INTOSAI WGEA - RESEARCH PROJECT
“GREENING CITIES – SUSTAINABLE URBAN DEVELOPMENT”

Michal Rampír
Why research project on “GREENING CITIES“?

✔ Why should SAIs deal with environmental challenges in cities or in urban areas?

✔ Is this issue important to SAIs?

✔ Can SAIs contribute to improving environmental challenges in cities?
Why research project on “GREENING CITIES“?

Why research project on “GREENING CITIES“?

WORLD’S POPULATION

2015:
more than 50% residing in cities

2050:
80% will reside in cities

Source: http://reports.thomsonreuters.com/9billionbowls/
# URBAN AGGLOMERATIONS 2014

<table>
<thead>
<tr>
<th>City, Country</th>
<th>1990</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELHI, INDIA</td>
<td>9,7</td>
<td>36,1</td>
</tr>
<tr>
<td>SHANGHAI, CHINA</td>
<td>7,8</td>
<td>30,8</td>
</tr>
<tr>
<td>BEIJING, CHINA</td>
<td>6,8</td>
<td>27,7</td>
</tr>
<tr>
<td>CAIRO, EGYPT</td>
<td>9,9</td>
<td>24,5</td>
</tr>
<tr>
<td>BUENOS AIRES, ARGENTINA</td>
<td>10,5</td>
<td>17</td>
</tr>
<tr>
<td>LIMA, PERU</td>
<td>5,8</td>
<td>12,2</td>
</tr>
</tbody>
</table>

Source: http://www.unpopulation.org
Why research project on “GREENING CITIES”?

Cities with a projected 2030 population of more than 10 million

2030 population

Change in population from 2014 to 2030

Bolded cities: projected to surpass 10 million people between 2014 and 2030

Tokyo and Osaka
Both are expected to lose population due to low birth rates and declining immigration.

Source: United Nations World Urbanization Prospects
Graphic: Alex Tribou / Bloomberg visual data
Why research project on “GREENING CITIES“?
The “metropolitan area” corresponds to the Toronto “census metropolitan area.”

The “urban agglomeration” corresponds to the Toronto “population centre.”

The “city proper” described here corresponds to the Toronto “census subdivision – municipality” as defined in the 2011 Census of Canada.

Satellite image is from Google Imagery TerraMetrics 2016.

Population data and boundaries are from Statistics Canada (http://www12.statcan.gc.ca/census-recensement/index-eng.cfm).
THE MAIN PURPOSE OF THE PROJECT

PROJECT OBJECTIVE AND OUTCOME:

✔ to identify and describe the most critical challenges of urban agglomerations;

✔ to share experience of SAIs in auditing this area and at the same time; and

✔ to emphasize the importance of this issue within the INTOSAI WGEA in the set planning period.
AIR QUALITY
INCREASED NOISE

NOISE POLLUTION

In 2015, the Department of Environment received a total of 132 noise pollution complaints.

54 complaints from industrial sources.
7 from motor vehicle sources.
71 from commercial and construction sites.

06:00 p.m.
Jordan Road
Amman City, Jordan
93 dB
QUALITY AND SYSTEM OF DRINKING WATER

WASTED WATER

MORE THAN 1/3 of the world's drinking water supply is LOST before it ever reaches consumers, mostly from UNSEEN LEAKS.

In DEVELOPING COUNTRIES

the percentage is even higher: 40-50%.

This wasted water is called non-revenue water (NRW) with estimated LOST REVENUE to utilities of $14B ANNUALLY.

Source: Miya & The World Bank with Clean Edge analysis.
SEWAGE SYSTEM
WASTE MANAGEMENT
Why research project on “GREENING CITIES“?
ENVIRONMENTAL AUDITS WORLDWIDE

HUMAN ACTIVITIES AND SECTORS

- Agriculture
- Biosafety and genetically modified organisms (GMOs)
- Chemicals management
- Cultural heritage
- Energy and energy efficiency
- Environment and human health
- Infrastructure
- Land development
- Natural disaster management: preparedness responses
- Other human activities/sectors
- Pesticides
- Recreation and tourism
- Transportation, traffic, mobility
- Urban environment quality (sustainability)
- Humanitarian aid
# URBAN ENVIRONMENT QUALITY (SUSTAINABILITY)

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Title</th>
<th>Issue</th>
<th>Type</th>
<th>Main Audit Objective</th>
<th>Report Summary</th>
<th>Report Full Text</th>
<th>Joint Audit Produced By</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>France</td>
<td>Air pollution</td>
<td>Air: Acid precipitation, Air: (Show more...)</td>
<td>1, 2, 3</td>
<td>1, 2, 3, 4, 5, 6, 7</td>
<td>French (12 kB)</td>
<td>French (4.1 MB) French (2.9 MB)</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Kuwait</td>
<td>Environmental Audit on the discharge of effluent into the sea</td>
<td>Human activities and sectors: (Show more...)</td>
<td>2, 3</td>
<td>3, 4, 5, 6, 7</td>
<td>Arabic (756 kB)</td>
<td>Arabic (756 kB)</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Thailand</td>
<td>Waste-to-Energy Power Plant Projects</td>
<td>Governance: Environmental management (Show more...)</td>
<td>4</td>
<td>3, 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>Australia</td>
<td>Our Heritage and Our Future: Health of the Swan Canning River System</td>
<td>Ecosystems: Ecosystem management (Show more...)</td>
<td>2, 3</td>
<td>4, 5</td>
<td>English (841 kB)</td>
<td>English</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Zambia</td>
<td>Impact of Mining operations on communities (ongoing)</td>
<td>Air: Local air quality such as (Show more...)</td>
<td>2</td>
<td>3, 4, 6</td>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Japan</td>
<td>Operation and maintenance of melting and solidifying facilities and the use of the molten slag</td>
<td>Governance: Domestic funds and (Show more...)</td>
<td>2, 3</td>
<td>3</td>
<td>Japanese (56 kB)</td>
<td>Japanese</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Peru</td>
<td>Special Exam to the Process of Low bid award No. 016-2012-CE-MDC and service of solid waste final disposal in the municipal area of the Municipality of Comas</td>
<td>Governance: Domestic funds and (Show more...)</td>
<td>2, 3</td>
<td>3</td>
<td>Spanish (379 kB)</td>
<td>Spanish</td>
<td></td>
</tr>
</tbody>
</table>


PROJECT SCOPE – KEY OBJECTIVES

✔ to emphasize the importance of this issue within the INTOSAI WGEA;
✔ to provide comprehensive data and information to the users of the project Greening Cities – Sustainable Cities;
✔ to summarise performed and on-going audits on the subject;
✔ to give examples of how the topic can be approached in audits and to sum up methodology and challenges related to performing the audit in this field;
✔ to contribute to improving the quality of the city's environment.
STRUCTURE OF THE STUDY

CHAPTER 1

Basic information on
• concepts and definitions related to Greening cities
• environmental problems in urban agglomerations:
  ▪ objectives,
  ▪ definitions,
  ▪ types of problems,
  ▪ examples of problems from the perspective of individual environmental components such as
    – air quality,
    – water protection,
    – waste management,
    – ecosystem services, and
    – green infrastructure.
STRUCTURE OF THE STUDY

CHAPTER 2

- Importance of international agreements, strategies and governmental programmes

- Importance of instruments focused on individual environmental components, and

- influence of these programmes on the quality of the environment in cities and urban agglomerations and also with regards to the fulfilment of the Sustainable Development Goals.
STRUCTURE OF THE STUDY

CHAPTER 3

✓ Experience of SAIs from audits of individual environmental components in cities and urban agglomerations.

✓ Case studies from environmental audits of SAIs that at least partially covered cities and urban agglomerations

✓ Possible obstacles that prevented SAIs from conducting audit on this subject.
PLANNED METHODOLOGY

THIS RESEARCH PROJECT WILL BE BASED ON:

- guides and manuals published by INTOSAI;
- performance audits conducted by WGEA members;
- data collected by a survey sent to the WGEA members;
- resources available on websites of specialized and expert organizations and agencies;
- information exchange, e.g., by e-mail, tele- and videoconferences with members of the subgroup, and/or with other external experts;
- workshops and work sessions planned during the meetings of the WGEA and/or organized separately;
- SAO Czech Republic audit planned for 2018 “Support of air quality improvement”.
EXAMPLE FROM THE CZECH REPUBLIC

SUPPORTING THE IMPROVEMENT OF AIR QUALITY

Annual average concentration of benzo(a)pyrene in the ambient air in 2013

Source: Czech Hydrometeorological Institute
EXAMPLE FROM THE CZECH REPUBLIC

THE MORAVIAN-SILESIAN REGION/OSTRAVA REGION
EXAMPLE FROM THE CZECH REPUBLIC

PRAGUE
## TIMELINE AND KEY MILESTONES

<table>
<thead>
<tr>
<th>Stage</th>
<th>Action</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Final Draft of Project Plan to WGEA Secretariat</td>
<td>May 2017</td>
</tr>
<tr>
<td>2</td>
<td>Receive comments from Steering Committee</td>
<td>May – June 2017</td>
</tr>
<tr>
<td>3</td>
<td>15th Steering Committee, review and approve Project Plan, Washington USA</td>
<td>September 11 – 14, 2017</td>
</tr>
<tr>
<td>4</td>
<td>Final version of the Project Plan</td>
<td>October 2017</td>
</tr>
<tr>
<td>5</td>
<td>Elaborated table of contents of the Project to the Secretariat</td>
<td>December 2017</td>
</tr>
<tr>
<td>6</td>
<td>18th WGEA Assembly</td>
<td>March 2018</td>
</tr>
<tr>
<td>7</td>
<td>16th Steering Committee meeting, approval of the Project output, discussion of the next work plan</td>
<td>November 2018</td>
</tr>
<tr>
<td>8</td>
<td>Final draft of the Project output to the Secretariat</td>
<td>February 2019</td>
</tr>
<tr>
<td>9</td>
<td>Final version of the Project output – translation, editing, printing etc.</td>
<td>June 2019</td>
</tr>
<tr>
<td>10</td>
<td>19th WGEA Assembly</td>
<td>September 2019</td>
</tr>
</tbody>
</table>
# CONTACT PERSONS INFORMATION

<table>
<thead>
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<th>Name</th>
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</tbody>
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CONTACTS

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  Director of the International Relations Department.
Thank you for your attention

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