

Technological Platforms for the Integration of Geospatial and Statistical Information

UN-GGIM Americas 2018

Dean Angelides, Corporate Director, Esri



WE LIVE

In a Complex . . .

. . . and Interconnected World

Geography



Constantly Changing . . .

The Pace of Change Is Accelerating


Creating Many Challenges

Threatening Our Natural World
and Our Future as Humans

We Are Now at a Place
Where No Humans Have Been . . .

We Need More Understanding
. . . Collaboration and
. . . Action

Evidence



The globe is surrounded by a network of lines and nodes, representing interconnected challenges. The labels are:

- Social Conflict
- Mass Migration
- Ocean Acidification
- Urbanization
- Water
- Political Polarization
- Energy
- Loss of Biodiversity
- Climate Change
- Drought
- Deforestation
- Population
- Food
- Pollution

GIS provides a means

A System for Managing, Analyzing
and Applying Geographic Information

... And Solving
Problems Holistically

Integration

Leveraging Location . . .
. . . and Technology

Communication

. . . Maps and Visualization

Analytics

Geographic Sciences . . .
. . . and Modeling



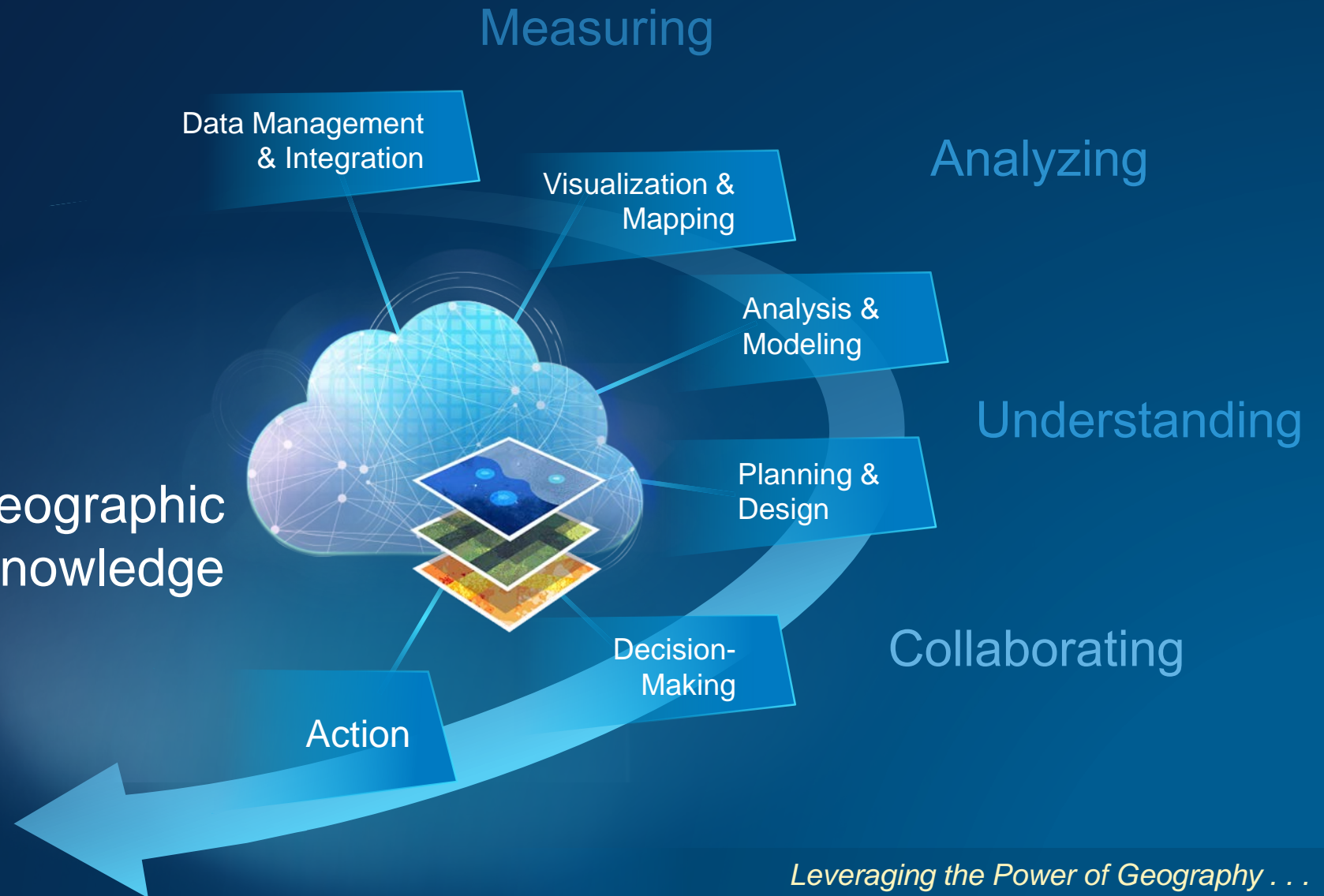
Understanding

A Platform for Organizations. . .
. . . And Society

THE SCIENCE OF WHERE

*A Framework
and Process*

Geographic
Knowledge



*Leveraging the Power of Geography . . .
to Make Better Decisions*

GIS Is Advancing Rapidly

Driven by Exponential Technological Advancements

Scientific Measurements
Drones
Location
Demographics
Surveys
Weather
Real-Time Video
Lidar
Traffic
Imagery
3D
Crowdsourcing

Data

THE SCIENCE OF WHERE

Web GIS

Easier, Open, & Accessible

Computing Infrastructure

Mobile
Big Data
Faster
IoT
Web Services
Distributed Computing
Microservices
SaaS
Cloud
Networks
AI & Machine Learning

GIS Innovation

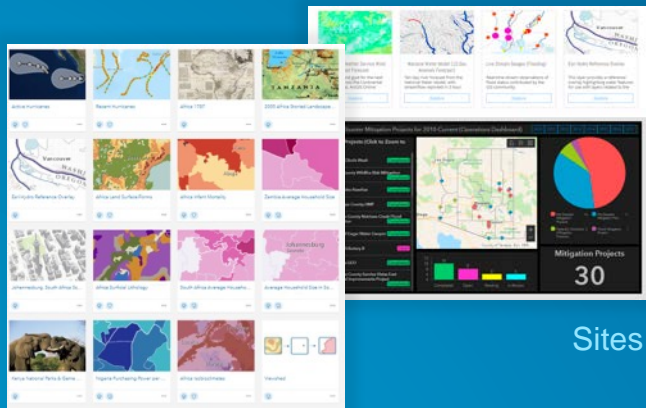
Real-Time
Python
Modern Desktop
Open APIs
3D
Portal
Dynamic Image Processing
Advanced Analytics
Data Exploration
Hub
Open Data
AI
Smart Mapping
Apps
Online Content

Expanding the Power of GIS

Web GIS

Organizes and Manages All Aspects of Geographic Knowledge

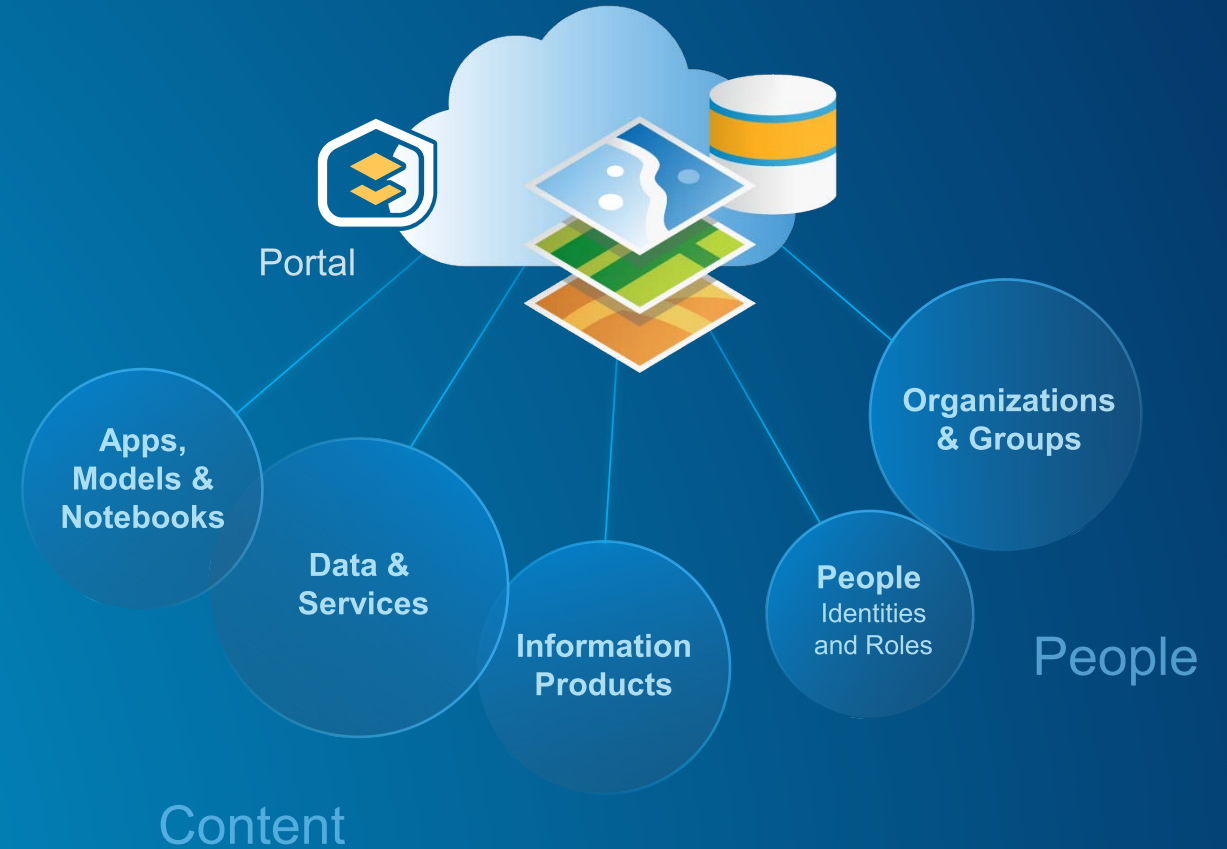
Data, Information Products, Apps, Models . . .
. . . and People and Their Organizations



Sites

Catalog

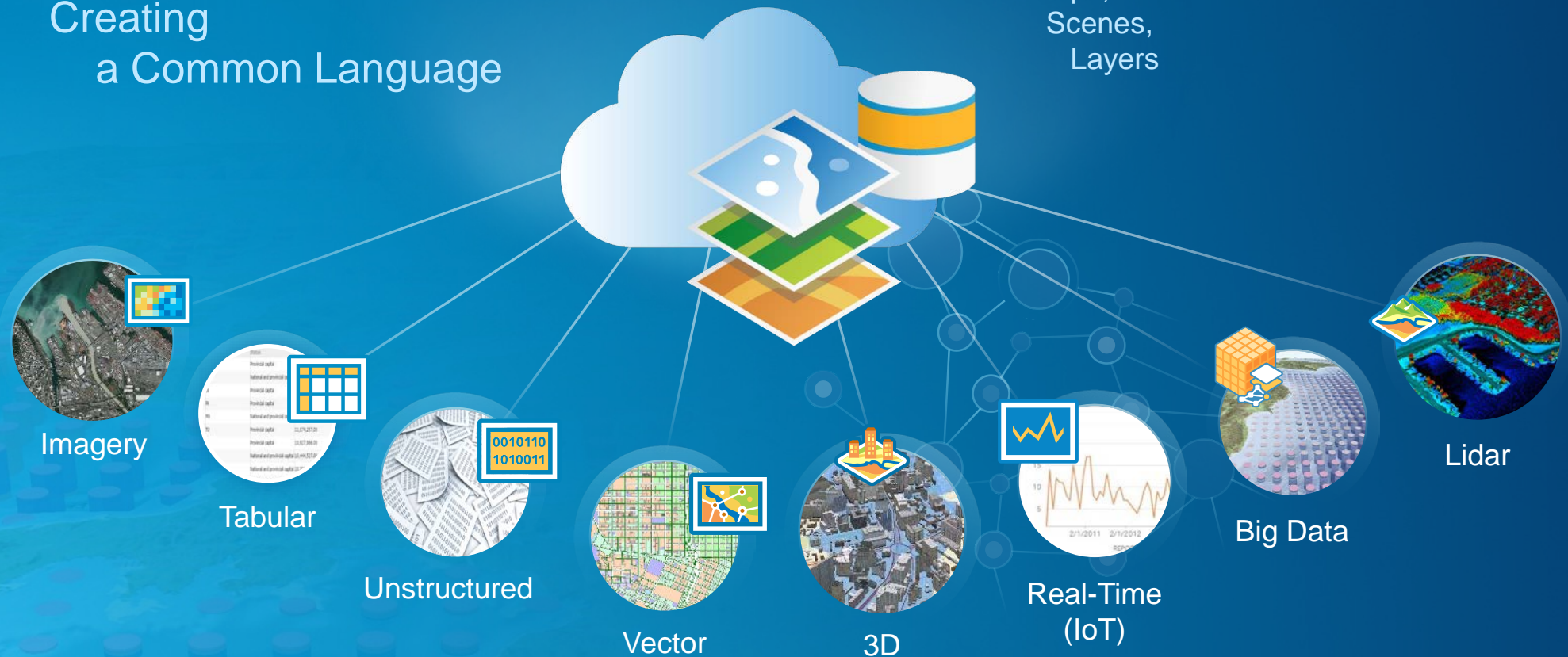
Integrated User Experiences



Web GIS Simplifies Data Integration

Creating
a Common Language

Maps,
Scenes,
Layers



Web GIS Provides a Platform

Empowers All Aspects of the Organization

System of Record

Data Management
and Integration



System of Engagement

Sharing, Collaboration,
and Dissemination



System of Insight

Analytics, Models,
and Data Exploration



... Leveraging the Power of Location

Web GIS Is the Modern GIS Architecture

Helping Everyone Do Their Work Better

Leveraging
Web Services

Communities

Organizations

Departments

Teams

Individuals



Distributed
and
Interconnected

Engaging
Everyone

Sharing and
Collaboration



Policies and Systems are Emerging at all Levels and Scales

THE GLOBAL GOALS

For Sustainable Development



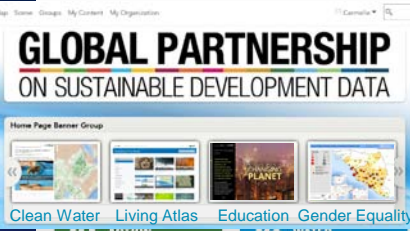
City Service - California



Ireland



Geology and Minerals, Peru



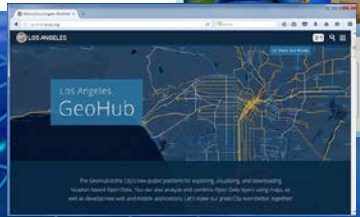
Clean Water Living Atlas Education Gender Equality



Abu Dhabi



Land Information - Wisconsin



Los Angeles



Manaus, Brazil



NOAA

Addressing challenges and engaging citizens

Integration of Statistical and Geospatial Data

Global
Statistical
Geospatial
Framework
(GSGF)

Usable

Interoperable

Common Geographies

Geocoded Units

Fundamental Geospatial Infrastructure



Statistical Process Model (GSBPM)

Planning/
Pre Enumeration

Enumeration

Post Enumeration/
Dissemination

Specify
Needs

Design

Build

Collect

Process

Analyze

Disseminate

Evaluate

Quality / Metadata Management

Fundamental Data Themes important to the Integration

Fundamental Data Themes



Global Geodetic Reference Frame



Geographical Names



Addresses



Functional Areas



Buildings and Settlements



Land Parcels



Transport Networks



Elevation and Depth



Population Distribution



Land Cover and Use



Geology and Soils



Physical Infrastructure



Water



Orthoimagery

INEGI – SDG Data Hub



On 1 January 2016, the world officially began implementation of the 2030 Agenda for Sustainable Development—the transformative plan of action based on 17 Sustainable Development Goals—to address urgent global challenges over the next 15 years. This agenda is a road map for people and the planet that will build on the success of the Millennium Development Goals and ensure sustainable social and economic progress worldwide. It seeks not only to eradicate extreme poverty, but also to integrate and balance the three dimensions of sustainable development—economic, social and environmental—in a comprehensive global vision. All nations will need to build the Sustainable Development Goals into their national policies and plans if we are to achieve them.



INEGI – SDG Data Hub

Open Data Portal

Catalogs

Public (35)
Restricted

Filter By

Capabilities

permits downloads (35)
has an api (35)

Tags

Indicator_4_1_2_municipal (3)
By Sex And Age (1)
.Sd (1)
8.5.7 Share Of Women In Wage And Salaried Workers In Non-farm Sector (1)
8.7.1. Proportion And Number Of Children Aged 5-17 Years Engaged In Child Labour (1)

[More](#)

< 1 - 10 of 35 results >

Relevance ▾

Indicator 3.2.3 Infant mortality rate

Shared by fco_mendoza_unsd

Importance and purpose of the indicator: Infant mortality is an important component of the mortality of children under 5 years. This indicator is directly related to child survival and reflects the sociodemographic and health conditions of this population, which should be the subject of action programs such as immunization, oral



Custom License 7/7/2017 Feature Layer 32 Rows

Indicator 9.c.3 Mobile cellular subscriptions per 100 inhabitants.

Shared by luz.hernandez_ods_inegi

Metadata Goal: 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation Target: 9.c. Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020 Definition: It is the



Custom License 1/16/2018 Feature Layer 32 Rows

Indicator 1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

Shared by fco_mendoza_unsd

Source of statistical information used to calculate the indicator: "Instituto Nacional de Estadística y Geografía"



INEGI – Story Map

A high-angle photograph of a group of young children, likely in a school setting. They are wearing white and blue school uniforms. The children are of various ethnicities and are looking towards the camera with different expressions, some curious and some slightly sad. The background is a light-colored tiled floor.

Ensure a healthy life

and promote well-being for all at all ages


Integrating Geography and Statistics

To understand our society, economy and environment



INEGI – Story Map

INEGI
INSTITUTO NACIONAL
DE ESTADÍSTICA Y GEOGRAFÍA



Do all youth not at school
or in training and
unemployed, are idle?

Integrating Geography and Statistics

To understand our society, economy and environment



Ireland, Sustainable Development Goals

17 Goals to Transform our World

Sign In

Ireland: Voluntary National Review 2018

Introduction National Context SDG 1 No Poverty SDG 2 Zero Hunger SDG 3 Good Health & Well-Being SDG 4 Quality Education SDG 6 Clean Water & Sanitation SDG 7 Affordable & Clean Energy

SDG 6: Ensure availability and sustainable management of water and sanitation for all

Ireland's performance under this Goal is mixed based on latest available EU and OECD data.

Ireland is in the middle OECD tier in relation to renewable freshwater resources and, consistent with the OECD average, public satisfaction with local water quality has fallen slightly in the recent years.

Based on EU SDG indicators, Ireland outperformed the EU average in relation to biochemical oxygen demand [BOD] in rivers in 2012, though failed to meet the threshold for the cleanest river category of less than 1.0 mg/l BOD. Ireland was also below the EU averages for Nitrate in groundwater and Phosphate in rivers.

© Ordnance Survey Ireland | Ordnance Survey Ireland, Environmental Pr... esri

Ireland

Sénégal, Open Data Site

Sign In

Sénégal, Plateforme de suivi des ODD

Sénégal, Open Data Site

Find My Data Sign In

ODD 8.3.1 Proportion de l'emploi informel dans les secteurs non agricoles, par sexe

FID	2
CODE	4000012
NOM	Tembecounde
THEME	LA
PAYS	SN
IDAU	1d6d9c7e-103e-4d6e-9ea3-259b63911b3
SUM_SUPERF	42613.1974998
Shape_Lena	1483600.3372

Overview Data API Explorer

ODD 8.3.1 Proportion de l'emploi informel dans les secteurs non agricoles, par sexe

Objectif 8 : Promouvoir une croissance économique soutenue, partagée et durable, le plein emploi productif et un travail décent pour tous. La cible est "Promouvoir des politiques axées sur le développement qui favorisent les activités"

About
SDG Decent work and economic growth

Senegal

UAE Sustainable Development Goals

Sign In

80% 2010 2017

Welcome to the UAE SDG Data Hub

UAE

Palestine, Sustainable Development Goals

Find My Data Sign In

Unemployment Rate, by sex, age and persons with disabilities

Attributes

About
SDG 08 Decent Work & Economic Growth
Shared By: NAHR_PCBS
Data Source: services@arcgis.com

Palestine

Philippines' Sustainable Development Goals Status

Goal 1 Goal 8

At the national level the poverty situation among population has improved a bit compared to the 2006 poverty incidence and at the regional level (zoom in to see regional level), almost all areas have the same trend (click an area to see the trend) as the national level except for Autonomous Region in Muslim Mindanao (ARMM) where the incidence has gone up. But at the provincial level (zoom in) the poverty status is not that encouraging because the poverty situation has deteriorated in more than 20 provinces. Worse, there are 6 provinces where poverty incidence has doubled compared to 2006 estimate. On the positive note, there are provinces whose goal of halving the poverty incidence can be considered as achievable and ten (10) have already achieved the target.

SDG 1.1.2 Status (2015 Poverty Incidence in the Regions)

2015 Poverty Incidence (Pop.) divided by 2006 Poverty Incidence (Pop.)

- Worsened (> 100% of Baseline)
- Improved/No Change (> 75% - 100% of Baseline)
- Improved (50% - 75% of Baseline)

Esri, HERE, Garmin, FAO, NOAA, USGS esri

Philippines

PROYECTO

ODS 11

ODS 15



OBJETIVOS DE DESARROLLO SOSTENIBLE

17 OBJETIVOS PARA TRANSFORMAR NUESTRO MUNDO

EL PROYECTO

La Cámara de Comercio de Bogotá (CCB), Red Pacto Global Colombia, Fundación Bolívar Davivienda y Fundación Corona, comprometidos con la implementación de la **Agenda 2030**, unieron esfuerzos para promover la iniciativa “**Unidos por los ODS: el aporte de nuestras empresas**”, proyecto que busca medir la contribución de las empresas al cumplimiento de los ODS. El Centro de Pensamiento Estratégico Internacional (Cepei) es el operador técnico de la iniciativa y cuenta con el apoyo de World Wildlife Fund (WWF) en temáticas ambientales.

La iniciativa realiza una radiografía de la situación actual de las empresas frente a la **Agenda 2030**, permitiendo identificar sus logros, fortalezas y aspectos a mejorar. Asimismo, espera convertirse en una herramienta de consulta para la toma de decisiones acertadas frente los nuevos retos y la consolidación de sus acciones en pro de un mejor país.



ODS Aportes de las empresas



Pacto Global
Red Colombia

Fundación
**Bolívar
Davivienda**

Fundación **corona**

CCB Cámara
de Comercio
de Bogotá

Supporting Civil Society- Example CEPEI and Esri Colombia

ODS Aportes de las empresas

Página Oficial  Cepei
Knowledge Society for the world we deserve

PROYECTO ODS 11 ODS 15

 **OBJETIVO DE DESARROLLO SOSTENIBLE**
17 OBJETIVOS PARA TRANSFORMAR NUESTRO MUNDO

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ODS Aportes de las empresas

  Pacto Global Red Colombia  Fundación Bolívar Davivienda  Fundación CORONA  Cámara de Comercio de Bogotá



ODS Aportes de las empresas

Página Oficial  Cepei
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PROYECTO ODS 11 ODS 15

15 FLORA Y FAUNA TERRESTRES

OBJETIVO 15: Proteger, restablecer y promover el uso sostenible de los ecosistemas terrestres, gestionar sosteniblemente los bosques, luchar contra la desertificación, detener e invertir la degradación de las tierras y detener la pérdida de biodiversidad

IMPORTANCIA


Las estrategias para la protección de la biodiversidad en el país, no solo deben enfocarse en actividades correctivas para mitigación de impactos, sino que también debe concentrarse en aspectos regulatorios que identifiquen y erradiquen el problema de raíz, con el objetivo de prevenir situaciones futuras de degradación de los ecosistemas naturales (especialmente aquellos relacionados con la

LEGEND
Regiones Colombia
Centro
Norte
Occidente
Oriente
Sur



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ODS Aportes de las empresas

Página Oficial  Cepei
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PROYECTO ODS 11 ODS 15

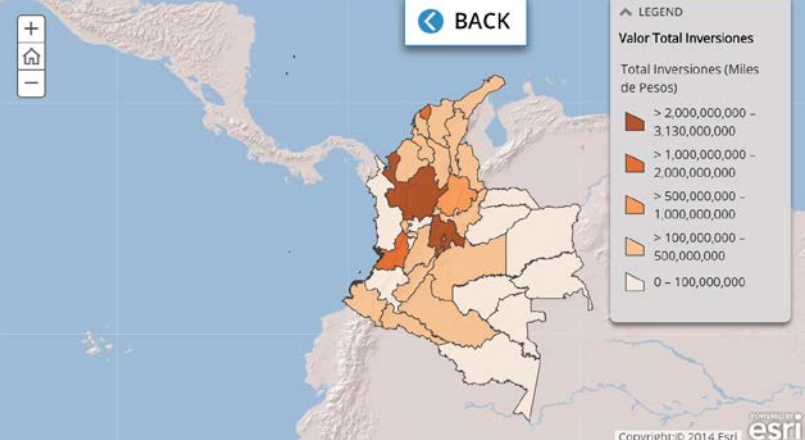
11 CIUDADES Y COMUNIDADES SOSTENIBLES


OBJETIVO 11: Lograr que las ciudades y los asentamientos humanos sean inclusivos, seguros, resilientes y sostenibles.

IMPORTANCIA

La inversión social de las empresas ha dejado de ser categorizada como una obligación legal o propio del negocio, para entenderse como una oportunidad para la generación de condiciones necesarias que conviertan las ideas de inclusión, crecimiento y equidad en una realidad estructurada que permita al país ser una nación moderna e insertada en la economía global.

LEGEND
Valor Total Inversiones
Total Inversiones (Miles de Pesos)
> 2,000,000,000 - 3,130,000,000
> 1,000,000,000 - 2,000,000,000
> 500,000,000 - 1,000,000,000
> 100,000,000 - 500,000,000
0 - 100,000,000



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Web GIS Has Enabled a network of SDG Hubs worldwide



A Global SDG Hub ...

... And a Network of National SDG Hubs

UNSD Story Map Illustrates Data Driven Progress

The Sustainable Development Goals Report 2018



Overview Interlinkages Goal 6 Goal 7 Goal 11 Goal 12 Goal 15 Goal 17

The Sustainable Development Goals Report 2018



The Sustainable Development Goals Report 2018

The Sustainable Development Goals Report 2018 reviews progress in the third year of implementation of the 2030 Agenda for Sustainable Development. This overview presents highlights of progress and remaining gaps for all 17 Sustainable Development Goals (SDGs) based on the latest available data, and examines some of the interconnections across Goals and targets. Subsequent chapters focus in more depth on the six Goals under review at the high-level political forum on sustainable development in July 2018.

While people overall are living better lives than they were a decade ago, progress to ensure that no one is left behind has not been rapid enough to meet the targets of the 2030 Agenda. Indeed, the rate of global progress is not keeping pace with the ambitions of the Agenda, necessitating immediate and accelerated action by countries and stakeholders at all levels.



Support for the region via grant programs



Collaboration and Partnerships – Key to success

- **Civil Society**
- **Academia**
- **Private Sector**
- **CARICOM**
- **OECS**
- **UN-ECLAC**
- **IADB**
- **. . . . And others**



esri

THE
SCIENCE
OF
WHERE