



# **ASEM Expert Seminar “Joint Curriculum on Tourism and Hospitality in higher education among ASEM member countries”**

**Megawati Santoso**

**Indonesian Qualifications Framework (Team Leader)**

**Directorate of Learning and Students Affairs (Expert Team)**

**Directorate of Institution and Collaborations (Expert Team)**

**Higher Education Council – Directorate General of Higher Education –  
Ministry of Education and Culture (Member)**

**National Training Council – Ministry of Manpower and Transmigration (Member)**

**ASEAN Qualification Reference Framework (Vice Chair)**

# Outline

1. Background
2. National Policy
3. Internationalization Policy
4. Quality Assurance System



# **1. BACK GROUND**

# ***GATS and AFTA***



**ROAD TRANSPORT SERVICES**

**ARCHITECTURE**

**ENERGY SERVICES**

**LEGAL SERVICES**

**ACCOUNTANCY**

**TOURISM**

**EDUCATION SERVICES**

**TELECOMMUNICATIONS**

**LOGISTICS SERVICES**

***WTO FREE TRADE***

**DISTRIBUTION SERVICES**

**AUDIOVISUAL SERVICES**

**POSTAL AND COURIER SERVICES**

**MARITIME TRANSPORT**

**ENGINEERING SERVICES**

**COMPUTER AND RELATED SERVICES**

**FINANCIAL SERVICES**

**CONSTRUCTION AND RELATED  
ENGINEERING SERVICES**

**ENVIRONMENTAL SERVICES**



# ASEAN ECONOMIC COMMUNITY 2015 (Single Market and Production Base)

- Free Flow of Goods
- Free Flow of Services
- Free Flow of Investment
  - Free Flow of Capital
- Free Flow of Professionals  
and Skilled Labors

# ROADMAP MOBILITAS BEBAS TENAGA KERJA KOMPETEN & PROFESIONAL

2008-2009	2010-2011	2012-2013	2014-2015
<ul style="list-style-type: none"> <li>▪ Harmonisasi regulasi</li> <li>▪ Perbaiki sistem dan penguatan institusi</li> </ul>	Persiapan dan pelaksanaan MRA	Pelaksanaan MRA untuk okupasi yang sdh disepakati	Perluasan, penyiapan & pelaksanaan untuk bidang profesi lain.

## BIDANG PROFESI YANG TELAH MEMILIKI MRA

NO	BIDANG PROFESI	NO	MRA TAHUN
1	ENGINEERS	5	MEDICAL DOCTOR
2	ARCHITECT	6	DENTIST
3	ACCOUNTANT	7	NURSES
4	LAND SURVEYORS	8	LABORS IN TOURISM

# ASEAN QUALIFICATIONS REFERENCE FRAMEWORK



Megawati Santoso  
Vice Chair of Task Force of the  
ASEAN Qualifications Reference Framework





L	Knowledge and skills	Application and Responsibility
	<b><i>Demonstration of knowledge and skills that:</i></b>	<b><i>The contexts in which knowledge and skills are demonstrated:</i></b>
VIII	<ul style="list-style-type: none"> <li>• is at the most advanced and specialized level and at the frontier of a field</li> <li>• involve independent and original thinking and research, resulting in the creation of new knowledge or practice</li> </ul>	<ul style="list-style-type: none"> <li>• are highly specialized and complex involving the development and testing of new theories and new solutions to resolve complex, abstract issues</li> <li>• require authoritative and expert judgment in management of research or an organisation and significant responsibility for extending professional knowledge and practice and creation of new ideas and or processes.</li> </ul>
VII	<ul style="list-style-type: none"> <li>• is at the forefront of a field and show mastery of a body of knowledge</li> <li>• involve critical and independent thinking as the basis for research to extend or redefine knowledge or practice</li> </ul>	<ul style="list-style-type: none"> <li>• are complex and unpredictable and involve the development and testing of innovative solutions to resolve issues</li> <li>• require expert judgement and significant responsibility for professional knowledge, practice and management</li> </ul>

L	Knowledge and skills	Application and Responsibility
	<b><i>Demonstration of knowledge and skills that:</i></b>	<b><i>The contexts in which knowledge and skills are demonstrated:</i></b>
VI	<ul style="list-style-type: none"> <li>• is specialised technical and theoretical within a specific field</li> <li>• involve critical and analytical thinking</li> </ul>	<ul style="list-style-type: none"> <li>• are complex and changing</li> <li>• require initiative and adaptability as well as strategies to improve activities and to solve complex and abstract issues</li> </ul>
V	<ul style="list-style-type: none"> <li>• is detailed technical and theoretical knowledge of a general field</li> <li>• involve analytical thinking</li> </ul>	<ul style="list-style-type: none"> <li>• are often subject to change</li> <li>• involve independent evaluation of activities to resolve complex and sometimes abstract issues</li> </ul>
IV	<ul style="list-style-type: none"> <li>• is technical and theoretical with general coverage of a field</li> <li>• involve adapting processes</li> </ul>	<ul style="list-style-type: none"> <li>• are generally predictable but subject to change</li> <li>• involve broad guidance requiring some self direction, and coordination to resolve unfamiliar issues</li> </ul>

L	Knowledge and skills	Application and Responsibility
	<b><i>Demonstration of knowledge and skills that:</i></b>	<b><i>The contexts in which knowledge and skills are demonstrated:</i></b>
III	<ul style="list-style-type: none"> <li>● includes general principles and some conceptual aspects</li> <li>● involve selecting and applying basic methods, tools, materials and information</li> </ul>	<ul style="list-style-type: none"> <li>● are stable with some aspects subject to change</li> <li>● involve general guidance and require judgement and planning to resolve some issues independently.</li> </ul>
II	<ul style="list-style-type: none"> <li>● is general and factual</li> <li>● involve use of standard actions</li> </ul>	<ul style="list-style-type: none"> <li>● involve structured processes</li> <li>● involve supervision and some discretion for judgement on resolving familiar issues</li> </ul>
I	<ul style="list-style-type: none"> <li>● is basic general</li> <li>● involve simple, straightforward and routine actions</li> </ul>	<ul style="list-style-type: none"> <li>● involve structured routine processes</li> <li>● involve close levels of support and supervision</li> </ul>

# Time Line of AQRF Development

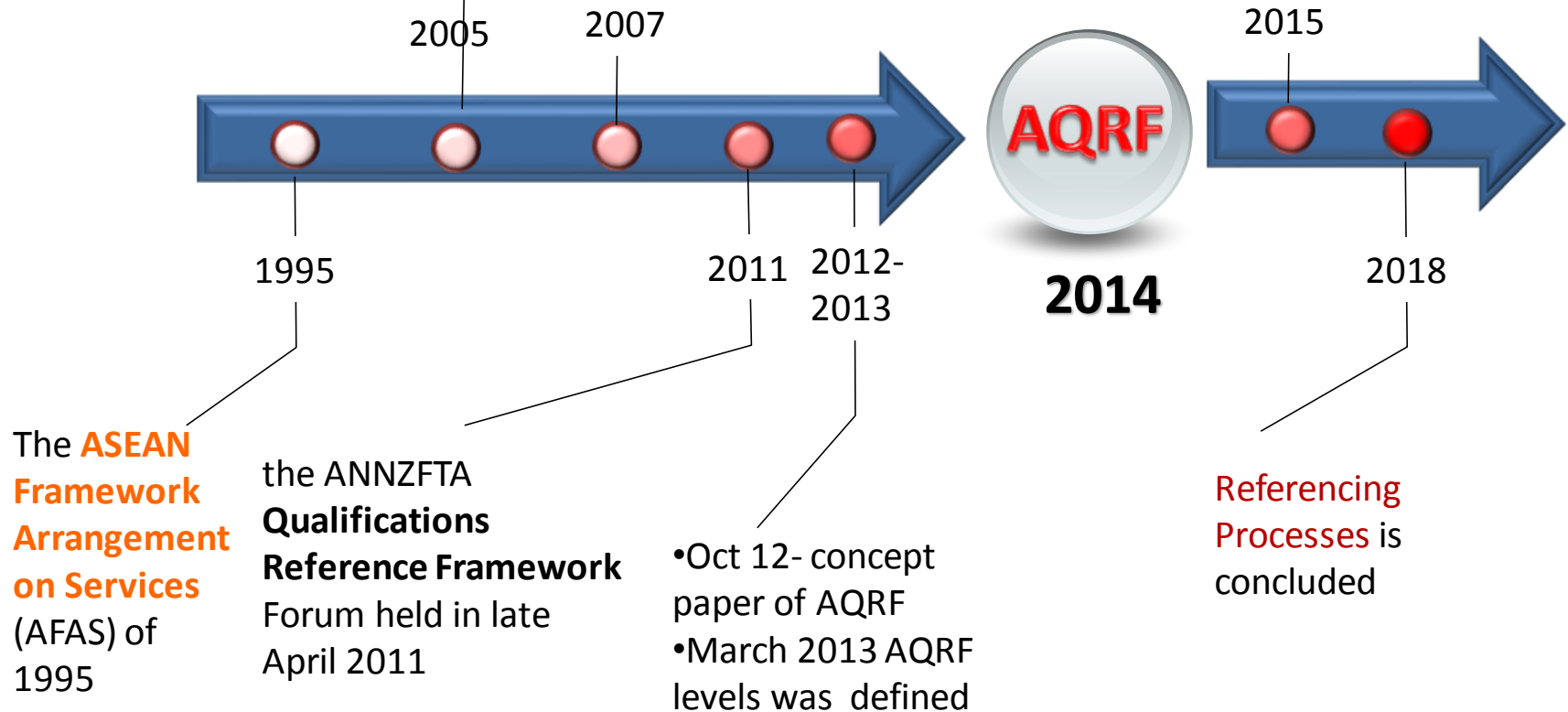
The creation of the free flow of skilled labour through 'harmonisation and standardisation

**Formation of MRAs**

The 12<sup>th</sup> ASEAN Summit in January 2007- Cebu Declaration on the **Acceleration of the Establishment of an ASEAN Community by 2015**

- Establishment of AQRF Board
- Sectoral implementation

- MRAs engagements
- Monitoring and
- Evaluation of AQRF





**THE NINETEENTH AEM-CER CONSULTATIONS  
26 August 2014, Nay Pyi Taw, Myanmar**

**JOINT MEDIA STATEMENT**

1. ASEAN Economic Ministers (AEM) and the Ministers of Australia and New Zealand (Closer Economic Relations – CER) met in Nay Pyi Taw, Myanmar on 26 August 2014 for the Nineteenth AEM-CER Consultations, which were co-chaired by H.E. Dr. Kan Zaw, Union Minister for National Planning and Economic Development, Myanmar; the Honourable Mr. Andrew Robb, Minister for Trade and Investment, Australia; and the Honourable Mr. Tim Groser, Minister of Trade, New Zealand.

**13. Ministers welcomed the endorsement of the ASEAN Qualification Reference Framework (AQRF) at the 46th ASEAN Economic Ministers' Meeting. The AQRF, which will enable comparisons of qualifications across ASEAN Member States, is a step further towards the ASEAN Economic Community goal of free flow of skilled labor. The Ministers acknowledged the work undertaken by the Task Force on AQRF, which comprised representatives from ministries of labour, education, trade, and qualification agencies. ASEAN thanked Australia and New Zealand for their continued support to the Task Force through the AECSP.**

# Endorsement by Ministries of Education

## ASEAN Qualifications Reference Framework

1. Reference is made to your letter dated 11 August 2014 to Prof. Dr Ainun Na'im, Chair of the Senior Officials Meeting on Education (2012-2014) on the ASEAN Qualifications Reference Framework (AQRF).
2. As the newly-appointed chair of the 9<sup>th</sup> SOM-ED, I am pleased to inform you that the 8<sup>th</sup> ASEAN Education Ministers Meeting (8<sup>th</sup> ASED), which was held in Vientiane, Lao PDR on 11 September 2014, agreed to endorse the AQRF as a guideline for the ASEAN Member States to voluntarily adopt.
3. Recognizing its importance towards the vision of ASEAN Community 2015, the SOM-ED would like to also express its appreciation to the Task Force on the ASEAN Qualifications Reference Framework (AQRF) for its efforts in producing the Framework, as well as the support rendered by the ASEAN, Australia New Zealand Free Trade Area (AANZFTA) work programme.
4. We look forward to the operationalization of the Framework, as indicated in the work plan of the Task Force.



## CATC & RQFSRS – Design Principles (cont)

### 5 levels of Qualifications & Level Indicators

Framework Level	Level Indicator
Level 5 - Advanced Diploma	<i>Sophisticated, broad and specialised competence with senior management skills</i>
Level 4 - Diploma	<i>Specialised competence with managerial skills</i>
Level 3 - Certificate IV	<i>Greater technical competence with supervisory skills</i>
Level 2 - Certificate III	<i>Broad range of skills in more varied context and team leader responsibilities</i>
Level 1 - Certificate II	<i>Basic, routine skills in a defined context</i>

# Summary

A common ASEAN Tourism Curriculum and Qualifications Framework has been developed for 52 qualifications across 6 labour divisions.

	Certificate II	Certificate III	Certificate IV	Diploma	Advanced Diploma	Sub-Total
Food & Beverage	2	2	3	1	1	9
Food Production	2	3	3	1	1	10
Front Office	1	1	1	1	1	5
Housekeeping	1	1	1	1	1	5
Tour Operation (Management)	2	3	4	2	1	12
Travel Agencies	3	3	3	1	1	11
<b>TOTAL</b>						<b>52</b>



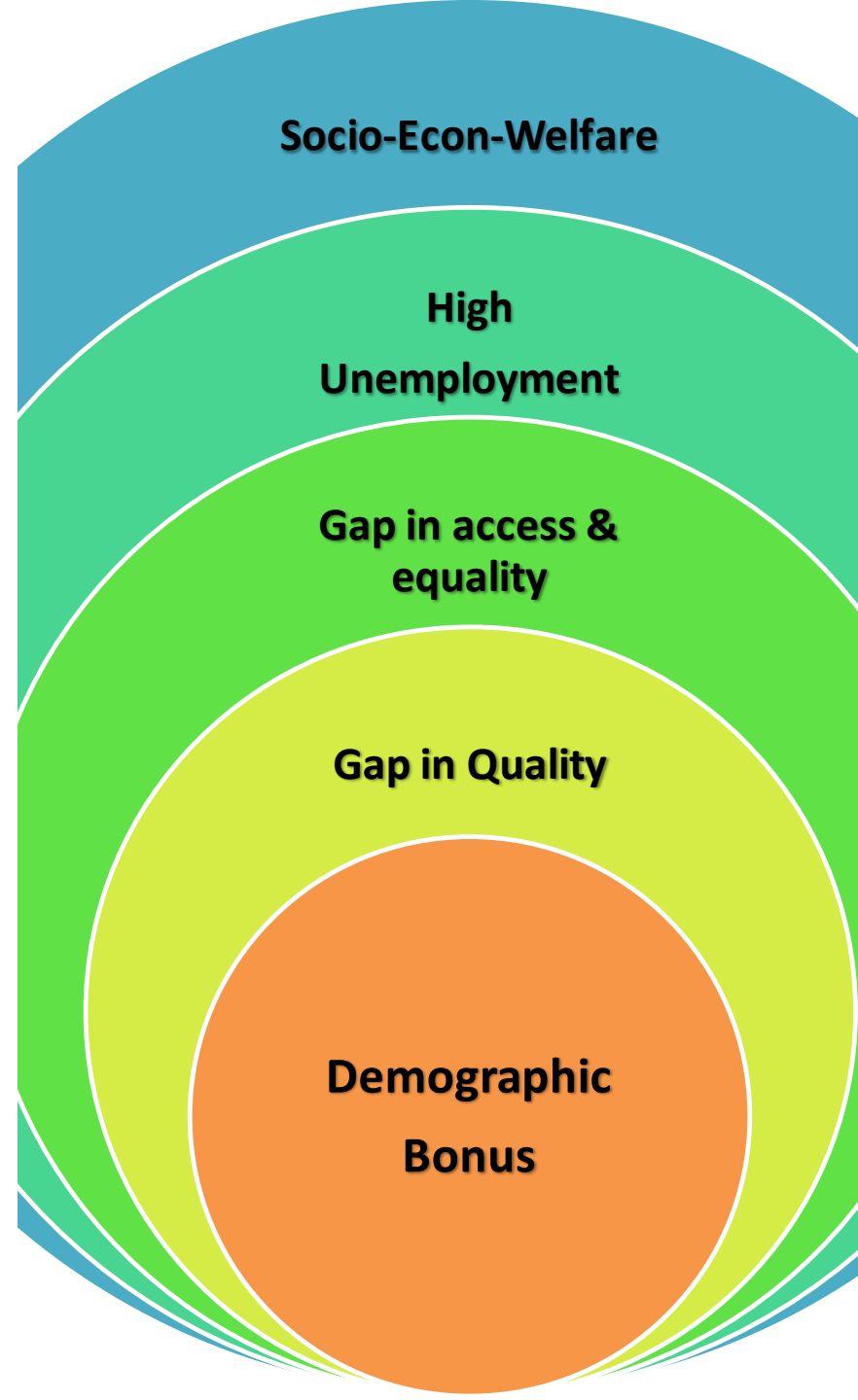
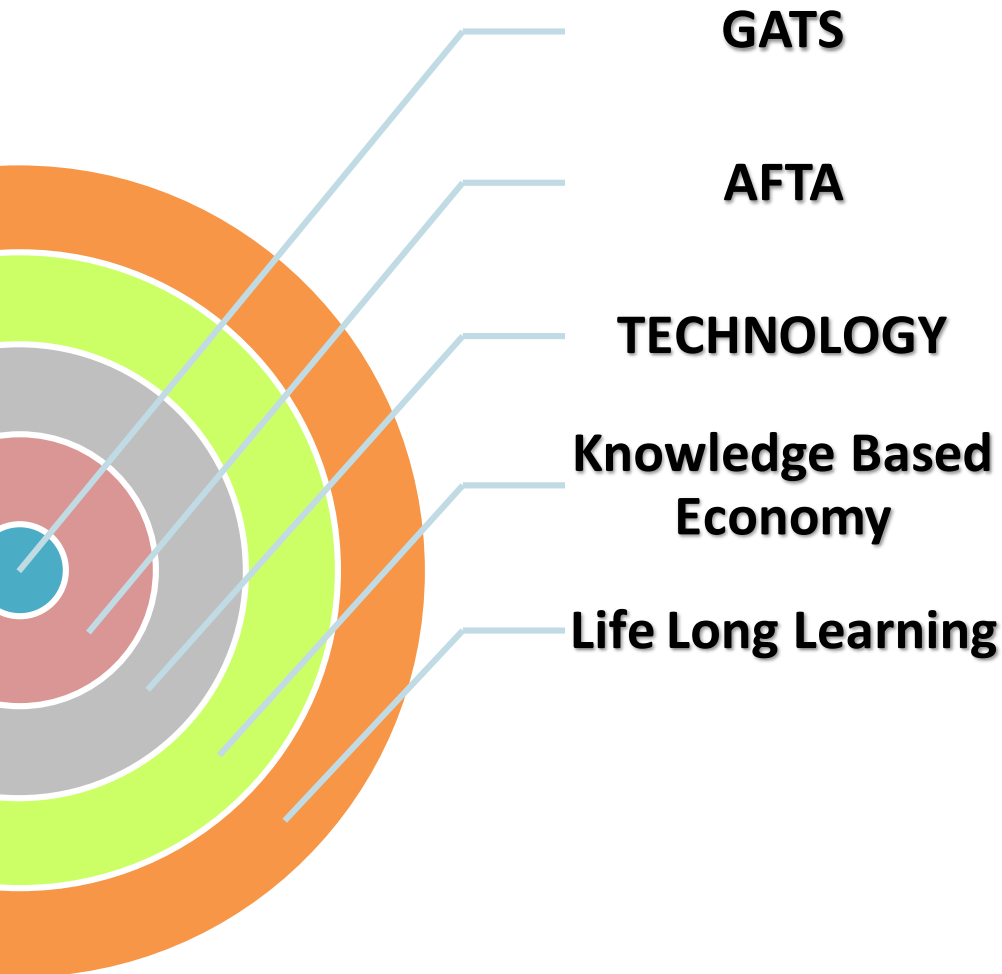
# ***National Concerns***





- Indonesia is an archipelago comprising approximately 17,508 islands.<sup>[7]</sup> It encompasses 34 provinces with over 238 million people
- There are around 300 distinct native ethnic groups in Indonesia, and 742 different languages and dialects.<sup>[138][139]</sup>

# Global & National Challenges for HEI

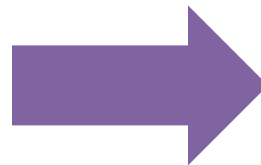
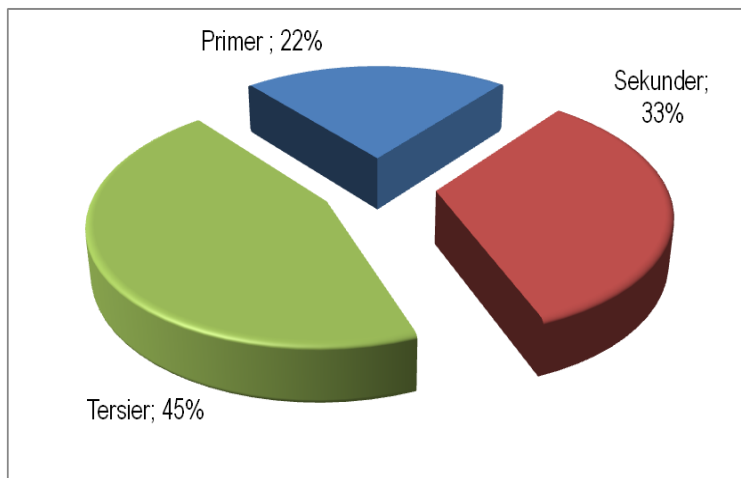


# A New Master Plan for Economic Transformation

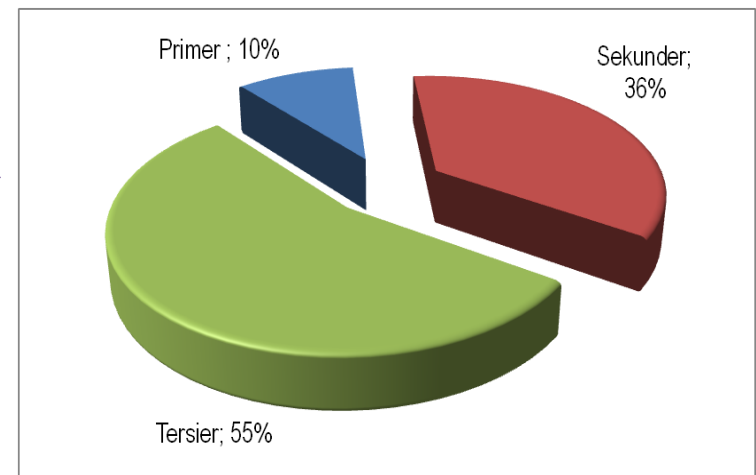
A New Vision for  
Indonesia 2025

- Transform Indonesian economy by 2025 to reach:
  - **Nominal GDP** of \$6.4-\$8.1 billion
  - **Nominal GDP per-capita** of \$20,600-\$25,900
  - Significant improvement in **poverty and human development indicators**
- Transform the structure of Indonesian economy in 2030 by increasing secondary and tertiary economic activities:

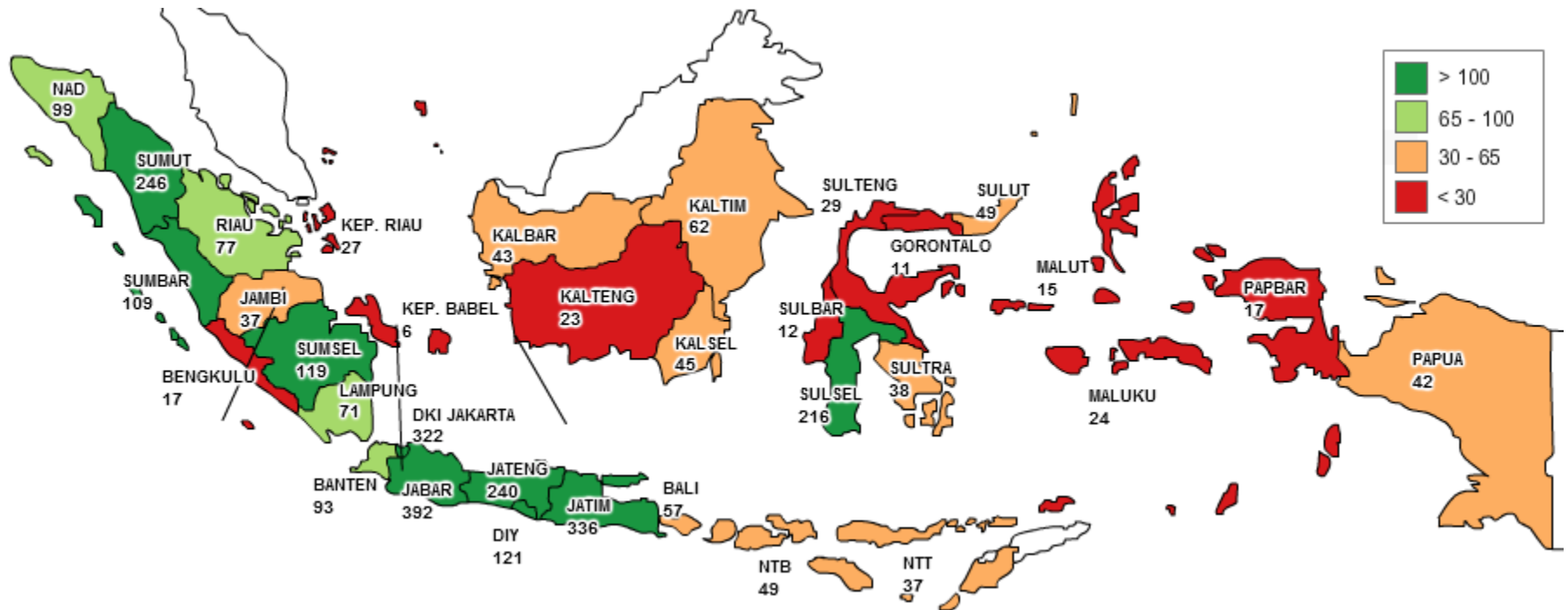
INDONESIA (Lower middle income country)  
Economic Structure 2009



DEVELOPED COUNTRY  
Economic Structure 2025



# Distribution of HEI



# HIGHER EDUCATION INSTITUTIONS: PRIVATE and PUBLIC

- Ministry of Education and Culture (MoEC)
  - 101 public HEIs managed by MoEC
  - 3,054 private HEIs supervised by the MoEC
  
- Ministry of Religious Affairs (MoRA)
  - 49 public religious HEIs
  - 845 private religious HEIs
  
- Other Ministries
  - 174 public HEIs
  
- Number of programs: 22,036 programs.

# DISTRIBUTION OF HEI

(under MoEC and other ministries)

No	Forms of HEI	Public	Private	Total
1.	Academies	87	1,047	1,134
2.	Polytechnic	80	135	215
3.	School of Higher Learning	69	2,189	2,268
4.	Institutes	25	83	108
5.	University	63	435	498
	Total	324	3,899	<b>4,223</b>

# DISTRIBUTION OF HEI (under MoEC)

No	Forms of HEI	Public	Private	Total
1.	Academies	0	1,047	1,047
2.	Polytechnic	38	135	173
3.	School of Higher Learning	1	1,385	1,386
4.	Institutes	7	52	59
5.	University	55	435	490
	Total	101	3,054	<b>3,155</b>



# DISTRIBUTION OF STUDY PROGRAM (under MoEC and other ministries)

No	Forms of HEI	Public	Private	Total
1.	Academies	124	1,368	1,492
2.	Polytechnic	993	530	1,523
3.	School of Higher Learning	541	5,531	6,072
4.	Institutes	856	620	1,476
5.	University	5,068	6,675	11,743
	<b>Total</b>	<b>7,582</b>	<b>14,724</b>	<b>22,306</b>

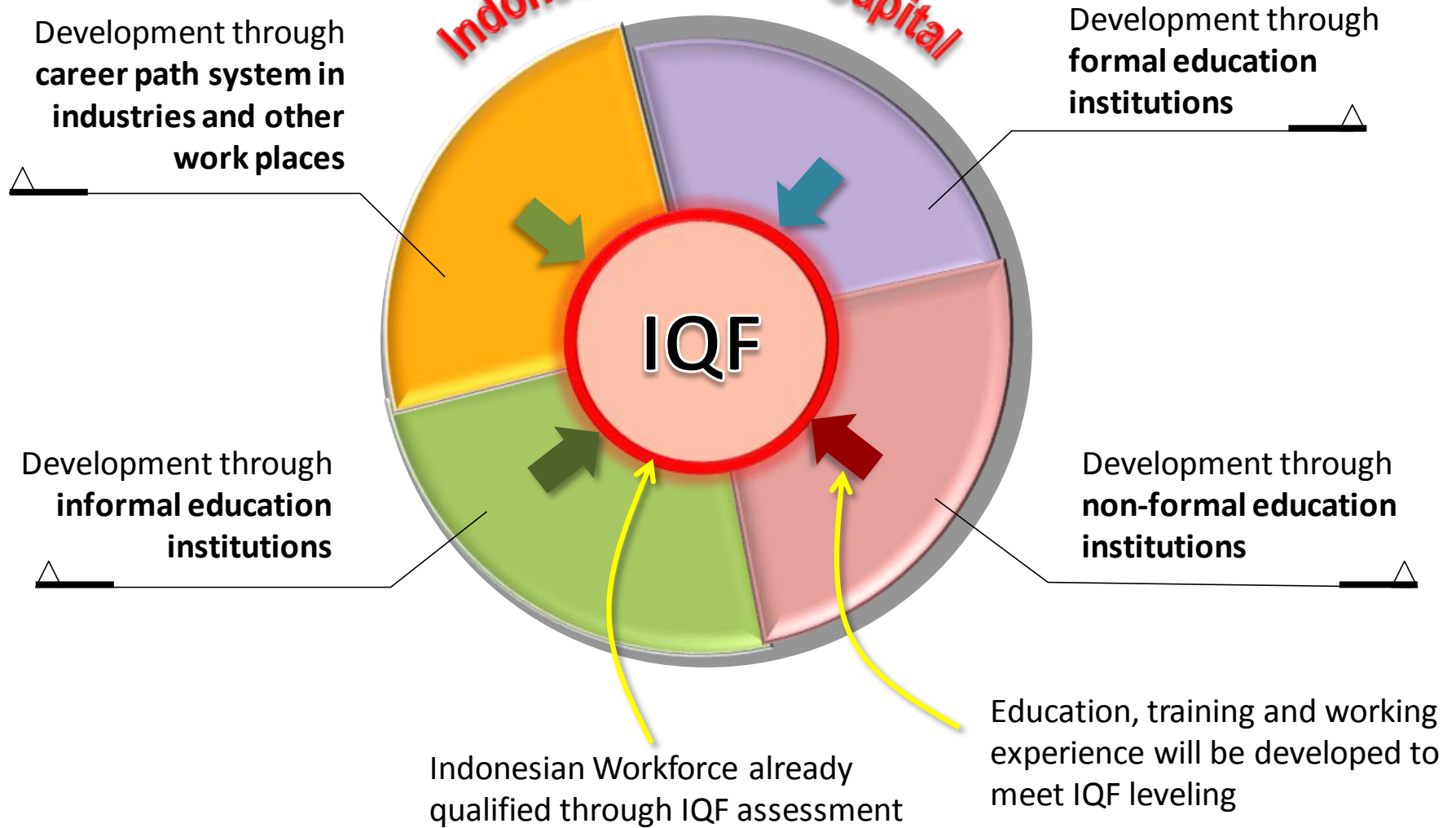
# DISTRIBUTION OF STUDY PROGRAM (under MoEC)

No	Forms of HEI	Public	Private	Total
1.	Academies	0	1,368	1,368
2.	Polytechnic	583	530	1,113
3.	School of Higher Learning	10	3,962	3,972
4.	Institutes	425	455	880
5.	University	4,737	6,675	11,412
	<b>Total</b>	<b>5,755</b>	<b>12,990</b>	<b>18,745</b>



## *2.* NATIONAL POLICY

# Indonesian Human Capital



# Indonesian *Q*ualification Framework

- The **I<sup>Q</sup>F** is a reflection on human resources quality in Indonesia.

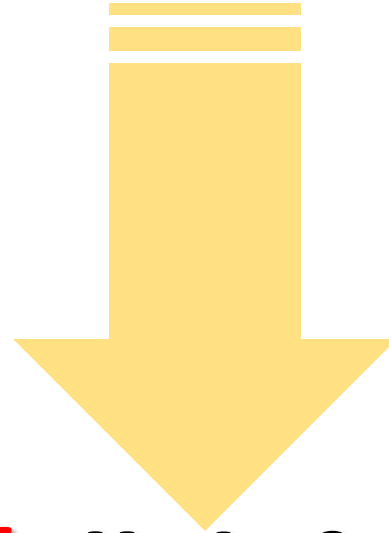
- **I<sup>Q</sup>F** acts as a **neutral reference** that can equalize learning outcomes resulted from formal or non-formal education, as well as learning outcomes acquired through job experiences.

- At the international stage, **I<sup>Q</sup>F** serves as a **device** that can recognize and translate international workforce or students qualifications to the Indonesian qualifications system.

Presidential decree no 8 – 2012; Higher Education Law no 12 – 2012;  
Education and Cultural Ministrial Decree no 73 - 2013



# DIFFERENT P PATHWAYS

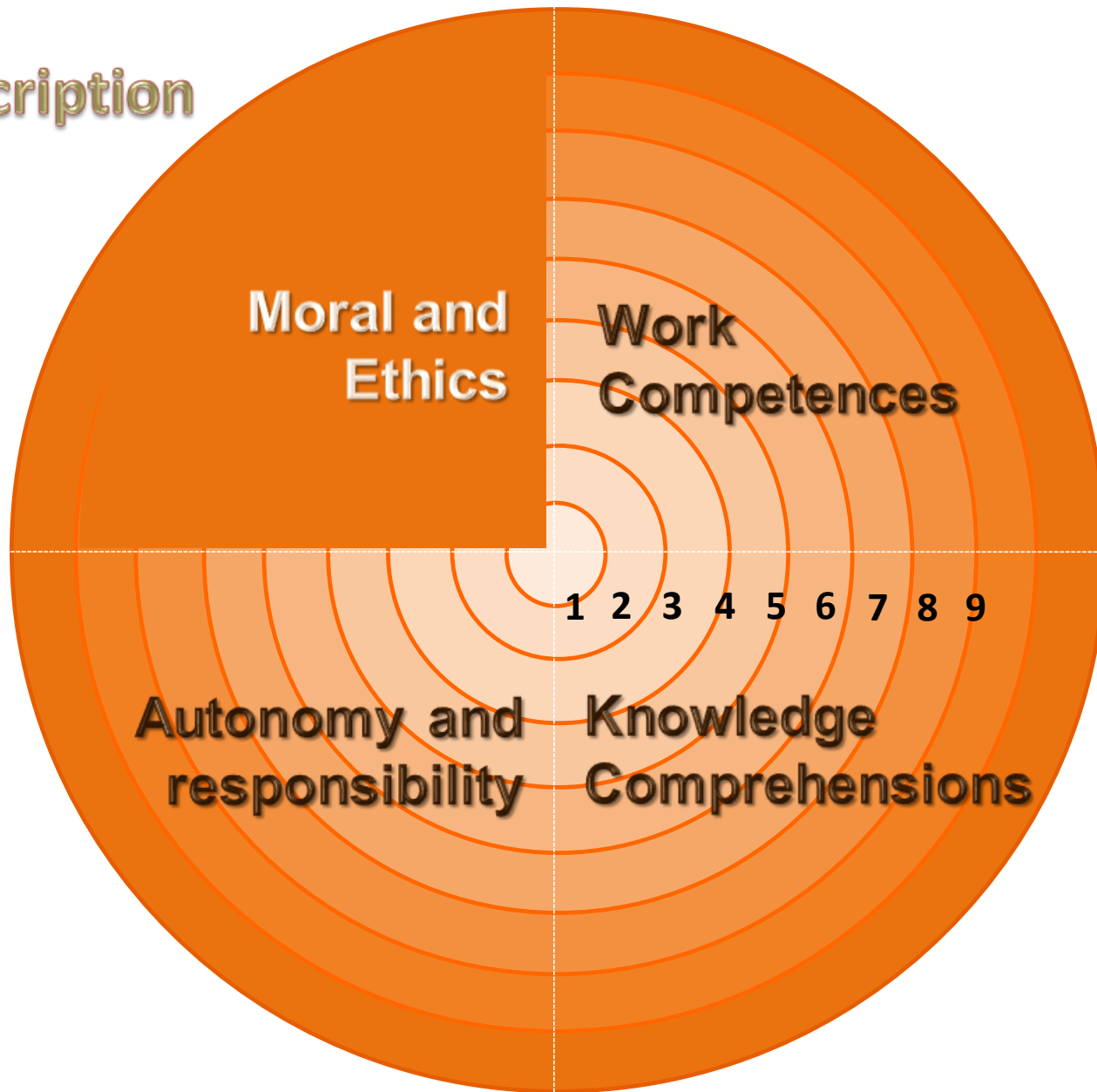


**W**ell defined

**O**UTPUT / **O**UTCOMES



# IQF Description





# The IQF implementation strategies at National Level

As a whole; the IQF implementation strategies should be able to reflect the following:

- to be an inseparable part of human capital planning as well as management strategies and quality improvement of human resources
- to be a guideline and reference for the development and improvement of education quality from the secondary to the university levels
- to be a guideline for industries, business enterprises, and government institutions in setting up their career planning and development
- to be a guideline and reference for quality development and improvement of private and government training centers
- to be a guideline for profession associations to design profession development and certification
- to be a guideline for individuals or community at large for conducting self assessment on her/his qualification and career development.



## *3.* INTERNATIONALIZATION POLICY

# POLICY

**Indonesia** viewed education is a noble process in improving a quality of human being and not a commercial goods that can be traded.

Internationalization of education in Indonesia will be carried to support the formation of a world intellectual community with mutual understanding and solidarity among scholars in preserving world peace by facilitating the development of academic mobility and higher education collaboration.

# Internationalization Frameworks

- **Unesco Convention On Degree Recognition**
- **Indonesian Qualification Framework**
- **Mutual recognition agreements**
- **National higher education database and information system**
- **Quality assurance system**
  - Internal
  - External (structured as well as tracer studies)

# The Bologna Declaration 1999 – Recommendations – as a driving force

- Adoption of an uniform credit system
  - generalization of the European Credit Transfer System
  - promotion of cooperation in quality assurance
  - increase in quality of education (assessments, accreditation)
- Promotion of mobility of students and teachers life-long learning and training using new technologies
- Promotion of European dimensions in higher education harmonization in the duration and framework of titles
  - adoption of a system of easily readable and comparable degrees
  - adoption of a system based on three cycles: undergraduate (bachelor) and postgraduate (master and doctorate)

# ***Definition***

***Specific Educational Program(s) based on Strategic Alliances*** is an educational program(s) that can lead to awarding a degree(s) which are provided by at least two higher education institutions that have mutual agreement.

***The Specific Educational Program(s) based on Strategic Alliances*** can be delivered as a cross national border program involving overseas higher education institutions.

## ***Basic philosophies to undertaken strategic alliances***

- *Specific Educational Program(s) based on Strategic Alliances is required to be operated under national and international laws.*
- *Strategic Alliances should be engaged based on these five principles:*
  1. *Prioritizing the national development*
  2. *Equal and mutual respect*
  3. *Highest value addition to a Quality improvement*
  4. *Sustainable*
  5. *Diversity*

## ***Basic philosophies to undertaken strategic alliances***

- 1. Prioritizing the national development***  
*particularly that leads to increasing the nation competitiveness.*
- 2. Equal and mutual respect:*** *strategic alliances is geared up with the purpose of improving the education quality, therefore the alliances should be made among higher education institutions with same level of quality.*



## ***Basic philosophies to undertaken strategic alliances***

- 3. Highest value addition to a Quality improvement:*** Strategic alliances should be performed innovatively and creatively to yield quality improvement of national higher education system and institutions.
- 4. Sustainable:*** strategic alliances should be able to bestow mutual benefits for all parties involved, stakeholders, as well as ascertaining the development of regional, national, and world peace. The stability of the strategic alliances should be enlarged by involving more and more partners.
- 5. Diversity:*** Strategic Alliances should take the cultural and many other aspects of diversity as important consideration.

# ***Types of Specific Educational Program(s) based on Strategic Alliances***

## ***Degree awarding programs:***

- 1. Joint Degree (Program Gelar Bersama)*
- 2. Double degrees (Program Gelar Ganda)*

## ***2 types of Double Degree programs***

- A. Acceleration or fast track*
- B. Regular*

# *Operating Modes*

- ***Credit Transfer*** (Program Pemindahan Kredit) & ***Credit Earnings*** (Program Perolehan Kredit);
- ***Twinning*** (Program Kembaran)
- ***Joint Supervision*** (Program Pembimbingan Bersama dalam Penelitian);
- ***Student and/or Staff Exchanges*** (Program Pertukaran Mahasiswa dan/atau Dosen)



## *A.* **QUALITY ASSURANCE SYSTEM**



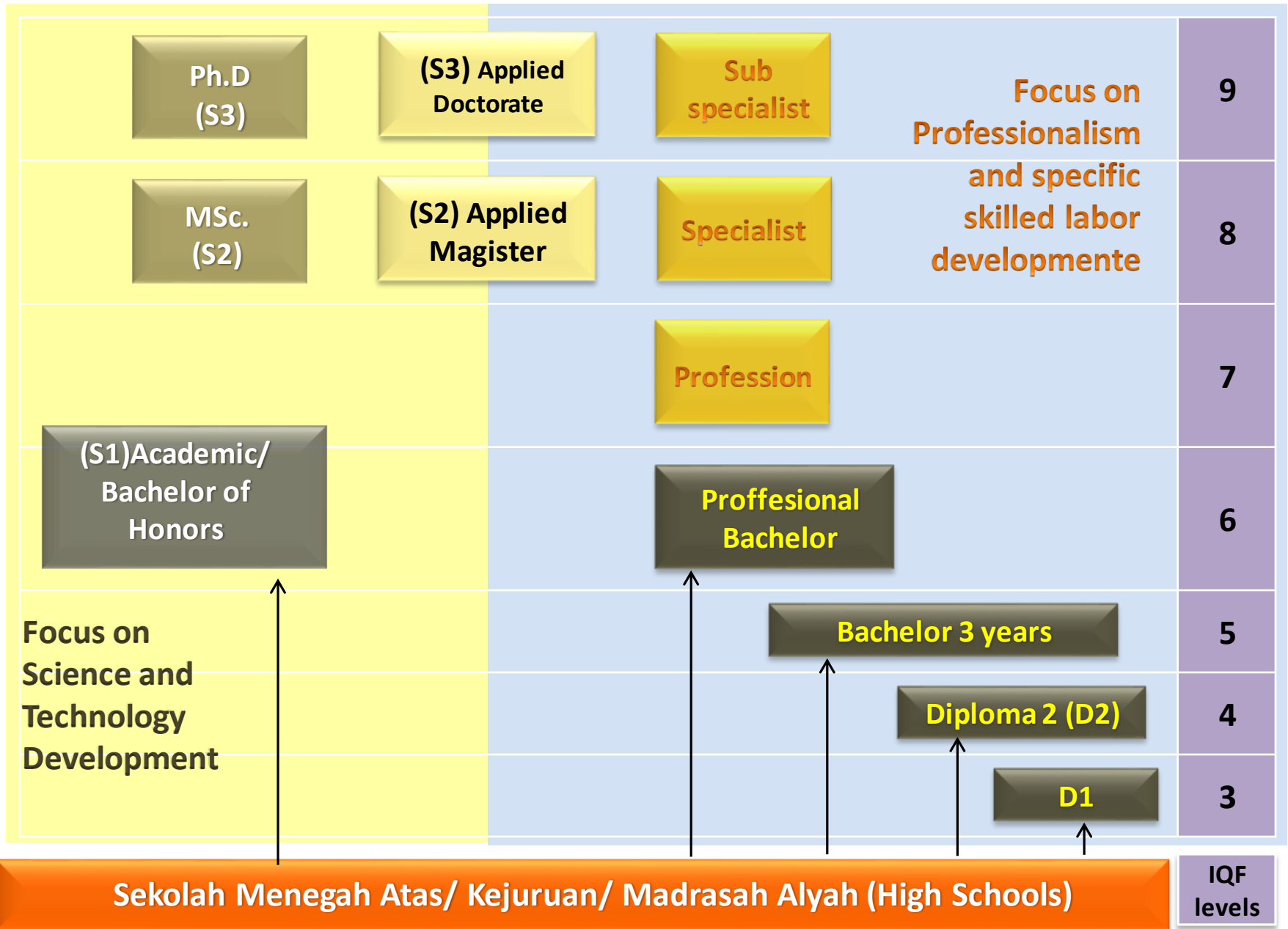
# The IQF Implementation Strategy at Higher Education Sector

- A. Accountability and Compatibility in producing graduates.
- B. RPL
- C. Quality assurance



1. Type of higher education
2. Study program epistemology
3. Recognition, Title, **Diploma Supplement**
4. Learning Outcomes
5. Educational process

# ACCOUNTABILITY & COMPATIBILITY

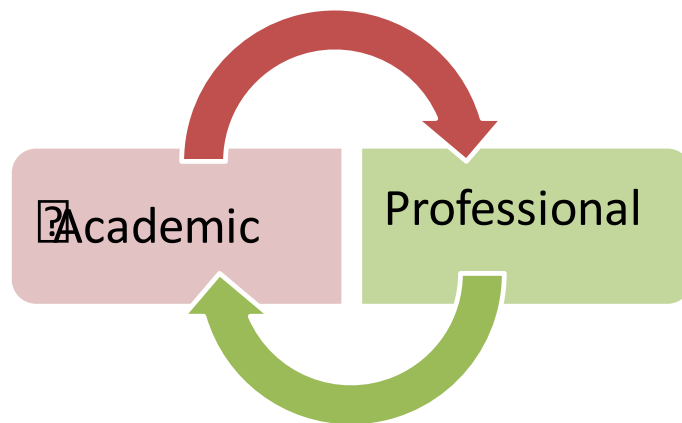


# REVISION OF THE INTERNATIONAL STANDARD CLASSIFICATION OF EDUCATION (ISCED)

36 C/19 - 5 September 2011 Original: English

Levels	ISCED 2011	INDONESIA
<b>0</b>	Early childhood	PAUD
<b>1</b>	Primary	SD
<b>2</b>	Lower secondary	SMP
<b>3</b>	Upper secondary	SMA/MA/SMK
<b>4</b>	Post-secondary non-tertiary	D1
<b>5</b>	Short-cycle tertiary	D2 /(ASSOCIATE DEGREE)
<b>6</b>	Bachelor or equivalent	D3 D4, S1 (First degree programme), dan Profesi (Long first degree programme)
<b>7</b>	Master or equivalent	Master
<b>8</b>	Doctoral or equivalent	Doktor

# The following two orientation categories are available:



ISCED PROGRAM	ISCED DURATION	INDONESIA
short-cycle tertiary programmes at ISCED level	at least 2 years	D2
bachelor or equivalent first degree programmes at ISCED level 6	3-4 years	D3 (Bachelor-level 5), D4 (Professional Bachelor –level 6), S1 (Bachelor of Honors-level6)
bachelor or equivalent long first degree programmes at ISCED level 6	more than 4 years	Profesi (Professional Bachelor –level7)



Stated in National Standard Of Education (NSE)

Generic working competence for **compatibility** purposes (stated in NSE)

Moral and Ethics

Work Competences

Specific working competence based on degree program – stated in ministerial decree

1 2 3 4 5 6 7 8 9

Autonomy and responsibility

Knowledge Comprehensions

Generic managerial skills for **compatibility** purposes (stated in NSE)

Specific Knowledge Comprehension based on degree program – stated in ministerial decree

## CREDIT SYSTEM (VOLUME BASED)

the minimum criteria for learning process consisting of:

- The characteristics of the learning process;
- The plan of the learning process;
- The implementation of the learning process; and
- The volume of student learning.

Program	sks
D1	36
D2	72
D3	108
D4/S1	144
PROFESI	36
S2/SP1	72
S3/SP3	72

**sks or semester credit unit** is a standard for comparing the study attainment and performance of students of HEI. One academic year corresponds to **36 credits** that are equivalent to **1535** hours of study respective of standard or qualification type.

**60 ECTS-credits** are equivalent to 1500–1800 hours of study. Therefore **1sks = 2 ECTS**

## EVALUATION AND MARKING

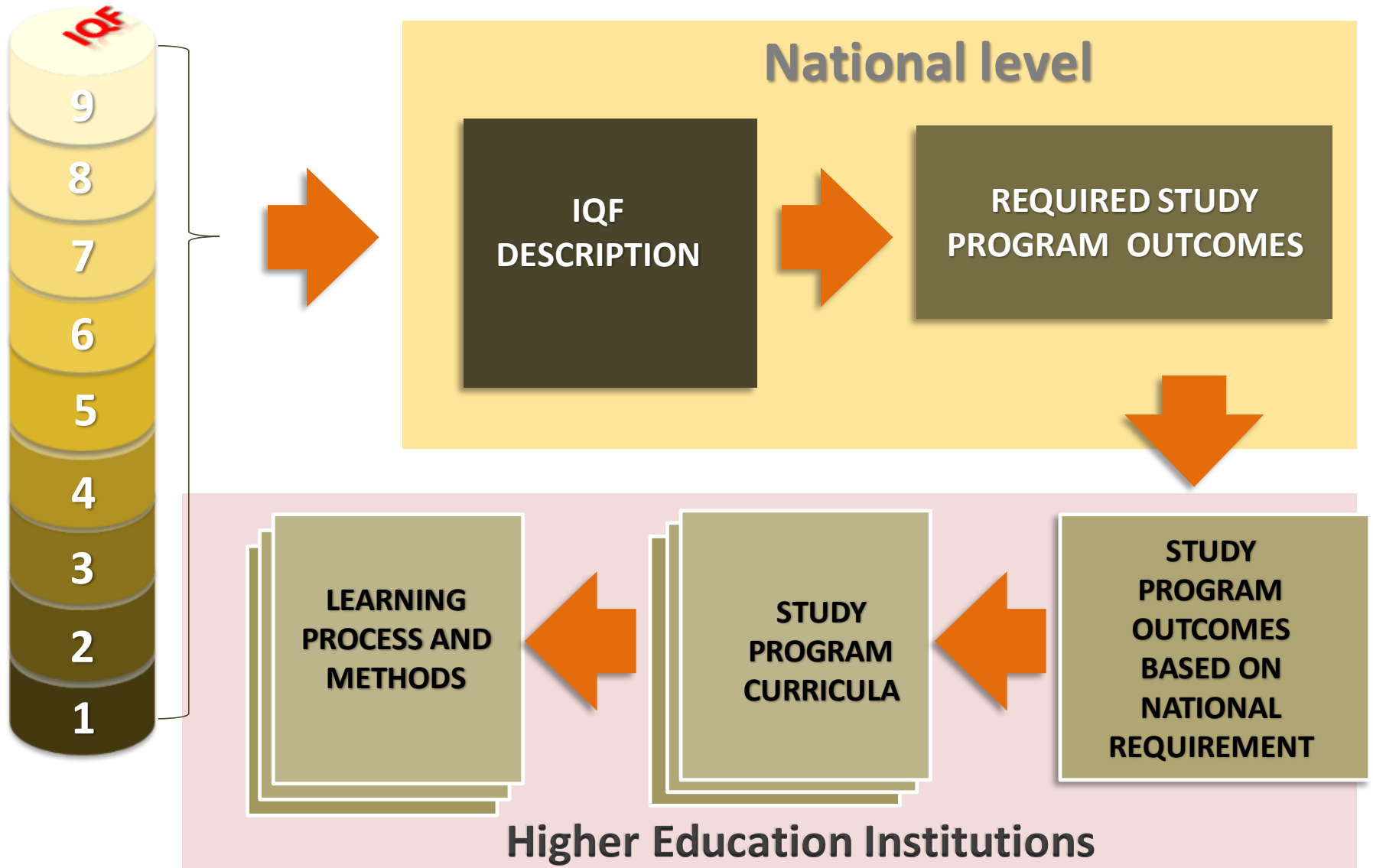
**PRINCIPLES: educative, authentic, objective, accountable, and transparent integrated manner.**

## PREDICATES

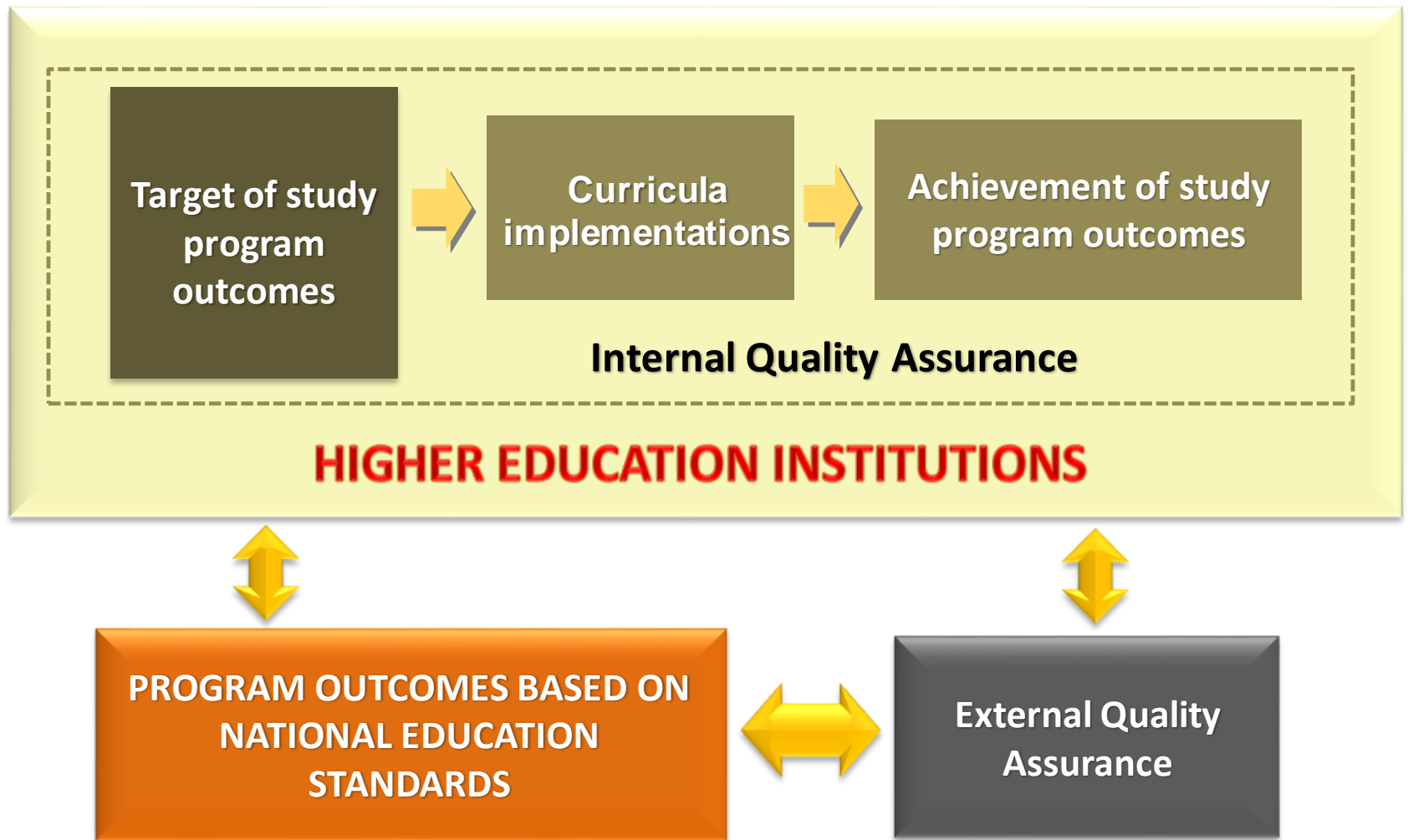
GPA 1-5

- SATISFACTORY (memuaskan) – GPA 2,76 - 3,00;
- OUTSTANDING (sangat memuaskan) – GPA 3,01 - 3,50
- CUM LAUDE (pujian)- GPA > 3,50.

# IQF to curricula



# QUALITY ASSURANCE APPROACH



# Nature of a Diploma Supplement



- It is designed to provide a description of the learning outcomes gained by the graduates in accord with the designated IQF level;
- The description should be written such that the information will be easily understood by society, particularly users (HRD managers);
- The description should be objective and accountable;

# Benefits of the Diploma Supplement



- Promoting transparency and accountability of providers in delivering education programs. In the mid and long terms, this mechanism will cultivate the mutual trust from the stakeholders and build better institution's sustainability
- Promoting cross-border education, staffs and students' mobilities
- Promoting better employability

1. Information regarding the identity of the holder
  - Full Name
  - Place and birth date
  - Identity Number
2. Information regarding the identity of the provider
  - Name and address of HEI
  - Name of Degree Granting Program
  - Type of education
  - LO according IQF level
  - Programs' entry requirements
  - Regular study duration

# Core Information of a diploma supplement





- Evaluation and grading system
  - Language
  - Type and level of further studies
  - Profession status (if applicable)
3. Information regarding the program outcomes .
  4. Information regarding the HE system in Indonesia
  5. Diploma Supplement legality
    - Date
    - Signature
    - Dean of Faculty
    - Official stamp

# Core Information of a diploma supplement



# Closing Marks

*Bhinneka Tunggal Ika*

**Unity in Diversity**

**Thank You Very Much**



**ENCLOSURE**

# **Moral and Ethics**

## **ESSENTIAL DESCRIPTION for all levels**

**In line with the fundamental state ideology and in harmony with the culture of Indonesian people, the implementation of national education system and work training program in Indonesia that distinguish each level of qualification in the Indonesian Qualification Framework, will embrace the process of emergent character and identity of Indonesian people as follows,**

- devoted to One Mighty God
- possesses excellent moral, ethics and personal identity in carrying out her/his jobs
- acts as citizen who is proud of and loves her/his nation and has faith in world peace
- capable of working in teams and attests compassion to social, community and environmental issues
- values diversity in culture, vision, beliefs and religion as well as appreciates patent and property rights
- esteems law enforcement and demonstrates spirit to put priority to national and public needs.

## **LEVEL 1**

Capable to carry out simple task with limited range of scope and routine attribute using tool, known method and process under supervision, monitoring and responsibility of her/his supervisor

Posses factual knowledge.

Responsible only for her/his own job and not for other person's job

## **LEVEL 2**

Capable to carry out specific task using tool, information and commonly defined working procedure, and demonstrate performance with measurable quality under direct supervision of her/his supervisor.

Posses basic operational and factual knowledge for being capable to choose available solutions suitable for commonly existed problems.

Responsible for her/his own job and can be assigned to perform responsibility in supervising other person.

## LEVEL 3

Capable to carry out a series of specific tasks by translating information and using tool, based on a number of working procedures, and capable to demonstrate performance with measurable quality in which some are her/his own performances under indirect supervision.

Posses complete operational knowledge, general principles and concepts related to a certain knowhow fact, for being capable to complete a variety of common problems using appropriate method

Capable to cooperate and perform good communication skills within her/his job coverage

Responsible for her/his own job and can be assigned to take responsibility of other person's performance

## LEVEL 4

Capable to carry out a task with wide scope as well as a specific task by analyzing limited information, able to select a correct method from several standardized choices, and capable to demonstrate performance with measurable quality and quantity.

Mastering several basic principles of certain knowhow and capable to align them with factual problems in within her/his job coverage.

Capable to cooperate and perform good communication, construct written report within limited scope and to demonstrate initiatives

Responsible for her/his own job and can be assigned to take responsibility of other person's performances



## LEVEL 5

Capable to complete wide coverage job, choose appropriate method from a variety of undefined and defined selections by analyzing data and to demonstrate performance with measurable quality

Mastering general theoretical concepts of a certain knowledge and capable to formulate related problem solving procedure.

Posses capacity to manage team work and construct comprehensive written report

Responsible for her/his own job and can be assigned to take responsibility of the attainment of team work performances.

## **LEVEL 6**

Capable to apply science, technology and art within her/his expertise and adaptable to various situations faced during solving a problem

Mastering in-depth general and specific theoretical concepts of a certain knowledge and capable to formulate related problem solving procedure.

Capable to take strategic decision based on information and data analysis and provides direction in choosing several alternative solutions.

Responsible for her/his own job and can be assigned to take responsibility of the attainment of organization's performances.

## **LEVEL 7**

Capable to carry out planning and managing resources under her/his responsibility and comprehensively evaluate her/his performance by using science, technology and art to establish the organization's strategic development steps.

Capable to solve science, technology or/and art problems within her/his scientific expertise through mono-discipline approach.

Capable to carry out research and take strategic decision with accountability and full responsible on all aspects under her/his expertise's domain.

## **LEVEL 8**

Capable to flourish knowledge, technology, or/and art within her/his expertise's or professional domain through research for producing innovative and reputable creation

Capable to solve science, technology or/and art problems within her/his scientific expertise through inter- or multi-discipline approach.

Capable to organize research and development useful to science and society as well as obtain national and international recognitions.

## **LEVEL 9**

Capable to cultivate new knowledge, technology, or/and art within her/his expertise's or professional domain through research for producing creative, original and reputable creation.

Capable to solve science, technology or/and art problems within her/his scientific expertise through inter-, multi- or trans-discipline approach.

Capable to organize, lead and flourish research and development useful to science and valuable to human civilization as well as obtain national and international recognitions.