Panel 1: Innovation and Knowledge Integration
- from JICA’s International Cooperation Experience -

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Japan International Cooperation Agency (JICA)

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What is JICA?
Japan International Cooperation Agency (JICA)

Field network
91 overseas offices, many project offices & 17 domestic Offices

Human network
approx. 20,000/year personnel dispatched for training in Japan 50+ years cooperation

Expertise
Staff and external experts (Approx. 10,000 experts/year newly dispatched)

JICA covers various area such as:
- Education
- Health
- Water / Disaster
- Governance
- Peace-building
- Social security
- Transportation
- ICT
- Natural resources & Energy
- Private Sector Development (PSD)
- Agriculture and fisheries
- Environment
- Urban development
- ... etc.

Source: modified from JICA (2017)
JICA’s Cooperation at a glance

$9.289 billion
* JICA’s disbursements in FY2015

$1.917 billion
* technical cooperation expenses

572 projects
* number of Technical cooperation projects (ongoing)

11,134 experts
* number of dispatching experts (new)

$1.117 billion
* amount of concluded Grant Agreements

154 projects (58 countries)
* number of grants aid projects (ongoing)

$22.609 billion
* amount of loan aid distributed

75 projects (31 countries)
* number of loan aid projects (new)

Source: JICA (2018)
JICA’s Mission, Vision and Actions

Renewed in 2017

Source: JICA website (2016)

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<th>Mission</th>
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<td>JICA, in accordance with the Development Cooperation Charter, will work on human security and quality growth.</td>
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<th>Vision</th>
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<td><strong>Leading the world with trust</strong></td>
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<td>JICA, with its partners, will take the lead in forging bonds of trust across the world, aspiring for a free, peaceful and prosperous world where people can hope for a better future and explore their diverse potentials.</td>
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<th>Actions</th>
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<td><strong>Co-creation</strong></td>
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<td>Bring together diverse wisdom and resources.</td>
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<th>Commitment</th>
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<td>Commit ourselves with pride and passion to achieving our mission and vision.</td>
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<th>Gemba</th>
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<td>Dive into the field (&quot;gemba&quot;) and work together with the people.</td>
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<th>Strategy</th>
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<td>Think and act strategically with broad and long-term perspectives.</td>
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<th>Innovation</th>
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<td>Innovate to bring about unprecedented impacts.</td>
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Utilization of Science, Technology and Innovation (STI) for solving social issues in developing countries: UN’s Sustainable Developing Goals (SDGs)

Source: modified from JICA (2018)
Driver of Technology Development / Innovation

“Issue-driven” “Solution-led”

Demand-driven Market-in

Supply-driven Product-out

Sustainable Development Goals (SDGs)

Source: Author (2018)
Innovation, Co-creation and *Gemba* in JICA’s Vision

Need to consider how STI can be inclusive and contribute to the whole society

It is important for STI to share common goals

Japan’s innovation nurtured by this sharing common goals: such as Toyota’s Kaizen

(*President Prof. Kitaoka, JICA, 14 Dec. 2017, at the STI Forum at the University of Tokyo, with the President of the World Bank and the President of the University of Tokyo*)

STI will be one of the most important pillar at 2019 G20 hosted by Japan

Source: processed from JICA website (2017)
STI for Leapfrog Africa through Open Innovation

- **Raising Awareness** among multi-stakeholders in relation to Africa’s development using the power of STI.
- **Consensus Building and Acceleration** particularly between African countries and JICA to re-identify development agenda and practice of using the power of STI.
- **Resource Mobilization and Ecosystem** through inclusive and collective approach with multi-stakeholders include encourage private finance to accelerate the STI for Africa’s development.

**Source:** JICA (2018)
JICA to become a catalyst for innovation for solving social issues in developing countries

Utilization of Japanese technology abroad

Utilization of new technology born in developing country

Company / Start-up in developing country

Innovation!

Japanese company / start-up

Solution of social issues in developing countries

Leapfrog! Reverse Innovation!

University, research institute, government, NGO, association etc.

Open Innovation!

Source: modified by author from JICA (2018)
Kaizen

Kaizen as one of the solutions

Participatory
Participation from top management all the way down to front line workers is essential. Suggestions from workers are encouraged.

Universal
Applicable in any country, industry, sector, size and organization.

Continuous
Activities consisting of small but continuous efforts on a daily basis add up resulting in big changes.

Economical
Emphasis is on using wisdom more than money. Applicable even when there are resource limitations.

Scientific Approach
Rational measures based on statistical data analysis.

Kaizen as one of the solutions

- Effect 1: Improves quality, productivity and service level; Reduces cost and delivery time
- Effect 2: Changes mindsets of managers and workers
- Effect 3: Fosters personnel who can think and act by themselves
- Effect 4: Builds teamwork and enhances communication
- Effect 5: Creates a strong organization that keeps evolving and developing
- Effect 6: Creates a safe and comfortable work environment

Basic features of KAIZEN

- **Quality** and **Productivity** Improvement
- **Incremental** and **continuous** improvement
- **Without** additional investment: **economical**
- Participatory process and **bottom-up** from factory floors (*gemba*)
- With strong **commitment** of **top** management
- Practical **methods/tools** as well as **philosophy**
- Base of the **success** of well-known Japanese companies such as Toyota while also SMEs; Idea of KAIZEN is **embedded** in work style / daily life
- Already **spread** in the **world**
- Also spread from manufacturing to service, public and other **sectors**

*Source: summarized by author from various resources including Masaaki Imai, “Kaizen: The Key to Japan’s Competitive Success”, McGraw-Hill/Irwin, 1986. etc.*
JICA Kaizen projects spread all over the world for industrial development.

Kaizen Support from JICA

Africa Kaizen Annual Conference 2018 in Durban for knowledge sharing and integration

Held on 2-4 July 2018 with 150 participants from 20 countries in and out of Africa

Source: JICA website (2018)
Kaizen: results and impact

- Introduction of KAIZEN to SMEs in 8 countries,
  Supported over 1,000 firms, Beneficiaries of 60,000 people
- Formed “Africa Kaizen Initiative” with NEPAD (April 2017)
- Productivity improvement by 30%

Kaizen for innovative business

- Kaizen is also an innovation.
- Kaizen is Incremental Innovation to complement Radical Innovation (Breakthrough).
- Kaizen is Process Innovation and a most basic capability for enhancing firm capability.
- Invention capabilities and Technological adoption capabilities, essential for economic transformation.


Ladder of Firm Capabilities

- Innovative mind
- Technology
- Kaizen
- Invention capabilities
- Technological adoption capabilities
- Production capabilities (Process Innovation)

Source: Prof. Shiba, VLFM/CSM Project Brochure, modified by JICA
ASEAN University Network
Southeast Asia Engineering Education Development Network Project
Achievement and Way Forward of AUN/SEED-Net

Achievement by Phase 3

1. Improvement of Quality of Academic Staff
   - 1,392 Master and PhD scholarship
2. Improvement of Quality of Research
   - 211 Research Projects
3. Mobility/Network
   - More than 700 Trips (Research Fellowship, Short-term Research Program in Japan, Short-term Visit Program in ASEAN, Japanese Professor Dispatch Program)

Project Purpose of Phase 4

The network of AUN/SEED-Net among member countries is well maintained and expanded.

- Networks among Member Institutions (MIs), Industry and community are strengthened
- Research and educational capacity of MIs is enhanced through collaboration among MIs/Japanese Supporting Universities (JSUs)
- Joint research is promoted for solving regional issues
- Academic network among MIs /JSUs is strengthened and expanded

Network of 40 Engineering Universities in ASEAN and Japan

10 ASEAN countries: 26 Member Institutions
- University of Yangon
- Yangon Technological University
- Chulalongkorn University
- King Mongkut’s Institute of Technology Ladkrabang
- Burapha University
- Kasetsart University
- Thammasat University
- Institute of Technology of Cambodia
- Universiti Sains Malaysia
- Universiti Malaya
- Universiti Putra Malaysia
- Universiti Teknologi Malaysia
- National University of Singapore
- Nanyang Technological University

Japan: 14 Supporting Universities
- Hokkaido University
- Keio University
- Kyoto University
- Kyushu University
- Nagoya University
- National Graduate Institute for Policy Studies
- Osaka University
- Shibaura Institute of Technology
- Tohoku University
- Tokai University
- Tokyo Institute of Technology
- Toyohashi University of Technology
- The University of Tokyo
- Waseda University
- University of the Philippines – Diliman
- De La Salle University
- Mindanao State University – Iligan Institute of Technology
- Universiti Brunei Darussalam
- Universiti Teknologi Brunei
- Institut Teknologi Bandung
- Universitas Gadjah Mada
- Institut Teknologi Sepuluh Nopember
- Universitas Indonesia

Project Timeline

Phase 1: 2003 - 2008
- Establishment of Framework
- Strengthening and Promote Network
- Addressing Common Regional Issues and Industry

Phase 4: 2018 - 2023
- Developing Sustainable Scheme for Collaborative Education and Alumni Support

Source: JICA (2018)
Network of 40 Engineering Universities in ASEAN and Japan

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- Institute of Technology of Cambodia
- Universiti Sains Malaysia
- Universiti Malaya
- Universiti Putra Malaysia
- Universiti Teknologi Malaysia
- National University of Singapore
- Nanyang Technological University

Japan:
14 Supporting Universities

- National University of Laos
- Hanoi University of Science and Technology
- Ho Chi Minh City University of Technology
- University of the Philippines – Diliman
- De La Salle University
- Mindanao State University – Iligan Institute of Technology
- Universiti Brunei Darussalam
- Universiti Teknologi Brunei
- Universitas Gadjah Mada
- Institut Teknologi Sepuluh Nopember
- Universitas Indonesia

Source: JICA (2018)
Keywords/implications

STI for SDGs - issue-driven

Collaborative Innovation - Open Innovation

Kaizen - Incremental Innovation

Knowledge sharing and integration

University and industry network

Thank you!

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