Global Innovation Index 2021

LAO PEOPLE'S DEMOCRATIC REPUBLIC

117th Laos ranks 117th among the 132 economies featured in the GII 2021.

The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

The following table shows the rankings of Laos over the past three years, noting that data availability and changes to the GII model framework influence year-on-year comparisons of the GII rankings. The statistical confidence interval for the ranking of Laos in the GII 2021 is between ranks 112 and 122.

Rankings for Laos (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	117	123	112
2020	113	127	95
2019			

- Laos performs better in innovation outputs than innovation inputs in 2021.
- This year Laos ranks 123rd in innovation inputs, higher than last year.
- As for innovation outputs, Laos ranks 112th. This position is lower than last year.

27th Laos ranks 27th among the 34 lower middle-income group economies.

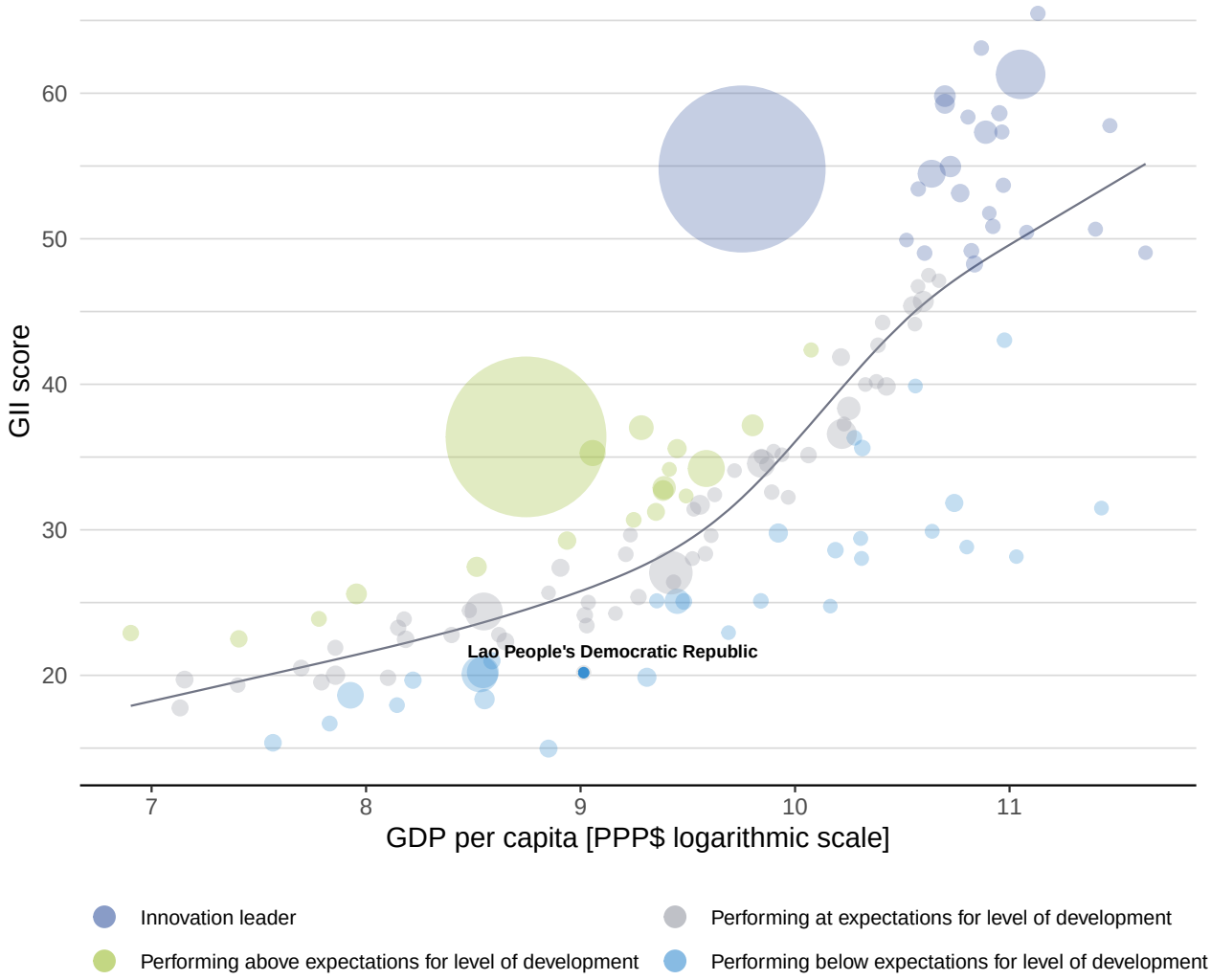
16th Laos ranks 16th among the 17 economies in South East Asia, East Asia, and Oceania.

EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

Relative to GDP, Laos's performance is below expectations for its level of development.

The positive relationship between innovation and development

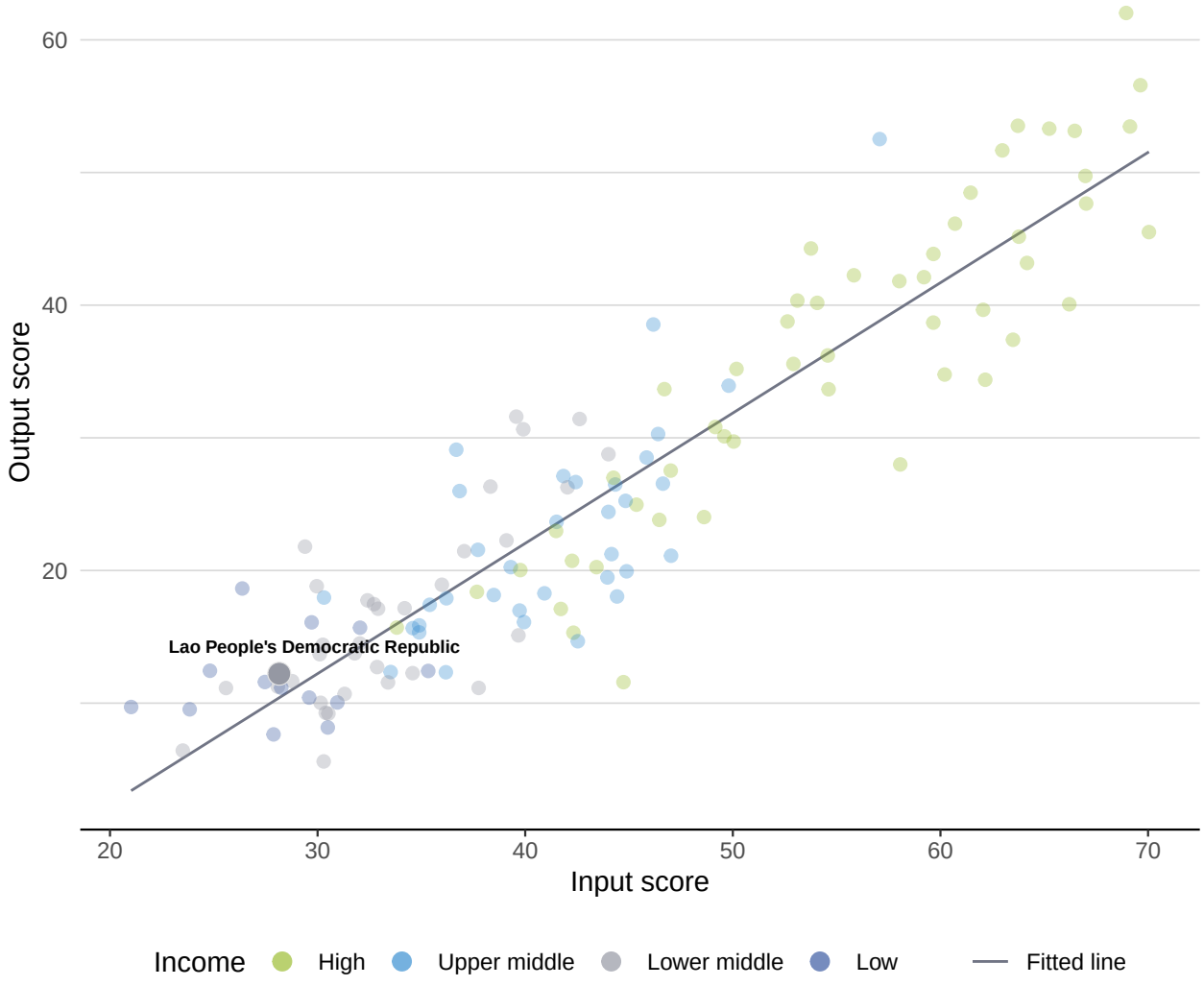


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

Laos produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND SOUTH EAST ASIA, EAST ASIA, AND OCEANIA

The seven GII pillar scores for Laos

Lower middle-income group economies

Laos performs above the lower middle-income group average in Business sophistication.

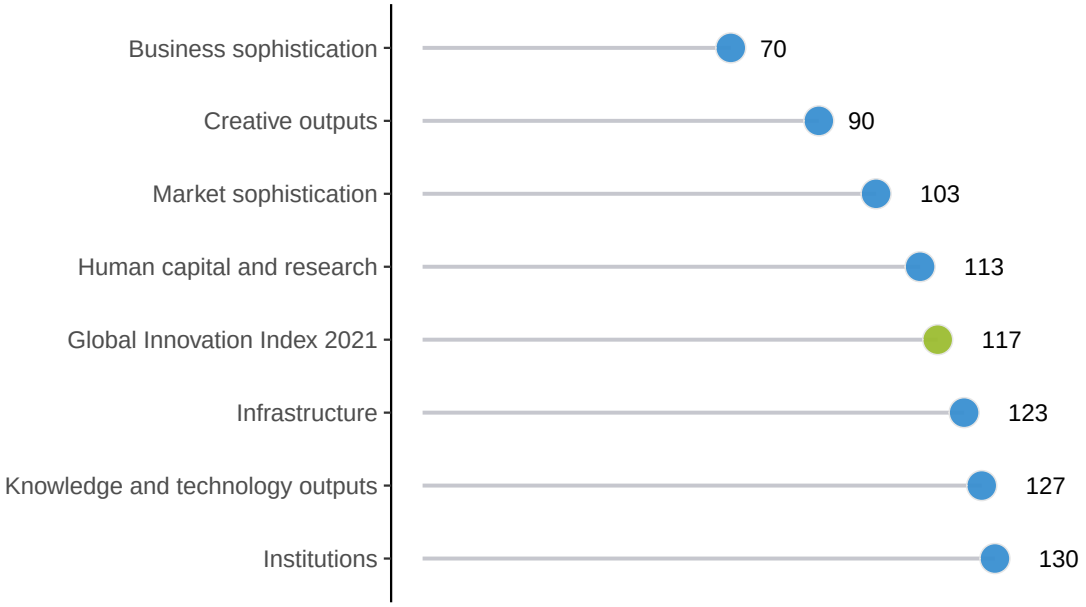
South East Asia, East Asia, and Oceania

Laos performs below the regional average in all GII pillars.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Laos performs best in Business sophistication and its weakest performance is in Institutions.

The seven GII pillar ranks for Laos



Note: The highest possible ranking in each pillar is one.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Laos in the GII 2021.

Strengths and weaknesses for Laos

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.1.1	Political and operational stability	44	1.3	Business environment	132
2.2.2	Graduates in science and engineering, %	53	1.3.2	Ease of resolving insolvency	129
3.2.1	Electricity output, GWh/mn pop.	47	2.3.3	Global corporate R&D investors, top 3, mn US$	41
4.1.3	Microfinance gross loans, % GDP	27	2.3.4	QS university ranking, top 3	74
4.3	Trade, diversification, and market scale	63	3.1.3	Government's online service	131
4.3.1	Applied tariff rate, weighted avg., %	7	3.1.4	E-participation	130
5.2.1	University-industry R&D collaboration	54	4.2.1	Ease of protecting minority investors	130
5.2.2	State of cluster development and depth	46	5.2.5	Patent families/bn PPP$ GDP	100
5.3.4	FDI net inflows, % GDP	14	6.1.2	PCT patents by origin/bn PPP$ GDP	98
6.3.3	High-tech exports, % total trade	35	6.2.2	New businesses/th pop. 15–64	121
7.2.5	Creative goods exports, % total trade	20	7.2.4	Printing and other media, % manufacturing	102

Lao People's Democratic Republic

GII 2021 rank **117**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
112	123	Lower middle	SEAO	7.3	59.7	8,221	113

		Score/ Value	Rank	
Institutions		**37.9**	**130**	◇
1.1	**Political environment**	**46.5**	**100**	
1.1.1	Political and operational stability*	73.2	44	● ◆
1.1.2	Government effectiveness*	33.2	117	
1.2	**Regulatory environment**	**35.8**	**125**	◇
1.2.1	Regulatory quality*	24.9	114	
1.2.2	Rule of law*	21.9	119	
1.2.3	Cost of redundancy dismissal	34.2	123	
1.3	**Business environment**	**31.3**	**132**	○ ◇
1.3.1	Ease of starting a business*	62.7	130	◇
1.3.2	Ease of resolving insolvency*	0.0	129	○ ◇
Human capital and research		**16.3**	**113**	
2.1	**Education**	**29.2**	**116**	
2.1.1	Expenditure on education, % GDP	2.9	98	
2.1.2	Government funding/pupil, secondary, % GDP/cap	12.5	83	
2.1.3	School life expectancy, years	10.5	105	
2.1.4	PISA scales in reading, maths and science	n/a	n/a	
2.1.5	Pupil-teacher ratio, secondary	17.3	84	
2.2	**Tertiary education**	**19.8**	**95**	
2.2.1	Tertiary enrolment, % gross	14.5	103	
2.2.2	Graduates in science and engineering, %	23.1	53	●
2.2.3	Tertiary inbound mobility, %	0.5	99	
2.3	**Research and development (R&D)**	**0.0**	**[123]**	
2.3.1	Researchers, FTE/mn pop.	n/a	n/a	
2.3.2	Gross expenditure on R&D, % GDP	n/a	n/a	
2.3.3	Global corporate R&D investors, top 3, mn US$	0.0	41	○ ◇
2.3.4	QS university ranking, top 3*	0.0	74	○ ◇
Infrastructure		**22.7**	**123**	◇
3.1	**Information and communication technologies (ICTs)**	**25.4**	**128**	◇
3.1.1	ICT access*	35.6	115	
3.1.2	ICT use*	25.3	107	
3.1.3	Government's online service*	19.4	131	○ ◇
3.1.4	E-participation*	21.4	130	○ ◇
3.2	**General infrastructure**	**24.0**	**88**	
3.2.1	Electricity output, GWh/mn pop.	4,872.4	47	● ◆
3.2.2	Logistics performance*	30.4	81	
3.2.3	Gross capital formation, % GDP	n/a	n/a	
3.3	**Ecological sustainability**	**18.8**	**110**	
3.3.1	GDP/unit of energy use	8.7	85	
3.3.2	Environmental performance*	34.8	102	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.2	119	
Market sophistication		**39.5**	**103**	
4.1	**Credit**	**29.3**	**110**	
4.1.1	Ease of getting credit*	60.0	74	
4.1.2	Domestic credit to private sector, % GDP	20.9	113	
4.1.3	Microfinance gross loans, % GDP	0.7	27	●
4.2	**Investment**	**20.0**	**[114]**	
4.2.1	Ease of protecting minority investors*	20.0	130	○ ◇
4.2.2	Market capitalization, % GDP	n/a	n/a	
4.2.3	Venture capital investors, deals/bn PPP$ GDP	n/a	n/a	
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	n/a	n/a	
4.3	**Trade, diversification, and market scale**	**69.2**	**63**	●
4.3.1	Applied tariff rate, weighted avg., %	0.8	7	● ◆
4.3.2	Domestic industry diversification	85.2	66	
4.3.3	Domestic market scale, bn PPP$	59.7	96	

		Score/ Value	Rank	
Business sophistication		**24.3**	**[70]**	
5.1	**Knowledge workers**	**25.8**	**[84]**	
5.1.1	Knowledge-intensive employment, %	21.3	76	
5.1.2	Firms offering formal training, %	24.4	63	
5.1.3	GERD performed by business, % GDP	n/a	n/a	
5.1.4	GERD financed by business, %	n/a	n/a	
5.1.5	Females employed w/advanced degrees, %	5.4	94	
5.2	**Innovation linkages**	**29.0**	**[37]**	
5.2.1	University-industry R&D collaboration†	44.9	54	●
5.2.2	State of cluster development and depth†	50.1	46	●
5.2.3	GERD financed by abroad, % GDP	n/a	n/a	
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	n/a	n/a	
5.2.5	Patent families/bn PPP$ GDP	0.0	100	○ ◇
5.3	**Knowledge absorption**	**18.1**	**[102]**	
5.3.1	Intellectual property payments, % total trade	n/a	n/a	
5.3.2	High-tech imports, % total trade	3.4	122	
5.3.3	ICT services imports, % total trade	0.2	125	◇
5.3.4	FDI net inflows, % GDP	7.3	14	● ◆
5.3.5	Research talent, % in businesses	n/a	n/a	
Knowledge and technology outputs		**6.8**	**127**	◇
6.1	**Knowledge creation**	**2.3**	**126**	
6.1.1	Patents by origin/bn PPP$ GDP	0.0	125	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.0	98	○ ◇
6.1.3	Utility models by origin/bn PPP$ GDP	0.0	68	
6.1.4	Scientific and technical articles/bn PPP$ GDP	4.3	117	
6.1.5	Citable documents H-index	4.0	114	
6.2	**Knowledge impact**	**2.5**	**[131]**	
6.2.1	Labor productivity growth, %	n/a	n/a	
6.2.2	New businesses/th pop. 15–64	0.0	121	○ ◇
6.2.3	Software spending, % GDP	n/a	n/a	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	0.8	113	
6.2.5	High-tech manufacturing, %	4.7	101	
6.3	**Knowledge diffusion**	**15.6**	**67**	
6.3.1	Intellectual property receipts, % total trade	n/a	n/a	
6.3.2	Production and export complexity	29.4	95	
6.3.3	High-tech exports, % total trade	5.1	35	●
6.3.4	ICT services exports, % total trade	0.4	105	
Creative outputs		**17.6**	**90**	
7.1	**Intangible assets**	**19.4**	**104**	
7.1.1	Trademarks by origin/bn PPP$ GDP	4.5	124	
7.1.2	Global brand value, top 5,000, % GDP	11.7	58	
7.1.3	Industrial designs by origin/bn PPP$ GDP	n/a	n/a	
7.1.4	ICTs and organizational model creation†	52.5	71	
7.2	**Creative goods and services**	**18.7**	**[59]**	
7.2.1	Cultural and creative services exports, % total trade	n/a	n/a	
7.2.2	National feature films/mn pop. 15–69	1.3	78	
7.2.3	Entertainment and media market/th pop. 15–69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	0.1	102	○ ◇
7.2.5	Creative goods exports, % total trade	3.1	20	● ◆
7.3	**Online creativity**	**13.0**	**80**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	1.9	77	
7.3.2	Country-code TLDs/th pop. 15–69	2.5	64	◆
7.3.3	Wikipedia edits/mn pop. 15–69	36.4	91	
7.3.4	Mobile app creation/bn PPP$ GDP	n/a	n/a	

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question. ◴ indicates that the economy's data are older than the base year; see Appendix IV for details, including the year of the data, at http://globalinnovationindex.org. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

DATA AVAILABILITY

The following tables list data that are either missing or outdated for Laos.

Missing data for Laos

Code	Indicator name	Economy year	Model year	Source
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
3.2.3	Gross capital formation, % GDP	n/a	2020	International Monetary Fund
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
4.2.3	Venture capital investors, deals/bn PPP$ GDP	n/a	2020	Refinitiv Eikon
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	n/a	2020	Refinitiv Eikon
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2018	UNESCO Institute for Statistics
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	n/a	2020	Refinitiv
5.3.1	Intellectual property payments, % total trade	n/a	2019	World Trade Organization
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.2.1	Labor productivity growth, %	n/a	2020	The Conference Board
6.2.3	Software spending, % GDP	n/a	2020	IHS Markit
6.3.1	Intellectual property receipts, % total trade	n/a	2019	World Trade Organization

Code	Indicator name	Economy year	Model year	Source
7.1.3	Industrial designs by origin/bn PPP$ GDP	n/a	2019	World Intellectual Property Organization
7.2.1	Cultural and creative services exports, % total trade	n/a	2019	World Trade Organization
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC
7.3.4	Mobile app creation/bn PPP$ GDP	n/a	2020	App Annie

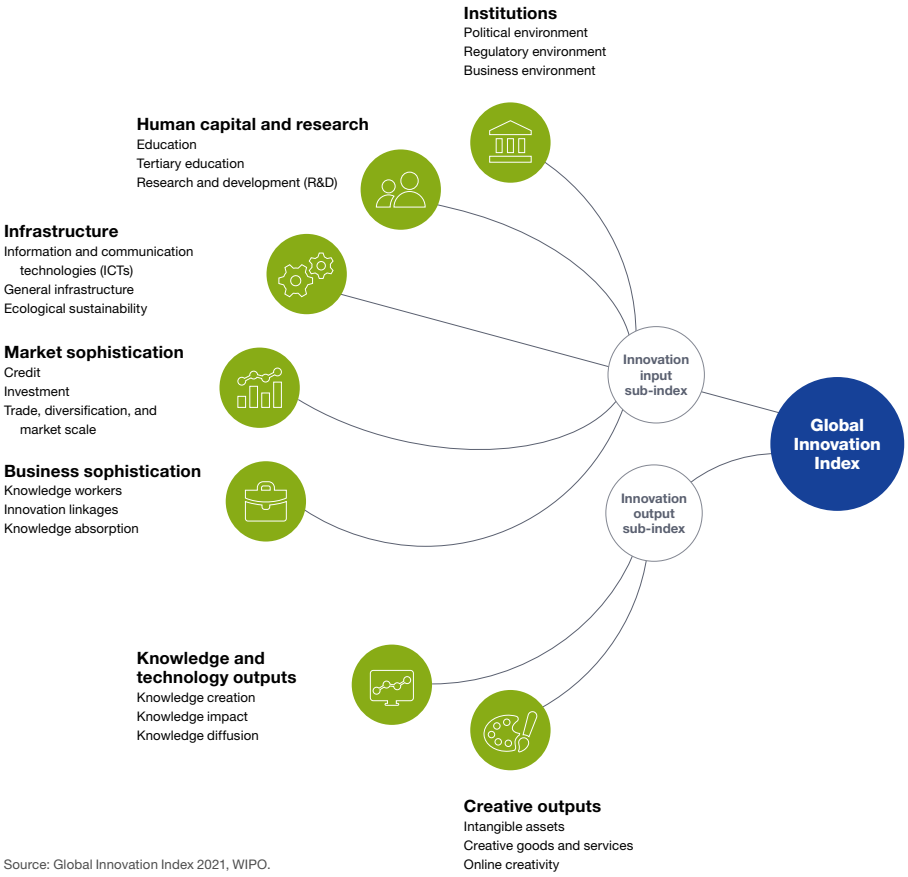
Outdated data for Laos

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2014	2017	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2014	2017	UNESCO Institute for Statistics
4.1.2	Domestic credit to private sector, % GDP	2010	2019	International Monetary Fund
4.3.2	Domestic industry diversification	2017	2018	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2017	2019	International Labour Organization
5.1.2	Firms offering formal training, %	2018	2019	World Bank
5.1.5	Females employed w/advanced degrees, %	2017	2019	International Labour Organization
6.1.1	Patents by origin/bn PPP$ GDP	2018	2019	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP$ GDP	2018	2019	World Intellectual Property Organization
6.2.5	High-tech manufacturing, %	2017	2018	United Nations Industrial Development Organization
7.1.1	Trademarks by origin/bn PPP$ GDP	2018	2019	World Intellectual Property Organization
7.2.4	Printing and other media, % manufacturing	2015	2018	United Nations Industrial Development Organization

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.

Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a "tool for action" for economies that incorporate the GII into their innovation agendas.



Source: Global Innovation Index 2021, WIPO.

The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that include institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each consisting of three sub-pillars.