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Economic and Social Commission for Asia and the Pacific

UNECE

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATIONS OF THE REPUBLIC OF UZBEKISTAN

INNO week

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)

UZBEKISTAN
7, UNIVERSITY STREET, ALMAZAR DISTRICT, TASHKENT CITY

SCAN ME

Session 4:
ESCAP Connectivity Tools and the E-resilience Monitoring Dashboard for Digital Foresight Planning

09:30-10:30

19 October 2023

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E-resilience monitoring dashboard
Partnership portal
ESCAP innovative online tools on ICT
Infrastructure corridor simulator
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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

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Pandemic phase and ICT role	Risk Prevention	Risk Reduction	Preparedness, adaptation and response	Recovery
Key Task	Improving Pandemic informed investments, Strategies, operations in ICT connectivity, risk analytics for early warning and enhanced preparedness	Mitigating the chance of virus induced disruption, damage, Socio-economic losses, through development of analytical tools, applications, lessons learned	Risk indexing, lessening the impacts by preparing developing an eresilience index to assess readiness	Restoring functions with graded lockdowns and operations, recovering to build back better
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?

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FIVE PILLARS OF E-RESILIENCE

- ICT Infrastructure Resilience
- ICT Policy in Different Sectors
- ICT's Role in Creating New Systems and Applications
- ICT's Role in Digital Data Management
- ICT system under Risk of Hazard and Exposure

Indicators under the 2/5 pillars

ICT Infrastructure Resilience		
Fixed (wired) broadband subscriptions per 100 inhabitants	Percentage of Individuals using the Internet	
Active mobile-broadband subscriptions per 100 inhabitants	Mobile tariffs (% monthly GDP per capita)	Handset prices (% monthly GDP per capita)
Computer software spending	Percentage of households with Internet access at home	Percentage of households with a computer
4G mobile network coverage	Fixed-broadband subscriptions, >10 Mbit/s, % of total fixed-broadband subscriptions	International Internet bandwidth per Internet user (kbit/s)
Mobile cellular subscriptions per 100 inhabitants	Internet access in schools	Fixed (wired) broadband subscriptions per 100 inhabitants

Ease of doing business	ICT Policy in Different Sectors	
ICT regulatory environment	Secure Internet servers	Regulatory quality
Adult literacy	Mean years of schooling	R&D expenditure by governments and higher education (% of GDP)
Public trust in politicians	Government effectiveness	DRR implementation
E-commerce legislation	Cybersecurity	Legal framework's adaptability to emerging technologies

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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, %

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E-Resilience Monitoring Dashboard

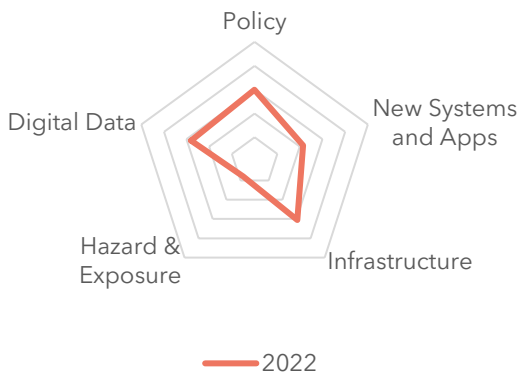
Country Group	Country	Pillar	Indicator	Year
Kazakhstan Kyrgyzstan Mongolia	Tout	Tout	Tout	2020

Pillar	Name	Kazakhstan	Kyrgyzstan	Mongolia
ICT infrastructure as a physical foundation	4G mobile network coverage (0-100 % max)	75,30	70,00	45,00
	Active mobile-broadband subscriptions per 100 inhabitants (0-100 % max)	77,57	94,03	83,72
	Computer software spending (0-100 % max)	0,02	0,09	0,13
	Fixed (wired) broadband subscriptions per 100 inhabitants	13,44	5,64	9,66
	Fixed-broadband subscriptions, >10 Mbit/s, % of total fixed-broadband subscriptions, (0-100 % max)	51,83	64,27	0,58
	Handset prices (%monthly GDP per capita) (0-100 max)	55,61	16,35	30,46
	International Internet bandwidth per Internet user (kbit/s)	55 067,84	47 863,64	22 399,44
	Internet access in schools (0-100 % max)		41,37	70,66
	Mobile cellular subscriptions per 100 inhabitants (0-100 max)	120,00	120,00	120,00
	Mobile tariffs (%monthly GDP per capita) (0-100 % max)	93,53	33,43	48,92
	Percentage of Households with a computer (0-100 % max)	80,53	23,29	30,00
	Percentage of households with Internet access at home (0-100 % max)	87,59	21,11	22,99
	Percentage of Individuals using theInternet (0-100 % max)	78,90	38,00	47,16
ICT policy in different sectors	Adult Literacy (0-100% max)	99,80	99,59	98,42
	Cybersecurity (0-1max)	0,78	0,25	0,47
	DRR Implementation 0 - 10 (max, the worst)	3,80	3,70	5,10

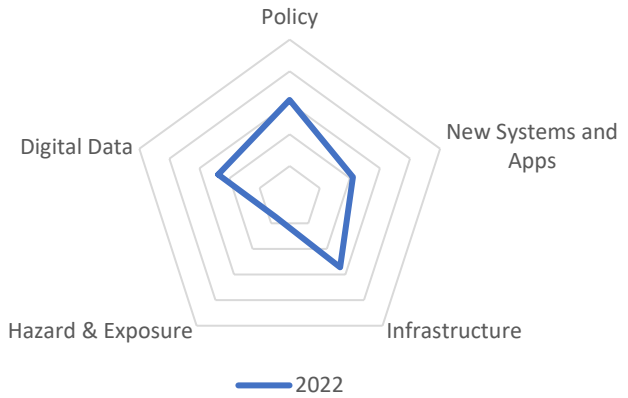
Hazard & Exposure

Radar Charts of E-resilience Profiles in North and Central Asia

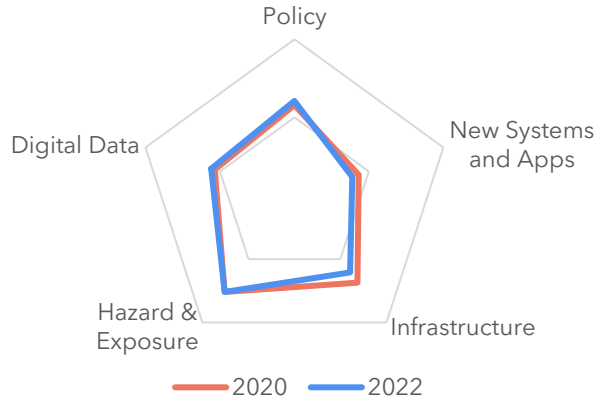
Armenia



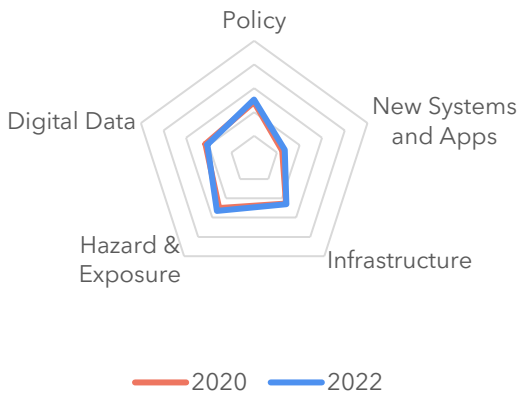
Azerbaijan



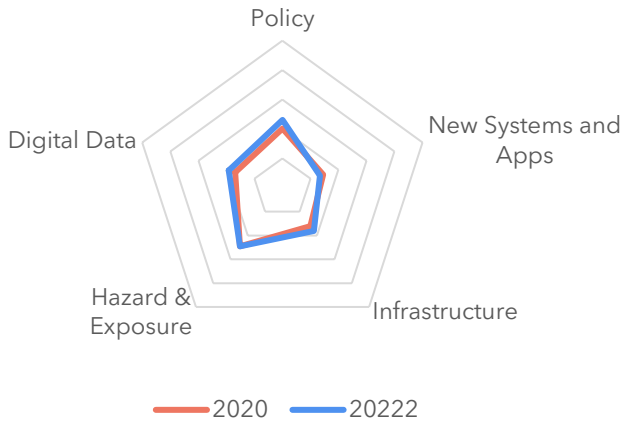
Kazakhstan



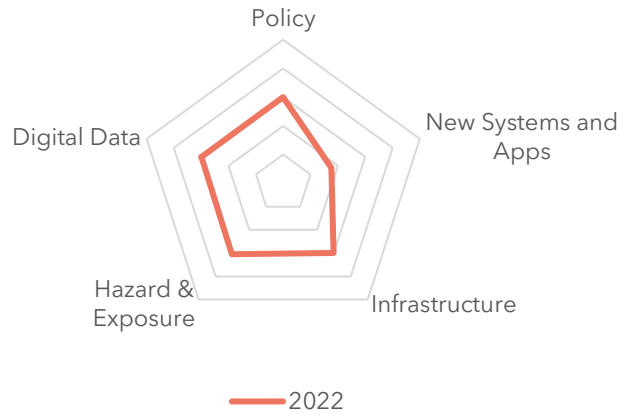
Kyrgyzstan



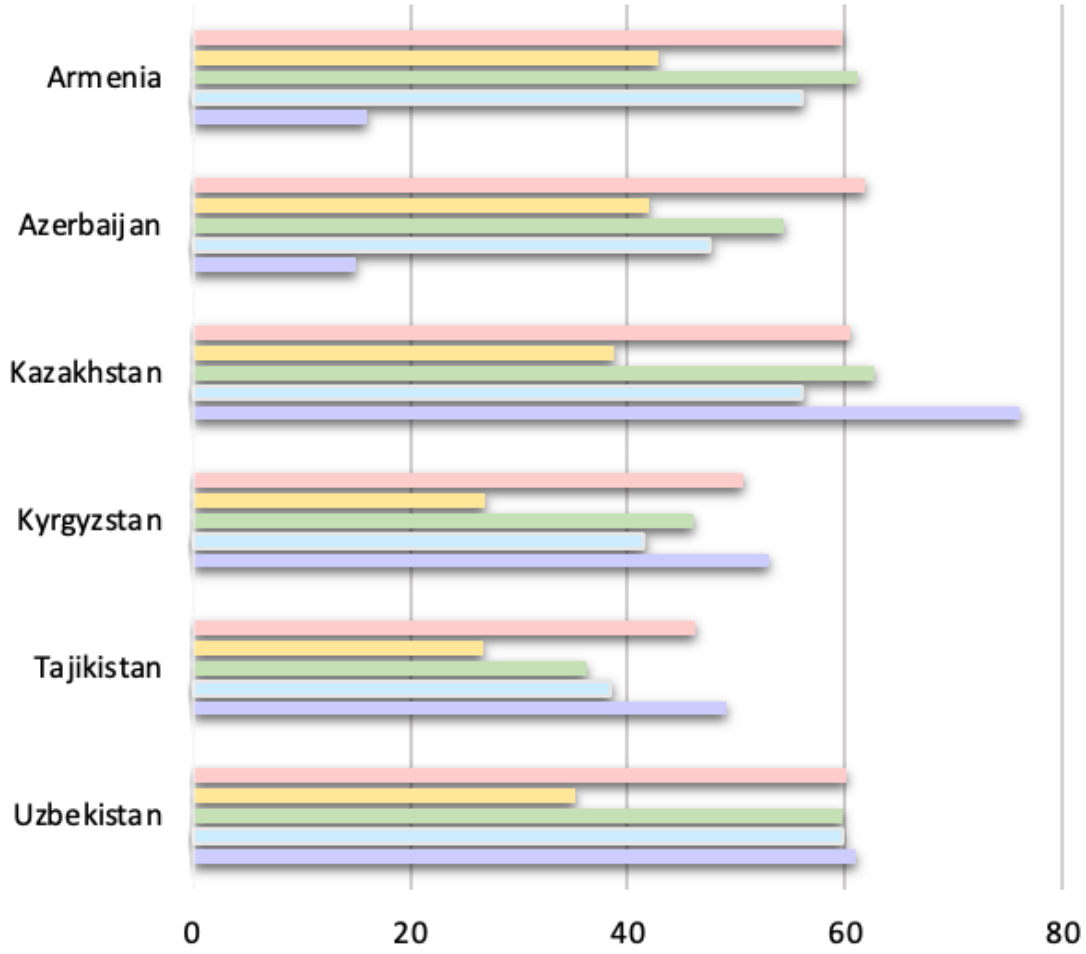
Tajikistan



Uzbekistan



Bar charts e-resilience profiles per pillar



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EGM

23 August 2023

LINK

ESCAP
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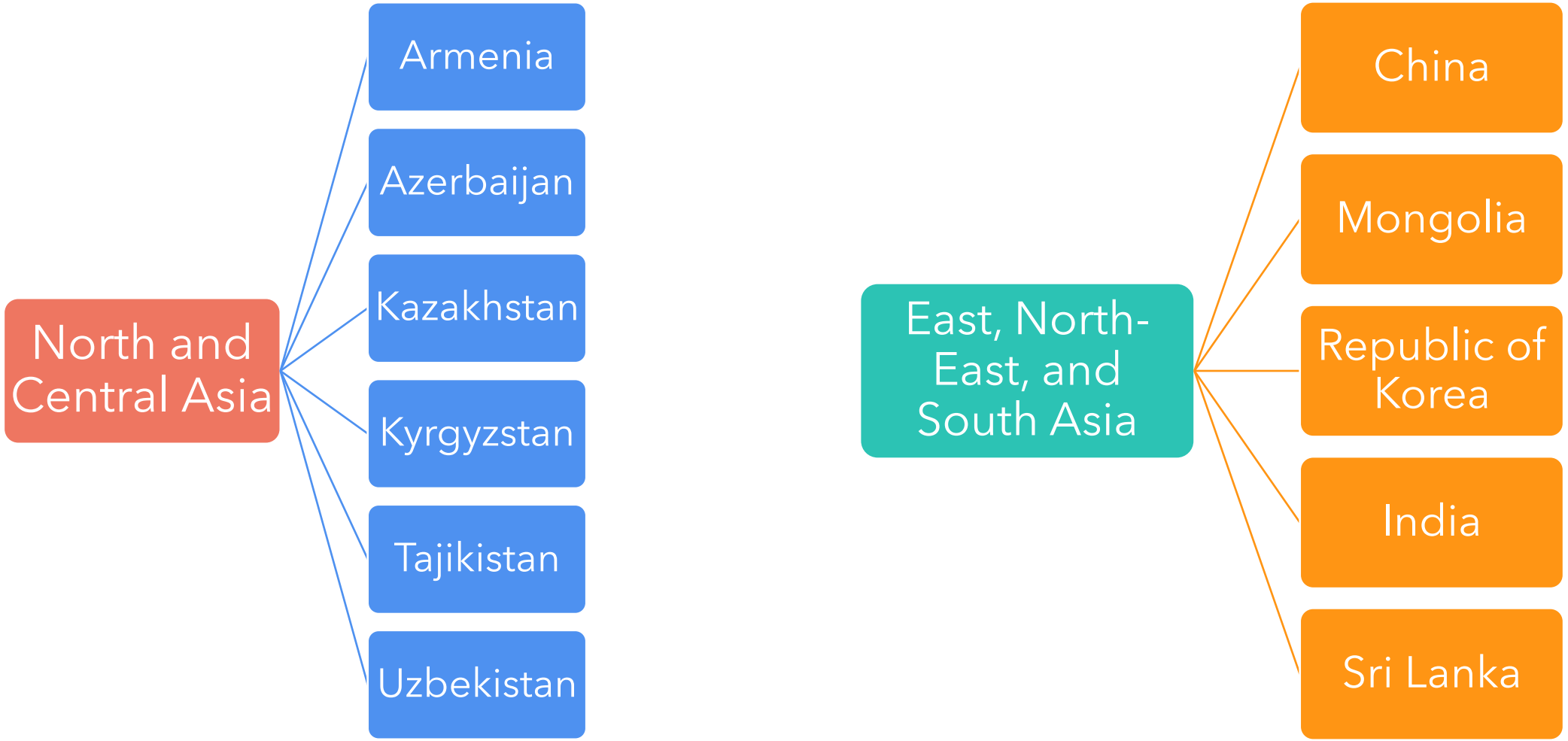
Working Paper: Tracking E-Resilience in NCA, SA and ENEA



INFORMATION AND COMMUNICATIONS TECHNOLOGY
AND DISASTER RISK REDUCTION DIVISION

Tracking E-Resilience in North and Central Asia

Aida KARAZHANOVA
Zorikto GOMBOIN
Ekaterina GENKINA

ASIA-PACIFIC INFORMATION SUPERHIGHWAY (APIS)
ESCAP Working Paper Series

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INFORMATION AND COMMUNICATIONS TECHNOLOGY
AND DISASTER RISK REDUCTION DIVISION

Tracking E-Resilience in China, Mongolia, the Republic of Korea, India, and Sri Lanka

Aida KARAZHANOVA
Zorikto GOMBOIN

ASIA-PACIFIC INFORMATION SUPERHIGHWAY (APIS)
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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

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Thank You!

Благодарю!

Rakhmet!