# Resume - 2025

**Professor Ian Porter**

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## QUALIFICATIONS:

- Professor/AProfessor, La Trobe University, 2009 - Present
- Fellow, Williamson Leadership Victoria 2002
- PhD, La Trobe University 1991
- B.Agr.Sc (1st Class Honours), Melbourne University, 1979
- Graduate in a Master Class in Microbial Plant Molecular Genetics, Monash Uni, 1994
- Graduate Diploma in Frontline Management, 1998
- Graduate from Board Orientation Course, Leadership Victoria 2003

## CAREER RESEARCH APPOINTMENTS - SUMMARY:

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| **2017 - Present** | Research Professor, School of Agriculture, Biomedicine and Environment, La Trobe University |
| **2009 - 2017** | Associate Professor, School of Life Sciences, La Trobe University |
| **2014 - 2017** | Director, Centre for Expertise in Smoke Taint Research on Grapevines, Department of Primary Industries, DEDJTR, Victoria |
| **2006 - 2014** | Principal Research Scientist, Plant Pathology, BioSciences Division, Department of Primary Industries, DPI, Victoria |
| **2006** | Acting General Manager Plant Industries - DPI, Victoria |
| **2003 - Present** | Member of the United Nations TEAP Committee (top scientific committee of the Montreal Protocol, and |
| **2003 - Present** | Convenor/Cochair of the United Nations Methyl Bromide Technical Options Committee for the Montreal Protocol |
| **1997 - 2003** | Chair of UN MBTOC Soils Committee |
| **2002 - 2006** | Statewide Leader of Plant Pathology - Department of Primary Industries (DPI), Victoria |
| **2000 - 2001** | Acting Plant Health Manager - IHD, Knoxfield, DPI, Victoria |
| **1993 - 2000** | Team Leader/Manager - Integrated Pest Management |
| **1980 - 1993** | Plant Pathologist & Senior Plant Pathologist, Mycology Section, Institute of Plant Sciences, Dept of Agriculture, Burnley |
| **1978 - 1979** | Research Assistant, Botany School, Melbourne University studying the biochemistry of seed proteins using SDS gel electrophoresis |

## NATIONAL AND INTERNATIONAL RECOGNITION:

**International:**

- 2017 - UN 30th Anniversary, Montreal Protocol TEAP award
- 2012 - UN Montreal Protocol Award TEAP Champion
- 2007 - Awarded the 'Best of the Best' Stratospheric Ozone Protection Award (United States Environment Protection Agency) - for service over the last decade to repair of the ozone layer (Received both as an individual and Team Award).
- 2007 - United Nations Innovators Award, Montreal Protocol (Team Award to DPI)
- 2007 - United Nations TEAP Champion Award, Montreal Protocol
- 2003 - US EPA Stratospheric Ozone Award

**National:**

- 2012 National Award - One of 7 Australians to be awarded recognition by the Australian Government for science contribution to the ozone layer and international legacy at the 25th Montreal Protocol at Parliament House on September 2012
- Awarded to Victorian Rowing Hall of Fame 2011
- 2011 - Winner of the BioSciences Research Division (BRD), DPI, Louis Pasteur Award for teamwork in BioProtection research, Victorian Dept of Agriculture
- 2009 - Winner of the Norman Borlaug inaugural DPI Award for research which has had the greatest national and international impact within the BioSciences Research Division, Victorian Dept of Agriculture
- 2009, 10 and 11 - Finalist in the 2009, 2010 and 2011 National Vegetable Industries 'Researcher of the Year' Award
- 2006 - Perelberg Award from Scotch College - Most prestigious award from Scotch College. Given to an old boy who has conducted outstanding service to the environment and to a person who reflects the school spirit
- 2004 - United Nations Award of Australia Finalist, 2003 (Team Award as Program Leader)
- 2002 - MacAlpine Award - The highest Government award for Exceptional Science on research into alternatives to Methyl bromide within the Department of Agriculture in Victoria (Team Award as Program Leader)
- 2001 - Inaugural DPI, Knoxfield Science Award.
- 1979 - Postgraduate Research Scholarship.
- 1976 -79 Undergraduate Bursary (TT Dick), Melbourne University.

## SCIENTIFIC OUTCOMES IN METHYL BROMIDE RESEARCH AND DEVELOPMENT:

**Professional Expertise (1980-Present)**

As a cochair of a United Nations Committee of the Montreal Protocol and Statewide and National Leadership positions within government (Department of Agriculture, Victoria) and university recognition has been gained from agricultural industries and policy advisors for providing successful solutions to pests and diseases of agricultural industries. Particularly this includes sustainable solutions which have beneficial outcomes for the environment. This includes an extensive career in the field of integrated pest management for control of soilborne pathogens, soil health and more recently in practices which reduce the detrimental effects of agricultural practices on climate change and the ozone layer. The outcomes from the work have led to huge reductions in economic loss to National horticultural industries in Australia, particularly in vegetables crops, strawberry and floricultural industries (GVP $500 million). The mostly voluntary role for the UN over 26 years has been instrumental in assisting countries globally to find alternatives to methyl bromide, previously one of the largest and most important chemicals in agriculture (over 70,000 tonnes used annually). Methyl bromide is a Class 1 ozone depleting chemical and its 80% reduction has contributed 35% to the present recovery of the ozone layer with major benefits to everyone globally through reduced UV-B radiation (i.e. reduced skin cancer, cataracts, etc.).

Lifetime roles have involved providing technical and policy advice to national and international horticultural industries and governments for over 40 years. As such, regular invitations have been received to give keynote addresses at key national and international conferences and additionally to present findings to key diplomatic delegates at International Conventions held for the Montreal Protocol, the most successful international Protocol ever. Current roles include leading research on reducing the impact of controlled burns and bushfires to reduce smoke taint in wine for the national wine industry and to help improve public land management. This role has conceived and helped implement into commercialization the world's first wine industry smoke detector which can reduce the impact of smoke taint in wine – the number one production loss for the wine industry in Australia and many countries globally. Work connected with the Montreal Procotol has led the publication of over 80 vital decision making reports (Assessment Progress and Other Reports). During my career over 350 articles have been published in books, journals and key technical reports of research outcomes for global agricultural industries all over the world including the 198 parties of the Montreal Protocol and the United Nations.

**Achievements for the National and International Phase Out Strategy for Methyl Bromide:**

* 1994 - Conceived and chaired the First National Workshop in Australia to assess the impact of International Restrictions under the Montreal Protocol on the Use of Methyl Bromide (MB) for preplant soil fumigation.
* 1995 - Founding member of the Australian National Methyl Bromide Consultative Committee which set up the National Strategy for Reduction of MB for Horticultural Uses and a National Research Program.
* 1998 - Instrumental in the drafting and set up of the Australian 'National Methyl Bromide Response Strategy for Horticultural Uses including development and set up of the critical National Research Program required to enable industries worth over $500 Million in Australia to develop alternatives to the ozone depleting fumigant, methyl bromide.
* 1996 - 2005 Conceived and helped instigate a national levy on importers of methyl bromide to fund over $4 Million in R and D over 10 years which led to successful alternatives to methyl bromide being available in Australia.
* 1996 - 2003 National Research Coordinator for the Australian MB Research Committee from assessing and aligning priority programs for research on methyl bromide.
* 2001 - Instigated and led the first comprehensive review of uses of methyl bromide for 'quarantine and preshipment' QPS in Australia (affecting over $20 billion of exported and imported products). This involved painstakingly review of manual databases from all Australian Fumigators and users to identify sectors, pest and usage.
* 1992 - 2012 Principal Research Scientist who led a dedicated team annually conducting the key national research program in Australian Horticultural Industries to identify alternatives to methyl bromide (evaluated over 110 different chemical and non-chemical treatments and combinations).
* 1997 - 2005 Masterminded the development and acted as Senior Editor of the 'National MB Update' - a national newsletter to assist industries and every methyl bromide user in Australia with rapid uptake of alternatives to methyl bromide from.
* 2006 Instigated and led a worldwide meta-analysis of 168 studies for the UN to validate the performance of over 100 potential alternatives to replace methyl bromide for Parties to the Montreal Protocol. This publication helped change the course of the Montreal Protocol for phase out of methyl bromide and assisted technical validation of alternatives to assist with complete phase out for controlled uses in 2025. It also provided the scientific rigour that

alternatives existed and provided the largest user countries, i.e. the United States with evidence to accept that alternatives were performing with similar efficacy to MB.

**Additional Professional Expertise:**

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| 2025 | Invited speaker as Fresh Science Session at the Australian Wine Industry Technical Conference, Adelaide 23 July 2025 |
| 2023 | Invited keynote presentation on 'International Situation with Methyl Bromide Fumigation Globally' Fumigation for Today and Tomorrow, Adelaide, August, 2023. |
| 2022 | Invited speaker at the Australian BerryQuest Conference entitled 'Has the Berry Industry Met its Obligation to Help Save the Planet?' Australian BerryQuest Conference, Gold Coast 26 July, 2022 |
| 2019 | Expert Consultant Witness for the Victorian EPA at VCAT to defend against emissions of methyl bromide at the Melbourne markets breaching Victorian ozone legislation. |
| 2012-2021 | Key speaker on ODS chemicals at sessions organized by UNEP/ UNIDO at side meetings of the Montreal Protocol 2012, 2014, 2015, 2018, 2021. |
| 2015 | Invited keynote speaker at the Joint Session of the International Convention and Exhibition of Soilless Culture and National Conference of Protected Cropping Australia, 5-8 July 2015 |
| 2012&2013 | Invited keynote speaker (one of two) at the Asian Seed Conference in Bali, November 2012 and 2013 (strategically planning for industry potential for biofumigant crops) |
| 2011 | Invited keynote speaker for the International Biopesticides and Biofumigation Conference in Saskatoon, Saskatchewan, Canada 2011. |
| 2010 | Invited Presentation and Member of a La Trobe University delegation of Professors to attend the Beijing Forum in China and present on international issues affecting environmental management international (Keynote address one of a few selected for presentation in 2011 book). |
| 2008 -2009 | Chairman of Primary Industries Standing Committee Working Groups (Soil Health, Brassicas) to assist national rationalization of R, D and E. |
| 2005- 2010 | Guest lecturer in plant pathology in agricultural science courses at Melbourne University |
| 2008 | Session Chairman and invited keynote speaker to the 8th International Congress of Plant Pathology, Torino, Italy and International Biofumigation Workshop, Canberra, Australia |
| 2006-2008 | Developed strategic plans for the National Vegetable Industry to coordinate a $3.6 million/yr National IPM Pathology program and $1.2 million/yr National Soil Health program. |
| 2001-2005 | Member of the National Onion Industry Advisory Committee |
| 2001 | Chairman of 2nd Australasian Soilborne Diseases Conference, Lorne, March 2001<br>Secretary, Australasian Plant Pathology Society |
| 2001<br>1998 | Expert consultant to review UNDP (United Nations Development Programs) research programs in China. |
| 1998 | Lead Consultant for the United Nations Environment Program to develop a strategic policy plan for phase out of methyl bromide in China which assisted China sign the Copenhagen Amendment and avoid use of potentially 100,000 t of methyl bromide.<br>Panel member of Agriculture Victoria's Cadetship Program selecting new prospective scientists for DPI, |

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| 1996-1998 | In conjunction with the Department of Environment and Heritage developed a $1.8 millon/yr National Strategy for Phase out of Methyl Bromide for Horticultural Uses in Australia |
| 1995 | Victorian Councillor for the Australian Sunflower Association |
| | Member of the Professional Scientists Group |
| 1992-1995 | Sub-editor of the Crop Protection Bulletin, Department of Agriculture |
| 1991-1993 | Member of the Departmental Onion Export Development Team |
| 1989-1993 | Member of the Garden Week Advisory Panel |
| 1987-1991 | Australasian Plant Pathology Society Regional Councillor for Victoria |
| 1986-1991 | |
| 1983-1987 | Acted as a scientific referee for numerous national and international journals A.J.E.A., A.J.A.R., Australasian Plant Pathology and Soil Biology and Biochemistry (International), Plant and Soil (International), European Journal of Plant Pathology. |
| Other: | Regularly talk to International governments during bilateral meetings at the Montreal Protocol to assist with regulation and control of ozone depleting chemicals. |
| | Have extensive experience in negotiation of research and policy issues with industry, government national (HAL, RIRDC, GWRDC, GRDC, Reserve Bank) and international (United Nations Environment Program, UNDP) research agencies regarding strategic priorities for research and implementation of sustainable practices. |
| | Member of three International Working Groups on Soilborne Plant Pathogens of Horticultural Crops: (i) Onion white rot, (ii) Sclerotinia diseases; and (iii) Clubroot of crucifers |
| | Presented over 100 keynote addresses and presentations at National and International Conferences in Plant Pathology, Climate Impacts and Soil Health. |
| | Published over 350 refereed and non-refereed publications (Appendix 1) including the initiation and development of 5 grower newsletters in the Australian horticultural industries |

**Key Research Outcomes:**

As Cochair of MBTOC and member of TEAP, the top technical committee of the Montreal Protocol have provided technical solutions for the phase out of the key anthropogenic chemicals breaking down the ozone layer. The work influences International Decisions set under the Montreal Protocol to regulate ozone depleting chemicals. Personally, I have taken part in publication of over 80 progress, task force and assessment reports assisting parties determine action on ozone depleting substances. The work has directly resulted in assisting parties achieve an 80% reduction in methyl bromide use globally which in turn has contributed 35% of the present recovery of the ozone layer.

Developed strategic plans for Horticulture Australia (National RIRC) for the National Vegetable Industry to coordinate a $3.6 million/yr National IPM Pathology program and $1.2 million/yr National Soil Health program.

As Director, successfully fulfilled the Victorian Government's (2011-2015) $4 Million initiative at 'The Centre for Expertise in Smoke Taint Research' which has for the first time international set new benchmarks for understanding and minimizing the impact of smoke taint from controlled burns and bushfires on the national wine industry.

Initiated, implemented and managed research programs in national horticultural industries (Directly responsible for obtaining funds of > $800,000/yr) on: (i) Development of alternatives to soil disinfestation with methyl bromide (MB) in Australian horticultural industries, particularly flower bulbs, strawberries and vegetables, which had major implications on the international phase out of MB,

and (ii) the importance of methyl bromide for biosecurity, quarantine and pre-shipment uses in Australia.

Initiated and managed a National Program to provide integrated pest management (IPM) methods to control the most destructive soilborne pathogen of Brassica crops globally, *Plasmodiophora brassicae*. The IPM program included a combination of nutrient and chemical control methods and molecular and epidemiological studies of clubroot. The disease in Australia caused over $25 million/yr loss and is one of the most devastating diseases globally. The project involved coordination of researchers in all States of Australia and has provided industry with the first effective molecular diagnostic tool, four new nutrient treatments and chemical controls for this disease.

Managed, as the Lead Consultant, a program for the UN Environment Program to identify technical and policy options for replacement of methyl bromide in China, which has had a huge impact globally through preventing use (100,000 t) of MB, equivalent to 1.5 times the total global use in 1998.

Initiated and managed project on integrated control of Sclerotium rot in flower bulbs. Saved industry from devastation (prevented >$5 million/yr loss). This project was used by the US EPA as an international case study to demonstrate how IPM programs can be used to replace methyl bromide.

Conducted and prepared a report on the 'Risk assessment of pest and disease spread by mulched and recycled green wastes'. The information from this project assisted Victoria satisfy legislation to reduce green wastes going to landfill by 1998, and to achieve a 50% reduction of total wastes by the year 2000.

Developed the first effective IPM strategy in Australia for control of onion white rot, the most serious soilborne disease of onions worldwide. Research led to understanding of the pathogen ecology and disease expression as affected by the environment. It also led to wide scale adoption of new technologies by the Australian Onion Industry and national registration of new fungicide strategies by Crop Care.

Developed a novel method of using solar energy, soil solarisation, to control a wide range of soilborne diseases of horticultural crops, including Sclerotinia on lettuce and clubroot of crucifers as model pathogens. The work required a thorough understanding of pathogen ecology and soil biodiversity and led to dramatic reductions in disease in vegetable and flower crops with yield increases up to 1,000%. This research led to solarisation being recommended by the Victorian Department of Agriculture in 1986 as a broad scale soil disinfestation treatment of a large range of horticultural crops.

# Selected Bibliography (ODS and Disease Control Relevance)

## REFEREED: BOOKS AND BOOK CHAPTERS


Besri, M, Pizano, M. and Porter, I.J. (2012). Soil solarisation and the methyl bromide phase out. In '**Soil solarisation: Theory and Practice'**. Gamliel A and Katan, J. (Eds). Springer Publishing, New York 280pp.

Porter, I.J. (1992). Soil solarization and biocontrol. In `**Recent Developments in Biocontrol of Plant Diseases**' Eds. K. Mukerji and K. Karg. Aditya Pub., New Dehli, India, pp. 164-186.

Porter. I.J. and Mattner, S.W. (2006). Case Study 10. Australia – Phase-out of methyl bromide in the strawberry fruit industry. In MBTOC (Eds). United Nations Environment Programme 2006 Report of the Methyl Bromide Technical Options Committee. UNEP, Nairobi, Kenya. pp 374-378.

Porter, I., Banks, J., Mattner, S. and Fraser, P. (2010). Global phaseout of methyl bromide under the Montreal Protocol: Implications for bioprotection, biosecurity and the ozone layer. In '**Recent Developments in Management of Plant Diseases'.** Gisi, U., Chet, I. and Gullino L. (Eds) Springer Publishing, New York . pp. 293-309.

Porter, I. J. and Andersen, Stephen, S.O. (2010). Chinese Political, Social and Economic Leadership in Protection of the Ozone Layer, Climate and Biosecurity: A Montreal Protocol Case Study. In '**The Harmony of Civilizations and Prosperity for All** – Commitments and Responsibilities for a Better World. Eds Cheng Yuzhui and Gu Xue, 2010, (Selected Papers of the Beijing Forum 2010), Peking University Press


## REFEREED: SCIENTIFIC JOURNALS

### 1. Methyl bromide, nitrous oxide and ODS Related (selected)


Chellemi, D. and Porter, I. (2001). The role of plant pathology in understanding soil health and its implication for production agriculture. **Australasian Plant Pathology 30**: 103-109.

Choi, H., Park, M.-K., Fraser, P. J., Park, H., Geum, S., Mühle, J., Kim, J., Porter, I., Salameh, P. K., Harth, C. M., Dunse, B. L., Krummel, P. B., Weiss, R. F., O'Doherty, S., Young, D., and Park, S.: Top-down and bottom-up estimates of anthropogenic methyl bromide emissions from eastern China, **Atmos. Chem.** Phys. Discuss. [preprint], https://doi.org/10.5194/acp-2021-699, in review, 2021.

Riches, D., Porter, I., Dingle, G., Gendall, A., Grover, S. (2020). Soil Greenhouse Gas Emissions from Australian Sporting Fields. **Science of the Total Environment, 707,** https://doi.org/10.1016/j.scitotenv.2019.134420

Mattner, S.W., Gounder, R.K., Mann, R.C., Porter, I.J., Matthiessen, J.N., Ren, Y.L. and Sawar, M. (2006). Ethane dinitrile (C2N2) – A novel soil fumigant for strawberry production. **Acta Hortic. 708:**197-204.

Mattner, S.W., Porter, I.J., Gounder, R.K., Mann, R.C., Guijarro, B. and Williams, E.N. 2010. Maintaining biosecurity and market access in the Australian strawberry industry following methyl bromide phase-out. **Acta Hortic**. 883: 99-106.

Mattner, S.W., Porter, I.J., Falco J. and Grullemans, W. (2014). Recaptured Quarantine Methyl Bromide: An Alternative to Methyl Bromide for Soil Disinfestation. **Acta Hortic.**: 1044, 381-388

Mattner, S.W., M. Milinkovic, P.R. Merriman and Porter, I.J. (2014). Critical Challenges for the Phase-out of Methyl Bromide in the Australian Strawberry Industry**. Acta Hortic.:** 1044, 367-373

Mattner, S.W., McFarlane, D.J., Porter, I.J., (2025). The Role of Methyl Bromide Phase-Out on Charcoal Rot of Strawberry in Australia. **PhytoFrontiers** https//doi:10.1094/PHYTOFR-03-25-0027-R

Porter, I.J. (1987). Soil solarization for disease and weed control. **Plant Protection Quarterly 2**: 97-98.

Porter, I.J. (1991). Factors which influence the effectiveness of solarization for control of soilborne fungal pathogens in south-eastern Australia. PhD Thesis, Latrobe University, Melbourne, Australia, 268 pp.

Porter, I.J. (2016). What is Driving Industry Tipping Points from Open Field to Hydroponics. **Acta Hortic.** 1176:129-136

Porter, I.J., Banks, J., Mattner, S.W., and P. Fraser (2010). Implications of the phase out of methyl bromide on crop protection, biosecurity and the ozone layer. **Acta Hortic.** 883: 59-66

Porter I and Brett R (1997) IPM strategies for control of sclerotium rot in the Australian flower industry. **Case Study**: United States, EPA. April, 1997

Porter IJ, Brett RW, Wiseman BM (1999) Alternatives to methyl bromide: chemical fumigants or integrated pest management systems? **Aust. Plant Path. 28**: 65–71

Porter IJ., Brett, RW., Mattner SW. and Donohoe, H. E. (2006). Implications of the increased growth response after fumigation on future crop protection and crop production strategies. **Acta Hortic. 698**:229 - 237.

Porter, I., Fraser, P. (2020). Progress and remaining challenges with the phase out of methyl bromide under the Montreal Protocol. **Proc. IXth International Soil and Substrate Disinfestation Conference**, 9, -13th September, 2018 Heraklion, Crete

Porter, I.J., Mattner, S.W., Banks, J. and P., Fraser. (2006). Impact of global methyl bromide phase-out on the sustainability of strawberry industries. **Acta Hortic. 708**:179 - 186.

Porter, I.J., Mattner, S.W., Mann, R.C. and Gounder, R.K. (2006). Strawberry nurseries: Summaries of alternatives and trials in different geographic regions. **Acta Hortic. 708**:187 - 192.

Porter, I., Riches, D., Scheer, C. (2017) Benchmarking and mitigation of nitrous oxide emissions from manures and fertilisers used in temperate vegetable crops in Australia. **Soil Research**, 55: 534-546

Riches, D., Porter, I., Dingle, G., Gendall, A., Grover, S. (2020). Soil Greenhouse Gas Emissions from Australian Sporting Fields. **Science of the Total Environment**:707(5949):134420

Riches D., Mattner S., Davies R. and Porter I. (2016). Mitigation of nitrous oxide emissions with nitrification inhibitors in temperate vegetable cropping in southern Australia. **Soil Research** 54:533-543. http://dx.doi.org/10.1071/SR15320

Scheer, C., Rowlings, D., Firrell, M., Deuter, P., Morris, S., Riches, D., Porter, I., Grace, P. (2017). Nitrification inhibitors can increase post-harvest nitrous oxide emissions in an intensive vegetable production system. **Scientific Reports** 7, No: 43677 doi:10.1038/srep43677

**2. United Nations International Reports**, which Influence Global Policy under the Montreal Protocol:
Note: Examples of over 80 Progress (annual), Critical Use (Twice yearly) and Assessment Reports (Quadrennial) and other publications written by MBTOC cochairs (Porter I, Pizano, M, Besri, M, and some with Banks J, Marcotte M)

Anon (1998). 1998 Assessment of Methyl Bromide Alternatives, Report of the Methyl Bromide Technical Options Committee. United Nations Environment Program. 350pp.

Anon (2002). 2002 Report of the Methyl Bromide Technical Options Committee (MBTOC), United Nations Environment Program, Nairobi, Kenya 437pp.

Anon (2003). Progress Report of the Technology and Economic Assessment Panel (TEAP). 174 pp. United Nations Environment Program

Anon (2005). Handbook on critical use nominations for methyl bromide 2005. United Nations Environment Program, Nairobi, Kenya 317pp.

Member of Taskforce, (2018): TEAP Decision XXIX/4 Task Force Report on Destruction Technologies for Controlled Substances (Volume 2), United Nations Environment Program, Nairobi, Kenya

Porter I, Pizano M, Besri M and Marcotte M (2006). Evaluations of the 2006 Critical Use Nominations for Methyl Bromide and Related Matters. Final Report United Nations Environment Program Report. Nairobi 130pp. ……

Porter I, Pizano, (2024). Evaluation of the 2024 Critical Use Nominations and Related Matters. Final report. Report of the Technology and Economic Assessment Panel (Vol 2). Montreal Protocol On Substances that Deplete the Ozone Layer, UNEP, Nairobi, Kenya.