

Planning and Managing Technology Transfer for Inclusive Development

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Technology based Business Cooperation for Cottage and Small Industries – Perspectives from Asia Pacific

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Outline

- Technology cooperation – The Global mandate
- Cottage & Small Industry – diversity & technology needs
- Technology cooperation opportunities for CSIs
- Selected collaboration models from Asia Pacific
- Concluding remarks

The Global Mandate

➤ **Science, Technology and Innovation** are the means to achieve **Sustainable Development Goals**



- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



- Strengthen the means of implementation and revitalize the **global partnership** for sustainable development

Technologies for Inclusive & Sustainable Development

Meet economic, social and environmental objectives

Sustainable technological solutions for local problems, consumer needs

Emphasis on green technologies

Affordability and accessibility of technologies to reduce technology inequality

Low cost, affordable water purification



- Developed by Industrial Technology Development Institute (ITDI) of Department of Science and Technology (DOST), Philippines
- Nanotech-based ceramic water filter made of red clay coated with anti-microbial agent that can substitute the chlorination process
- Low cost, affordable, widely deployed, especially in the far flung areas

Definition of Micro & Small Enterprises

(an enterprise must meet at least two requirements)

Firm size	Employees	Assets	Annual sales
Micro	<10	<\$100,000	<\$100,000
Small	<50	<\$3 million	<\$3 million

Source: International Finance Corporation. 2010. *The SME Banking Knowledge Guide*. Washington, D.C.

Micro & Small Industry in the Asia Pacific

Industrial diversity

Artisans

Village industry

Cottage industry

Self Help Groups

Cooperatives

Social enterprises

Micro enterprises

Small enterprises

Technology needs

Technical skill

Raw materials

Tools, Components

Equipment

Technical knowhow

Process technology

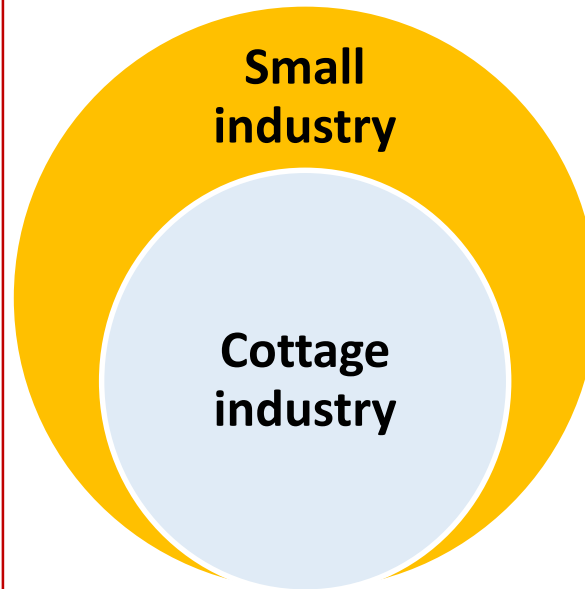
Machinery

Turnkey plant

Cottage vs. Small Industry

Cottage

- Mostly in villages
- Homes of artisans
- Family members, SHGs, Cooperatives
- Meet local requirements
- Produce traditional goods
- Simple tools, small capital
- Produce ancillary goods for small industry



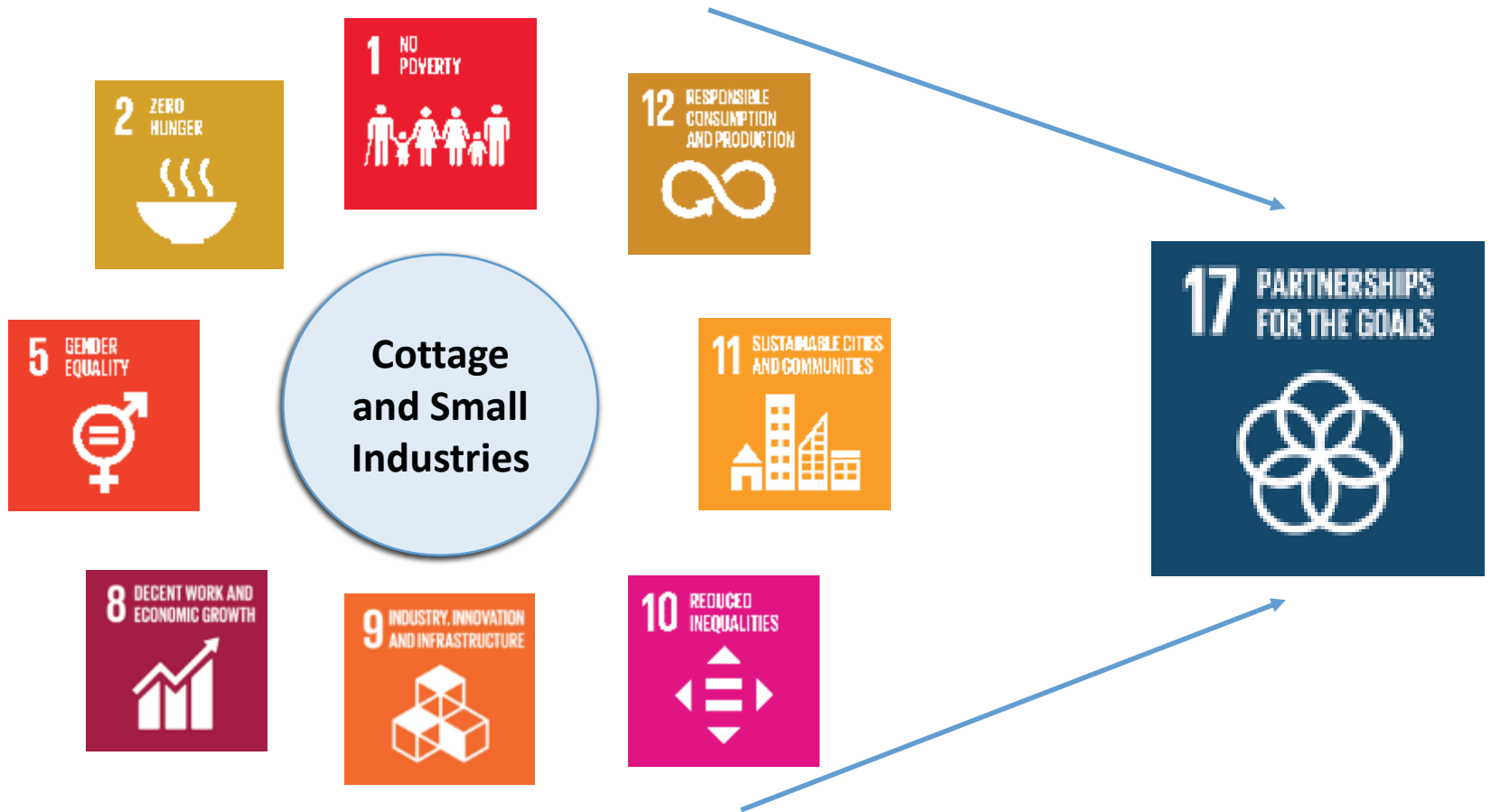
Small

- Mostly in urban areas
- Separate area for est.
- Company ownership, hired labour
- Meet demand of large area, population
- Produce modern goods
- Machinery, equipment, power, more capital
- Produce ancillary goods for large industry

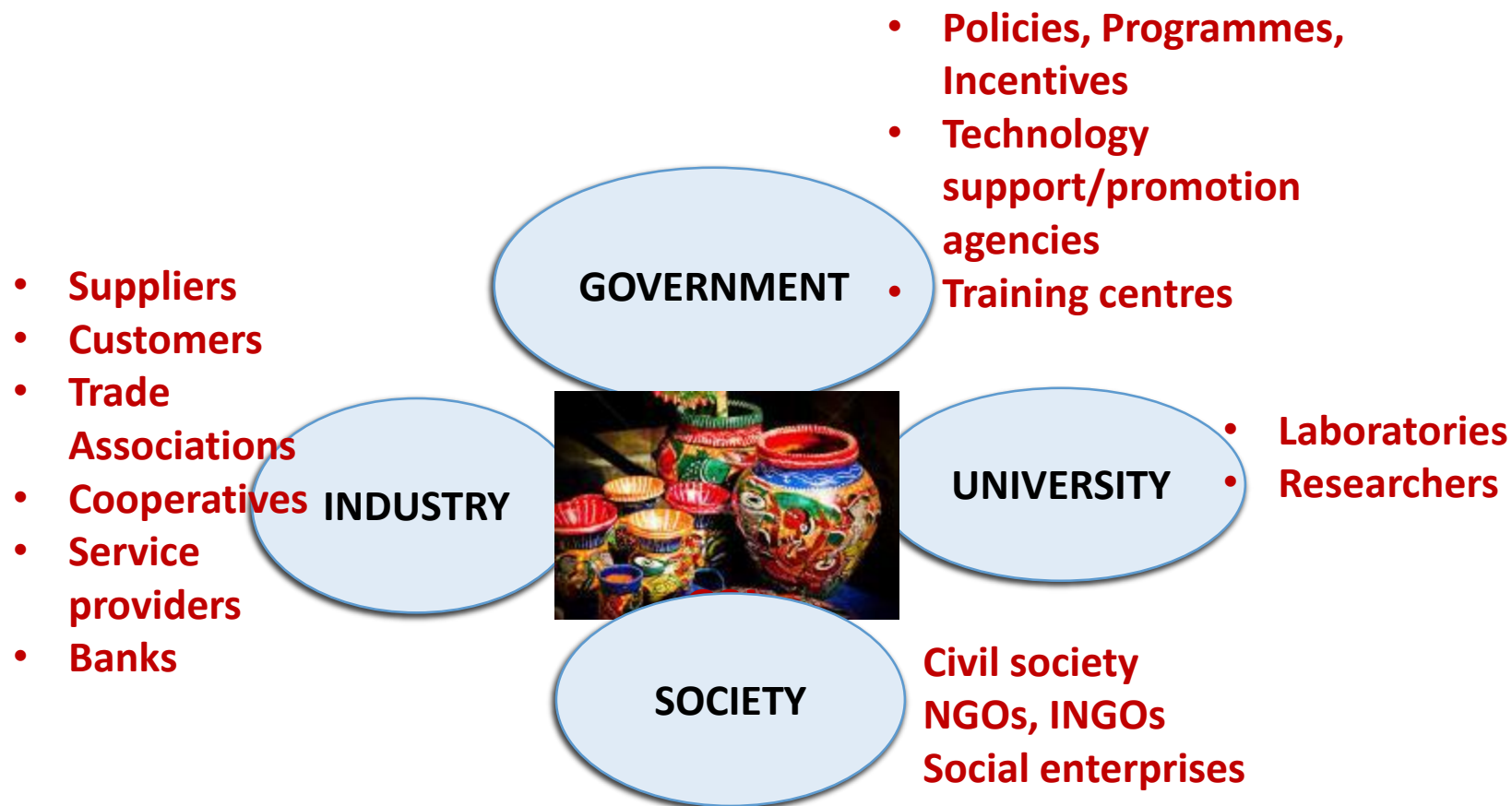
Role of CSIs in Development

- **Generate Employment**
- **Promote Rural advancement and growth**
- **Use of domestic resources**
- **Possess large export potential**
- **Women entrepreneurship**
- **Entrepreneurial skills, craftsmanship**

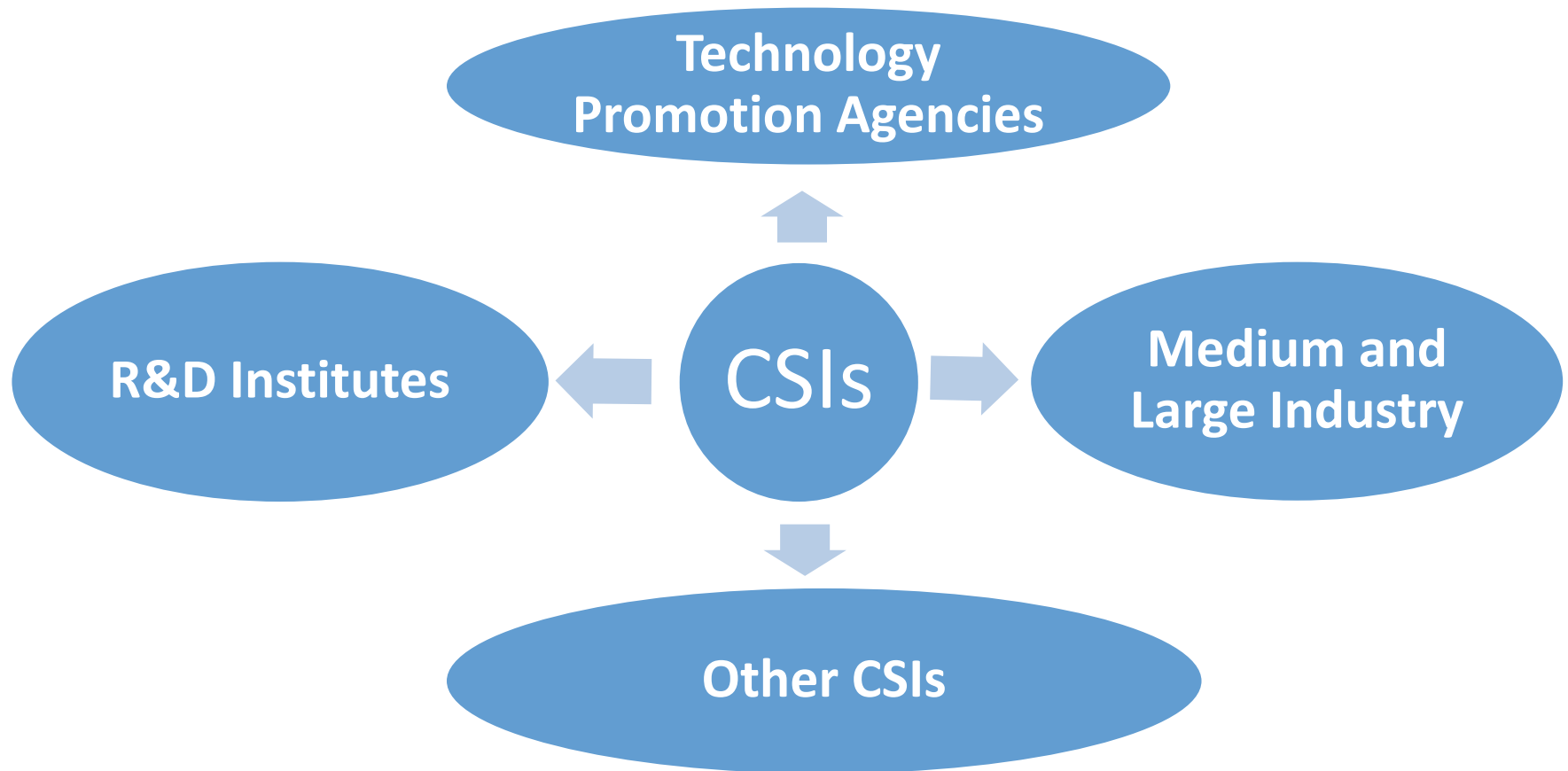
CSIs contribute to SDGs



Ecosystem for Supporting CSIs



Technology Partnerships for CSIs



Technology Inputs from Partners

R&D Institutes – Suitable technologies; Selecting the right product, process, suitable equipment

Technology Promotion Agencies – Guidance on market potential/surveys/assessments; Enhance entrepreneurial skills through technical training; Information & identification of suitable product, market, technologies, plant and machinery, raw materials

Medium and Large Industry – Acquiring machinery, equipment; Supplying intermediate products in the value chain; Quality control support

Other CSIs – Sourcing raw materials, intermediate products

Technology Cooperation for CSIs

Examples from Asia Pacific

1. Government supported decentralized model – Sri Lanka
2. Public-driven technology support system – India
3. Public Private Partnership model – The Philippines

Vidatha Resource Centers – Sri Lanka

- Island wide network of tech transfer centres
- Technology dissemination; self employment creation
- Initiated in 2000; 268 Centres
- S&T Officer, Field coordinator, computer operator and assistant

Functions

- Technology needs assessment
- Appropriate technologies selected
- Equipment purchased by the Centre
- Demonstrations conducted with assistance of umbrella organizations
- Hands on training provided
- Entrepreneurships created



MSME Technology Centres - India



MSME-Technology Centre, Aurangabad, India



MSME-Technology Development Centre, Meerut, India

MSME Technology Centres - India

18 Technology Centres, many of them through bilateral collaboration with Germany, Denmark and the United Nations

10 TCs in tool engineering & manufacturing sector - (1) Design & manufacture of tools, precision components, moulds; (2) Training; IP facilitation; (3) Consultancy

8 TCs (product specific Centres) - (1) Technical services to develop/upgrade technologies, processes, products; (2) Training in the specific product groups such as Forging & Foundry, Electronics, Electrical Measuring Instruments, Fragrance & Flavour, Glass, Footwear & Sport Goods

<https://msme.gov.in/sites/default/files/MSME-AR-2017-18-Eng.pdf>

Technology Support to Rural Industry - India

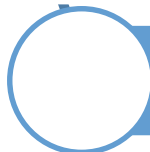
Khadi and Village Industries Commission (KVIC)

Entrepreneurs

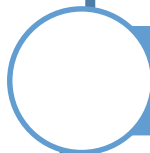


R&D Institutions (Mahatma Gandhi Institute of Rural Industrialization (MGIRI), IIT Delhi, IIT Chennai) – To increase quality & productivity

Entrepreneurs



Production-based Cooperative Societies



Multidisciplinary Training Centres

Entrepreneurs



Specialized Training Centres (Beekeeping, mushroom, Bamboo, Sericulture, etc)

Solar powered technologies for rural industry - India

MGIRI SOLAR CHARKHA



Pioneered by Mahatma Gandhi Institute of Rural Industrialization (MGIRI), Wardha



<https://www.mgiri.org/>

“Shared Service Facilities” for MSMEs - Philippines

- **Increase productivity and competitiveness of MSMEs** providing them with **machinery, equipment, and tools under a shared system**
- **2,231 SSFs** are in the cluster of processed food, coconut/coir, handicrafts, bamboo, ceramics and pottery, etc.
- **12 SSF-Fabrication Laboratories** (FabLabs) - Small-scale workshops help entrepreneurs turn ideas into new products and prototypes
- **Managed by Cooperators** - Cooperatives, industry/trade/business associations, local government units, NGOs, universities/colleges
- **Beneficiaries** are MSME cooperatives/associations, individual MSMEs, entrepreneurs, researchers, trainees, service providers.

<https://asean.org/sharing-access-technology-story-msmes-path-innovation-philippines/>

Brooke's Point Kitchen Incubator - MIMAROPA Region, Philippines

Support start-up entrepreneurs who do not have the capital and technology to put up a processed food business.

Facility



Support institutions

- DTI, DOST Philippines
- Western Philippines University
- Honey Fruit Gourmet Foods
- Municipality of Brooke's Point

- **Production, packaging, storage**
- **Equipment** determined on the basis of client need
- **Training** on new production techniques and products

Clients

- Start-up entrepreneurs
- Positive impacts in terms of technology transfer, packaging and labelling, marketing, and promotion.

http://techmonitor.net/tm/images/8/89/14oct_dec_sf3.pdf

APCTT's Networks and Platforms



Technology4SME

Technology Intelligence
<http://www.techmonitor.net>



Asia-Pacific Online NIS Resource Centre
<http://apctt.org/nis/>



Asia-Pacific Nanotechnology
R&D Management Network
<http://apctt.org/nanotech/>

Asia-Pacific Tech Monitor

<http://www.techmonitor.net>



Concluding Remarks

- Networking and collaboration are **key to access up-to-date information and establish linkages and partnerships** for skill development, technology acquisition and upgradation for CSIs.
- The **challenges of production, quality control, technical manpower, and innovation** can be addressed through wider networking with stakeholders.
- **Web-based platforms and online tools** can be effective and faster means to facilitate technology cooperation with prospective partners.
- **Participation in international networks** can boost the chances of cross-country collaborations.
- **APCTT provides online and offline platforms** to member country stakeholders for establishing linkages and partnerships in the region.

Thank you

For more information, contact

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