

# Outline

- 1 What is a developing country?
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## What is a developing country ?

- Various terms are used for whatever is not a *developed country*. Terms used include *less developed country* or *less economically developed country*, and for the more extreme, *least developed country* or *least economically developed country*.
- Criteria for what is not a developed country can be obtained by inverting the factors that define a developed country:
  - 1 people have lower life expectancy
  - 2 people have less education
  - 3 people have less money (income)

# What is a developing country ?

- Kofi Annan, former Secretary General of the United Nations, defined a developed country as "one that allows all its citizens to enjoy a free and healthy life in a safe environment."
- But according to the United Nations Statistics Division, There is no established convention for the designation of "developed" and "developing" countries or areas in the United Nations system. The designations "developed" and "developing" are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process.

# What is a developing country ?

The classification system from International Monetary Fund (IMF) considers

- 1 per capita income level,
- 2 export diversification—so oil exporters that have high per capita GDP (Gross Domestic Product) would not make the advanced classification because around 70% of its exports are oil, and
- 3 degree of integration into the global financial system.

# What is a developing country ?

The **World Bank** classifies countries into four income groups. These are set each year on July 1. Economies were divided according to 2016 GNI (Gross National Income) per capita using the following ranges of income:

- Low income countries had GNI per capita of USD 1,025 or less.
- Lower middle income countries had GNI per capita between USD 1,026 and USD 4,035.
- Upper middle income countries had GNI per capita between USD 4,036 and USD 12,475.
- High income countries had GNI per capita above USD 12,476.

# What is a developing country ?

The World Bank classifies all low- and middle-income countries as developing but notes, "The use of the term is convenient; it is not intended to imply that all economies in the group are experiencing similar development or that other economies have reached a preferred or final stage of development. Classification by income does not necessarily reflect development status.

# What is a developing country ?

Developing countries are, in general, countries that have not achieved a significant degree of industrialization relative to their populations, and have, in most cases, a medium to low standard of living. There is a strong association between low income and high population growth.

Other terms sometimes used are less developed countries (LDCs), least economically developed countries (LEDCs), "underdeveloped nations" or Third World nations,

## List of developing countries

Afghanistan Albania Algeria Angola Antigua and Barbuda  
Argentina Armenia Azerbaijan Bahamas Bahrain Bangladesh  
Barbados Belarus Belize Benin Bhutan Bolivia Bosnia and  
Herzegovina Botswana Brazil Brunei Bulgaria Burkina Faso  
Burundi Cambodia Cameroon Cape Verde Central African  
Republic Chad Chile China Colombia Comoros Democratic  
Republic of the Congo Republic of the Congo Costa Rica Côte  
d'Ivoire Croatia Djibouti Dominica Dominican Republic Ecuador  
Egypt El Salvador Equatorial Guinea Eritrea Ethiopia Fiji  
Gabon The Gambia Georgia Ghana Grenada Guatemala  
Guinea Guinea-Bissau Guyana Haiti Honduras Hungary India  
Indonesia Iran Iraq Jamaica Jordan Kazakhstan Kenya Kiribati  
Kyrgyzstan Laos Lebanon Lesotho Liberia Libya Macedonia  
Madagascar

## List of developing countries

Malawi Malaysia Maldives Mali Marshall Islands Mauritania  
Mauritius Mexico Federated States of Micronesia Moldova  
Mongolia Montenegro Morocco Mozambique Myanmar  
Namibia Nepal Nicaragua Niger Nigeria Oman Pakistan Palau  
Panama Papua New Guinea Paraguay Peru  
Philippines Poland Qatar Romania Russia Rwanda Saint Kitts  
and Nevis Saint Lucia Saint Vincent and the Grenadines  
Samoa São Tomé and Príncipe Saudi Arabia Senegal Serbia  
Seychelles Sierra Leone Solomon Islands Somalia South Africa  
South Sudan Sri Lanka Sudan Suriname Swaziland Syria  
Tajikistan Tanzania Thailand Timor-Leste Togo Tonga Trinidad  
and Tobago Tunisia Turkey Turkmenistan Tuvalu Uganda  
Ukraine United Arab Emirates Uruguay Uzbekistan Vanuatu  
Venezuela Vietnam Yemen Zambia Zimbabwe

- ICMI has a substantive interest in ensuring that its resources and influence extend to any country that is able to mobilize the elements of its mathematics education enterprise to make productive use of this connection
- In line with this goal, and cognisant of issues of 'voice', and so the building of connections and relationships across countries and communities of mathematics education, the following outlines ICMI's main work to enable developing countries' activities to become part of the international community of mathematics education represented by ICMI, through its regular activities and those of its Affiliated Study Groups, its Solidarity Fund program and its collaboration with other bodies, more especially with the International Mathematical Union (IMU) and with UNESCO.

## ICMI membership

Many developing countries do not have IMU membership and so, in agreement with its Terms of reference, the ICMI EC is looking into ways to make membership to ICMI possible especially for developing countries with some structured activity in mathematics education that could serve as a basis for an affiliation to ICMI.

# ICMI Solidarity Programme

The ICMI Solidarity Fund was established by ICMI in 1992, on the proposal of its President Miguel de Guzmán, during ICME-7 held in Québec, Canada. Its purpose is to help the development of mathematics education in countries in which there is a need for it that justifies international assistance. The Solidarity Fund is based on private contributions by individuals, associations, etc.

Directed by a Steering Committee appointed by the ICMI Executive Committee, the Solidarity Fund was activated to support concrete initiatives and activities that may foster solidarity in mathematics education between well-defined quarters in developed and less developed countries.

# ICMI Solidarity Programme

The main idea defining its mission is to support projects that might help the improvement — in a broad sense — of mathematics education in a region, country, or province. Particular emphasis is placed on projects that enable the activation of a self-sustainable infrastructure (such as preparation of teachers or researchers in mathematics education, curriculum development, production of teaching/learning materials, creation of networks, initiation of research activities) within mathematics education. Only in very special cases has the Fund been used to support individuals in leaving their country for conferences, courses, etc.

# ICME: International Congresses on Mathematics Education

- The International Congresses on Mathematics Education (ICME's) Interests of developing countries in ICMEs are reflected through themes of some of the scientific program, and through the choice of venue of the congresses.  
**Participation of mathematics educators from developing countries in the congress is actively supported by the award of congress participation grants, financed through a "Solidarity Tax" built into the regular registration fees, as well as other specifically raised funds.**

## The ICMI studies

- The ICMI Executive Committee has followed a range of strategies with respect to the ICMI Studies to enable voice, participation and connection with developments, interests and concerns of mathematics education in developing countries.
- Central is the representation of experts from developing countries on the International Programme Committee in charge of the Study; moreover some of the Study conferences are taking place in developing or emerging countries.

# The ICMI studies

For example, the conference for ICMI Study 15, on Mathematics Teacher Education and Development, took place in Brazil in 2005; that for Study 17 on Technology took place in Vietnam in 2007; the Statistics Study conference (18) has taken place in Mexico in 2008. Choice of themes is also being extended to include interests and concerns of developing countries. For example, a Study (21) announced at ICME-11 in Mexico is focused on (Re)sourcing teaching and learning mathematics in multilingual contexts.

# CANP Capacity & Network Project

The Capacity & Networking Project is a major international initiative in the mathematical sciences in the developing world to help exchange information, share the state of the art research, and identify strategies for addressing barriers to enhance mathematics education and to conduct to building a sustainable network for policy makers, scholars and practitioners across those targeted regions.

# Capacity & Network Project CANP

CANP aims to enhance mathematics education at all levels in developing countries so that their people are capable of meeting the challenges these countries face. It will develop the educational capacity of those responsible for mathematics teachers, and create sustained and effective regional networks of teachers, mathematics educators and mathematicians, also linking them to international support.

# CANP Capacity & Network Project

Each programme will have, at its centre, a two-week workshop of about forty participants, half from the host country and half from regional neighbours'. It will be primarily aimed at mathematics teacher educators, but also included mathematicians, researchers, policy-makers, and key teachers. Each workshop will associate activities such as public lectures, satellite workshops for students, or exhibitions reaching out to a board audience. The coordination of the workshop will be undertaken by a group of eight with equal participation by mathematicians and mathematics educators from the region and from the international IMU/ICMI/ICIAM community. Programme coordinators will be appointed by ICMI in consultation with IMU and ICIAM.

# CANP Capacity & Network Project

The program, and in particular the workshop, will build on existing activities in the region and will not seek to reproduce or compete with existing development programmes. It will include a follow-up after one year to ensure continuity and for evaluation. A post-workshop and a 1-year report will be produced for each programme. ICMI will ensure that the experience of earlier programmes will be used for the design of later ones.

# CANP Capacity & Network Project

Here is a list of past and future CANP programmes:

- 1 The first programme was held in Mali in September, 2011,
- 2 the second in Central America in 2012,
- 3 the third in South East Asia in 2013 to build on existing developing initiatives in Cambodia and Nepal,
- 4 the fourth in East Africa in 2014,
- 5 the fifth in Andean Region in 2016.
- 6 ...

# How are educations in developing countries ?

In this section, I will show Madagascar and Senegal education status. The problems were common in the two countries. What is our students status: 70% of new "bacheliers" are literary, only 30% are scientific, without mentioning the rate of success to this degree.

We always hear this question

# How are educations in developing countries ?

**" The "baccalauréat", is it a certificate marking the end of cycle or a prerequisite for the university ?"**

**What is the real academic level of our "bacheliers", having spent hundreds even thousands hours of courses during their cursus, while they were trained - in a physical and social environment far from "éducogène" - by a majority of teachers demotivated constrained to keep levels (grades) for which they were not trained nor paid."**

# How are educations in developing countries ?

In *Rapport*, p.27, 23/10/2012, Mamadou Mbodj:

**"En produisant (...) de plus en plus de littéraires et de bacheliers inaptes à obtenir une maîtrise en quatre ans, le système éducatif sénégalais semble bien remplir le rôle qui lui est assigné dans la nouvelle économie du savoir"**

qui voudrait qu'il y ait une catégorie de population bénéficiant d'un enseignement privé compétitif, une autre catégorie moyenne avec une éducation qui ne serait pas de classe mondiale, et enfin une troisième qui ne serait préparée que pour un "marché local d'emplois faiblement qualifiés".

# How are educations in developing countries ?

Meanwhile, numbers of "bacheliers" increase each year.  
Senegal is on progress to solve these problems,

# How are educations in developing countries ?

Senegal case: Universities extension, constructing new infrastructures



# How are educations in developing countries ?

Senegal case: Universities extension, constructing new infrastructures



# How are educations in developing countries ?

## Madagascar case



Figure: Primary school Mahamasina

# How are educations in developing countries ?

## Madagascar case



Figure: Primary school Andemamy

# How are educations in developing countries ?

## Madagascar case



Figure: Primary school Recovery, Lembhitaky

# Bibliography

- [1 ] <http://www.mathunion.org/icmi>
- [2 ] [http://fr.wikipedia.org/wiki/Commission\\_internationale\\_de\\_l'enseignement\\_mathématique](http://fr.wikipedia.org/wiki/Commission_internationale_de_l'enseignement_mathématique)
- [3 ] Rapport général de la Concertation Natioanle sur l'Avenir de l'Enseignement supérieur au Sénégal, 06-09 Avril 2013, King Fahd Palace, Dakar.
- [4 ] Sullivan, Arthur; Steven M. Sheffrin (2003). *Economics: Principles in Action*. Upper Saddle River, New Jersey 07458: Pearson Prentice Hall. p. 471. ISBN 0-13-063085-3.
- [5 ] *How does the World Bank Classify Countries ?* World Bank Group. Available on

# Bibliography

<https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries>

- [6 ] World Economic Outlook: Uneven Growth Short- and Long - Term Factors, April 2015, International Monetary Fund.
- [7 ] The Least Developed Countries Report 2012 - UNCTAD

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ICMI: International Commission on Mathematical Instruction

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Bibliography

THANK YOU !