

Why HCAD is important for STI

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HCAD

HCAD contributes to SET

why it is important for stimulating science, technology and innovation?

does quality education have an effect on economic growth?

Govts are increasingly interested in financial support for research
assuming progress in literacy and numeracy among the working
population yields better quality of life and improved economic
competitiveness

H resources are the most valuable asset



The challenge

HCAD means different things to different people:

How to look people through the life cycle lens in terms of investment, what investments have been leveraged by the economy so we can

building local STI capabilities to catch up?

training and education is expensive,

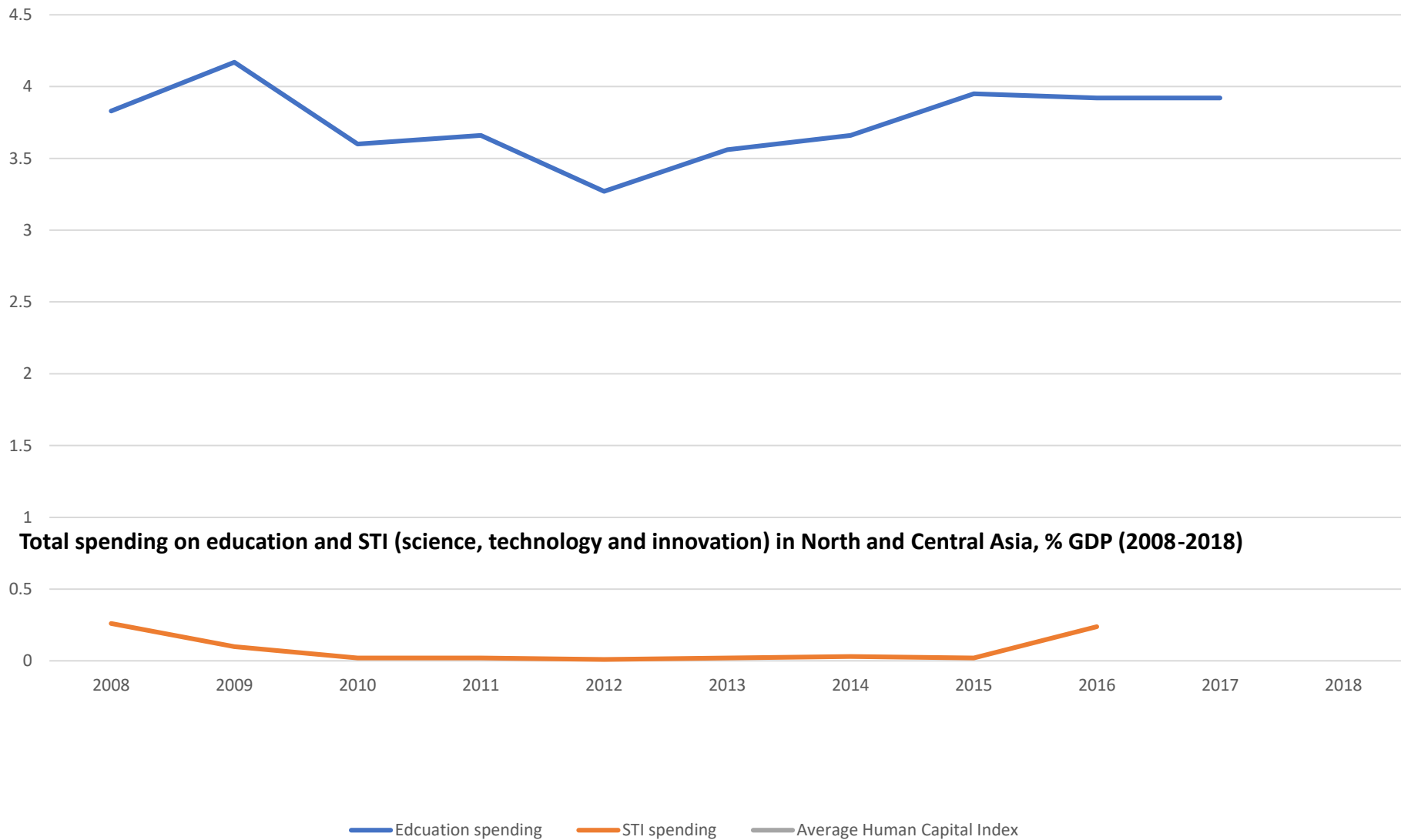
Economic incentive (the business case for innovation)

Global context is complex (externalities)

Social and economic organization of the system

innovation and invention capacity, requires the strategic interaction between individual- and institutional-knowledge, and which are critical to increasing product supply chains and added value in trade to increase income and redistribution to integrate those **left behind**.



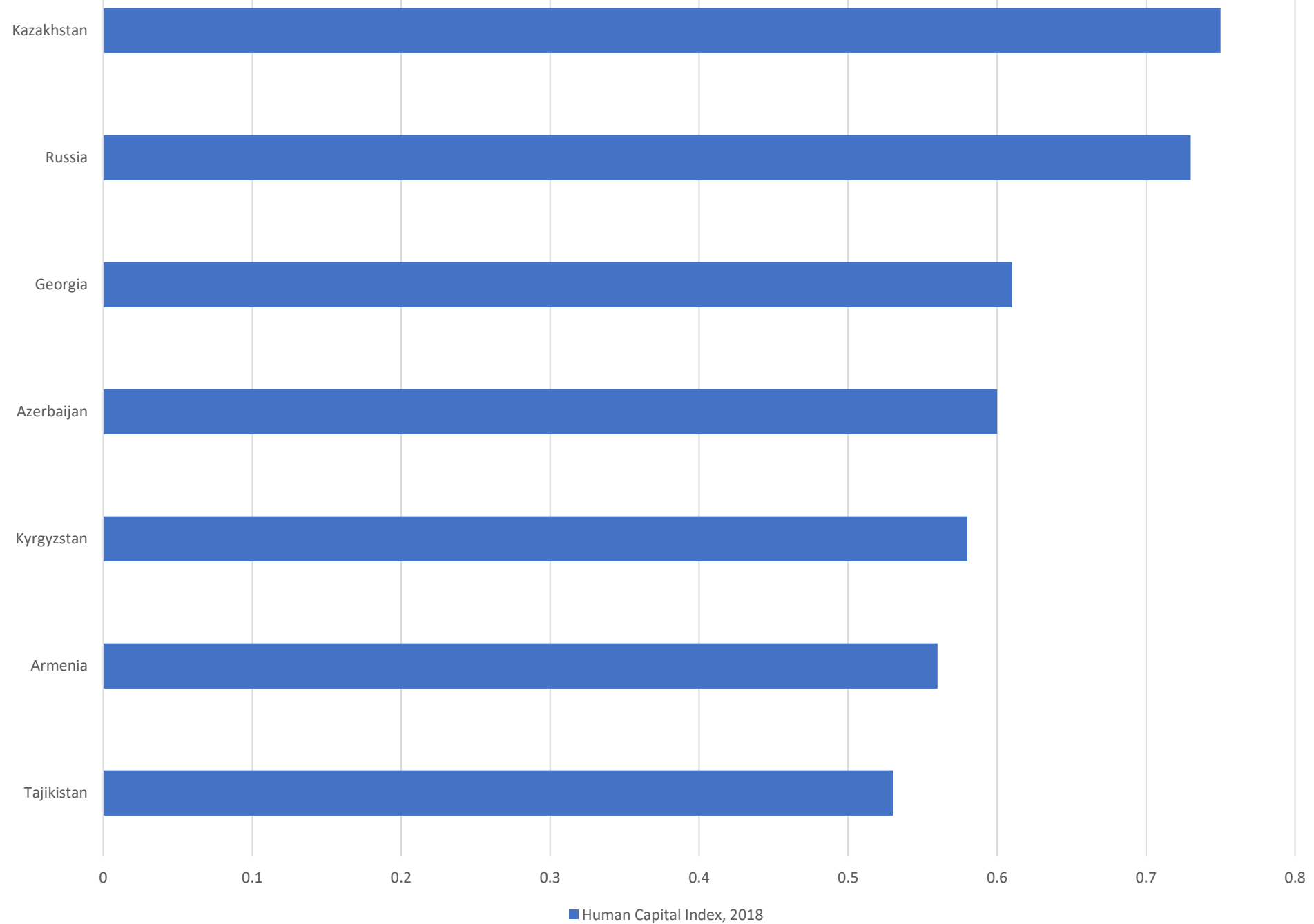


productivity and added value and in turn, grow the economies. However, SDGs are also about leaving no one behind so we must engage the people who are impacted by development bc they are the transformers of the system but there is a talent crunch

- identify the obstacles to acquiring HCAD, which fall in **two categories**:
- (1) individual (literacy) and
- (2) structural (institutional). For many, these factors can obstruct **equality of opportunity** and analyzing them can help ensure that all education, health and labour policies work holistically to reduce harm and increase desirable economic and social outcomes



Human Capital Index (HCI), 2018



Individual and structural factors

individual factors: literacy, infant and maternal mortality rates, life expectancy, access to full employment, and enrolment in quality education. Obviously, however,

structural factors: culture, class, technology, gender equality, perception of fairness, migration, and choice

interplay in a complex and holistic manner making the two connected and interdependent, and requiring qualitative data to interpret in a contextually relevant manner.





NEETs percent share of youth (age 15-24) Not in Education, Employment or Training in North and Central Asia

	Total	Male	Female
Armenia (2016)	36.6	35.4	37.8
Azerbaijan (2005)	19.5	14.7	24.0
Kazakhstan (2016)	9.5		
Kyrgyzstan (2016)	20.4	12.1	20.4
Russia (2015)	17.0	16.6	17.4
Tajikistan (2015)	42.2	30.4	52.4

NCA achieved near universal completion in primary and secondary education, but not **pre-primary** and **quality education**

Divergent access to pre-primary education

	enrolment rate	enrolment rate for girls	enrolment rate for boys
Azerbaijan	27.61	25.05	24.84
Kazakhstan	90.74	74.64	71.22
Kyrgyzstan	69.21	73.54	71.40
Russia	95.24	95.88	96.91
Uzbekistan	31.13	36.40	37.37

SDGs connection to STI structural factors

Indicator	SDG	Rate
Under-five mortality	3.2.1	33/1000
Chronic disease (30 to 70)	3.4.1	17%
Renewable energy share of consumption	7.2.1	3.7%
CO2 emissions http://www.fao.org/3/a-i3840e.pdf	9.4.1	600 grams/\$ GDP PPP
Researchers/1 million population	9.5.2	500
Livestock: Agriculture contribution to GDP %	10.1	44.5 % (2014)

Researchers and entrepreneurs – 500 researchers/million population

	STI candidate			Doctor in STI			PhD degree		
	M&W	Men	Women	M&W	Men	Women	M&W	Men	Women
total	17,506	8,427	9,079	5,049	3,121	1,928	1,687	785	902



The relative shortage of researchers and the underutilization of the population's potential is also reflected in the subregion's Global Innovation Index ranking, innovation being dependent on applied research, which in turn improves HCAD and may reduce the 'brain drain'. In 2018 NCA countries' situation ranked them between 46th (Russia, 2018) to 101st (Tajikistan, 2018), again putting the subregion in the middle between developed European countries (like Switzerland, 1st) and developing countries in Asia and the Pacific (Bangladesh, for example, 116th).

Take away

the World Bank in 2018 estimated that on average, 50 % of children born today in the subregion will receive half of what they could potentially get from the economy due to low spending on quality education.

This also meant the knowledge, skills and health that will be acquired from learning during school years up to age 18 by most children born today are invariably expected to lead to 75% (or less) of their potential productivity in the labour-market by age 60.

Human **attitude** is critical

ICT and culturally sound methods can also help motivate individuals and their families to focus more learning efforts on STIs.

Several structural factors : (1) Student-centred learning to promote critical thinking and reasoning remains rare in the learning environment in rural and remote areas; (2) the national assessment systems, which tests educational systems (like the PISA) to evaluate the placement of students in math and science, and which tends to focus on memory (rote) rather than thinking; (3) chronic deficits in qualified personnel in higher education (like scientific researchers), vocational training (in trades) and high 21st century skills (like in business), and (4) **accountability** systems remain weak to ensure effective educational reforms vital for HCAD.

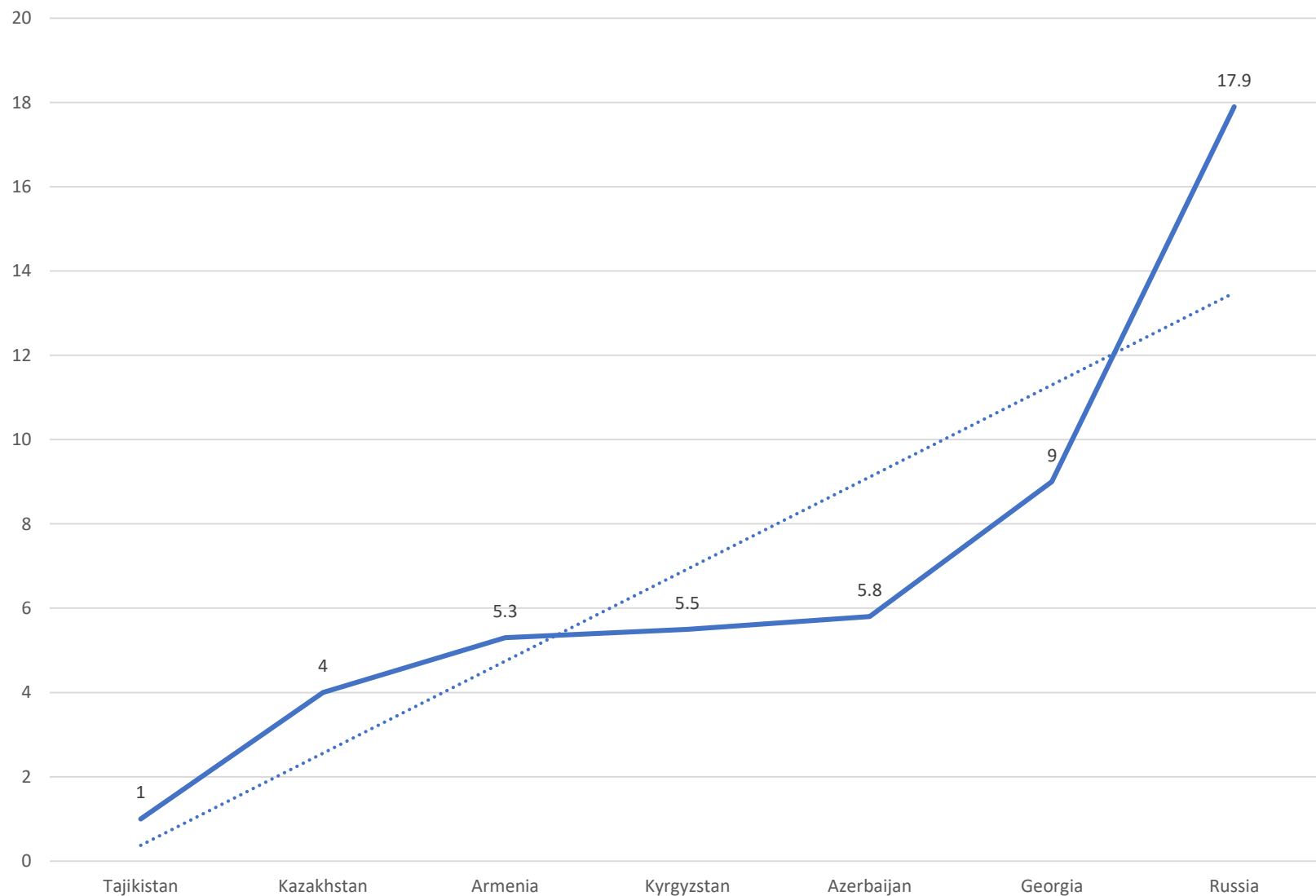


Labour markets

Country/Year	Male		Female	
	2010	2018	2010	2018
Armenia	17.1	17.9	21.3	37.97
Azerbaijan	4.4	4.7	6.9	43.6
Georgia	17.9	13.6	14.5	40.6
Kazakhstan	4.9	4.2	6.6	16.9
Kyrgyzstan	7.7	6.3	9.9	27.1
Russia	7.9	5.2	6.8	4.9
Tajikistan	11.7	9.9	11.7	11.0
Turkmenistan	4.0	3.2	4.0	3.6
Uzbekistan	8.3	6.9	8.0	6.9



Social protection, GDP % 2016



SDG gaps

SDG Gaps	Armenia	Azerbaijan	Georgia	Russia	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
1.1.1	X						X	X	X
3.2.1							X		
3.3.2					X		X	X	
3.4.1	X	X	X	X	X	X	X	X	X
3.6.1	X				X	X	X	X	
7.2.1	X	X	X	X	X	X	X	X	X
8.6	X	X	X	X	X	X	X	X	X
9.4.1	X	X	X	X	X	X	X	X	X
9.5.1	X	X	X	X	X	X	X	X	X
9.5.2	X	X	X	X	X	X	X	X	X
16.3	X						X	X	



conclusion

1. There is positive universal effect at the individual level, with variations in ROI per additional year of education
2. Quality education has positive effects on health, mortality and moderation of demographic growth
3. QE reduces gender inequality but not other types of inequality, such as socioeconomic disadvantage
4. Gaps in innovation and knowledge need to be addressed
5. Self-development is necessary for STI
6. Think of how to develop sustainable innovation systems
7. Public sector need to advance a innovation-based agenda
8. Support the private sector to embrace innovation



A large, teal-tinted background image showing several hands reaching out from the bottom and sides, symbolizing unity and support.

Thank you

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