A decorative graphic consisting of several concentric circles in orange, purple, green, and blue. Four colored dots (pink, blue, green, and purple) are positioned along the top arc of the circles, and three black dots are positioned along the bottom arc.

# **CAUSALITY ANALYSIS BETWEEN EDUCATION AND POVERTY IN INDONESIA AS AN EFFORT TO ACHIEVE SDGS**

**Ni Nyoman Reni Suasih<sup>1</sup>, Putu Yudy Wijaya<sup>2</sup>,  
I Gede Putu Kawiana<sup>3</sup>, Ida Ayu Nyoman Saskara<sup>4</sup>**

<sup>1,4</sup>Udayana University, Indonesia

<sup>2,3</sup>Hindu Indonesia University, Indonesia



# CAUSALITY ANALYSIS BETWEEN EDUCATION AND POVERTY IN INDONESIA AS AN EFFORT TO ACHIEVE SDGs

Ni Nyoman Reni Suasih<sup>1</sup>, Putu Yudy Wijaya<sup>2</sup>,

I Gede Putu Kawiana<sup>3</sup>, Ida Ayu Nyoman Saskara<sup>4</sup>



<sup>1,4</sup>Udayana University, Indonesia

<sup>2,3</sup>Hindu Indonesia University, Indonesia



# INTRODUCTION

## FACT ABOUT POVERTY & EDUCATION

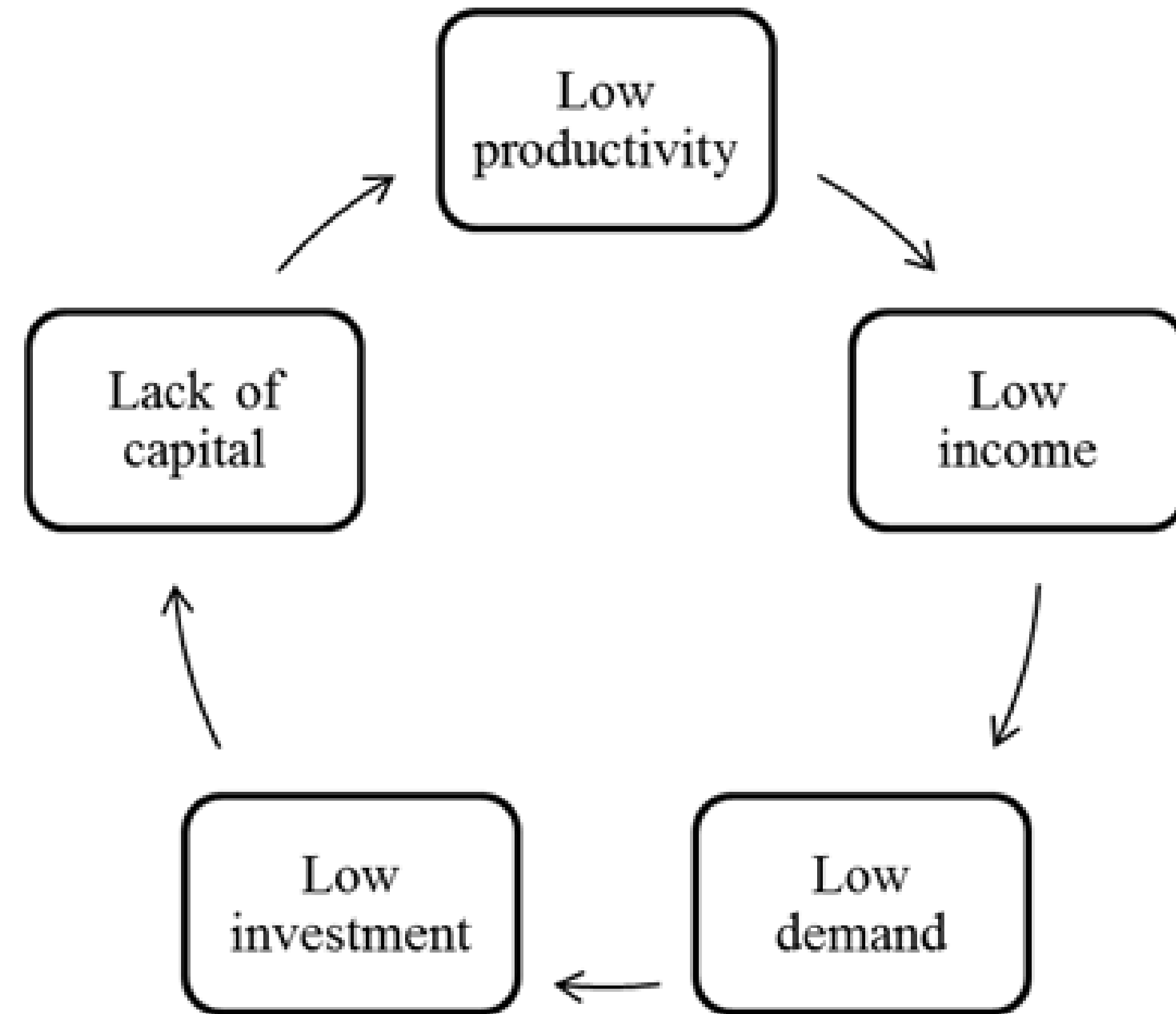
Poverty and education are still a problem in Indonesia, so it needs recommended policies

## INDONESIA

In 2045 it is predicted that there will be a demographic bonus

## 17 SDGS

No poverty and quality education



# VICIOUS CIRCLE NURKSE

The circular forces that react with each other so that a poor country remains in a state of poverty. The vicious circle basically stems from the fact that total productivity in underdeveloped countries is very low as a result of lack of capital, causing low productivity. Low productivity is reflected in low real income. The low level of income causes the level of demand to be low, so that in turn the level of investment is low. Low investment returns cause less capital and low productivity

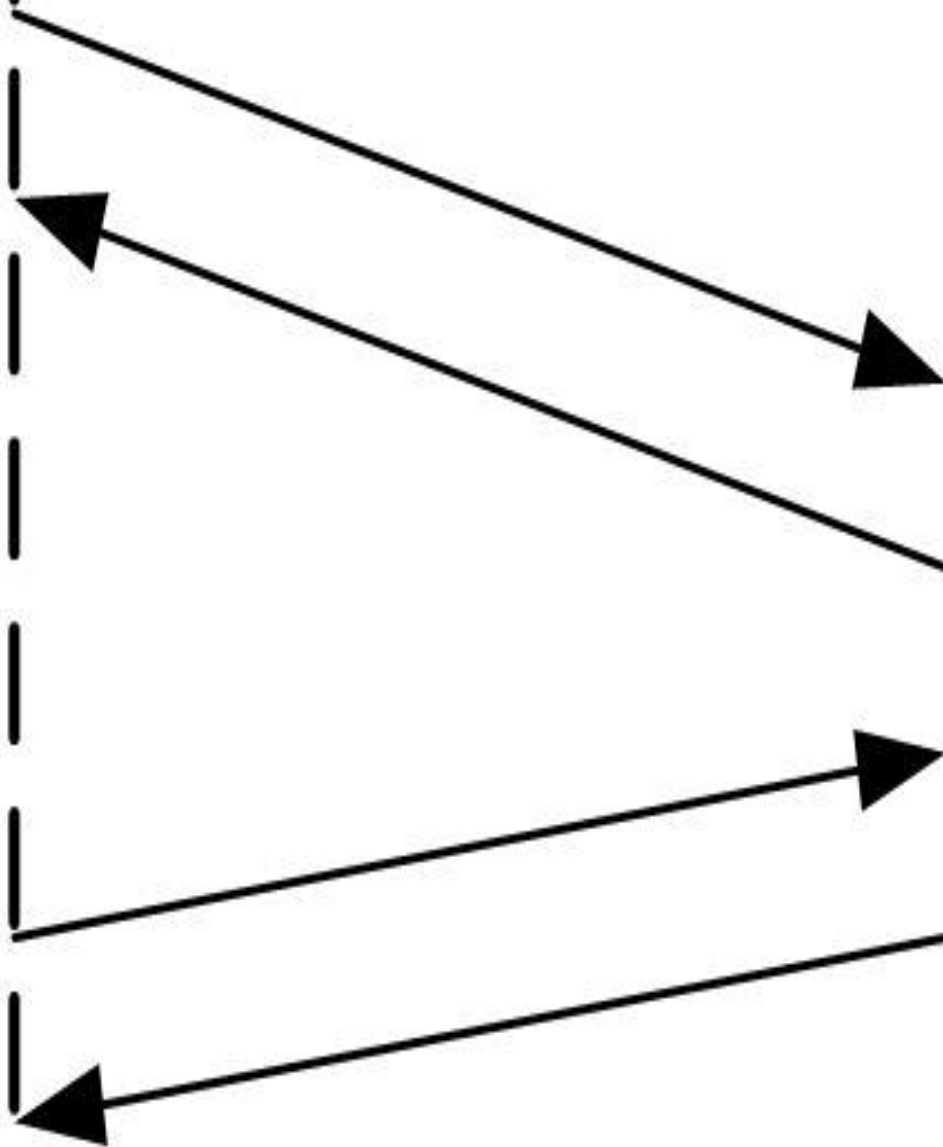
# RESEARCH AIM (FRAMEWORK)

Mean years of schooling

Literacy rate

Education

The number of poverty



# RESEARCH Method



## VARIABLES

Mean Years of Schooling  
Literacy Rate  
The Number of Poverty



## TYPE OF DATA

Panel data  
35 Provinces in  
Indonesia,  
Five years (2015-2019)



## ANALYSIS

Causality Analysis:  
Unit Root Test  
Lag Length Test  
Causality Granger Test



## HYPOTHESIS

H1: Allegedly there is a causal relationship between mean years of schooling and the number of poverty.  
H2: Allegedly there is a causal relationship between literacy rate and the number of poverty.

# RESULTS OF UNIT ROOT TEST

## Mean Years of Schooling

| Method   | Statistic | Prob.** | Cross-sections | Obs |
|--|-----------|---------|----------------|-----|
| Null: Unit root (assumes common unit root process)     |           |         |                |     |
| Levin, Lin & Chu t*                                    | -17.1397  | 0.0000  | 34             | 136 |
| Null: Unit root (assumes individual unit root process) |           |         |                |     |
| Im, Pesaran and Shin W-stat                            | -13.0746  | 0.0000  | 34             | 136 |
| ADF - Fisher Chi-square                                | 101.011   | 0.0058  | 34             | 136 |
| PP - Fisher Chi-square                                 | 133.957   | 0.0000  | 34             | 136 |

## The Number of Poverty

| Method   | Statistic | Prob.** | Cross-sections | Obs |
|--|-----------|---------|----------------|-----|
| Null: Unit root (assumes common unit root process)     |           |         |                |     |
| Levin, Lin & Chu t*                                    | -120.214  | 0.0000  | 34             | 136 |
| Breitung t-stat  | 1.40860   | 0.9205  | 34             | 102 |
| Null: Unit root (assumes individual unit root process) |           |         |                |     |
| Im, Pesaran and Shin W-stat                            | -10.9505  | 0.0000  | 34             | 136 |
| ADF - Fisher Chi-square                                | 100.476   | 0.0064  | 34             | 136 |
| PP - Fisher Chi-square                                 | 149.694   | 0.0000  | 34             | 136 |

## Literacy Rate

| Method   | Statistic | Prob.** | Cross-sections | Obs |
|--|-----------|---------|----------------|-----|
| Null: Unit root (assumes common unit root process)     |           |         |                |     |
| Levin, Lin & Chu t*                                    | -22.1646  | 0.0000  | 34             | 136 |
| Null: Unit root (assumes individual unit root process) |           |         |                |     |
| Im, Pesaran and Shin W-stat                            | -3.55123  | 0.0002  | 34             | 136 |
| ADF - Fisher Chi-square                                | 110.166   | 0.0009  | 34             | 136 |
| PP - Fisher Chi-square                                 | 165.479   | 0.0000  | 34             | 136 |

\*\* Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

### Mean Years of Schooling and The Number of Poverty

| Lag | LogL      | LR        | FPE       | AIC        | SC         | HQ         |
|-----|-----------|-----------|-----------|------------|------------|------------|
| 0   | -16.32919 | NA        | 0.010077  | 1.078188   | 1.167973   | 1.108807   |
| 1   | 196.8421  | 388.7242* | 4.57e-08  | -11.22601  | -10.95665* | -11.13415* |
| 2   | 200.9886  | 7.073335  | 4.55e-08* | -11.23462* | -10.78569  | -11.08152  |
| 3   | 204.1737  | 5.058752  | 4.81e-08  | -11.18669  | -10.55819  | -10.97235  |
| 4   | 205.3659  | 1.753196  | 5.75e-08  | -11.02152  | -10.21345  | -10.74595  |

### Literacy Rate and The Number of Poverty

| Lag | LogL     | LR        | FPE       | AIC        | SC         | HQ         |
|-----|----------|-----------|-----------|------------|------------|------------|
| 0   | 6.920755 | NA        | 0.002567  | -0.289456  | -0.199670  | -0.258837  |
| 1   | 224.4216 | 396.6191* | 9.03e-09* | -12.84833* | -12.57897* | -12.75647* |
| 2   | 226.8591 | 4.158087  | 9.93e-09  | -12.75642  | -12.30749  | -12.60332  |
| 3   | 229.6430 | 4.421532  | 1.07e-08  | -12.68488  | -12.05638  | -12.47055  |
| 4   | 230.2279 | 0.860097  | 1.33e-08  | -12.48399  | -11.67592  | -12.20842  |

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

# RESULTS OF LAG LENGTH TEST



# CAUSALITY TEST (Between MYS & POV)

THE GRANGER  
CAUSALITY TEST  
THERE IS A ONE  
WAY  
RELATIONSHIP  
BETWEEN THE  
MEAN YEARS OF  
SCHOOLING AND  
THE NUMBER OF  
POVERTY

| Null Hypothesis:                     | Obs | F-Statistic | Prob.  |
|--------------------------------------|-----|-------------|--------|
| LN_POV does not Granger Cause LN_MYS | 136 | 3.39938     | 0.0674 |
| LN_MYS does not Granger Cause LN_POV |     | 2.16959     | 0.1431 |

The number of poverty statistically significantly influences the mean years of schooling, as indicated by a probability value of  $0.0674 < \alpha = 0.1$  in lag 1. However, the mean years of schooling does not statistically significantly affect the number of poverty indicated by a probability value of  $0.1431 > \alpha = 0.1$  in lag 1

# CAUSALITY TEST (Between MYS & POV)

**THE GRANGER  
CAUSALITY TEST  
THERE IS A ONE  
WAY  
RELATIONSHIP  
BETWEEN  
LITERACY RATE  
AND THE NUMBER  
OF POVERTY**

| Null Hypothesis:                    | Obs | F-Statistic | Prob.  |
|-------------------------------------|-----|-------------|--------|
| LN_POV does not Granger Cause LN_LR | 136 | 1.68630     | 0.1963 |
| LN_LR does not Granger Cause LN_POV |     | 5.97592     | 0.0158 |

The number of poverty does not statistically significantly affect the literacy rate, which is indicated by the probability value  $0.1963 > \alpha = 0.1$  in lag 1. Whereas the literacy rate is statistically significant affect the number of poverty indicated by a probability value of  $0.0158 < \alpha = 0.1$  in lag 1.

# CONCLUSION



## GENERAL

There is indeed a causality between education and poverty in Indonesia.

## SPECIFIC

More precisely the significant effect of the number of poverty on the mean years of schooling, and the significant effect of literacy rate on the number of poverty.



# SUGGESTION based Results

*For Government of Indonesia*

Completing  
literacy rate



Decreasing  
the number  
of poverty



Increased  
years of  
schooling

## POLICY RECOMMENDATION

It is recommended to the government to provide facilities or subsidies for the poor to increase the mean years of schooling. In addition, the government also needs to complete the literacy rate which is the main skill, so that people (especially the poor) can get more jobs or income so they can escape poverty. Future studies are suggested to use a number of moderation variables in testing causality between education and poverty, such as variables of gender, age, and area of residence (urban or rural), so that the treatment or recommendations produced can be more targeted.



2

ZERO HUNGER



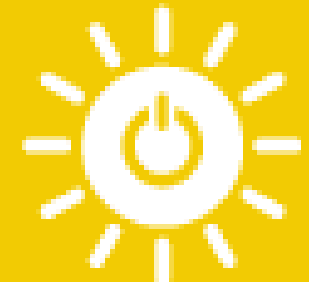
5

GENDER EQUALITY



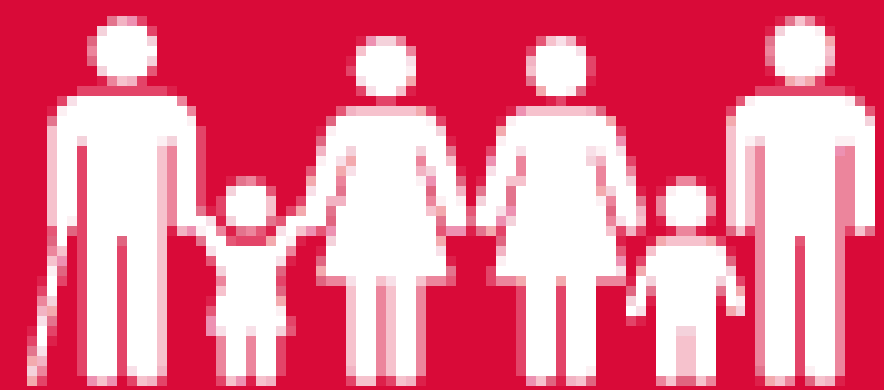
7

AFFORDABLE AND CLEAN ENERGY



1

NO POVERTY



9

INDUSTRY, INNOVATION AND INFRASTRUCTURE



10

REDUCED INEQUALITIES



3

GOOD HEALTH AND WELL-BEING



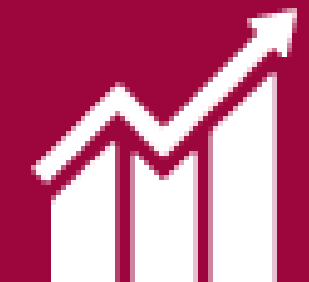
6

CLEAN WATER AND SANITATION



8

DECENT WORK AND ECONOMIC GROWTH



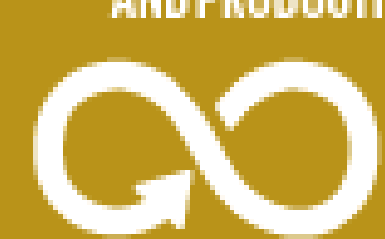
11

SUSTAINABLE CITIES AND COMMUNITIES



12

RESPONSIBLE CONSUMPTION AND PRODUCTION



4

QUALITY EDUCATION



13

CLIMATE ACTION

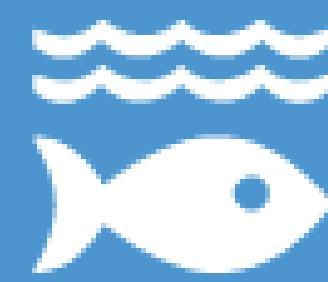


# THANK YOU

*For Your Attention*

14

LIFE BELOW WATER



15

LIFE ON LAND



16

PEACE, JUSTICE AND STRONG INSTITUTIONS



17

PARTNERSHIPS FOR THE GOALS



  
**SUSTAINABLE DEVELOPMENT GOALS**