FOURTH SESSION OF THE SPECA WORKING GROUP ON INNOVATION AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT

DATE 19 October, 2023
TIME 14:00 - 16:30 (Tashkent time)
LOCATION UZBEKISTAN
7, UNIVERSITY STREET, ALMAZAR DISTRICT, TASHKENT CITY
ESCAP
innovative online tools on ICT

E-resilience monitoring dashboard

Partnership portal

Infrastructure corridor simulator
DEFINING E-RESILIENCE, MANDATED BY CICTSTI

E-Resilience is defined as the ability of ICT systems to resist, absorb, accommodate, adapt to, transform, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management (ESCAP, 2020).
E-resilience framework (2020-2022) from a pandemic management perspective

**Pandemic phase and ICT role**

**Risk Prevention**
Improving Pandemic informed investments, Strategies, operations in ICT connectivity, risk analytics for early warning and enhanced preparedness

**Risk Reduction**
Mitigating the chance of virus induced disruption, damage, Socio-economic losses, through development of analytical tools, applications, lessons learned

**Preparedness, adaptation and response**
Risk indexing, lessening the impacts by preparing developing an resilience index to assess readiness

**Recovery**
Restoring functions with graded lockdowns and operations, recovering to build back better

**Key Task**

1. Resilience of ICT infrastructure and networks
2. ICT for societal resilience

**What e-resilience toolkits are available?**
- For the resilience of ICT infrastructure and networks?
- For ICT for societal resilience?
FIVE PILLARS OF E-RESILIENCE

1. ICT Infrastructure Resilience
2. ICT Policy in Different Sectors
3. ICT’s Role in Creating New Systems and Applications
4. ICT’s Role in Digital Data Management
5. ICT system under Risk of Hazard and Exposure
### Indicators under the 2/5 pillars

<table>
<thead>
<tr>
<th>ICT Infrastructure</th>
<th>Fixed (wired) broadband subscriptions per 100 inhabitants</th>
<th>Percentage of Individuals using the Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience</td>
<td>Active mobile-broadband subscriptions per 100 inhabitants</td>
<td>Mobile tariffs (% monthly GDP per capita)</td>
</tr>
<tr>
<td></td>
<td>Computer software spending</td>
<td>Handset prices (% monthly GDP per capita)</td>
</tr>
<tr>
<td></td>
<td>4G mobile network coverage</td>
<td>Percentage of households with Internet access at home</td>
</tr>
<tr>
<td></td>
<td>Mobile cellular subscriptions per 100 inhabitants</td>
<td>Percentage of households with a computer</td>
</tr>
<tr>
<td></td>
<td>Internet access in schools</td>
<td>Fixed (wired) broadband subscriptions per 100 inhabitants</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICT Policy in Different Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of doing business</td>
</tr>
<tr>
<td>ICT regulatory environment</td>
</tr>
<tr>
<td>Secure Internet servers</td>
</tr>
<tr>
<td>Regulatory quality</td>
</tr>
<tr>
<td>Adult literacy</td>
</tr>
<tr>
<td>Mean years of schooling</td>
</tr>
<tr>
<td>R&amp;D expenditure by governments and higher education (% of GDP)</td>
</tr>
<tr>
<td>Public trust in politicians</td>
</tr>
<tr>
<td>Government effectiveness</td>
</tr>
<tr>
<td>DRR implementation</td>
</tr>
<tr>
<td>E-commerce legislation</td>
</tr>
<tr>
<td>Cybersecurity</td>
</tr>
<tr>
<td>Legal framework’s adaptability to emerging technologies</td>
</tr>
</tbody>
</table>
Indicators under the 2/5 pillars

ICT’s Role in Data Management

- Online Service Index
- GitHub commits per 1,000 population
- Wikipedia edits per million population
- Use of virtual social networks, % of population
- ICT skills
- Publication and use of open data
- E-participation
- Rural gap in use of digital payments
- Socioeconomic gap in use of digital payments
- Availability of local online content
- Gender gap in Internet use
- Online access to financial account

ICT’s Role in Creating New Systems and Applications

- ICT PCT patent applications
- Firms with website, % of total
- Medium- and high-tech industry (share in total manufacturing value)
- High-tech exports, % of total exports
- Mobile apps development
- Adoption of emerging technologies
- Government promotion of investment in emerging technologies
- Investment in emerging technologies
- R&D expenditure by businesses, % of GDP
- Prevalence of gig economy
- Internet shopping, %
Radar Charts of E-resilience Profiles in North and Central Asia

- **Armenia**
  - Policy
  - Hazard & Exposure
  - Infrastructure
  - Digital Data
  - New Systems and Apps

- **Azerbaijan**
  - Policy
  - Hazard & Exposure
  - Infrastructure
  - Digital Data
  - New Systems and Apps

- **Kyrgyzstan**
  - Policy
  - Hazard & Exposure
  - Infrastructure
  - Digital Data
  - New Systems and Apps

- **Tajikistan**
  - Policy
  - Hazard & Exposure
  - Infrastructure
  - Digital Data
  - New Systems and Apps

- **Uzbekistan**
  - Policy
  - Hazard & Exposure
  - Infrastructure
  - Digital Data
  - New Systems and Apps
Bar charts e-resilience profiles per pillar

E-Resilience Pillars
- ICT Policy in Different Sectors
- ICT capacity in Development of the New systems and Applications
- ICT Infrastructure Resilience
- ICT under Risk of Hazard and Exposure
- ICT supporting Digital Data Management
Working Paper: Tracking E-Resilience in NCA, SA and ENEA

North and Central Asia
- Armenia
- Azerbaijan
- Kazakhstan
- Kyrgyzstan
- Tajikistan
- Uzbekistan

East, North-East, and South Asia
- China
- Mongolia
- Republic of Korea
- India
- Sri Lanka
EGM had proposed indicators for tracking e-resilience in 2024

• Existence of data centers
• National broadband strategy
• Infrastructure redundancy
• High-speed connectivity
• Artificial Intelligence in Infrastructure
• Existence of personal information act
Summary of key findings
Tracking E-resilience in North & Central Asia

• **ICT Infrastructure**: solid scores with growing preference for mobile devices

• **ICT Policy**: scores are moderately high. Regulatory policy/quality needs improvement.

• **New Systems and Applications**: pillar is the weakest compared to the region.

• **Data Management**: low levels of e-participation are paired with widening gender and socio-economic gaps.

• **Hazard and Exposure**: ICT infrastructure in Azerbaijan and Armenia is more exposed to hazards compared to other Central Asian countries.
The Way Forward on Tracking e-Resilience

1. Consider the risks of new emerging issues and climate change
2. Revise the Indicator Set in 2024 and Report the open data to next session of SPECA WG on ITSD in 2024
3. Establish the Task Force for monitoring e-resilience in 2024 and 2026 and report to APIS Bureau and SC
Contact:

escap-ids@un.org

Thank You!

Благодарю!

Rakhmet!