103rd Tanzania ranks 103rd among the 132 economies featured in the GII 2022.

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 Tanzania 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 Tanzania in the GII 2022 is between ranks 99 and 119.

### Rankings for Tanzania (2020–2022)

<table>
<thead>
<tr>
<th>GIIYR</th>
<th>GII</th>
<th>Innovation inputs</th>
<th>Innovation outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>88</td>
<td>112</td>
<td>67</td>
</tr>
<tr>
<td>2021</td>
<td>90</td>
<td>120</td>
<td>65</td>
</tr>
<tr>
<td>2022</td>
<td>103</td>
<td>100</td>
<td>99</td>
</tr>
</tbody>
</table>

- Tanzania performs better in innovation outputs than innovation inputs in 2022.
- This year Tanzania ranks 100th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Tanzania ranks 99th. This position is lower than both 2021 and 2020.

21st Tanzania ranks 21st among the 36 lower-middle-income group economies.

8th Tanzania ranks 8th among the 27 economies in Sub-Saharan Africa.
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, Tanzania’s performance is above expectations for its level of 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.

Tanzania produces less innovation outputs relative to its level of innovation investments.
BENCHMARKING AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

The seven GII pillar scores for Tanzania

Lower-middle-income group economies

Tanzania performs above the lower-middle-income group average in two pillars, namely: Institutions; and, Market sophistication.

Sub-Saharan Africa

Tanzania performs above the regional average in four pillars, namely: Institutions; Infrastructure; Market sophistication; and, Creative outputs.
OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Tanzania performs best in Institutions and its weakest performance is in Human capital and research.

The seven GII pillar ranks for Tanzania

<table>
<thead>
<tr>
<th>Area</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions</td>
<td>74</td>
</tr>
<tr>
<td>Market sophistication</td>
<td>79</td>
</tr>
<tr>
<td>Creative outputs</td>
<td>94</td>
</tr>
<tr>
<td>Global Innovation Index</td>
<td>103</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>104</td>
</tr>
<tr>
<td>Business sophistication</td>
<td>112</td>
</tr>
<tr>
<td>Knowledge and technology outputs</td>
<td>114</td>
</tr>
<tr>
<td>Human capital and research</td>
<td>126</td>
</tr>
</tbody>
</table>

Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Tanzania can be found at:

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Tanzania in the GII 2022.

**Strengths and weaknesses for Tanzania**

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.3</td>
<td>Cost of redundancy dismissal</td>
<td>24</td>
<td>2.2.2</td>
<td>Graduates in science and engineering, %</td>
<td>109</td>
</tr>
<tr>
<td>1.3.1</td>
<td>Policies for doing business</td>
<td>51</td>
<td>2.3.1</td>
<td>Researchers, FTE/mn pop.</td>
<td>106</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Gross expenditure on R&amp;D, % GDP</td>
<td>63</td>
<td>2.3.3</td>
<td>Global corporate R&amp;D investors, top 3, mn USD</td>
<td>38</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Gross capital formation, % GDP</td>
<td>8</td>
<td>2.3.4</td>
<td>QS university ranking, top 3</td>
<td>72</td>
</tr>
<tr>
<td>4.1.3</td>
<td>Loans from microfinance institutions, % GDP</td>
<td>1</td>
<td>5.1.1</td>
<td>Knowledge-intensive employment, %</td>
<td>125</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Domestic market scale, bn PPP$</td>
<td>71</td>
<td>5.1.5</td>
<td>Females employed w/advanced degrees, %</td>
<td>123</td>
</tr>
<tr>
<td>5.2.1</td>
<td>University-industry R&amp;D collaboration</td>
<td>43</td>
<td>5.2.5</td>
<td>Patent families/bn PPP$ GDP</td>
<td>101</td>
</tr>
<tr>
<td>5.2.2</td>
<td>State of cluster development and depth</td>
<td>44</td>
<td>6.1.1</td>
<td>Patents by origin/bn PPP$ GDP</td>
<td>130</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Labor productivity growth, %</td>
<td>9</td>
<td>6.1.2</td>
<td>PCT patents by origin/bn PPP$ GDP</td>
<td>101</td>
</tr>
<tr>
<td>7.2.4</td>
<td>Printing and other media, % manufacturing</td>
<td>9</td>
<td>6.2.3</td>
<td>Software spending, % GDP</td>
<td>123</td>
</tr>
</tbody>
</table>
### United Republic of Tanzania

<table>
<thead>
<tr>
<th>Output rank</th>
<th>Input rank</th>
<th>Income</th>
<th>Region</th>
<th>Population (mn)</th>
<th>GDP, PPP$ (bn)</th>
<th>GDP per capita, PPP$</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>100</td>
<td>SSA</td>
<td>61.5</td>
<td>182.9</td>
<td>3,062</td>
<td></td>
</tr>
</tbody>
</table>

#### Institutions

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>54.2</td>
<td>74</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Political environment</th>
<th>44.7</th>
<th>115</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government effectiveness</td>
<td>33.1</td>
<td>117</td>
</tr>
<tr>
<td>Regulatory environment</td>
<td>63.4</td>
<td>68</td>
</tr>
<tr>
<td>Regulatory quality*</td>
<td>28.5</td>
<td>108</td>
</tr>
<tr>
<td>Rule of law*</td>
<td>30.4</td>
<td>100</td>
</tr>
<tr>
<td>Cost of redundancy dismissal</td>
<td>9.3</td>
<td>24</td>
</tr>
</tbody>
</table>

| Business environment | 54.4 | [50] |
| Policies for doing business* | 54.4 | 51  |
| Entrepreneurship policies and culture* | n/a | n/a  |

#### Human capital and research

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.9</td>
<td>126</td>
</tr>
</tbody>
</table>

| Education | 29.8 | 123 |
| Expenditure on education, % GDP | 3.3 | 102 |
| Government funding/pupil, secondary, % GDP/cap | 14.9 | 83  |
| School life expectancy, years | 9.2 | 108  |
| PISA scales in reading, maths and science | n/a | n/a  |
| Pupil-teacher ratio, secondary | 23.3 | 101  |

| Tertiary education | 1.3 | 127  |
| Tertiary enrolment, % gross | 7.8 | 115  |
| Graduates in science and engineering, % | 9.5 | 109  |
| Tertiary inbound mobility, % | n/a | n/a  |

#### Knowledge and technology outputs

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.9</td>
<td>110</td>
</tr>
</tbody>
</table>

| Knowledge workers | 12.2 | [116] |
| Knowledge-intensive employment, % | 3.4 | 125  |
| Firms offering formal training, % | 30.7 | 54   |
| GERD performed by business, % GDP | n/a | n/a  |
| GERD financed by business, % | n/a | n/a  |
| Females employed w/advanced degrees, % | 0.4 | 123  |

#### Business sophistication

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.0</td>
<td>112</td>
</tr>
</tbody>
</table>

| Knowledge creation | 4.6 | 109 |
| Patents by origin/bn PPPS GDP | 0.0 | 130  |
| PCT patents by origin/bn PPPS GDP | 0.0 | 101  |
| Utility models by origin/bn PPPS GDP | 0.0 | 77   |
| Scientific and technical articles/bn PPPS GDP | 9.8 | 89   |
| Citable documents H-index | 9.4 | 78   |

#### Knowledge diffusion

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4</td>
<td>116</td>
</tr>
</tbody>
</table>

| Intellectual property receipts, % total trade | 0.0 | 110  |
| Production and export complexity | 18.1 | 109  |
| High-tech exports, % total trade | 0.2 | 102  |
| ICT services exports, % total trade | 0.3 | 117  |

#### Creative outputs

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.9</td>
<td>[94]</td>
</tr>
</tbody>
</table>

| Intangible assets | 6.5 | [113] |
| Intangible asset intensity, top 15, % | n/a | n/a  |
| Trademarks by origin/bn PPPS GDP | 11.5 | 106  |
| Global brand value, top 5,000, % GDP | n/a | n/a  |
| Industrial designs by origin/bn PPPS GDP | n/a | n/a  |

| Creative goods exports, % total trade | 0.1 | 107  |
| National feature films/mm ppop. 15–69 | n/a | n/a  |
| Entertainment and media market/th ppop. 15–69 | n/a | n/a  |
| Printing and other media, % manufacturing | 2.3 | 21   |
| Creative goods exports, % total trade | 0.1 | 107  |

| Online creativity | 0.1 | 124  |
| Generic top-level domains (TLDs)/th ppop. 15–69 | 0.1 | 120  |
| Country-code TLDs/th ppop. 15–69 | 0.2 | 113  |
| Github commit pushes received/mm ppop. 15–69 | 0.2 | 121  |
| Mobile app creation/bn PPPS GDP | 0.0 | 108  |

### 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 appendices for details, including the year of the data, at https://www.wipo.int/global_innovation_index/env2022. 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 indicators that are either missing or outdated for Tanzania.

## Missing data for Tanzania

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Economy year</th>
<th>Model year</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.2</td>
<td>Entrepreneurship policies and culture</td>
<td>n/a</td>
<td>2021</td>
<td>Global Entrepreneurship Monitor</td>
</tr>
<tr>
<td>2.1.4</td>
<td>PISA scales in reading, maths and science</td>
<td>n/a</td>
<td>2018</td>
<td>OECD, PISA</td>
</tr>
<tr>
<td>2.2.3</td>
<td>Tertiary inbound mobility, %</td>
<td>n/a</td>
<td>2019</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Logistics performance</td>
<td>n/a</td>
<td>2018</td>
<td>Logistics Performance Index, World Bank</td>
</tr>
<tr>
<td>4.1.1</td>
<td>Finance for startups and scaleups</td>
<td>n/a</td>
<td>2021</td>
<td>Global Entrepreneurship Monitor</td>
</tr>
<tr>
<td>5.1.3</td>
<td>GERD performed by business, % GDP</td>
<td>n/a</td>
<td>2020</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>5.1.4</td>
<td>GERD financed by business, %</td>
<td>n/a</td>
<td>2019</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>5.2.3</td>
<td>GERD financed by abroad, % GDP</td>
<td>n/a</td>
<td>2019</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>5.3.5</td>
<td>Research talent, % in businesses</td>
<td>n/a</td>
<td>2020</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>7.1.1</td>
<td>Intangible asset intensity, top 15, %</td>
<td>n/a</td>
<td>2021</td>
<td>Brand Finance</td>
</tr>
<tr>
<td>7.1.3</td>
<td>Global brand value, top 5,000, % GDP</td>
<td>n/a</td>
<td>2021</td>
<td>Brand Finance</td>
</tr>
<tr>
<td>7.1.4</td>
<td>Industrial designs by origin/bn PPP$ GDP</td>
<td>n/a</td>
<td>2020</td>
<td>World Intellectual Property Organization</td>
</tr>
<tr>
<td>7.2.1</td>
<td>Cultural and creative services exports, % total trade</td>
<td>n/a</td>
<td>2020</td>
<td>World Trade Organization and United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>7.2.2</td>
<td>National feature films/mn pop. 15–69</td>
<td>n/a</td>
<td>2019</td>
<td>OMDIA</td>
</tr>
<tr>
<td>7.2.3</td>
<td>Entertainment and media market/th pop. 15–69</td>
<td>n/a</td>
<td>2021</td>
<td>PwC, GEMO</td>
</tr>
</tbody>
</table>

## Outdated data for Tanzania

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Economy year</th>
<th>Model year</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.2</td>
<td>Government funding/pupil, secondary, % GDP/cap</td>
<td>2014</td>
<td>2018</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Graduates in science and engineering, %</td>
<td>2019</td>
<td>2020</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>2.3.1</td>
<td>Researchers, FTE/mn pop.</td>
<td>2013</td>
<td>2020</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Gross expenditure on R&amp;D, % GDP</td>
<td>2013</td>
<td>2020</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Electricity output, GWh/mn pop.</td>
<td>2019</td>
<td>2020</td>
<td>International Energy Agency</td>
</tr>
<tr>
<td>4.1.3</td>
<td>Loans from microfinance institutions, % GDP</td>
<td>2014</td>
<td>2020</td>
<td>International Monetary Fund, Financial Access Survey (FAS)</td>
</tr>
<tr>
<td>4.2.3</td>
<td>Venture capital recipients, deals/bn PPP$ GDP</td>
<td>2020</td>
<td>2021</td>
<td>Refinitiv</td>
</tr>
<tr>
<td>Code</td>
<td>Indicator name</td>
<td>Economy year</td>
<td>Model year</td>
<td>Source</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4.2.4</td>
<td>Venture capital received, value, % GDP</td>
<td>2020</td>
<td>2021</td>
<td>Refinitiv</td>
</tr>
<tr>
<td>5.1.1</td>
<td>Knowledge-intensive employment, %</td>
<td>2014</td>
<td>2021</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>5.1.2</td>
<td>Firms offering formal training, %</td>
<td>2013</td>
<td>2019</td>
<td>World Bank Enterprise Surveys</td>
</tr>
<tr>
<td>5.1.5</td>
<td>Females employed w/advanced degrees, %</td>
<td>2014</td>
<td>2021</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>5.3.1</td>
<td>Intellectual property payments, % total trade</td>
<td>2019</td>
<td>2020</td>
<td>World Trade Organization and United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>5.3.3</td>
<td>ICT services imports, % total trade</td>
<td>2019</td>
<td>2020</td>
<td>World Trade Organization and United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>6.1.1</td>
<td>Patents by origin/bn PPP$ GDP</td>
<td>2015</td>
<td>2020</td>
<td>World Intellectual Property Organization</td>
</tr>
<tr>
<td>6.2.2</td>
<td>New businesses/th pop. 15–64</td>
<td>2018</td>
<td>2020</td>
<td>World Bank, Entrepreneurship Database</td>
</tr>
<tr>
<td>6.3.1</td>
<td>Intellectual property receipts, % total trade</td>
<td>2019</td>
<td>2020</td>
<td>World Trade Organization and United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>6.3.4</td>
<td>ICT services exports, % total trade</td>
<td>2019</td>
<td>2020</td>
<td>World Trade Organization and United Nations Conference on Trade and Development</td>
</tr>
</tbody>
</table>
TANZANIA’S INNOVATION SYSTEM

As far as practicable, the plots below present unscaled indicator data.

**Innovation inputs**

**2.1.1 Expenditure on education** was equal to 3.3% GDP in 2021—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 102.

**2.2.2 Graduates in science and engineering** was equal to 9.5% of tert. grads in 2019 and equivalent to an indicator rank of 109.

**2.3.1 Researchers** was equal to 19.2 FTE/mn pop. in 2013 and equivalent to an indicator rank of 106.

**2.3.2 Gross expenditure on R&D** was equal to 0.5% GDP in 2013 and equivalent to an indicator rank of 63.
2.3.4 **QS university ranking** was equal to 0.0 in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 72.

3.1.1 **ICT access** was equal to 4.9 in 2020 and equivalent to an indicator rank of 123.

4.2.4 **Venture capital received** was equal to 0.0 bn USD in 2020—up by Inf percentage points from the year prior—and equivalent to an indicator rank of 91.

4.3.2 **Domestic industry diversification** was equal to 0.4 in 2019—effectively unchanged from the year prior—and equivalent to an indicator rank of 100.

5.1.1 **Knowledge-intensive employment** was equal to 713.9 thsd people in 2014 and equivalent to an indicator rank of 125.
6.1.1 **Patents by origin** was equal to 1.0 in 2015 and equivalent to an indicator rank of 130.

6.1.5 **Citable documents H-index** was equal to 205.0 in 2021—up by 17 percentage points from the year prior—and equivalent to an indicator rank of 78.

6.2.5 **High-tech manufacturing** was equal to 6.9% of mfg. output in 2019—effectively unchanged from the year prior—and equivalent to an indicator rank of 95.

6.3.1 **Intellectual property receipts** was equal to 0.0 mn USD in 2019—down by 80 percentage points from the year prior—and equivalent to an indicator rank of 110.
6.3.2 Production and export complexity was equal to -1.0 in 2019—down by 732 percentage points from the year prior—and equivalent to an indicator rank of 109.

6.3.3 High-tech exports was equal to 21.9 mn USD in 2020—up by 6 percentage points from the year prior—and equivalent to an indicator rank of 102.
TANZANIA’S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

<table>
<thead>
<tr>
<th>Firm</th>
<th>Industry</th>
<th>R&amp;D</th>
<th>R&amp;D Growth</th>
<th>R&amp;D Intensity</th>
<th>Rank</th>
</tr>
</thead>
</table>

No observations


2.3.4 QS university ranking

<table>
<thead>
<tr>
<th>University</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
</table>

No observations


7.1.1 Intangible asset intensity, top 15

<table>
<thead>
<tr>
<th>Firm</th>
<th>Rank</th>
</tr>
</thead>
</table>

No observations


7.1.3 Global brand value, top 5,000

<table>
<thead>
<tr>
<th>Brand</th>
<th>Industry</th>
<th>Rank</th>
</tr>
</thead>
</table>

No observations

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.

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.