OFFICE OF THE CHIEF GOVERNMENT STATISTICIAN ZANZIBAR

Handbook for Statistical Methodology for Computation of Key Labour Market and Related SDGs Indicators

Integrated Labour Force Survey

August, 2021

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PREFACE

This guideline presents the statistical methodology for computing Key Indicator for Labour Market (KILM) Ninth edition of 2015 and some of the Sustainable Development Goals (SDGs) indicators which are related to labour market. Computation of these indicators is based on Integrated Labour Force Survey (ILFS) data set. This survey was conducted in Zanzibar during the year 2014.

The objective of this guideline is to assist users on understanding how KILM and related SDGs indicators were computed. Computational methodologies explained in this guideline have been adopted from ILO guidelines and metadata on KILM and SDGs indicators.

I wish to extend my sincere gratitude to UN Family – International Labour Organization (ILO) for financial support which contributed to the production of this guideline. Special thanks should go to OCGS - SDGs Coordination Team members namely; Ms. Moza R. Omar, Hamisa S. Faki, Mr. Bakari Kh. Kondo, Ms. Kazija Kh. Said, Ms. Salma S. Ali and Mr. Abdullah O. Makame for their technical expertise.

Sincere thanks are also addressed to other OCGS technical staff members including Mr. Ali I. Shamte and Ms. Sabina R. Daima for sparing their time to review this guideline and provide constructive inputs that lead this guideline to be successfully completed.

Finally, I would like to extend my gratitude to all other staff members of OCGS as well as technicians and experts from other institutions who in one way or another made this handbook to be released.
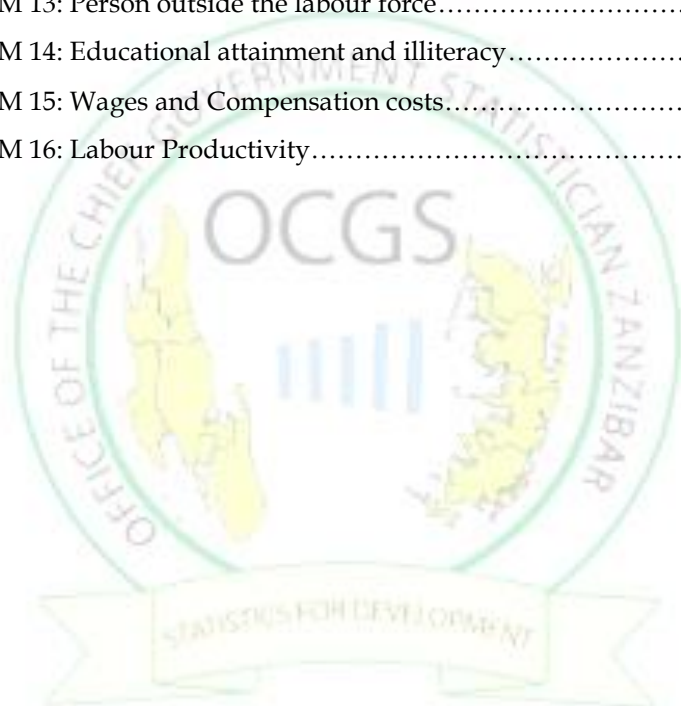
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1. INTRODUCTION

1.1. Background

Office of the Chief Government Statistician (OCGS) is a semi-autonomous government institution responsible for production of official statistics of Zanzibar. In this mandate, the office is responsible for collections, compilations, processing and disseminating statistics as well as coordinating the production of official statistics in other institutions. The coordination role of OCGS is to ensure that official statistics produced by all institutions within Zanzibar are of acceptable quality. This means that, statistics have to meet the set and agreed national and international rules, standards and methodologies.

The Handbook for Statistical Methodology for Computation of Key Labour Market and Related SDGs Indicators contains several information regarding to the concepts and computation methods of the indicators. This information includes composition of indicator, identified variables that are used to compute the indicator and a formula which shows how an indicator is computed.

This handbook was developed by adopting other national and international guidelines on computing the KILM and SDGs indicators. Cross reference from the localized metadata of SDGs indicators have been extensively made to align the content of this handbook with the metadata which already exists.

A total of 25 indicators have been explained in this guideline. These includes all 16 KILM and nine SDGs indicators which are related to labour market.

1.2. *Purpose of Developing the Handbook*

This handbook is designed to provide guidance to data users and producers on how to interpret correctly the KILM and SDGs labour related indicators. The handbook explained in details the concepts behind the terminologies used in the indicators as well as computational methods which derive those indicators.

This handbook is a complimentary material to fact sheet of KILM which provides data for KILM and SDGs indicators related to labour market. It aids users to make a cross reference and makes it easier to do comparison of the indicators between Zanzibar and other places.
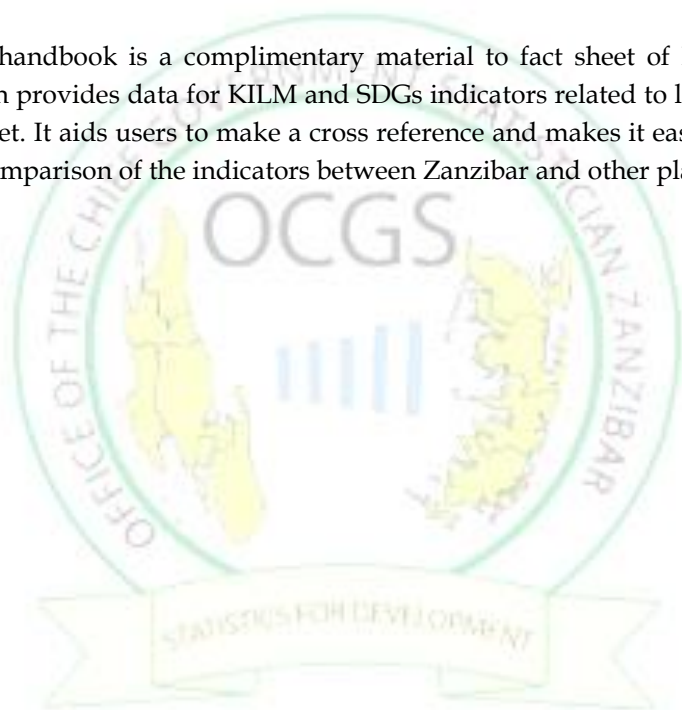
2. COMPUTATIONAL METHODS OF INDICATORS

SDG 5.4.1: Proportion of time spent on unpaid domestic and care work, by sex, age and location

This indicator includes *daily average number of hours spent on unpaid domestic and care work* as a numerator and *24 hours* as denominator.

Method of computation

$$\text{Proportion of time spent on unpaid domestic and care work, by sex, age and location} = \frac{\text{Daily number of hours spent on domestic work and care work}}{24} \times 100$$

Whereby;

$$\text{Daily number of hours spent on relevant activities} = \frac{\text{Total number of hours spent by the population on relevant activities}}{\text{Total Population}}$$

SDG 8.2.1: Annual growth rate of real GDP per employed person

This indicator includes *changes in real GDP per employed person* as a numerator and *real GDP per employed person in a previous year* as denominator.

$$\text{Annual growth rate of real GDP per employed person} = \frac{\text{Real GDP per employed person in a current year} - \text{Real GDP per employed person in a previous year}}{\text{real GDP per employed person in a previous year}} \times 100$$

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Whereby:

$$Real\ GDP\ per\ employed\ person\ = \frac{GDP\ at\ constant\ prices}{Total\ employment}$$

SDG 8.3.1: Proportion of informal employment in total employment, by sector and sex

This indicator is computed in three categories according to the SDGs International metadata which are:

1. Total employment
2. Agriculture employment
3. Non-agricultural employment

1. Total Employment

The indicator underlying in this category is **Proportion of informal employment in total employment.** It includes *Informal employment* as a numerator and *number of total employed persons* as denominator.

Method of computation

$$Proportion\ of\ informal\ employment\ in\ total\ employment = \frac{Informal\ employment}{Total\ employment} \times 100$$

Whereby;

$$Informal\ employment = Total\ employment - Formal\ employment$$

2. Agriculture employment

The indicator underlying in this category is **Proportion of informal employment in Agriculture.** It includes *informal employment* as a numerator and *total agricultural employment* as denominator

Method of computation

$$\text{Proportion of informal employment in agriculture} = \frac{\text{Informal agricultural employment}}{\text{Total agricultural employment}} \times 100$$

From Integrated Labour Force Survey, the **total agricultural employment** is obtained by considering the following steps:

i. Taking formal employment by ISIC Rev.4 to get those who engaged in agricultural activities in formal sectors (**formal agricultural employment**).

ii. Taking informal employment by ISIC Rev.4 to get those who engaged in agricultural activities in informal sectors.

iii. Taking informal sector own account employment by ISIC Rev.4 to get those who engaged in agricultural activities in informal sectors own account.

iv. Summing up the results obtained from the three steps mentioned above with agriculture employment in special category.

$$\text{Informal agricultural employment} = \text{Total agricultural employment} - \text{Formal agricultural employment}$$

Note: Formal agricultural employment is obtained in step 1 above

3. Non-agricultural employment

The indicator underlying in this category is **Proportion of informal employment in non-agricultural employment.** It includes *Informal employment in non-agricultural activities* as a numerator and *Total employment in non-agricultural activities* as denominator

Method of computation

$$
\begin{array}{l}
\textit{Proportion of informal} \\
\textit{employment in} \\
\textit{nonagricultural} \\
\textit{employment}
\end{array}
=
\frac{\textit{Informal employment in non agricultural activities}}{\textit{Total employment in non agricultural activities}} \, x100
$$

Whereby;

$$
\begin{array}{l}
\textit{Total employment} \\
\textit{in non-agricultural}
\end{array}
= \textit{Total employment} - \textit{Total agricultural employment}
$$

$$
\begin{array}{l}
\textit{Informal employment} \\
\textit{in non-agricultural}
\end{array}
= \textit{Total employment} - \textit{Informal agricultural employment}
$$

*Note: **Total agricultural employment** has already been computed in **Agriculture employment category** above*

*Informal employment and informal agricultural employment have been computed in the **total employment category** and **agricultural employment category** respectively.*

SDG 8.5.1: Average hourly earnings of employees, by sex, age, occupation and persons with disabilities

This indicator is computed in two categories according to the SDGs International metadata which are:

1. Average hourly earnings of employees
2. Gender pay gap

1. Average hourly earnings of employees

This indicator includes ***monthly average income of paid employees*** as a numerator and ***average hours spent per month*** as denominator.

Method of computation

$$\begin{array}{l} \text{Average hourly earnings} \\ \text{of employees} \end{array} = \frac{\begin{array}{c} \text{Monthly average income} \\ \text{of paid employees} \end{array}}{\text{Average hours spent per month}}$$

2. Gender pay gap

Method of computation

$$Gender\ Pay\ Gap = \frac{MAHE - FAHE}{MAHE}\ x100$$

Where;

MAHE - Male average hourly earnings
FAHE - Female average hourly earnings

SDG 8.5.2, KILM (9&10): Unemployment rate, by sex, age and persons with disabilities

This indicator is computed in two categories according to the SDGs International metadata which are:

1. Unemployment (KILM 9)
2. Youth unemployment (KILM 10)

1. Unemployment (KILM 9)

This indicator includes *unemployed persons* as a numerator and *total labour force* as denominator.

Method of computation

$$Unemployment = \frac{Unemployed\ persons}{Total\ Labour\ force} \times 100$$

Whereby;

$$Labour\ force = Employed + unemployed$$

2. Youth unemployment (KILM 10)

This indicator includes *unemployed youth* as a numerator and *total youth labour force* as denominator.

Method of computation

$$Youth\ unemployment = \frac{Unemployed\ youth}{Total\ youth\ labour\ force} \times 100$$

SDG 8.6.1: Proportion of youth (aged 15–24 years) not in education, employment or training

This indicator includes *number of youth not in education, employment or training* as a numerator and *total number of youth* as denominator.

Method of computation

$$\text{Proportion of youth not in education, employment or training} = \frac{\text{Number of youth not in education, employment or training}}{\text{Total number of youth}} \times 100$$

SDG 8.7.1: Proportion and number of children aged 5–17 years engaged in child labour, by sex and age

This is a composite indicator which includes:

1. Number of children aged 5–17 years engaged in child labour, by sex and age
2. Proportion of children aged 5–17 years engaged in child labour, by sex and age

1. Number of children aged 5–17 years engaged in child labour, by sex and age

Method of computation

$$\text{Number of children aged 5–17 years engaged in child labour} = \text{Sum of all children aged 5–17 engaged in child labour}$$

2. **Proportion of children aged 5–17 years engaged in child labour, by sex and age**

This indicator includes *number of children in child labour* as a numerator and *total children* as denominator.

Method of computation

$$\text{Proportion of children aged 5-17 years engaged in child labour, by sex and age} = \frac{\textit{Number of children in child labour}}{\textit{Total children}} x100$$

SDG 9.2.2: Manufacturing Employment as a proportion of total employment

This indicator includes *number of employed persons in manufacturing industry* as a numerator and *total employed persons* as denominator.

Method of computation

$$\text{Manufacturing Employment as a proportion of total employment} = \frac{\textit{Number of employed persons in manufacturing industry}}{\textit{Total employment persons}} x100$$

SDG 10.4.1: Labour share of GDP

This indicator includes *total labour earning* as a numerator and *GDP at current prices* as denominator.

Method of computation

$$Labour\ share\ of\ GDP = \frac{Total\ labour\ earning}{GDP\ at\ current\ prices} x100$$

KILM 1: Labour force participation rate

This indicator includes *Labour force* as a numerator and *Working age population* as denominator.

Method of computation

$$Labour\ force\ participation\ rate = \frac{Labour\ force}{Working\ age\ population} x100$$

KILM 2: Employment to population ratio

This indicator includes *employed person* as a numerator and *working age population* (15 years and above) as denominator.

Method of computation

$$Employment\ to\ population\ ratio = \frac{Employed\ Persons}{Working\ age\ population} x100$$

KILM 3: Status in employment

This indicator is computed in two categories according to the Key Indicators of Labour Market (KILM) Ninth edition which are:

1. Total employees
2. Total self-employed workers

1. Total employees

The indicator underlying in this category is **Status of total employees.** It includes *wage and salaried workers* as a numerator and *total employed persons* as denominator

Method of computation

$$Status\ of\ total\ employees = \frac{wage\ and\ salaried\ workers}{Total\ employed\ persons} x100$$

2. Total self-employed workers

The indicator underlying in this category is **Status of total self-employed workers.** It includes *total self-employed workers* as a numerator and *total employed persons* as denominator

Method of computation

$$Status\ of\ total\ employees = \frac{total\ self\ employed\ workers}{Total\ employed\ persons} x100$$

Note: Total self-employed workers includes self-employed workers with employees (employers), self-employed workers without employees (own-account workers), members of producers' cooperatives and contributing family workers (unpaid family workers).

KILM 4: Employment by sector

This indicator is computed in three categories of economic activities under *ISIC Rev.4* according to the Key Indicators of Labour Market (KILM) Eighth edition which are:

1. Agriculture sector
2. Industry sector
3. Services sector

1. Agriculture sector

The indicator underlying in this category is **Proportion of employed workers in Agricultural Sector as a percentage of total employment.** It includes *number of employed persons in Agricultural Sector* as a numerator and *total employed persons* as denominator

Method of computation

$$\text{Proportion of employed workers in Agricultural Sector} = \frac{\text{Number of employed persons in Agricultural sector}}{\text{Total employed persons}} \times 100$$

2. Industry sector

The indicator underlying in this category is **Proportion of employed workers in Industry Sector as a percentage of total employment.** It

includes **number of employed persons in industry sector** as a numerator and **total employed persons** as denominator

Method of computation

Proportion of employed workers in Industry Sector is computed as:

$$Proportion\ of\ employed\ workers\ in\ Industry\ Sector = \frac{Number\ of\ employed\ persons\ in\ Industry\ sector}{Total\ employed\ persons} \times 100$$

3. Service sector

The indicator underlying in this category is **Proportion of employed workers in Service Sector as a percentage of total employment.** It includes **number of employed persons in service sector** as a numerator and **total employed persons** as denominator

Method of computation

$$Proportion\ of\ employed\ workers\ in\ Services\ Sector = \frac{Number\ of\ employed\ persons\ in\ service\ sector}{Total\ employed\ persons} \times 100$$

KILM 5: Employment by Occupation

This indicator is computed in two categories which includes:

1. Number of worker by occupation
2. Share of workers in an occupational group as a percentage of total number of workers

1. **Number of workers by occupation**

Method of computation

Number of workers in each major occupation group according to International Standard Classification of Occupations (ISCO-08)

2. **Share of workers in an occupational group as a percentage of total number of workers**

This indicator includes *number of workers in an occupational group* as a numerator and *total number of workers* as denominator.

Method of computation

Share of workers in an occupational group as a percentage of total number of workers is computed as:

$$\text{Share of workers in an occupational group} = \frac{\text{number of workers in an occupational group}}{\text{total number of workers}} \times 100$$

KILM 6: Part-time workers

This indicator includes *number of employed person whose working time less than 40 hours a week* as a numerator and t*otal employed persons* as denominator.

Method of computation

$$\text{Part-time workers} = \frac{\begin{array}{c}\textit{Number of employed person whose} \\ \textit{working time less than 40 hours a week}\end{array}}{\textit{Total employed persons}} x100$$

KILM 7: Hours of work (Average Usual Hours of Work per Week)

This indicator is computed in two categories according to the Key Indicators of Labour Market (KILM) Ninth edition which are:

1. Average hours that employed persons work per week
2. Average annual hours actually worked per person

1. Average hours that employed persons work per week

Method of computation

$$\begin{array}{c}\textit{Average hours that} \\ \textit{employed persons work} \\ \textit{per week}\end{array} = \frac{\textit{Total working hours per week}}{\textit{Total employed persons}} x100$$

2. Average annual hours actually worked per person

Method of computation

$$\begin{array}{c}\textit{Average annual hours} \\ \textit{actually worked per person}\end{array} = \frac{\textit{Total working annual hours}}{\textit{Total employed persons}} x100$$

KILM 8: Employment in informal economy

This indicator is computed by summing up the employed persons in the following employment status.

i.	Contributing family workers in formal sectors
ii.	Informal employee in formal sectors
iii.	Informal sector own account workers
iv.	Informal employers
v.	Contributing family workers in informal sectors
vi.	Informal employees in informal sectors
vii.	Formal employees in informal sectors
viii.	Informal members of producer cooperative in informal sectors.
ix.	Informal sector own account workers in households
x.	Informal employees in households

KILM 11: Long term unemployment

This indicator is reported by two indicators which includes:

1. Long-term unemployment
2. Durations of unemployment

1. Long-term unemployment

The long term unemployment is computed in two categories which are:

a. Long-term unemployment rate
b. The incidence of long-term unemployment

a.   Long-term unemployment rate

This indicator includes *number of persons unemployed for one year or longer* as a numerator and *total labour force* as denominator.

Method of computation

$$\text{Long-term un-employment rate} = \frac{\text{Number of persons unemployed for one year or longer}}{\text{Total labour force}} \times 100$$

b.   The incidence of long-term unemployment

This indicator includes *number of persons unemployed for one year or longer* as a numerator and *total unemployment* as denominator.

Method of computation

$$\text{The incidence of long-term unemployment} = \frac{\text{Number of persons unemployed for one year or longer}}{\text{Total unemployment}} \times 100$$

2.   Durations of unemployment

The duration of unemployment is computed in two categories which are:

  a.   Number of unemployed at different durations
  b.   Share of total unemployment at different durations

a.   Number of unemployed at different durations

Method of computation

Summation of all unemployed persons at different durations

b. Share of total unemployment at different durations

This indicator includes *number of unemployed at different durations* as a numerator and ***total*** *unemployed persons* as denominator.

Method of computation

$$\text{The share of total unemployment at different durations} = \frac{\text{number of unemployed at different durations}}{\text{total unemployed persons}} \, x100$$

Note: Durations means (a) less than one month; (b) one month to less than three months; (c) three months to less than six months; (d) six months to less than twelve months; (e) twelve months or more

KILM 12: Time related under employment

This indicator is reported by two indicators which includes:

1. Time related under employment as a percentage of total employment
2. Time related under employment as a percentage of labour force

1. Time related under employment as a percentage of total employment

This indicator includes ***time related under employment*** as a numerator and ***total employment*** as denominator.

Method of computation

Time related under employment as a percentage of total employment is computed as:

$$\text{Time related under employment as percentage of total employment} = \frac{\text{Time related under employment}}{\text{Total employment}} x100$$

2. Time related under employment as a percentage of labour force

This indicator includes *time related under employment* as a numerator and *total labour force* as denominator.

Method of computation

$$\text{Time related under employment as percentage of labour} = \frac{\text{Time related under employment}}{\text{Total labour force}} x100$$

KILM 13: Person outside the labour force (Inactivity Rate)

This indicator includes *inactive population* as a numerator and *working age population* as denominator.

Method of computation

$$\text{Person outside the labour force (Inactivity rate)} = \frac{\text{Inactive population}}{\text{Working age population}} x100$$

KILM 14: Educational attainment and illiteracy

This indicator is reported by three indicators which includes:
   1. Distribution of the educational attainment of the labour force

2. Distribution of the educational attainment of unemployed
3. Illiteracy rate

1. Distribution of the educational attainment of the labour force

This indicator includes *number of labour force in each level of educational attainment* as a numerator and *total labour force* as denominator.

Method of computation

$$\text{Distribution of the educational attainment of the labour force} = \frac{\text{Number of labour force in each level of educational attainment}}{\text{Total labour force}} \, x100$$

2. Distribution of the educational attainment of unemployed

This indicator includes *number of unemployed persons in each level of educational attainment* as a numerator and *total unemployed persons* as denominator.

Method of computation

$$\text{Distribution of the educational attainment of unemployed persons} = \frac{\text{Number of unemployed persons in each level of educational attainment}}{\text{total unemployed persons}} \, x100$$

3. Illiteracy rate

This indicator includes number of illiterate persons as a numerator and total population.

$$Illiteracy\ rate = \frac{Number\ of\ illiterate\ persons}{Total\ population}\ x100$$

Note: *Illiteracy rate depends on the target population such as Labour force, unemployed, employed or working age population.*

KILM 15: Wages and compensation costs

Method of computation

Summation of the average monthly wages and compensation of all employees

KILM 16: Labour productivity

This indicator is computed in two categories according to the Key Indicators of Labour Market (KILM) Ninth edition which are:

1. Labour Productivity per employed person
2. Labour Productivity per worked hours

1. Labour Productivity per employed person

This indicator includes ***Nominal Gross Domestic Product (USD*** as a numerator and ***Total employed persons*** as denominator.

Method of computation

$$\begin{array}{l} Labour\ Productivity \\ per\ employed\ person \end{array} = \frac{Nominal\ Gross\ Domestic\ Product\ (USD)}{Total\ employed\ persons}\ x100$$
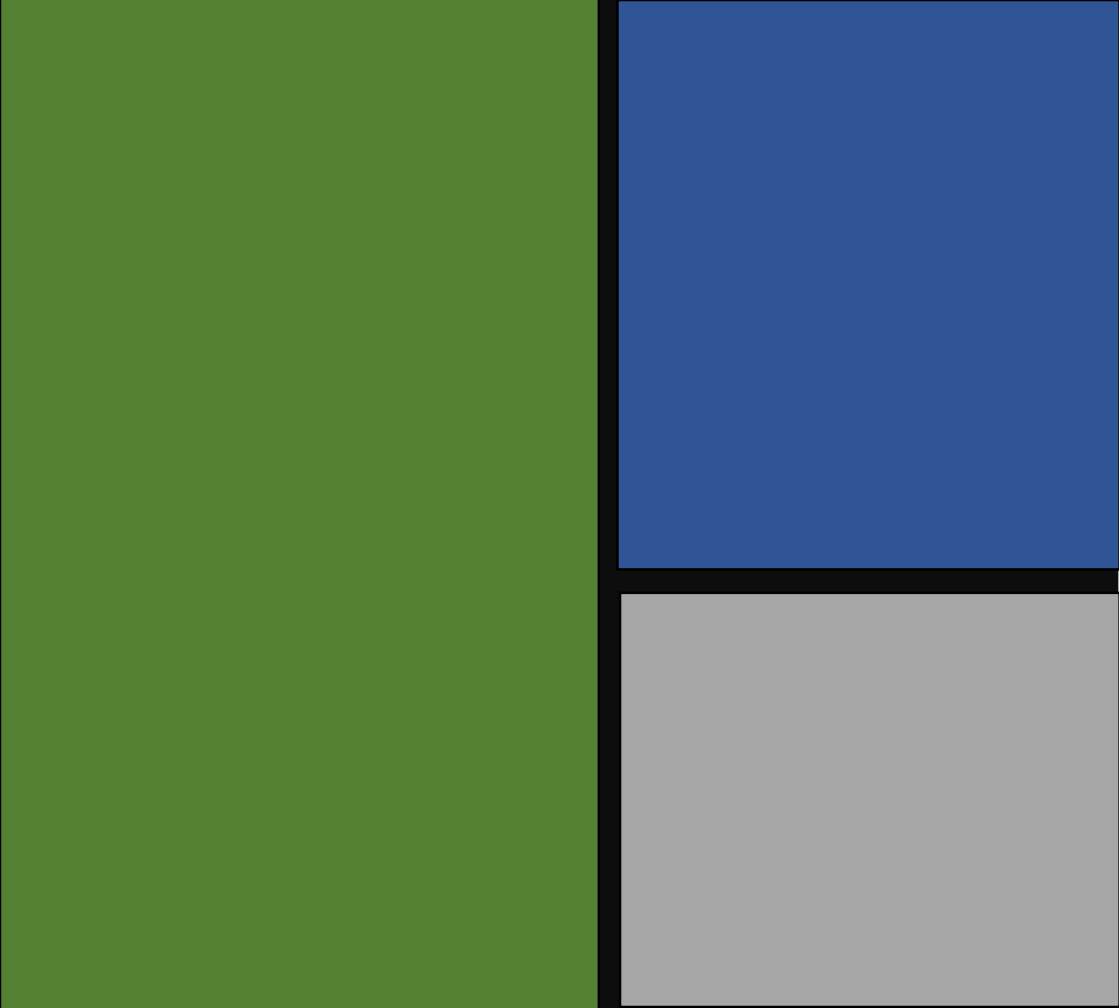
2. Labour Productivity per worked hours

This indicator includes *Nominal Gross Domestic Product (USD)* as a numerator and *Total worked hours* as denominator.

Method of computation

$$\text{Labour Productivity per worked hours} = \frac{\text{Nominal Gross Domestic Product (USD)}}{\text{Total worked hours}} \times 100$$

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