



**OPCW**

**Scientific Advisory Board**

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**REPORT OF THE THIRD MEETING OF THE SCIENTIFIC ADVISORY BOARD'S  
TEMPORARY WORKING GROUP ON EDUCATION AND OUTREACH IN SCIENCE  
AND TECHNOLOGY RELEVANT TO THE CHEMICAL WEAPONS CONVENTION**

1. The Report of the Third Meeting of the Scientific Advisory Board's (SAB) Temporary Working Group (TWG) on education and outreach in science and technology relevant to the Chemical Weapons Convention is hereby circulated to the States Parties. The meeting was held in The Hague from 26 to 29 November 2013.
2. The Chairman of the SAB and the Director-General have agreed that this report can be circulated to the States Parties in advance of the Twenty-First Session of the SAB.
3. In accordance with the Rules of Procedure of the SAB, this report will be reviewed in detail by the SAB at its Twenty-First Session.

Annex: Report of the Third Meeting of the SAB Temporary Working Group on education and outreach in science and technology relevant to the Chemical Weapons Convention.



**Annex**

**REPORT OF THE THIRD MEETING OF THE SCIENTIFIC ADVISORY BOARD'S  
TEMPORARY WORKING GROUP ON EDUCATION AND OUTREACH IN  
SCIENCE AND TECHNOLOGY RELEVANT TO THE CHEMICAL WEAPONS  
CONVENTION**

**1. AGENDA ITEM ONE – Opening of the meeting and adoption of the agenda**

- 1.1 The Scientific Advisory Board Temporary Working Group (TWG) on education and outreach in science and technology relevant to the Chemical Weapons Convention (hereinafter "the Convention") held its third meeting from 26 to 29 November 2013 at OPCW Headquarters in The Hague.
- 1.2 The meeting was chaired by Professor Djafer Benachour on behalf of the SAB.
- 1.3 The list of TWG members attending this meeting is given in the Appendix.
- 1.4 The members of the TWG congratulated the OPCW on the award of the 2013 Nobel Peace Prize and urged the Organisation and relevant stakeholders and supporters to take full advantage of the education and outreach opportunities that the award presents.
- 1.5 The following agenda was adopted:
  - (a) Opening of the meeting and adoption of the agenda;
  - (b) Reports from members on intersessional work;
  - (c) Relevant OPCW activities - including the outcome of the Third Review Conference;
  - (d) Preparation for the education and outreach and science and technology break-out groups at the Fifteenth Annual Meeting of National Authorities;
  - (e) Interaction with the Fifteenth Annual Meeting of National Authorities;
  - (f) Technical Secretariat plans for 2014 as "the year of awareness-raising on the CWC";
  - (g) Approaches for the Technical Secretariat to adopt in conducting outreach to the scientific community: Discussion;
  - (h) Working with science centres and museums;
  - (i) Training and educational materials for UNICRI Project 31 (Network of universities and institutes for raising awareness on dual-use concerns of chemical materials);
  - (j) Development of educational materials and feedback from TWG members: progress;

- (k) Working with international organisations;
- (l) Outreach and awareness-raising: the chemical industry and the scientific and policy communities;
- (m) Intersessional work and drafting of the report from the meeting;
- (n) Any other business;
- (o) Adoption of the TWG report, date of final meeting, and approach to end of mandate report;
- (p) Closure of the meeting.

## **2. AGENDA ITEM TWO – Reports from members on intersessional work**

- 2.1 Djafer Benachour gave a brief presentation on the International Union of Pure and Applied Chemistry (IUPAC) 44th World Chemistry Congress which was held in Istanbul in August 2013. The OPCW conducted outreach activities at the congress including an information booth, which was visited by many congress participants, and a video message by the Director-General. An entire section of the congress was devoted to "Chemistry Education". Professors Alastair Hay and Peter Mahaffy described the workshop they had run at the congress in which they had demonstrated updated web-based materials on the multiple uses of chemicals. These materials had been developed under a joint OPCW-IUPAC project, supported by the European Union, which invites educators, students, policy makers, and the public to explore the beneficial uses, misuses, and abuses of multi-use chemicals. The resources can be used alone or in support of interactive presentations to build understanding of the responsibilities, of scientists and the public, to respond to the misuse of chemicals - such as in the production of chemical weapons. The interactive web materials were created by the King's Centre for Visualization in Science at The King's University College in Edmonton, Canada, in cooperation with members of the OPCW Scientific Advisory Board and TWG members. In addition to promoting discussion about the multiple uses of chemicals, the intention of the workshop was to promote ways in which the material can be taught. Professors Hay and Mahaffy explained that to engage students it is far better to adopt an interactive approach to teaching. To illustrate this, the workshop proceedings were filmed and a 17-minute film of the workshop will form part of the website. The updated website is available at <http://multiple.kcvs.ca>
- 2.2 Professor Alejandra Suárez described a workshop on "Chemistry for peace: ethics and professional responsibility in education" which was held in Rosario, Argentina, in June 2013. The workshop was attended by representatives from academia, the scientific community, the chemical industry, professional associations, federal agencies, such as the ministries of education and science and technology, and the forum of deans of chemistry. In addition, with financial support from the European Union, three members of the TWG also participated. The objectives of the workshop were to stress the potential risks posed by the multiple uses of chemicals and the dual use nature of scientific knowledge contribute to the prevention of the misuse of toxic chemicals; facilitate chemical safety and chemical security; raise awareness of the

Convention among the broad community of relevant professionals who may not be aware of it; and build networks in chemical education. At the end of the workshop, it was proposed that each participating institution includes ethics and professional responsibility as well as address issues relevant to the Convention in the chemical curricula. Goals to be achieved were identified as implementation of "train-the-trainer" courses, development of educational tools and materials for chemistry professors, and the encouragement of active collaboration through the recently organised network of education in chemistry. Professor Suárez said that subsequent to the workshop, the industry association decided to include relevant issues in its activities and the local Santa Fe region will include material on the Convention in some of its courses.

- 2.3 In discussion, the TWG members who attended the workshop described it as a "model case" of how to conduct outreach and also stressed the importance of support from the OPCW.
- 2.4 Professor Alejandra Suárez and Stefan Mogl and Jonathan Forman from the Technical Secretariat (hereinafter "the Secretariat") described their participation in the Biological Weapons Convention (BWC) Meeting of Experts on 14 August 2013. They participated in a panel that also included a representative of the BWC Implementation Support Unit (ISU), Dr. Piers Millet, who gave an update on how scientific developments arising from the convergence of chemistry and biology have moved from the laboratory into commercial processes and consumer products. He also described joint awareness raising activities by the BWC ISU and the OPCW. Mr Mogl briefed the participants on the mandate and the work of the TWG on the convergence of chemistry and biology. Professor Suárez described the Rosario workshop noted in paragraph 2.2 above. There were 70 people attending the side event. There was much interest in the mechanisms for collaboration between experts on the BWC and Convention and the use of convergence as a platform for outreach on both conventions. The three presentations are available on the ISU website.<sup>1</sup> The panellists also presented brief summaries on the same topics to the plenary session of the Meetings of Experts.
- 2.5 In discussion, the following points were raised:
- (a) TWG members recognised the benefits of discussing education and outreach in the context of both the chemical and biological weapons conventions. Based on examples from Geneva, the value of conducting education and training for diplomats was also emphasised.
  - (b) Unlike the BWC, the Convention benefits from having an organisation and National Authorities. The BWC does, however, have very good links with international scientific associations and with committed individuals who can be "national champions" for education and outreach.

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<sup>1</sup> See

[http://www.unog.ch/\\_80256ee600585943.nsf/\(httpPages\)/eed3e63397c2144bc1257bf80054fe12?OpenDocument#\\_Section8](http://www.unog.ch/_80256ee600585943.nsf/(httpPages)/eed3e63397c2144bc1257bf80054fe12?OpenDocument#_Section8)

- 2.6 Professor Jan Apotheker briefed the TWG on a new EU-funded project which he is coordinating. The project, entitled "Including Responsible Research and innovation in cutting Edge Science and Inquiry-based Science education to improve Teacher's Ability of Bridging Learning Environments In Europe" ("Irresistible"), addresses the issue of 'Responsible research and innovation', particularly the relationship between research and society. Working together to make young people more aware about responsible research and innovation issues, participating universities and science centres from 10 countries will form "communities of learners" that will develop material to be used both in the classroom as well as in the science centres.
- 2.7 Daniel Feakes from the Secretariat described the "International Workshop on Disarmament and Non-Proliferation Education and Capacity Development" which had been co-organised by the OPCW and the Vienna Center for Disarmament and Non-Proliferation from 14 to 15 November in Vienna. The workshop was supported financially by the Foreign and Commonwealth Office of the United Kingdom and the Federal Ministry for European and International Affairs of Austria. It brought together practitioners in the field of disarmament and non-proliferation education, particularly from international organisations, as well as experts from selected leading academic centres and professional networks. The workshop provided an opportunity for this broad range of professionals to share experiences and best practices—particularly with regard to specific tools and methods—and to explore potential collaboration and synergies between international organisations and other key stakeholders in the areas of disarmament and non-proliferation education and training, awareness-raising, and outreach. Workshop participants made recommendations under three main headings: Improving and increasing contacts and communication among relevant organisations, including international organisations, non-governmental organisations, and academia; Increasing project cooperation to maximise efficiencies, decrease duplication of efforts, and avoid gaps; and Raising the profile of disarmament and non-proliferation education. A summary report of the workshop is available at: [http://www.vcdnp.org/131125\\_np\\_education\\_workshop\\_report.htm](http://www.vcdnp.org/131125_np_education_workshop_report.htm)
- 2.8 Philip Coleman described a workshop on Article XI of the Convention that he had recently attended in Nairobi. One point raised at the meeting was a lack of tools and information for National Authorities to disseminate to domestic stakeholders.

### **3. AGENDA ITEM THREE – Relevant OPCW activities**

- 3.1 Daniel Feakes updated the TWG on the activities of the Secretariat since the Third Review Conference in April 2013. Mr Feakes emphasised that the final report of the Third Review Conference was the first time that States Parties had mandated activities relating to education and outreach. He referred specifically to paragraphs 9.15, 9.101, 9.103(e), 9.131(j), 9.131(l) and 9.155(d) of the Review Conference final report (RC-3/3\*, dated 19 April 2013) and gave details of follow-up steps undertaken by the Secretariat. For example, the Secretariat has recently, with financial support from the European Union, assisted in the updating of the web-based educational materials described in paragraph 2.1 above. With financial support from the United Kingdom, the Secretariat is assisting the development of educational materials for high school

chemistry students and has made available the film "Fires: A Teacher's Mission" in all six official OPCW languages (see <http://www.thefiresproject.com>).

3.2 In discussion, the following points were raised:

- (a) The TWG welcomed the emphasis given to education and outreach by the Third Review Conference.

**4. AGENDA ITEM FOUR – Preparation for the break-out groups at the fifteenth annual meeting of National Authorities**

4.1 As recommended by the first meeting, and as practised at its second meeting, the TWG again met in conjunction with the annual meeting of National Authorities. This year, TWG members participated in two break-out groups; one on education and outreach, and the other on science and technology. Under this particular agenda item, the TWG members discussed their roles in and contributions to the break-out groups.

**5. AGENDA ITEM FIVE – Interaction with the fifteenth annual meeting of National Authorities**

5.1 Daniel Feakes facilitated the break-out group on education and outreach. He gave an introduction to the subject and, with the participating TWG members he led interactive discussions on the following issues: Challenges faced by National Authorities; Requirements of National Authorities; Potential remedies and solutions. The break-out group was attended by 20 representatives from National Authorities. Members of the TWG also presented to the National Authority representatives those educational materials that are already available for use. National Authority representatives shared their experiences and suggestions for improved education and outreach activities.

5.2 The following outcomes resulted from the discussion in the break-out group on education and outreach:

- (a) The TWG expressed its appreciation for the opportunity to interact again with the National Authorities.
- (b) The TWG restated its recommendation that education and outreach be included on the agenda of regional meetings of National Authorities although thought will have to be given to ensuring that educators, officials from ministries of education and other relevant stakeholders are in attendance.
- (c) Given the emphasis put on education and outreach at the Third Review Conference and at the National Authorities meetings, the TWG proposes that education and outreach is made a standing agenda item for such meetings at both the global and regional level.

5.3 Jonathan Forman facilitated the break-out group on science and technology. He presented an introductory overview of science and technology and how it impacts policies and non-proliferation concerns. The breakout session was attended by 12 representatives from National Authorities; as well as several TWG and SAB

members. The National Authorities identified a number of scientific and technological issues and discussed how these might be effectively addressed. They included: understanding new science and technology and how it is used and why it is important; the political will to take scientific and technological recommendations forward to policy makers; ensuring policy makers understand scientific and technological developments and whether they need to consider amendments or changes to the Convention in response; communication of scientific and technological issues between policy makers, National Authorities, and the OPCW; the role of the SAB and how to most effectively facilitate interaction with stakeholders from the States Parties; and verification technologies.

- 5.4 The following outcomes resulted from the discussion in the S&T break-out group:
- (a) The issue of communication underpinned all of the issues raised within the break-out group.
  - (b) There should be an event on the SAB at each session of the Conference and at every annual National Authorities meeting. SAB and TWG members could also participate in regional meetings of National Authorities, and in any public outreach events which might be organised in parallel to such meetings.
  - (c) The issue of how best to "translate" technical information from technical experts into a form understandable and usable by diplomats was also discussed. This is a common issue across science-related treaties and it could therefore be worth sharing experiences between the Convention and BWC.

**6. AGENDA ITEM SIX – Technical Secretariat plans for 2014 as "the year of awareness-raising on the CWC"**

- 6.1 Daniel Feakes described the activities planned for 2014 which the Director-General has announced will be "the year of awareness-raising on the Chemical Weapons Convention". These activities were presented to States Parties on 10 September 2013 during the discussions on the 2014 programme and budget. The objectives of this initiative are to:
- (a) Significantly increase the level of awareness, particularly among audiences such as the scientific and academic communities which have not yet been targeted in a systematic manner, about the Convention and its prohibitions;
  - (b) Develop more specific educational and training materials for current and future chemists and chemical engineers;
  - (c) Provide tools for National Authorities to assist them in effective national outreach to the relevant communities and make such tools easily accessible to National Authorities, for example, via the OPCW website; and
  - (d) Build sustainable relationships with other national, regional, and international actors in the areas of responsible science, the peaceful uses of chemistry, and disarmament education.

- 6.2 Mr Feakes then explained that, during 2014 these objectives will be addressed by:
- (a) Disseminating the educational tools and materials developed during 2013 as widely as possible to relevant audiences;
  - (b) Building on initial contacts with other relevant international organisations in order to establish collaborative projects aimed at issues such as responsible science and science and security;
  - (c) Establishing a network of individuals, particularly in the academic and scientific communities, committed to raising awareness about the multiple uses of chemicals and the contribution made by the Convention;
  - (d) Regional or subregional events in 2014 organised or hosted by States Parties to sensitise the relevant communities and to share best practices and exchange information;
  - (e) Developing capacities among National Authorities to conduct awareness-raising, education and outreach at a national level to improve the implementation of the Convention.
- 6.3 In conclusion, Mr Feakes informed that TWG that, for the first time, in 2014 the OPCW programme and budget will include a line item for education and outreach activities.
- 6.4 In discussion, the following points were raised:
- (a) Some TWG members felt that the OPCW was now in a "new era" given the award of the Nobel Peace Prize. There is now a need for a more strategic approach in order to sustain the interest developed.
  - (b) One element of such a sustained approach could be to develop an OPCW exhibition which could be displayed at prominent international meetings, conferences of professional associations, and so on.
  - (c) The TWG also reflected that States Parties to the Convention are very diverse and their concerns and interests can differ significantly. OPCW outreach efforts need to take this diversity into account.

**7. AGENDA ITEM SEVEN – Approaches for the Technical Secretariat to adopt in conducting outreach to the scientific community**

- 7.1 Jonathan Forman from the Secretariat briefed the TWG on science and technology related meetings and workshops he had attended in 2013. He described his experiences with public awareness of OPCW before and after the announcement of the Nobel Peace Prize; presented some observations on how engagement with the scientific community is being approached for raising awareness on security issues, noting some short-comings and provided suggestions that would lead to more positive engagement; highlighted the importance of engaging and partnering with scientists for security; asked the TWG to consider how to reach the most critical stakeholders for

the awareness-raising messages; and discussed how effective communication involves not only a common understanding of the meaning of words, but also a need to use appropriate communication tools to reach an intended audience. He stressed that technology development is a highly multidisciplinary process and it is important to understand this and learn to use the language and concepts of scientific discovery and development for more effectively engaging with the broader scientific community. His presentation concluded with a list of topics and ideas for the TWG to provide input drawn from his interactions with participants in the meetings and workshops described.

7.2 In discussion, the following points were raised:

- (a) Scientific expertise is an important contribution to security issues and necessary for effective implementation of the Convention. Positive messaging in engagement with the scientific community is necessary to bring them into the discussion as partners.

## **8. AGENDA ITEM EIGHT – Working with science centres and museums**

8.1 Friso Visser briefed the TWG on Museon, a large museum for culture and science located very close to the OPCW headquarters building. Museon was established in 1906 and today has a total exhibition space (temporary and permanent) of 4,000m<sup>2</sup>. In 2012, Museon received approximately 193,500 visitors, including 42,500 school students. Museon is also a founding member of the European Network of Science Centres and Museums (ECSITE) and will be hosting the 25th ECSITE annual conference in The Hague in May 2014. Mr Visser explained the development of science centres and their role in both formal and informal learning. He also outlined Museon's goals for the future, including developing exhibitions on the neighbouring international organisations such as the OPCW, and plans in relation to the Nuclear Security Summit in March 2014.

8.2 In discussion, the following points were raised:

- (a) TWG members acknowledged the potential value in working with science centres and also encouraged the Secretariat to develop its contacts with the Nobel Peace Centre in Oslo.
- (b) TWG members identified the 25th ECSITE annual conference in May 2014 as a good outreach opportunity for the OPCW. The centenary of the First World War and the centenary of the first large-scale use of chemical weapons will also present opportunities to both commemorate the victims of chemical weapons and raise awareness of the OPCW.

## **9. AGENDA ITEM NINE – Training and educational materials for UNICRI Project 31 (Network of universities and institutes for raising awareness on dual-use concerns of chemical materials)**

9.1 Dr Daan Noort and Dr Stephanie Meulenbelt of TNO Laboratories informed the TWG on the experiences of TNO in building and maintaining networks to the scientific community. Under the EU CBRN Centres of Excellence initiative, TNO participates

in a project entitled "Network of Universities and Institutes for Raising Awareness on Dual-use Concerns of Chemical Materials". The Project aims at contributing to the safety and security of chemical dual-use materials and processing equipment, via the reinforcement of chemical safety and chemical security, a culture of responsibility and the awareness and engagement of both expert and young chemical scientists. The project foresees three key activities: organisation of national expert networks (in Central Asia; South East Europe, the Caucasus, Moldova and Ukraine; Middle East; North Africa and South East Asia); organisation of workshops and training events; and provision of relevant documentation to the trainees. Within the project consortium, TNO leads on the third activity with the aim of producing materials to recognise the issue of dual-use chemicals, increase awareness on dual-use of chemicals, cultivate responsibility regarding dual-use possibilities, promote the discussion on suitable countermeasures at the workplace, and create a basis for future institutional courses on dual-use issues.

## **10. AGENDA ITEM TEN – Development of educational materials and feedback**

10.1 Professor Ludo Juurlink of Leiden University briefed the TWG on progress in designing educational materials for high school chemistry students. Working with a group of local Dutch and international high school chemistry teachers, Professor Juurlink has prepared a student workbook called "Chemistry in Conflict". The workbook has three main sections (chemical weapons, the OPCW and the Chemical Weapons Convention, and ethics and science). The first draft of the workbook has now been prepared and it will be tested in various real school settings and adjusted where necessary.

10.2 In discussion, the following points were raised:

- (a) TWG members encouraged the translation of the workbook into all official OPCW languages;
- (b) TWG members raised the question of how the workbook would be kept up-to-date once it has been published;
- (c) TWG members also raised questions about dissemination of the materials and ensuring that its availability is advertised in the relevant places.

## **11. AGENDA ITEM ELEVEN – Working with international organisations: UNESCO**

11.1 Dr Rovani Sigamoney from UNESCO described that the organisation's education initiatives in the fields of science and engineering. She described how UNESCO is encouraging the development and/or integration of innovative, interesting and dynamic tools and methodologies into science teaching in order to capture the interest of young students. Emphasis is being placed on enquiry based investigation and hands-on teaching methodologies as a means of improving science curricula. She referred to the International Year of Chemistry in 2011 and informed the TWG that 2014 will be the International Year of Crystallography, which could involve opportunities for collaboration with the OPCW.

11.2 In discussion, the following points were raised:

- (a) Dr Sigamoney mentioned that UNESCO has National Commissions in almost all countries and that it also runs networks of chairs in many disciplines at universities around the world. Such bodies and networks could be useful channels through which to disseminate OPCW educational materials.
- (b) An additional opportunity is presented by the World Science Day for Peace and Development which takes place every year on 10 November and which UNESCO oversees. There could be potential for collaboration between OPCW and UNESCO in future years.

## 12. AGENDA ITEM TWELVE – Outreach and awareness-raising

12.1 Detlef Maennig reported on outreach and awareness-raising in the chemical industry. The most important tools are working groups within chemical industry associations. These teams of experts liaise with National Authorities including law-makers, OPCW-bodies and selected scientific, as well as, commercial institutions. They then disseminate information to their member companies via association journals, newsletters and workshops/training activities. Outreach and awareness-raising has largely been limited to those selected partners. Awareness-raising activities with schools, academia and the public at large have been limited mainly to chemical industry experts in their individual capacities.

12.2 There is still widespread concern within the chemical industry that the topic of chemical weapons is too complex to communicate and would only stir negative sentiments about chemistry in general and the chemical industry in particular.

12.3 Within CEFIC, the European Chemical Industry Association, the topic has been transferred from Industrial Policy to International Affairs/Responsible Care® Management. This indicates a shift from best-practice administration of the Convention to management of the chemical weapons issue within the framework of sound management of chemicals in general including novel outreach activities. To build on the positive image of the OPCW as the recipient of the 2013 Nobel Peace Prize offers new approaches to communication.

12.4 In discussion, the following points were raised:

- (a) TWG members suggested that representatives of chemical associations from industrialised countries could travel to developing countries and share experiences about raising awareness about the Convention at a national level, and that such representatives could attend regional meetings of National Authorities.
- (b) At the national level, some countries are finding that additional outreach efforts to industry are now needed, as many people who were reached early in the life of the OPCW are now retiring.

12.5 In her presentation, Jo Husbands discussed two kinds of activities for the OPCW to consider that could contribute to sustainability. The first is the opportunities for

outreach by working with scientific and policy organisations to host joint events. One example is the dissemination activities that will be undertaken for the education handbook to be published in early 2014 as a companion to Responsible Conduct in the Global Research Enterprise (<http://www.interacademycouncil.net/24026/GlobalReport.aspx>) from the InterAcademy Council and IAP—The Global Network of Science Academies.

12.6 The second is the potential to create networks of faculty able to teach about the Convention and dual use/multiple uses issues in the context of responsible science. As an example, Dr Husbans gave an update on a project in the life sciences by the US National Academy of Sciences (NAS). In partnership with (1) The World Academy of Sciences (TWAS) and the Bibliotheca Alexandrina and (2) the Academy of Sciences Malaysia, the NAS has held week-long Education Institutes to introduce both content and effective teaching methods to university faculty members from the Middle East/North Africa and South/Southeast Asia. A report on the work in the MENA is available at <http://search.nap.edu/napsearch.php?term=MENA>.

**13. AGENDA ITEM THIRTEEN – Intersessional work and drafting of the report from the meeting**

13.1 The intersessional activities will be drawn from the conclusions and proposals listed above and from the work of the sub-groups established in subparagraphs 15.1(e) and 15.1(i) below.

**14. AGENDA ITEM FOURTEEN – Any other business**

14.1 No other business was raised.

**15. AGENDA ITEM FIFTEEN – Summary of conclusions and proposals, adoption of the TWG report from this meeting, date of final meeting, and approach to end of mandate report**

15.1 As requested by its terms of reference, the TWG agreed the following main conclusions and proposals at its third meeting:

(a) The TWG noted that the unique constellation presented by the 2013 Nobel Peace Prize, the centenary of the First World War, the approaching centenary of the first large-scale use of chemical weapons, the use of chemical weapons in Syria and subsequent accession of Syria to the Convention presents an unparalleled opportunity for OPCW to:

- (i) highlight the importance of the peaceful and responsible use of chemicals;
- (ii) develop a strategy over the coming year for visible and sustainable attention to education and outreach as an integral part of the programme and activities of the OPCW;
- (iii) develop the organisational capacities and resources of the OPCW and the National Authorities to implement the above.

- (b) From its interactions with the National Authorities at their two most recent annual meetings, the TWG received encouragement to maintain, update and expand the educational materials described above (see paragraphs 2.1 and 10.1). The TWG proposed that:
- (i) The "multiple uses" and "chemistry in conflict" materials described above be translated into all official OPCW languages and additional languages (for which volunteers could be sought);
  - (ii) These materials be updated on an annual basis;
  - (iii) Active-learning strategies that encourage interaction and participation be promoted, as well as guidance for their use.
- (c) The TWG proposed that a visible presence be created on the homepage of the OPCW public website for education and outreach materials with links to the existing materials described in subparagraph (b) above.
- (d) The TWG expressed its satisfaction that National Authorities are keen to include education and outreach on the agenda of their meetings at the regional level. TWG members offered to assist the National Authorities in planning and carrying out such meetings.
- (e) The TWG noted the contacts which the Secretariat has initiated with science and peace museums and proposes that the Secretariat, in cooperation with National Authorities, provides appropriate material to such museums in order to enable them to incorporate chemical weapons and responsible use issues in exhibits as appropriate. The TWG is aware that the Nobel Peace Center is developing an exhibition on the OPCW and its activities that will be displayed during 2014. The TWG offers to provide advice on the continued use of the exhibition in other settings including to commemorate the centenary of the first large scale use of chemical weapons in 1915. The TWG will establish a sub-group to further pursue these opportunities.
- (f) The TWG welcomed the initiatives taken by the Secretariat in the past year to reach out to international professional associations and conferences such as those described in paragraph 7.1 above and proposed that the Secretariat continue to develop its outreach to the scientific community and the chemical industry and its participation in such events.
- (g) In light of the presentations to this meeting of the TWG by UNESCO and participants in the EU Network of universities and institutes for raising awareness on dual-use concerns of chemical materials, the TWG proposes that the Secretariat continues to develop more sustained collaborative relationships with relevant actors, such as international organisations, professional associations, civil society, academia etc in order to expand and promote a culture of responsibility in the scientific community and the chemical industry.
- (h) The TWG recognised that the use of chemical weapons has humanitarian consequences and recognises the urgent need to provide appropriate assistance to victims. It notes that:

- (i) Broad education and outreach among the general public about those consequences is urgently needed;
  - (ii) Education and training for the medical profession about the clinical management of those affected and how to deal with both short-term and long-term consequences is also required;
  - (iii) Some members of the TWG will explore opportunities to contribute advice to the Secretariat in this regard.
- (i) In the period before its next meeting, the TWG will establish a sub-group to develop a plan for sustainable ways in which the OPCW can take forward its education and outreach activities in preparation for the review by the SAB and decision by the Director-General in April 2015 on whether the TWG should continue its work and whether its terms of reference should be revised.

15.2 The fourth meeting of the TWG was tentatively scheduled for mid-2014 pending exploration of the dates of other relevant meetings in 2014.

## **16. AGENDA ITEM FIFTEEN – Closure of the Meeting**

16.1 The Chairperson closed the meeting at 12:30 on 29 November 2013.

Appendices:

Appendix: List of Participants in the Third Meeting of the Temporary Working Group on Education and Outreach in Science and Technology Relevant to the Chemical Weapons Convention

### Appendix

#### LIST OF PARTICIPANTS IN THE THIRD MEETING OF THE TEMPORARY WORKING GROUP ON EDUCATION AND OUTREACH IN SCIENCE AND TECHNOLOGY RELEVANT TO THE CHEMICAL WEAPONS CONVENTION 26 - 29 NOVEMBER 2013

<b>Participant</b>	<b>Institution</b>
Professor Jan Apotheker, Jan	University of Groningen
Professor Djafer Benachour <sup>2</sup> *	Ferhat Abbas University, Ministry of Higher Education and Scientific Research, Setif
Dr Philip Coleman	Protechnik Laboratories, Lynnwood Glen
Professor Temechn Engida	Addis Ababa University
Professor Alastair Hay	University of Leeds, United Kingdom
Dr Jo Husbands	National Academy of Sciences, Washington, D.C.
Professor Peter Mahaffy	The King's University College, Edmonton
Dr Detlef Manning	Evonik Industries AG, Hanau-Wolfgang
Professor Mahdi Balali-Mood	Medical Toxicology Centre, Imam Reza Hospital, University of Medical Sciences, Mashhad
Dr Robert Mathews	Defence Science and Technology Organisation, Melbourne
Mr Stefan Mogl	SPIEZ Laboratory
Dr Ting-Kueh Soon	Malaysian Institute of Chemistry, Kuala Lumpur
Alejandra Graciela Suárez*	Universidad Nacional de Rosario
Professor Ludo Juurlink (guest speaker)	Leiden University
Dr Stephanie Meulenbelt (guest speaker)	Netherlands Organisation for Applied Scientific Research (TNO)
Dr Daan Noort (guest speaker)	Netherlands Organisation for Applied Scientific Research (TNO)
Dr Rovani Sigamoney (guest speaker)	UNESCO
Dr Christopher Timperley* (guest from SAB)	Defence Science and Technology Laboratory (Dstl), Porton Down
Dr Friso Visser (guest speaker)	Museon, The Hague

\*Member of the Scientific Advisory Board.

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