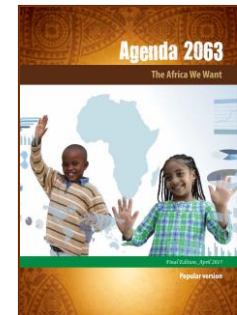




TICAD8 official side event organized by METI-AOTS



Supporting Industrial Human Resource Development in Africa

**Key features of Japanese cooperation and
enhanced partnership with Africa**

**Izumi Ohno
National Graduate Institute for Policy Studies (GRIPS)
August 22, 2022**

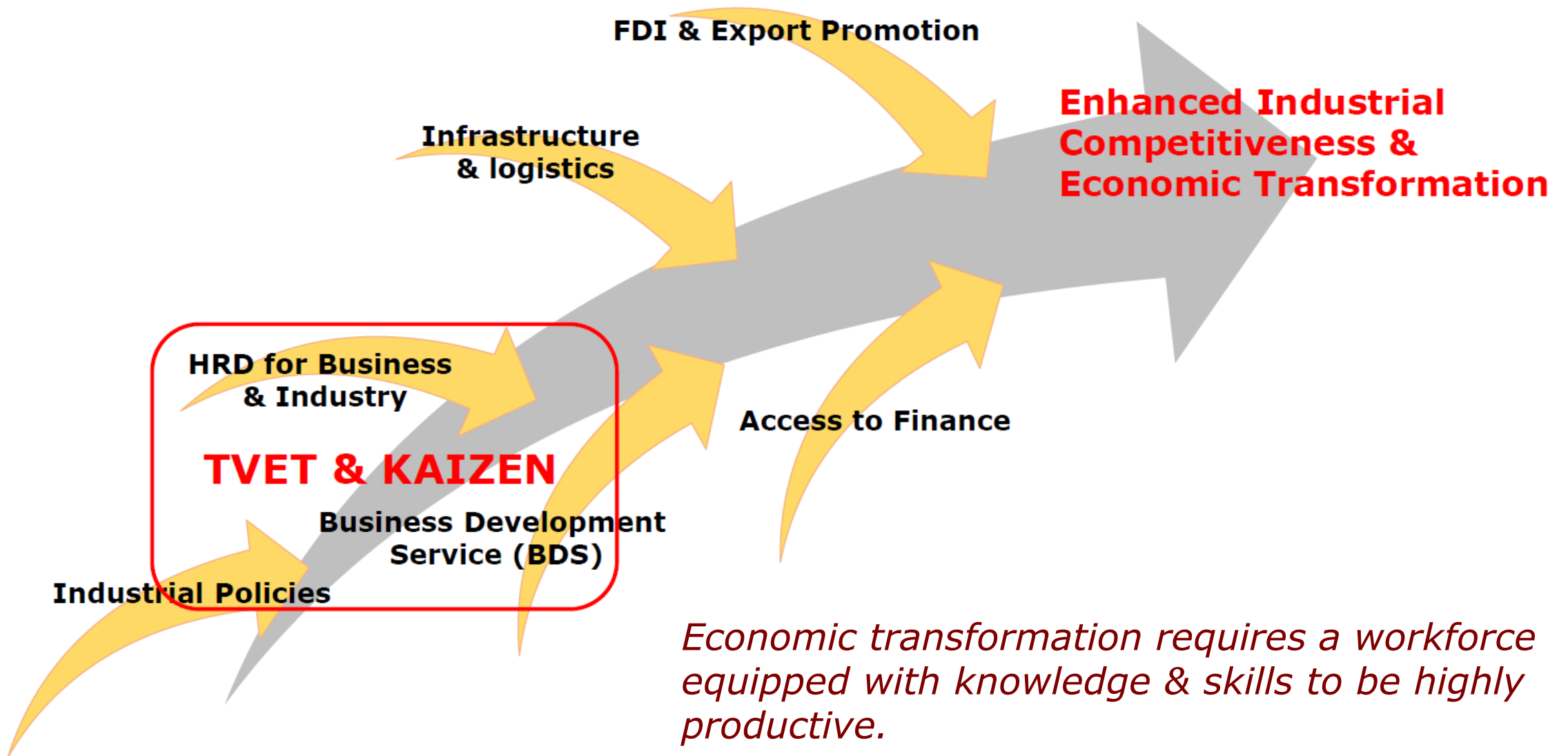
Main Points

1. Importance of upgrading industrial HR in Africa
2. Key features of Japanese cooperation for industrial HRD
3. Selected examples (primarily in Asia)
 - Kaizen, TVET-industry linkage, KOSEN
 - Automotive industry supply chain development
4. Enhanced initiatives for Africa
5. Way forward

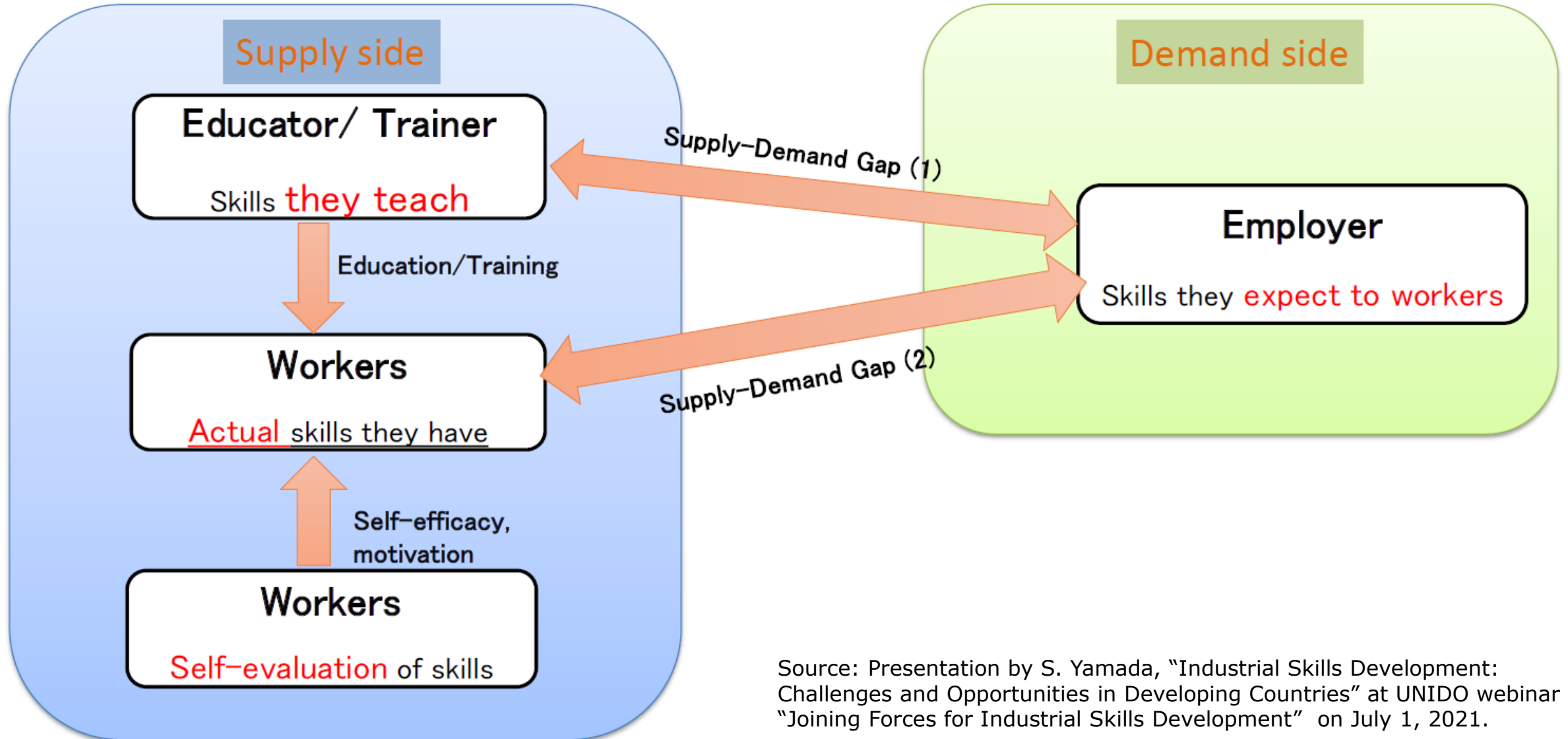
Importance of Upgrading Industrial HR in Africa

- Africa is the continent of **future** and **opportunity**.
 - Africa's population is estimated to double by 2050, reaching 2.5 bn.
 - SSA has the world's youngest population—more than 60% under the age of 25—equivalent to 20% of the world's under-25 pop.
- Combined with an expanding consumer market and the recent advance of AfCFTA, a growing labor force presents an economic potential and Africa's comparative advantages relative to other regions.
- Nevertheless, reaping the **benefits of demographic dividends** is not automatic. Its success depends on investment in job creation and HRD, which have to go hand in hand with economic transformation.

Economic Transformation & Productive Job Creation



Twin Gaps of Supply and Demand of Skills in the Labor Market



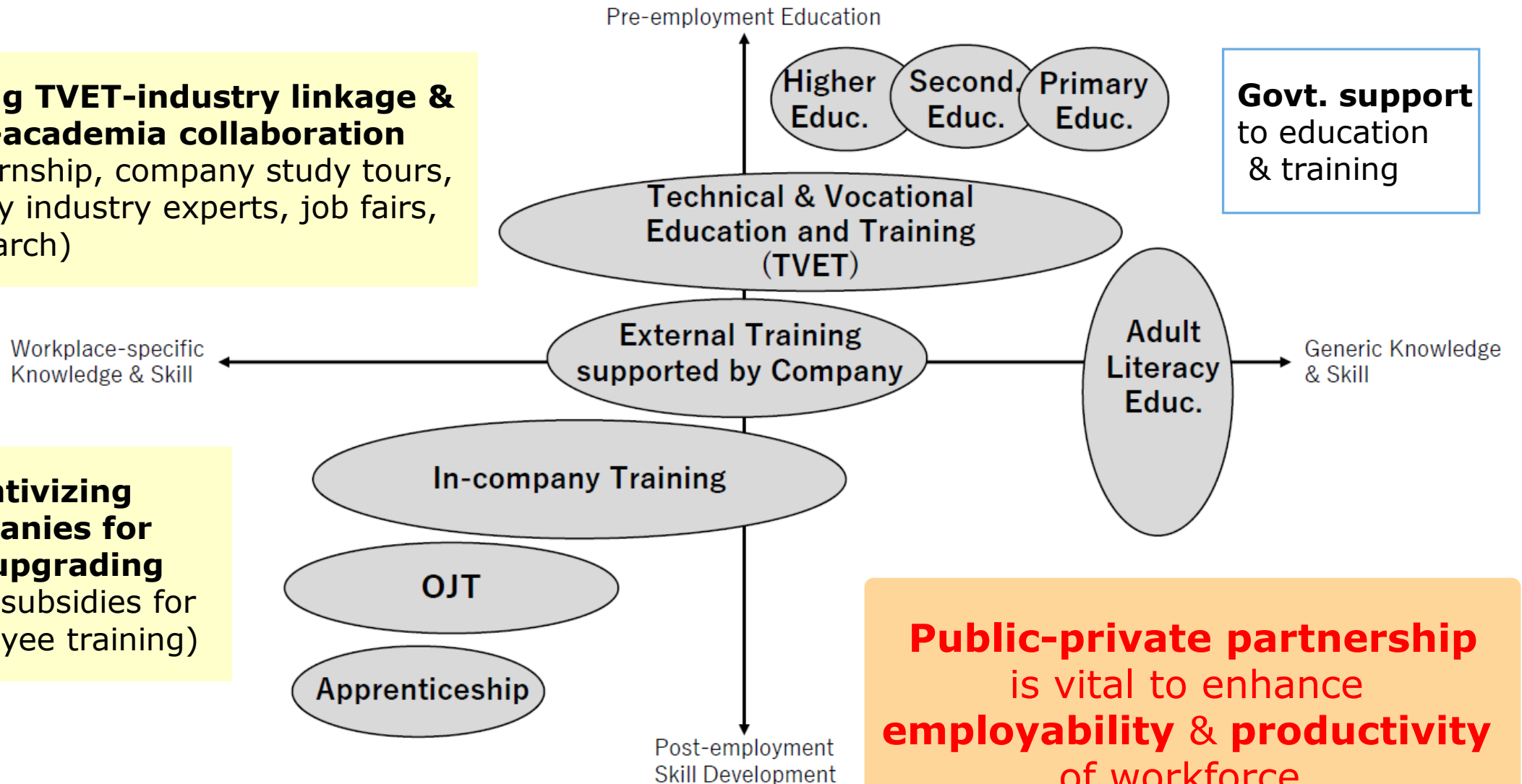
Source: Presentation by S. Yamada, "Industrial Skills Development: Challenges and Opportunities in Developing Countries" at UNIDO webinar "Joining Forces for Industrial Skills Development" on July 1, 2021.

How to Overcome Skills Gap?

Enhancing TVET-industry linkage & industry-academia collaboration

(e.g., internship, company study tours, lectures by industry experts, job fairs, joint research)

Govt. support
to education
& training



Incentivizing companies for skill upgrading
(e.g., subsidies for employee training)

Key Features of Japanese Cooperation

- Industrial HRD (***Hitozukuri***) as a top priority area of Japanese cooperation for many decades
 - Consistent engagement, against changing global trends (industrialization → BHN → macro → MDGs → SDGs)
- Emphasis on practice & field-orientation, problem-solving skills to respond to 'real' needs of industry; hands-on guidance
- HRD with ***Monozukuri*** spirit
 - Not just hard technical skills, but soft skills with philosophy (making products with pride, skill and dedication)



Kiichiro Toyoda
(Toyota car production)



Konosuke Matsushita
(Panasonic)



Soichiro Honda
(Honda)



Akio Morita (Sony)

Technology Transfer and Industrial HRD: A Japanese Perspective

- Technology transfer should cover **both** specific skills and the underlying work ethic and Japanese work culture (although the latter must be **adapted to the country/society-specific context**).



Individual capacity building
(esp. line leaders, supervisors)



Specific Skills

Production management
Quality management,
Production technologies, etc.

Japanese Monozukuri Spirit

Work ethics, corporate culture,
5S & Kaizen, etc.

Note: This mechanism for technology transfer is presented in FY2005 AOTS Post-Evaluation Report in details.

- OJT, hands-on guidance, factory visits, exposure to Japanese society are effective ways for technology transfer, incl. Japanese *monozukuri*.
- Applicable to any industries (not limited to manufacturing).

Source: Elaborated by the author, based on AOTS/HIDA information.

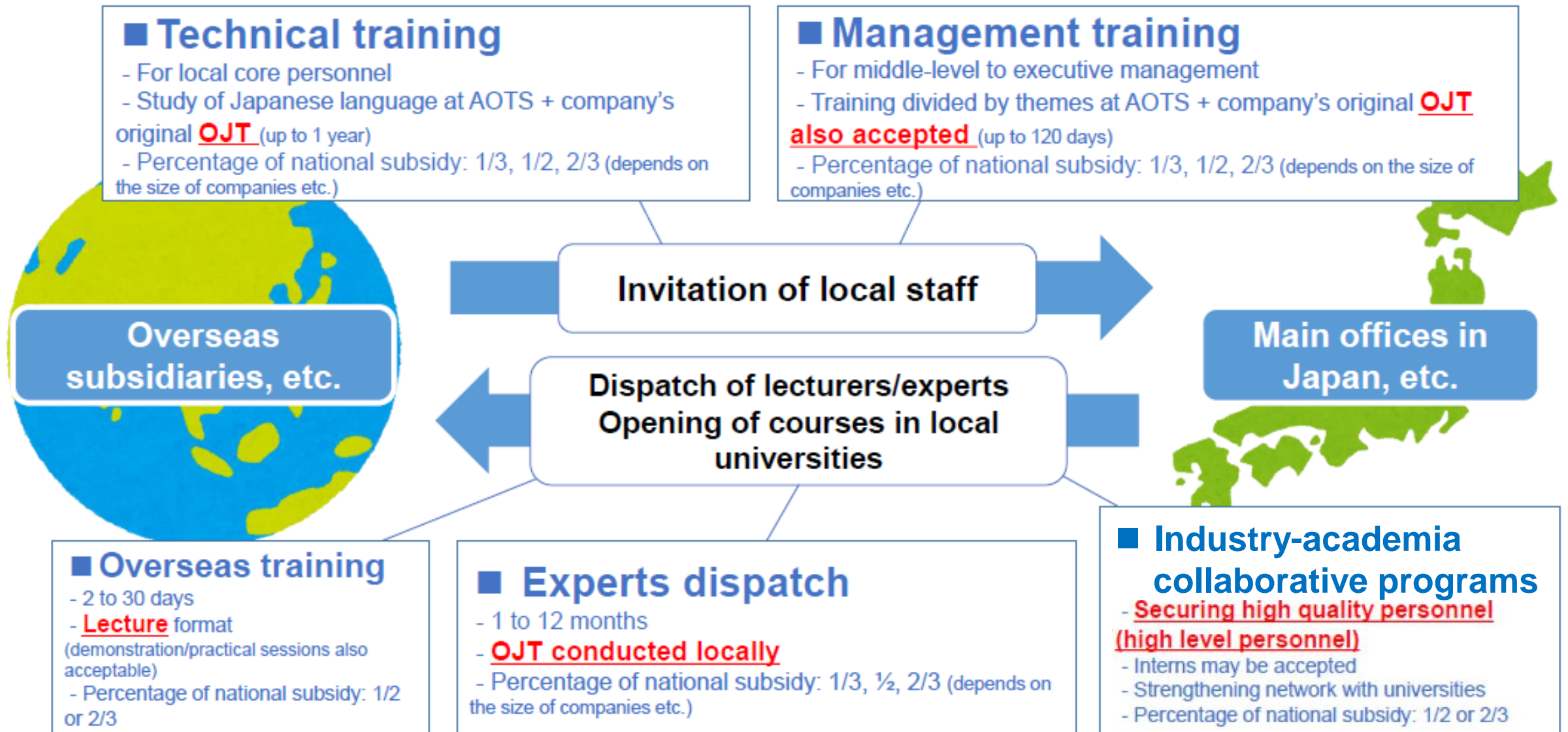
Key Features of Japanese Cooperation (contd.)

- Japanese ODA for industrial HRD has taken two-pronged approach, complementing each other (esp. in Asia).
 - **JICA**: G to G cooperation (capacity development of the public sector, e.g., TVET, engineering univ., quality/productivity institutes)
 - **AOTS**: offering demand-driven, technical & management training and expert dispatch to private organizations & firms, combining ODA and private funding.
- Public-private partnership (Japan ODA model: METI 2005)
 - Aid, investment, trade synthesis (trinity) (Shimomura & Wang 2013)
 - Japanese ODA as vanguard of FDI (Kimura & Todo 2007)
- Asia focus; but recent initiatives of enhanced cooperation for Africa

JICA: Japan International Cooperation Agency

AOTS: The Association for Overseas Technical Cooperation and Sustainable Partnerships

Human Resource Development Scheme at AOTS



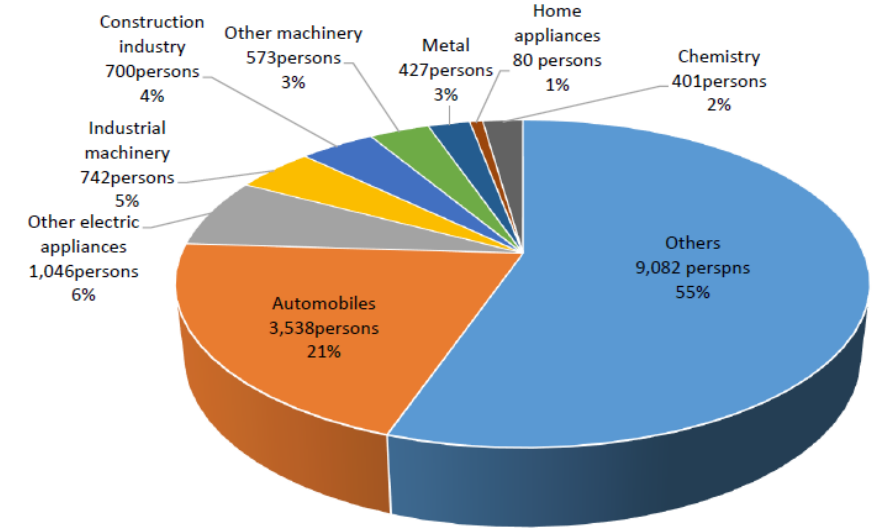
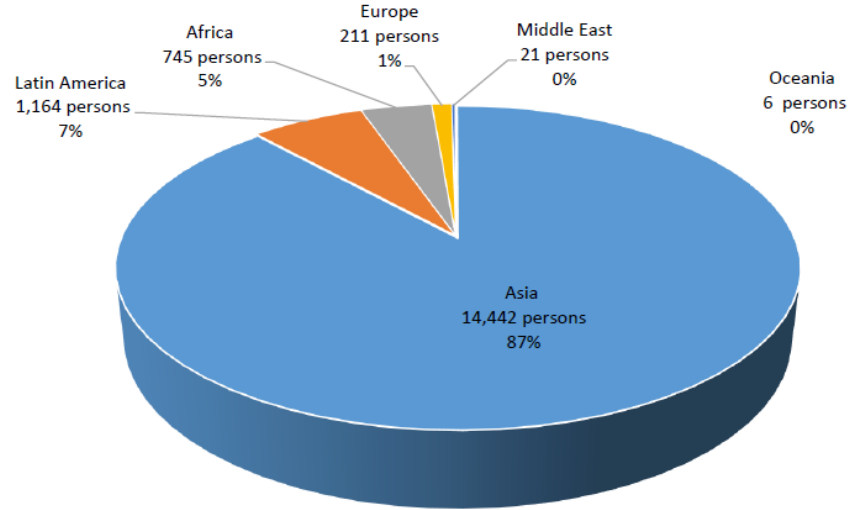
AOTS Subsidized Program (FY2011-FY2020)



① By region

② By industry type

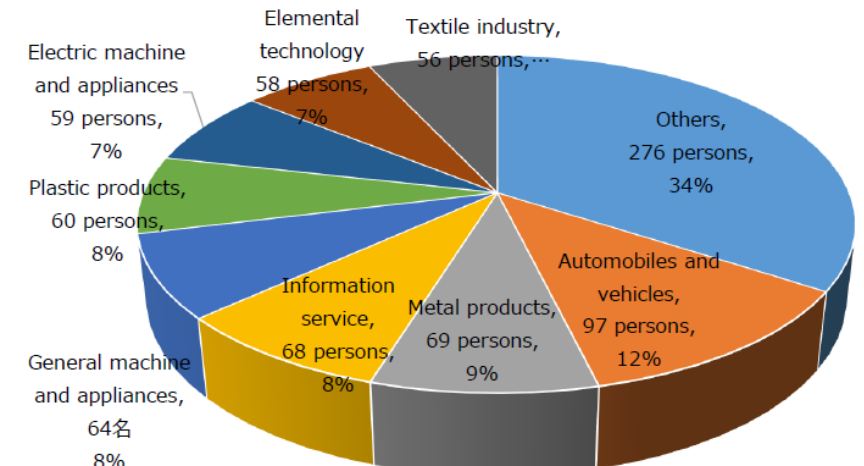
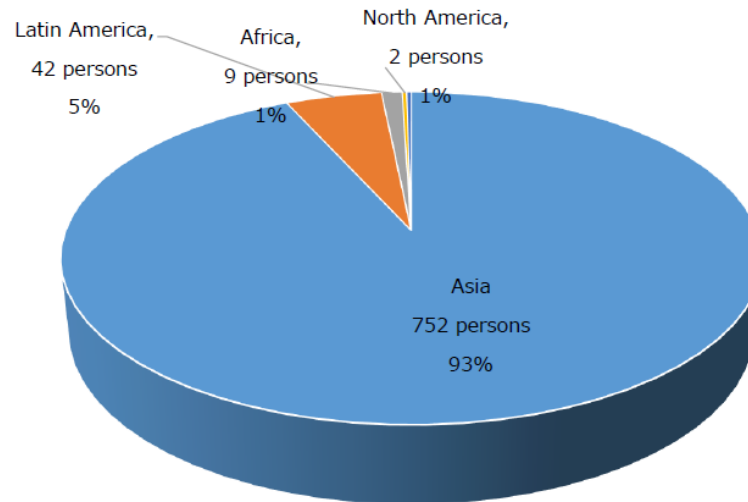
Training in Japan
Technical Training
& Mgt. Training



① By region

② By industry type

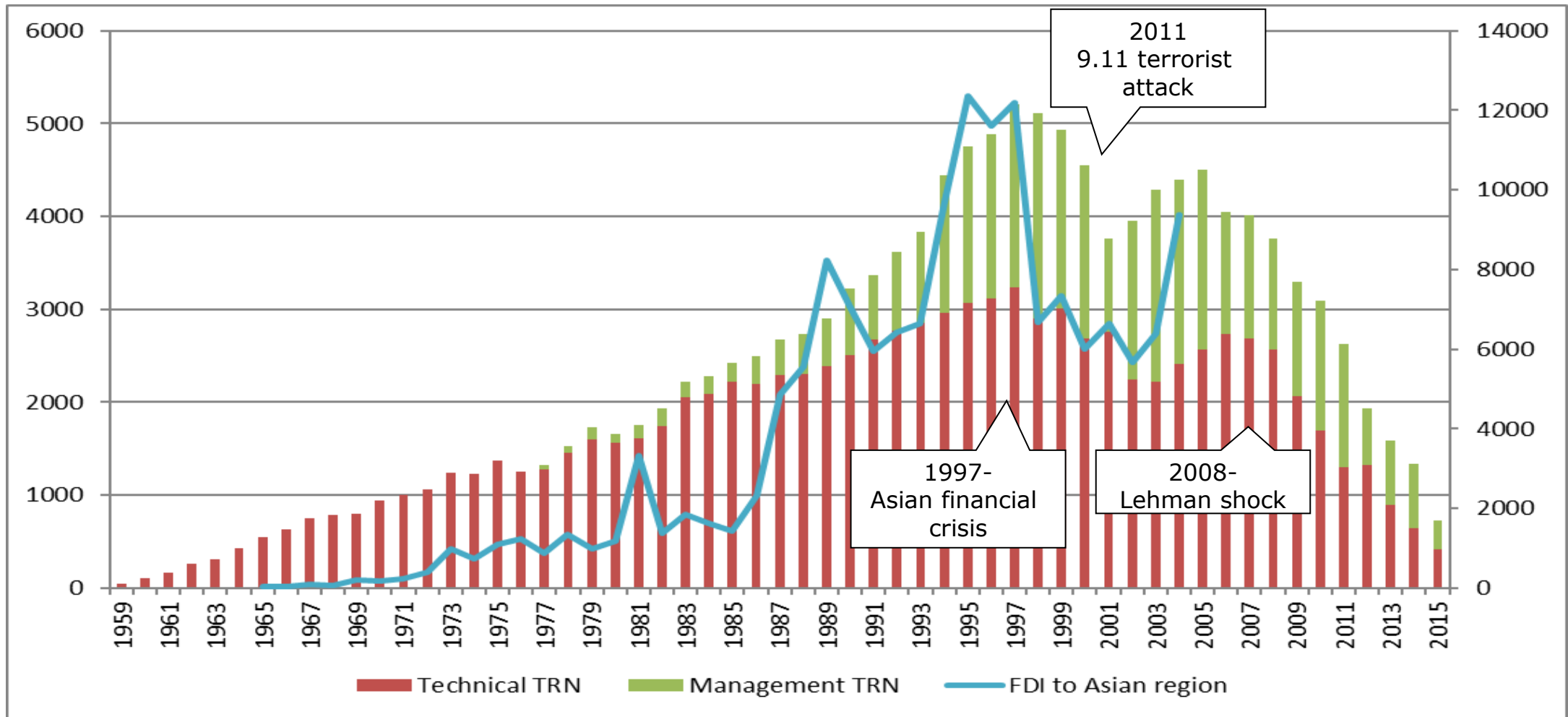
Experts Dispatch



Number of Participants of AOTS Training Programs and the Trends of Japanese FDI to Asia

Number

Unit: US million

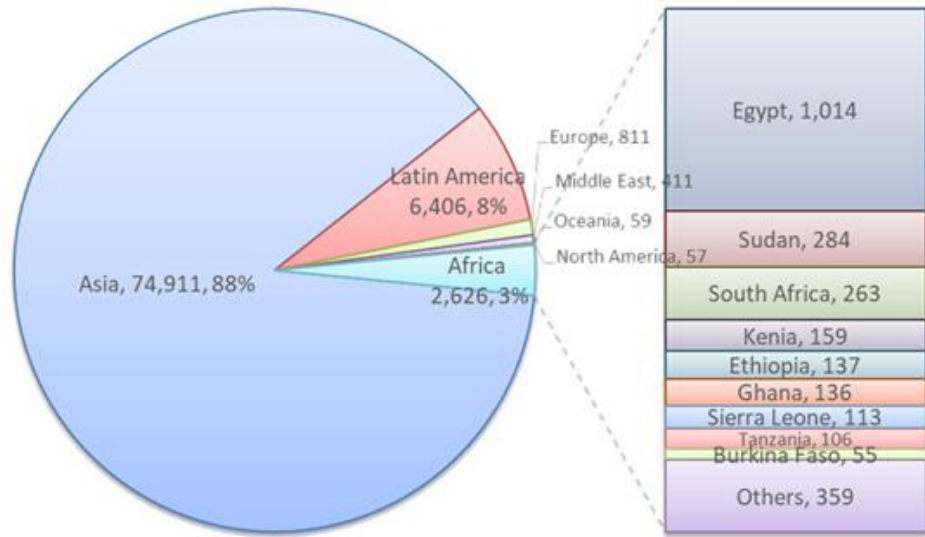


Source: Y. Shimazu, A. Tsujimoto & S. Yamada (2022) "Private-Sector Led Cooperation in Industrial Human Resource Development: The Case of AOTS," Ch.8 in *Japan's International Cooperation in Education: History and Prospects*, eds. N. Kayashima, K. Kuroda & Y. Kitamura, Figure 8-6, p.190.
 Notes: Based on AOTS & JETRO data. FDI data (JETRO) after 2005 are not included in the graph, due to change in data compilation method.

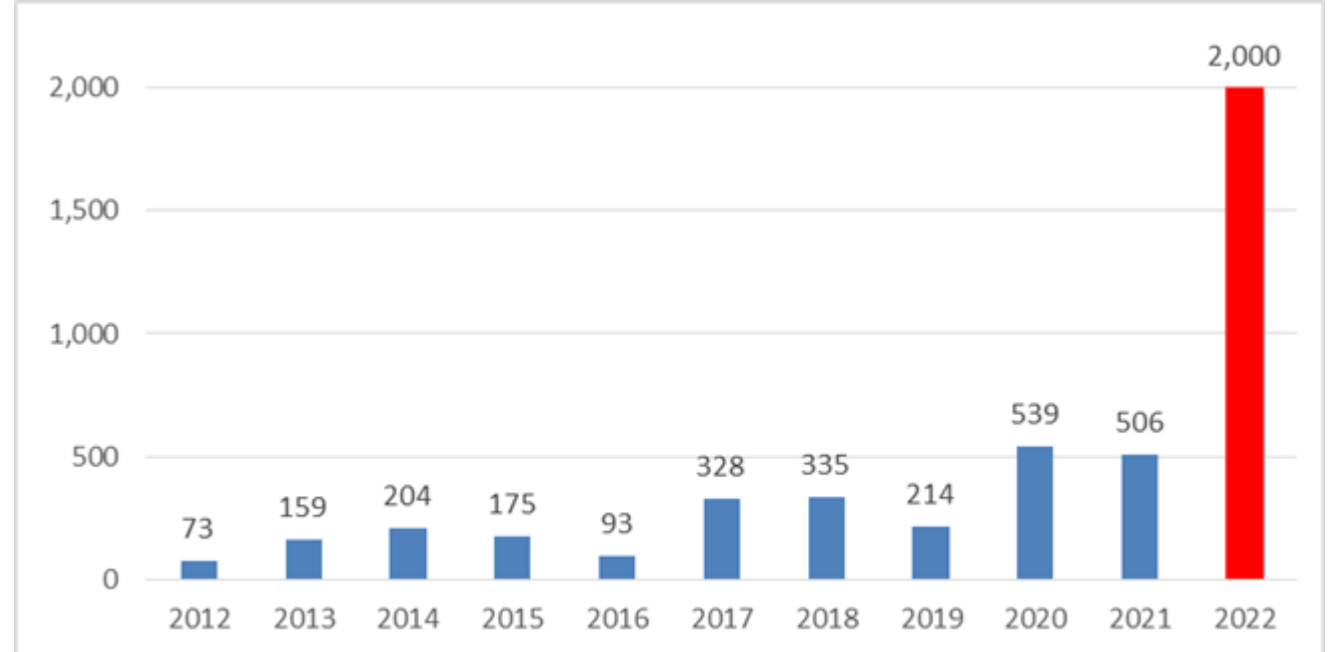
Cumulative Number of African Training Participants <FY2012~FY2021>

Number of Participants of AOTS Programs

(Training in Japan, Overseas Training, Online Seminars, Industry-Academia Collaborative Programs)



Aiming to render the support to 2,000 people in the industrial field of Africa.



Source: Based on the information provided by AOTS.

Experiences of Japanese Cooperation

Example (1): 5S and Kaizen

- Kaizen is a bottom-up, low-cost way of improving efficiency at workplace, imported from USA and developed in Japan.
- Kaizen is a philosophy with many practical tools. It pursues elimination of ***muda*** (any thing or action that does not add value). The most basic Kaizen tool is **5S** (Seiri, Seiton, Seiso, Seiketsu & Shitsuke; or Sort, Set in order, Shine, Standardize & Sustain).
- Kaizen was developed in the late 1950s and practiced all over Japan. It also spread to Asia and the rest of the world, many countries **through FDI, ODA & private consultants**. AOTS/JODC, JICA, APO, JPC, JUSE, JMA, Kaizen Institute, etc. taught Kaizen abroad.



India



Ethiopia

Example (2): TVET- Industry Linkage (Vietnam)

- For Technical & Vocational Education and Training (TVET) to be effective, schools must build close linkage with industry which hires graduating students. For this, Japan can offer two mechanisms:
 1. **Training process management** featuring the PDCA (Plan-Do-Check-Action) cycle.
 2. **Employment support system** featuring (i) internship; (ii) company study tours; (iii) lectures by TVET graduates; (iv) job fairs; (v) collection and circulation of job opportunity information; and (vi) career counseling.
- JICA has introduced this system to Ha Noi University of Industry (HaUI, 2010-13) in Vietnam. HaUI built active linkage with Japanese FDI, and created new courses for industry.

Short-term course in partnership with FDI



Company study tour

Toyota Technical Education Program for Body Repair and Paint



Example (3): TVET-Industry Linkage (Thailand)



- Thai-Nichi Institute of Technology (TNI): Established in 2007 by TPA, as a private, *monozukuri* University **by Thai people for Thai people**.
 - Courses of automobile, electronics, production technology, ICT.
 - Emphasis on practical knowledge, internship with Japanese/local supplier companies in Thailand & Japan, factory visits, job fairs.
 - High employment rate (half of the graduates working at Japanese companies or their local suppliers).
 - Recently, starting International Program for Asian & Japanese youth.
- TNI was founded by Technology Promotion Association (TPA), a Thai NPO established in 1972 by Thai alumni who studied at Japanese engineering universities and ex-trainees of AOTS.
 - While initially supported by Japanese ODA & private sector (via JTECS), TPA achieved self-financing by 2008.

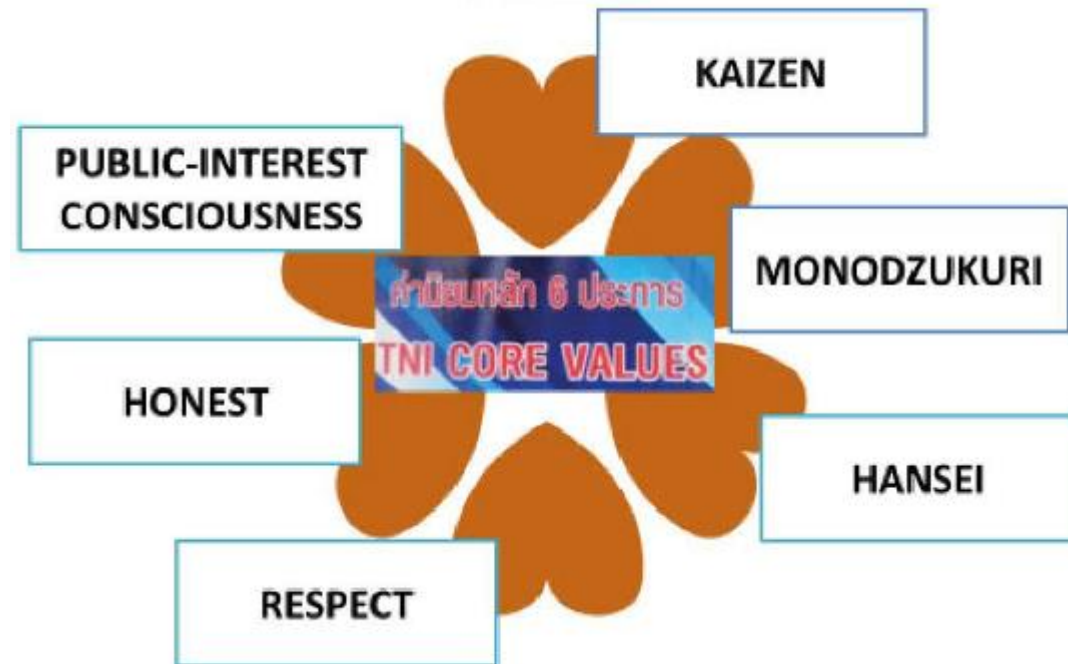


Photo: TNI website

TNI Core Values and 5 Gs of Monozukuri

表1 ものづくり5ゲン主義 5 Gs of Monodzukuri		
1	現場 Genba	Learning from the workplace
2	現物 Genbutsu	Learning from the work environment and real materials
3	現実 Genjitsu	Learning from practice in real situations
4	原理 Genri	Learning from theories
5	原則 Gensoku	Learning from rules and regulations

Six Core Values KM-HR-HoP



Kaizen: continuous improvement

Monozukuri: dedication, creativity, and development)

Hansei: accept mistakes and learn from them)

Respect: respect yourself and others)

Honest: be honest

Public-interest consciousness: consider the public interests

Example (4) : KOSEN (technical college)



- ❑ KOSEN is a Japanese technical and vocational higher education system for producing practical and creative engineers. It offers a five-year program to students aged 15 to 19. There are 57 KOSEN in Japan with 50,000 students.
- ❑ KOSEN combines theory and practice. Besides technical skills, it teaches proper mindset, creativity, problem-solving capacity and communication skills.
- ❑ KOSEN builds close and practical linkage with firms through factory visits, internship and graduation studies. Graduates are highly demanded by industry.
- ❑ Japan is now supporting the introduction of KOSEN model to several Asian countries (Thailand, Vietnam, Mongolia).



Kosen
Robocon

Example (5): Automotive Industry Supply Chain Development (Mexico)



Photo: JICA HP

- ❑ Japan-Mexico EPA (2005-) has important impacts in promoting FDI, particularly automotive industry.
- ❑ AOTS and JICA provide complementary support to HRD for automotive industry in Mexico for capacity development of local parts suppliers, esp. in the north & south regions where Japanese automobile-related companies form clusters.

JICA: Project for HRD for Automotive Industry in El Bajío of Mexico (2015-2020)

- CONALEP, Provincial govts (States of Aguascalientes, Guanajuato & Queretaro), ProMéxico
- Aimed at upgrading TVET capacity

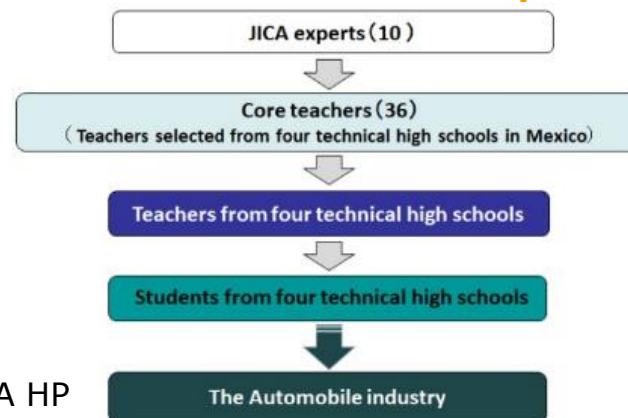


Figure: JICA HP

AOTS:

- Experts dispatch to local suppliers
- Technical training in Japan
- Special programs for Mexico:
 - Production Management Training (in Japan)
 - Principles of Management Training (in Mexico)



Photos: AOTS HP

Recent Initiatives for Africa (Examples)

□ African Business Education (ABE) Initiative for Youth

- Launched at TICADV (2013), implemented by JICA (scholarship for Japanese universities/MA) and AOTS (training practical engineers, technicians, etc.)
- Internship at Japanese companies
- **ABE Initiative 3.0 (2019-)**: accepting 3,000 African youth in Japan over 6 years

□ Africa Kaizen Initiative (AKI) & Africa Kaizen Award

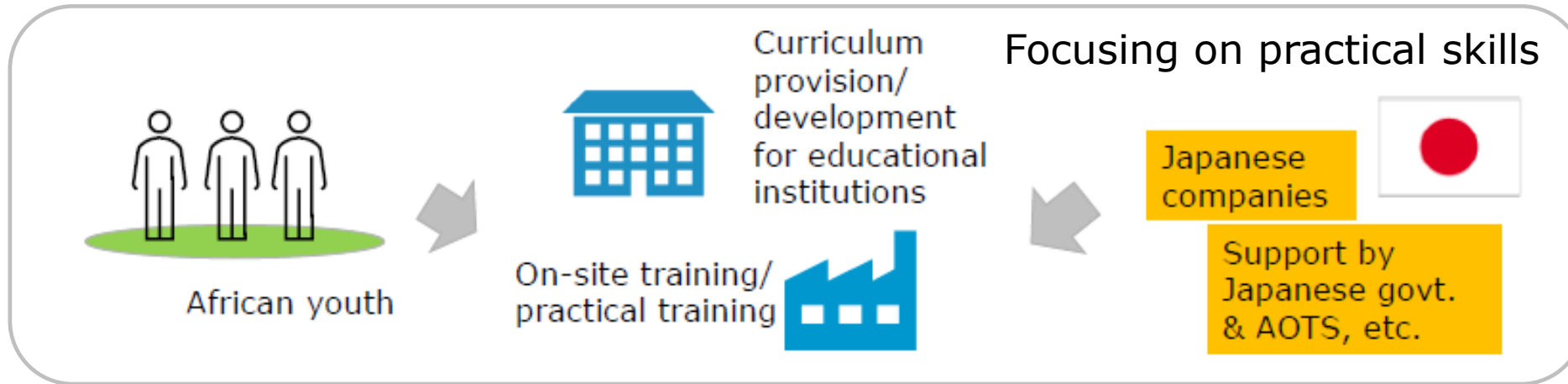
- AKI launched by AUDA-NEPAD & JICA in 2017, later joined by PAPA
- JICA has been implementing Kaizen promotion projects in nine African countries (Tunisia (2006-), Egypt, Ethiopia, etc.)

□ Africa-Japan Industrial HRD Initiative for the Future (AfIF)

- Provide training & educational opportunities for 5,000 African youth over 3 years, focusing on practical skills by:
 - Enhancing the existing AOTS programs (e.g., engagement of 3rd country experts)
 - Promoting industry-academia collaboration, supported by Japanese private sector
 - Strengthening partnerships with JICA, UNIDO & other institutions.



Industry-Academia Collaboration in Africa

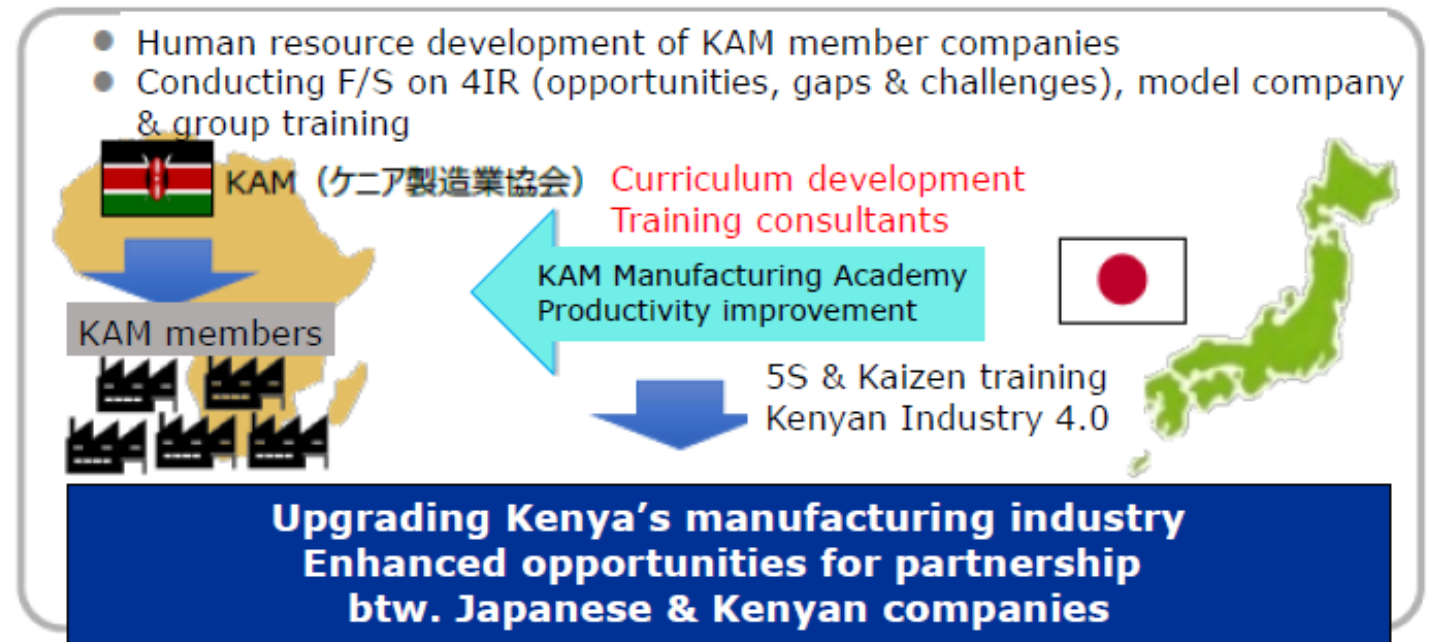


Source: Elaborated by the author based on METI information (original in Japanese)

Nurturing Future Business Partners through HRD

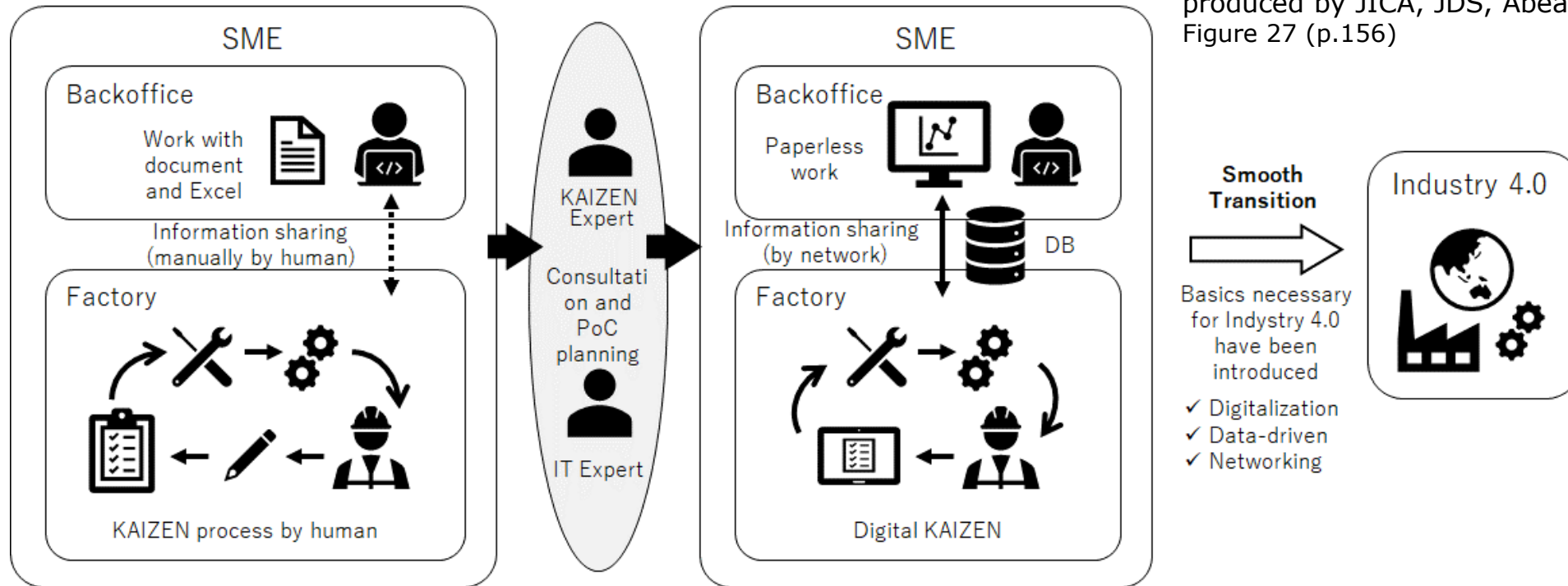
New partnership with KAM (Kenya Association of Manufacturers) for HRD of KAM member companies in the area of automation/DX for productivity improvement.

This is built on AOTS's experiences with supporting Thailand's 4.0 challenges (New Monozukuri) through Lean Automation with Robot & Lean Manufacturing with IoT.



Conceptual Diagram of Digital KAIZEN

Source: "Worldwide Data Collection Survey on Upgrading Manufacturing Industry Using the Latest Technology" produced by JICA, JDS, Abeam Consulting, Feb. 2022. Figure 27 (p.156)

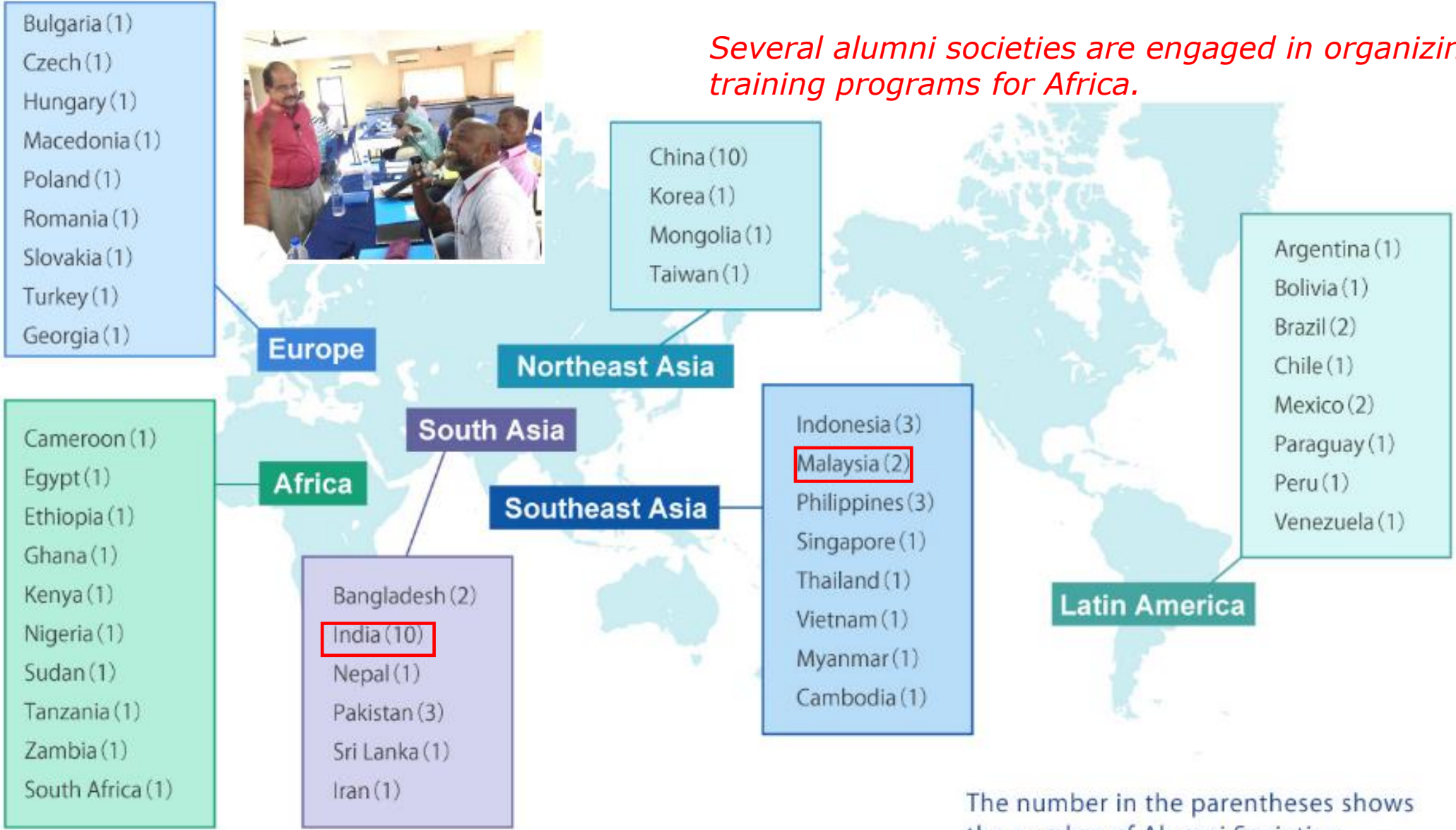


- It is unrealistic to jump into 4IR immediately. There is a need to draw a roadmap with a concrete future plan to gradually move towards 4IR.
- Basics of 4IR: **data-driven, digitalization, and networks (connectivity)**.
- The following steps to be taken:
Safety of production site → KAIZEN at production site → FA → smartification (data gathering & accumulation → data-based analysis & prediction → data-based control & optimization) → adaption to 4IR

WNF Program: South-South Cooperation led by AOTS Alumni Societies

<https://www.aots.jp/en/alumni/about/>

Several alumni societies are engaged in organizing training programs for Africa.



The number in the parentheses shows the number of Alumni Societies



(Examples)

Malaysia



エジプト人研修生を招いてロジスティクス研修を実施

Delhi/India



品質経営セミナーを実施
(前列中央は安倍晋三内閣総理大臣)

Egypt



インドから専門家を招き、TOMのための業績管理システム研修を実施

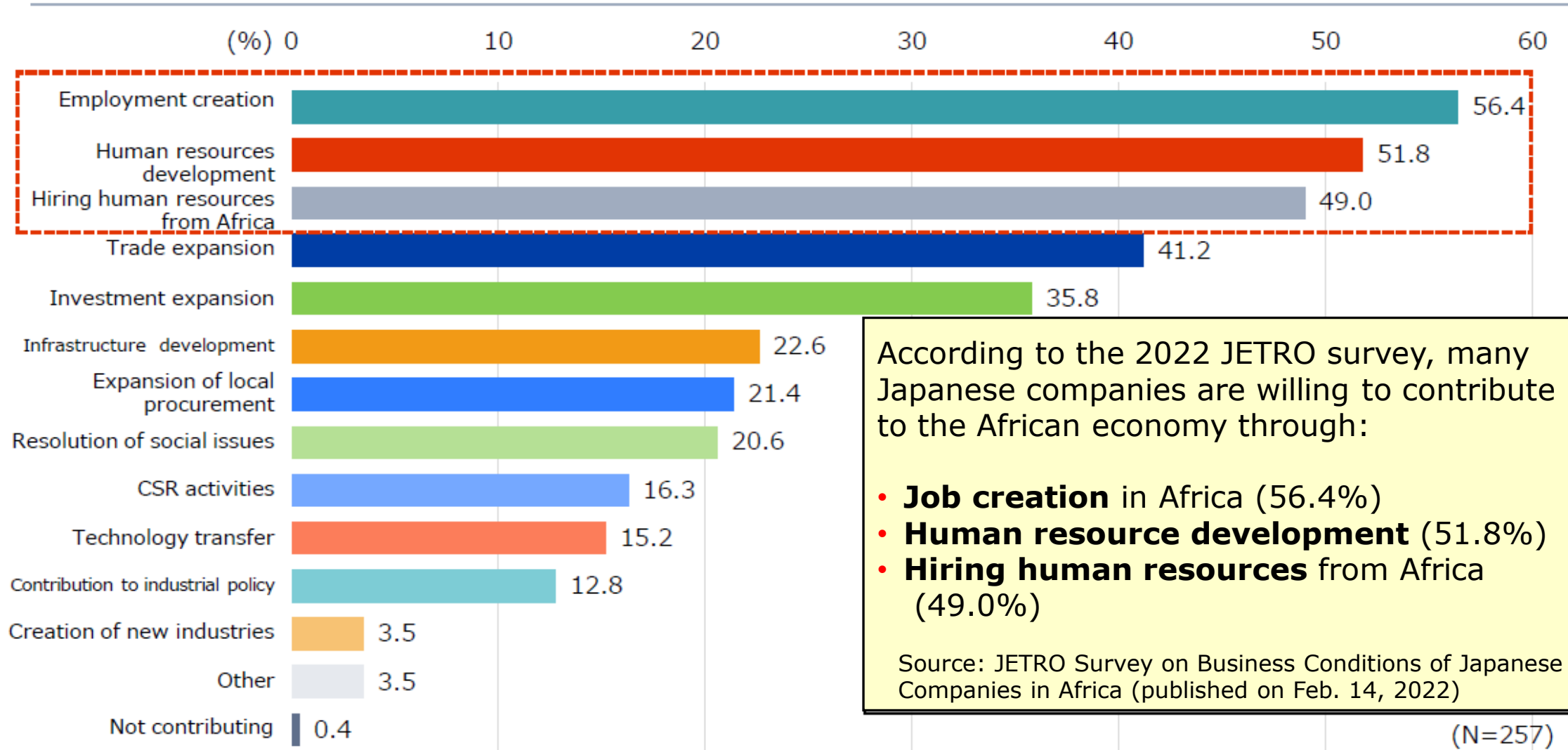
Peru



産業界、大学と連携して品質管理セミナーを実施

Japanese Companies are Willing to Contribute to Productive Job Creation in Africa

Content of Contribution to the African Economy (Multiple Answers)



Way Forward

- Industrial HRD is a key for building Africa's future.
- Asian experiences show the importance of:
 - **Public-private partnerships for HRD**
 - **Acquisition of both hard & soft skills (Monozukuri);** and
 - **Practice & field-oriented, hands-on approach.**
- Also, there exist a thick layer of experts who have mastered the above approach, through long-standing cooperation with Japan.
- It is time for Japan to further strengthen engagement in African HRD, **together with various partners** (incl. the above).
- Japan should also **learn** and **adapt its method to "African ways."**
- The scope of industrialization is broadening in the age of digitalization. Kaizen is an indispensable element of IR4, due to its affinity with data-driven, visualization and networking activities.

Thank You !

African Future Industrial Human Resources Initiative

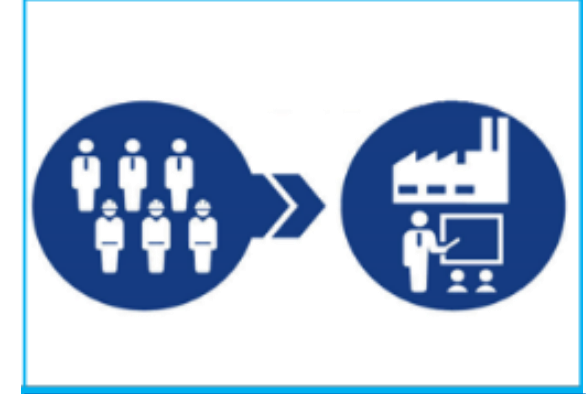
Upgrading AOTS programs in various areas:



Enhancing Biz.
Environment in Africa



Endowed courses at
African universities



Expanding
Third-Country Training



Online training course
for Africa



WFN Program
(South-South Cooperation)



Partnerships with other
inst. & private sector



Contributing to solving
social problems with biz.