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**PROGRESS MADE AND REVIEW OF THE STATUS OF IMPLEMENTATION OF
ARTICLE XI OF THE CHEMICAL WEAPONS CONVENTION**



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EXECUTIVE SUMMARY

1. This report has been produced for the 104th Session of the Executive Council (hereinafter “the Council”) in response to a decision by the Conference of the States Parties (hereinafter “the Conference”) at its Sixteenth Session (C-16/DEC.10, dated 1 December 2011) entitled “Components of an Agreed Framework for the Full Implementation of Article XI”, in which the Conference requested the Technical Secretariat (hereinafter “the Secretariat”) to provide annual reports to the Council and the Conference on the progress of concrete measures undertaken in implementing the decision, and on the status of implementation of Article XI of the Chemical Weapons Convention (hereinafter “the Convention”). The reporting period for this report is 26 August 2022 to 25 August 2023.
2. During the reporting period, the Secretariat continued to enhance its portfolio of programmes and activities aimed at promoting the implementation of Article XI and addressing the four areas identified by decision C-16/DEC.10. The Secretariat sustained delivery of established programmes and launched new initiatives surrounding the three focus areas of integrated chemicals management, enhancement of laboratory capabilities, and chemical knowledge promotion and exchange.
3. All programmes and initiatives continued to be implemented using a results-based approach, with special attention to cost-effectiveness and the needs and priorities of the States Parties. The resources used were provided from the regular budget, as well as voluntary contributions, both financial and in-kind, received for specific activities from several States Parties and entities.
4. The Secretariat adeptly and effectively responded to the gradual easing of COVID-19 restrictions and sustained its delivery across all three thematic areas to further the implementation of Article XI programmes. Drawing on the lessons learned during the COVID-19 period, the Secretariat continued to employ a combination of online, hybrid, and in-person modalities to effectively ensure implementation of its diverse range of programmes and activities.
5. The newly inaugurated OPCW Centre for Chemistry and Technology (ChemTech Centre) also offers the Secretariat a unique platform to enhance and bolster its international cooperation and assistance initiatives, utilising its state-of-the-art facilities, in alignment with Secretariat Notes S/2034/2022 (dated 1 March 2022) and S/2102/2022 (dated 30 September 2022). Since its inauguration in May 2023, the Centre has successfully delivered key Article XI initiatives like the Symposium on Women in Chemistry and the Workshop on Policy and Diplomacy for Scientists, demonstrating its capability for seamless and efficient programme delivery. With more specialised trainings to be introduced, the Centre remains committed to offering comprehensive training experiences that resonate with its foundational vision and cater to the unique needs of States Parties.
6. During the reporting period, the Secretariat organised 35 capacity-building programmes (training activities, seminars, and workshops) with a total of 871 participants from 92 States Parties. Thirty-one events were held in person or in hybrid format. The Secretariat supported 20 research projects, 13 fellowships, and 11 conferences, of which 10 were held in person.

7. In the area of integrated chemicals management, during the reporting period the Secretariat initiated the twenty-fourth edition of the Associate Programme in face-to-face format, benefitting 32 participants from 32 States Parties. A special focus also continued to be placed on chemical safety and security management, with the organisation of 14 training courses and workshops benefitting 281 participants from 85 States Parties.
8. In the area of enhancement of laboratory capabilities, the Secretariat delivered 13 analytical skills development courses, proficiency testing training courses, and specialised laboratory training courses, benefitting 266 participants from 60 States Parties.
9. Under the chemical knowledge promotion and exchange group of programmes, various opportunities were provided to further enhance networking and the exchange of information and knowledge among scientific communities, academic institutions, chemical industry associations, and non-governmental organisations (NGOs), as well as regional and international institutions. Among the key highlights was the launch of the first in-person edition of the Education and Training Programme for Youth on Peaceful Uses of Chemistry aimed at enhancing the capacities of young people in respect of peaceful uses of chemistry towards the prevention of diversion of chemicals for malicious use. The initiative, supported by the European Union, was attended by 17 participants from 10 Member States. As noted above, the Secretariat also held the annual Symposium on Women in Chemistry at the ChemTech Centre in Nootdorp, the Netherlands, on 19 and 20 June 2023. The Symposium, which aimed to foster gender equality and diversity in the field of chemistry, was organised in close cooperation with the United Nations Interregional Crime and Justice Research Institute (UNICRI) and the United Nations Institute for Disarmament Research (UNIDIR), and with a voluntary contribution from France.
10. The Secretariat sponsored 11 scientific conferences in nine States Parties under the Conference Support Programme (benefitting 289 experts), funded 20 research projects in 11 States Parties under the Programme for Support of Research Projects, and provided 13 fellowships for junior scientists under the Fellowship Programme.
11. To further enhance the effectiveness and impact of the international cooperation programmes provided by the Secretariat to States Parties under Article XI, a cost-effective and results-based approach was sustained. Special attention was given to the advancing alumni networks of the programmes. In addition to the vibrant alumni network of the Associate Programme, the new alumni network launched in April 2022 for the Education and Training Programme for Youth on Peaceful Uses of Chemistry was further strengthened. Also, alumni networks have been established for the Chemical Safety and Security Management Programme, the Integrated Chemicals Management Programme, and the Women in Chemistry initiative, which offer the Secretariat additional channels to communicate with former participants and support their initiatives, including education and outreach on the Convention and the peaceful uses of chemistry.
12. Furthermore, the Secretariat continued to place due emphasis on strengthening capacity-building needs assessments for the effective delivery of programmes. In this context, during the reporting period, the Secretariat continued its efforts to conduct needs assessments in the area of integrated chemicals management. The Secretariat also

invited States Parties, on a voluntary basis, to submit assessments on their specific needs in the area of chemical safety and security management, as well as information on existing tools, guidelines, and best practices in chemicals management in their respective countries.

13. The evaluation and impact assessment approach and techniques continued to be institutionalised during the reporting period. The assessment of all programmes was based on structured feedback from the various stakeholders, including participants, relevant institutions, and National Authorities of States Parties, and also on regular follow-up of participants' career paths and academic development vis-à-vis the impact of the respective programmes in which they participated. During the reporting period, the Secretariat carried out a comprehensive survey of the analytical skills development courses covering the last four years (2019 to 2022).
14. As part of the Secretariat's continued efforts to facilitate States Parties' participation in the fullest possible exchange of chemicals, equipment, and scientific and technical information relating to the development and application of chemistry, the Secretariat continued to support the deliberations of States Parties through the informal consultation mechanism. The Secretariat also organised an online information briefing on 4 May 2023 to raise awareness among States Parties of its extensive range of services and capacity-building programmes, aimed at fostering and promoting full implementation of the Convention. The Secretariat sustained its efforts to reach out to States Parties that seldom participate in the Secretariat's international cooperation programmes to encourage them to take part in and benefit from them. The Secretariat also continued its proactive approach to encouraging relevant States Parties to make donations for the Equipment Exchange Programme.

INTRODUCTION

15. The Conference at its Sixteenth Session adopted a decision regarding the components of an agreed framework for the full implementation of Article XI of the Convention (C-16/DEC.10) and requested the Secretariat to report to the Conference at each regular session on the progress of concrete measures undertaken in implementing the decision, and on the status of implementation of Article XI. This report is submitted in accordance with the Conference request, with the reporting period being 26 August 2022 to 25 August 2023.
16. The components included in the agreed framework identified concrete measures in the following areas:
 - (a) national capacity building for the research, development, storage, production, and safe use of chemicals for purposes not prohibited under the Convention;
 - (b) promoting networking and exchange among scientific communities, academic institutions, chemical industry associations, NGOs, and regional and international institutions;
 - (c) enhancing the effectiveness of the current international cooperation programmes of the OPCW; and

- (d) measures by States Parties and the OPCW to facilitate States Parties' participation in the fullest possible exchange of chemicals, equipment, and scientific and technical information relating to the development and application of chemistry, in accordance with the provisions of the Convention.

ACTIVITIES UNDER CONFERENCE DECISION C-16/DEC.10 ON THE FULL IMPLEMENTATION OF ARTICLE XI OF THE CONVENTION

- 17. During the reporting period, the OPCW continued the implementation of Article XI of the Convention through various programmes and activities that were identified in decision C-16/DEC.10. The needs and priorities of the States Parties were taken into consideration throughout the continued implementation of the programmes, with resources provided from the regular budget as well as voluntary contributions, both financial and in kind.
- 18. In accordance with the results-based approach that the Secretariat continued to apply during the reporting period, the effectiveness of these programmes was assessed according to whether skills and capabilities were enhanced in the three focal areas relating to the peaceful application of chemistry: integrated chemicals management, enhancement of laboratory capabilities, and chemical knowledge promotion and exchange.
- 19. The assessment of all programmes was based on feedback from the participants and from States Parties, as well as on observation of the evolution of the participants' career paths or academic development following their participation in the various programmes.

NATIONAL CAPACITY BUILDING FOR THE RESEARCH, DEVELOPMENT, STORAGE, PRODUCTION, AND SAFE USE OF CHEMICALS FOR PURPOSES NOT PROHIBITED UNDER THE CONVENTION

- 20. National capacity building for the research, development, storage, production, and safe use of chemicals for purposes not prohibited under the Convention has been supported through a number of programmes, including but not limited to the Associate Programme, the Laboratory Twinning and Assistance Programme, analytical skills development courses, training courses for the OPCW proficiency tests, and the Chemical Safety and Security Management Programme.
- 21. The portfolio of international cooperation programmes under Article XI features the following:
 - (a) Integrated chemicals management:
 - (i) Associate Programme;
 - (ii) Chemical Safety and Security Management Programme;
 - (iii) Executive Programme;
 - (iv) green and sustainable chemistry;
 - (v) Responsible Care[®] workshops; and
 - (vi) development of tools and guidance on chemical safety and security management.

- (b) Enhancing laboratory capabilities:
 - (i) analytical chemistry and analytical skills development courses;
 - (ii) enhancement of laboratory skills courses;
 - (iii) proficiency testing training;
 - (iv) customs laboratory training;
 - (v) Laboratory Twinning and Assistance Programme; and
 - (vi) Equipment Exchange Programme.

- (c) Chemical knowledge promotion and exchange:
 - (i) Fellowship Programme;
 - (ii) Programme for the Support of Research Projects;
 - (iii) Conference Support Programme;
 - (iv) Forum on Peaceful Uses of Chemistry;
 - (v) Education and Training Programme for Youth on Peaceful Uses of Chemistry;
 - (vi) Women in Chemistry initiative; and
 - (vii) policy and diplomacy for scientists.

INTEGRATED CHEMICALS MANAGEMENT

22. The integrated chemicals management concept is based on a holistic and comprehensive approach, considering multiple factors such as policy, practices, science, and engineering to address various facets of chemicals management from a health, safety, and security standpoint, towards the ultimate goal of ensuring the safe and secure management of chemicals throughout their life cycle.

Associate Programme

23. The Associate Programme aims to address the objectives set out in Article XI of the Convention in terms of capacity building and implementation of the Convention in areas relating to chemistry for peaceful purposes—in particular in developing countries and countries with economies in transition.
24. The programme facilitates capacity building in States Parties by imparting requisite skills to qualified chemists and chemical engineers and by exposing them to the modern chemical practices required to operate effectively and safely in a modern chemical industry environment. Moreover, it enhances the ability of States Parties to implement the industry-related provisions of the Convention and broadens the talent pool of those assuming the responsibility for implementation within the National Authorities and other relevant institutions. The programme also facilitates the trade in chemicals by disseminating the best practices in this field.
25. The Associate Programme also supports chemical safety and security in an industrial environment, with a focus on the Responsible Care[®] programme.
26. The twenty-fourth edition of the Associate Programme began on 21 July 2023 in The Hague, the Netherlands, and is due to close on 22 September 2023. The Programme is hosting a total of 31 participants from 31 States Parties. The Programme raises awareness of participants on the Convention, its history, and its implementation by

States Parties, with a particular focus on modern chemical industry operations. The training covers a wide range of topics, including chemical safety and security in industry, chemical plants auditing, and emerging threats and trends. The Programme comprises three segments: an induction/intermediate/final segment in the Netherlands; a university segment in the United Kingdom of Great Britain and Northern Ireland; and an industry segment in different locations. During the three-week intermittent segment at the University of Surrey in the United Kingdom, the participants learn about the theory of mass balance and practice at the university's model plant. Subsequently, for the industry segment the participants are paired and deployed to 16 identified chemical industry sites hosted by 14 States Parties for first-hand exposure and training in various industrial operations. Upon completion of the Programme, all participants will present research projects on topics related to the Convention as well as the industry assignment. A total of 31 participants from the following 31 States Parties have been admitted to the Programme: Armenia, Argentina, Azerbaijan, Bangladesh, Botswana, Brazil, Cambodia, Chile, China, Colombia, Costa Rica, Djibouti, Ghana, Iraq, Jamaica, Jordan, Kenya, Lesotho, Malaysia, Mauritania, Morocco, Nigeria, Pakistan, the Philippines, South Africa, Sri Lanka, Suriname, Uganda, Viet Nam, Zambia, and Zimbabwe.

27. The Associate Programme has emerged as the OPCW's flagship initiative for fostering international cooperation. It is specifically designed to engage and empower young professional scientists and engineers from OPCW Member States with economies that are either developing or in transition. Over the years, the Programme has undergone periodic evaluations and enhancements, including an extension of its duration, an increase in the number of participants, and the introduction of diverse training methods. These revisions have further strengthened the Programme's effectiveness.
28. To date, 24 editions of the Associate Programme have taken place, with the participating 576 professionals from 122 States Parties now being engaged in an active alumni network. Special attention has been given to the participation of female professionals, with 170 women from 77 States Parties having enrolled in the Programme thus far. Feedback received from the participants has indicated their great appreciation of the training, which has considerably upgraded their knowledge, technical skills, and experience in terms of chemistry and chemical and process engineering, with a focus on chemical safety and security management. Additionally, the training has increased participants' knowledge of the Convention and of the mission and role of the OPCW. Following the completion of the Programme, participants serve as resource persons to their National Authorities and often offer valuable support regarding the implementation of the Convention at the national and regional levels. It is noteworthy that, over the years, several associates have later become Secretariat staff members. Furthermore, in 2023, the Secretariat was able further strengthen its outreach efforts and enhance the geographical representation in the Programme, both for participation and in industry. During the reporting period, Mauritania, along with Azerbaijan and South Africa, both supporting the industry segment, participated in the Programme for the first time.
29. The Alumni Association of the Associate Programme, established in 2012 as a group on the social media platform Facebook, has continued to provide a highly interactive forum among current and former participants to share views, scientific information, and experiences in the field of chemistry. In addition, the association has continued to serve as a reliable channel to receive feedback regarding the Associate Programme and to

provide updates on the work of the OPCW. This exchange of information ensures continuous improvement of the Programme for a longer-term impact. The group also offers the opportunity for professional networking, as participants can get together for joint projects and help each other on various professional issues.

Chemical safety and security management

30. The chemical safety and security management-related activities that took place during the review period were generously supported through voluntary contributions from the Governments of Germany, Qatar, and the Republic of Korea, as well as the European Union. Global, regional, and national events were planned to meet the needs of the participating countries. This has given impetus to the promotion of chemical safety and security in participating States Parties, especially in terms of sharing experiences and best practices.¹
31. During the reporting period, the Secretariat organised 14 capacity-building activities on chemical safety and security management, 12 of which were in-person or in hybrid format.
32. The Secretariat, with the International Union of Pure and Applied Chemistry (IUPAC) as partner and co-sponsor, organised an online e-learning chemical safety training programme in Spanish for Member States in the Latin America and the Caribbean Group (GRULAC) from 1 August to 7 October 2022. The training course, delivered by the Chemical Industries Association of Uruguay, provided an update on the current standards, policies, and best practices regarding occupational safety, chemical hazards, the handling, storage, and transport of chemicals, and waste management. Participants had access to a wealth of training materials available on a dedicated e-learning platform consisting of five modules covering safety, chemicals, security, emergencies, and management and culture. The course was attended by 12 participants specialised in environment, health, safety, and security relating to the use of chemicals, representing the following six Member States: Brazil, Chile, El Salvador, Guatemala, Mexico, and Peru.
33. From 5 September to 7 October, the Secretariat, in collaboration with the University of Wuppertal, and with support from the Federal Government of Germany, organised an online “Wuppertal Course on Explosion Protection and Safety Management in the Chemical Process Industries”. The course employed “train-the-trainer” approach and was intended for participants with backgrounds in chemistry, chemical engineering, or chemical industry who work at chemical or manufacturing industrial facilities or who, because of their involvement in the implementation of the Convention, are called upon to interact with the chemical industry at various levels, such as in relation to formulating, analysing, or implementing chemical safety policies in their home countries. The course accommodated 24 participants from the following 23 Member States: Algeria, Argentina, Bangladesh, Burundi, Cabo Verde, Chile, Côte d’Ivoire, Guatemala, Iraq, Kenya, Mauritius, Mexico, Morocco, Myanmar, Pakistan, Peru, Qatar, Senegal, the Sudan, Thailand, Trinidad and Tobago, Uganda, and the United Republic of Tanzania.

¹

Launched in 2009, the Chemical Safety and Security Management Programme is an international cooperation programme designed initially to focus on the chemical industry and industry-related aspects of the implementation of the Convention, specifically on chemical safety and security at the plant level in the development, storage, production, handling, transportation, and distribution of chemicals.

34. From 6 to 8 September 2022, the Secretariat organised a three-day chemical safety and security management seminar for Eastern European Member States, in cooperation with the Croatian National Authority and the Faculty of Science of the University of Zagreb. The seminar promoted safety and security standards for chemical facilities and laboratories to minimise the risk of safety incidents. Participants reviewed critical resources, tools, and training needed to strengthen chemical safety measures and to secure industry facilities. The seminar was attended by 26 participants representing the following 13 Member States: Albania, Armenia, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Georgia, Hungary, North Macedonia, Poland, Romania, Slovakia, and Slovenia.
35. From 20 to 22 September 2022, the Secretariat organised a workshop on general aspects of chemical safety and security in laboratories. The workshop focused on best practices and knowledge about hazardous chemicals and related risk assessments, personal protection equipment, emergency management, environmental impacts, and sustainability. Attendees participated in a table-top exercise using a scenario involving hazardous chemicals to test emergency response and risk assessment, and visited a chemical industry plant to learn about safety and chemical security management protocols. The event was attended by 17 participants from the following 16 Member States: Brazil, Cameroon, Chile, Côte d'Ivoire, India, Iraq, Kenya, Malawi, Malaysia, Morocco, Nepal, Pakistan, the Philippines, Sierra Leone, Uganda, and Zimbabwe.
36. From 11 to 13 October 2022, the Secretariat, together with the Prime Minister's Office of Mauritius, conducted a "Seminar on the Chemical Weapons Convention and Chemical Safety and Security Management for African Member States" in Port Louis, Mauritius. The seminar, co-funded by the European Union as part of its Joint Action Programme, aimed at providing tools and exchanging experience to prevent incidents and accidents involving toxic chemicals. The seminar gathered 19 participants from industry, academia, and government institutions representing the following 12 Member States: Algeria, Botswana, Chad, Congo, Côte d'Ivoire, Guinea, Kenya, Malawi, Mauritius, Nigeria, the Sudan, and Zimbabwe.
37. In parallel, from 11 to 14 October 2022, the Secretariat, jointly with the Prime Minister's Office of Mauritius, organised an Executive Programme on Integrated Chemicals Management course in Port Louis, Mauritius. The Programme, also co-funded by the European Union as part its Joint Action Programme, aimed at raising awareness and building capacity on integrated chemicals management and peaceful uses of chemistry among the senior and middle management of industry, laboratories, and government institutions. It particularly focused on process safety management audits, occupational health, leadership skills for safety and security culture, and gender mainstreaming. The course was attended by 17 participants from the following 11 Member States: Argentina, Bangladesh, Burundi, Costa Rica, Guatemala, Kenya, Nicaragua, Nigeria, Pakistan, Mauritius, and Zimbabwe.
38. From 24 to 27 October 2022, the Secretariat organised a course in Buenos Aires, Argentina on chemical safety and security management in laboratories. During the training, participants examined various policy and practical aspects of the management of chemical laboratory infrastructure. Particular emphasis was placed on waste management, personal protection measures, emergency management, toxicology

regulations, the management of toxic chemicals, and the Global Harmonized System. The event was attended by 14 participants from the following eight Member States: Brazil, Chile, Ecuador, El Salvador, Honduras, Nicaragua, Panama, and Suriname.

39. From 16 to 18 November 2022 in Seoul, the Republic of Korea, the Secretariat organised the “Seoul Workshop on Peaceful Development and Use of Chemistry for Member States in Asian Region”. The workshop, funded by the Government of the Republic of Korea, focused on promoting the peaceful uses of chemistry and developing the capacity of Member States of the OPCW in the Asia region in chemical safety and security management. Discussions were held on dual-use chemicals, critical infrastructure protection, consequence of human error, cybersecurity, counterterrorism, and process safety management audits. The course was attended by 19 representatives from the following 12 Member States in the Asian region: Bangladesh, Cambodia, Iraq, Jordan, Maldives, Malaysia, Micronesia (Federated States of), Nepal, Pakistan, Saudi Arabia, Sri Lanka, and Viet Nam.
40. From 7 to 9 February 2023, the Secretariat organised a seminar in Dubai, the United Arab Emirates, on chemical safety and security management for Asian Member States, in cooperation with the United Arab Emirates Executive Office for Control and Non-Proliferation (EOCN). The objectives of the seminar were to provide tools to assess, mitigate, and respond to the risks of chemical accidents, and to prevent the misuse of dual-use chemicals in the Asia region. During the seminar, the participants were briefed on different approaches to improving safety and security in industry and ensuring the legitimate use of chemicals throughout the entire chemical supply chain. The seminar gathered 33 participants from the following 13 Member States: Bangladesh, China, India, Indonesia, Iran (Islamic Republic of), Iraq, Jordan, Malaysia, Myanmar, Pakistan, the Philippines, Sri Lanka, and the United Arab Emirates.
41. From 21 to 24 February 2023, the Secretariat organised the second workshop for “Developing Indicative Guidelines for Transportation of Hazardous Chemicals by Road”, which took place in Kuala Lumpur, Malaysia. The workshop promoted chemical safety and security by providing a platform for cross-sector partnership in developing a non-binding guidance document on transportation of hazardous chemical by road. The workshop hosted experts from all regions working in the areas of chemical safety and security and transportation of hazardous chemicals to collectively work on best practices in the transportation of hazardous chemicals. The workshop was attended by 11 representatives from the following 10 Member States: Argentina, Brazil, Germany, India, Malaysia, South Africa, Sri Lanka, Togo, the United Kingdom of Great Britain and Northern Ireland, and the United States of America.
42. From 19 to 21 March 2023 in Doha, the Secretariat hosted, jointly with the National Committee for Prohibition of Weapons of Qatar, a “Seminar on the Chemical Weapons Convention and Chemical Safety and Security Management for Asian Member States”. The seminar, funded by Qatar, promoted the peaceful uses of chemistry and built the capacities of Asian Member States in chemical safety and security management. The seminar was attended by a total of 26 representatives from the following 19 Member States: Bangladesh, China, India, Indonesia, Iraq, the Lao People’s Democratic Republic, Lebanon, Malaysia, Micronesia (Federated States of), Myanmar, Nepal, Oman, Qatar, Pakistan, the State of Palestine, Saudi Arabia, Thailand, Sri Lanka, and Viet Nam.

43. The first “OPCW-IUPAC Safety Training Programme E-Learning Course in English” was held online from 17 April to 23 June 2023. The training, co-organised by the Secretariat and IUPAC with the administrative support of the Chemical Industries Association of Uruguay, provided an update on the current standards, policies, and best practices in occupational safety and chemicals hazards. A total of 15 participants from the following 15 Member States attended: Argentina, Algeria, Azerbaijan, Bangladesh, India, Iraq, Kenya, Malawi, Nigeria, Pakistan, Panama, Sri Lanka, Uganda, the United Republic of Tanzania, and Zimbabwe.
44. From 9 to 11 May 2023, the Secretariat organised a workshop on general aspects of chemical safety and security in laboratories. The workshop focused on best practices and knowledge about hazardous chemicals and related risk assessments, personal protection equipment, emergency management, environmental impacts, and sustainability. Attendees participated in a table-top exercise using a scenario involving hazardous chemicals to test emergency response and risk assessment, and also visited forensic chemistry and toxicology laboratories at the University of Milan and exchanged with scientists on safety and security protocols in the management of forensic samples. The event was attended by 18 participants from the following 15 Member States: Algeria, Burkina Faso, Chile, India, Italy, Kenya, Malaysia, Morocco, the Niger, Nigeria, Pakistan, the Philippines, Serbia, Sri Lanka, and Suriname.
45. The Secretariat, in cooperation with Mexican National Authority for the implementation of the Chemical Weapons Convention, organised a seminar on chemical safety and security management for GRULAC Member States in Mexico City, Mexico, from 20 to 22 June 2023. The seminar promoted safety and security standards for chemical facilities and laboratories to minimise the risk of safety incidents. Participants reviewed the critical resources, tools, and training needed to raise chemical safety measures and secure industry facilities. The seminar aimed at building knowledge on advanced chemical safety and security in the region. The seminar was attended by 30 participants from governmental and private chemical laboratories, chemical industry, academia, and National Authorities, representing the following 12 Member States: Argentina, Barbados, Chile, Costa Rica, Cuba, Honduras, Mexico, Nicaragua, Panama, Peru, Suriname, and Venezuela (Bolivarian Republic of).

ENHANCING LABORATORY CAPABILITIES

46. The Secretariat continued to provide capacity-building activities for participants from developing countries and countries with economies in transition to assist their efforts in building or further enhancing their laboratory capacities. The activities included a range of general analytical chemistry courses (analytical skills development courses, analytical chemistry courses, enhancement of laboratory skills courses, and a basic analytical course for women chemists), the Laboratory Twinning and Assistance Programme, proficiency testing training, specialised laboratory training (for customs laboratories), and the Equipment Exchange Programme. During the reporting period, a total of 266 participants from the following 60 Member States either benefitted from or supported these activities: Algeria, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Benin, Bolivia (Plurinational State of), Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Chile, Colombia, Costa Rica, Côte d’Ivoire, Ecuador, El Salvador, Ethiopia, Finland, Germany, Ghana, Guatemala, Guinea-Bissau, Iraq, Kenya,

the Lao People's Democratic Republic, Lesotho, Malawi, Malaysia, Mauritius, Mexico, Morocco, Namibia, Nepal, Nicaragua, Nigeria, Pakistan, Peru, the Philippines, Poland, Romania, Seychelles, Sierra Leone, South Africa, Spain, Sri Lanka, the Sudan, the Syrian Arab Republic, Tajikistan, Thailand, Tunisia, Türkiye, Uganda, the United Kingdom of Great Britain and Northern Ireland, the United Republic of Tanzania, Uruguay, Zambia, and Zimbabwe.

47. The analytical chemistry courses and analytical skills development courses aim at assisting qualified analytical chemists in acquiring further experience and practical skills in the analysis of chemicals related to the Convention and serve to:
- (a) enhance States Parties' national capacity in analytical chemistry for personnel from industry, academic institutions, and government related to the Convention, or in improving the quality and proficiency of laboratory work through sound management practices.
 - (b) facilitate the adoption of good practices in laboratories supporting national implementation of the Convention, trade, and economic development; and
 - (c) broaden the pool of human resources from which National Authorities and the Secretariat can draw in the future.
48. The courses for the enhancement of laboratory skills focus either on building skills in using specific techniques such as mass spectrometry (MS) and nuclear magnetic resonance (NMR) to analyse chemicals related to the Convention, or on improving the quality and proficiency of laboratory work through sound management practices. These are two-week courses, each for a maximum of four participants who already have practical experience in liquid chromatography (LC), gas chromatography (GC), MS, NMR, or a combination of the techniques. Participants are introduced to the preparation of samples by means of demonstrations and practical exercises. The courses also address theoretical aspects of LC and GC, LC-MS, MS, and NMR, as well as those of quantitative MS, quality assurance, and instrument maintenance.

Laboratory Twinning and Assistance Programme

49. In addition to the established training programmes in the area of enhancing laboratory capabilities, the Secretariat has continued the Laboratory Twinning and Assistance Programme (a merger of the former Laboratory Twinning Initiative and Laboratory Assistance Programme), co-funded through a voluntary contribution from the European Union. The Programme is aimed at improving the technical competencies of laboratories in States Parties with economies that are either developing or in transition for participation in the OPCW proficiency tests. The Programme is based on the provision of mentorship and exchange of knowledge from more advanced laboratories, which preferably already hold OPCW designated laboratory status.
50. The Secretariat received a number of new expressions of interest for participation in the Laboratory Twinning and Assistance Programme from the following laboratories: Department of Chemistry, Malaysia; Chemical Defence Laboratory of Science and Technology Research Institute for Defence, Malaysia; Chemical Agents Analysis Facility, Defence Science and Technology Group, Australia; Institute of Pure and Applied Chemistry, the Philippines; the United States Centers for Disease Control and

Prevention; and the Centro Tecnológico do Exército (CTEx/IDQBRN), the Brazilian Army CBRN² laboratory. The Secretariat undertook a comprehensive evaluation of the applications received, conducted initial discussions with applicants, and initiated the process to identify potential twinning partners for these laboratories or to consolidate the twinning schemes, where feasible.

51. A twinning project between the Finnish Institute for Verification of the Chemical Weapons Convention (VERIFIN) (as assisting laboratory) and the Laboratory for Instrumental Analysis, Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Serbia (as assisted laboratory) was initiated in the fourth quarter of 2021 after the signature of a memorandum of understanding between the Secretariat and each laboratory. During the reporting period, two training activities took place under this project, in November 2022 at the Laboratory for Instrumental Analysis in Belgrade and in April 2023 at VERIFIN in Helsinki.
52. Activities are also ongoing within the twinning project between the Bundeswehr Research Institute for Protective Technologies and CBRN Protection in Germany (as assisting laboratory) and the National Institute of Criminalistics and Criminology of the National Gendarmerie in Algeria (as assisted laboratory). The memoranda of understanding between the Secretariat and the two laboratories were formally concluded in May 2023. Within this preparatory period, a series of online evaluation meetings and three on-site training activities for the staff of the Algerian laboratory have been organised with advanced funding from the German counterpart.

Assessing and enhancing the capacity of analytical laboratories in Africa and GRULAC and proficiency testing training

53. The project on Assessing and Enhancing Capacity of Analytical Laboratories from African and GRULAC Member States, initiated in 2019 and funded through a voluntary contribution from the Government of the United Kingdom of Great Britain and Northern Ireland, continued to advance during the reporting period. The second phase of the project, which concluded in March 2021, resulted in the partial achievement of the project's main goal of acquisition of OPCW designation by laboratories in the Africa and GRULAC regions. The laboratory of the Brazilian Army Technological Center formally obtained OPCW designation status in September 2021. The subsequent third and fourth phases of the project (2021–2022 and 2022–2023, respectively) continued to support other participating laboratories aspiring to OPCW designation.
54. Under the fourth phase of the project, the Secretariat, in cooperation with two OPCW designated laboratories—VERIFIN in Finland and the Laboratorio de Verificación de Armas Químicas (LAVEMA) in Spain—assisting African and GRULAC laboratories, extended support to six laboratories: one from Brazil, three from Chile, one from Kenya, and one from Nigeria. A comprehensive training programme covering various topics of the analysis of Convention-related chemicals was organised to enhance the analytical capacities of participating laboratories and help them to pass the stringent Official OPCW Proficiency Tests. The programme consisted of three types of online and face-to-face activities, namely, interlaboratory exercises, face-to-face trainings and workshops, and technical evaluation visits.

²

CBRN = chemical, biological, radiological, and nuclear.

55. From December 2022 to March 2023, all assisted laboratories participated in the interlaboratory exercises organised by the assisting laboratories from Finland and Spain. The assisting laboratories provided samples to be analysed by each assisted laboratory, evaluated the results obtained, and provided performance reports. The exercises for all assisted laboratories were followed by online workshops organised by the assisting laboratories, to discuss the results and issues encountered during the exercises.
56. All assisted laboratories received technical evaluation visits aimed at assessing their progress since 2019, re-evaluating their infrastructure and instrument capacity, and updating their tailor-made assistance plans. From 6 to 10 March 2023, a team of experts from Spain and the Secretariat visited the three assisted laboratories in Santiago, Chile and the one assisted laboratory in Rio de Janeiro, Brazil. From 13 to 17 March 2023, experts from Finland and the Secretariat undertook visits to the laboratories in Nairobi, Kenya and Lagos, Nigeria.
57. The assisted laboratories also attended dedicated face-to-face trainings/workshops, one in Helsinki for two African laboratories (13 to 17 February 2023), and one in Madrid for three GRULAC laboratories (21 to 24 March 2023). The workshops covered various topics regarding the analysis of Convention-related chemicals, including micro-synthesis, analytical techniques, quality systems, and various theoretical and practical aspects of OPCW proficiency testing. A total of 16 experts from Brazil (2), Chile (6), Kenya (4), and Nigeria (4) attended the workshops.
58. On 30 March 2023, the Secretariat organised an online closing workshop for the fourth phase of the project. The workshop summarised the project progress and brought participants together to discuss the way forward for the possible continuation of the project in 2023 and 2024 (subject to the continued support by the donor). The workshop was attended by 36 participants representing the six participating laboratories from Brazil, Chile, Kenya, and Nigeria, the two assisting laboratories from Finland and Spain, and the donor (the United Kingdom of Great Britain and Northern Ireland).

New projects on enhancing capacities of analytical laboratories under voluntary funding from Germany and Spain

59. In February 2023, a project on building a network of Spanish-speaking laboratories for the analysis of Convention-related chemicals formally started, and the activities are under way to identify project participants. LAVEMA partners with the Secretariat in this five-year project to establish the network of Spanish-speaking laboratories from GRULAC, conduct their assessments, and provide capacity building to selected network participants.
60. In addition, in May 2023 preparatory activities began for a project on enhancing the capacity of analytical laboratories from Member States of the OPCW in Africa, which is funded through a voluntary contribution from Germany. The project, which has a duration of 28 months, features a three-fold objective: (1) to provide training on chemical weapons-related analysis to customs laboratories from Africa; (2) to increase the capacity of African laboratories in the maintenance of equipment; and (3) to assist one African laboratory seeking OPCW designation through tailored action, including a twinning scheme with an OPCW designated laboratory. Selected project activities will take place at the ChemTech Centre.

Analytical skills development courses training

61. During the reporting period, 12 analytical chemistry courses, analytical skills development courses, and proficiency testing training courses were organised for the benefit of 266 participants from 60 States Parties. These included courses for women chemists, experts from facilities supporting customs services, and professionals from laboratories interested in participating in OPCW proficiency testing, as well as analytical chemistry and analytical skills development courses for Member States of the OPCW worldwide. Additionally, two specialised laboratory skills enhancement training courses were held in the areas of laboratory quality management and LC-MS. These events were organised in collaboration with VERIFIN in Finland, the Indian Institute of Chemical Technology in India, Protechnik Laboratories in South Africa, LAVEMA in Spain, or at the OPCW Laboratory and the ChemTech Centre.
62. From 5 to 16 September 2022, the Secretariat, together with VERIFIN, delivered two training courses in Helsinki for analytical chemists from countries with economies that are developing or in transition. The two parallel courses aimed at enhancing laboratory management and at advancing national chemical analysis capacities. In one course, participants improved their practical skills in the analysis of Convention-related chemicals using LC-MS. The other course focused on laboratory management practices in relation to achieving accreditation under Standard ISO/IEC 17025:2017 of the International Organization for Standardization/International Electrotechnical Commission, a qualification that demonstrates competency in laboratory operations and the generation of valid results. The dual courses were co-funded by the Government of Finland and were attended by 12 participants from the following 10 Member States: Bangladesh, Cameroon, Kenya, Malaysia, Morocco, Namibia, Nigeria, Pakistan, Sri Lanka, and the United Republic of Tanzania.
63. Also from 5 to 16 September 2022, the Secretariat, together with the Indian Institute of Chemical Technology, organised an analytical skills development course for analytical chemists and chemistry professionals from OPCW Member States whose economies are developing or in transition. The course aimed at equipping participants with information and know-how on the analysis of Convention-related chemicals using GC-MS and on derivatisation techniques and methods of sample preparation and analysis. The course was attended by 20 participants from the following 16 Member States: Algeria, Brazil, Chile, India, Iraq, Kenya, Malawi, Morocco, Nigeria, Sierra Leone, the Sudan, Suriname, Tunisia, Uganda, Zambia, and Zimbabwe.
64. From 10 to 14 October 2022, the Secretariat organised an analytical skills development course in Warsaw, Poland for analytical chemists supporting customs services in African Member States. The course, funded through a voluntary contribution from the United States of America, was held at the Institute of Industrial Organic Chemistry in Warsaw, and assisted qualified analytical chemists from laboratories that support, or plan to support, customs services or offices in acquiring further experience and practical knowledge of the analysis of chemicals related to the Convention. The course gathered 20 chemists representing the following 16 Member States: Algeria, Burundi, Cameroon, Côte d'Ivoire, Kenya, Malawi, Morocco, Nigeria, Senegal, Sierra Leone, South Africa, the Sudan, Uganda, the United Republic of Tanzania, Zambia, and Zimbabwe.

65. The Secretariat, in collaboration with the Indian Institute of Chemical Technology, organised an analytical skills development course for Asian Member States in Hyderabad, India from 10 to 21 October 2022. The course enhanced participants' theoretical knowledge and practical skills in the analysis of Convention-related chemicals. Attendees also received comprehensive lectures and practiced the advanced chemical analysis techniques of GC and GC-MS. Methods for sample preparation and derivatisation were also covered in depth. The course was attended by 10 analytical chemists from the following nine Member States: Bangladesh, Cambodia, Iraq, Malaysia, Maldives, Nepal, the Philippines, Saudi Arabia, and Sri Lanka.
66. From 17 to 28 October 2022, in Madrid, Spain, the Secretariat organised an analytical skills development course in Spanish for GRULAC Member States. The course programme enabled analytical chemists from the region to build and further improve their knowledge and skills on the theory and practice in the use of advanced analytical techniques, sample preparation, and interpretation of mass spectra of chemicals, as well as on other aspects related to the maintenance of laboratory equipment, quality assurance systems in chemical analysis, and procedures for participation in OPCW proficiency testing. The event was attended by 13 participants from the following nine Member States: Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Honduras, Uruguay, and Venezuela (Bolivarian Republic of).
67. From 14 to 24 November 2022, the Secretariat held an online basic analytical chemistry course. The course began with one-week of self-study of training materials online, and was followed by live online interactive sessions dedicated to discussion and questions and answers. The training included lectures covering areas such as the general aspects of the OPCW and the Convention, the chemical structure and properties of scheduled chemicals, and the use of analytical techniques for the analysis of Convention-related chemicals. The course also covered aspects of sample preparation and the applications of the OPCW Central Analytical Database (OCAD) for the identification of compounds. In all, 44 participants from the following 17 Member States attended the course: Algeria, Azerbaijan, Cameroon, Ghana, Guatemala, Kenya, Malawi, Namibia, Nicaragua, Nigeria, Senegal, the Sudan, Suriname, Türkiye, Uganda, the United Republic of Tanzania, and Zimbabwe.
68. From 5 to 16 December 2022, the Secretariat, in cooperation with the Indian Institute of Chemical Technology in Hyderabad, India, organised an analytical skills training course for analytical chemists and laboratory specialists from OPCW Member States with economies that are developing or in transition. The two-week training provided chemistry professionals with the theoretical knowledge and practical skills on the techniques necessary to analyse chemicals subject to the Convention. In particular, the participants received insights into GC and GC-MS techniques. The training also covered methods for sample preparation and derivatisation. The training was attended by 18 participants from the following 15 Member States: Algeria, Botswana, Brazil, Burkina Faso, Cameroon, Iraq, Malawi, Malaysia, Morocco, Namibia, Nigeria, Seychelles, the Syrian Arab Republic, Thailand, and Uganda.
69. The Secretariat, in cooperation with the Łukasiewicz Research Network – Institute of Industrial Organic Chemistry, held a course in Warsaw, Poland, from 22 to 26 May 2023 for analytical chemists from laboratories supporting customs services. The course assisted qualified analytical chemists from laboratories that support, or plan

to support, customs services or offices in acquiring further experience and practical knowledge of the analysis of chemicals related to the Convention. The course was attended by 17 participants from the following 17 Member States: Albania, Armenia, Chile, China, Croatia, Guatemala, India, Iraq, Jordan, Kenya, Mexico, Nepal, Nigeria, Pakistan, Serbia, Uganda, and the United Republic of Tanzania.

70. From 29 May to 9 June 2023, the Secretariat organised the thirteenth edition of the analytical chemistry course under the OPCW Programme to Strengthen Cooperation with Africa on the Chemical Weapons Convention. The two-week course, jointly implemented in partnership with Protechnik Laboratories of South Africa, developed the analytical chemistry skills of the participants and showcased the cooperation that exists among the African Member States. A total of 19 participants from the following 12 African Member States took part in the course: Algeria, Burkina Faso, Burundi, Cameroon, Côte d'Ivoire, Kenya, Malawi, Namibia, Senegal, South Africa (three local participants), Uganda, and the United Republic of Tanzania.
71. From 26 June to 6 July 2023, the Secretariat organised an online basic analytical chemistry course, which began with one week of self-study of online training materials. This was followed by live online interactive sessions dedicated to discussion and questions and answers. The training included lectures covering areas such as the general aspects of the OPCW and the Convention, the chemical structure and properties of scheduled chemicals, and the use of analytical techniques for the analysis of Convention-related chemicals. The course also covered aspects of sample preparation and the applications of the OCAD for the identification of compounds. In all, 31 participants from the following 13 Member States attended the course: Algeria, Burkina Faso, Cameroon, China, Ghana, India, Kenya, Mauritius, Mozambique, Nigeria, Slovakia, Uganda, and Zimbabwe.
72. The Secretariat organised a basic analytical chemistry course for women from 11 to 13 July 2023 at the OPCW Laboratory. The training assisted qualified female analytical chemists from Member States with economies that are either developing or in transition in acquiring further knowledge and experience in the analysis of chemicals under the Convention regime. The training was attended by 10 female chemists representing the following 10 Member States: Burundi, Cameroon, Colombia, Honduras, Jordan, Kenya, Nigeria, the Philippines, Suriname, and Uganda.

Equipment Exchange Programme

73. The Equipment Exchange Programme aims to support the transfer of used, but still functional, equipment from institutions in a State Party to those in another. During the reporting period, the Secretariat facilitated one equipment transfer and the donation of several devices from Germany to the United Republic of Tanzania. In addition, the Secretariat received two donations of laboratory equipment from Germany which were offered to Uganda (two devices) and to Kenya (two devices). As this Programme is based mainly on donations of equipment by States Parties, the Secretariat maintains continuous contact with potential donors to encourage such donations.

CHEMICAL KNOWLEDGE PROMOTION AND EXCHANGE

74. The Secretariat continued to promote and advance networking and exchange among the scientific community, academic institutions, chemical industry associations, NGOs, and regional and international institutions through standing programmes, such as the Fellowship Programme, the Programme for Support of Research Projects, the Conference Support Programme, and a series of awareness-raising programmes entitled “Building a Knowledge Society”. With a view to enhancing networking among scientists and their institutions, these programmes have provided a platform to a wide range of experts in the field of chemistry from both developing and developed countries to share their experience, knowledge, and insights.

Fellowship Programme

75. The Fellowship Programme assists scientists and engineers from States Parties with economies that are either developing or in transition in gaining experience by working in more advanced research laboratories and facilities in other States Parties for a limited period of time. 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.
76. Thirteen fellowships were sponsored during the reporting period. In addition, a number of fellowships are scheduled to start later in 2023. Details of the fellowships can be found in Annex 2 hereto.

Programme for Support of Research Projects

77. Under the Programme for Support of Research Projects, support is extended to small-scale research projects in States Parties 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. The status of the collaboration with the International Foundation for Science in co-funding projects from developing countries remains unchanged since 2021 (see Annex 4 to EC-98/DG.9 C-26/DG.7, dated 2 September 2021).
78. During the reporting period, the Secretariat continued to support 20 research projects undertaken by nationals of Argentina (2 projects), Brazil, Italy (2 projects), Kenya, Malaysia (6 projects), North Macedonia, Poland, Serbia (3 projects), South Africa, Türkiye, and Uruguay, all of which were ongoing as at the cut-off date for this report. Details regarding the aforementioned projects are provided in Annex 3.

Conference Support Programme

79. 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—generally by sponsoring scientists, technical personnel, and resource persons from States Parties to attend such events and by subsidising the cost of publications. Sponsorship is channelled through scientific institutions and conference organisers in States Parties.

80. During the period under review, a total of 11 events were supported to facilitate the exchange of scientific and technical information in areas relating to the peaceful use of chemistry. A list of these conferences and the countries of sponsored participants is provided in Annex 1.

Building a Knowledge Society

Empowering youth to advance peaceful uses of chemistry

81. Further to the launch in 2022 of the Education and Training Programme for Youth on Peaceful Uses of Chemistry, aimed at training the next generation of chemistry professionals to learn about chemical safety and security management and at building relationships for future careers in chemistry and disarmament, the Secretariat, in collaboration with the National Authority of Morocco, the Moroccan Ministry of Higher Education, Scientific Research and Innovation, and the National School of Chemistry of Morocco, organised the second edition of the Education and Training Programme on the Peaceful Uses of Chemistry for Youth, in Kenitra, Morocco from 31 October to 4 November 2022. The training was held with the financial support from the European Union.
82. The training aimed at raising awareness among the participating youth, especially young academics and researchers in chemistry, chemical engineering, and other chemical-related scientific fields, about the Convention and Article XI, educational and ethical issues for chemists, The Hague Ethical Guidelines, multiple uses of chemicals, and the role of chemical safety and security management in ensuring the peaceful use of chemicals, among others. A field visit to an industry-leading petrochemical plant provided a practical demonstration of chemical risk and incident management measures, while a visit to a civil protection site introduced participants to response preparedness. The training was attended by 17 participants from the following 10 Member States: Brazil, Guatemala, Kenya, Mauritius, Morocco, Nepal, Romania, Serbia, Togo, and Trinidad and Tobago.

Empowering women in chemistry

83. The OPCW's annual Symposium on Women in Chemistry attracts talented women from government, industry, and academia, to illustrate the strength and depth of contributions women have made to the peaceful uses of chemistry.
84. From 9 to 10 November 2022, the Secretariat, in cooperation with UNICRI, organised the annual Symposium on Women in Chemistry held at UNICRI Headquarters in Turin, Italy. The Symposium aimed to illustrate the strength and depth of the contribution of women to peaceful chemistry, to promote international solidarity and cooperation, and to raise awareness of the opportunities for capacity and knowledge development for women in chemistry. During the Symposium, a "Compendium of Best Practices on the Engagement and Advancement of Women in Chemical Safety and Security" was launched. The Compendium is the result of research funded by the European Union and conducted jointly by the OPCW and UNICRI, aimed at identifying best practices in recruiting, training, and promoting women in chemistry. The Symposium gathered 44 participants representing governmental authorities, laboratories, and academia, from the following 28 Member States: Albania, Argentina, Armenia, Azerbaijan, Brazil,

Bulgaria, Croatia, Ghana, Italy, Jordan, Kenya, Luxembourg, Madagascar, Mauritius, Morocco, Nigeria, the Philippines, Poland, Romania, Singapore, Slovakia, Slovenia, Sri Lanka, Tajikistan, Uganda, the United Kingdom of Great Britain and Northern Ireland, the United Republic of Tanzania, and Zimbabwe.

85. The 2023 Symposium on Women in Chemistry was held on 19 and 20 June 2023, and marked the first in-person capacity-building activity to be hosted at the newly inaugurated ChemTech Centre. The Symposium was organised by the Secretariat, in close cooperation with UNICRI and UNIDIR, and supported by a voluntary contribution from France. The 2023 Symposium aimed to foster gender equality and diversity in the field of chemistry under the theme “Empowering Women and Promoting Gender Diversity in the Peaceful Uses of Chemistry and Chemical Security”. The two-day event brought together experts, scientists, and researchers from across the globe to discuss and address the challenges faced by women in science, particularly in the field of chemistry. It also featured interactive panel discussions and presentations that focused on a wide range of topics, including women’s empowerment in scientific research, strategies to enhance women’s participation in chemistry-related professions, and the importance of mentorship and networking. Furthermore, the event emphasised the need to address unconscious biases and gender stereotypes that persist within the scientific community. Seventeen participants from the following nine African Member States attended the event in person: Algeria, Cameroon, Côte d’Ivoire, Kenya, Libya, Mauritius, South Africa, Uganda, and Zimbabwe. A further 16 global participants—from Bulgaria, Cameroon, Côte d’Ivoire, Germany, Iraq, Kenya, Nicaragua, Peru, and Uganda—joined the event online.

Forum on Peaceful Uses of Chemistry

86. The Secretariat, in cooperation with the Malaysian National Authority, organised the annual Forum on Peaceful Uses of Chemistry from 23 to 25 May 2023 in Kuala Lumpur, Malaysia. The Forum, targeting chemists, chemical engineers, and relevant professionals from government, international organisations, industry, and academia, aimed at elevating awareness and deepening participants’ understanding of chemical safety and security management towards building a culture of chemical safety and security. It also embraced the tenets of green and sustainable chemistry, highlighting its potential as a robust framework to mitigate risks associated with harmful by-products. It underscored the importance of ensuring safety and sustainability in chemical products and processes driven by the power of scientific innovation. The Forum was attended by 20 in-person participants from the following 11 Asian Member States: Bangladesh, Cambodia, China, India, Iraq, Malaysia, Myanmar, Nepal, Pakistan, Saudi Arabia, and Sri Lanka. A further 19 global participants joined the event online, representing the following eight Member States: Armenia, Côte d’Ivoire, Kenya, Namibia, Nicaragua, Nigeria, Türkiye, and Zambia.

Policy and diplomacy for scientists

87. The Secretariat has resumed holding a workshop entitled “Policy and Diplomacy for Scientists: Introduction to Responsible Research Practices in Chemical and Biochemical Sciences”. The latest edition, held from 21 to 23 June 2023 at the newly built ChemTech Centre, aimed at raising awareness about the goals of the Convention, the role of science

and scientists in disarmament, the dual uses of science, the impact of developments in science and technology on international security, and the role and contribution of scientists and academia in reducing chemical risks, including through the promotion of ethics and education in responsible and sustainable research practices. The workshop hosted 15 participants from the following 11 States Parties: Algeria, Argentina, China, India, Iraq, Kenya, Myanmar, Nigeria, Paraguay, the Philippines, and Uruguay.

Review and Evaluation Workshop on the Components of an Agreed Framework for the Full Implementation of Article XI

88. The Secretariat continued the series of workshops on Article XI, which provided an opportunity for stakeholders to review and evaluate the activities run by the Secretariat and States Parties to promote the peaceful uses of chemistry. The Secretariat organised the seventh edition of the Review and Evaluation Workshop on the Components of an Agreed Framework for the Full Implementation of Article XI, which was held on 14 November 2022 in hybrid format—that is, both in-person and online participation. International experts contributed towards the deliberations and facilitated group discussions among delegates on the three strategic thematic areas of the OPCW's work conducted under Article XI: integrated chemicals management, enhancing laboratory capabilities, and promoting chemical knowledge. Participants also engaged in thematic breakout group discussions to share ideas, lessons learned, and best practices. Forty-four participants from 25 States Parties, representing National Authorities, Permanent Representations, and relevant stakeholders, participated in the workshop, with the overall aim of facilitating discussions and exchanging views to further the full implementation of Article XI of the Convention.

Interaction with the chemical industry

89. The chemical industry has been recognised as a key stakeholder with regard to full and effective implementation of the Convention. In accordance with the recommendations made in the report of the Third Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention (RC-3/3*, dated 19 April 2013) and in decision C-16/DEC.10, the Secretariat has continued to strengthen partnerships between the OPCW and chemical industry associations, in particular the International Council of Chemical Associations and the International Chemical Trade Association. Cooperation with the chemical industry includes the exchange of information within the framework of the Chemical Industry Coordination Group, as well as support from chemical industry for activities related to chemical safety and security. More information on cooperation with chemical industry associations is available in the most recent annual Note by the Director-General on engaging the chemical industry associations (C-27/DG.14, dated 20 October 2022).

ENHANCING THE EFFECTIVENESS OF OPCW INTERNATIONAL COOPERATION PROGRAMMES

90. During the reporting period, the process of further formalising and strengthening the alumni networks of the programmes conducted by the Secretariat under Article XI continued to gain momentum. These networks help facilitate a professional channel of interaction with and among alumni of the various programmes for the sharing of experiences and best practices in terms of the objectives of the programmes during the post-implementation phase.

91. The recently established ChemTech Centre provides the Secretariat with an unparalleled avenue to amplify and diversify its international cooperation and assistance efforts by capitalising on its spacious and cutting-edge training and laboratory facilities, consistent with Secretariat Notes S/2034/2022 and S/2102/2022.
92. Since its inauguration in May 2023, the Centre has been instrumental in advancing some of the key Article XI capacity-building initiatives, especially the annual Symposium on Women in Chemistry and the biennial Workshop on Policy and Diplomacy for Scientists. The success of these programmes highlights the Centre's adeptness in ensuring coordinated and effective programme delivery with optimal use of in-house expertise.
93. With the upcoming introduction of new and specialised trainings, the Centre is poised to offer a more comprehensive learning experience in line with its founding vision. Additionally, the ChemTech Centre's dedication to leveraging the Secretariat's expertise ensures that training is tailored to the assessed needs of States Parties and adheres to global quality standards.
94. During the reporting period, the Secretariat launched the eighth edition of the survey on needs assessment and best practices on chemical safety and security management, inviting States Parties to share their specific needs in the area and to provide information on their existing tools, guidance, and best practices in this field. This year, the survey was modified to focus on Member States' needs in capacity building as well as tools and guidelines in relevant areas, including the transportation of hazardous chemicals, while promoting wider outreach to States Parties.
95. The Secretariat continued to support the facilitator for Article XI issues, Ms Fatima Hamdia Tanweer, First Secretary of the Permanent Representation of Pakistan to the OPCW. This support included organising informal consultations to provide States Parties with updates on the progress of the capacity-building programmes offered by the Secretariat in promoting the peaceful uses of chemistry.
96. The Secretariat sustained its efforts to strengthen the evaluation systems and tools that allow for continual review and improvement of its programmes to further enhance the design, delivery, and effectiveness of the international cooperation programmes and activities of the OPCW. Evaluation questionnaires address the content and continued relevance of the programmes, and feedback is taken into account when designing and updating the activities for the following year. Details of the evaluation of international cooperation programmes during the reporting period are provided in Annexes 4 and 5 to this report.
97. The Associate Programme serves as the flagship programme of the OPCW and consists of five distinct components, each of which is evaluated by both participants and tutors and, for the university segment, by university professors and lecturers. All components of the programme are comprehensively and fully assessed as part of a 360-degree evaluation mechanism. Based on the feedback received, the programme curriculum and delivery are continually enhanced. An appraisal of participants' performance has also been introduced.

98. With regard to the Programme for Support of Research Projects, research proposals are assessed and evaluated by a review committee composed of a number of experts representing different Secretariat units, including two members of the Scientific Advisory Board. The criteria used to assess new project proposals and the final reports of completed projects include an examination of their scientific quality, level of achievement of the stated objectives, financial planning, performance, and—for the proposals—managerial and logistic feasibility and relevance to the Convention.
99. For the Fellowship Programme, a continuous evaluation is undertaken by the Secretariat both at the proposal stage and on conclusion of the fellowship. In addition to the final scientific report on the fellowship, evaluation reports are also received from the fellowship supervisor at the host institution. An impact assessment of the Programme covering the period 2017 to 2021 was provided in the last report on the status of implementation of Article XI (EC-101/DG.9 C-27/DG.7, dated 31 August 2022).
100. As regards the Chemical Safety and Security Management Programme, feedback is routinely requested at the end of workshops or training events and then discussed in order to explore areas of improvement in the delivery of future activities.
101. Analytical skills development courses are evaluated through test exercises, including both theoretical and practical assignments, during and/or at the end of each course, and by means of a post-course evaluation meeting held with participants and trainers. Intermediate and final tests verify the knowledge participants have acquired, while questionnaires and post-course meetings collect feedback on the courses themselves and their perceived benefits for participants.
102. The Secretariat used a structured online survey questionnaire to conduct an impact assessment of the analytical skills development courses for the period 2019 to 2022. All former participants, supervisors, and respective National Authorities during the period in question were strongly encouraged to participate in the online survey. A total of 71 out of 134 former participants (53%) and 23 out of 54 concerned National Authorities (40%) responded to the survey. Participants were also asked to approach their supervisors to obtain their feedback through a separate questionnaire. Responses were received from 24 supervisors. Annex 5 provides an overview of the feedback received on the overall impact of the analytical skills development courses. Feedback is particularly insightful for the Secretariat, as it helps it to better understand the key strengths, specific areas that need further attention, and actionable recommendations that can help to fully optimise the courses in the future.
103. The feedback from the participants in the analytical skills development courses was highly positive, as they noted improvements in their professional competencies, their knowledge of various chemical hazards, their awareness of the mission of the OPCW, and in their analytical chemistry abilities. Many participants mentioned that the courses had helped them in their current roles, enabling them to better manage chemicals and provide technical expertise. They highlighted improvements in their understanding of quality management and lab protocols, in their abilities to analyse complex spectra, and their application of the knowledge from the analytical skills development courses to other areas of analytical method development. Some participants regretted that they had been unable to gain hands-on experience because of the courses being held online as a

result of COVID-19 travel restrictions. There is a significant request for more advanced courses, specifically in the use of certain instruments and software such as the Automatic Mass Spectral Deconvolution and Identification System (AMDIS), GC, and especially LC-MS and MS. The course also benefitted many participants by enhancing their ability to effectively take part in proficiency testing and to help advance efforts towards the achievement of laboratory accreditation. Many participants reported that they had successfully transferred the skills acquired to colleagues in their home institutions, aiding in capacity building. Several participants reported that the course had facilitated their recognition more widely.

104. As noted above, supervisors of participants in analytical skills development courses also assessed the impact of the courses on the participants. The survey findings highlighted the value and appreciation for the analytical skills development courses offered by the OPCW. Supervisors noted that these courses had been instrumental in advancing participants' knowledge and improving their capacities, particularly in the field of analytical chemistry related to chemical weapons. They expressed gratitude for the support and shared a desire for more advanced courses and additional training opportunities, specifically regarding the synthesis of compounds related to the Convention, as well as the inclusion of LC-MS in analytical skills development training. Some supervisors expressed a desire to expand participation by increasing the number of attendees from their institutions. They also appreciated the role such courses play in improving the skills of their staff, even beyond those directly involved in chemical weapons testing. These trainings were deemed as valuable not just for laboratory professionals but also for customs officers. Overall, there was a consistent call for continued and expanded courses, and an eagerness to strengthen collaboration with the OPCW in view of achieving designated status.
105. For their part, the National Authorities also positively reviewed the impact of the analytical skills development courses at the national level. National Authorities providing feedback highlighted a strong desire for more analytical skills development courses as well as specialised trainings, including those covering techniques such as LC and practical analysis of commonly traded chemicals. They also emphasised a need for a greater variety of courses, with some National Authorities suggesting that more time be allocated to such trainings. They also expressed a need for a better follow-up system, especially in cases in which candidates are non-accepted to participate in the training. Praise was given for the relevance and quality of the training and support provided by the OPCW. Moreover, respondents were of the view that participants who had already attended the courses should be encouraged to pursue additional training to further disseminate these skills in their home countries. Finally, there was a desire to encourage capable laboratories to become OPCW designated laboratories.
106. The overall feedback on the analytical skills development courses has been overwhelmingly positive, with participants expressing gratitude for the opportunity to enhance their analytical chemistry skills. There is also a desire to include more advanced courses focusing on specific analytical tools such as the AMDIS software, GC, and LC-MS. The feedback received suggests that the analytical skills development courses are greatly appreciated, but there are calls for more advanced, comprehensive, and instrument-specific trainings, where feasible.

MEASURES BY STATES PARTIES AND THE OPCW TO FACILITATE STATES PARTIES' PARTICIPATION IN THE FULLEST POSSIBLE EXCHANGE OF CHEMICALS, EQUIPMENT, AND SCIENTIFIC AND TECHNICAL INFORMATION RELATING TO THE DEVELOPMENT AND APPLICATION OF CHEMISTRY, IN ACCORDANCE WITH THE PROVISIONS OF THE CONVENTION

107. Throughout the reporting period, the Secretariat continued to actively support the facilitator for Article XI issues, including during the informal consultations between States Parties regarding the full implementation of this specific article of the Convention, which is aimed at the economic and technological development of the States Parties.
108. In order to enhance communication among all stakeholders, information about programmes, activities, and outcomes relating to the Convention, specifically Article XI, was shared through various platforms such as seminars and workshops, especially those organised by the Secretariat.
109. The Secretariat also organised an online information briefing on 4 May 2023 to raise awareness among States Parties of its extensive range of services and capacity-building programmes with a focus on the programmes under Article XI, aimed at fostering and promoting full implementation of the Convention. In particular, the event elaborated on the offerings of the Secretariat, including specialised and customised trainings designed to advance and strengthen chemical safety and security management in States Parties. Among others, it provided information on expert training programmes aimed at developing skills for the analysis of chemicals relevant to the Convention, specialised technical support offered to build upon and maintain the technical capabilities of analytical chemistry laboratories, opportunities for research grants and fellowships, and technical services that support the exchange of information and foster the peaceful uses of chemistry. Attendees at the briefing were also updated on the application process for international cooperation and assistance programmes and opportunities.

FINANCIAL ASPECTS

110. The activities covered during the reporting period were funded through the annual Programme and Budget of the OPCW. In addition, voluntary contributions were received from States Parties for specific events.

OVERSIGHT BY THE CONFERENCE OF THE STATES PARTIES AND THE EXECUTIVE COUNCIL

111. In accordance with decision C-16/DEC.10, the Secretariat reports to each annual session of the Conference on the progress made in implementing the decision and on the status of implementation of Article XI, in order for the Conference to consider and take appropriate measures, if necessary, to further promote its full implementation.
112. During the 103rd Session of the Council (11 to 13 July 2023), the Secretariat circulated a presentation to update the Council on the programme of activities related to the implementation of Article XI.

Annex 1

**CONFERENCES SUPPORTED
 UNDER THE CONFERENCE SUPPORT PROGRAMME
 26 AUGUST 2022 TO 25 AUGUST 2023**

No.	Conference Title	Location	Duration	State Party of Sponsored Participants	No. of Sponsored Participants
1.	Virtual Conference on Chemistry and its applications	Online, (Réduit, Mauritius)	8 – 12 Aug 2022	Africa (70%) and other regions (30%)	110
2.	Malta X, Frontiers of Chemical Sciences: Innovation, Research, and Education in the Middle East – A Bridge to Peace and International Development,	Malta	6 – 10 Nov 2022	Iraq, Jordan (2), Morocco, Lebanon, Norway, Pakistan, State of Palestine, and Syrian Arab Republic	9
3.	Dioxin 2022 – 42nd International Symposium on Halogenated Persistent Organic Pollutants	New Orleans, United States of America	9 – 14 Oct 2022	India and South Africa	2
4.	Workshop on Modern Spectroscopic Techniques and their application in Research	Amman, Jordan	12 – 14 Mar 2023	Ethiopia, Indonesia, Kazakhstan, and Pakistan (2)	5
5.	ChemCon The Americas 2023	San Francisco, United States of America	13 – 17 Mar 2023	Argentina, Chile, and India	3
6.	22nd International Conference on Flow Injection Analysis and related techniques (ICFIA)	Marseille, France	28 May – 2 Jun 2023	Thailand and Ukraine	4
7.	58th Course of the International School of Crystallography “Structural Drug Design 2023: Biology, Chemistry and Computers”	Erice, Italy	3 – 9 Jun 2023	Armenia, Bulgaria, India, and Türkiye	4

No.	Conference Title	Location	Duration	State Party of Sponsored Participants	No. of Sponsored Participants
8.	16th International Symposium on Applied Bioinorganic Chemistry	Ioannina, Greece	11 – 14 Jun 2023	China, India, Mexico, and Republic of Korea	4
9.	2023 Postgraduate Summer School on Green Chemistry	Hybrid (Venice, Italy)	2 – 7 Jul 2023	Azerbaijan, Ghana, Indonesia, Malaysia, Nigeria, Pakistan, Romania, South Africa, Türkiye, Uganda, Ukraine, and Uzbekistan	12 on site and 30 online
10.	Virtual Conference on Chemistry and its Applications – “Chemistry and Interdisciplinary Research towards SDGs”.	Online (Mauritius)	7 – 11 Aug 2023	Africa (70%) and other regions (30%)	100
11.	IUPAC/CHAINS 2023 World Chemistry Congress, World Forum	The Hague, Netherlands	20 – 25 Aug 2023	India, Malaysia, Nigeria, Pakistan, and Türkiye	5

Annex 2

**PROJECTS CONDUCTED UNDER THE FELLOWSHIP PROGRAMME
26 AUGUST 2022 TO 25 AUGUST 2023**

No.	Title of Project	Location of Fellowship	Duration	State Party of Fellow
1.	Fellowship: "Evaluation of effects and molecular mechanism of five new diterpenoids isolated from <i>Croton oligandrus</i> Pierre ex Hutch (Euphorbiaceae) on human prostate cancer cell lines"	University Hospital Schleswig, Lübeck, Germany	1 Aug – 30 Oct 2022	Cameroon
2.	Fellowship: "Isolation and structure determination of bioactive metabolites of Euphorbiaceae plants"	Department of Pharmacognosy, Faculty of Pharmacy, University of Szeged, Hungary	1 Aug 2022 – 30 Jan 2023	Serbia
3.	Fellowship: "Experimental verification of computationally designed stable transaminase biocatalysts"	Groningen Biomolecular Sciences & Biotechnology, University of Groningen, Netherlands	7 Sept – 5 Dec 2022	Uruguay
4.	Fellowship: "The impact of military action on natural environment in Ukraine"	Politechnika Wroclawska, Wydział Chemiczny ul. C.K. Norwida 50-373 Wroclaw, Poland	11 Oct 2022 – 9 Apr 2023	Ukraine
5.	Fellowship: "Continuation of the chemical study, anti-microbial and anti-malarial assay of both the extract and isolated compounds from <i>Caloncoba dusenii</i> , <i>Flacourtia vogelii</i> (Flacourtiaceae) and <i>Cola lepidiota</i> (Malvaceae) follows by the formulation of phytodrug and QSAR study of the isolated compounds then semi-synthesis on the lead compounds."	University of Bielefeld, Germany	16 Oct 2022 – 12 Jan 2023	Cameroon

No.	Title of Project	Location of Fellowship	Duration	State Party of Fellow
6.	Fellowship: GC-MS Analysis Specialist	VERIFIN, Finland	9 Jan – 8 Jul 2023	Ukraine
7.	Fellowship: “Preparation of bio-based films from feruloylated arabinoxylan isolated from rice bran from the Philippines”	AlbaNova University Centre KTH Royal Institute of Technology, Stockholm, Sweden	10 Jan – 8 Jul 2023	Philippines
8.	Fellowship: “Total of series of 3-benzylchroman-3-ol type hmoisoflavonoids and 3-methoxyflavones derivatives of anticancer applications”	University of Potsdam, Potsdam-Golm, Germany	1 Feb – 31 Jul 2023	Kenya
9.	Fellowship: “LC-MS and Bioactivity guided isolation of specialized metabolites from Cameroonian Indigenous Mushrooms for Infectious Diseases Drug Discovery”	University of Paris-Saclay, Faculty of Pharmacy 5, Rue J.B. Clement, Paris, France	1 Feb – 31 Jul 2023	Cameroon
10.	Fellowship: “Identification of new antibiotic compounds against multi drug resistant bacteria from some endophytic fungi isolated from Paullina pinnata (Sapindaceae)”	Heinrich Heine University Institut fur Pharmazeutische Biologie und Biotechnologie, Düsseldorf, Germany	1 Mar – 31 Aug 2023	Cameroon
11.	Fellowship: “Cerium, zinc and magnesium doped hydroxyapatites composites derived from biogenic materials: Synthesis, characterization towards optimization of antimicrobial properties”	National Institute of Materials Physics, Bucharest-Magurele Romania	20 Mar – 19 Aug 2023	Cameroon
12.	Fellowship: NMR Specialist	VERIFIN, Finland	1 Jun – 3 Dec 2023	Serbia
13.	Fellowship: “LC-MS and antimicrobial activities guided isolation of secondary metabolites endophytic fungi harboured in Pakia Biglobosa (Fabaceae)”	Fundación Medina, Spain	8 Jul – 31 Dec 2023	Cameroon

Annex 3

**RESEARCH PROJECTS FUNDED BY THE OPCW
 26 AUGUST 2022 TO 25 AUGUST 2023**

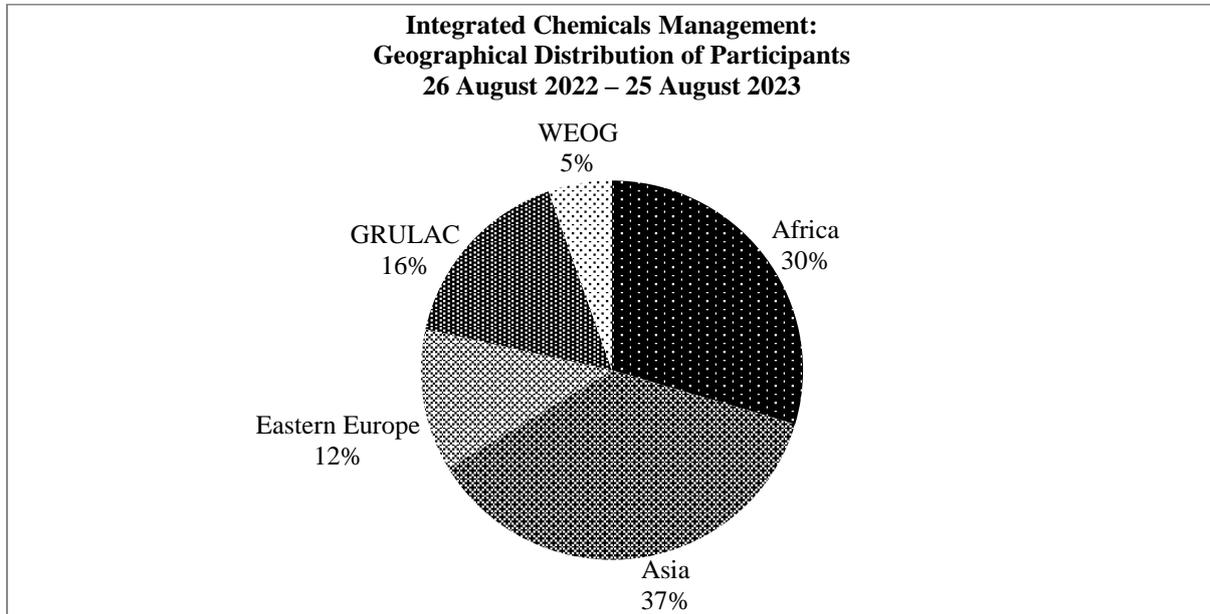
No.	Title	State Party of Researcher	Status
1.	Polyethylene mulching in agriculture: the interaction between plastic, soil, pesticides, and phthalic esters	Argentina	Ongoing
2.	Hybrid bio-nanomaterials: tools for the development of highly sensitive analytical methods applied to the determination of toxic elements in baby food	Argentina	Ongoing
3.	Development of polymer-based nanostructured sensors for detection of hydrogen sulphide (H ₂ S)	Brazil	Ongoing
4.	Chemistry beyond chlorine: dialkyl carbonates for biomass upgrading and synthesis of heterocycles	Italy	Ongoing
5.	Application of miniaturised sensors and sampler to remotely controlled mini aerial vehicles (payload less than 25 kg), a new pathway for the survey of critical areas	Italy	Ongoing
6.	Design and fabrication of chemo-sensor for food-borne mycotoxins as potential chemical warfare agents	Kenya	Ongoing
7.	Towards oxygen tolerant cross-coupling reactions in aqueous media for the developing world in the interest of safer molecular electronics: an attempt at reducing solvents and toxic chemicals dependency	Malaysia	Ongoing
8.	Mesoporous silica nanoparticles extracted from oil palm fronds for the development of magnetic solid phase extraction method for efficient separation of organochlorine pesticides in water samples	Malaysia	Ongoing
9.	Development and validation of electromembrane extraction with a new conductive polymer inclusion membrane sampling probe for simultaneous determination of cationic and anionic pesticides in environmental waters	Malaysia	Ongoing
10.	Investigation on the use of fabricated metals impregnated on pectin biopolymeric material as sustainable absorbents in solid phase extraction for pre-concentration of mycotoxins in cassava product samples	Malaysia	Ongoing
11.	Green synthesis of silver doped zinc oxide nanoparticles using aqueous leaves extract incorporated with activated carbon from oil palm kernel shell (Ag-ZnO-NPs/AC) and its mechanistic study towards photodegradation of organochlorine pesticide (OCPs) in water samples	Malaysia	Ongoing
12.	Adsorption and detection of model compounds analogous to chemical warfare agents by metal-organic framework CAU-1	Malaysia	Ongoing

No.	Title	State Party of Researcher	Status
13.	Risk Analysis of Natural Toxic Pyrrolizidine Alkaloids in the Food Chain: Development, Validation, and Application of HPLC/MS ⁿ Methods	North Macedonia	Ongoing
14.	Biomass valorization to enhance efficiency of toxic metals bioremediation from military and industry areas	Poland	Ongoing
15.	Diagnosis of schizophrenia and bipolar disorder by NMR-based metabolomics and lipidomics	Serbia	Ongoing
16.	Detection of herbs and dietary supplements fraud using metabolomics approach	Serbia	Ongoing
17.	Metabolomic fingerprints of schizophrenia and bipolar disorder	Serbia	Ongoing
18.	Monitoring the distribution of emerging micropollutants in food crops irrigated with reclaimed water	South Africa	Ongoing
19.	A novel approach to chlorine exposure: Raman spectroscopy Part II	Türkiye	Ongoing
20.	Turning industrial waste into value-added chemical products	Uruguay	Ongoing

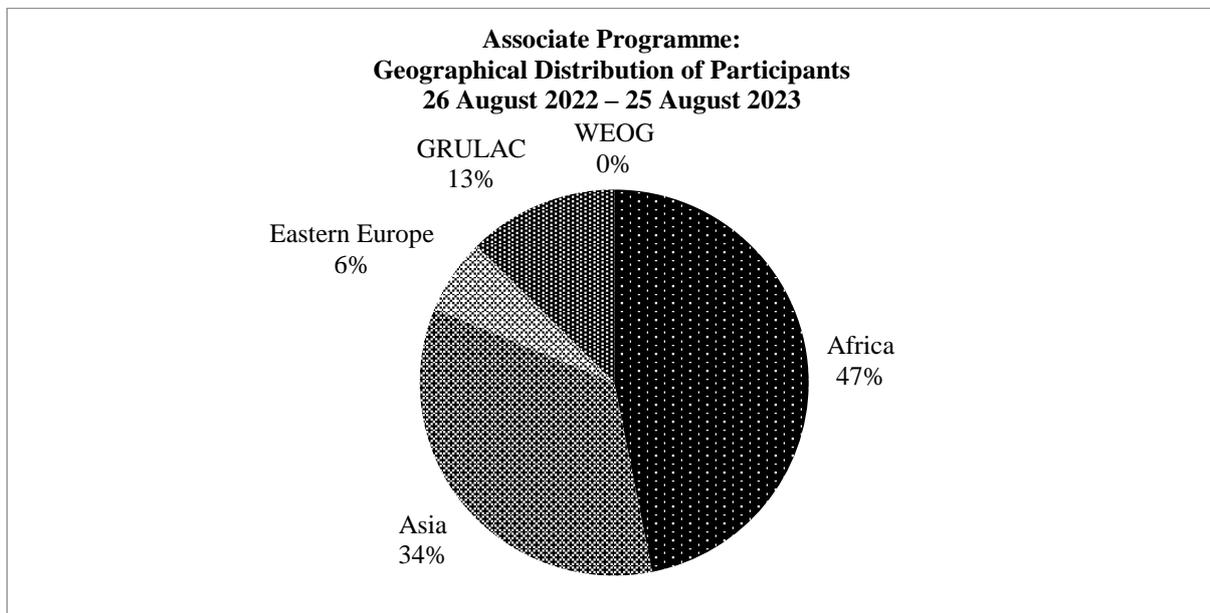
Annex 4

EVALUATION OF INTERNATIONAL COOPERATION PROGRAMMES

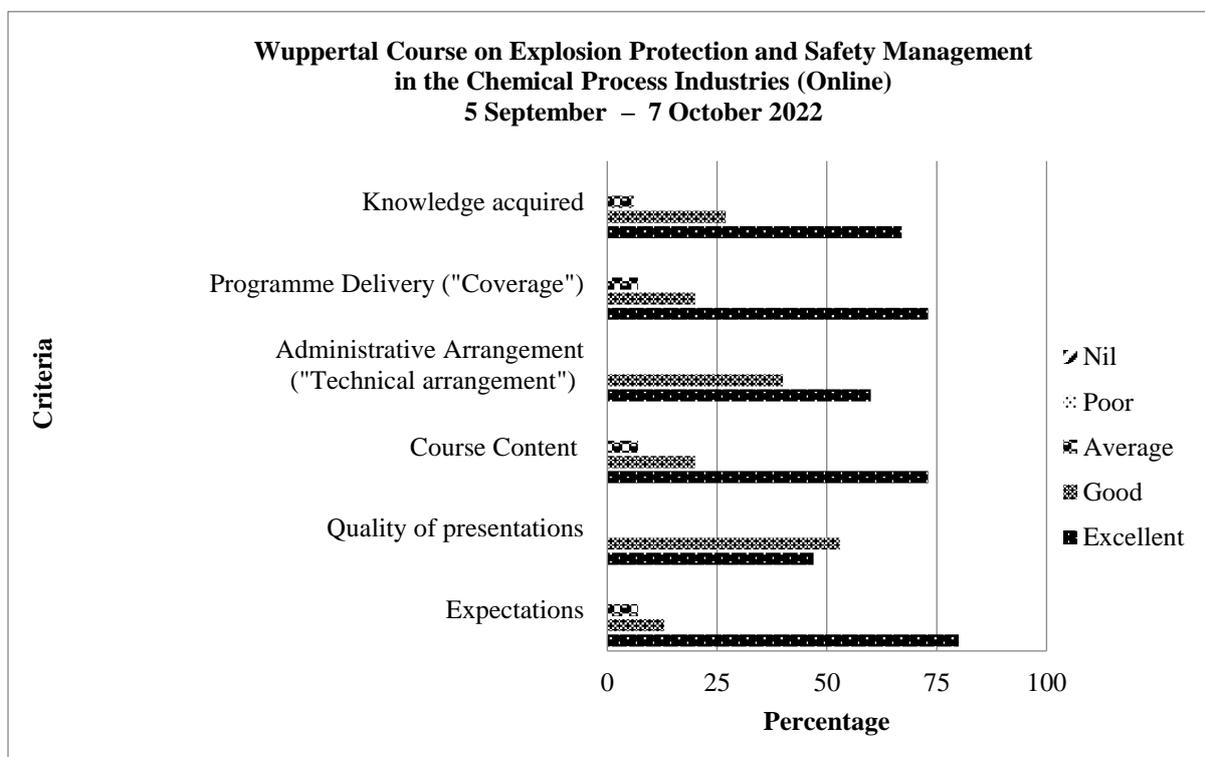
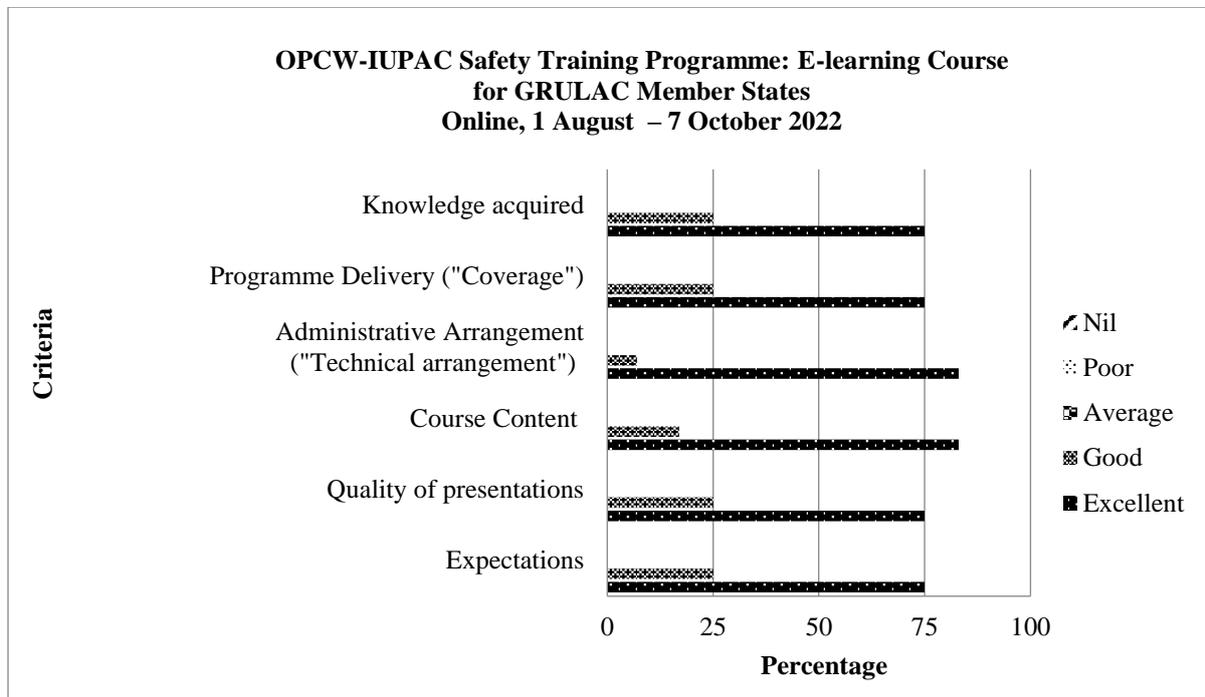
INTEGRATED CHEMICALS MANAGEMENT

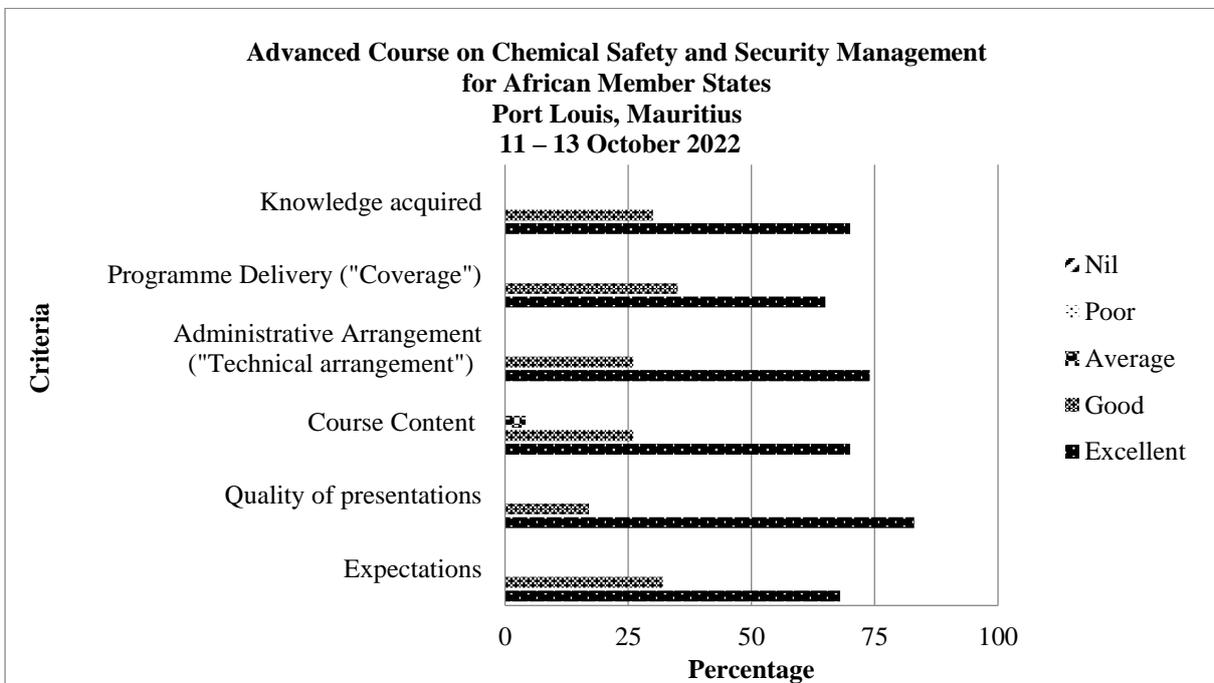
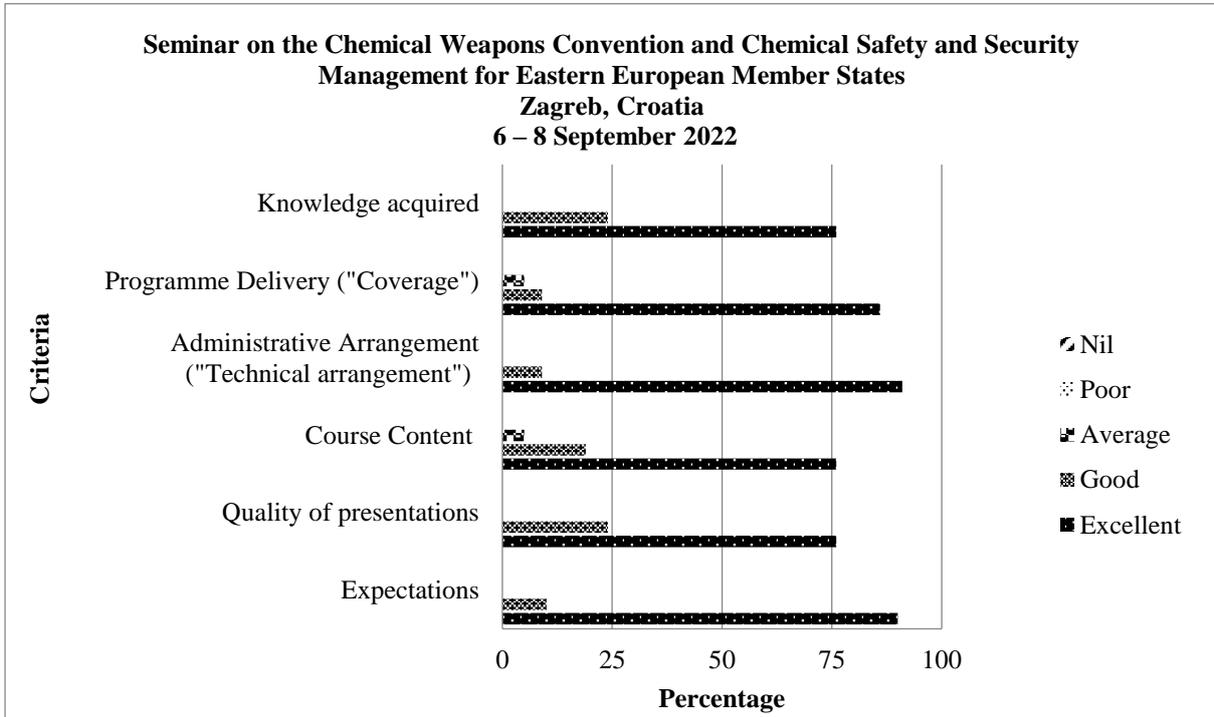


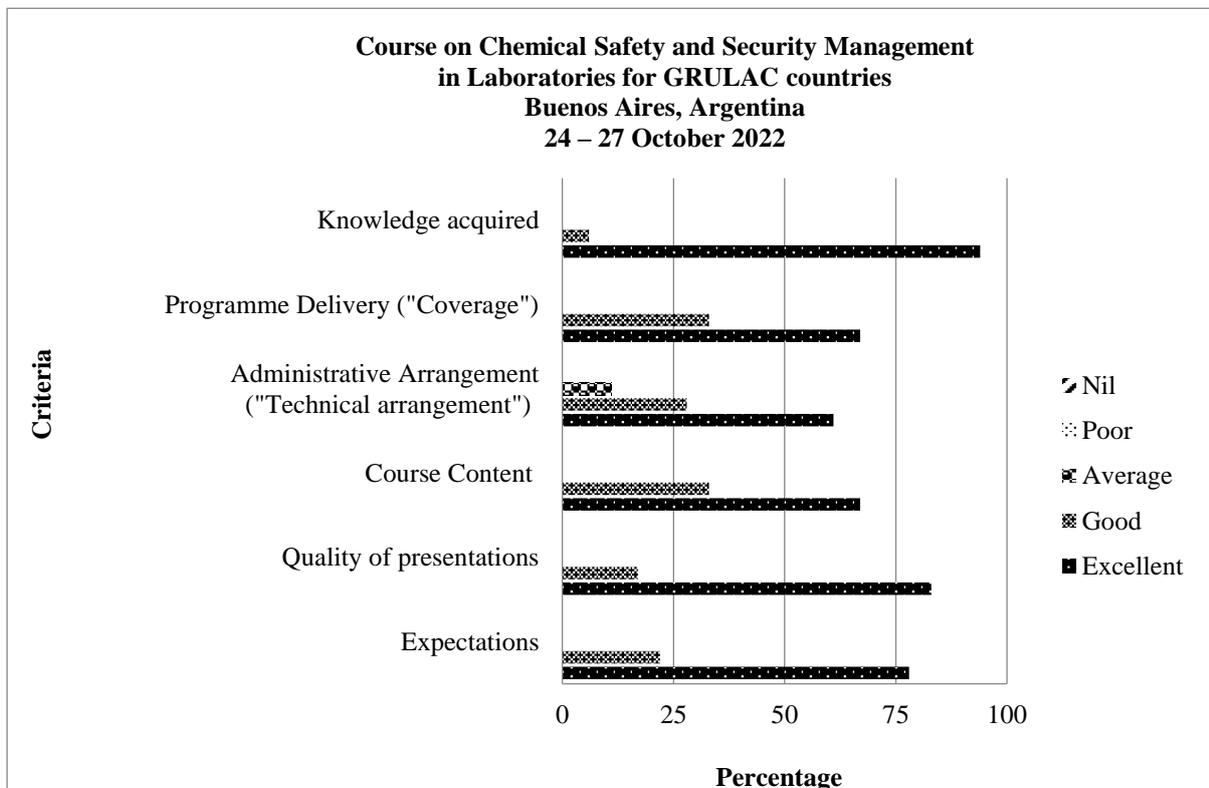
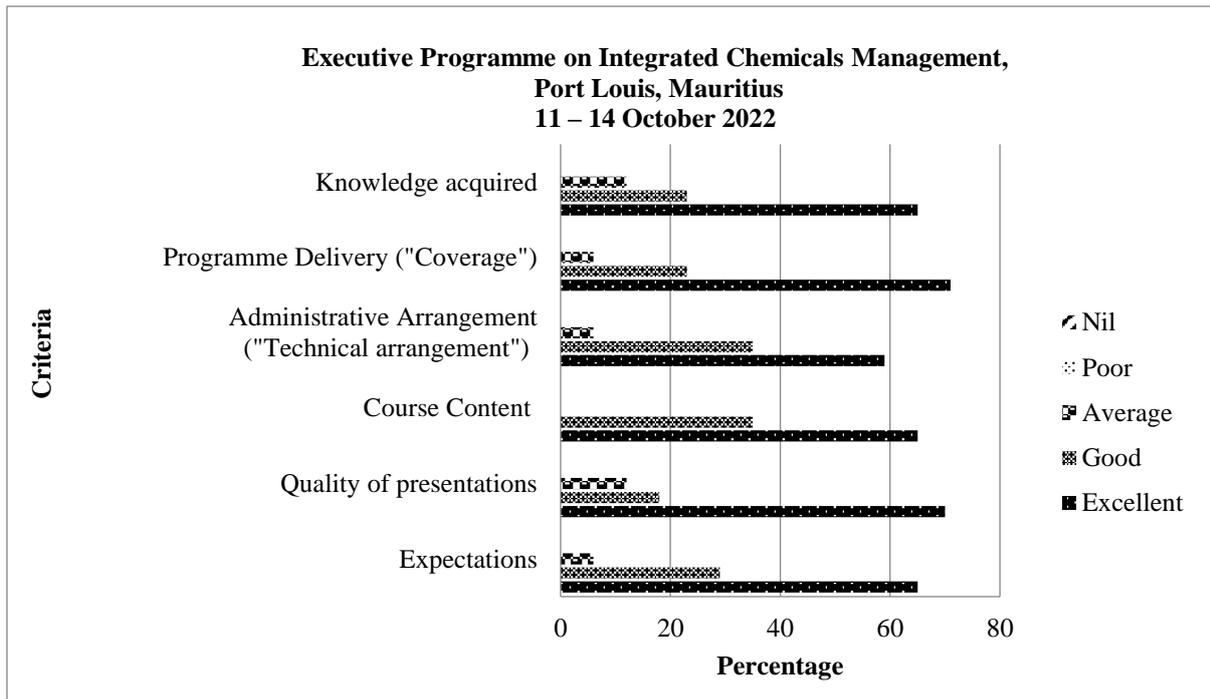
Associate Programme

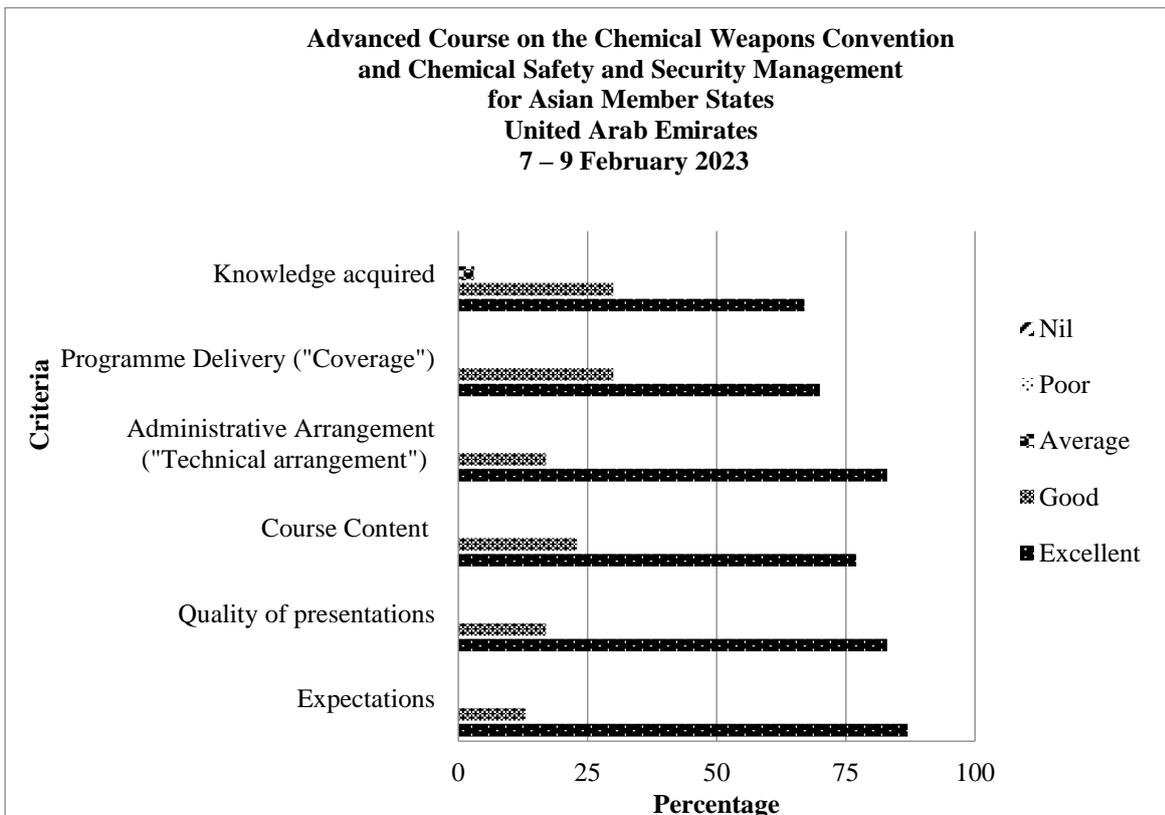
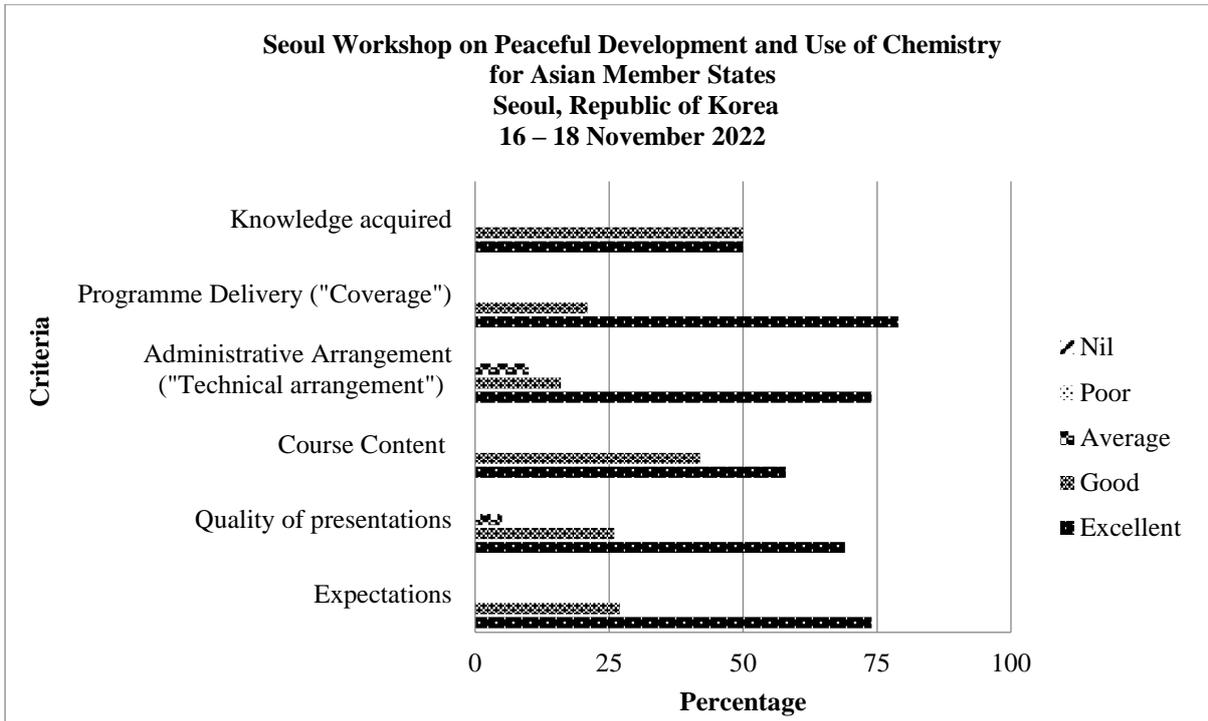


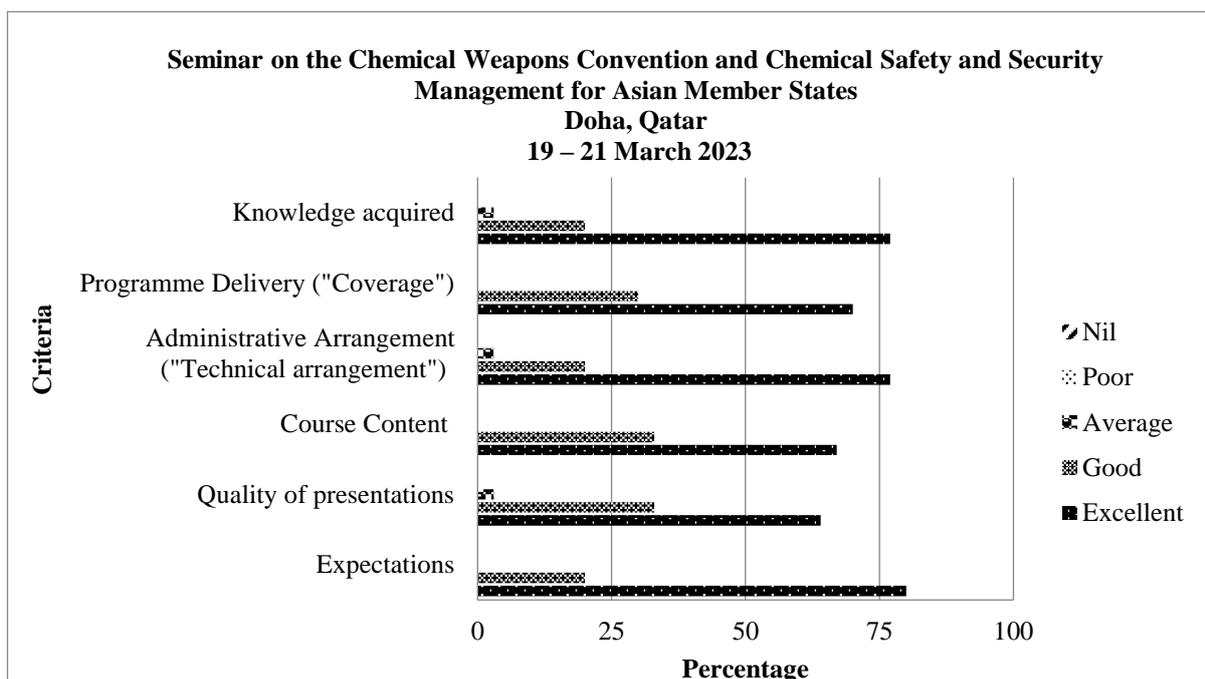
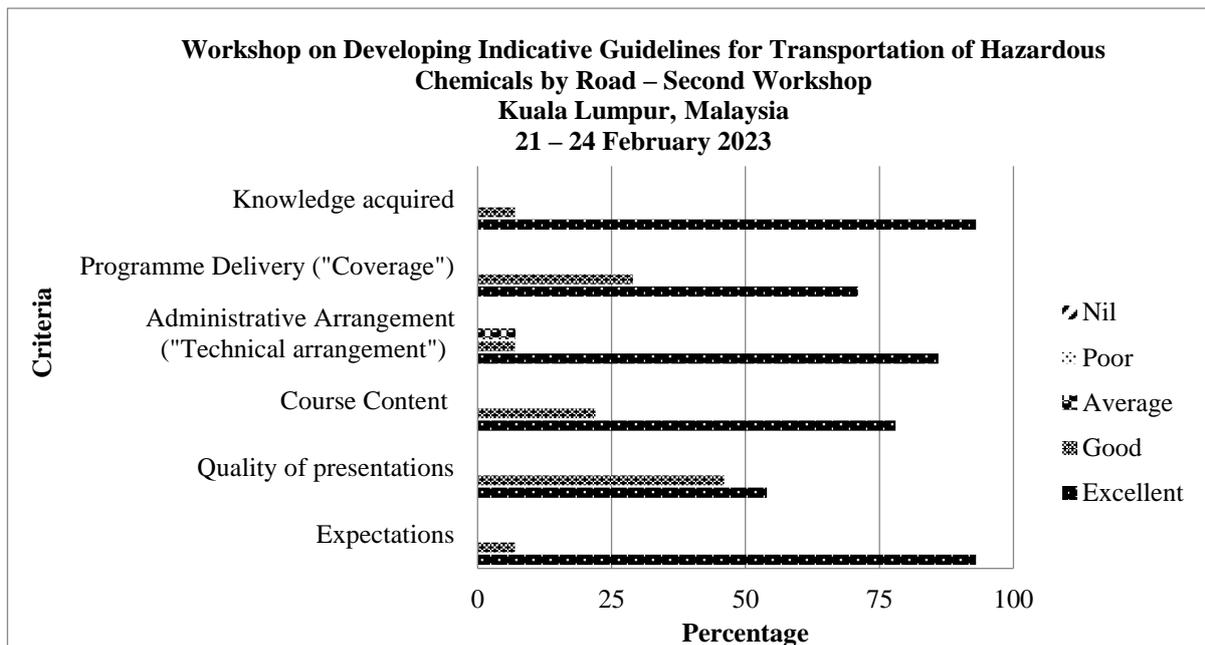
Chemical safety and security management

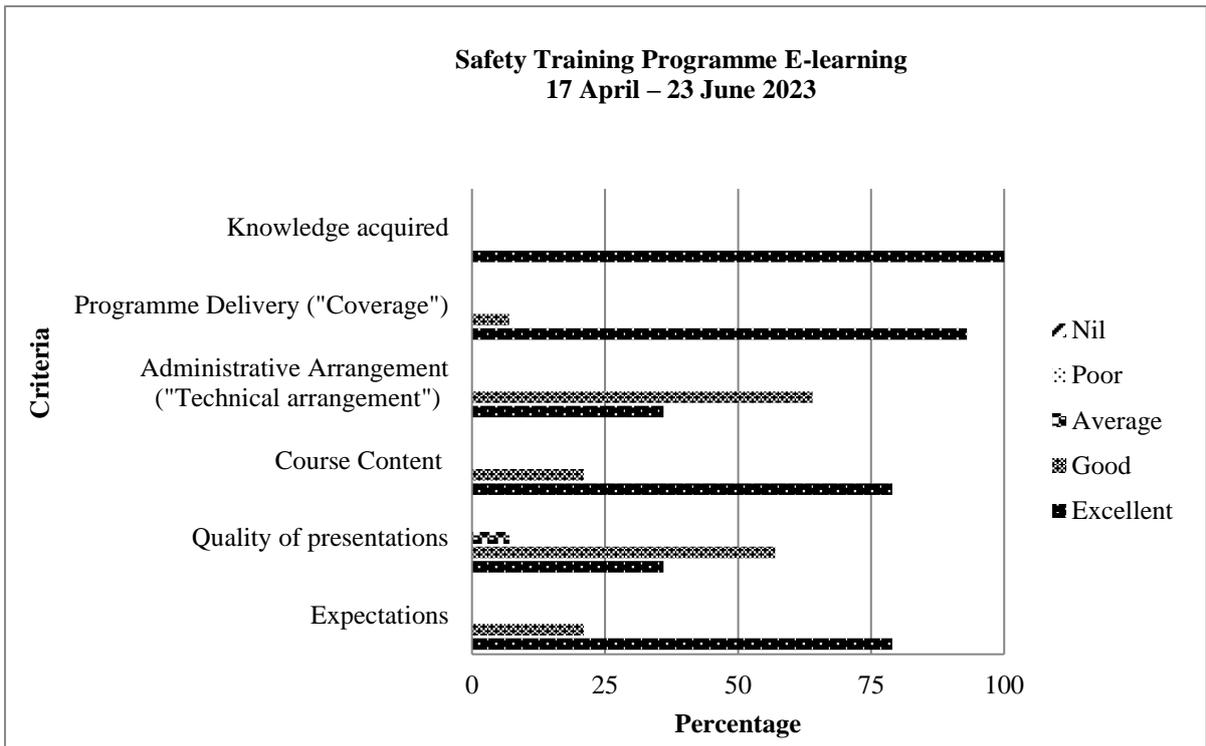
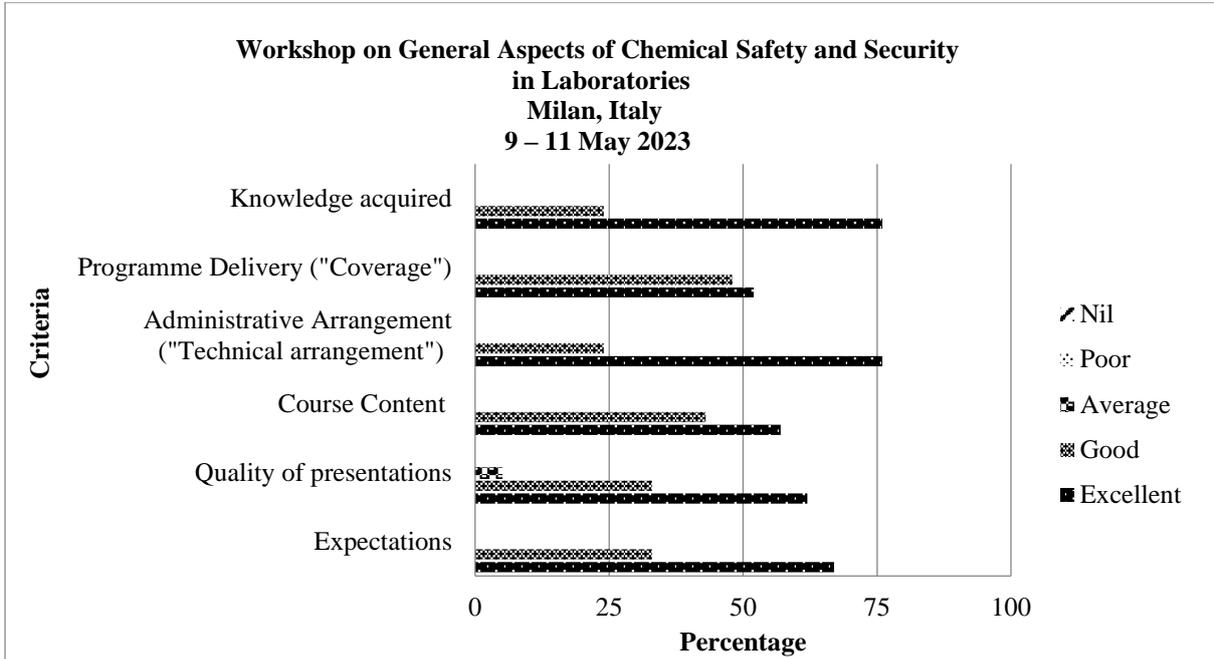


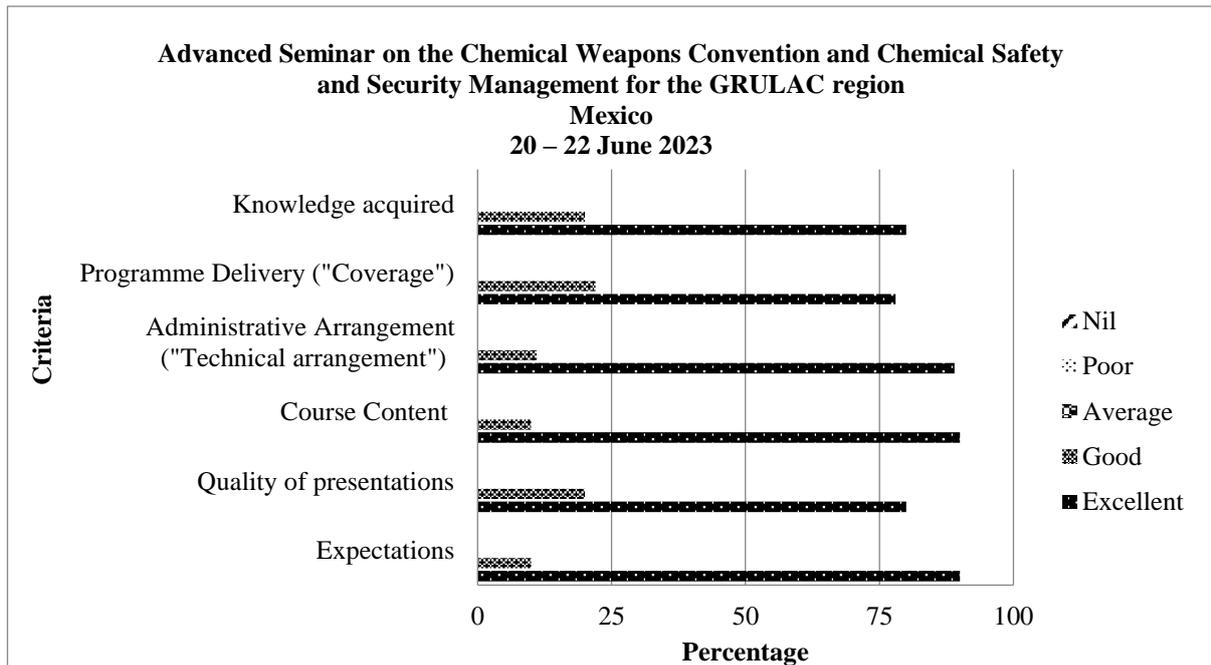




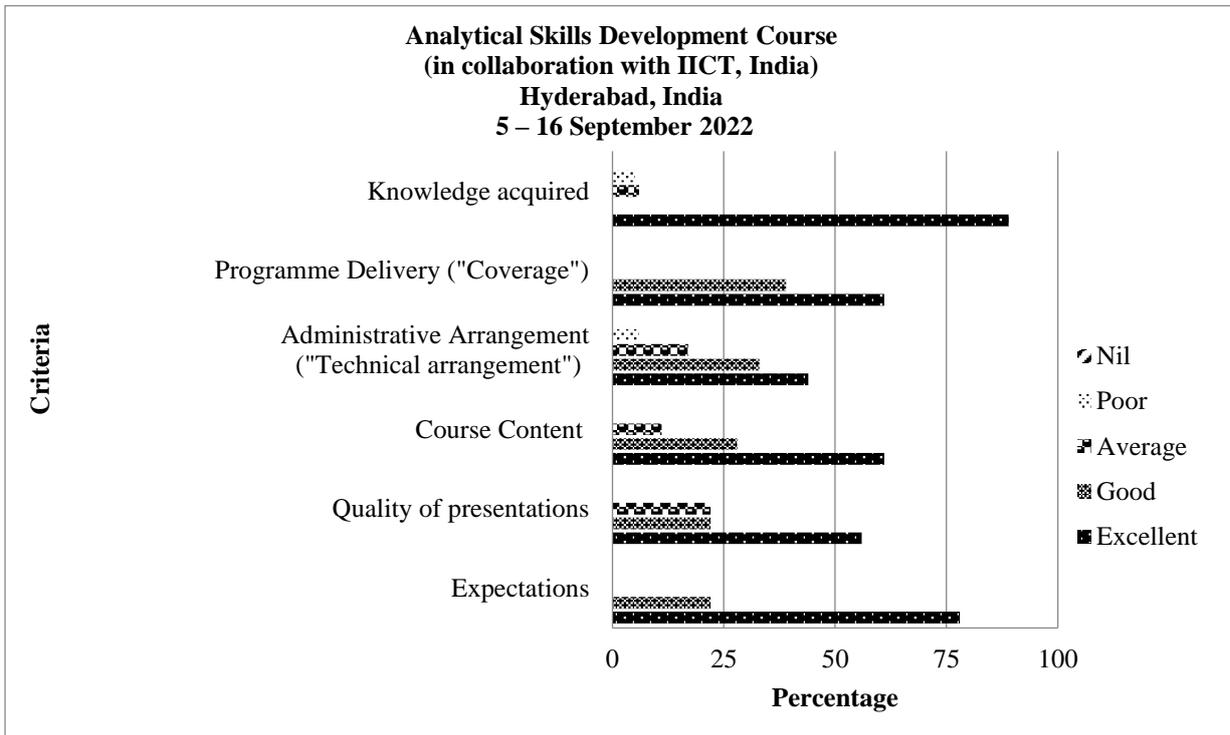
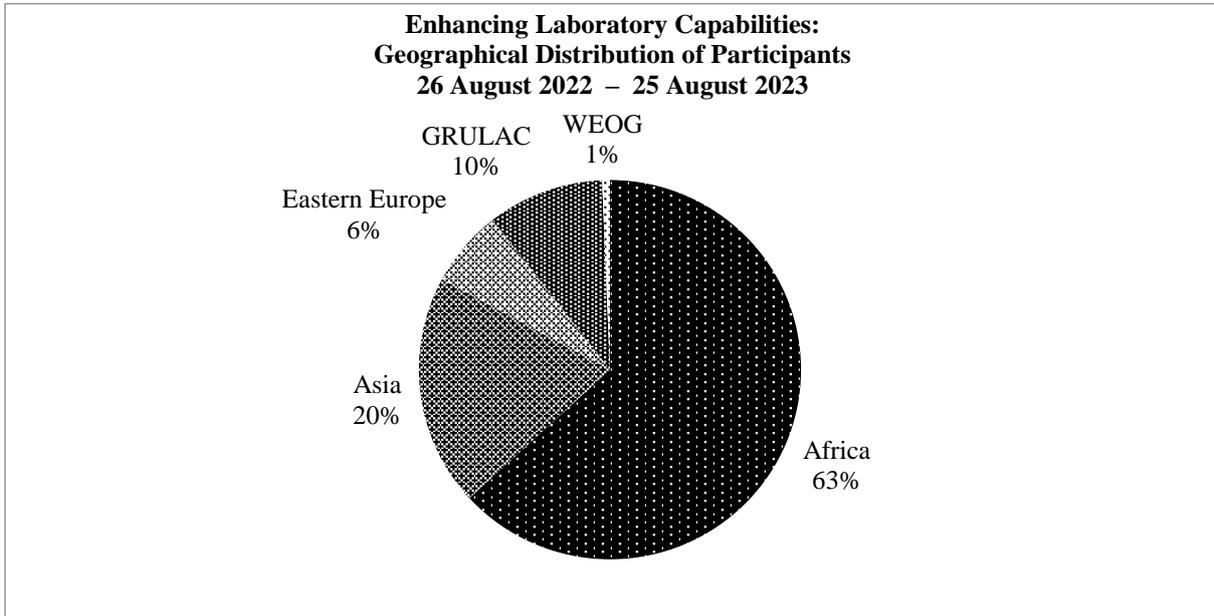


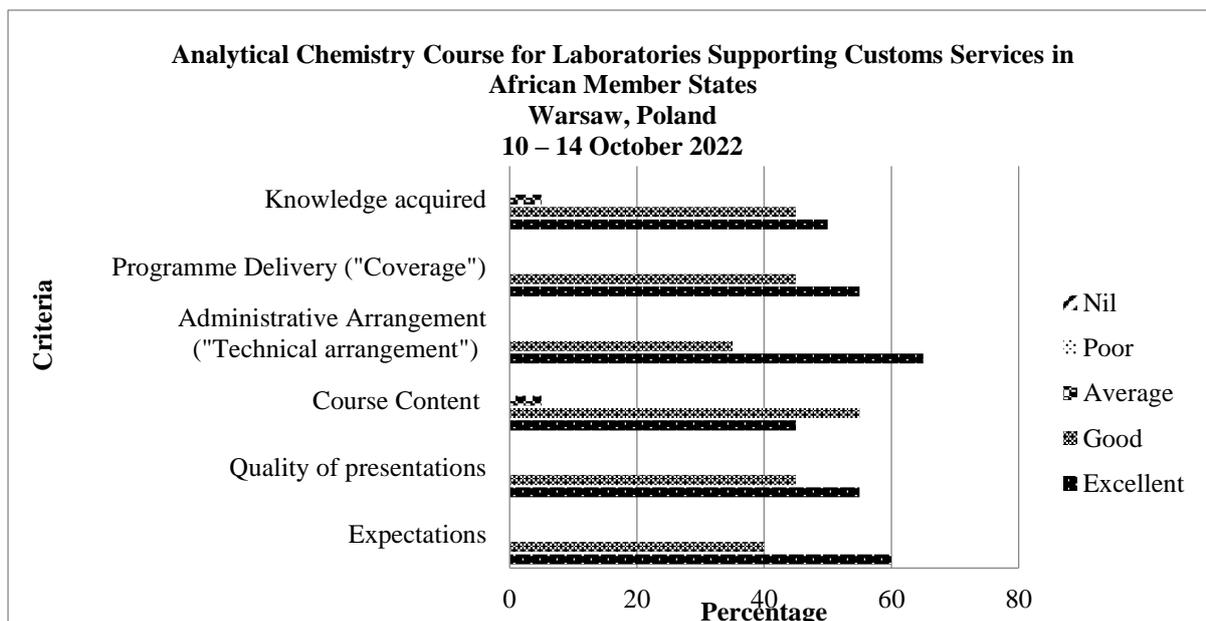
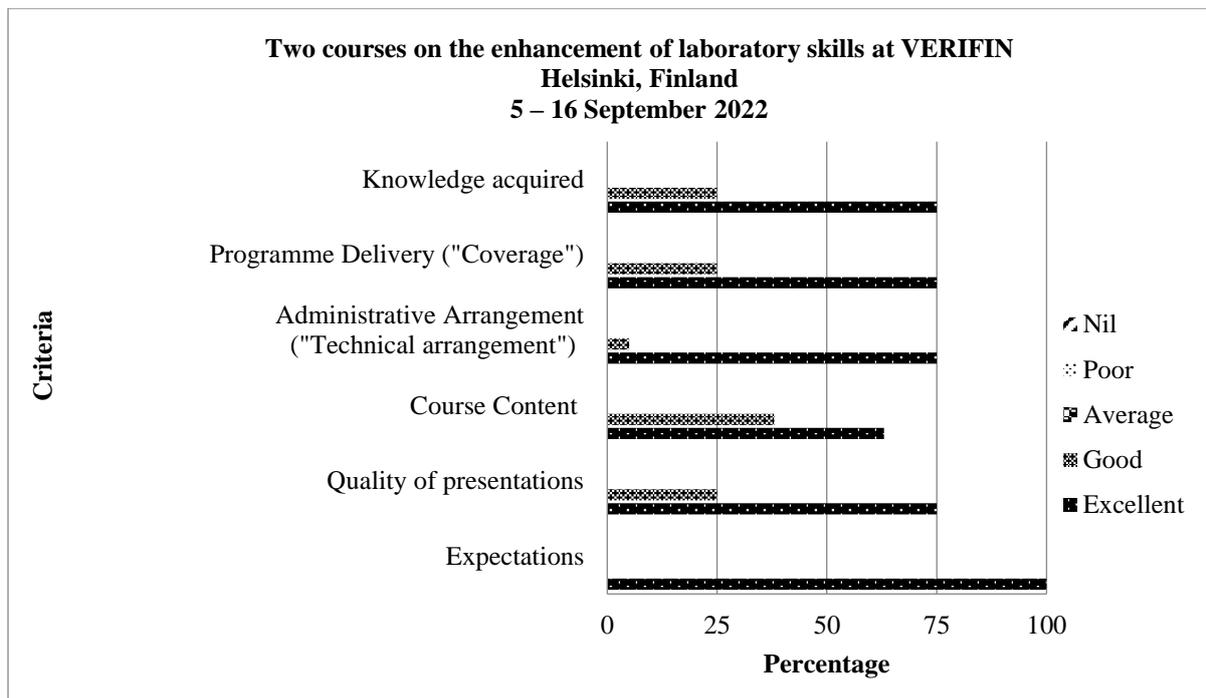


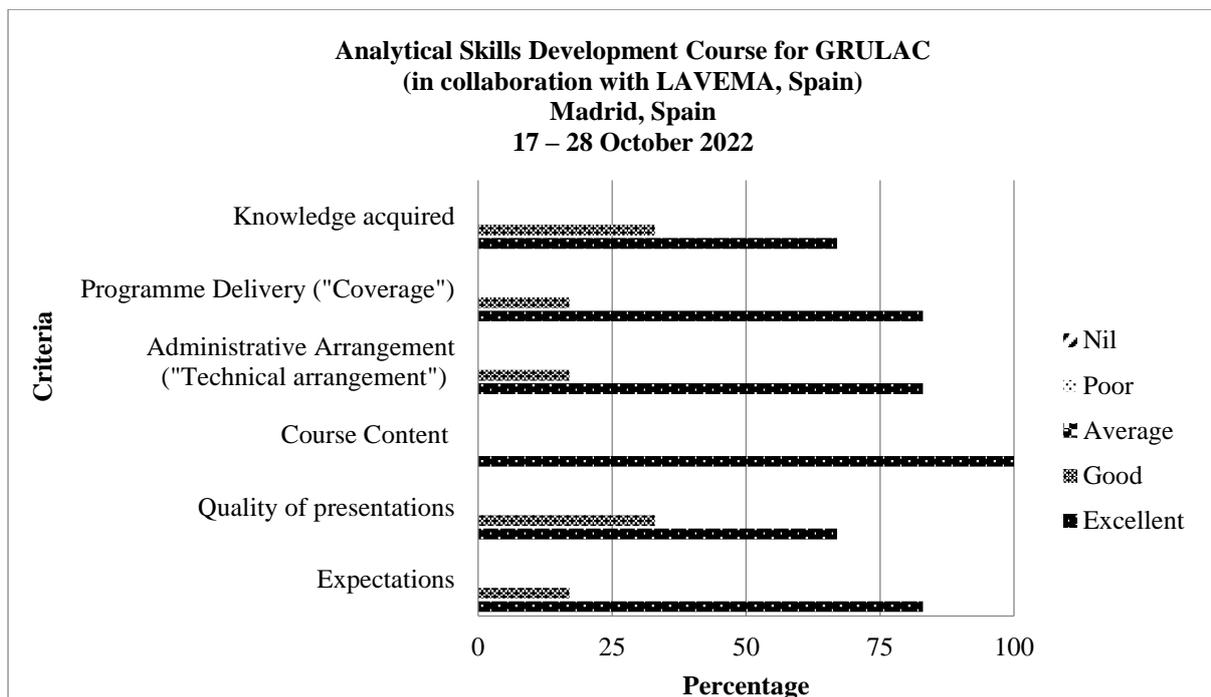
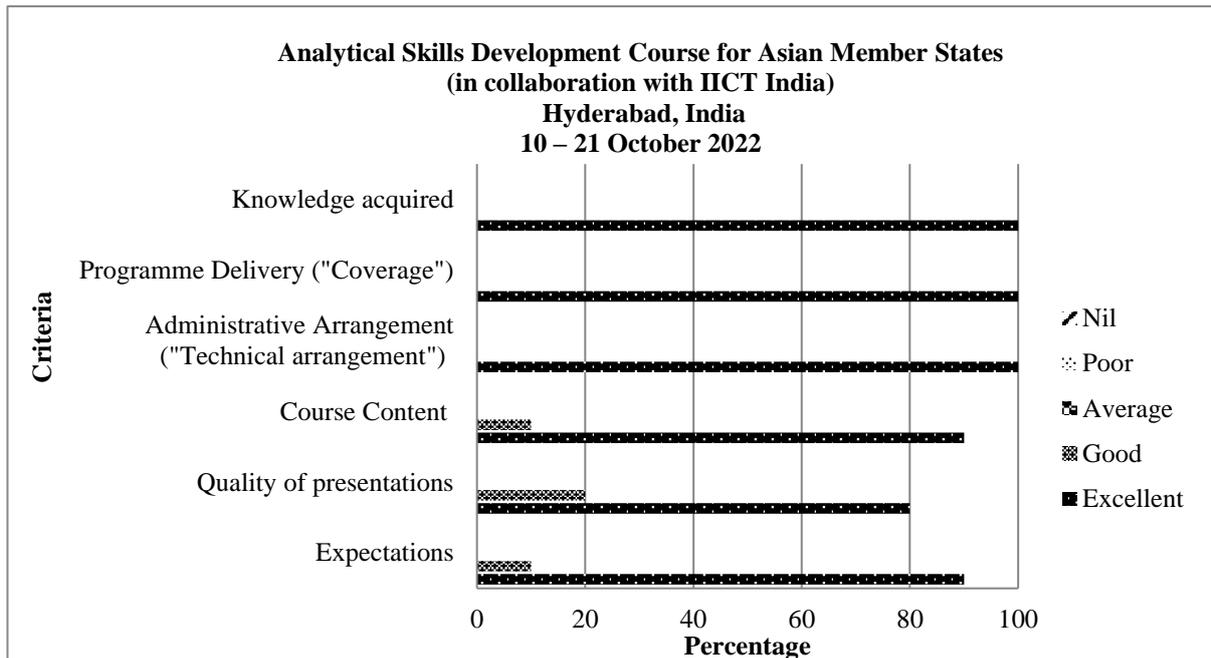


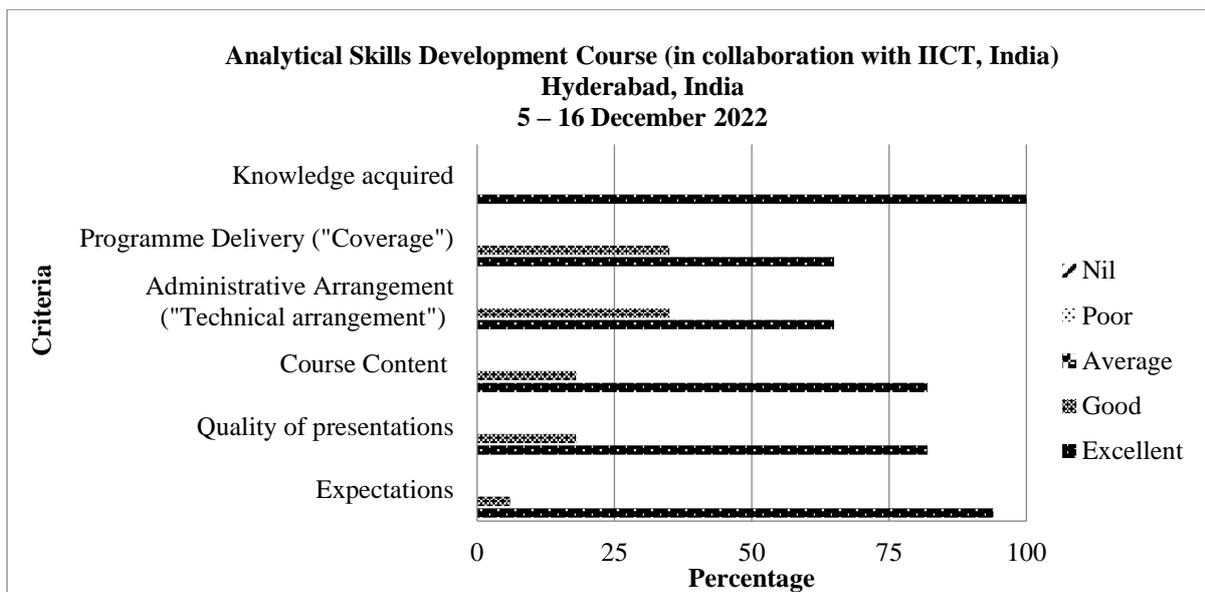
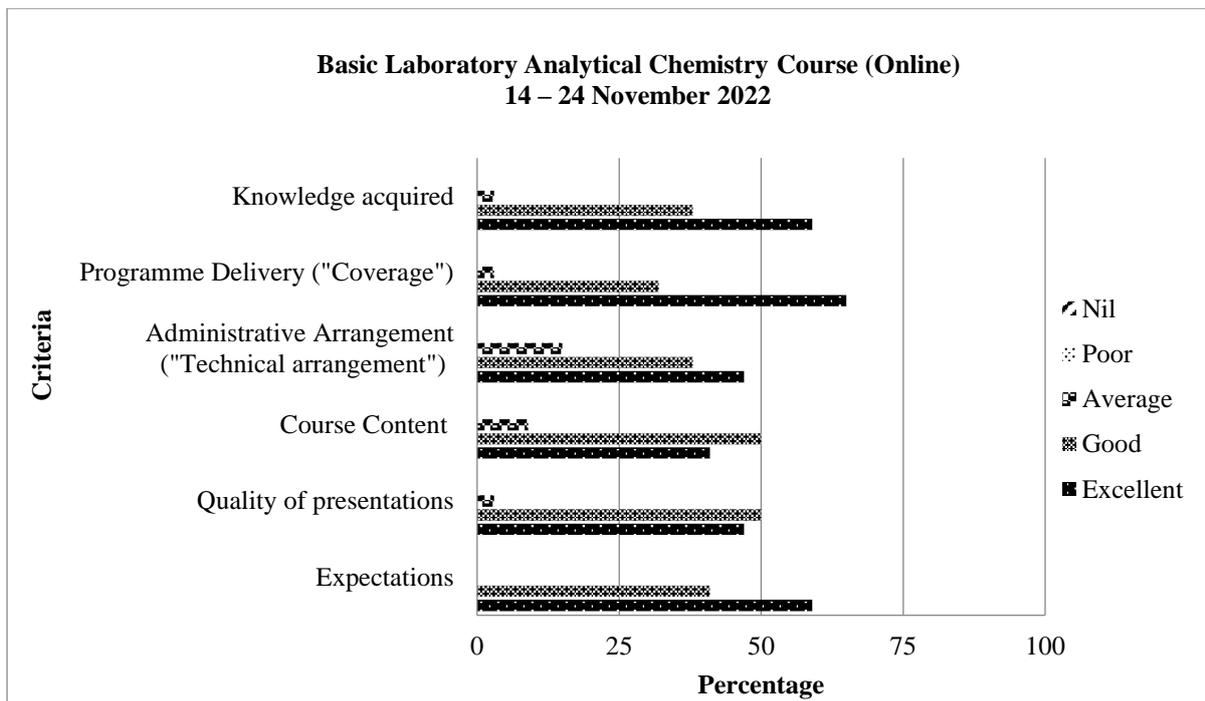


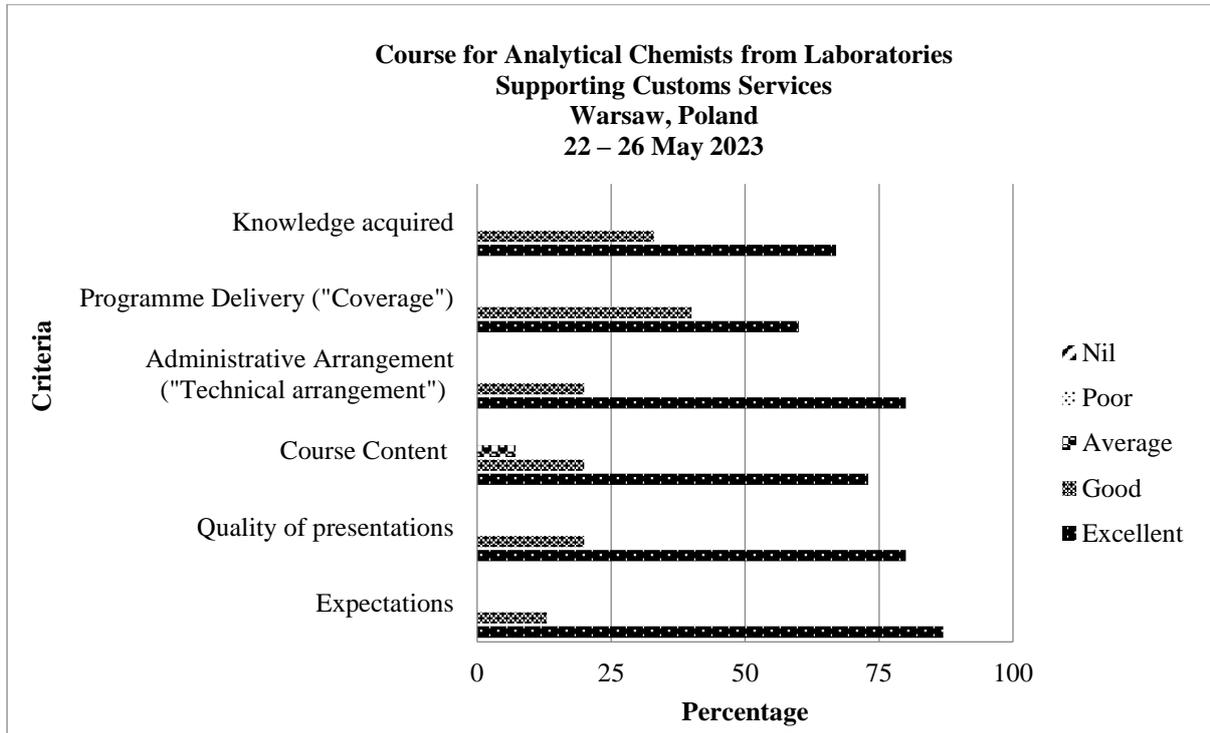
ENHANCING LABORATORY CAPABILITIES

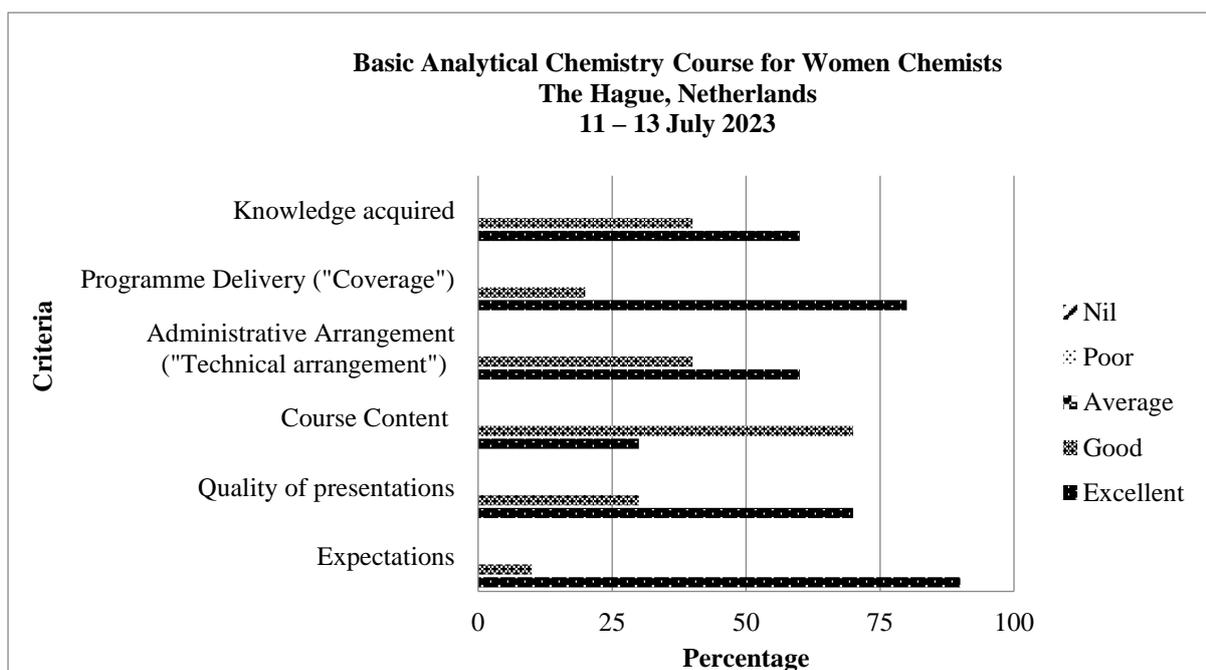
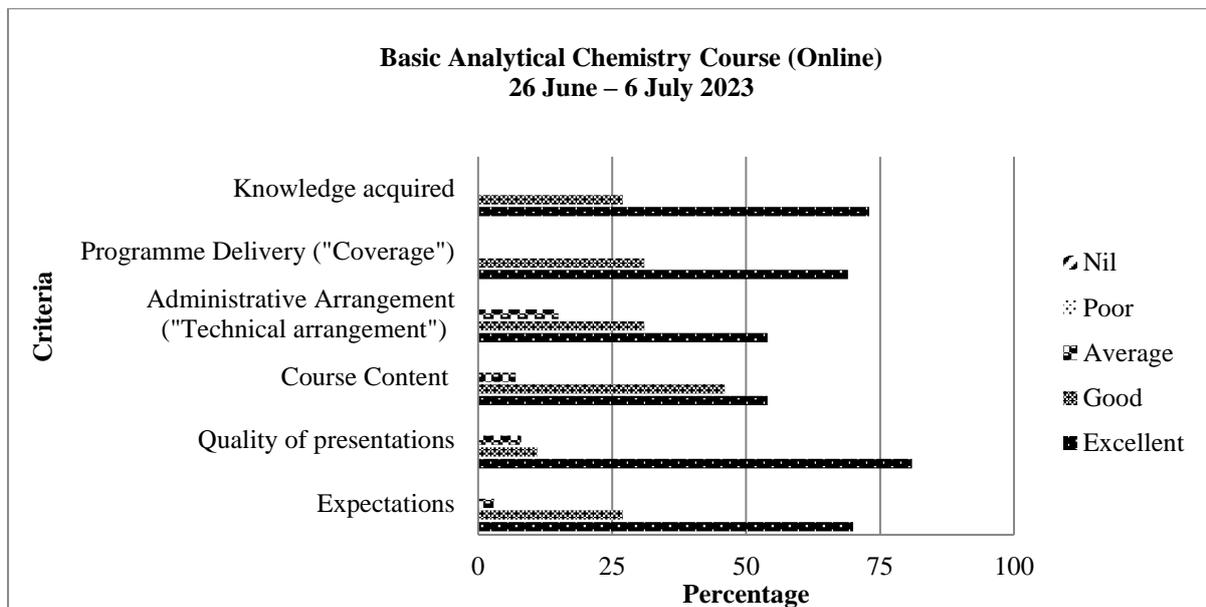


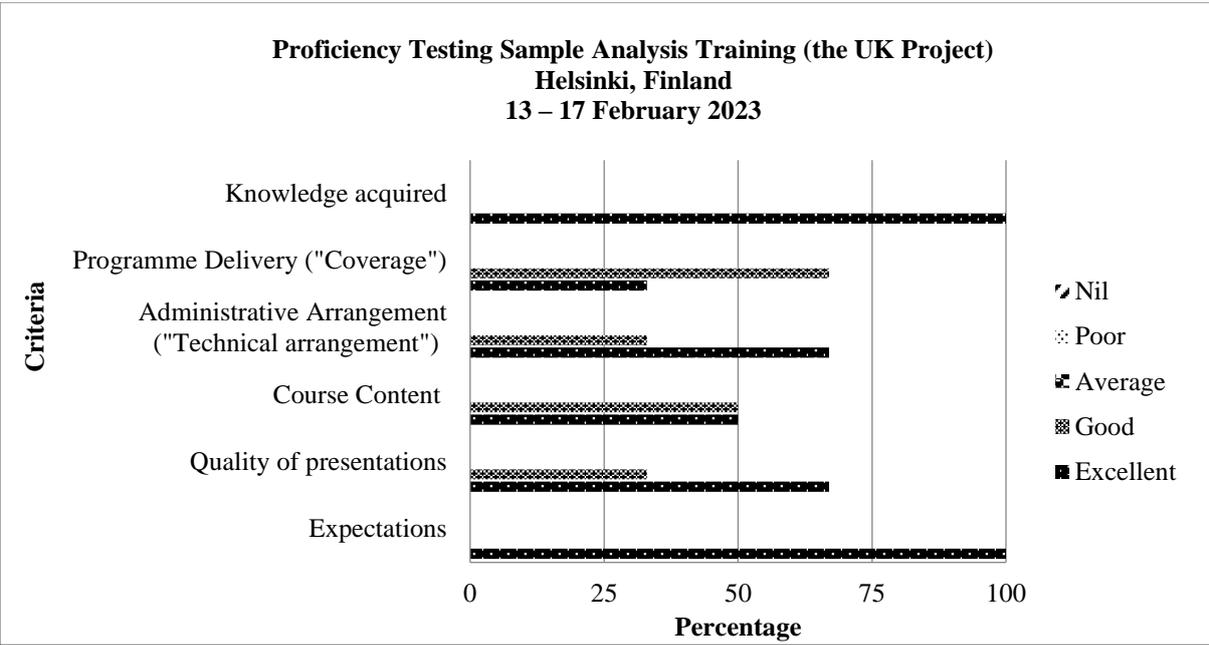




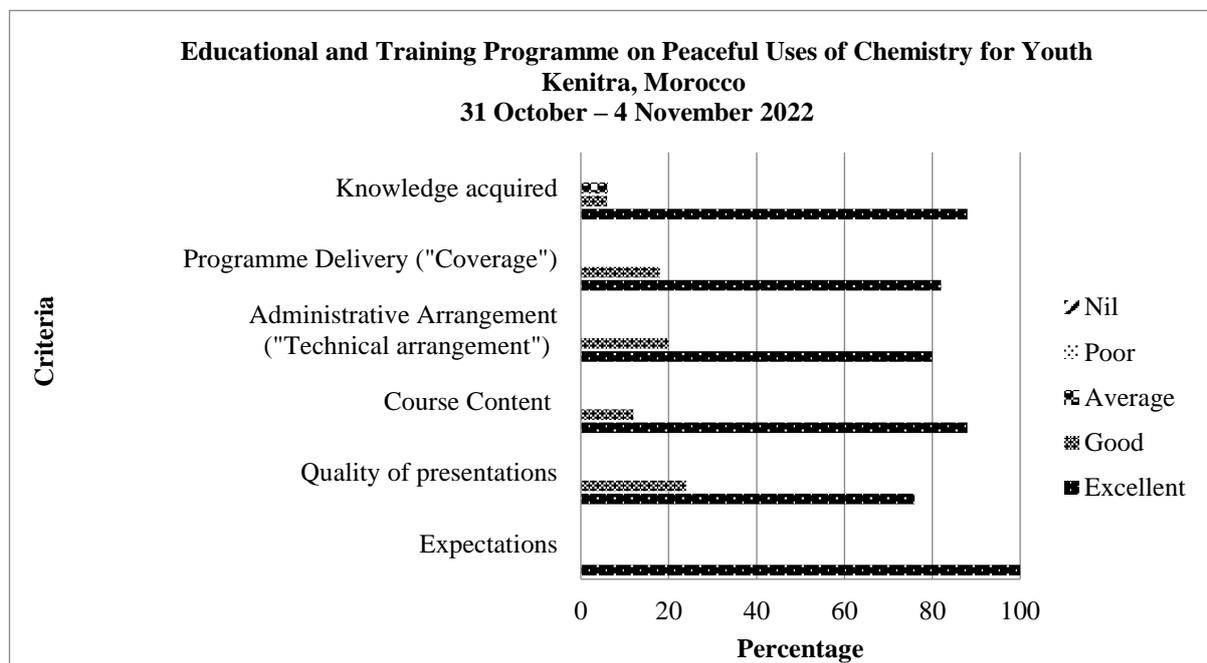
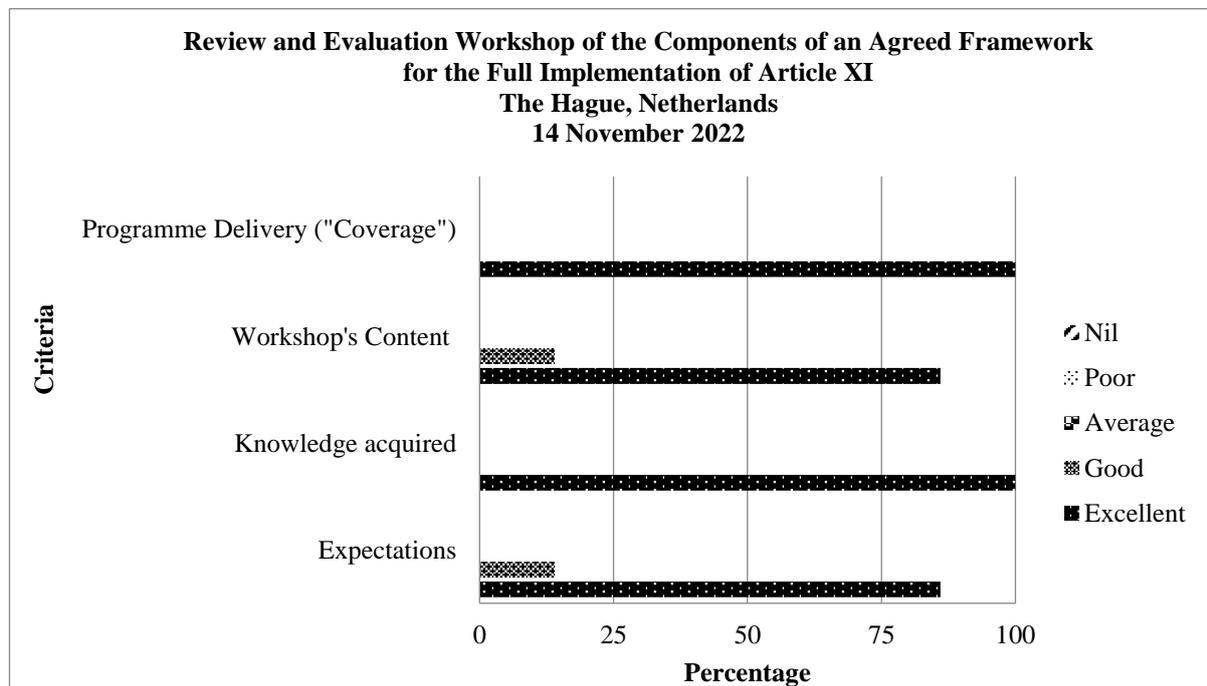


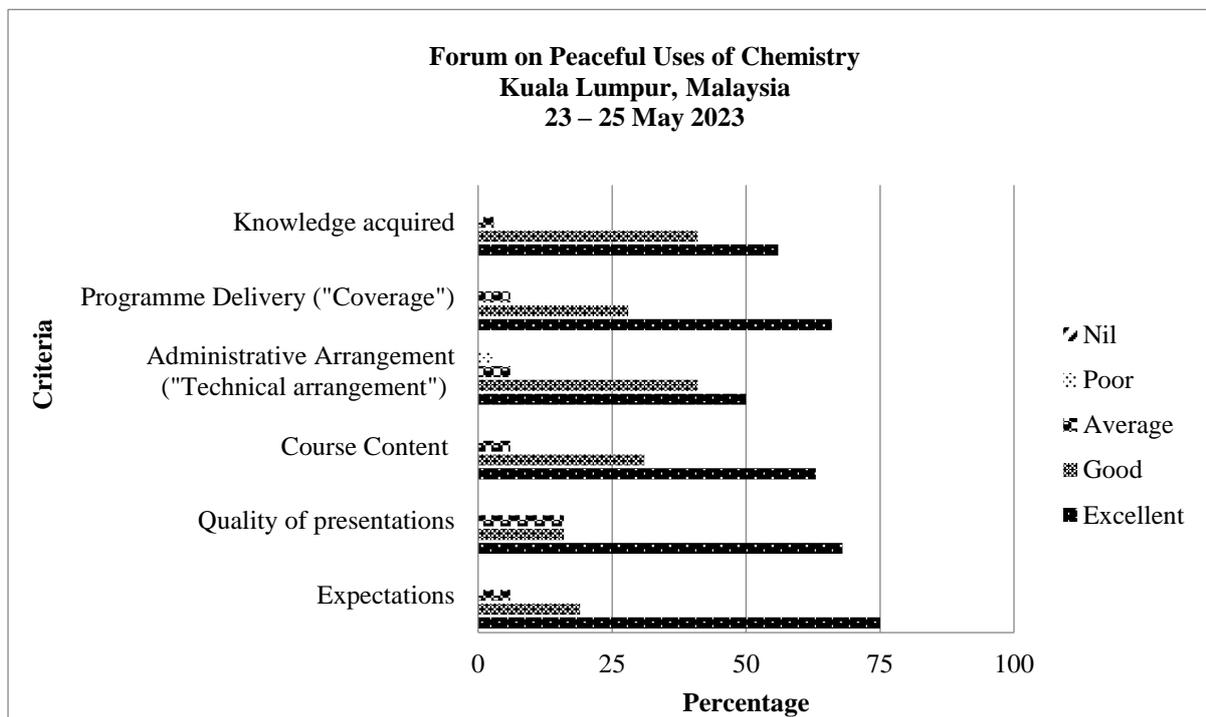
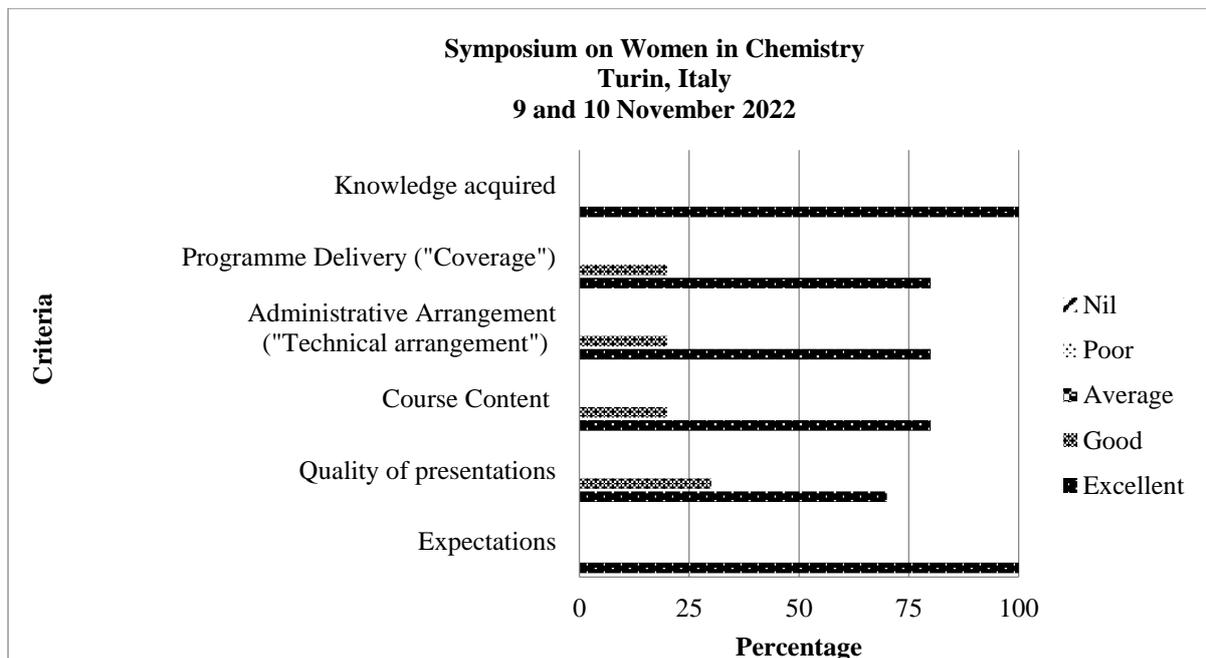


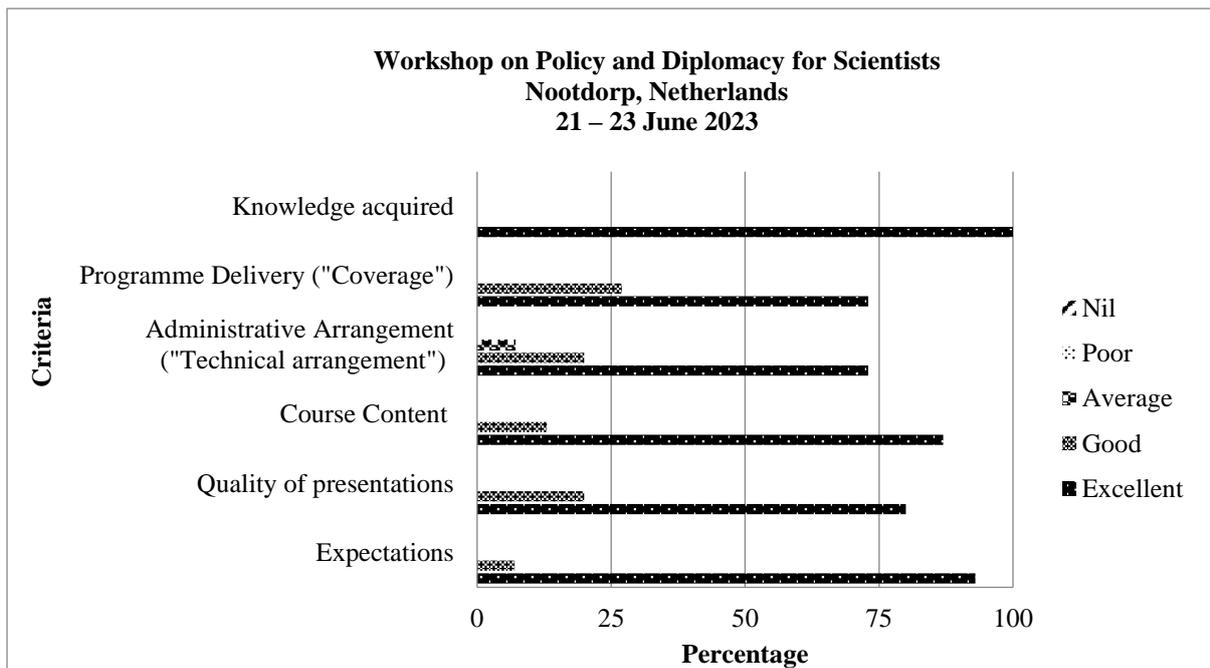
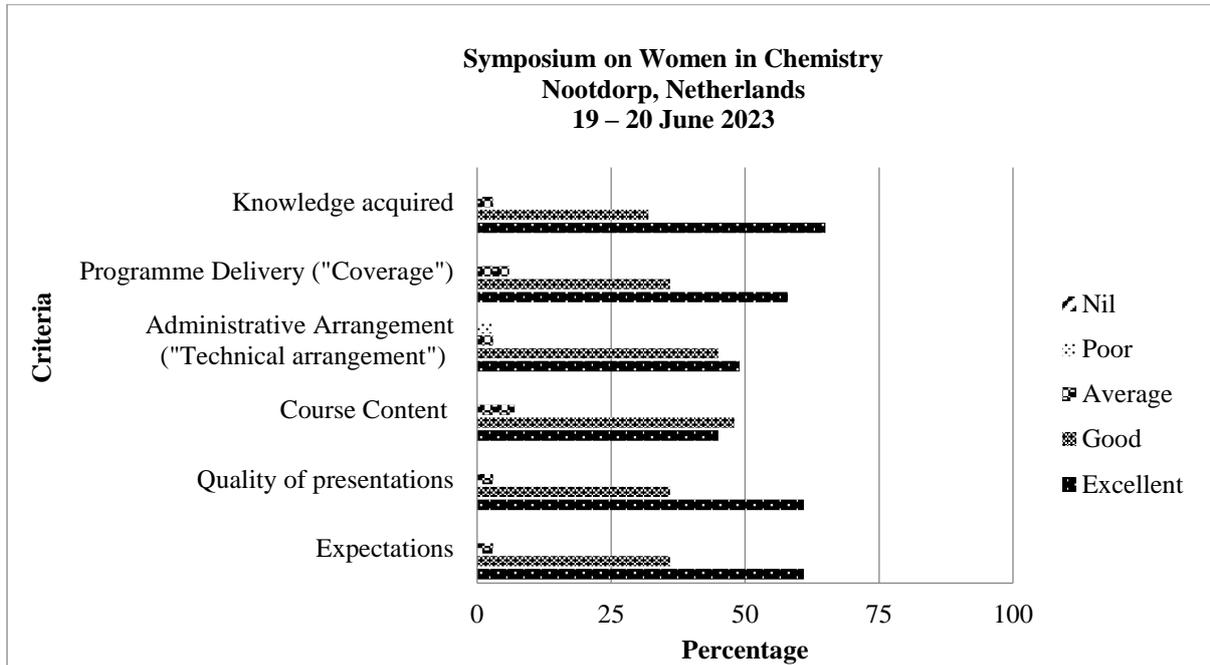




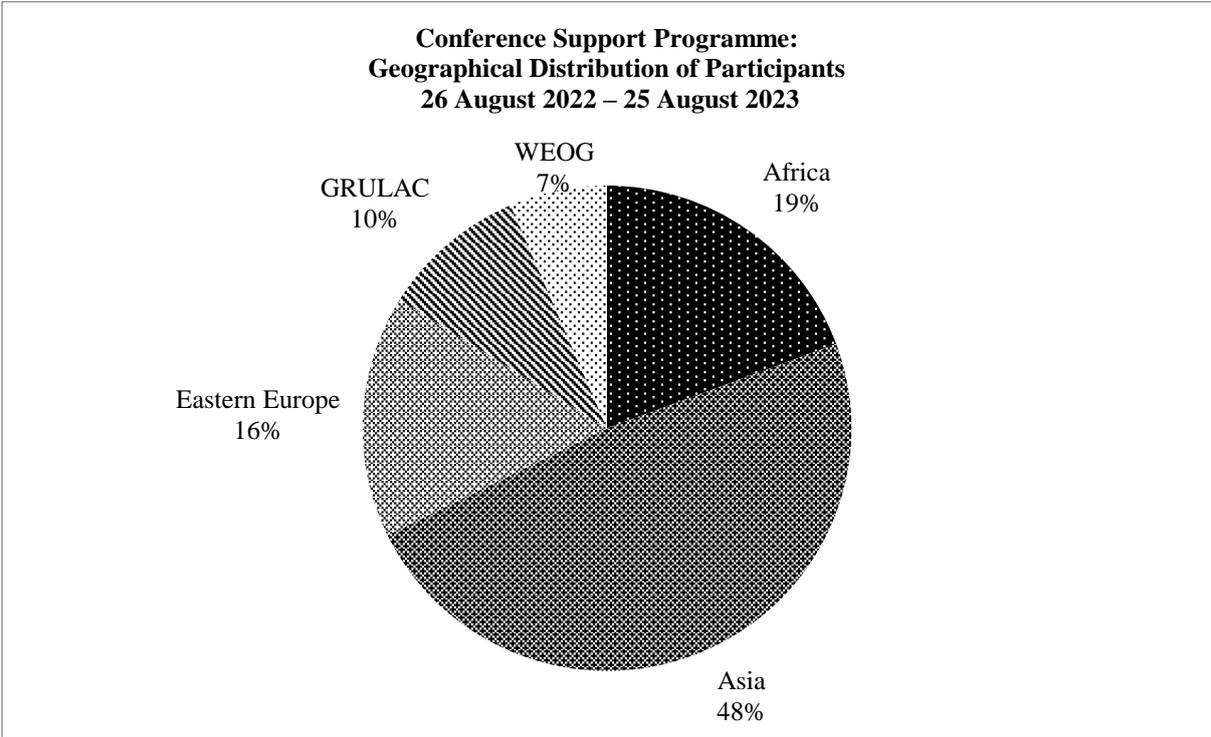
CHEMICAL KNOWLEDGE PROMOTION AND EXCHANGE



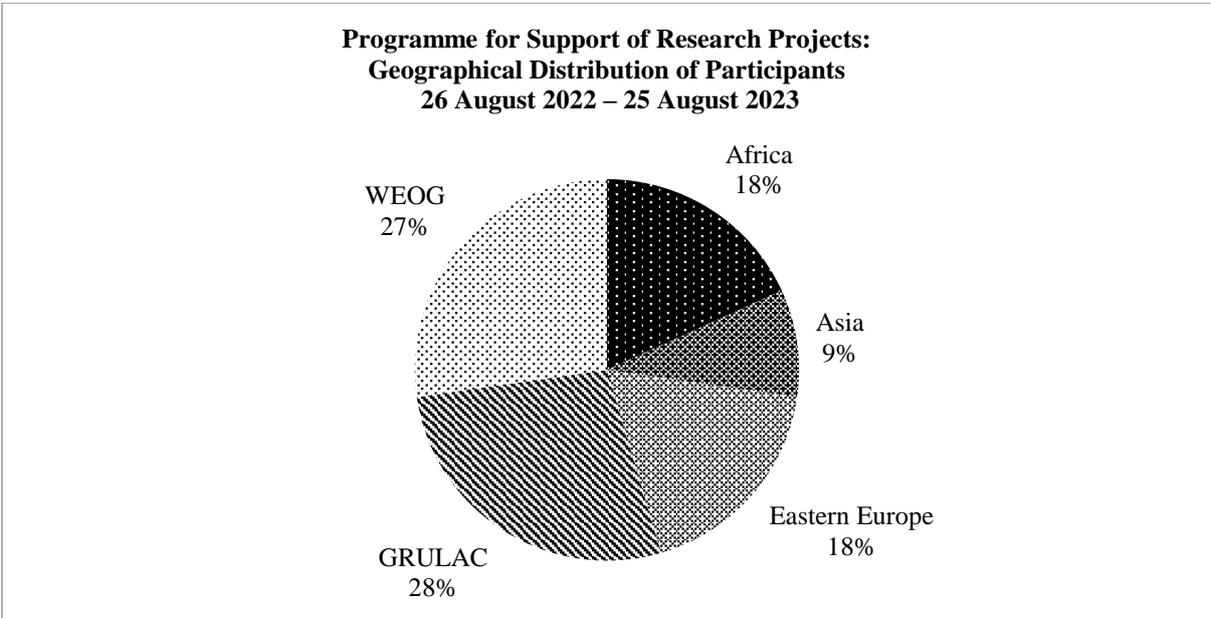




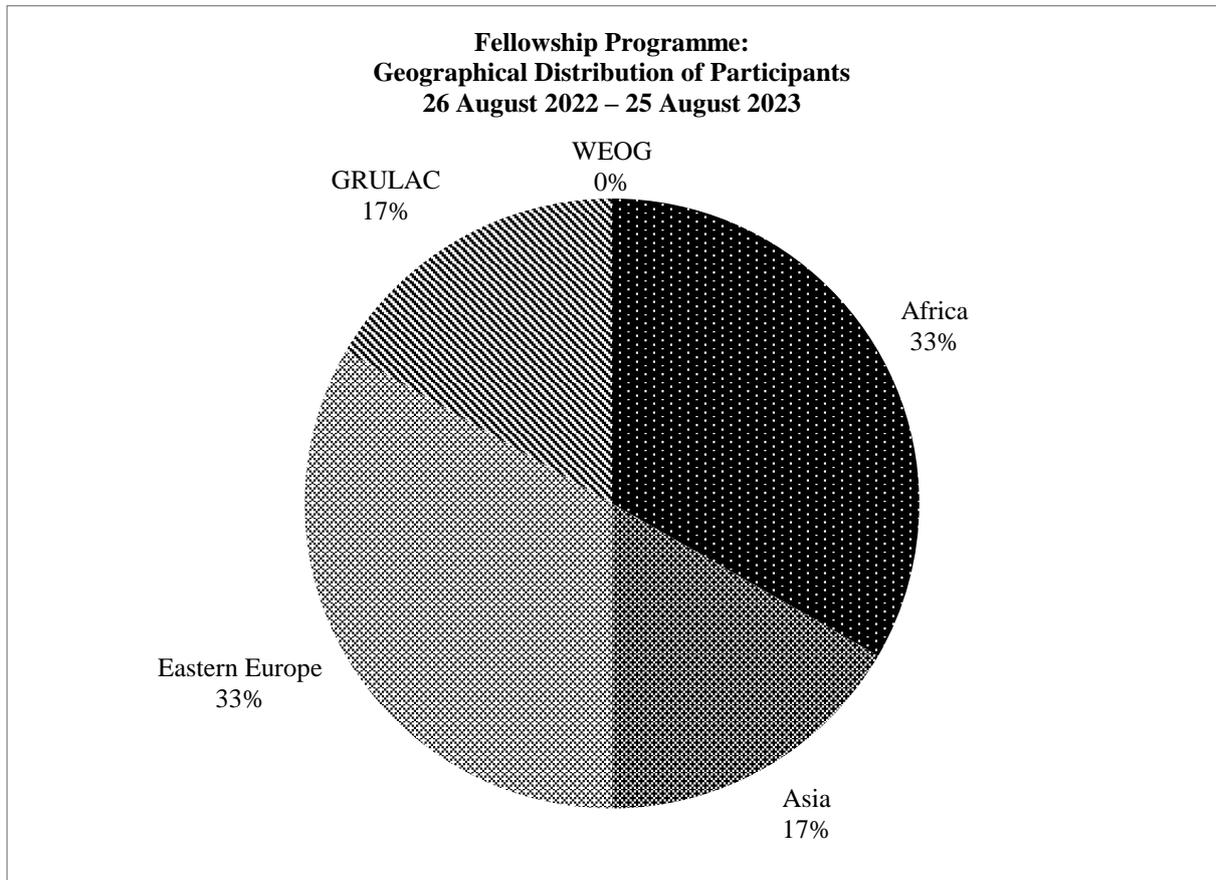
Conference Support Programme



Programme for Support of Research Projects

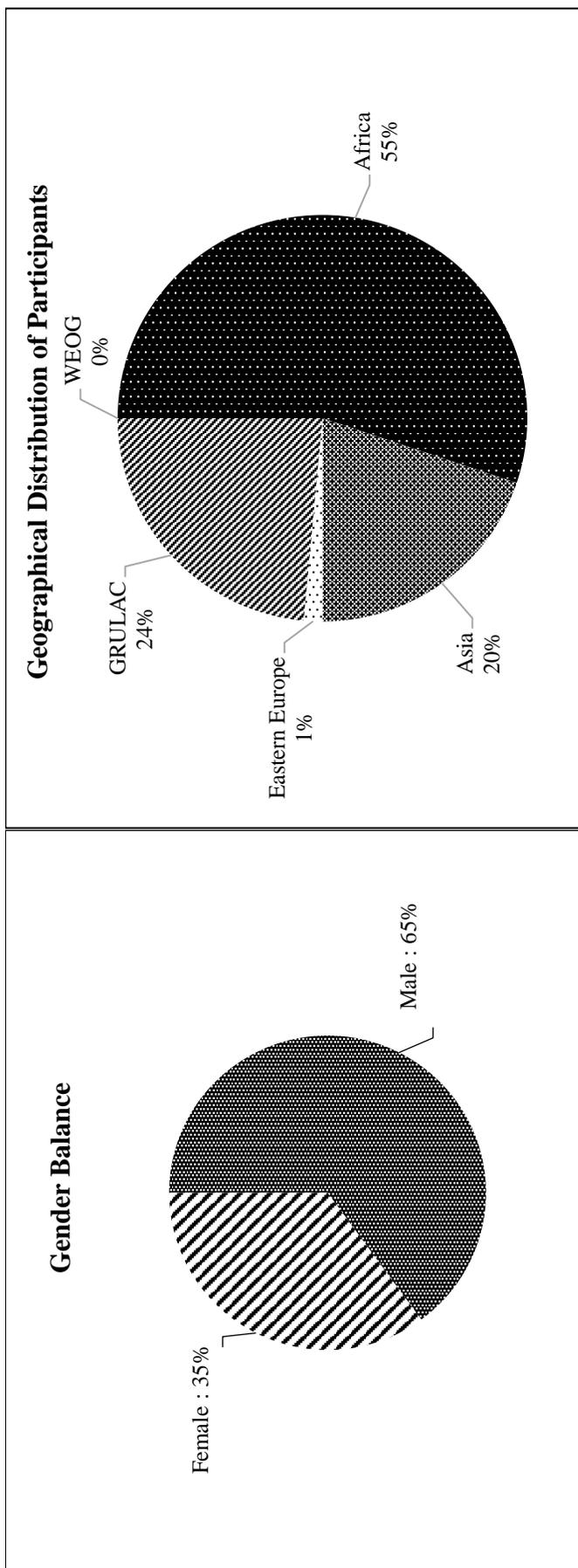


Fellowship Programme

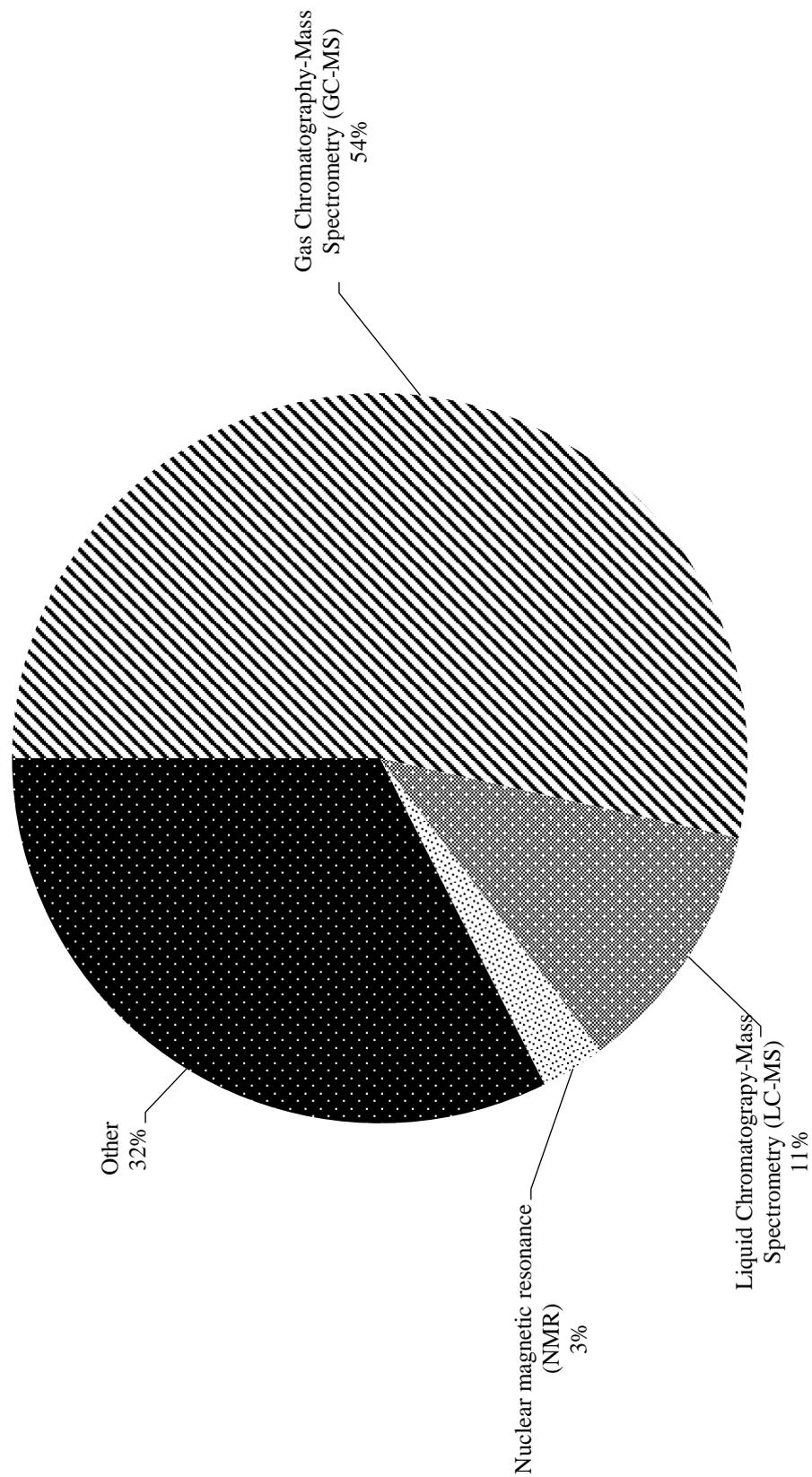


Annex 5

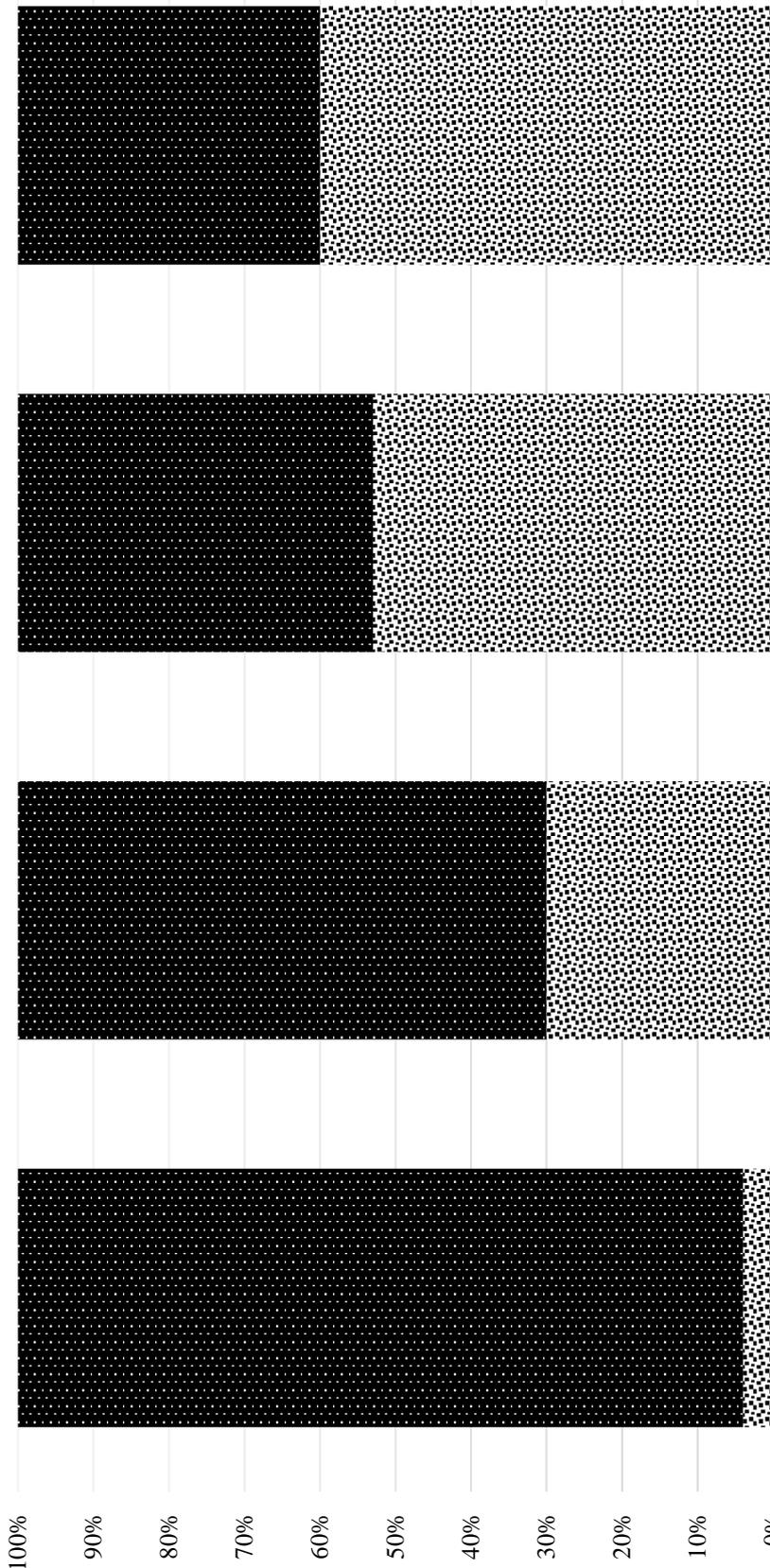
IMPACT ASSESSMENT OF INTERNATIONAL COOPERATION PROGRAMMES
ANALYTICAL SKILLS DEVELOPMENT COURSES
(2019 – 2022)



Analytical Skills Development Courses (2019 – 2022)
Feedback on equipment being used by participants for undertaking chemical analysis



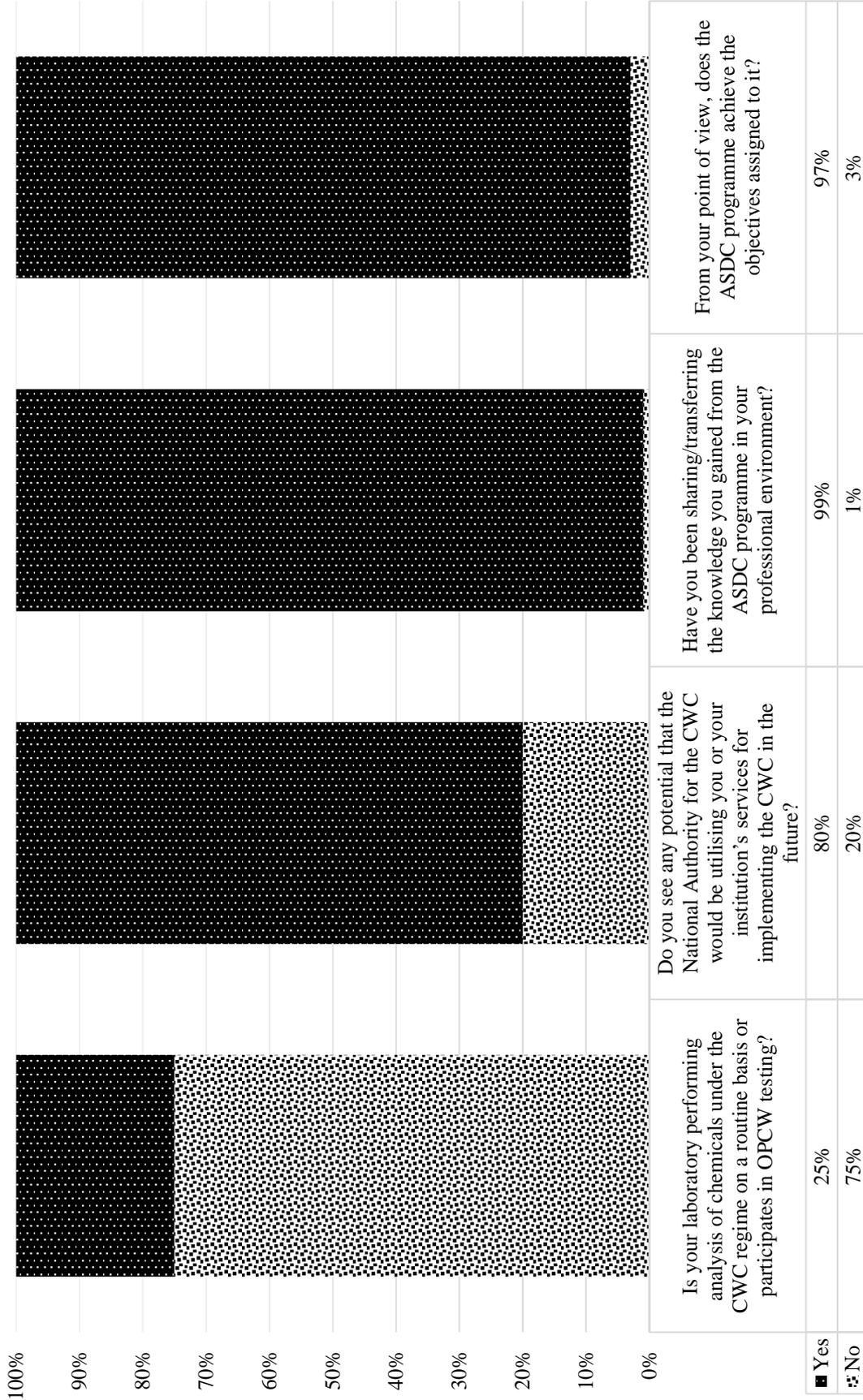
**Analytical Skills Development Course
Participant Impact Assessment (2019 – 2022)**



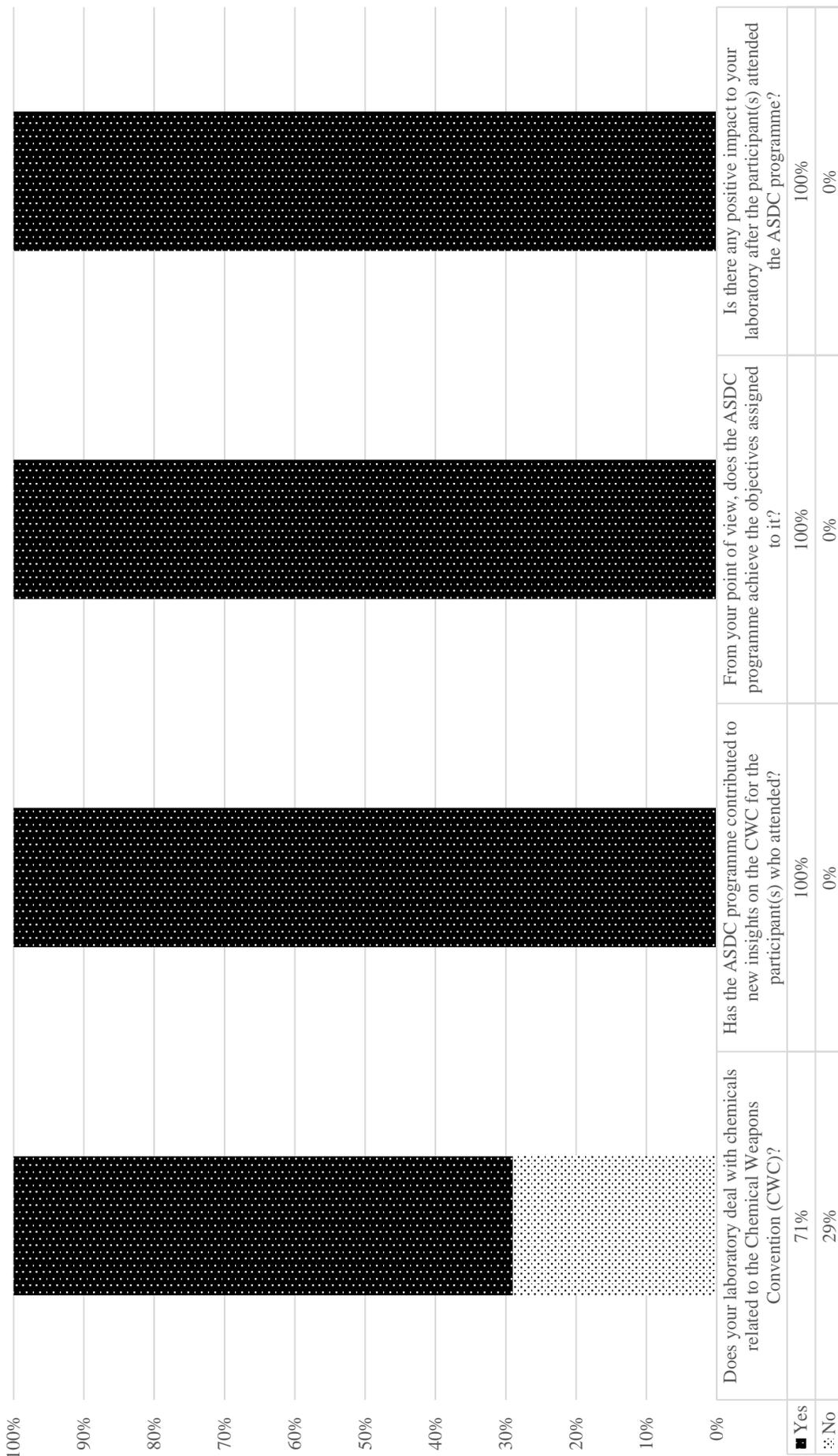
Has the ASDC programme contributed to new insights for you?	96%	4%
Are you in touch with the National Authority of Chemical Weapons Convention in your country (including the various related Government agencies) after participating in the ASDC programme?	70%	30%
Has the National Authority solicited your service/s in relation to the implementation of the Chemical Weapons Convention (CWC)?	47%	53%
Is your laboratory where you serve accredited?	40%	60%

■ Yes
▤ No

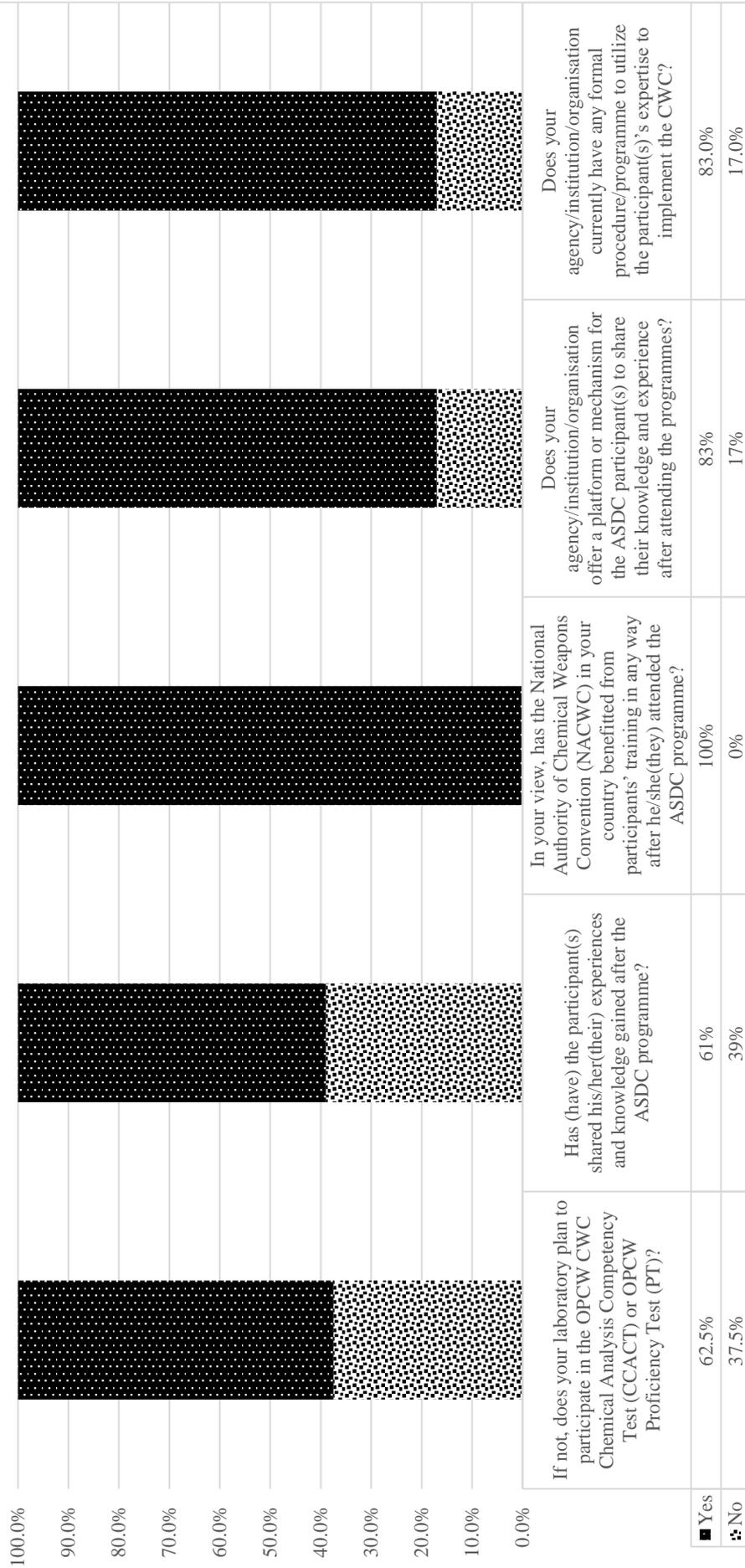
**Analytical Skills Development Course
Participant Impact Assessment (2019 – 2022)**



**Analytical Skills Development Course
 Supervisor Impact Assessment (2019 – 2022)**

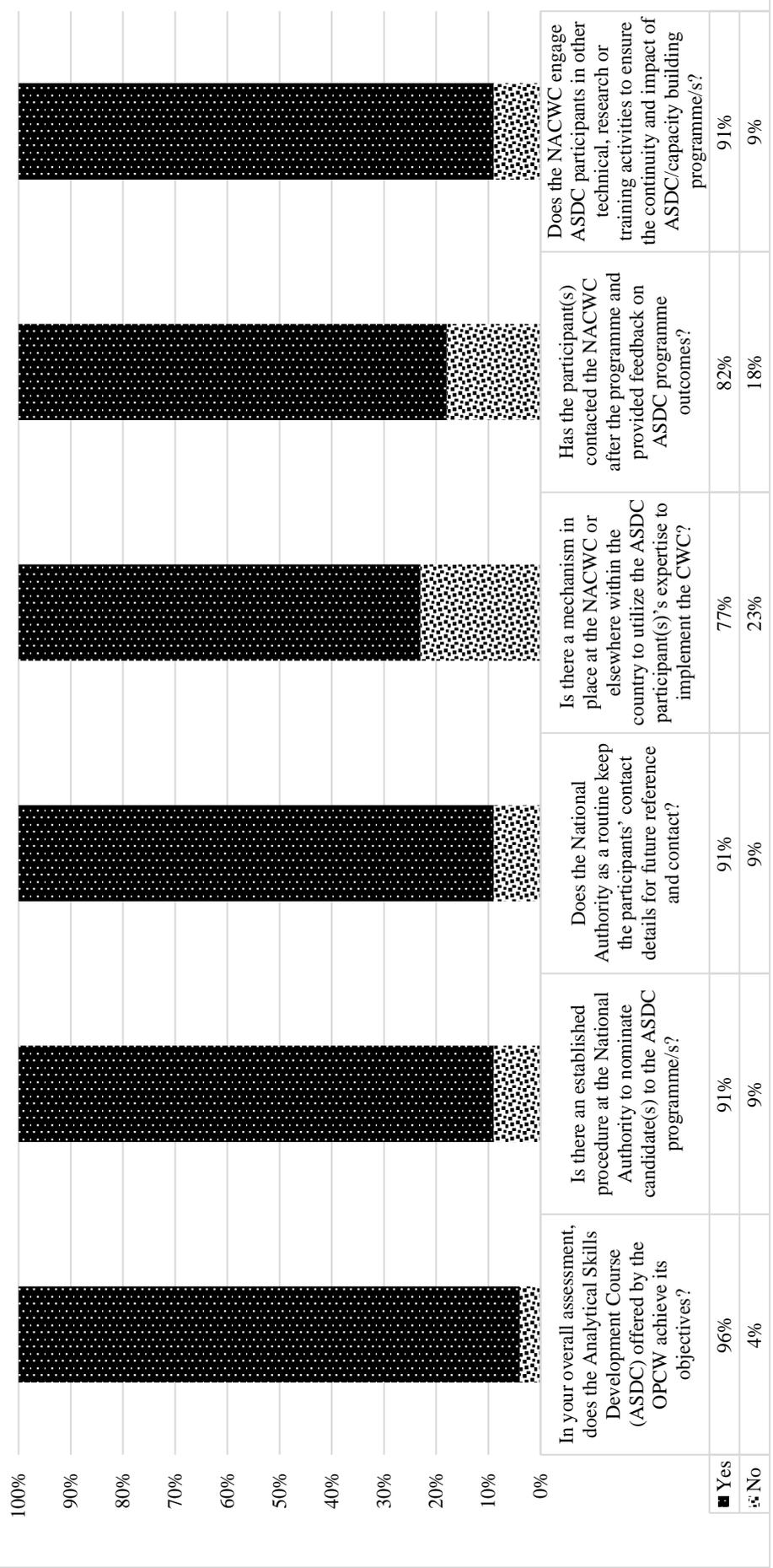


**Analytical Skills Development Course
Supervisor Impact Assessment (2019 – 2022)**



■ Yes
▤ No

**Analytical Skills Development Course
 National Authority Impact Assessment (2019 – 2022)**



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