department of Chemistry of the Ministry of Science, Technology and Innovation, with active support from the National Authority of Malaysia, from 9 to 17 July, and by the Ministry of Health in Peru at La Dirección General de Salud Ambiental (DIGESA), from 25 to 30 October 2010. Each training course accommodated 10 local analytical chemists.

- 2.28 The Secretariat, in collaboration with Protechnik Laboratory in Pretoria, South Africa and VERIFIN, conducted the second edition of the “Basic Analytical Chemistry Course” for the Africa Programme. This course took place from 13 to 23 September 2010 in Pretoria, South Africa. Fourteen participants from 12 countries completed the course, and were from the following Member States: Algeria, Benin, Botswana, Cameroon, Ghana, Kenya, Mauritius, Nigeria (2), South Africa (2), Tunisia, the United Republic of Tanzania, and Zimbabwe.
- 2.29 Two “Courses on the Enhancement of Laboratory Skills in Using Liquid Chromatography-Mass Spectrometry to Analyse Chemicals Related to the Chemical Weapons Convention (CW-LSE)” were held at VERIFIN, Helsinki, Finland, from 10 to 21 May and from 6 to 24 September 2010. Both courses aimed at enhancing the skills of the participants in regard to the analysis of chemicals related to the national implementation of the Convention and the national capacities in the Member States. Analytical chemists from India (3), Malaysia (2), Mexico, Pakistan, Serbia (2), Turkey, Viet Nam, and Yemen participated.

Industry outreach

- 2.30 The industry-outreach seminars are related to the implementation of Article XI; these seminars are organised in order to strengthen international cooperation through programmes that focus on chemical-industry outreach and industry-related aspects of the implementation of the Convention.
- 2.31 The chemical-safety management/industry-outreach initiative was launched in 2009 and continued in 2010, with the organisation of a two-day seminar at the OPCW Headquarters in The Hague on 5 and 6 July 2010. The seminar was supported by funds from the European Union (EU) through the EU Council Decision 2009/569/CFSP of 27 July 2009; 33 participants from 20 Member States attended. The seminar provided a forum for review and discussion, both on the theoretical foundations underpinning safety management and safety-management practices, as well as the human factors which have an impact on safety management in the workplace. During the seminar, a discussion took place on specific safety-management issues related to chemical processes that have a direct bearing on the effective implementation of the Convention.
- 2.32 The above-mentioned 33 participants from 20 countries represented the chemical industry and governmental institutions. The countries that participated were: Belgium, Brazil, China (2), Finland, France, Germany, India (2), Japan, Kenya, Malaysia (2), the Netherlands (3), Poland, Qatar (3), the Republic of Korea (2), Saudi Arabia (3), Serbia, Tunisia, Turkey (2), the United Kingdom of Great Britain and Northern Ireland (2), and the United States of America. A resource person/participant from the Secretariat was also present.
- 2.33 The participants completed questionnaires giving their overall evaluation of the industry-outreach courses held during the period under review; these indicated that the seminar had been successful and very useful. The deliberations during the seminar confirmed the need for national capacity building and the importance of raising awareness in Member States about the culture of safety management; the

discussions also emphasised the value of training and of the exchange of scientific knowledge to promote best practices in the chemical sectors.

Equipment-Exchange Programme

- 2.34 This programme facilitates the transfer of used equipment that is still functional from institutions in industrialised countries to publicly funded research and/or academic laboratories or other institutions in countries whose economies are developing or in transition. Support consists of grants to meet the costs of transporting the equipment from the donor to the recipient, of insuring the equipment in transit, and, where necessary, of an expert's appraisal on the condition and functionality of the equipment and the quality of training.
- 2.35 Under this programme, three laboratories each received a Bruker Daltonic GC-MS machine; these laboratories were the Laboratory of the Government Chemist at the Ministry of Public Health and Sanitation in Kenya, the Department of Pharmaceutical Chemistry at the University of Maiduguri in Nigeria, and the Chemistry Department, Rhodes University, in Grahamstown, South Africa.
- 2.36 Following this donation, a three-day training programme on the use and maintenance of the instruments was organised by the ICB at Rhodes University in Grahamstown, South Africa. The training took place from 28 to 30 July 2010, and the trainees were from Kenya (1) Nigeria (1), and South Africa (4).

Information service

- 2.37 During the reporting period, the Secretariat continued to maintain an information service that provides information, upon request, to Member States and their institutions on the properties of chemicals and the contact details of both suppliers and producers of chemicals and chemical technologies. The service has access to the on-line services of the Science and Technology Network, which enables it to respond quickly and effectively to requests for information. National Authorities are encouraged to inform national institutions and enterprises on the availability of this service. Requests for information can be made directly to the Secretariat or through the National Authority concerned. This service is particularly useful for participants in the Associate Programme for their literature surveys when writing up their research projects.

Article XI workshop

- 2.38 A workshop on Article XI of Convention was held on 24 and 25 November 2010 at the OPCW Headquarters in The Hague. The workshop was organised to facilitate the exchange of ideas among States Parties and relevant stakeholders from States Parties, including chemical-industry associations, NGOs, and regional and international institutions, which could assist, as appropriate, the policy-making organs of the OPCW to explore, identify, and develop concrete measures on the full implementation of Article XI. The workshop was attended by 140 participants from 64 Member States from various geographical regions, including eight resource persons from seven Member States. The innovative design of the workshop ensured interactive discussions that optimised the available time and provided all delegates

with the opportunity to contribute; a wide range of ideas and proposals for action was generated. Voluntary contributions from the Netherlands and Algeria were also utilised in support of the workshop.

The Programme to Strengthen Cooperation with Africa on the Chemical Weapons Convention

- 2.39 The Africa Programme focuses on activities and interventions to respond to the particular needs of African Member States. Activities under the programme have included high-level bilateral visits and other activities to increase awareness of the Convention in Africa, including cooperation with the African Union (AU) and outreach to civil society and academic institutions. In 2010, the ICA continued its engagement with African Member States to accelerate and strengthen efforts under the Africa Programme. Some programmes were specifically designed in support of this programme; further details can be found in a Note by the Director-General on this subject, submitted to the Conference at its Fifteenth Session (C-15/DG.12, dated 10 November 2010).
- 2.40 The following activities in 2010 have continued to the implementation and strengthening of the Africa Programme:
- (a) Twelve of the 15 individuals supported under the Internship-Support Programme came from African Member States: Two were supported through a voluntary contribution from the Government of China, and one from a voluntary contribution from the Government of the Netherlands.
 - (b) Fourteen researchers (from a total of 27 research projects) were from African Member States.
 - (c) The Associate Programme in 2010 again accommodated more participants under the Africa Programme. Fourteen out of 27 participants of this programme were from African Member States.
 - (d) Analytical-skills-development courses, including the laboratory-skills enhancement course, were successfully completed by a total of seven participants from Africa.
 - (e) Under the Laboratory-Assistance Programme in 2010, personnel from 11 African laboratories were given training and six laboratories benefited from a TAV.
 - (f) The Secretariat, in collaboration with Protechnik Laboratory in Pretoria, South Africa and VERIFIN, Finland, held the annual “Basic Analytical Chemistry Course” for the Africa Programme. Fourteen participants from the following 12 Member States benefited from this course: Algeria, Benin, Botswana, Cameroon, Ghana, Kenya, Mauritius, Nigeria (2), South Africa (2) Tunisia, the United Republic of Tanzania, and Zimbabwe.
- 2.41 Industry outreach to support safety in chemicals management, especially in relation to the Convention, brought together two chemical industry and safety experts from

African Member States (Kenya and Tunisia) to participate in a seminar on chemical-safety management.

Review of existing regulations in the field of trade in chemicals

- 2.42 The plan of action regarding the implementation of Article VII obligations, which was adopted by the Conference at its Eighth Session (C-8/DEC.16, dated 24 October 2003), urges States Parties that have not yet done so to review their existing regulations in the field of trade in chemicals in order to render them consistent with the object and purpose of the Convention.
- 2.43 Throughout the period under review, as in the other years since the Article VII plan of action was adopted, the Secretariat raised this issue with States Parties during TAVs and also in the margins of other meetings.
- 2.44 To facilitate reporting by States Parties in regard to this issue, a question (question 9) on subparagraphs 2(c), (d), and (e) of Article XI was included in the “Questionnaire on the Implementation of Trade Measures under the Chemical Weapons Convention” (Annex to S/440/2004, dated 23 August 2004). The responses to that question, together with those to the version of the question that appeared in the first legislation questionnaire (“Survey of National Measures to Regulate Scheduled Chemicals under the Chemical Weapons Convention” (Annex to S/194/2000, dated 8 June 2000)) and the submissions received by the Secretariat in respect to the Article VII plan of action, show that, as at 15 November 2010, out of 188 States Parties:
- (a) Sixty-four States Parties (34%) have completed the review and found their regulations consistent with the Convention.
 - (b) Two States Parties (1%) are amending their legislation as a result of their review of their existing legislation.
 - (c) Nineteen States Parties (10%) are carrying out the above-mentioned review.
 - (d) One hundred and three States Parties (55%) have neither provided any information on the matter nor have indicated that they have begun their review.

Annexes (English only):

- Annex 1: Conference-Support Programme 2010
- Annex 2: Internship-Support Programme: Projects Conducted in 2010
- Annex 3: Research Projects Funded Directly by the OPCW in 2010 and Research Projects Funded Jointly by the International Foundation for Science and the OPCW in 2010

Annex 1

CONFERENCE-SUPPORT PROGRAMME 2010

	Conference Title	Location	Duration	State Party of Sponsored Participants	Number of Sponsored Participants
1	Fifth International Symposium on Brominated Flame Retardant, BFR2010	Kyoto, Japan	7 to 9 April	Argentina	1
2	25th Philippines Chemistry Congress: Creating Green Solutions through Chemistry	Zambales, the Philippines	8 to 10 April	Australia, Indonesia, Japan (2), Singapore, Thailand, and the United States of America	7
3	III Latin America Risk Assessment Workshop 2010	São Paulo, Brazil	11 to 18 April	Argentina, Chile, Colombia, Peru, Uruguay, and the United States of America	6
4	CBMTS VIII Eighth International Chemical and Biological Medical Treatment Symposium	Spiez, Switzerland	2 to 7 May	Croatia, India, Iraq, the Islamic Republic of Iran, Kenya, Kyrgyzstan, Nigeria, and Ukraine	8
5	African School on Nanoscience for Solar Energy Conversion	Addis Ababa, Ethiopia	3 to 7 May	Austria, China, and Germany	3
6	Pesticides Management for Regulatory Risk Assessors and Risk Managers of the CEMAC and CPAC	Yaoundé, Cameroon	24 to 27 May	Central African Republic, Chad, the Congo, Equatorial Guinea, and Gabon	5
7	Second Regional Symposium on Electrochemistry: South-East Europe	Belgrade, Serbia	6 to 10 June	Greece, Italy (3), Romania, the Russian Federation, Slovenia, and Switzerland	8
8	10th European Conference on Research in Chemistry Education (ECRICE)	Krakow, Poland	4 to 7 July	Colombia, Germany, India, the Russian Federation, South Africa, Thailand, Ukraine, and the United Kingdom of Great Britain and Northern Ireland	8
9	12th IUPAC International Congress of Pesticides Chemistry	Melbourne, Australia	4 to 8 July	China, Colombia, Viet Nam, and Zimbabwe	4

	Conference Title	Location	Duration	State Party of Sponsored Participants	Number of Sponsored Participants
10	International Conference on Pure and Applied Chemistry (ICPAC 2010)	Balacava, Mauritius	26 to 30 July	India, Malaysia, and Pakistan	3
11	18th IUPAC International Conference on Organic Synthesis (ICOS-18)	Bergen, Norway	1 to 6 August	Algeria	1
12	A Decade into the 21st Century: The Contribution of African Women Scientists and Engineers	Nairobi, Kenya	18 to 20 August	Burundi, Cameroon, and Nigeria (2)	4
13	UMLG-JMLG Annual Meeting 2010 Complex liquids: Modern Trends in Exploration, Understanding and Application	Lviv, Ukraine	5 to 9 September	The Russian Federation (3)	3
14	11th EURASIA Conference on Chemical Sciences	Dead Sea, Jordan	6 to 10 October	Italy, the Netherlands, Turkey, and the United States of America (3)	6
15	International Scientific and Professional Conference (13th Ružička days)	Vukovar, Croatia	16 and 17 September	Serbia and Slovenia	2
16	16th Malaysian Chemical Congress (16MCC) 2010	Kuala Lumpur, Malaysia	12 to 14 October	Indonesia and the Philippines	2
17	African Regional Workshop on the Right to Food and Nutrition: Implications for Food Science and Nutrition Education, Public Policy, Food Fortification and Distribution Activities in Africa	Addis Ababa Ethiopia	7 to 9 October	Kenya, the Sudan, and the United Republic of Tanzania	3
18	The 13th International Symposium on Marine Natural Products	Phuket, Thailand	18 to 22 October	Japan and the United States of America	2
19	14th Scientific and International Meeting of the University of Lomé	Lomé, Togo	25 to 29 October 2010	Cameroon and the Democratic Republic of the Congo	2

	Conference Title	Location	Duration	State Party of Sponsored Participants	Number of Sponsored Participants
20	International Symposium on Biological Nitrogen Fixation in Africa	Cape Town, South Africa	21 to 28 November	Venezuela and the United States of America	2
21	14th Regional Meeting on Biocatalysis and Biotransformation	Montevideo, Uruguay	8 to 10 December	Argentina, Brazil, Chile, and Mexico	4
22	12th International Symposium on Natural Products Chemistry	Karachi, Pakistan	22 to 25 November	Bangladesh, Kenya, the Islamic Republic of Iran, Malaysia, Nigeria, South Africa, and the Sudan	7
23	9th Eastern and Southern Africa Laboratory Managers Association Workshop	Khartoum, the Sudan	18 to 22 December	Ethiopia (2), Kenya (2), South Africa, Uganda, the United Republic of Tanzania (2), and Zimbabwe	9

Annex 2

INTERNSHIP-SUPPORT PROGRAMME: PROJECTS CONDUCTED IN 2010

	Title of Project	Location of Internship	Duration	State Party of Intern
1.	Adsorptive, Photolytic, and Photocatalytic Removal of Pollutants from Drinking Water	Department of Chemical Engineering, Delft University of Technology, Delft, the Netherlands	4 January to 30 June	Argentina
2.	Training Programme on Chemical Engineering for African Countries	Beijing University of Chemical Technology, Beijing, China	15 September 2010 to 15 March 2011	Botswana
3.	Development of an Analytical Method for the Determination of Sulphonamide Residues in Food Samples Based on QuEChERS and LC-MS	Polo Tecnológico de Pando, Facultad de Química, Universidad de la República, Montevideo, Uruguay	3 May to 2 August	Botswana
4.	Adsorptive, Photolytic, and Photocatalytic Removal of Pollutants from Drinking Water	Department of Chemical Engineering, Delft University of Technology, Delft, the Netherlands	4 January to 30 June	Cameroon
5.	Phytochemical and Pharmacological Studies of two Cameroonian Medicinal Plants: <i>Trillepissium Madagascariensis</i> and <i>Morus Mesozygia (Moraceae)</i>	Department of Chemistry, University of Botswana, Gaborone, Botswana	10 March to 9 June	Cameroon
6.	Electrochemical Synthesis, Characterisation, and Electrochromic Properties of New Polythiophene Derivatives and Their Co-Polymers with 3,4-Ethylenedioxythiophene in Room Temperature Ionic Liquids	SensorLab, Faculty of Natural Sciences, University of the Western Cape, Bellville, South Africa	3 May to 2 August	Ethiopia
7.	Synthesis of Compounds Related to Precursors, Degradation and By-products of CW Agents	Spiez Laboratory, Spiez, Switzerland	30 August to 26 November	Ghana
8.	Training Programme on Chemical Engineering for African Countries	Beijing University of Chemical Technology, Beijing, China	15 September 2010 to 15 March 2011	Kenya

	Title of Project	Location of Internship	Duration	State Party of Intern
9.	Chemical Sorbents and Bio-sorbents for the Removal of Heavy Metals in Fresh and Contaminated Waters	School of Chemistry, University of Kwa Zulu Natal, Durban, South Africa	29 February to 28 May	Kenya
10.	Optimisation of Pesticidal Plants for the Control of Insect Pests in Stored Maize and Beans	Natural Resources Institute, University of Greenwich, United Kingdom of Great Britain and Northern Ireland	1 July to 30 September	Malawi
11.	Geopolymer: A New Cement with Low CO ₂ Emissions	Department of Chemical Engineering, Delft University of Technology, Delft, the Netherlands	16 November 2009 to 15 May 2010	Nigeria
12.	Catalysis of the Reduction Reactions between Fe(phen) ₃ ²⁺ and Halopentaacyanocobaltate(III) Complexes by Neutral, Ionic and Cationic Surfactants TritonX-100, SDS and CTAB	Department of Chemistry, University of Botswana, Gaborone, Botswana	15 March to 14 June	Nigeria
13.	Best Practice and Trends in HPLC Method Development and Optimisation in Liquid Chromatography	Katholieke Universiteit Leuven, Leuven, Belgium	1 July to 30 September	Nigeria
14.	Organic-geochemical Characterization and Correlation of Oils from the South-eastern Part of the Pannonian Basin, Serbia	Geological Survey of Denmark and Greenland, Copenhagen, Denmark	1 January to 31 March	Serbia
15.	The Development of Immunoaffinity Purification and Tandem Mass Spectrometry for the Detection of Chemical Weapons Convention Controlled Toxins	Finnish Institute for the Verification of the Chemical Weapons Convention (VERIFIN), Helsinki, Finland	19 August to 17 December	South Africa

Annex 3**RESEARCH PROJECTS FUNDED DIRECTLY BY THE OPCW IN 2010**

	Title	State Party of Researcher
1	Adding Value to Mortño (<i>Vaccinium floribundum Kunth</i>) and Development of Healthy Products with Potential Commercial Interest	Ecuador
2	Solid-phase Synthesis and SAR Studies of Cyclic Peptides to Develop New Anti-inflammatory Agents	Pakistan
3	Hydrological, Sedimentological, and Chemical Processes Shaping the Structure and Functioning of Lake Sibaya in Northern Kwa Zulu Natal, South Africa: Implications for Conservation and Management at iSimangaliso Wetland Park	South Africa

RESEARCH PROJECTS FUNDED JOINTLY BY THE INTERNATIONAL FOUNDATION FOR SCIENCE AND THE OPCW IN 2010

	Title	State Party of Researcher
1	Extraction and Modification of Radiation-Induced Naturally Occurring Polymers for Biomedical Applications	Bangladesh
2	Production and Elucidation of the Chemical Structure of an Active Metabolite Produced by <i>Beauveria Bassiana</i> Isolate to Control the Insect <i>Alphitobius Diaperinus</i>	Brazil
3	Chemical Investigation of <i>Hypericum Lanceolatum</i> , <i>Hypericum Riparium</i> and <i>Psorospermum Aurantiacum</i> (<i>Guttiferae</i>) for Antimicrobial and Antioxidant Substances	Cameroon
4	Colombian Fruits as sources of Anthocyanin Pigments with the Potential for the Development of Value-Added Products	Colombia
5	<i>Activité antifalcémiant</i> (Antisickling Activity) <i>des plantes utilisées contre la drépanocytose en médecine traditionnelle congolaise</i>	Democratic Republic of the Congo
6	Seaweeds as a Source of Natural Antioxidants: Atheroprotective Properties of Hydrophilic Extracts from <i>Halimeda Incrassata</i>	Cuba
7	Development of an Electrochemical Sensor for the Detection of Heavy Metals in Wastewater	Kenya
8	Biodegradation of Organophosphate Pesticides in Liquid Culture and Soil Under the Influence of Different Environmental Conditions	Pakistan
9	Pharmacological and Chemical Characterisation of Bioactive Natural Products Isolated from Marine Fungi in the Republic of Panama	Panama
10	Development of Analytical Techniques for the Detailed Investigation of Wine Tannins	South Africa

	Title	State Party of Researcher
11	Elucidation of Novel Bioactive Compounds from Vietnamese Fungi by the Combination of Phytochemical, Metabolite Profiling, and Screening Methods	Viet Nam
12	Isolation and Characterisation of Extremophilic Sulphate Reducing Bacterial Consortia or Sulphate Reducing Bacteria as a Part of a Treatment System for Acid Mine Drainage	Bolivia
13	Ecotoxicological Effects and Risk Assessment of Pesticides Used by Rice Farmers in Ndop, the North West Region of Cameroon	Cameroon
14	Preparation and Research of Chitosans of Different Molecular Weight in a Reactor System; their Biological Properties to Maximize Crop Efficiency	Cuba
15	Antipediculosis Properties of Five Medicinal Plants Sourced from Ghana	Ghana
16	Synthesis of Binucleating Macrocycles Incorporating Thiolato and Polyether Components Fused to 1,10-Phenanthroline as Sensors for Soft Heavy Metals	Kenya
17	<i>Matières organiques issues de l'élevage et de la ville en milieu tropical: apports de la spectrométrie proche infra-rouge (SPIR) pour orienter leurs usages agronomiques et/ou énergétiques</i>	Madagascar
18	Tetracycline Residues in Feral and Cultured Fish and Their Products in Nigeria	Nigeria
19	Biocontrol of <i>Macrophomina Phaseolina</i> Causing Charcoal Rot in Oil Seed Crops by Using Plant Growth Promoting Rhizobacteria (PGPR)	Pakistan
20	Bioprospecting Acid Mine Drainage in South Africa for Applications in Biotechnology	South Africa
21	Pesticide Residue Analysis in Water and Bottom Sediments of the Pangani River Basin in Tanzania	United Republic of Tanzania
22	Utilisation of Palm Oil Mill Wastes in the production of natural rubber antioxidants	Thailand
23	Effect of Green Manure Legumes (<i>Crotalaria Ochroleuca</i>) and Crop Residues on Soil Physico-Chemical Properties under the Banana-Bean-Maize Cropping System in South Western Uganda	Uganda
24	Batch and Continuous Flow Sorption of Heavy Metals from Aquatic Systems by Water Hyacinth Weed (<i>Eichhornia Rassipes</i>)	Zimbabwe