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Supporting Mechanisms for SMEs: Strengthening Innovative Capability and Establishing Linkages in Global Value Chains

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Knowledge Sharing Program

4 Factors of supporting mechanism for SME
3 Main Common Issues of Each Factor

1. Four Factors of Supporting mechanism for SMEs

(1) Integrating SMEs into GVC
- Strengthening the linkage of SMEs with MNCs to integrate SMEs into GVC

(2) Technology Innovations of SMEs
- Innovating technology of SMEs to enhance the competitiveness of small businesses

(3) Human Resource Development
- Developing technicians and engineers with **university-industry collaboration**,

(4) Accelerating Startups
- Accelerating startups for economic growth, innovation, job creation, technological advances by changing the governance system to be friendly for startup and developing **entrepreneurship**

2. Three Main Common Issues of Each Factor

(1) Deregulation
(2) Changing the governance system to increase the implementation level
(3) Strengthening the academia-industry collaboration

Contents

1. The structure and operation of supporting mechanism for SME

2. The analysis and key Issues of supporting mechanism for SME in Costa Rica

3. The analysis of Korean Supporting Mechanism for SME

4. Suggestion of Policy and Program

Knowledge Sharing Program

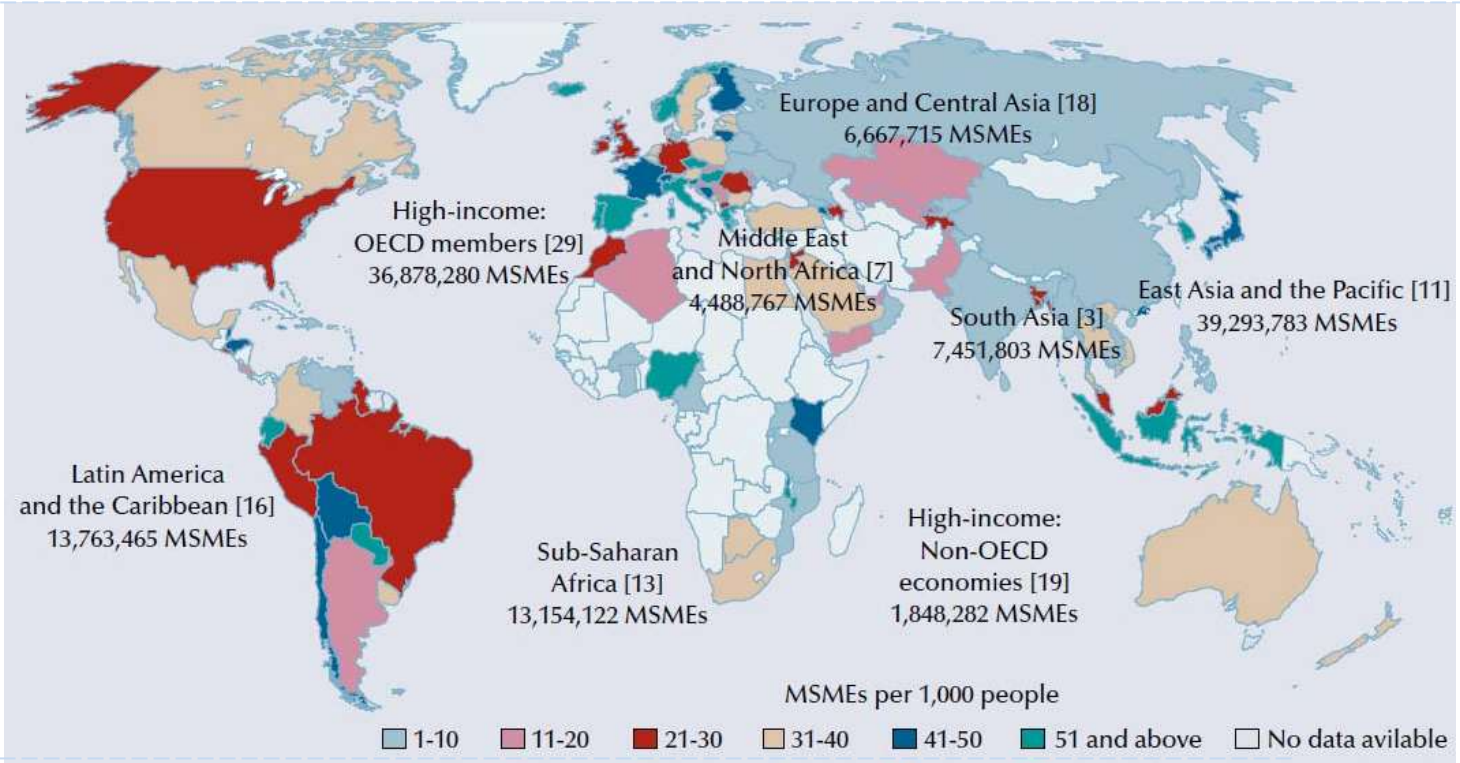
Part I

1. The structure and operation of supporting mechanism for SMEs

1. The structure and operation of supporting mechanism for SME

1.1 Global Trends of SMEs

- SMEs are very important for economic growth in the world economy: in emerging economies, developing countries, and developed countries
- More than 95% of companies, 60% to 70% job occupies are made by SMEs (86% of new jobs)
- The challenges of world economy is to develop competitive SMEs.

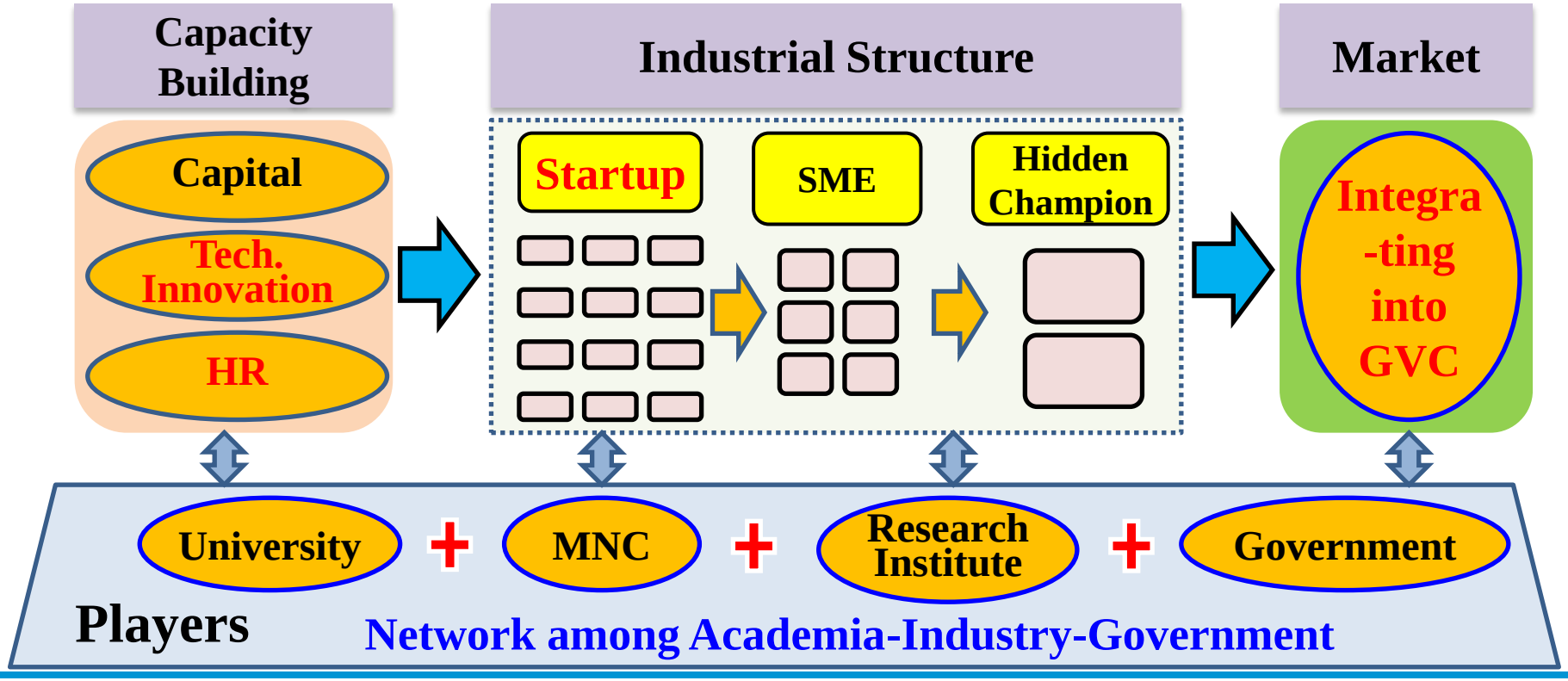


Source: Kushnir, et al. "*Micro, Small, and Medium", 2013*

1. The structure and operation of supporting mechanism for SMs

1.3 Structure of support mechanism for SME

- To integrate SME into GVC, strengthening **innovation capabilities** (**technology innovations**, **HRD**, **Financing capital**) of SMEs is essential.
- In order to improve innovation capabilities of SMEs, **all players need to cooperate**, especially **academia-industry-government collaboration** like the trend of world economy.



1. The structure and operation of supporting mechanism for SME

1.3.1 Internationalization of SMEs

- The relationship in the global market between small businesses and Global enterprises & multinational corporations are not competition but **partnership**.

1.3.2 Technology Innovations

- To enhance the competitiveness of small businesses, **technological innovation is essential**; most of the country is pursuing strongly a variety of policies for R&D.
- In particular, building the technology hub is the top priority through innovation platform which can improve the efficiency of R&D.

1.3.3 Human Resource Development

- Key strategies for cultivating and securing top talent is a **university-industry cooperation**, for which governments that are supported by a range of policies.
- To strengthen vocational education, **companies have involved in vocational training** to improve the skills of the workforce

1.3.4 Startups Acceleration

- Because startups is to act as a driving force for economic growth, innovation, job creation, technological advances, the current worldwide policies promote a strong foundation.
- Especially in developed countries, universities have operated a program for fostering **entrepreneur spirits** by developing **entrepreneurship curriculum** with the firms.

Knowledge Sharing Program

Part II

2. The analysis and key Issues of supporting mechanism for SME in Costa Rica

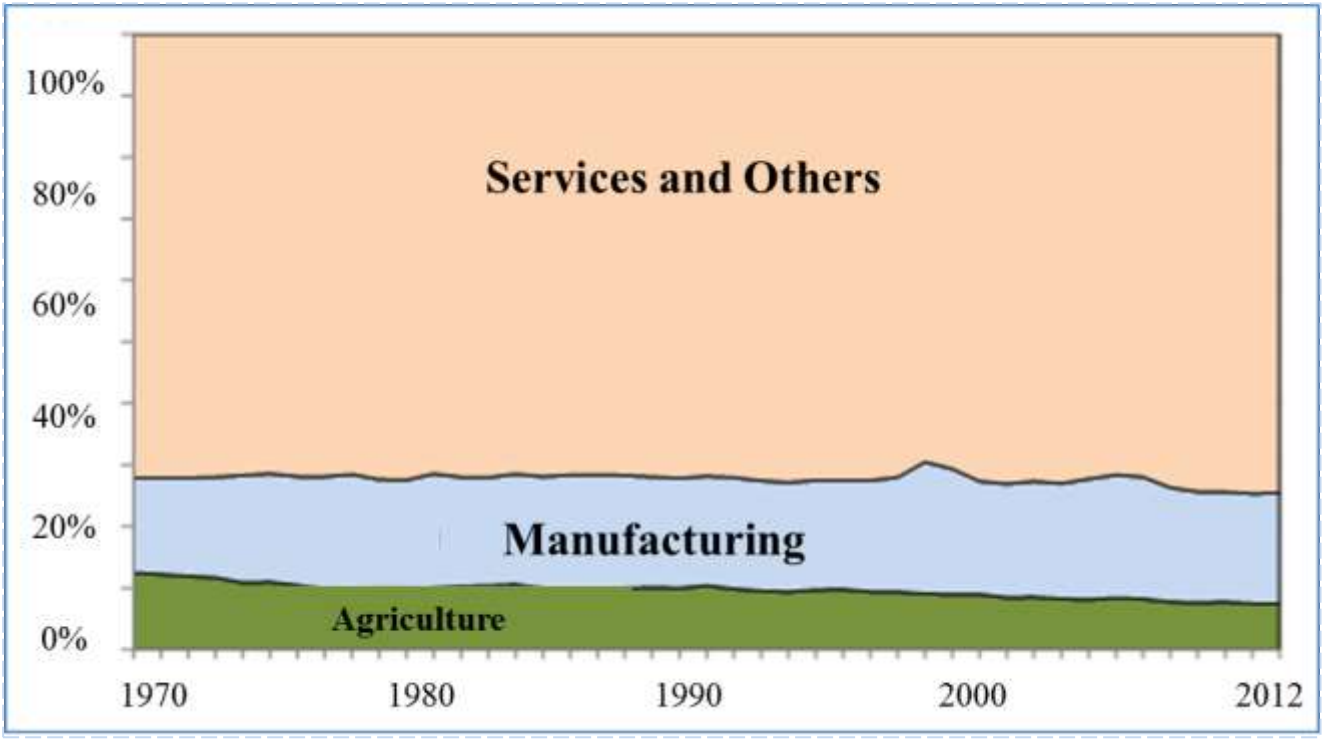
2. The analysis and key Issues of supporting mechanism for SME in Costa Rica

Status of Industry

● The proportion of manufacturing industry was 19.3% in 1970 and decreased by **15.4% in 2012** and the industry does not play a leading role as the economic growth engine.

● Although Costa industry is traditionally specialized in agriculture, share of agriculture is constantly declined so Innovation capacity building like technology innovation is required.

Trend of Industrial Sector

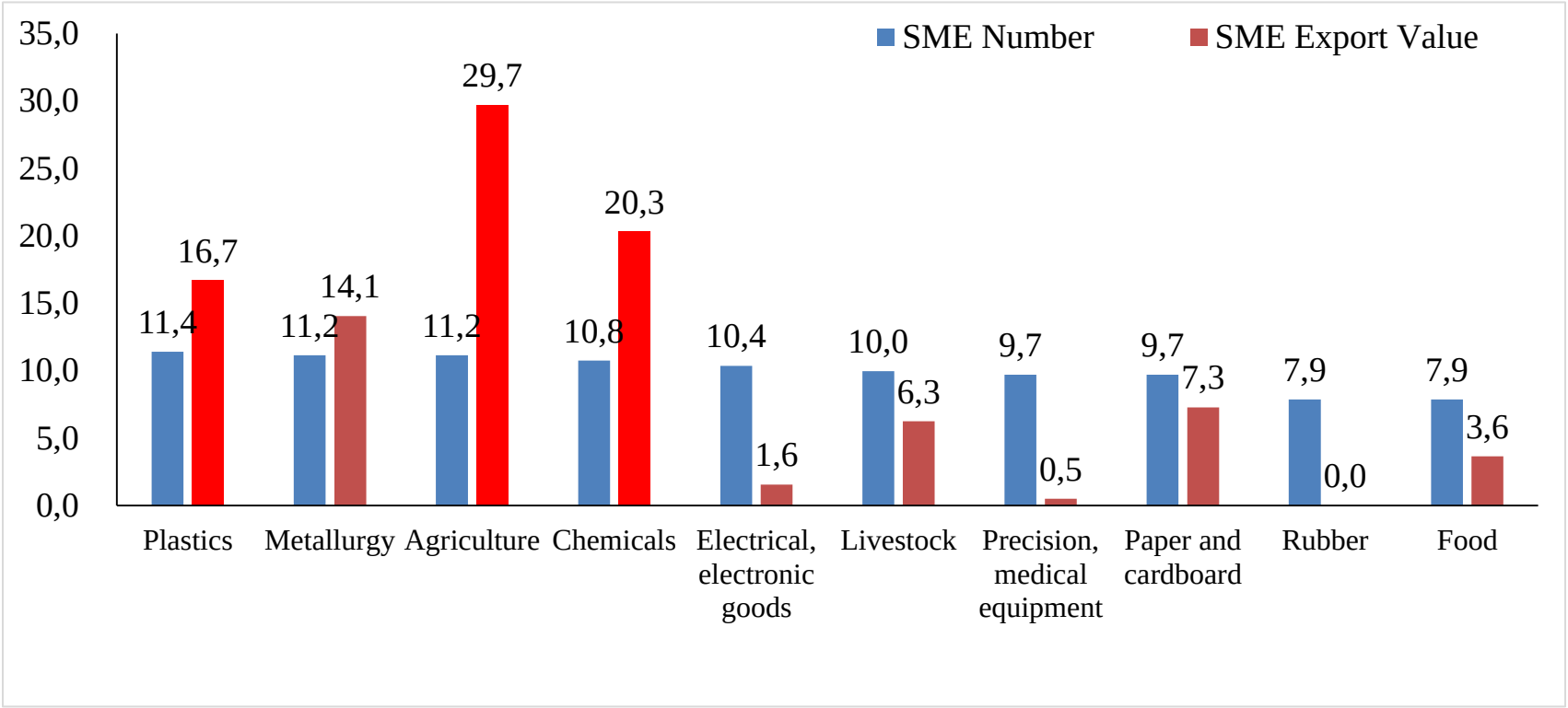


Source: KSP Costa Rica 2013 Report, 2014

2. The analysis and key Issues of supporting mechanism for SME in Costa Rica

Status of SMEs

- SMEs: **95% of all companies, 46% of employment, but 39% of GDP**
- Contribution of export by industrial sector,
  in terms of firm number: plastic(11.4%), metallurgy and agriculture(11.2%), and so on
  in terms of export value: agriculture(29.7%), Chemicals(20.3%), plastic(16.7%), metallurgy(14.1%)

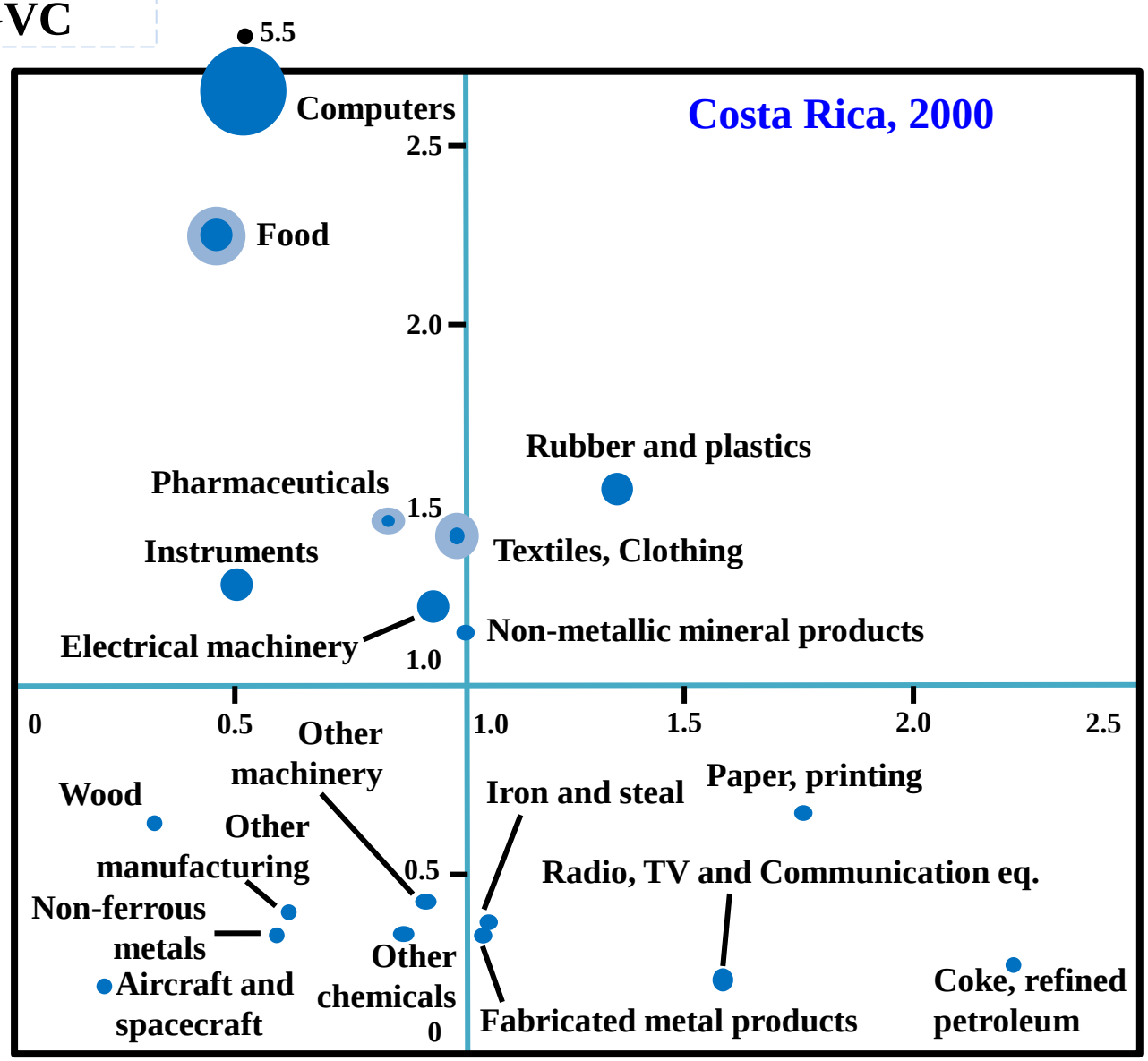


2. The analysis and key Issues of supporting mechanism for SME in Costa Rica

- **Industrial Change in GVC**

RCA Total exports

- OECD(2013) analyzed integration into GVC with imports of intermediate inputs.
- Above-average import share of intermediates indicate revealed comparative advantage (**RCA**) in assembly operations.
- Revealed comparative Advantage(**RCA**) total exports indicate export competitiveness.

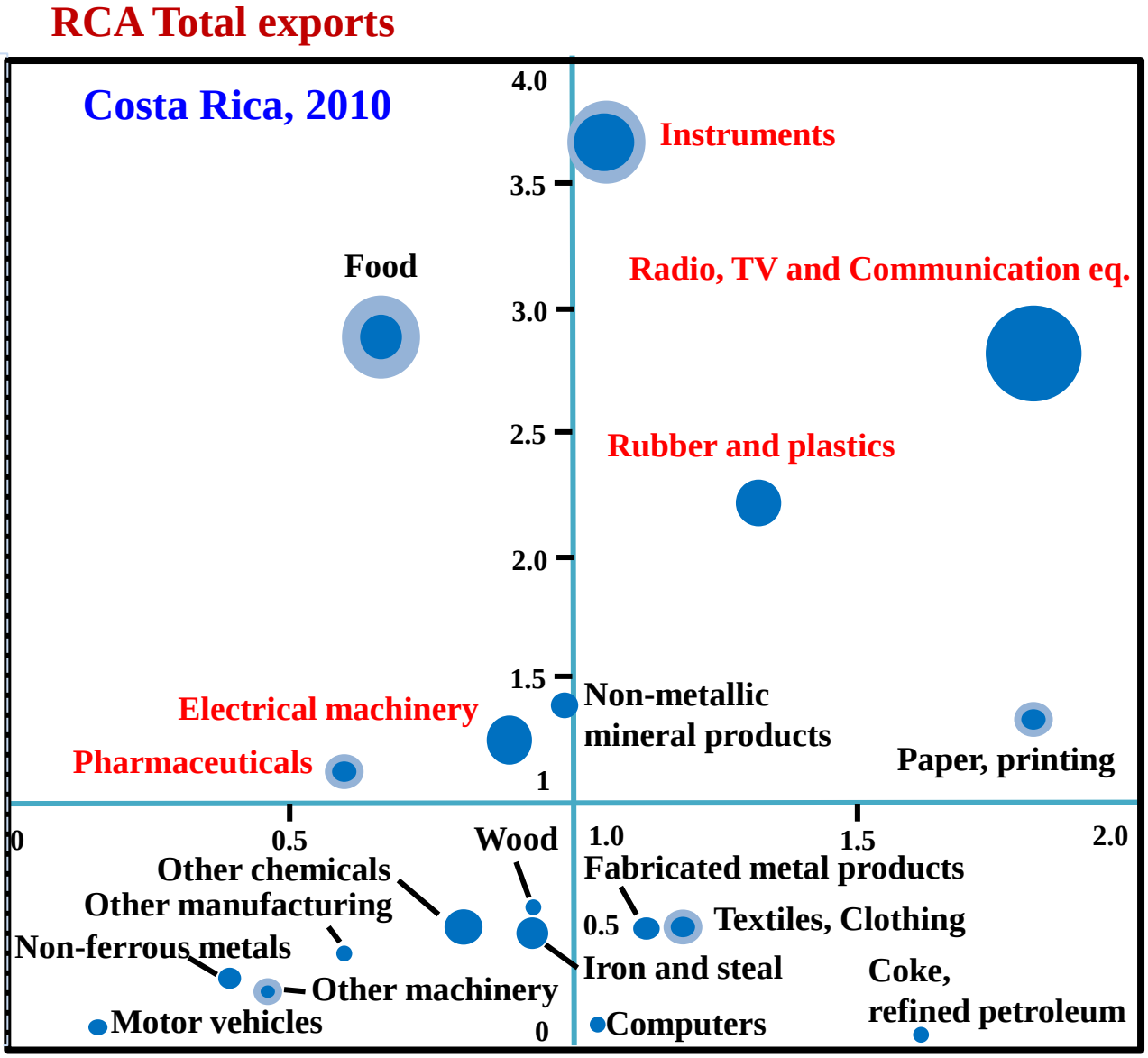


: Total Export Value

: Exports of Intermediates

3. The analysis and key Issues of supporting mechanism for SME in Costa Rica

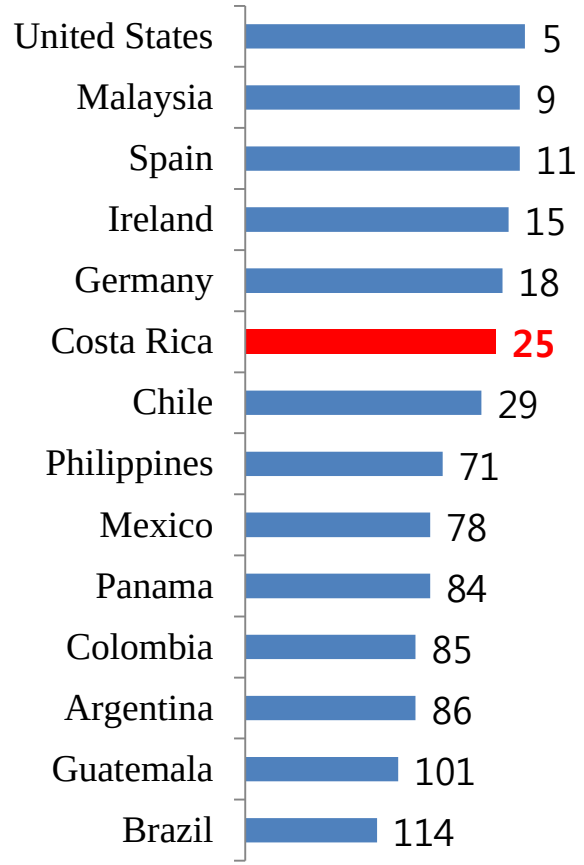
- **Volume of exports increased exponentially in most industrial sectors.**
- The production and assembly of intermediates account for a large share of exports.
- Export competiveness has closely linked to imports of intermediates.
- **Integration into GVC has changed the industrial specialization from the traditional industries to high-tech industries.**



2. The analysis and key Issues of supporting mechanism for SME in Costa Rica

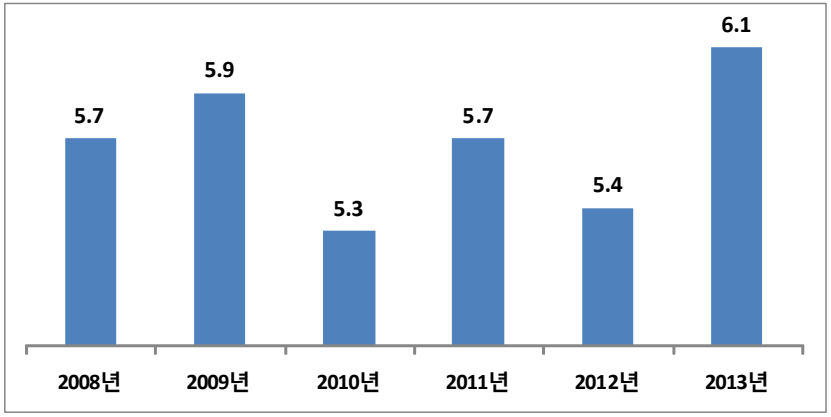
- **Potential of HRD in Costa Rica**

Availability of Scientist and Engineers



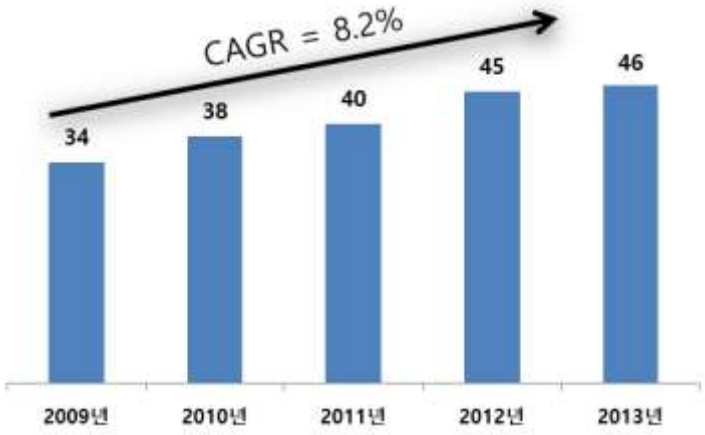
Source : CINDE based on data from PROCOMER. 2014

Graduates of Technical High School



Source : CINDE based on data from PROCOMER. 2014

University Graduates



Source : CINDE based on data from PROCOMER. 2014

2. The analysis and key Issues of supporting mechanism for SME in Costa Rica

2.2 Main Issues of Costa Rican support policies for SMEs

(1) Policy Issues of support mechanism for SMEs

❖ **Deregulation**

▷ Deregulating the variety of obstacles to promote the policies

❖ **Governance system with insufficient implementing level**

❖ **Weak access to financing innovative activities**

▷ Constrained financial markets discourage borrowing for innovation of SMEs

(2) Integration of SMEs into GVC

❖**Strengthening linkage between MNC and SME for integration into GVC**

▶ Weak linkages between MNC & SMEs: **5%**

▶ **Poor marketing skills** of local firms

⇒Policies for integrating SMEs into GVC by strengthening the linkage between MNCs and SMEs

(3) Improving innovation capabilities of SMEs

▶ Improving technology innovation SMEs: Low level of R&DI (0.5 percent of the GDP)

▶ Cultivating technicians, engineers, researchers

▶ Stimulating Entrepreneurship and Innovation culture

▶ Strengthening the academia-industry-government collaboration

Knowledge Sharing Program

Part III

3. The analysis of Korean Supporting Mechanism for SME

3. The analysis of Korean Supporting Mechanism for SME

3.1. Basic Structure of Korean support mechanisms SME

3.1.1. Status of SME

- **Korean Policy Development for SME**

Inception(1960~1979)	Protection / Training(1980~1999)	Conversion / Innovation(2000~)
To establish the comprehensive plan for small businesses and their structural improvements that depend on large	**SME support / protection through the regulation**	**Innovation and Shared Growth**
- 1961:Small Business Cooperative Act, SME Banking Act enacted - 1966: Small legislation - Definition of SMEs, Business / Technology Maps/Training Promote technology development / standardization, etc - 1974: Centralized financing system, Credit Guarantee Fund established for SME credit enhancement - 1975: SME integration Promotion Law enacted , SME sector-specific schemes, SME products procurement system introduction/enforcement - 1979:Small Business Corporation established	- 1980:Specify integration introduction, Established Small Business Long Term Planning(82-92) - 1982:Small Business Product Purchase promotion law enacted, Promising SME operating system(83) - 1984:Legislation on subcontracting trade process, practice SME sectors for fostering SME institutions first(85) - 1986: Simplify small business start-up procedures through Act enacted, promoting professional workforce - 1992: Extended Military service system to SMEs - 1996:Install Small Business Promotion - 1997: Special law enacted on Venture Businesses - 1998: Established SMEs committee directly from Presidential Ad Hoc	- 2000: SME development vision 2010 Established - 2001:Special law enacted for small businesses and small business support - 2002: Venture enterprise evaluation system, introduced Innobiz certification - 2004: Establishing SME Competitiveness Comprehensive Plan & Youth recruitment package projects - 2005: Union funds Configuration, Business owners Agency / Market Management Agency established - 2009: Regulatory Impact Assessment, Small Business Ombudsman operation - 2010: Shared Growth for SMEs - 2013:Promote a virtuous cycle approach for entrepreneurship, venture capital ecosystem

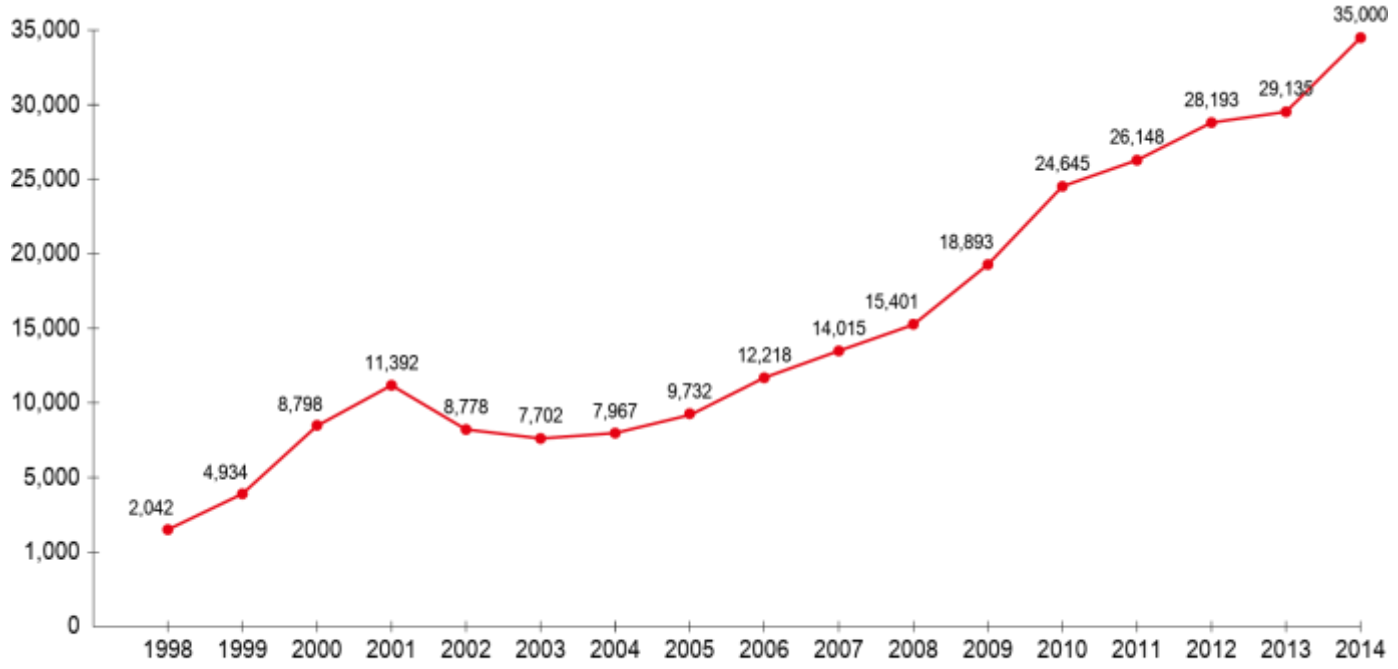
3. The analysis of Korean Supporting Mechanism for SME

- **Status of Korea's ventures**

 - Currently in 2014, Korea's venture businesses recorded 35,000; after first venture boom that was achieved in 1997, it is now accomplishing second venture boom.

 - A key factor of its second venture boom is creating startups supporting policy by Industry-academic cooperation

Growth of Ventures

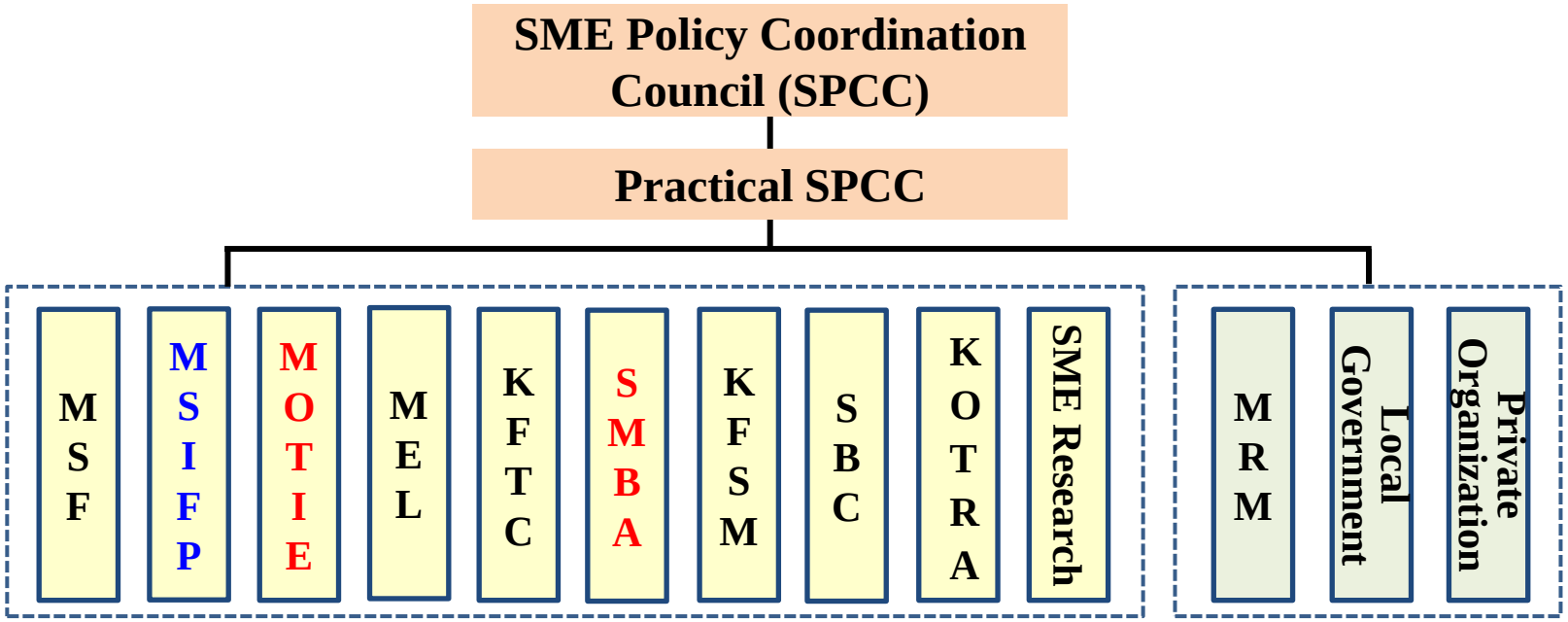


3. The analysis of Korean Supporting Mechanism for SME

3.1.2. Status of Korean support mechanisms for SME

▶Supporting SMEs is promoted by a total of **10 central ministries, agencies, local governments, private institutions** controlled by the **SME Policy Coordination Council**.

▶ However, that supporting policies for SMEs is usually made of **Small and Medium Business Administration(SMBA)** & **Ministry of Trade, Industry, and energy(MOTIE)**.



Source : Office for Government Policy Coordination

3. The analysis of Korean Supporting Mechanism for SME

3.1.2. Status of Korean support mechanisms for SME

(1) Internationalization of SME for integration into GVC

- GVC policies for SME in Korea were mainly dependent on **export support policy**
- **Moving to** operating a number of **step-by-step program of GVC**

(2) Technological Innovation

- **Total R&D expenses** in 2013 was $ **59 billion, 6th** in the world(6.9% increase from 2012),
- Ratio of **R&D to GDP** was **4.15%, No. 1** in the world

(3) HRD

- Korean policies to develop human resources have been taken based on industry development with **various re**gular and **special programs**
- Technician high schools & colleges, Korea Polytechnic for HRD
- Expanding dramatically the engineering majors by increasing students, professors
- **Special programs**: BK21(Brain Korea 21th) for developing researchers, **LINC** (**L**eaders for **I**ndustry U**N**iversity **C**ooperation) project to support the regional industry by establishing **industry-university collaboration**

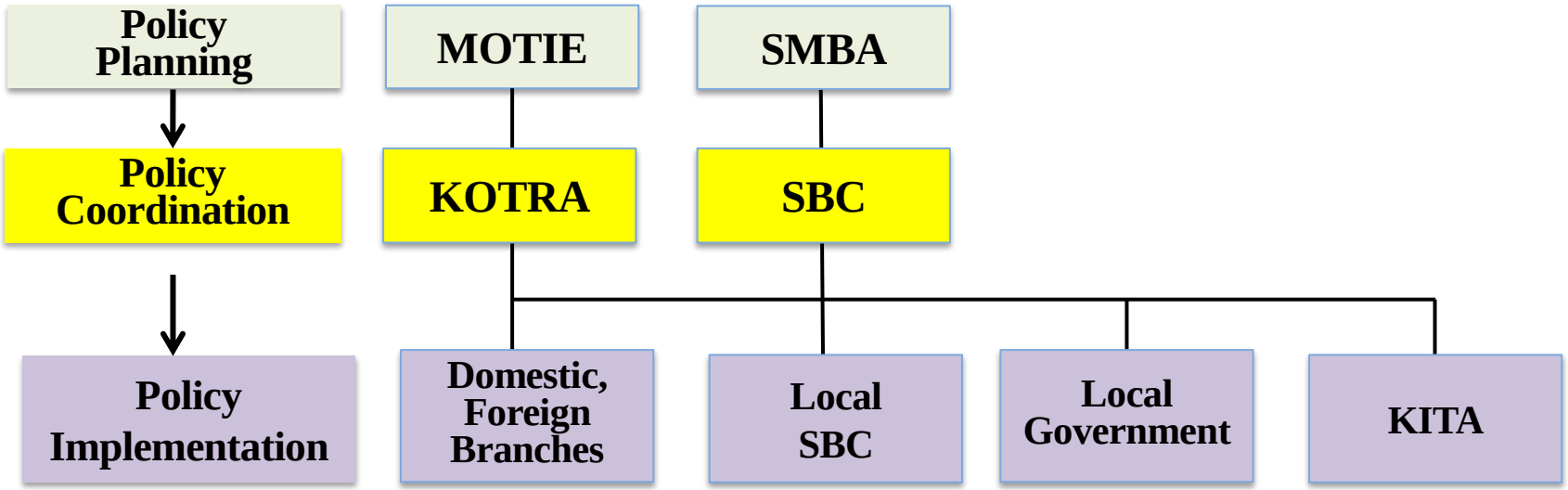
(4) Startup Acceleration

- According to venture & startup acceleration policies, the resources: about **$ 10 billion**

3.2. Strategies of Korea's SME support mechanisms by Factors

3.2.1. Strengthening Linkage to GVC: Internationalization

(1) Governance system of Internationalizing SME



- **KOTRA**: Korea Trade-Investment Promotion Agency
- **SBC** : Small and Medium Business Corporation
- **KITA**: Korea International Trade Association

3. The analysis of Korean Supporting Mechanism for SME

(2) Programs of Integrating SME into GVC: Internationalization of SME

Export Supporting Programs of Internalizing SME			
Programs	**SBC**	**KOTRA**	**KITA**
1. Trade education & Consulting	Strengthening Export capability		· Trade education · Trade Consulting
2. Providing Information, Construction of Sales Infrastructure	- Strengthening Export capability - Domestic sourcing of Global Buyer	- Analyzing Foreign Market - Information of Global Market Expansion	· Foreign Buyer information · Information of Trade Trend · Finding appropriate buyers (OKTA)
3. Export Design	· Strengthening FTA utilization capacity	- Developing Product Design	
4. Global Marketing	- Sending out a trade mission - Overseas Exhibition - Sending a delegation of - Technology cooperation - Supporting On-line export - Developing the Global Brand	·Sending out a trade mission ·Participation in Overseas exhibition ·On-line Marketing	· Participation in Overseas Exhibition · Sending a delegation of trade investment
5. Financing Export and Insurance	· Financing Export		· Export Financing
6. Establishing a Foreign branch	· Export Incubator · Overseas Private Network	· Consulting of Overseas Expansion	

3. The analysis of Korean Supporting Mechanism for SME

(3) Outcome of Internationalization of SME

Contribution of SMEs to Exports

(Unit: $ billion)

	2007	2009	2011	2012	CAGR
Total	371.1	363.1	554.8	547.5	8.1%
Large Firms	228.6	228.3	350.1	329.3	7.6%
SMEs Share	1425 (38.4%)	134.8 (37.1%)	204.7 (36.9%)	218.2 (39.8%)	**8.9%**

Source: Korea Customs Service, Trends of contribution of SMEs to exports, 2013

Accomplishments of Promoting Export Capability

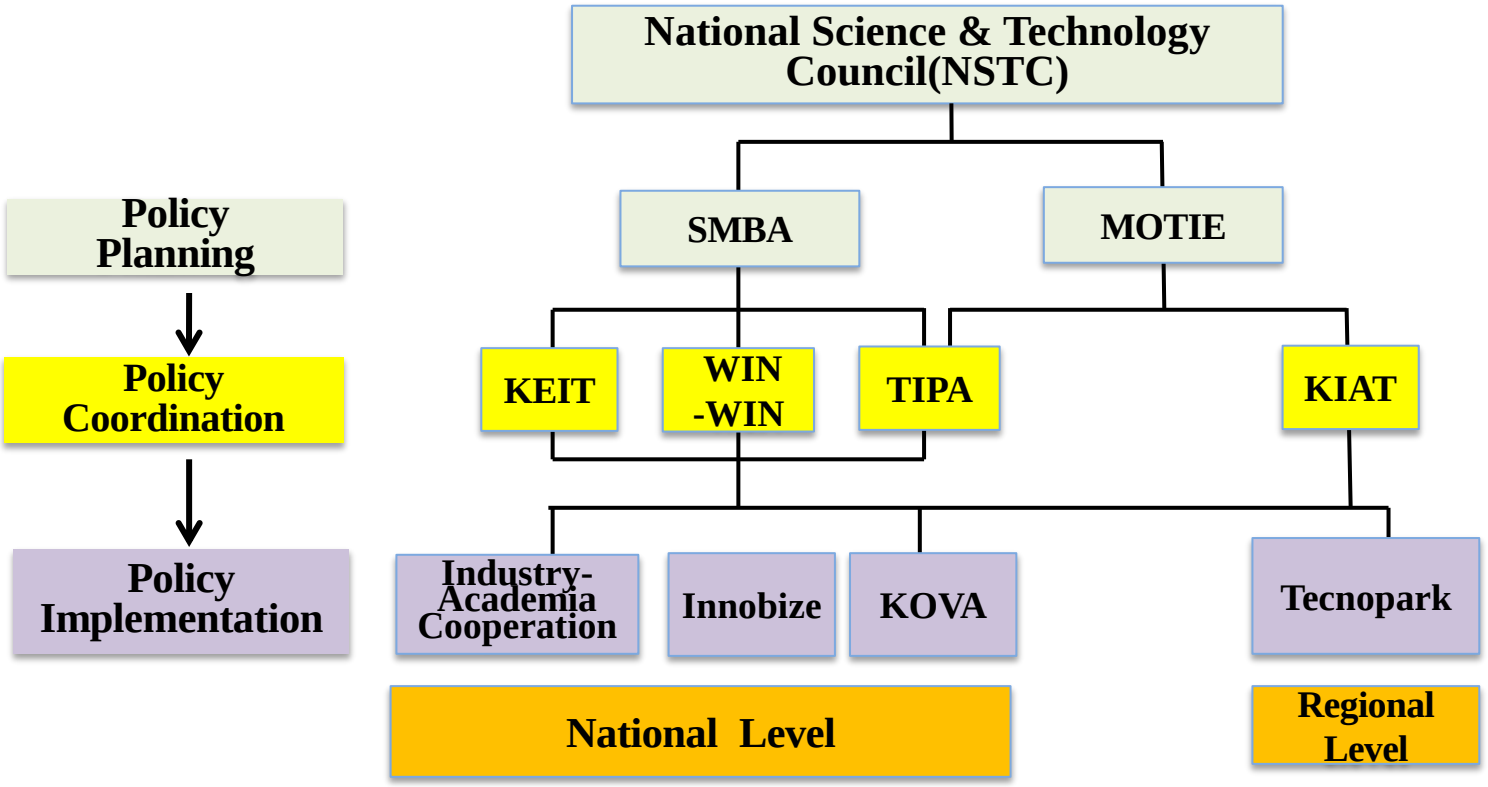
Classification	2007	2008	2009	2010	2011	2012	2013
Support Enterprise(#)	**927**	**900**	**1,447**	**1,584**	**1,484**	**1,589**	**1,777**
Domestic Enterprises of Support Enterprises(#)	388	331	549	508	356	343	342
Export success of Enterprise depending domestic market(%)	29.6	35	35	34.6	35.4	31.4	33.9

Choi, A Study on the SME Export Competencies and Policy Support Tasks,2015

3. The analysis of Korean Supporting Mechanism for SME

3.2.2. Technology Innovation

(1) Governance system of supporting technology innovation for SME



3. The analysis of Korean Supporting Mechanism for SME

(2) Programs of supporting technology for SME

- To improve technology innovation o SMEs, Korean government operates a variety of programs based on R&D state in four ministries.

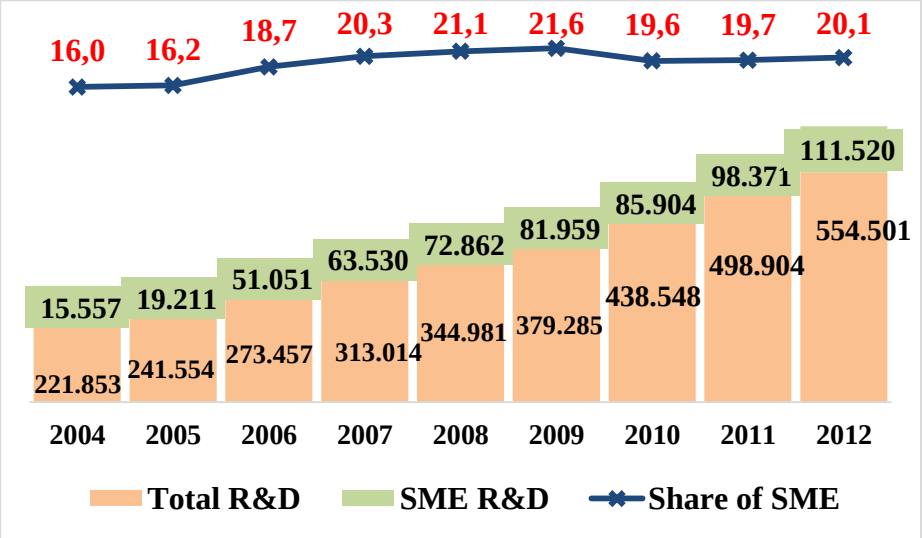
Stage	Type	Main Programs	Ministry
R&D	R&D	1. 1-2 years short-term technology development	SMBA
		2. 3-4 years Mid-term Development 3. 5-10 years long-term technology development	MOTIE
	Loan	1. Applied Technology Development	MSIFP
		2. Industrial Technology Development Loan	MOTIE
	Process & Production Technology	1. Comprehensive technical support in material parts	SMBA, Local Government
Technology Transfer & Commerciali-zation	Technology Transfer	1. Promoting Technology Transfer Commercialization 2. Diffusion research projects	MSIFP
		3. Technology Transfer Center	SMBA
	Commercialization	1. Patent valuation 2. Facilitating international patent	KIPO
	Testing and Inspection	3. Test and evaluation capabilities and assimilation projects	SMBA
	Prototyping	4. Prototyping	SMBA

3. The analysis of Korean Supporting Mechanism for SME

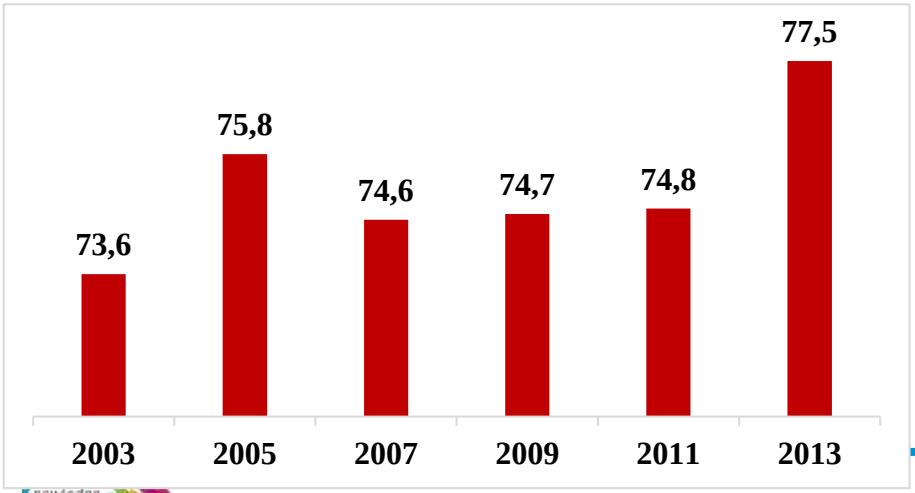
(3) Outcome of supporting technology innovation for SME

- Korean **R&D investment for SMEs** is high.
- **R&D of SME**: 25%, very high compared to ratio of developed countries
- Technological innovation capability and technological level has steadily increased; the technology level was 77.5% compared to the best in the world technology

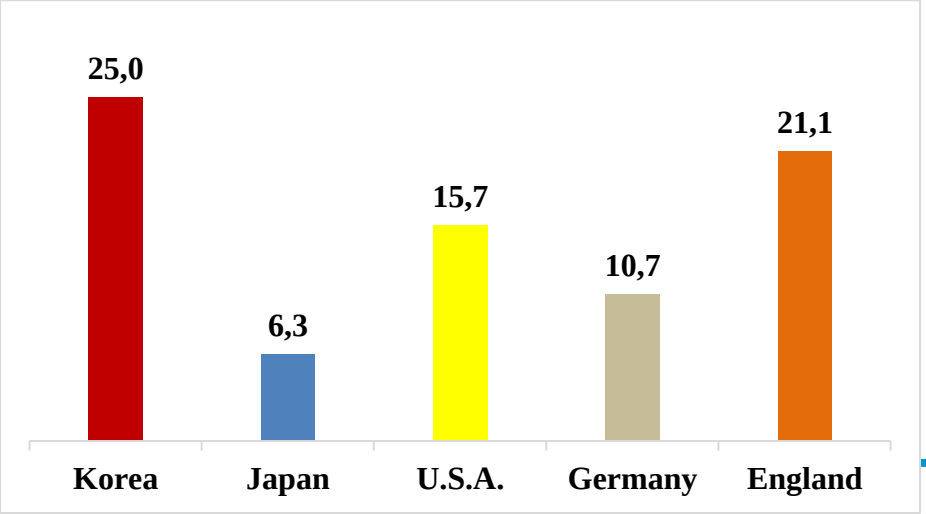
R&D Investment of SME



Technology Level of Korean SMEs comparted to the world highest Technology



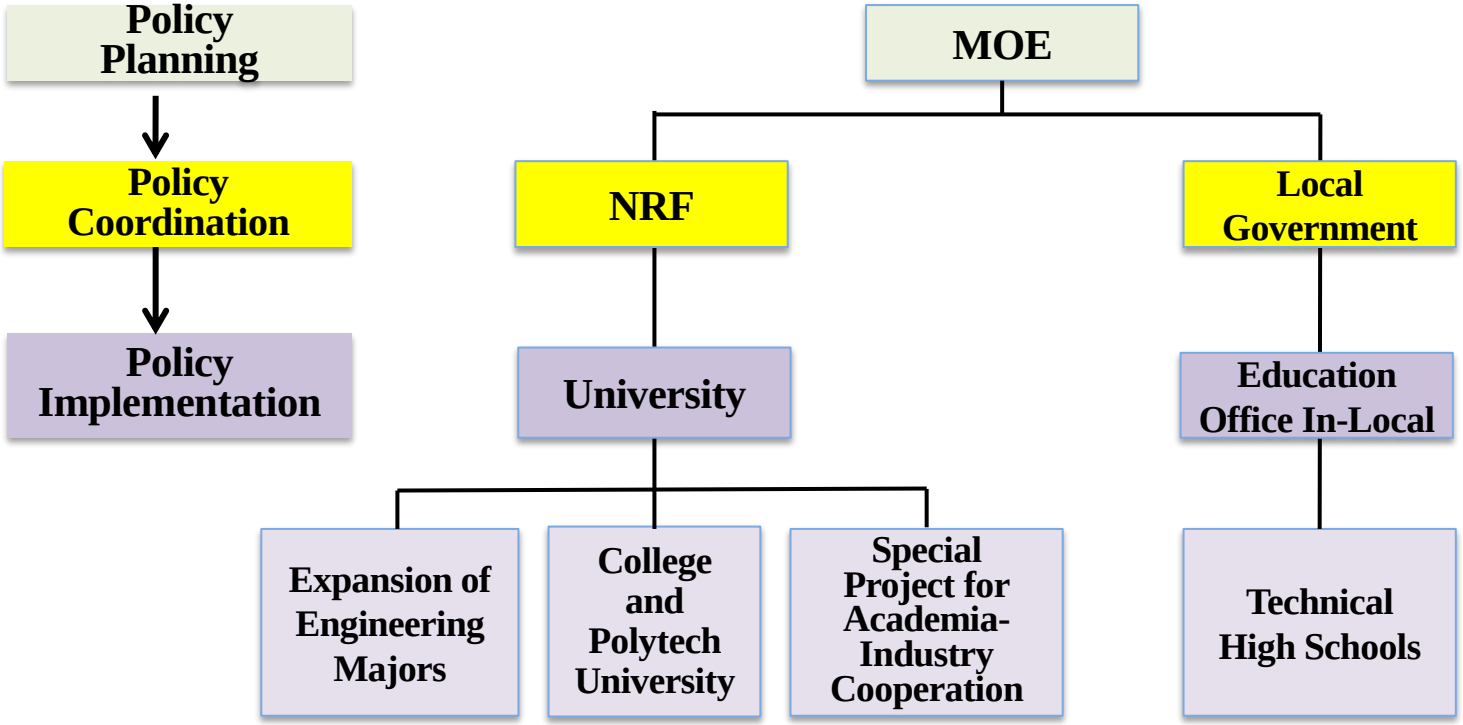
SME R&D of Countries



3. The analysis of Korean Supporting Mechanism for SME

3.2.3. Human Resource Development(HRD)

(1) Governance system of developing human resources for SME



3. The analysis of Korean Supporting Mechanism for SME

(2) Programs of HRD for SME

- Human Resource Policy in Korea has been the driving force of economic development, especially contributes concurrently in public sector-led as providing regular courses and special programs for cooperation that are led by the government.

① Developing Technician

- **Technical high schools**
- **Colleges & Polytechnics: 2-year program**

② Developing Engineer

- **Significantly expanding engineering majors to train the engineers**

③ Special programs of University-Industry Cooperation

- **University-Industry cooperation programs for undergraduate:**

  Nuri Project and LINC

- **Researchers development program for graduate: BK21**

3. The analysis of Korean Supporting Mechanism for SME

(3) Outcome of HRD

Effects of developing technicians

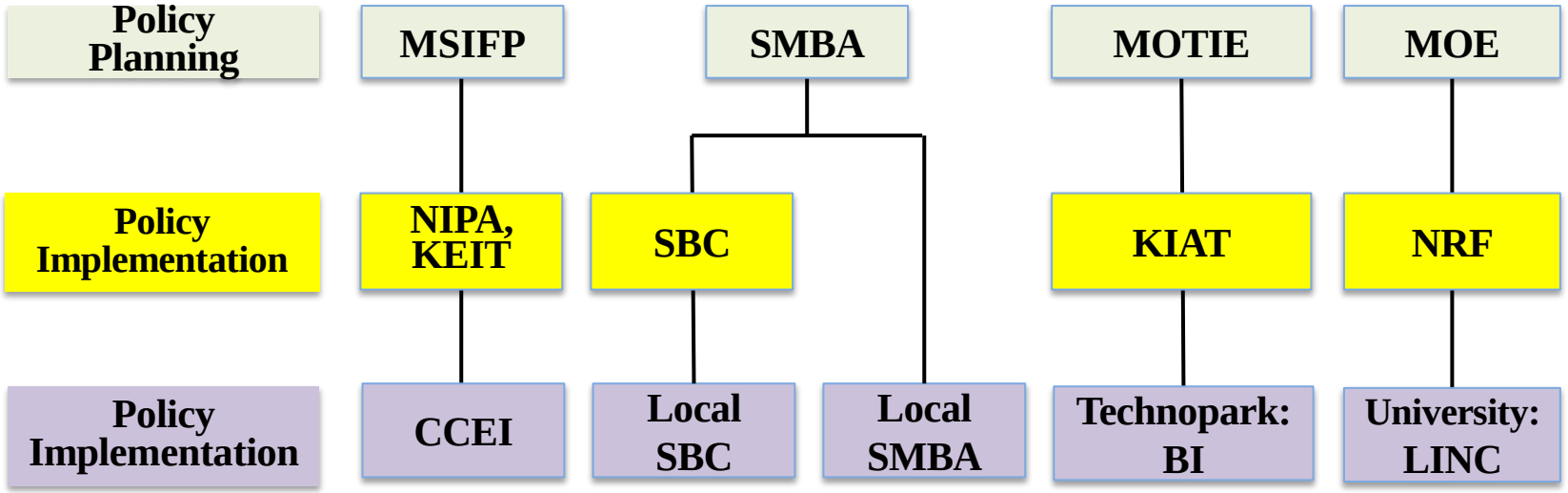
Classification	Policies	Accomplishments
Initial period of economic development: Demand for technicians	· Nurture new technicians driven by the country · Adopt policies that obligate vocational training	· Nurture and timely provide technicians · Promote companies to take part in nurturing manpower
Spring period: Demand for high-skilled technicians	· Nurture talents with various functions and techniques · Enhance the role of public training centers	· Nurture and timely provide technicians skilled and highly skilled workers · Complement the limitations of private organizations to nurture manpower through public training
Mature period: Demand for High-skilled Engineers	· Improvement training for employed workers · Secure social safety net through employment insurance	· Expand skilled technicians · Overcome forex crisis through a re-employment of unemployed
Innovative period: nurture talents customized to the industries	· Secure systems to develop life-long vocational skills · Nurture customized workforce for those in a vulnerable class	· Expand the subjects and ranges subject to vocational training · Policies for customer-oriented vocational training

Source: Kim Cheol-hee et al., The impact of Korea Polytechnics on the national economy, 2013

3. The analysis of Korean Supporting Mechanism for SME

3.2.4. Start-up Acceleration

(1) Governance system of Accelerating Startup



- **NIPA**: National IT Industry Promotion Agency
- **KEIT**: Korea Evaluation Institute of Industrial Technology
- **SBC** : Small and Medium Business Corporation
- **KIAT**: The Korea Institute for the Advancement of Technology
- **NRF** : National Research Foundation
- **CCEI**: Center for Creative Economy and Innovation

3. The analysis of Korean Supporting Mechanism for SME

(2) Programs of Accelerating Startup

- Many Korean ministries have conducted a variety of programs to accelerate startup through industry-academia cooperation by setting the policy direction associated with start-up stage
- In 2014, Korea government budget for startup acceleration: 2.1 billion dollars.

Stages	Policy Contents	Main Program	Ministry
Pre-BI	Entrepreneurship Education and expanding	1. Entrepreneurship education	**SMBA, MOE**
		2. Developing entrepreneurship & atmosphere, culture	**SMBA, MOTIE, MOE**
BI	Start-up Establishment & Commercialization	1. Business Incubator(BI)	**SMBA, MOTIE**
		2. Development Project for startup leading University	**SMBA**
		3. Youth entrepreneurship academy	**SMBA, MOTIE, Local Government**
		4. Development Project for Preliminary Technical founder	**SMBA, MOTIE**
		5. Development Project for preliminary founders in specialized type of researchers	**MSIFP**
Post-BI	Promotion for Start-up	1. Loan and guarantee	**SMBA**
		2. Investment (investment promotion such as angel funds, venture funds)	**SMBA**
		3. R&D projects Start-up dedicated Start-up companies	**SMBA**

3. The analysis of Korean Supporting Mechanism for SME

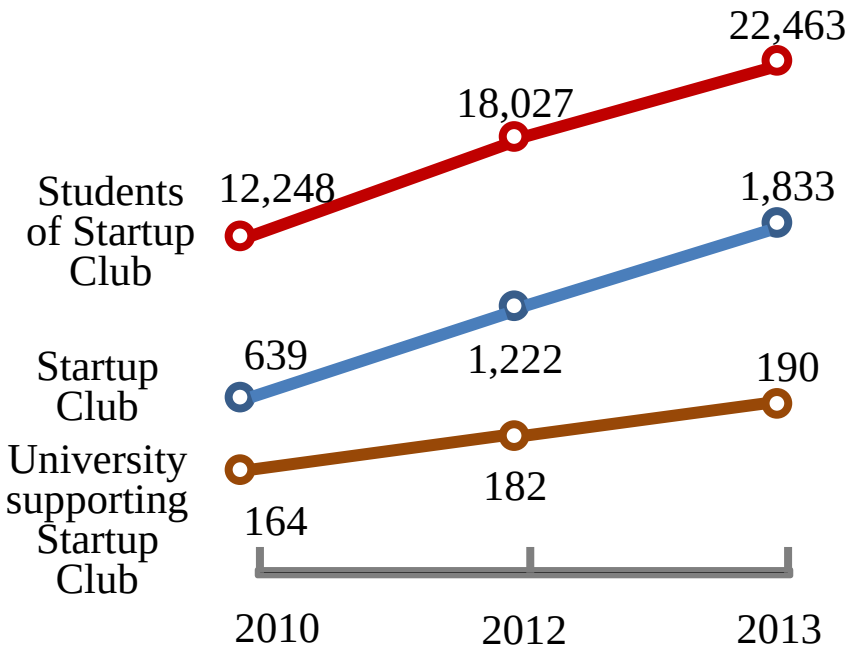
(3) Outcome of Accelerating Startup

Trends of start-ups

	2005	2008	2011
Number of Startups	134,980	195,687	422,844

Source: SMBA, 「A study on the status of start-ups in 2013」, 2014

	2012	2013
Department	11 Universities 772 students	12 Universities 871 students
Special Admission	6 Universities (100 students)	7 Universities (120 students)



Acceleration of Young Startup

- LINC has activated youth entrepreneurship.
- 12 universities operating entrepreneurship majors
- 7 universities operating special admission for entrepreneurship
- Start-up clubs:
  22,463 students and 1,833 clubs in 2013
- Startup Establishment:
  407 university students, 377 startups

3. The analysis of Korean Supporting Mechanism for SME

3.3. Summary and Policy Implications

3.3.1. Strategy of Korean Support Policy for SME

- Each ministry has the **governance system** to **implement its policy with fast process.**
  policy planning(each ministry) ⇒ implementing policy(agency) ⇒ operating programs
- All players are induced to take the strategy of **academia-industry-government cooperation**
- Korea is also promoting a strategy to support the industries and businesses throughout the country **in national and regional level.**
- The Korean government strongly promote the program by **investing a lot of budget**:
  9 billion dollars in 2014, cf. less than 2 billion dollars in Germany

3.3.2. Implications of each factor policy

(1) Integrating SME into GVC

- **SME internationalization** in Korea is to **overcome the limitations of a small domestic market** to explore overseas markets. Several ministries operates **a number of step-by-step program of GVC**

(2) Technology Innovation

- Ratio of **R&D to GDP** was **4.15%(No. 1** in the world) for Technological innovations of SMEs

(3) HRD

- HRD has pursued **regular courses(regular curriculum) policy** to train the **technician and engineer** and promoted **special programs for industrial HRD**.

(4) Accelerating Startups

- Spending about **$ 10 billion** to accelerate startups by operating startup graduate schools, startup-leading universities, LINC in order to promote entrepreneurship

Knowledge Sharing Program

Part IV

4. Suggestions of Policy and Program

4. Program Suggestion of supporting mechanism for SME in Costa Rica

4.1. Implementation Strategy

(1) General Strategy to implement the support mechanism for SMEs

Classification	Main Issues	Strategy
Institutional Agenda	Regulation	**Deregulation**
	Lack access to financing innovative activities	**Improve the Finance System**
	Governance system with insufficient implementation level	**Change the governance system to increase the implementation level**
	Poor Academia-Industry Cooperation	**Change the academic system to be cooperative for Industry**
GVC	Weak Linkage bt. MNC and SMEs	**Enhance the innovation capabilities of SMEs to strengthen the linkage between MNCs and SMEs**
	Poor marketing skills of SMEs	
Innovation Capabilities of SMEs	Low level of technology Capabilities	**RIS to improve the innovation capabilities of SMEs**
	Weak structure of Education system for HRD	**Innovate the Education system by creating the Academia-Industry Cooperation**
	Low Entrepreneurship and lack of culture innovation	**Increase the entrepreneurship programs**

4. Program Suggestion of supporting mechanism for SME in Costa Rica

4.1. Implementation Strategy

(2) Developing the Regional Innovation System(RIS) in Costa Rica

- **Creating knowledge-based regional high-tech clusters**
  - Three main regions where academic institutions, local governments, and the private sector (both local and multinationals) are currently working together to promote competitiveness.
    - **Cartago and San Carlos**: Special Economic Zones (SEZ) led by the Technological Institute of Costa Rica
    - **Alajuela**: Special Economic Zones (SEZ) led by The National Technical University
  - **Costa Rica has several strengths to develop RISs**
    - Hghly-qualified human resources, Leading universities in Science and Technology
    - Green resources, available industrial parks, good access to international markets

- **Requirements to develop RIS platform**
  - First, **how to change the regional current efforts** in Costa Rica as an instrument of regional innovation policy for stimulating technology-led economic development.
  - Second, **how to stimulate government-academic-industry cooperation** for regional innovation

4.2. Action Programs

4.2.1. Internalization of SMEs for integration into GVC

Cost Rican Main Issues	Korean Experiences		Costa Rica Programs
Strengthening the Linkage between SMEs and MNCs	Strengthening the Linkage bt. Korean MNCs and SMEs	⇒	- Selection and Concentration on pote ntially capable SMEs - Developing Special Programs to create linkage bt. SMEs and MNCs
Expanding the Export Programs	Various Export Programs based on GVC steps	⇒	- Expanding the export programs of PROCOMER - Developing PROCOMER as an Internalization Platform
Encouraging SMEs to join GVC by improving marketing skills of SMEs	Public and Private Cooperation: SBC, KOTRA, KITA	⇒	- Developing Special Programs to improve marketing skills of SMEs

4. Program Suggestion of supporting mechanism for SME in Costa Rica

4.2.2. Technology Innovations

Cost Rican Main Issues	Korean Experiences		Costa Rica Programs
Low level of R&D Investment	R&D budget: 11% since 1999 R&D of total budget: 6%(2015)	⇒	- Increasing R&D budget (2.5% of R&D to GDP) - Improving financing system
Changing the university system to stimulate R&D	Increasing the number of engineering majors	⇒	Increasing the engineering majors for encouraging R&D from a majority of science majors
Improving university-industry cooperation	R&D Consortium, LINC	⇒	- Developing the incentive system for cooperating with the industry - Deregulation the laws - Changing the evaluation system - Changing protecting system for intellectual property
Establishing Innovation Platform	DIF, Technopark	⇒	- Establishing **IADB-Funded Innovation Platform** as short-run - Establishing a Pilot Technopark as long-run

4.2.2. Technology Innovations

Cost Rican Main Issues	Korean Experiences		Costa Rica Programs
Technology development	R&D	⇒	- Increasing R&D Programs
Technology transfer	Technology Transfer	⇒	- Increasing the Programs for Technology Transfer
Technological services development	- Process & Production Technology - Commercialization - Testing and Inspection - Prototyping	⇒	- Developing the variety of commercialization programs like Korean programs
Innovation and patent creation	Supporting Patents	⇒	- Developing the programs to support patents

4. Program Suggestion of supporting mechanism for SME in Costa Rica

4.2.3. Human Resources Development

Cost Rican Main Issues of HRD	Korean Experiences		Costa Rica Programs
Increasing Technicians	MEISTER School	⇒	Establishing ICT, Medical Devices Technical High School
Increasing high-skilled Technicians	Korea Polytechnics	⇒	Increasing the number of majors and students at Technical Colleges
Developing Engineers	Expanding engineering Majors	⇒	Increasing the number of engineering majors, students, professors
Developing Researchers	BK21	⇒	Increasing the number of graduate students
Short Special Programs	LINC, CK	⇒	Developing the programs of National Learning Institute

4.2.4. Acceleration of Startups

Cost Rican Main Issues	Korean Experiences		Costa Rica Programs
Lack of Entrepreneurship and Innovation Culture	- Entrepreneurship Education: Startup Graduate Schools, Startup Leading University - Special Programs for Entrepreneurship(LINC)	⇒	- Establishing Entrepreneurship Classes at University - Operating Special Programs to develop entrepreneurship: Startup Clubs at college
Expanding the programs of Accelerating Programs	Programs of 4 Ministries & 5 Window Agencies: Pre-BI ⇒ BI ⇒ Post-BI	⇒	- Expanding the programs of CONICIT based on Startup stages
Expanding the business incubators or accelerators	Establishing BI at Universities, Public Research Institutes, Technoparks	⇒	- Expanding CONICIT BI as a short-run project - Establishing BI at Universities by cooperating with the firms as a long-run project

Conclusion and Main Policy Suggestions

Main Policy Suggestions to support SME in Costa Rica

1. Deregulating a variety of obstacles for business

- Deregulating the variety of obstacles to make the support mechanism friendly for business
- It is desirable to increase the enforcement power of the PCCI to deregulate in order to innovate support mechanism for SMEs by fostering policy co-ordination among different sectorial ministries
- PCCI needs to identify a proper mechanism to channel the voices of the private sector and endow it with an agenda for priority setting and action definition.

2. Establishing the Platform to support SMEs

- Developing PROCOMER as an Internalization Platform

- Expanding the export programs of PROCOMER based on GVC steps

- Establishing government procurement service in order to expand the domestic market for innovative SMEs

- Establishing the Foundation of Industry-University Cooperation(FIUC) at University

- Establishing FIUC in order to create and manage the cooperation of university with industry(Every Korean university has its own FIUC)

Conclusion and Main Policy Suggestions

Main Policy Suggestions to support SME in Costa Rica

3. Creating knowledge-based Regional High-tech Clusters: (IADB-Funded Innovation Platform)

- The initiative creates an innovation ecosystem by developing three RIS in Costa Rica.
- This innovation ecosystem works through interaction and close linkages among government, research institutes, universities, SMEs and MNCs.
- Three main **Cartago and San Carlos, Alajuela**: Special Economic Zones (SEZ) led by the Technological Institute of Costa Rica and The National Technical University
- Resources from the Korean Fund at the Inter-American Development Bank (IADB) could be used to finance this initiative.

4. Change the academic system to Develop Human Resources

- **Establishing ICT, Medical Devices Technical High School and 2-year technical colleges**

- Establish the technical high schools and 2-year technical colleges which develop the skills required for the strategic industry(ratio of vocational education is more than 50% in Korea)

- **Increasing the number of engineering majors**

- Developing a large number of engineers by increasing the number of engineering majors, students(graduate students), professors.
- Changing the university system to stimulate R&D by increasing R&D proportion

Thank you

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