



SCIENCE FOR DIPLOMATS

DATA ANALYTICS AND THE CWC: AN INTRODUCTION TO OCPF SITE SELECTION METHODOLOGY

Tuesday 6 October 2015

13:30 - 15:00

Ooms Room

Light lunch available at 13:00

$$A15 \text{ Value} = N^{1.5} \times M \times G \times P \times A$$



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Treaty Implementation

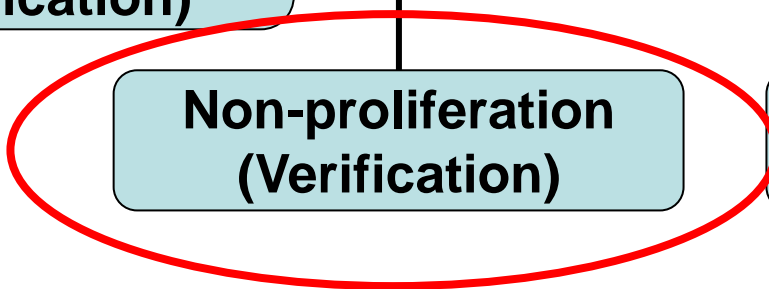
The Chemical Weapons Convention

Disarmament
(Destruction and
Verification)

Non-proliferation
(Verification)

Assistance and
Protection against CWs

International
Cooperation

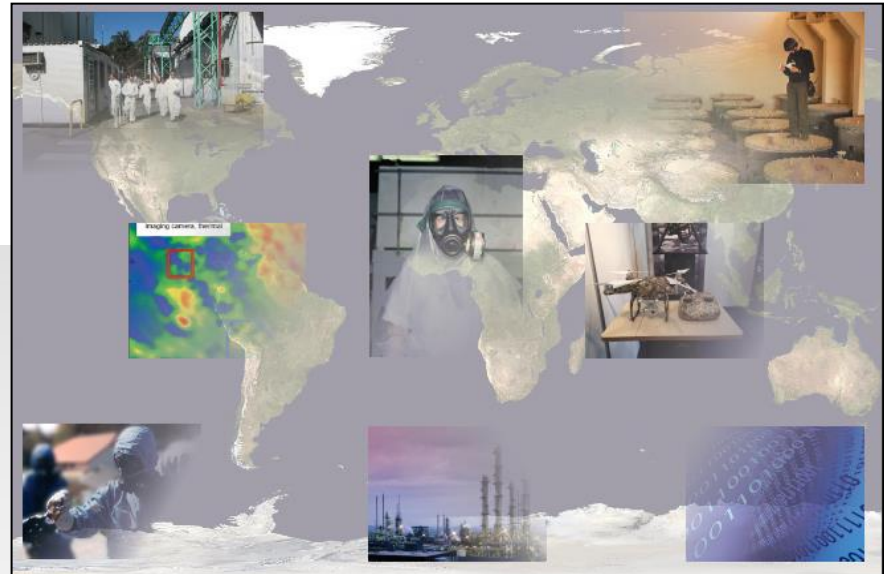




ORGANISATION FOR THE
PROHIBITION OF CHEMICAL WEAPONS

Working together for a world free of chemical weapons

Treaty Implementation



VERIFICATION

REPORT OF THE SCIENTIFIC ADVISORY
BOARD'S TEMPORARY WORKING GROUP

June 2015



ORGANISATION FOR THE PROHIBITION
OF CHEMICAL WEAPONS



The Many Faces of Chemical Production





EC-80/DG.7 (28 August 2015)

Action to implement the recommendations made by the SAB in its report on Verification

https://www.opcw.org/fileadmin/OPCW/SAB/en/ec80dg07_e_.pdf

Recommendation from the SAB	Implementation	Expected outcomes/results
<p>Recommendation 9: Not all facilities that fall under Part IX of the Verification Annex should be considered of the same relevance to the object and purpose of the Convention. The TWG recommends a practical approach for enhancing the utilisation of verification resources for OCPF declaration and on-site inspection processes.</p>	<ul style="list-style-type: none">• See (a), (b) and (c) below.	<ul style="list-style-type: none">• More effective verification.• Continued strong support from the global chemical industry for sound and proportionate implementation of the CWC.• Adaptation of the verification regime in line with developments in the chemical industry.
<p>Recommendation 9a: The OPCW policy-making organs should exempt certain OCPFs from declaration requirements.</p>	<ul style="list-style-type: none">• <u>Industry cluster</u>: Discussion based on Secretariat proposal.• <u>Executive Council</u>: Decision	
<p>Recommendation 9b: The Secretariat should reassess which product group codes are highly relevant to the Convention. Facilities declared with these product group codes should be subject to a higher probability to be selected for inspection.</p>	<ul style="list-style-type: none">• <u>Secretariat</u>: Review the performance of the site-selection methodology.• <u>Industry cluster</u>: Potential discussion depending on Secretariat review.	
<p>Recommendation 9c: For facilities in product group codes that are considered less relevant, the Secretariat should identify appropriate mechanisms to augment the declared information with validated and credible sources to allow for an assessment regarding the need for on-site inspection.</p>	<ul style="list-style-type: none">• <u>Secretariat</u>: The review and potential discussion on implementation of recommendation 9(b) will inform Secretariat guidance to States Parties and Secretariat action.• Action to implement recommendations 1, 2 and 3 will also be relevant.	



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Science for Diplomats

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Verification Division



Activities not Prohibited in the CWC

■ CWC Article VI, paragraph 2

- Each State Party shall subjectto verification measures as provided in the Verification Annex.

■ Verification Annex

- Part VI. (Schedule 1 chemicals and facilities)
- Part VII. (Schedule 2 chemicals and facilities)
- Part VIII. (Schedule 3 chemicals and facilities)
- **Part IX. (Other Chemical Production facilities)**

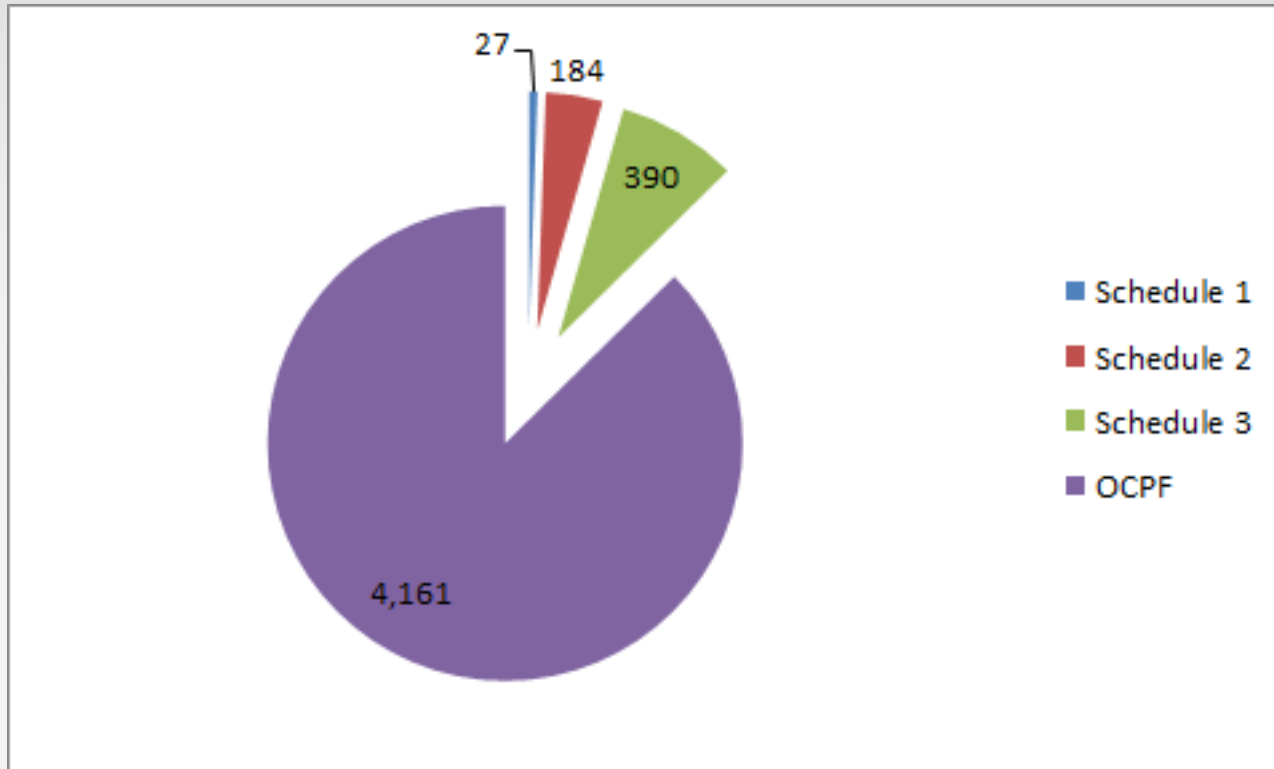


Summary of Article VI Inspection Process

- Submission of declarations by the States Parties as per relevant part of the Verification Annex
- Selection of facilities for inspection (those above the verification threshold)
- Annual budget approved by the CSP with number of Article VI inspections
- Planning of the actual inspections for the selected sites
- Conduct of the budgeted number of inspections



Inspectable Facilities/Plant Sites (as at 30 September 2015)





Annual Budget

- Annual budget approved by CSP specifies:
 - Overall number of Article VI inspections
 - Breakdown (for 2015)

SCHEDULE 1	11
SCHEDULE 2	42
SCHEDULE 3	19
OCPF	169
TOTAL	241



Policy guidelines on Number of Article VI inspections

(EC-66/Dec.10, 7 October 2011)

- Inspectable scheduled and unscheduled Article VI facilities which have not received yet inspections, should be given priority.
- Length of time between two Article VI inspections in any SP should not exceed approximately 8 years.
- At least 50%, and if possible 60%, of SPs that have declared inspectable Article VI facilities should receive at least one Article VI inspection each in any one year.



Mixed plant sites selection

- Objective is to reduce probability of re-inspection at Schedule 3 and OCPF mixed plant sites already inspected under another Article VI regime
- A Schedule 3 or OCPF mixed plant site already inspected under another Article VI regime but not yet inspected under Part VIII or IX of VA will be considered as inspected for the purpose of the random selection
- All OCPF and Schedule 3 plant sites with activities above verification threshold continue to be eligible to receive inspections



OCPF Site Selection Methodology

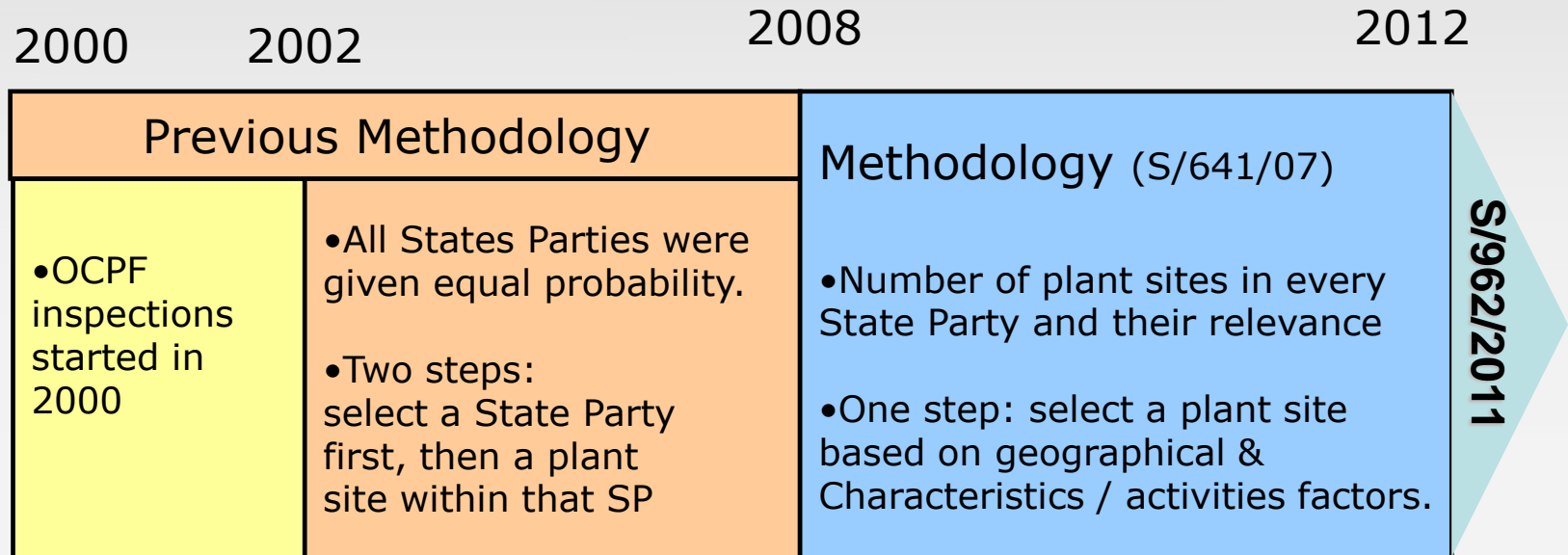


Current Selection Methodology

- Selection of OCPF plant sites for inspection
 - S/641 methodology between 2008-2011
 - S/962 methodology from 2012 onwards
- Objective of improvements to the interim site-selection methodology (S/962) to achieve better “targeting” of OCPF inspections
- Secretariat to report annually on the performance of the interim site-selection methodology
 - Latest report: S/1240/2015, dated 6 February 2015



Evolution of the Selection Methodology





Current Selection Methodology

- Combined contributions from equitable geographical distribution and information available to the TS.
- Use of multiple selection pools:
 - three pools for never inspected plant sites for each State Party (Pool A, B & C)
 - the respective pools for each State Party combined into three overall pools (Pool A, B & C)
 - one additional pool for previously inspected plant sites (Pool D)
- Random selection of 20% of the total number of budgeted OCPF inspections for subsequent inspections in 2015.
- Of the remaining OCPF inspections, random selection of 85% OCPF plant sites from pool A, 10% from pool B and 5% from pool C.



Current Selection Methodology

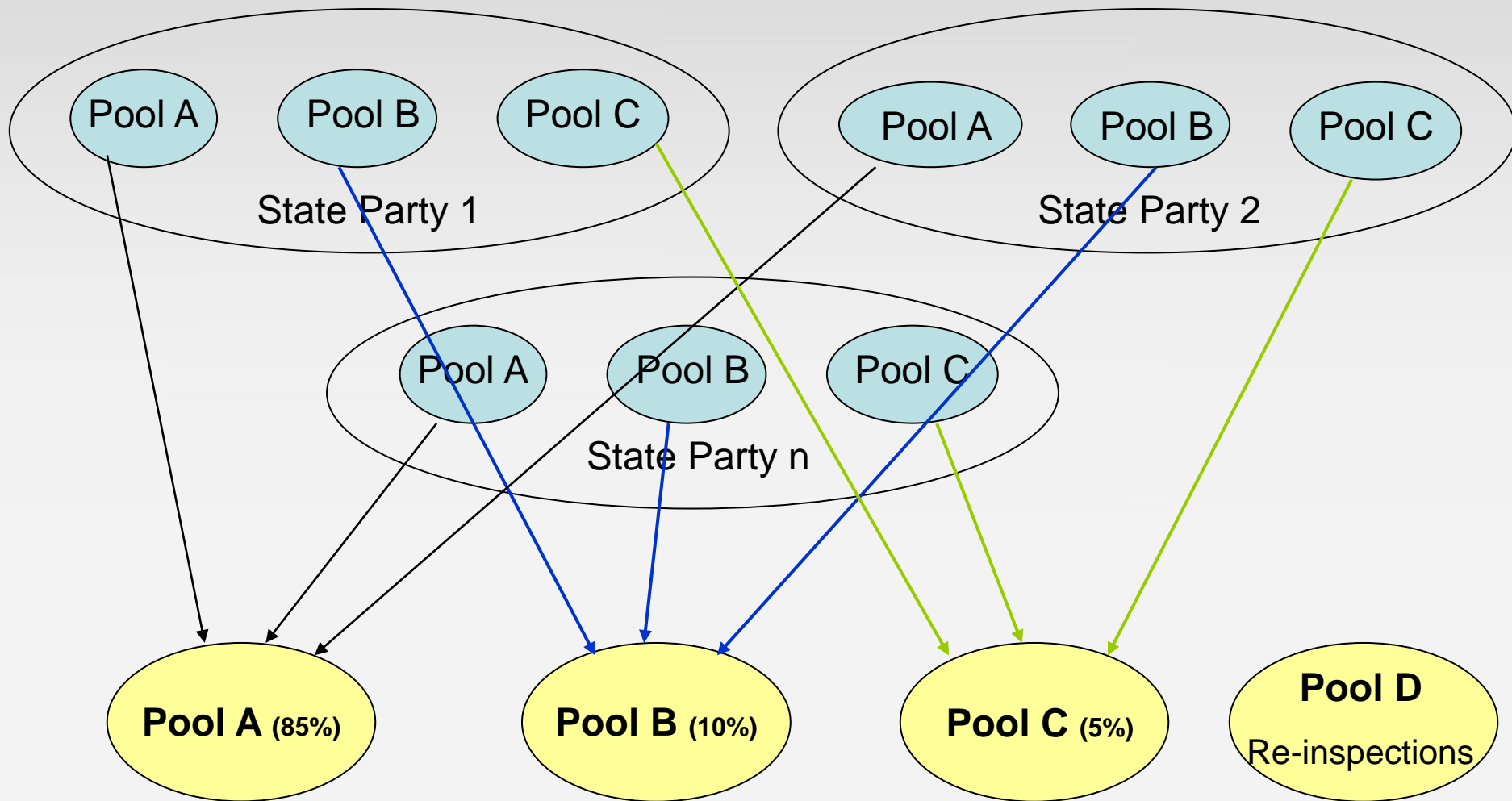
- The A15 Algorithm

$$A15 = N^{1.5} \times M \times G \times P \times A$$

- N: number of DOC plants (including PSF plants)
- M: production range
- G: Main activities (product group codes)
- P: PSF plant or not
- A: Occurrence of the previous inspection



Current Selection Methodology





Selection Process



Data Quality

- Routine data quality checks
- Quality of declaration data
 - Complete, accurate, timely declarations
 - Updates of information (e.g. amendments) regarding OCPFs
 - Follow-ups and clarification regarding declared data
- Quality of inspection data
 - Update of inspection data in the Verification Information System (VIS)
 - Analysis for mixed plant sites



Simulations and Official Selection

- Several rounds of simulations for the selection
- Analysis of the results
 - Pool distribution
 - Geographical distribution
- Further clarifications with the respective VER units
- Correction of data, if necessary
- Freeze of data and updates to the system
- Execution of the computer program which implements the current selection methodology by the DG
- Hand over of the official selection report to the Industry Verification Branch



Results

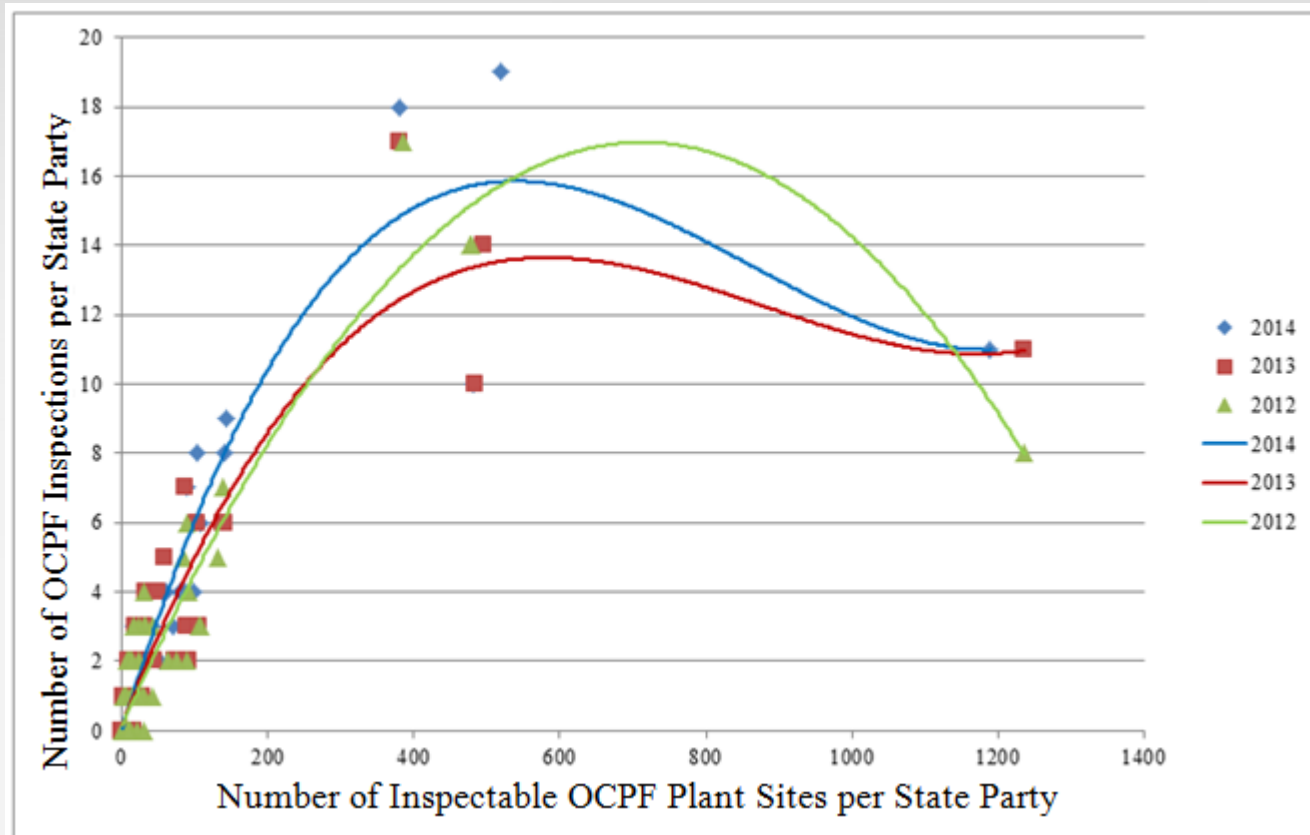


Selection of OCPF Sites for 2015 inspections

- Number of inspectable sites: **4278**
- Approved number of inspections for 2015: **169**
 - 135 Initial Inspections
 - 34 subsequent inspections @ **20 %**

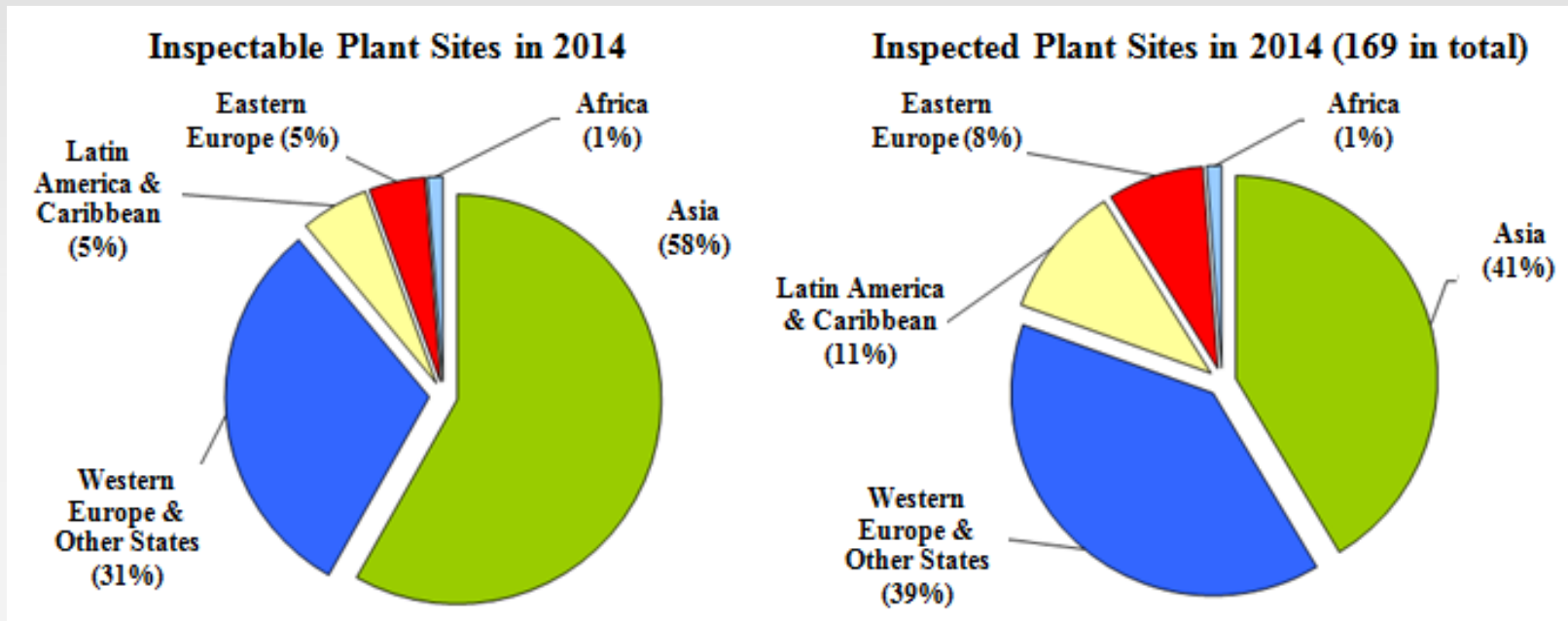


- Number of OCPF inspections per State Party against the total number of inspectable OCPF plant sites (2012 - 2014)



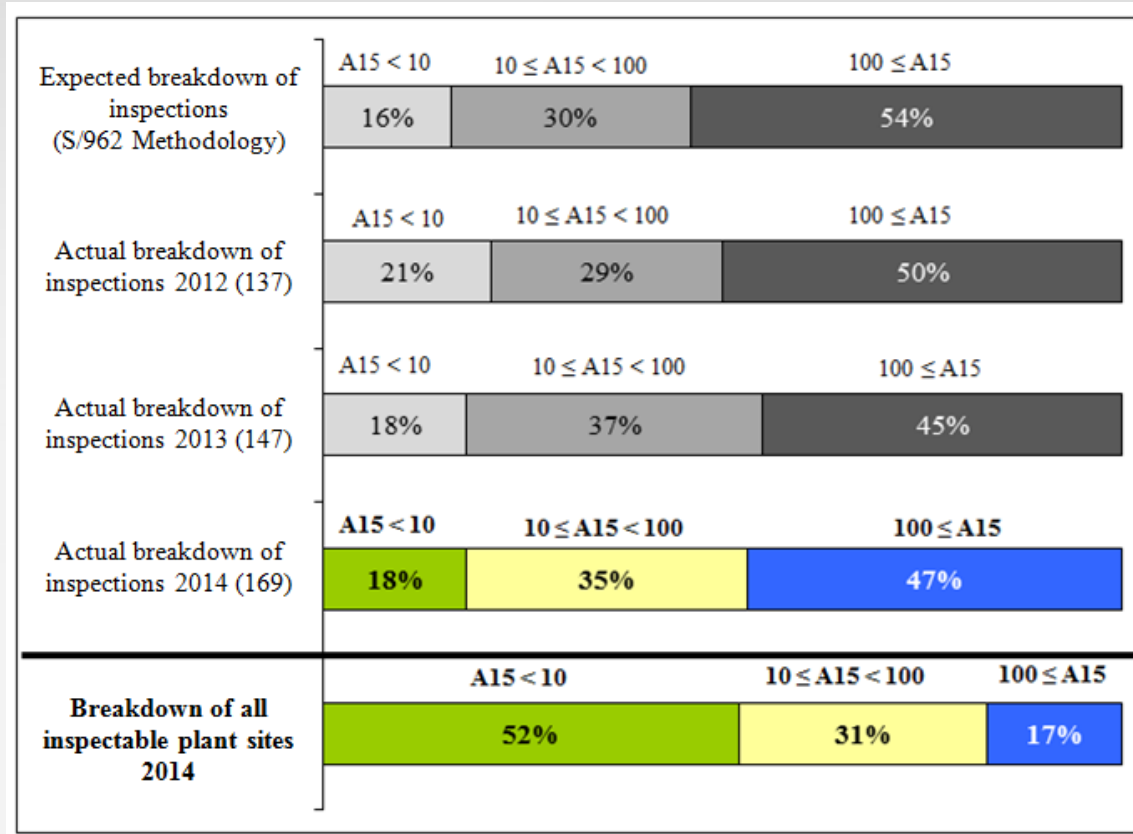


- Comparison of the regional distribution of plant sites and inspections (as at 6 November 2014)



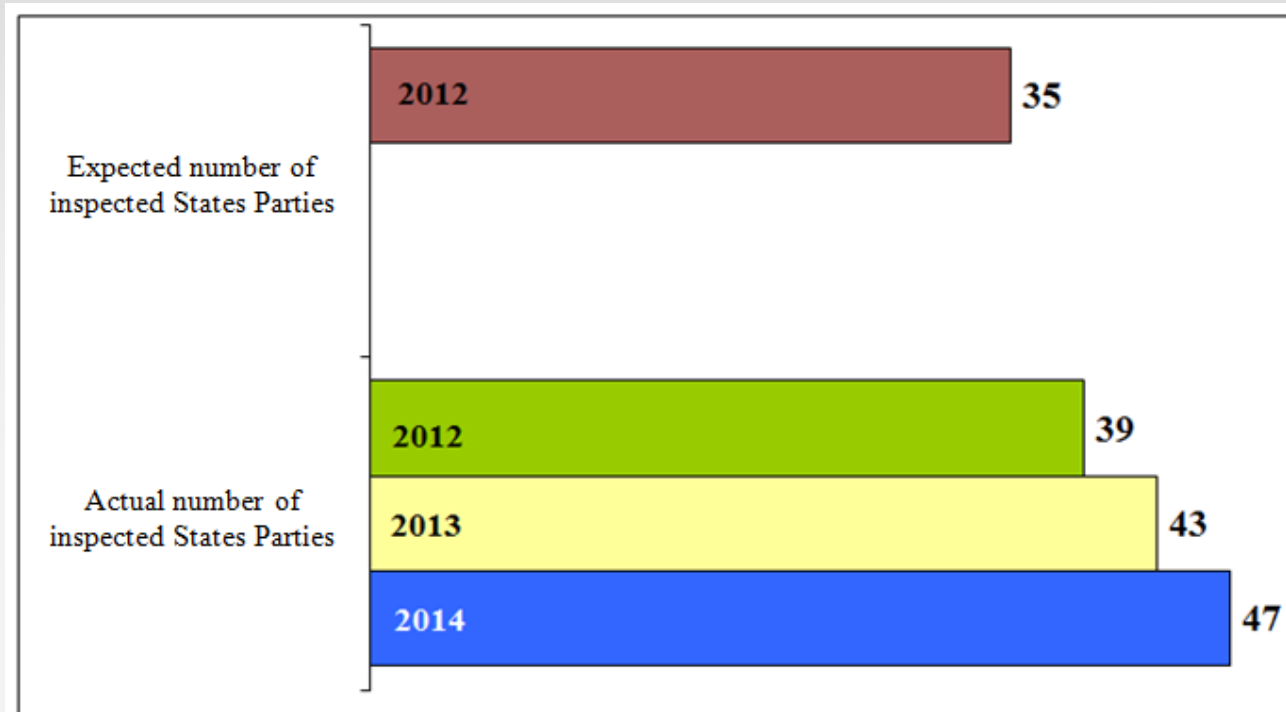


- Relative share of inspections according to the relevance of OCPF plant sites





- Coverage of the States Parties selected to receive OCPF inspections





Key Results

- The methodology takes into account both the number and the relevance of plant sites declared
- The number of inspections conducted in each SP is positively correlated with the number of declared OCPF plant sites in that SP
- The methodology continues to result in more inspections in highly relevant sites
- There is a continued increase in the number of State Parties receiving inspections
- **Conclusion: The selection process using the S/962 methodology continues to achieve the goals set forth to better target OCPF inspections**



Reference Documents



Reference Documents

- Initiative by the DG on a methodology for the OCPF for inspection (S/962/2011, dated 8 September 2011)
- Initiative by the DG on a Methodology for the OCPF for Inspection (S/641/2007, dated 25 May 2007 and Corr.1, dated 4 June 2007)
- Report on the performance of the revised methodology for the selection of OCPF for inspection (S/1240/2015, dated 6 February 2015)
- Alternative approach to verification at mixed plant sites (S/1202/2014, 23 July 2014)
- Report of the co-facilitators for the consultation on the site-selection methodology for OCPF (EC-65/WP.1 , dated 10 June 2011)
- Report on the results of the implementation of policy guidelines for determining the number of Article VI inspections (EC-79/DG.4, dated 7 April 2015)