Prof Dr Arshad Ali

Executive Director

Higher Education Commission

If we do not change the way we teach, in 30 years we will be in big trouble.
The things we teach our kids are the things from past 200 years ------

Jack Mack founder AliBaba.com

Journey Begins 2002

Gross Enrollment Rate 2.1%

No of Universities 50

H. E. Enrollment 0.26 Million(2001)

No. of Scholarship 200

Total PhD produced 1947 to 2000

176

Core Strategic Aims and objectives of HEC

Equitable Access, Quality & Standards

- Enhancing Nation wide Equitable Access
- Quality & Standards consistent with Global HE Standards
- Create a Critical Mass of qualified Human Resources
- Qualified Faculty with Advanced Degrees

Technology Readiness

- Nation wide availability and use of ICTs
- Provide necessary Scientific Equipment and Technology resources for High Quality Research
- Provide PERN3 Facilities through Global high speed connectivity
- Digital research and instructional Resources for faculty and students

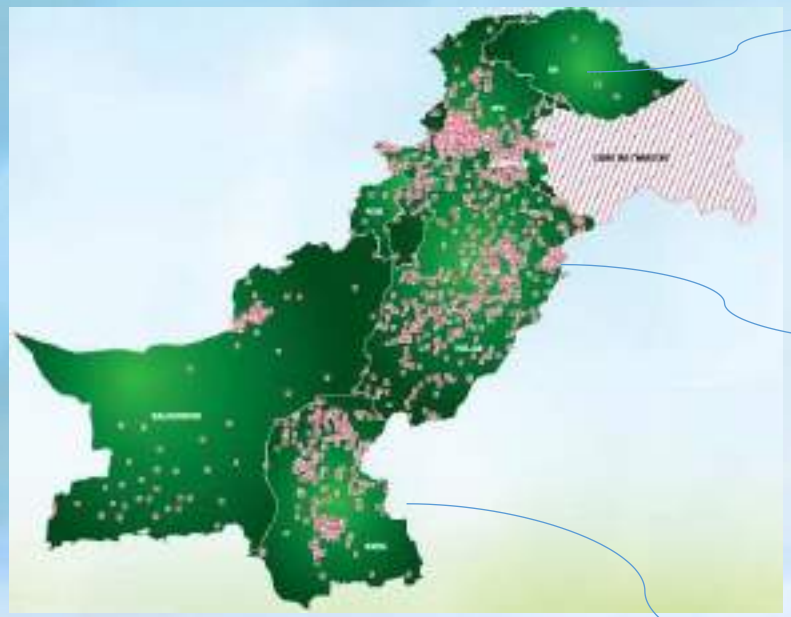
Research & Innovation

- Universities, Industry& Government nexus
  - Knowledge Economy
  - Critical National Problems and solutions
  - Discovery of new knowledge, competences and skills in Engineering specializations
  - Solve critical national problems and create indigenous solutions

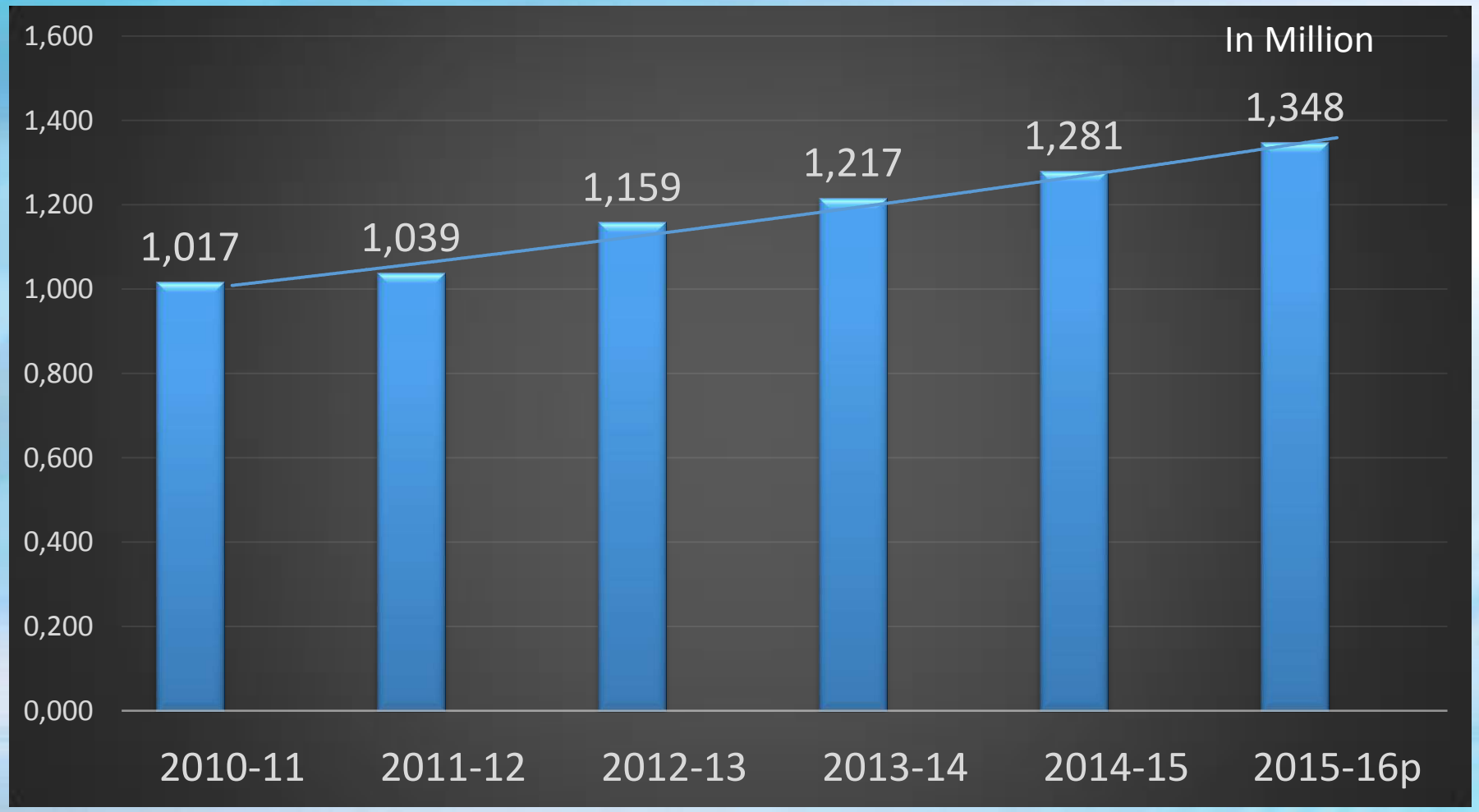
Leadership, Governance & Management

- Improve Management and Governance of HEI to offer UG and Grad interdisciplinary, rigorous and relevant programs
- Merit based selection of key university leaders, faculty and students
- Strategic planning, institutional development and improving academic quality of all programs offered at universities.

Enhancing Equitable Access



Students Enrollment in Universities (2010-2017)



Increase in Students Enrollment in Last three Years

16.3%

Female Participation in Universities

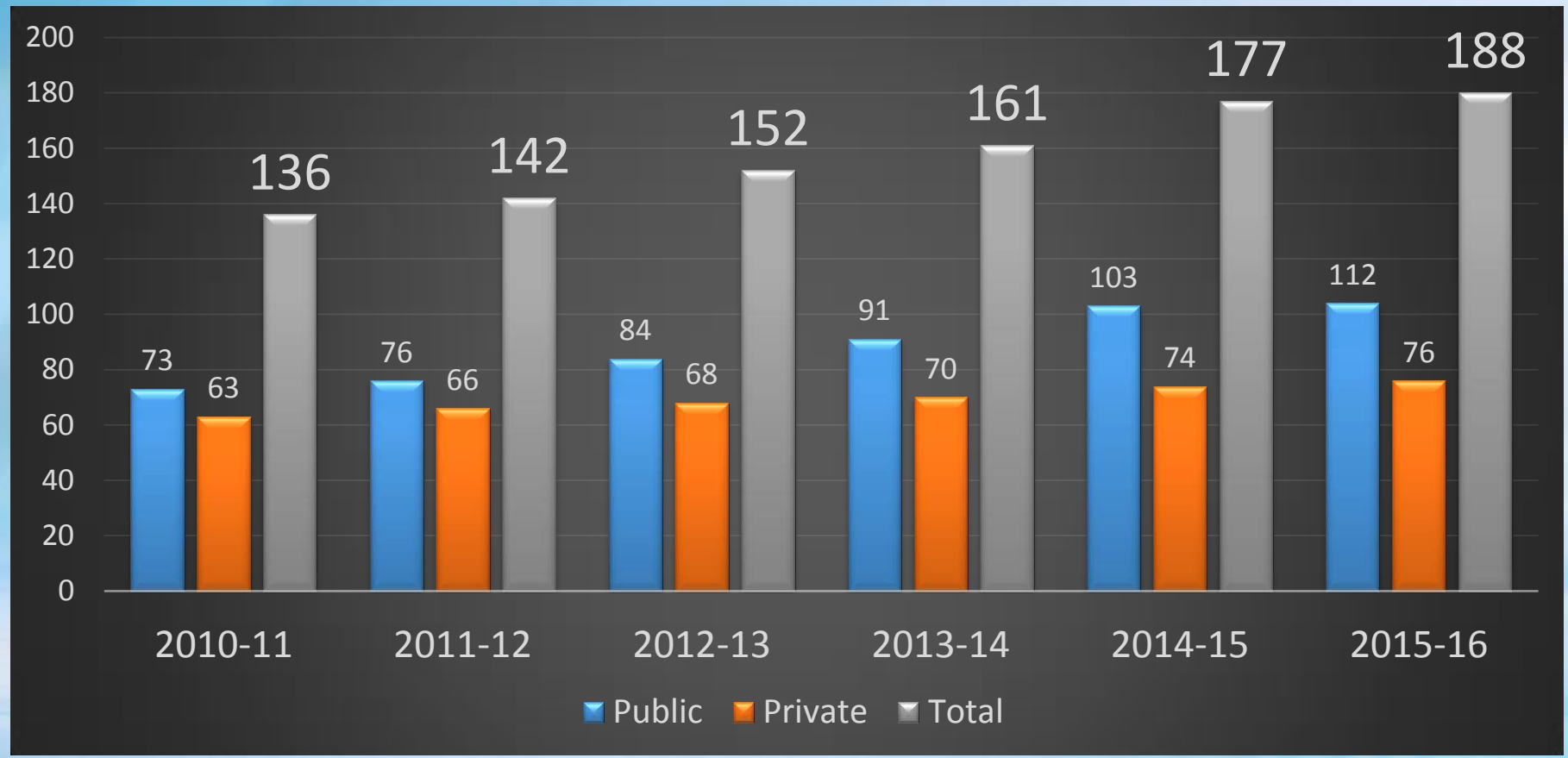
47.8%

Pre 2013: 1.15 Million

Post 2013: 1.348 Million

Source : HEC Data Bank

Recognized Universities(2010-2017)



Increase in no of Higher institution from 2014-17

19

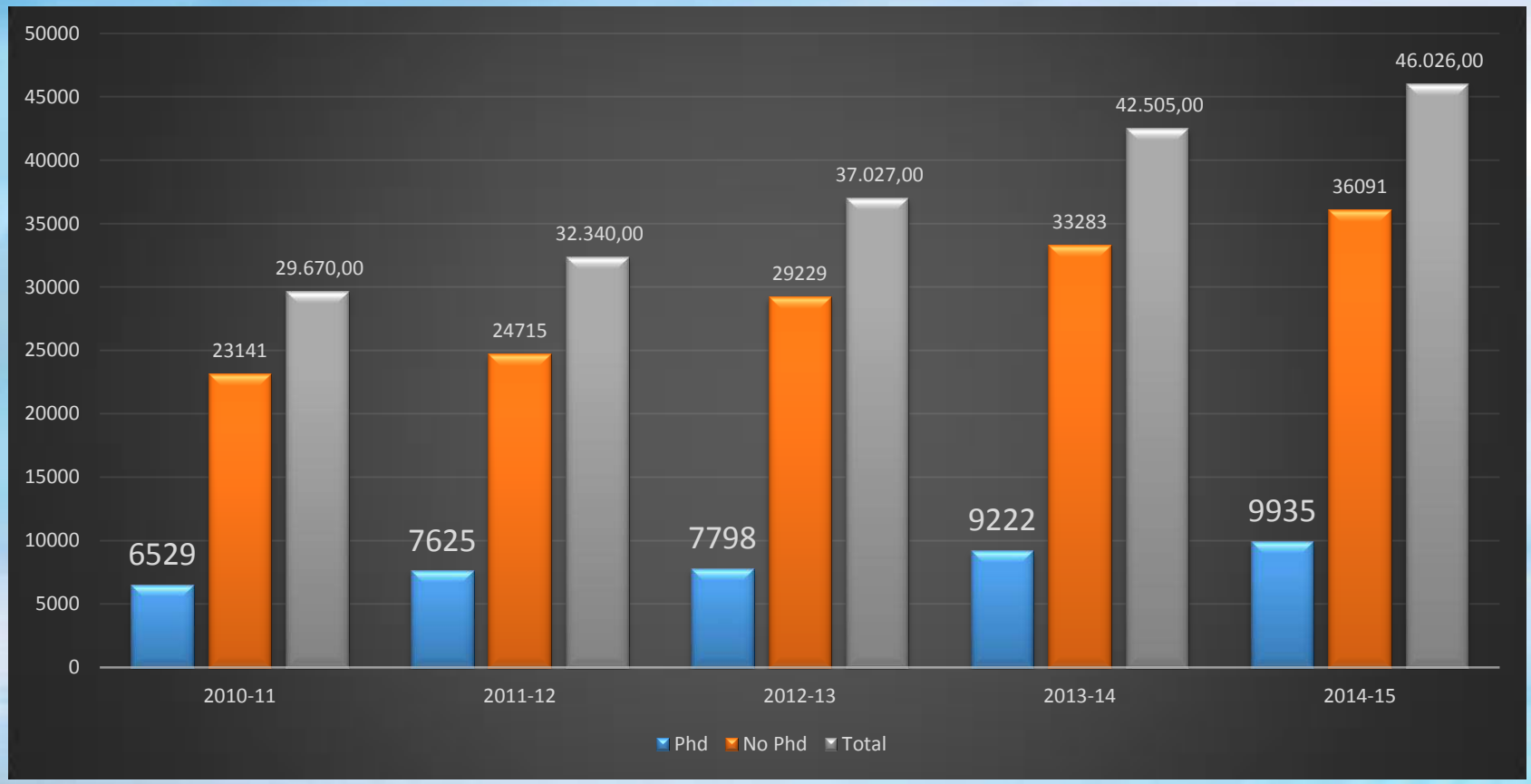
Planning to establish HEI or its campus in every district of Pakistan

Pre 2013: 152

Post-2013: 188

Source : HEC Data Bank

Faculty Members at Universities(2010-2017)



No. of Ph.D Faculty at HE Institutions in 2013

7,798

No. of Ph.D Faculty at HE Institutions in 2017

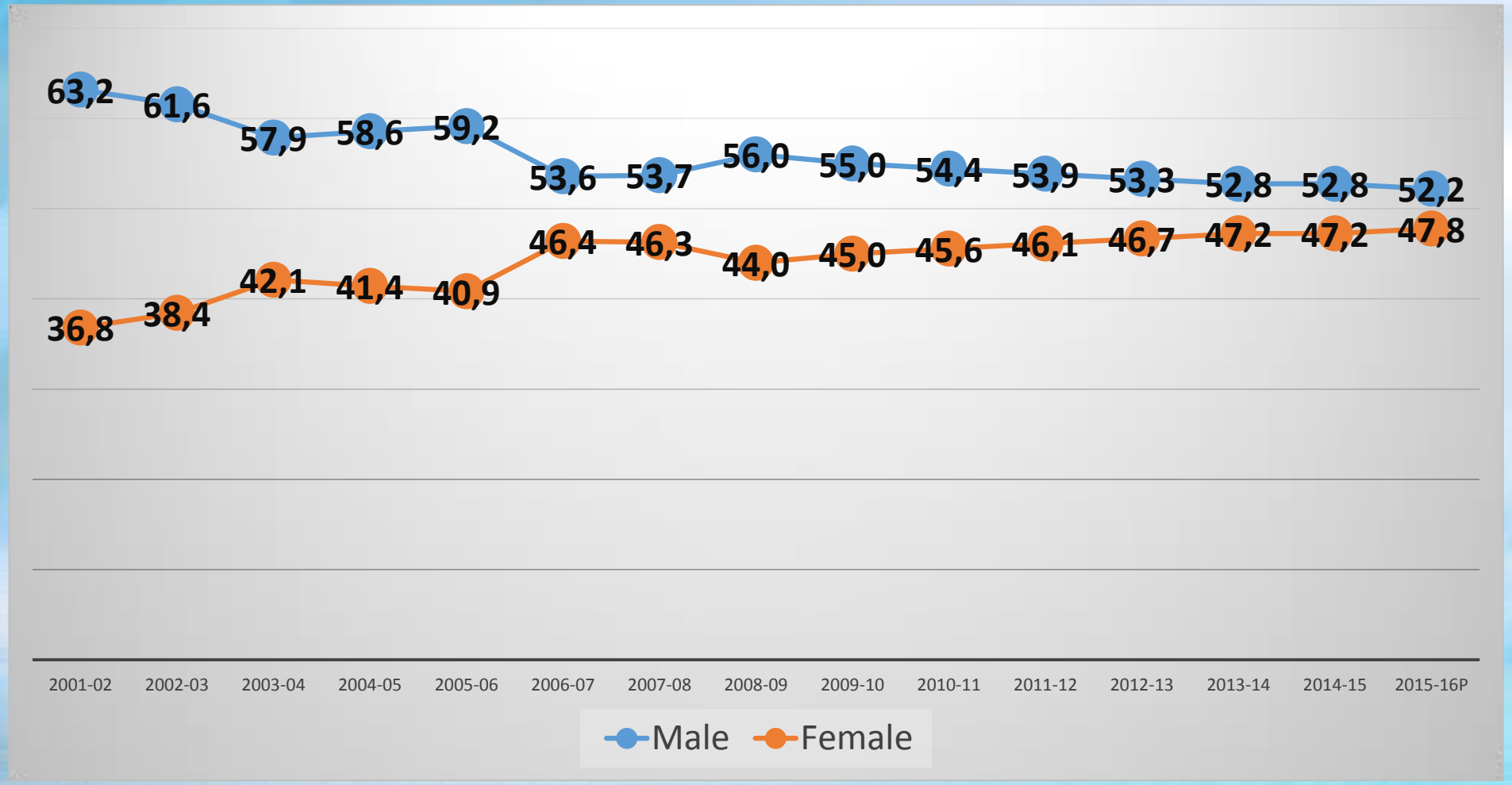
11,435

Pre 2013: 37,027

Post-2013: 46,026

Source : HEC Data Bank

Gender Wise Enrollment



Female Enrollment in HEI

612,300

Female Participation in Universities

47.8%

Source : HEC Data Bank

Quality & Standards

Quality & Standards of Higher Education & Research(Conti)

- National Qualification Framework-2016
- 15 Accreditation Councils developed Programmatic Accreditation standards
- Streamlined Recognition, Verification & Equivalence of Degrees
- HEC's Recognition of Institutions & Universities
- International Ranking of Programs & Universities

Quality & Standards of Higher Education & Research (Conti.)

- Standards of Bachelors, Masters and PhDs. Program approval
- Criteria for Award of Masters and PhD. Degrees
- Eligibility Criteria for Faculty Appointment, Retention and Promotion
- Quality Assurance & Enhancement (QECs)

Quality & Standards of Higher Education & Research(Conti.)

- **Relevance and Upgradation of Curricula , NCRC processes revised**
- **Criteria for Appointment of Vice- Chancellors /Rectors**
- Criteria for **appointment of Prof. Emeritus, Meritorious Professors Senior Management &**
- **Criteria for Recognition of Conferences and research Journals**

INTERNAL QUALITY ASSURANCE

Objective Function

- Enabling HEIs for incorporating IQA mechanism at both levels i.e. Program and Institution by establishing QECs, building their capacities, monitoring and assessing their performance and preparing them for external assessment by a 3rd party or regulatory body.

Status

- No. of QECs established: **177**
- No. of HEIs where IQA mechanism found implemented satisfactorily: Till 2015-17: 97 HEIs.
- No. of HEIs under taken for Assessment for Year 2016-17: 140, Assessment under process.
- IQA manual has been reviewed and being implemented in 2017-18

Plan

- Extending establishment of IQA mechanism to Sub-campuses and Affiliated Colleges of HEIs
- Extended Capacity Building of all stakeholders within an HEI clarifying them significance of IQA mechanism and their explicit roles
- Capacity Building of Director QECs in accordance with new IQA manual.
- Automation of IQA Self Assessment [Program and Institute Level]
- Certification of All HEIs on ISO 9000 HE related standard

EQA: INSTITUTE LEVEL [IPE]

Objective Function

- Enhancing the overall performance of DAIs
- Planning and administering the IPE visits, periodically (after 05 years), of all DAIs against defined standards of IPE

Status

- No. of HEIs evaluated against 11 IPE standards: **65**
- No. of HEIs evaluated against Governance and Quality standards only: **171**
- No. of Campuses evaluated against Governance and Quality standards: **84**
- IPE manual revised

Plan

- Certification of QAA Evaluators/Reviewers
- Capacity Building of IPE Existing Reviewers on revised manual
- Strengthening QAA for conducting IPE

EQA: PROGRAM LEVEL [ACCREDITATION]

Objective Function

- Assuring the accreditation of all the academic programs being offered in HEIs through relevant accrediting bodies
- Establishing new Accreditation Councils, Maintain composition, liaison and capacity building of existing accrediting councils to assure accreditation of all academic programs under their purview.

Status

- Total No. of Councils: **15**
- Total No. of HEC's Established Councils: **5 [NBEAC;NCEAC;NAEAC, NACTE & NTC]**
- No. of Councils under process of establishment: **3 [Allied Health Sciences, Life Sciences & Social Sciences]**
- Program accredited by four HEC est. Councils (NBEAC;NCEAC;NAEAC & NACTE) till Sep 2017: **999**

Plan

- Establishing Accreditation Councils for all remaining major disciplines in the light of Joint Academic Coding System and Capacity Building of all Accreditation Councils
- HEC's Vision 2025 & Investigation of Changing Accreditation Criteria/Model because of:
  - Emerging Smart Campuses & Classrooms in upcoming 4th Industrial Revolution
  - Community Colleges as Open Access Model – Accreditation Criteria may be different – Need Investigation
  - Reforms in Standards of Medical, Dental, Nursing and Allied Health Science
  - 3 tiered Higher Education System – outcomes of each tier are different – so different Accreditation Criteria for HEIs falling in different tiers required
- Certification of QAA Reviewers/Evaluators
- Accreditation of Distance learning programs

EQA: PROGRAM LEVEL [Review by HEC]

Objective Function

- Assuring the compliance of HEC's minimum criteria for PhD/MS & MPhil level programs by all DAIs and enhancing the quality of these programs to make them internationally compatible
- Planning and administering the Ph.D. Program Review Visits, periodically (after 3 years), of all DAIs that are offering PhD/MS & MPhil level programs , as per the defined Review Process

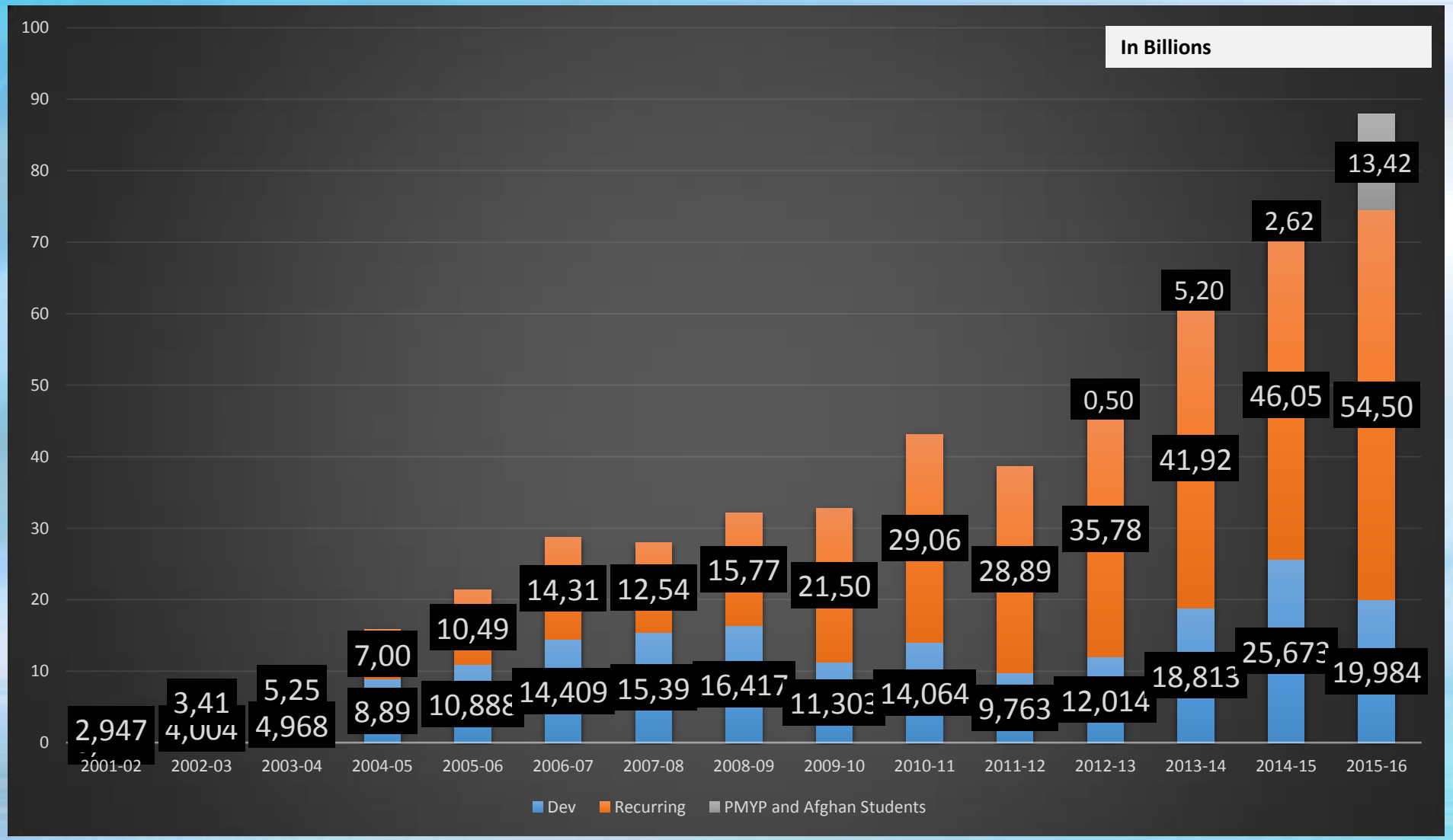
Status

- **PhD Programs:** Total DAIs reviewed: **82**, Total Programs reviewed: **604** whereof **419** were OK, Action taken till Nov. 2017: **102** programs stopped further intake and **83** halted
- **MS/MPhil Programs:** Total DAIs reviewed: **50**, Total Programs Reviewed: **524** whereof **278** were OK, Action taken till Nov. 2017: **84** programs stopped for further intake, **162** programs halted

Plan

- Legislation of for preparing Accreditation bodies to undertaking accreditation of Post Graduate Programs and building their capacity
- Certification of Program Reviewers/Evaluators

Progress of Higher Education Funding

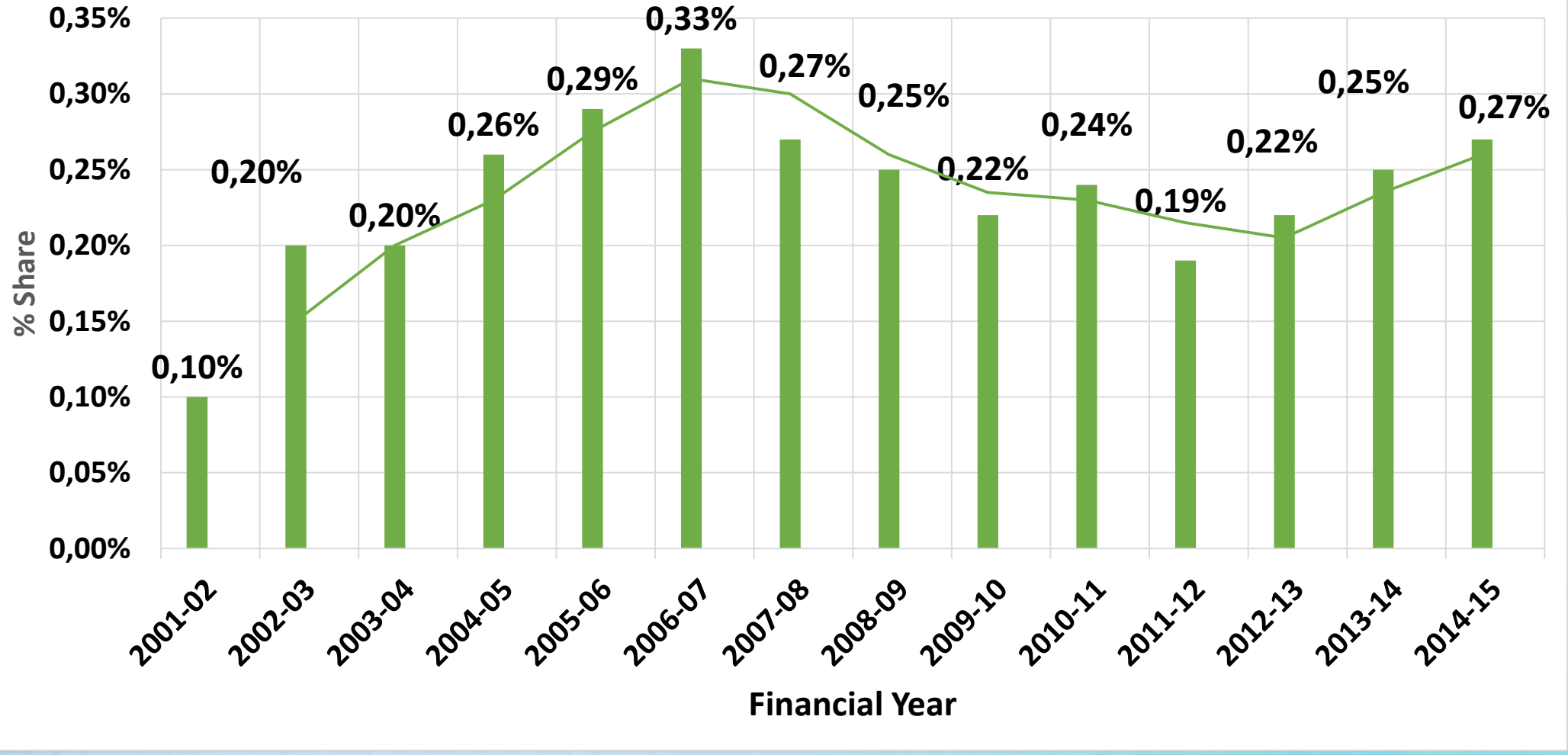


Increase in the Higher Education Commission Grants in last three Years

82%

Source : HEC Data Bank

Allocation to HE Sector Relative to GDP%



2016-17
0.30%

Technology Readiness


Learning & Innovation Division of Higher Education Commission Islamabad

Developments in PERN2

- **CURRENT STATUS (2017)**
  - **248** Universities\ Colleges connected in **57** Cities
  - **15** Gbps (10 PTCL + 5 TWA) Internet Bandwidth
  - **37** New universities will join PERN2 by Dec, 2018
  - **6** Gbps of Core Intranet Bandwidth Utilization.
  - IPLC upgraded from **155**Mbps to **1**Gbps with average utilization of **800**Mbps
  - Providing advance service, viz. IP MPLS, IPv6, IP Multicast, Advance Voice and Video Communication.

PERN3- Plans for Upgrading

- **PERN3 by 2019:**
- Establish **40Gbps/ 100Gbps** Backbone Long Haul Transmission
  - Up-Gradation of ADM sites from 10G to 40/100G
  - Bifurcation of Transmission Rings
  - New ADM/OLA Sites
- Upgradation of complete Core Equipment/ routers.
- Conversion of old with new updated technology
- Up-gradation of Campus equipment with 10Gbps Support.
- Expansion of PERN-III footprint to new cities/ regions.
- **10** Gbps last Mile Media shall be required for the universities

Digital Library and Archives – Available to all HEIs across Provinces

- E-Journals & E-Books
  - 2013: 70 K
  - 2017: 1.8 Million
- Budget
  - 2013: Rs. 907 Million
  - 2017: Rs. 935 Million

HEC's Vision- Three Tiered Model of Tertiary Education

TIER I Universities

- Top 30 Universities to convert them world class institution

TIER II Universities

- All TIER II universities to establish Distance Education Directorates

TIER III Universities

- Colleges
- 3600 existing colleges

Curriculum Development and Refinement

Judicious Blend of:

- **General Education**
- **Content Education**
- **Professional Field Work**

- **54** curricula of different Programs developed at undergraduate & graduate levels through relevant NCRCs (2013-17)
- 290 curriculum Revisions
- Curricula developed in close collaboration with Pakistan Councils.

Centers for Advanced Studies

Components

1. Curriculum Reforms for Graduate Program
2. Higher Quality Research through Research Grants for Innovative and commercialize projects
3. Stakeholders meetings to share the scholarly applied research
4. Faculty Development and Post graduate training
5. Sustainability through industrial academia linkages

- **Energy:**

NUST/ UET Peshawar

⇕

Arizona State University

- **Water:**

Mehran University

⇕

University of Utah

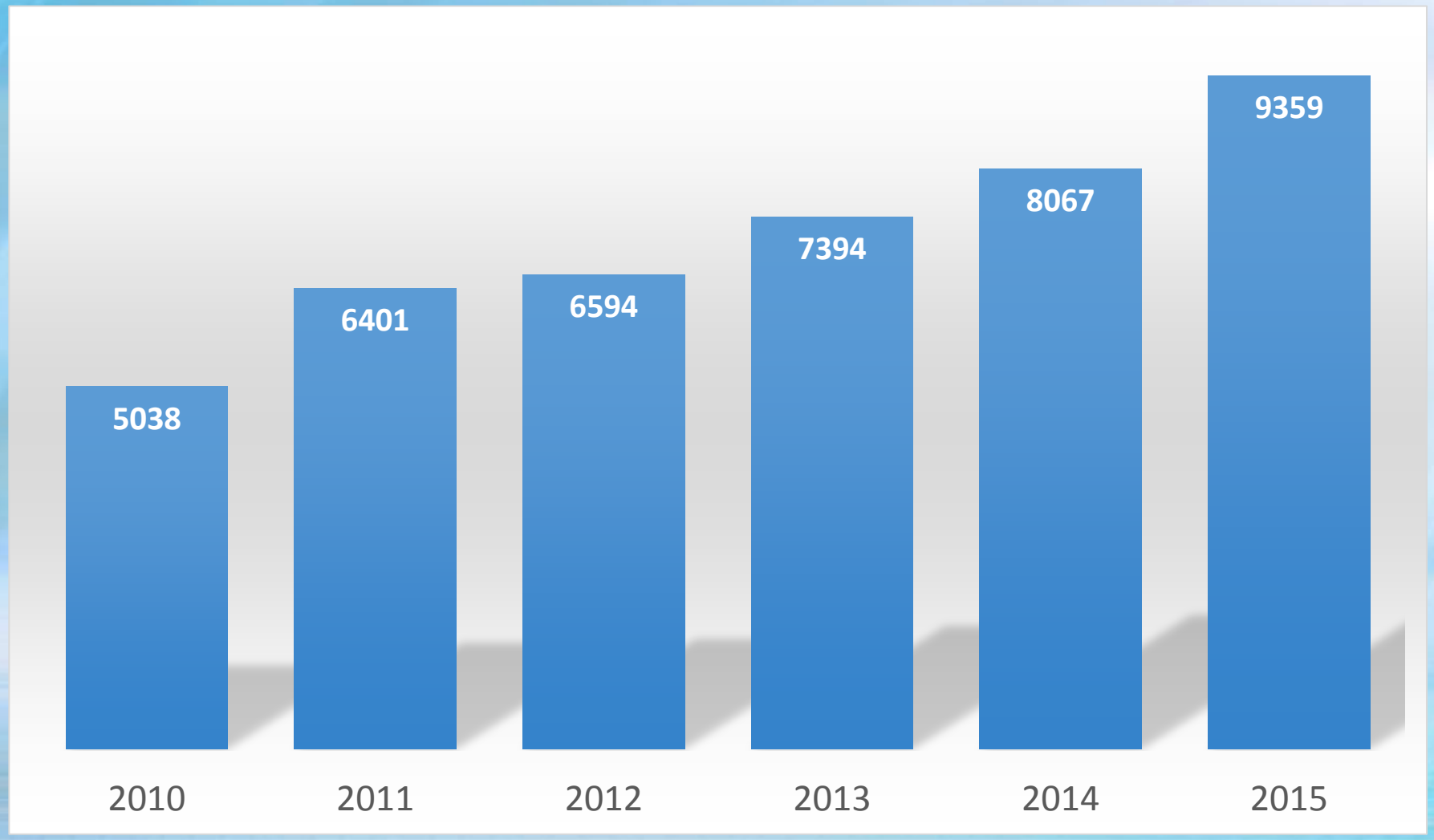
- **Agriculture and Food Security:**

University of Agriculture Faisalabad

⇕

UC Davis

Creating Knowledge through Research Publications

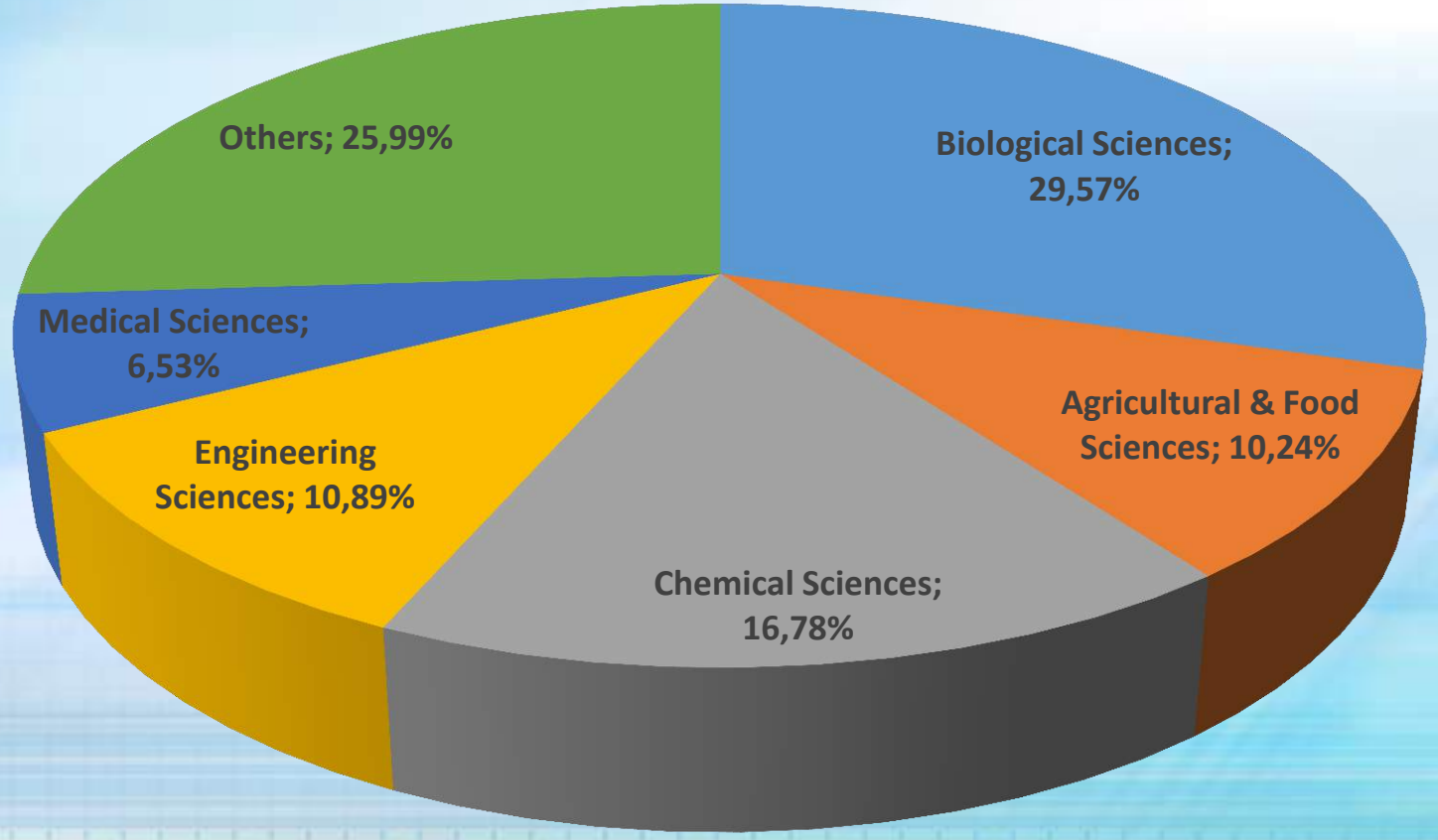


Increase in Research Publications

Year	No of Publications
2010	5038
2011	6401
2012	6594
2013	7394
2014	8067
2015	9359
2016	11237
2017	12147

National Research Programme for Universities

- Biological, Agricultural and Chemical Sciences are more than 50% of the total approved cost

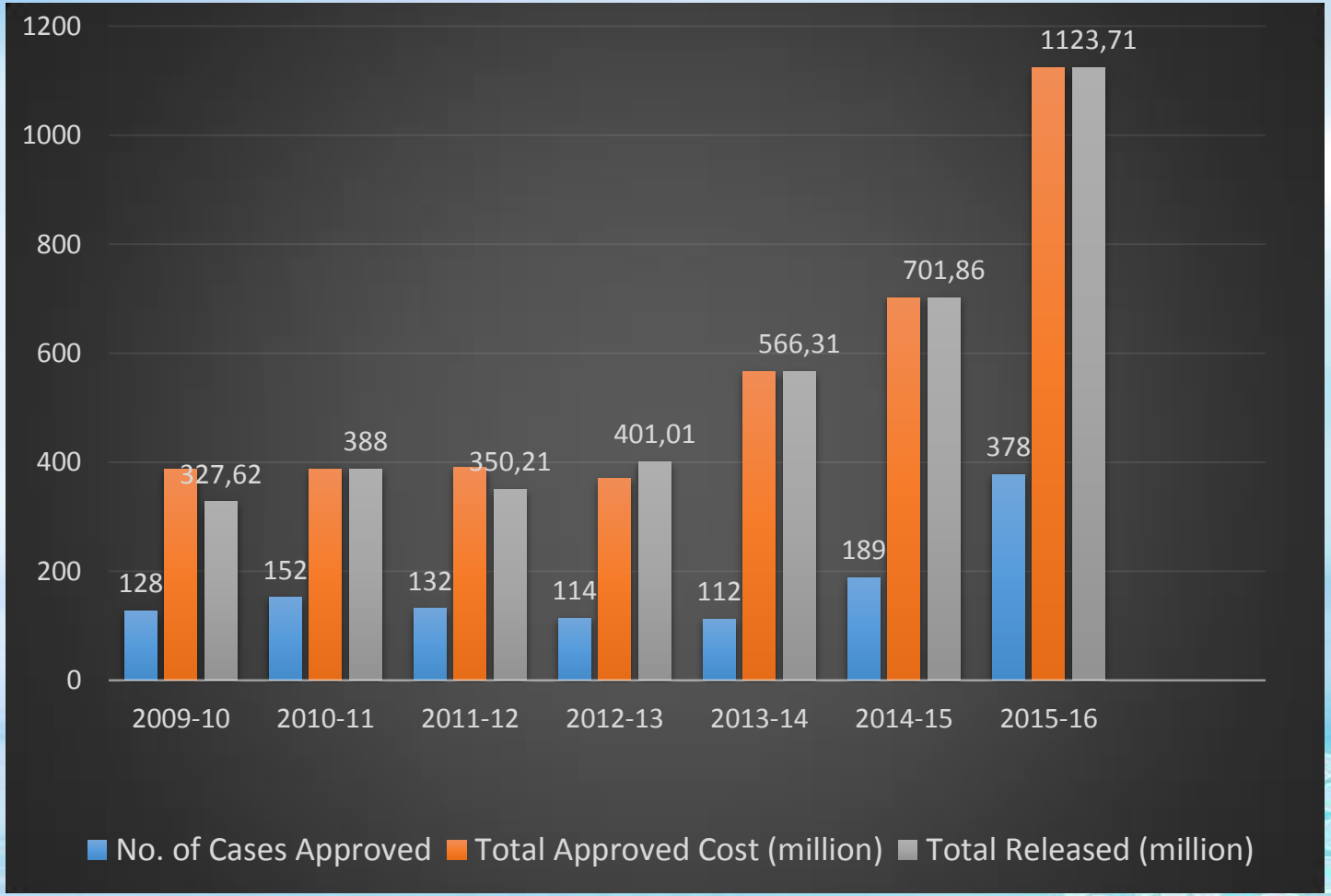


HEC Support to Engineering Universities

Program	Status 2001 to 2009	2010 to 2017
Establishment of ORIC	0	14
Establishment of BICs	02	09
Patent Filed in Engineering Discipline	02	19
Approved Projects in Engineering: Knowledge Economy Partnership Program	NA	Rs. 23,500,000 (06 Projects)
Pakistan Program for Collaborative Research	Rs.1,132,000 (7 projects)	Rs.3,505,000 (17 projects)
Pak-France PERIDOT Research Program	NA	Rs.550,000 (2 projects)
University/Industry Linkages	NA	400 (in 2014-15 only)

NATIONAL RESEARCH PROGRAM FOR UNIVERSITIES (NRPU)

Calendar Year	No. of Cases Approved	Total Approved Cost (million)	Total Released (million)
2009-10	128	386.98	327.62
2010-11	152	388.00	388.00
2011-12	132	390.21	350.21
2012-13	114	370.01	401.01
2013-14	112	566.31	566.31
2014-15	189	701.86	701.86
2015-16	378	1123.71	1123.71
Total	**1229**	**5027.08**	**3988.72**



Creating Knowledge through Research Publications

Pakistan has, emerged as a country with highest percentage of highly cited papers as compared to BRIC countries (Brazil, Russia, India and China). Citations are acknowledgments by the scientific community of useful findings and advances that add significantly to the ongoing research and its markitibility

THOMSON REUTERS

Source : http://ip-science.interest.thomsonreuters.com/incites-pakistan/

QS World Ranking-Asia

2012		2013		2014		2015		2016	
University	Rank	University	Rank	University	Rank	University	Rank	University	Ranking
NUST	108	QAU	119	PIEAS	106	PIEAS	115	LUMS	111
UOK	191-200	NUST	120	AKU	116	QAU	116	NUST	112
AKU	201-250	AKU	151-160	QAU	123	AKU	117	QAU	149
UET Lhr	201-250	LUMS	191-200	NUST	129	NUST	119	PIEAS	149
LUMS	251-300	UET Lhr	201-250	LUMS	181-190	LUMS	161-170	AKU	183
Uo Lhr	251-300	UoK	201-250	COMSATS	201-250	COMSAT	201-250	Uo Karachi	201-210
		Uo Punjab	201-250	UOK	201-250	Uo Punjab	201-250	Uo Punjab	221-230
				UOPunjab	201-250	UAF, Fsd	251-300	COMSAT	231-240
				UAF, Fsd	251-300	UET, Lhr.	251-300	UET Lhr.	241-250
				UET Lhr	251-300	Uo Karachi	251-300	UAF Fsd	301-350
Total HEIs= 6		Total HEIs= 7		Total HEIs= 10		Total HEIs= 10		Total HEIs = 10	

Source : http://www.topuniversities.com/university-rankings/asian-university-rankings/2016

AVAILABILITY OF SCIENTISTS & ENGINEERS

Rank	Economy	Value	Distance from best
1	Finland	6.1	
2	Qatar	5.6	
3	Japan	5.6	
4	United States	5.4	
5	Malaysia	5.4	
6	Greece	5.3	
7	United Arab Emirates	5.2	
8	Israel	5.2	
9	Ireland	5.2	
10	Canada	5.2	
44	Pakistan	4.3	
49	India	4.2	

2015-16

PATENTS PER MILLION POPULATION

RANK	COUNTRY/ECONOMY	SCORE
1	Taiwan, China	287.1
2	Japan	279.1
3	United States	261.7
4	Israel	195.0
5	Korea, Rep.	181.4
6	Finland	163.0
7	Switzerland	158.9
8	Sweden	110.2
9	Germany	109.5
10	Canada	108.8
11	Singapore	92.8
12	Iceland	80.0
13	Netherlands	77.6
14	Luxembourg	72.0
15	Denmark	70.9
16	Austria	59.9
17	Australia	57.3
18	Belgium	56.0
19	Norway	55.2
20	United Kingdom	51.5
51	China	1.2
59	India	0.6
88	Pakistan	0.0

2003-2004

Rank	Economy	Value	Distance from best
1	Japan	334.9	
2	Switzerland	320.8	
3	Sweden	312.5	
4	Finland	294.0	
5	Israel	239.1	
6	Germany	225.2	
7	Korea, Rep.	220.7	
8	Denmark	215.4	
9	Netherlands	208.9	
10	Austria	167.5	
61	India	1.6	
109	Pakistan	0.0	

2015-2016

STATE OF PAKISTAN'S INDUSTRY-UNIVERSITY RESEARCH COLLABORATION

RANK	COUNTRY/ECONOMY	SCORE
1	United States	5.8
2	Switzerland	5.7
3	Finland	5.6
4	United Kingdom	5.6
5	Sweden	5.5
6	Singapore	5.4
7	Canada	5.4
8	Denmark	5.3
9	Germany	5.2
10	Belgium	5.2
11	Netherlands	5.2
12	Taiwan, China	5.2
13	Australia	5.1
14	Israel	5.1
15	Luxembourg	5.1
16	Iceland	5.0
17	Ireland	5.0
18	Austria	4.9
19	Japan	4.9
20	Norway	4.9
25	China	4.6
58	India	3.7
81	Pakistan	3.4

2003-2004

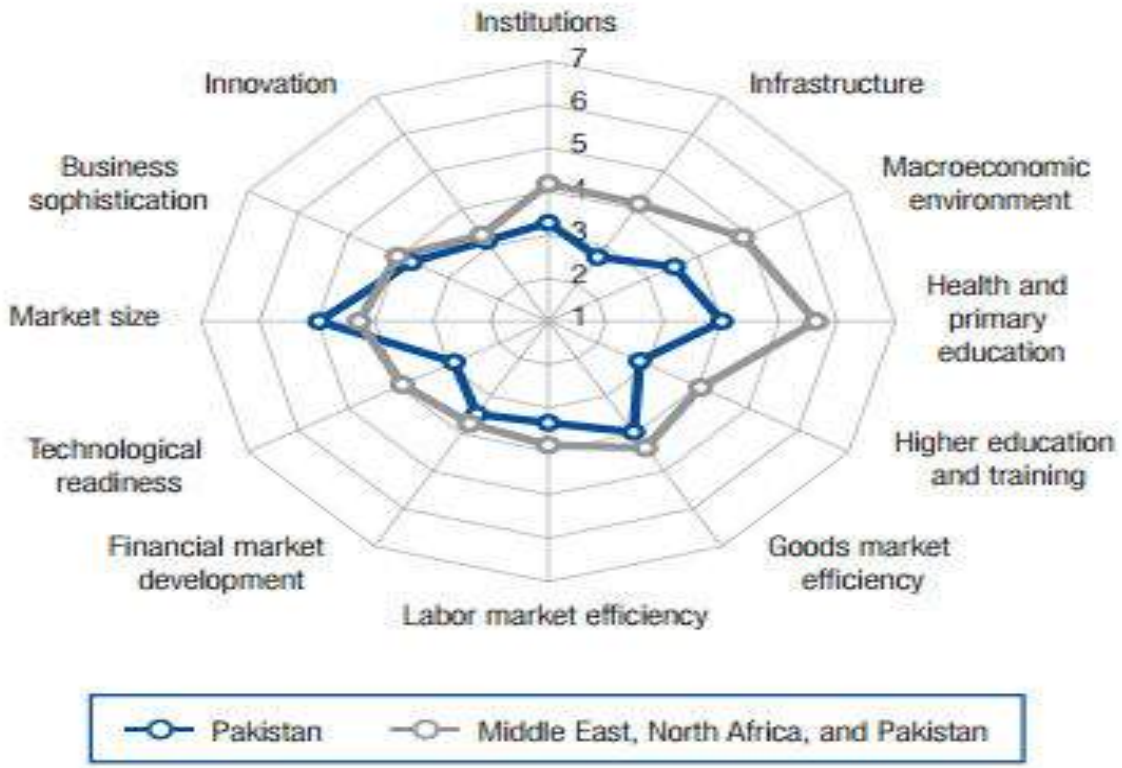
Rank	Economy	Value
1	Finland	6.0
2	United States	5.8
3	Switzerland	5.8
4	United Kingdom	5.7
5	Singapore	5.6
6	Belgium	5.6
7	Israel	5.5
8	Qatar	5.4
9	Netherlands	5.4
10	Germany	5.3
50	India	3.9
98	Pakistan	3.2

2015-2016

STATUS OF INNOVATION IN PAKISTAN

Global Competitiveness Index

	Rank (out of 140)	Score (1–7)
GCI 2015–2016	**126**	**3.4**
GCI 2014–2015 (out of 144)	129	3.4
GCI 2013–2014 (out of 148)	133	3.4
GCI 2012–2013 (out of 144)	124	3.5
Basic requirements (60.0%)	**131**	**3.4**
1st pillar: Institutions	119	3.3
2nd pillar: Infrastructure	117	2.7
3rd pillar: Macroeconomic environment	128	3.5
4th pillar: Health and primary education	127	4.0
Efficiency enhancers (35.0%)	**107**	**3.6**
5th pillar: Higher education and training	124	2.8
6th pillar: Goods market efficiency	116	3.9
7th pillar: Labor market efficiency	132	3.3
8th pillar: Financial market development	99	3.5
9th pillar: Technological readiness	113	2.9
10th pillar: Market size	28	5.0
Innovation and sophistication factors (5.0%)	**89**	**3.4**
11th pillar: Business sophistication	86	3.7
12th pillar: Innovation	89	3.1



Stage of development

Thank You