University of Stuttgart
IER Institute of Energy Economics
and Rational Energy Use

5.1 Namibian Economy

ECONOMIC INDICATORS

Namibia

- Located in Southern Africa
- Member of the SADC (Southern African Development Community)
- Categorized as an upper middle-income country by the World Bank since 2008
- **Gini coefficient** with 59 rather high (measure for income inequality, ranges between 0 and 100) (World Bank, 2015)
- **Gross Domestic Product (GDP)** development *(Fig. 1)*
  - 1990 – 2015: stable economic growth (on average 4.5% per annum) since Namibia's independence
  - Post 2015: slowdown and contraction
- **GDP expenditure** composition *(Fig. 2)*
  - Consumption-oriented: High final consumption (101%), low investment (14%)
  - Main sectors for private consumption are:
    - Food/Beverages/Tobacco (35%)
    - Housing/Water/Electricity/Fuels (17%)
  - Import-oriented: negative trade balance

Fig. 1: GDP development, Namibia

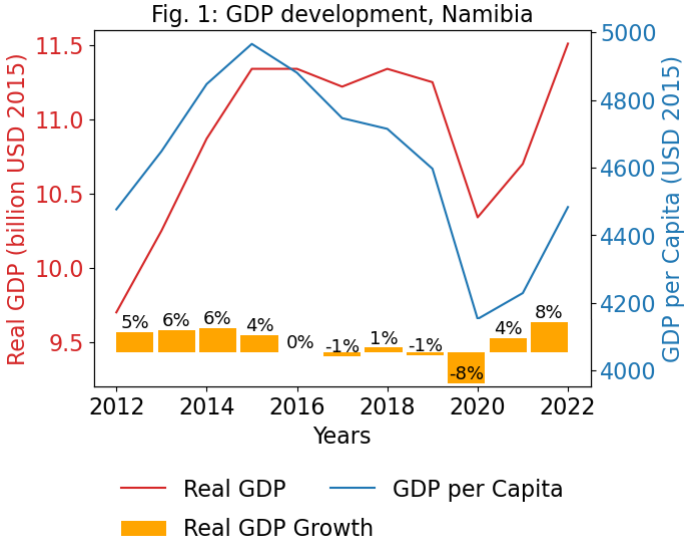
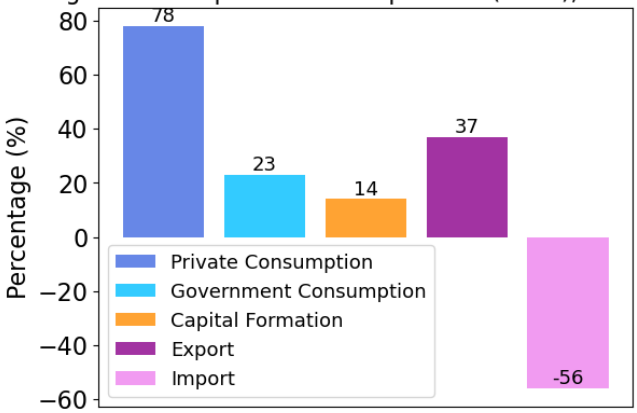


Fig. 2: GDP expenditure composition (2022), Namibia



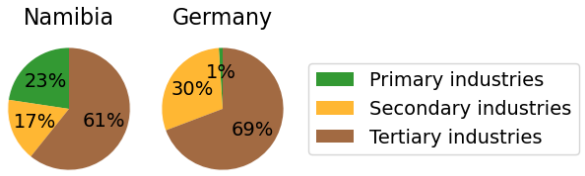
Comparison of economic key indicators for Namibia and Germany

Indicator	Year	Namibia	Germany	Data source
Total population	2022	2.6 million	83.8 million	Worldbank
Gini index	2015	59.1	31.4	Worldbank
GDP (USD 2015)	2022	11.5 billion	3 600 billion	Worldbank
GDP per capita (USD 2015)	2022	4 483	43 361	Worldbank
Final consumption (% of GDP)	2022	101 %	73 %	NSA, Worldbank
Investment (% of GDP)	2022	14 %	25 %	NSA, Worldbank

INDUSTRIES & SECTORS

Namibia

- High importance of primary industries
- Value added of primary and secondary industries relies heavily on agriculture and mining *(Fig. 3)*



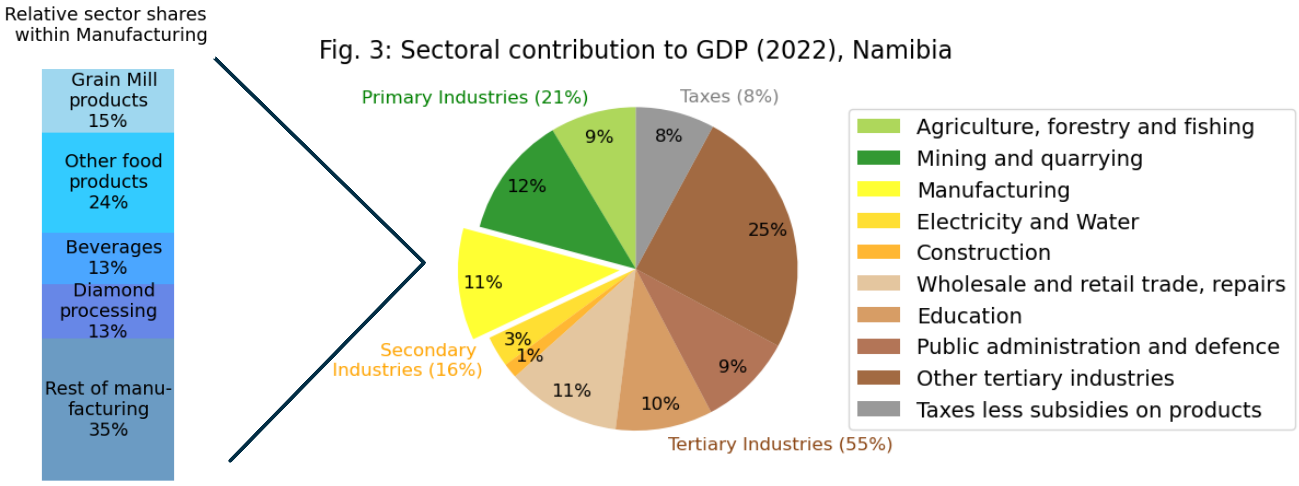


Fig. 3: Sectoral contribution to GDP (2022), Namibia

Comparison of industry and energy indicators for Namibia and Germany

Indicator	Year	Namibia	Germany	Data source
R&D expenditure (% of GDP)	2014	0.35	2.88	Worldbank
Electricity and water (GVA in % of GDP)	2022/2021	3	1	NSA, Destatis, Worldb.
Electricity and water (% of employment)	2018	1	1	ILO
Energy use per capita (kWh/person)	2019	8 748	42 555	U.S. Energy Inf. Adm.
Energy supply per GDP (MJ/1,000 USD$_{2015}$)	2022	1 987	1 531	IEA
CO_2 emissions (million t)	2022	3.95	665.60	Global Carbon Budget
CO_2 emissions per capita (t/person)	2022	1.5	8.0	Global Carbon Budget
CO_2 emissions per GDP (kg/USD$_{2011}$)	2018	0.18	0.19	Global Carbon Budget

- Namibia has very low **R&D expenditures** in comparison to other regions (World Bank 2014) *(Fig. 4)*

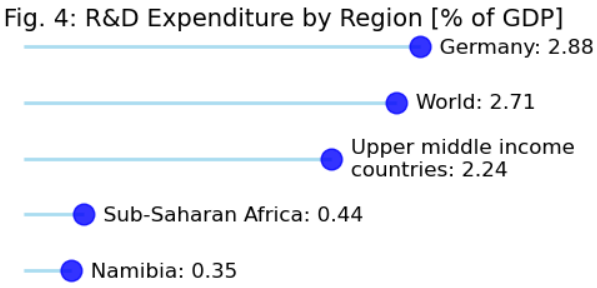


Fig. 4: R&D Expenditure by Region [% of GDP]

- While energy use per capita is rather low, **energy supply per GDP** is similar to Germany. Energy supply per GDP can be interpreted as energy efficiency in terms of economic output. However, the structure of the economy also influences this indicator, since service-oriented economies generally have a lower energy intensity than industry-oriented economies. Namibia ranks 27 out of 35 African countries and 101 out of 147 global countries. Note, that these rankings do not include all African and global countries but rather a selection. The African average lies at 96 MJ/1000USD, while the global average lies at 2 673 MJ/1000USD.
- While absolute CO_2 emissions and CO_2 emissions per capita are rather low in Namibia compared to Germany, **CO_2 emissions per GDP** are in the same range. However, compared to the average of upper middle income countries of 0.44 kg/USD, the World average of 0.32 kg/USD or the African average of 0.23 kg/USD Namibias carbon intensity is relatively low.

In collaboration with

INTERNATIONAL TRADE

Namibia

- **Exports** rely heavily on the Mining and Fishing sector *(Fig. 5)*
  Main export countries in 2023 were Botswana (20%), South Africa (20%) and China (13%).
  Export flows concentrate on Africa (52%), Europe (22%) and Asia (22%).
- **Imports** rely mainly on Secondary industries *(Fig. 6)*
  Main import partners in 2023 were South Africa (37%), China (9%) and India (7%).
  Import flows concentrate on Africa (44%), Asia (33%) and Europe (14%).

Fig. 5: Sectoral exports (% of total exports) (2022), Namibia

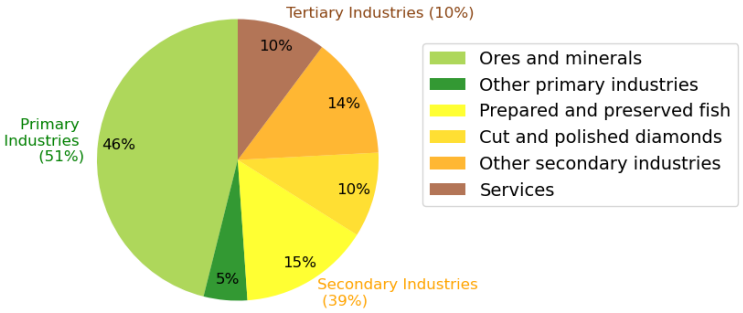
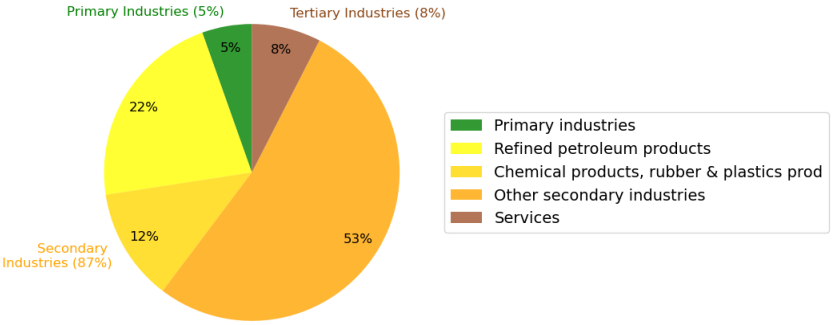


Fig. 6: Sectoral imports (% of total imports) (2022), Namibia



Comparison of international trade indicators for Namibia and Germany

Indicator	Year	Namibia	Germany	Data source
External balance (current USD)	2022	- 2 billion	80 billion	Worldbank
Export (% of GDP)	2022	37 %	51 %	NSA, Worldbank
Main export partner	2023	Botswana, South Africa	United States	Trading economics
Imports (% of GDP)	2022	56 %	49 %	NSA, Worldbank
Main import partner	2023	South Africa	China	Trading economics
Global competitiveness index (score)	2019	54.5	81.8	World Economic Forum
Global competitiveness index (rank)	2019	94	7	World Economic Forum

- Exports from the primary sector account for 51% in Namibia. In Germany, however, primary sector exports do not play a major role. **Germany's export goods** are mainly secondary goods with motor vehicles and parts (16%) having the highest share. Most important **import goods** of Germany are data processing equipment, electronic and optical products (11%).
- The **Global competitiveness index** aggregates 103 indicators to 12 pillars within 4 broader categories (Enabling Environment, Human Capital, Markets and Innovation Ecosystem) Namibia ranks 94 out of 141 economies and 5 out of the 34 Sub-saharan African countries included. Within the 12 pillars Namibia scores highest in „Macroeconomic stability" and „Financial system" and scores lowest in „Innovation capability" and „Market size". Compared to the Sub-Saharan African average Namibia scores relatively better in all 12 pillars. However, compared to the Upper-middle-income group average Namibia underperformes in 7 of the 12 pillars, most notably in „Health" and „Market size".

In collaboration with
Enersense Namibia
UNAM University of Namibia

LABOUR MARKET

Namibia

- High importance of primary industries for **employment** *(Fig. 7)*
- High share of **informal employment**, especially in the agriculture sector *(Fig. 8)*
- High share of **unemployment**, especially in the group of intermediate educated *(Fig. 9)*

Fig. 7: Sectoral employment (% of total employment) (2018), Namibia

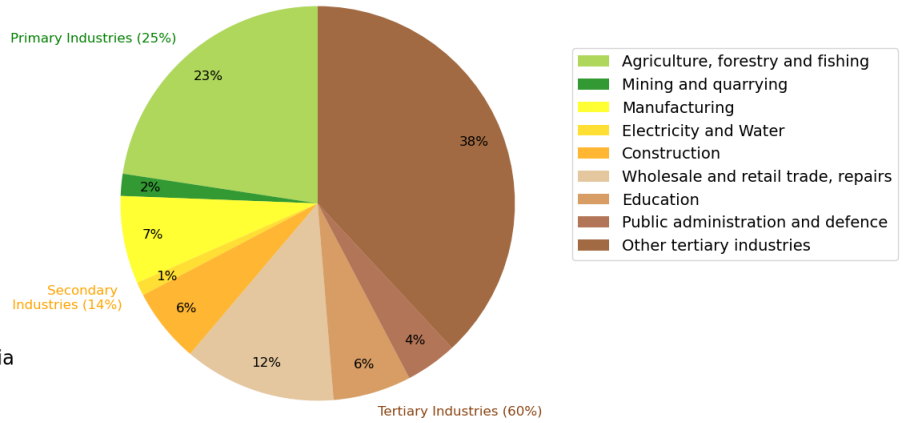


Fig. 8: Sectoral informal employment (% of total sectoral employment) (2018), Namibia

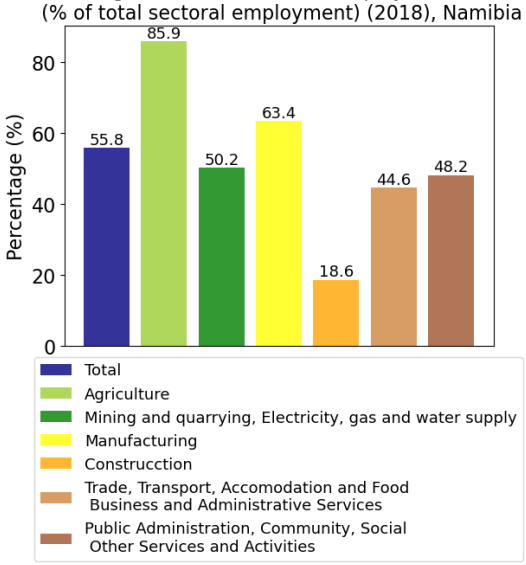
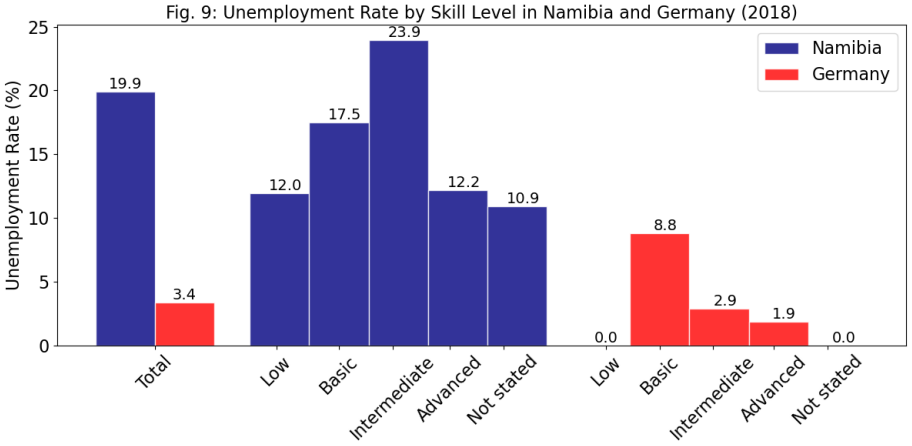
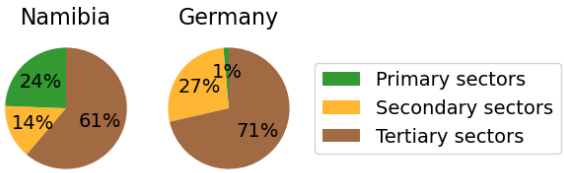


Fig. 9: Unemployment Rate by Skill Level in Namibia and Germany (2018)



Comparison of employment indicators for Namibia and Germany

Indicator	Year	Namibia	Germany	Data source
Employment per GDP (person/million USD 2015)	2018	63.7	11.8	ILO, Worldbank
Informal employment rate (%)	2018/2022	55.8	2.5	ILO
Unemployment rate (%)	2018	19.9	3.4	ILO



- In Germany, **employment** is mainly within the tertiary industries. "Manufacturing" (19%) and "Wholesale and retail trade, repairs" (14%) are the two single sectors with the highest share of employment.
- **Labour productivity**, measured as employment per GDP, is much higher in Germany (12 employed per million USD) than in Namibia (64 employed per million USD).
- The size of the **informal economy** is significant in Namibia (55.8%), but negligible in Germany (2.5%). For both economies the highest share of employment also represents the highest share of informal employment (Namibia: Agriculture and Wholesale and retail trade; Germany: Manufacturing and Wholesale and retail trade). Another similarity between both economies is the high share of informal employment within the agriculture sector (86 % in Namibia and 13 % in Germany).
- **Unemployment** in Germany is not only lower than in Namibia but also differently structured. While in Namibia the group of intermediate educated has the highest unemployment, in Germany unemployment is highest in the group of basic educated *(Fig. 9)*.

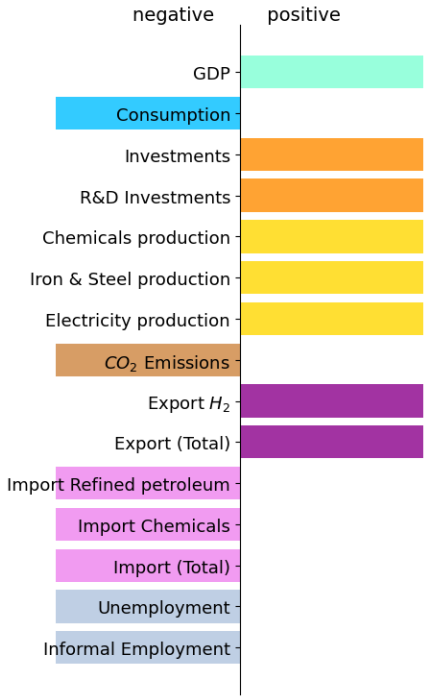
In collaboration with
Enersense Namibia
UNAM UNIVERSITY OF NAMIBIA

THE NAMIBIAN CHANCE – A GREEN HYDROGEN ECONOMY

How will the transformation towards a green hydrogen economy reshape Namibia? *(Fig. 10)*

- **Economic growth and development, well-being**
  - Due to the need for large investments the Namibian economy might shift towards lower consumption and higher investment in the short term. In the long term, however, these investments are expected to translate into increased economic growth.
  - The need for increased investments may lead to an increase in R&D investments. This might enable further economic growth.
- **Industrial sectors**
  - Industrial sectors such as the chemical industry or the iron and steel industry are expected to profit most and have high growth expectancy.
  - The electricity and water sector is expected to expand due to the increased demand for H_2 production.
  - Potential of decreasing CO_2 emissions due to production of green electricity or green hydrogen. Domestic use may substitute emission intensive industries and products.
- **International trade**
  - Potential of generating additional added value.
  - Potential of decreasing the import dependency, especially from refined petroleum and chemical products, such as fertilizers, if properly designed.
  - Potential to become an exporter for green hydrogen and its derivatives.
- **Employment**
  - Strengthening and supporting employment and added value of the local communities.
  - Potential of reducing informal employment and unemployment by creating new and innovative job opportunities for Namibia.
  - Through education and special skills trainings the Namibian labour force can be enhanced to meet the required labour demand and qualifications.

Fig. 10: Expected trend of the Namibian transformation for different socio-economic indicators



FOR FURTHER INFORMATION AND FEEDBACK

Have a look at our other Fact Sheets covering topics from Project Descriptions, Use Cases, Techno-Economic analysis, Indicators, Energy System Analysis, Macro-Economic modelling, and many more:

https://github.com/IER-Hy4Daures/Fact-Sheets

Contact:

Claudia Hofer, M. Sc.

Institute of Energy Economics and Rational Energy Use,
University of Stuttgart

claudia.hofer@ier.uni-stuttgart.de

In collaboration with