


**APEC Workshop on  
SMEs' Access to Technology  
Jakarta, Indonesia, 7-9 February 2012**

Annex C


Annex C. Presentations from Workshop Participants


**APEC WORKSHOP ON SME'S ACCESS TO TECHNOLOGY**  
**Jakarta, Indonesia.**  
 SECRETARÍA DE ECONOMÍA  
 A whole Movement for the Competitiveness of the SMEs in Mexico  
**"TECHNOLOGY INNOVATION, ENTREPRENEURSHIP SUPPORT STRATEGY AND TRAINING TO FACILITATE THE ACCESS OF THE MEXICAN SMEs IN THE GLOBAL MARKET"**

MEXICO TAKING ON VENTURES A WHOLE MOVEMENT FOR THE COMPETITIVENESS OF THE SMEs TM MEXICO 1


**Entrepreneurs' National Program**  
 SECRETARÍA DE ECONOMÍA  
 A whole Movement for the Competitiveness of the SMEs in Mexico  
**Strategy 2008-2009**


MEXICO TAKING ON VENTURES A WHOLE MOVEMENT FOR THE COMPETITIVENESS OF THE SMEs TM MEXICO 2


**Entrepreneurs' National Program**  
*Objective*  
 The **Entrepreneurs' National Program** has the objective to promote and enhance in the Mexicans' mind the culture and business development that results in the creation of **more and better** enterprises through the **National Incubators' Network**

**"Source of Enterprises"**

- Entrepreneurs' National Campaign.
- To spread the Entrepreneur Program in all the institutions of middle and higher education.

**Entrepreneurs**



**"Factory of Businesses"**

- Creation of aggregate value and longevity businesses.
- Creation and consolidation of Businesses Incubators.

**Incubators**

*Herberto Félix Guerra*  
**"Becoming Mexico in an entrepreneurs land"**

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**Entrepreneurs' Program**  
 Promote and enhance entrepreneurship and entrepreneurial activity.

**Entrepreneurs' National Campaign**

Regional Routes

Advertising Campaign

Entrepreneurs' Events

"Mexico taking business ventures"

"Entrepreneurial Card"

"Entrepreneurs' Caravan"







**Young Entrepreneurs**

Entrepreneurs' Methodologies

Printing Promotional Materials


**Training Program for Entrepreneur Leaders**

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**Entrepreneurs' Program**  
**Entrepreneurs' National Campaign**  
 Regional Tours

**Entrepreneurs Tours "Entrepreneurs Day"**

- Regional events in 10 different states to promote and encourage entrepreneur activity.
- Exhibition with 50 stands presenting different support options for entrepreneurs, incubators, academic institutions, financial institutions, entrepreneurial organizations and successful graduated business from incubators.
- In addition, 3 thematic conferences, 5 panel discussions regarding to financing, management, innovation, marketing and training.
- Simultaneously, a simulator workshop of traditional and rural businesses.
- This event has the assistance of 1000 entrepreneurs who will receive assistance and information about the range of programs that the Under Ministry for the SMEs offers through the platform "Mexico taking on business ventures".



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**Entrepreneurs' Program**  
 Advertising Campaign

Print and electronic media to encourage entrepreneurs' activity in Mexico.

Entrepreneurs' Events

Invitation to academic institutions, entrepreneurial agencies, social agencies, ecc. to promote entrepreneurial activity through different events.

"Mexico taking business ventures"

National event with the participation of more than 10,000 young entrepreneurs from all over the country who participated in the Training Program for Entrepreneur Leaders.

MEXICO TAKING ON VENTURES A WHOLE MOVEMENT FOR THE COMPETITIVENESS OF THE SMEs TM MEXICO 6


### Entrepreneurs' Program

**"Entrepreneurs' Cards"**

- We recognize entrepreneurship through this card, which benefits are a free incubation process, a credit pre-approved of capital seed and the membership to the SME business community.
- The winners in contests and entrepreneurial events, get this card as an award.

**"Entrepreneurs' Caravan"**

- The Entrepreneurs' Caravan is a mobile unit (truck trailer) which will go through all the country offering options and opportunities for the entrepreneurs.
- The Caravan will have a simulator, personal assistance, business opportunities, employment opportunities, etc.



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### Entrepreneurs' Program


**Young Entrepreneurs**

**Methodologies for Entrepreneurs**

- Support for academic institutions that do not have their own entrepreneur methodology and printing materials for this purpose.

**Training Program for Entrepreneur Leaders**

- It is a training program for youths that have received some methodology for entrepreneurs before, and that present profiles of highly leadership (Enterprising Elite).
- Through motivational contents and business skills, the entrepreneurs will work during 10 weeks with multidisciplinary and interinstitutional groups, of 100 youths of each region, will become the source of businesses.

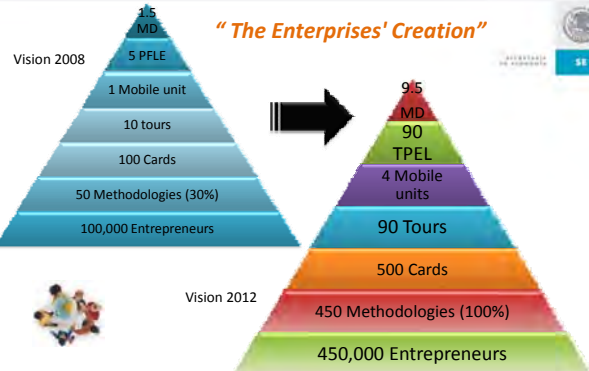


MEXICO TAKING ON VENTURES A WHOLE MOVEMENT FOR THE COMPETITIVENESS OF THE SME'S. TM MEXICO 8

### Entrepreneur's Program

Goals 2008 - 2012

**"The Enterprises' Creation"**



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### SME Fund

Supports 2008

**ENTREPRENEURS**



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### Business Incubators


Enterprises' Factory

The National Incubators' Network is a tool to foster economic growth, to contribute in the creation of **more and better entrepreneurs, more and better enterprises, more and better employments.**

- The objective is to create and enhance the incubators' network at national level ensuring the best incubator practices and programs and the appropriate customers services.
- To assist in the creation of innovative enterprises with more added value and longevity.

**500 incubators with the best incubator practices**

**Operate the BEST Incubator Policy.**



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### Classifying the Business Incubators

According with the different kind of the created enterprises, the business incubators are classified by:

**Traditional Business Incubators**  
To support the creation of businesses in traditional sectors with basic requirements of operation. In this classification, incubators are located in rural sectors and tourism.

**Intermediate Technology Business Incubators**  
To support the creation of enterprises with technological and physical infrastructure requirements, as well as operation mechanisms and semi-specialized.

**High Technology Business Incubators**  
To support the creation of businesses in specialized sectors such as Information and Communication Technologies (ICT's), microelectronic MEMS systems, biotechnology and pharmaceutical, and

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### Incubators

Strengths in Incubator Systems around the World

**United States**  
Facilities  
Sharing "know how"  
Management  
Financing  
Sustainability

**BRAZIL**  
Patents  
R+D  
Investment  
Innovation

**European Union**  
Virtual Networking  
Specialized Services  
Entrepreneur  
Training  
Effectiveness

**MEXICO**  
Coverage  
Effectiveness  
Efficiency  
National Policy

Facilities  
Networking and Specialization  
Patents, R&D  
Financing

MEXICO TAKING ON VENTURES A WHOLE MOVEMENT FOR THE COMPETITIVENESS OF THE SME'S TM MEXICO 13

### Business Incubators

Strategies

**Creation and Consolidation of 500 incubators with the best incubation services**

- Creation of specialized incubators, development of providers.
- Consolidation of weak incubators, helping them to reach international standards.
- Implementing a regional strategy to supervise incubators and report information in real time. (Independent work for each kind of incubators)

**A call for Enterprises for the Incubation Process**

- Through a national call at least 30 % of the projects will be selected to receive the incubation process in 2008.
- **National Prize for Entrepreneurs**
- Through the "Entrepreneur Card" the citizen will receive direct benefits.

**National Incubators Trust**

- Creation of a national trust to strengthen incubators and resource management, working as a leadership body for incubators.
- Creation of 8 regional trusts with the same functions at the national and regional levels.
- The trust will be integrated by members of the community with a great degree of acceptance amongst the stakeholders.

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**Creation of New Incubators**

- Through the presentation of feasibility studies according to the particular attributes of the region.
- A Special Committee integrated by a representative of the ministry of economy, the local government, specialists, etc.
- The feasibility study will be evaluated considering the country necessities, the qualities of the project, its added value and its strengths.

**Strengthening Institutional Relations**

- Visits to all incubators starting with the top 50 around the country, with the purpose of strengthening relations and commitments with the authorities.
- The General Director will take part in the tour around the incubators and there will be a register of each visit.

**Strengthening and Standardizing Incubators**

- Since this year, incubators receive financial support only if they are complying with the standards for the creation of enterprises.
- Special support has been established to those incubators complying with the standards.
- The process to design a certification norm for incubators.
- By the end of 2008, the process of certifying the consultancy team of the incubators will start.

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**National Council for Business Incubators**

- Promoting the change of chairman in the Council and extending the membership, as well as, getting new responsibilities and commitments.
- The Council will work as an operative body analyzing the performance of the National Incubators' System.

**Entrepreneurial Community**

- 60 incubators will integrate 100 enterprises into the community through the card "SME taking on business venture".
- In a strategic alliance with entrepreneurial bodies this community will grow and consolidate the links to exchange information.

**Operating Intermediate Bodies**

- Core strategy operating through intermediate bodies working as leaders of a net responsible for requesting the SME Fund resources, executing them according to results, following -up incubators and their projects, etc.

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### Incubators

Goals 2008 - 2012

**Vision 2008**

- 2,60 MD
- 20,000 Employments
- 5,000 Enterprises
- 50 Incubators

**"The Enterprises' Factory"**

- 2,138 MD
- 180,000 Employments
- 35,000 Enterprises
- 500 Incubators

**Vision 2012**

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### SME Fund

Supports 2008

**INCUBATORS**

- Transference
- Equipment
- Infrastructure
- Consultancy for the creation of enterprises
- Consultancy for strengthening and consolidating and certification of incubators.
- Consultancy for assessing and follow-up of the enterprises and incubators.

**SME Fund 2009**

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### Business incubators' national Program

Website - [www.siem.gob.mx/snief](http://www.siem.gob.mx/snief)

- Recognized Models
- Incubators' Network
- Investment Opportunities
- General information

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### Incubators' National Program

Global vision 2008 - 2012

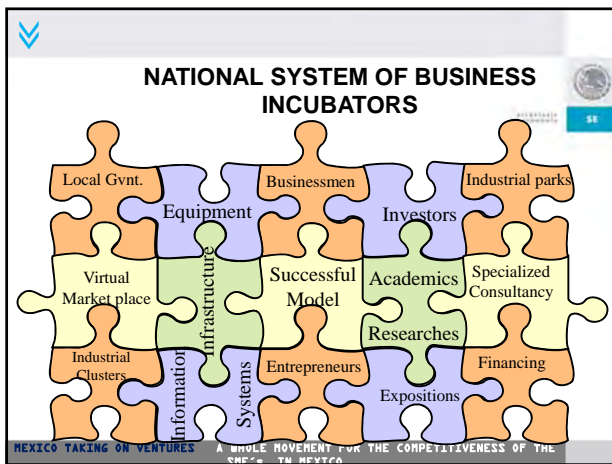
Year	Enterprises	Employments	Business Incubators
2008	5,000	20,000	450

Vision 2008

Year	Enterprises	Employments	Incubators	MD
04-06	10,320	26,019	300	About 18.9
2007	4,900	16,000	400	About 16.2
2008	5,000	20,000	450	About 25
2009	9,000	36,000	450	About 34.7
2010	10,000	40,000	500	About 38.5
2011	10,000	40,000	500	About 43.4
2012	10,000	40,000	500	About 48.2
	<b>59,220</b>	<b>218,019</b>	<b>500</b>	<b>About 216.6</b>

Vision 2012

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### INNOVATION CLUSTERS

Critical route to transform an economic region in a "Technopolis"

- To create local technology companies
- To attract high-tech companies to generate a trickle down effect in the region
- To develop new technologies for emerging industries
- To promote applied research and development in local Universities

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### BENEFITS

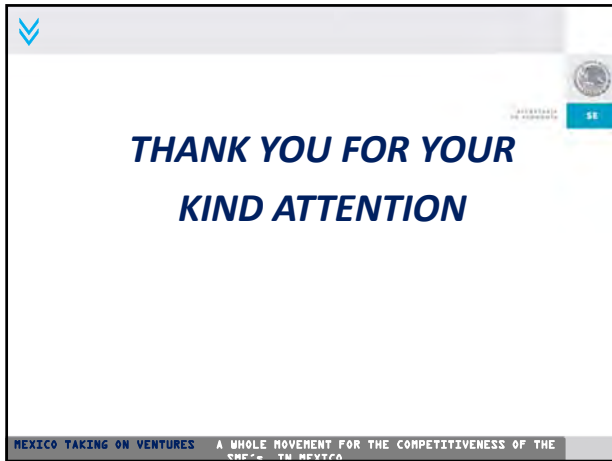
- Accelerated companies will improve their sales, increasing their national and/or international market share.
- Businesses will contribute to the production of innovative products generating new patents.
- Its strategic location will allow companies to have more contact with angel and venture capitalists getting the opportunity to expand through this type of financing.
- Companies will capitalize the opportunities from joint development of products, processes, materials and/or services of the 25 companies with Universities, Technological Centers and Businesses in Mexico and the United States, generating wealth and jobs in both sides of the border.
- The Ministry of the Economy of Mexico considers TechBA to be the top of the iceberg of a whole system of innovation and technology

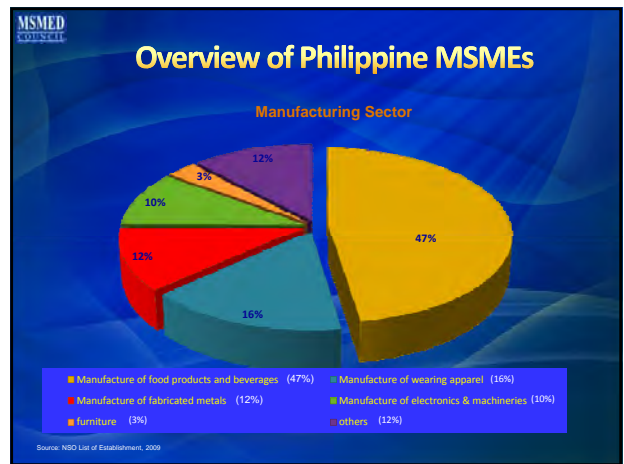
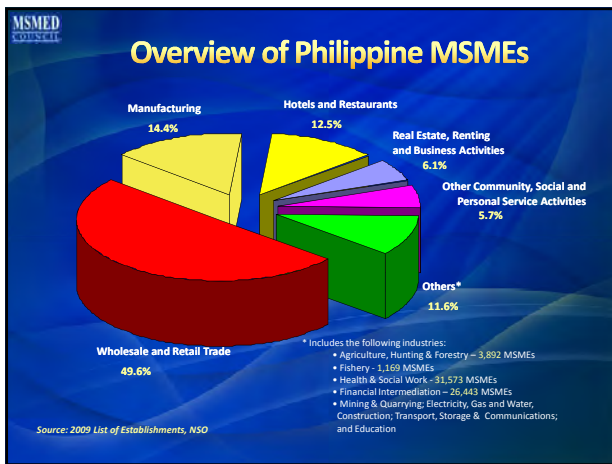
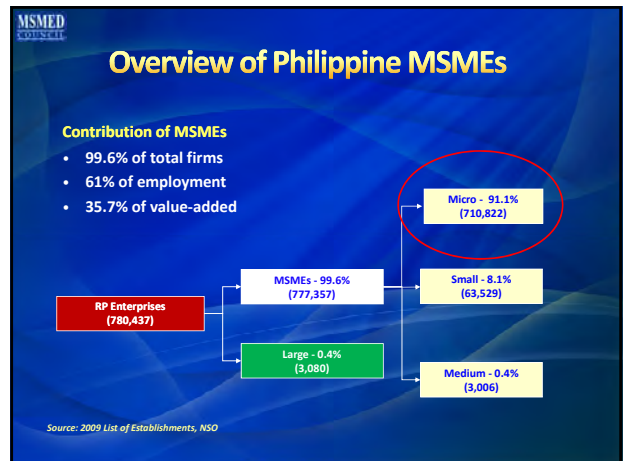
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### THERE IS A WHOLE INSTITUTIONAL STRATEGY TO SUPPORT TECHBA

- Top of the Iceberg: TECHBA
- Business Organizations Private Companies: PRIVATE SECTOR PARTICIPATION
- IPN, ITESM, UP: INVOLVEMENT KNOWLEDGE CENTERS
- Secretaries of Economic Development or Promotional Councils or Boards: STATE AND MUNICIPAL INCENTIVES
- Ministry of the Economy National Council for Science and Technology Development Banks: INSTITUTIONAL SUPPORT MECHANISMS FROM THE FEDERAL GOVERNMENT
- LEGISLATION

MEXICO TAKING ON VENTURES A WHOLE MOVEMENT FOR THE COMPETITIVENESS OF THE SME'S - TM MEXICO





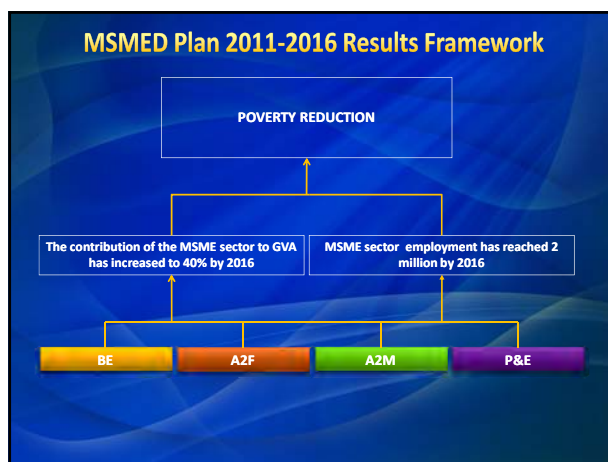
- ## Challenges
- ### Productivity and Efficiency (P&E)
1. The unsteady supply and high cost of water and electricity reduce the productivity of SMEs
  2. SMEs lack information and education on productivity
  3. The level of productivity of SMEs is reduced by their poor working conditions arising from non-compliance with labor laws
  4. The production systems of SMEs are not environment-friendly
  5. SMEs lack the knowledge and capacity to comply with international quality standards
  6. SMEs suffer from piracy of highly skilled workers

- ## Challenges
- ### Productivity and Efficiency (P&E)
7. Vocational and technical schools do not offer learning programs that are responsive to MSME needs
  8. ICT use among SMEs is not pervasive
  9. SMEs are not investing in productivity-enhancing technologies
  10. The services of government-subsidized technology/packaging centers are expensive
  11. SMEs are unable to access productivity programs due to their high cost

## MSME Development Plan 2011-2016

**The Plan is meant to:**

- Create a business environment that will center around a culture of governance that will foster the establishment, development, sustainability, and competitiveness of SMEs
- Improve the availability of reasonably priced financial products, services and support programs that SMEs can conveniently access



## BE Results Statements

The contribution of the MSME sector to GVA has increased to 40% by 2016

MSME sector employment has reached 2 million by 2016

Business Environment (BE)

1. The cost of doing business (taxes, fees, etc.) is affordable to MSMEs.
2. The institutional support structures for the development of start-up and existing MSMEs are in place.
3. The policies necessary to develop the MSME sector are crafted and being fully implemented.
4. Support for MSME development is results based, coordinated, harmonized and sustained by capable stakeholders.
5. An entrepreneurial mindset is pervasive among MSMEs and other MSME stakeholders.
6. Soft and hard infrastructures for MSME development are established.
7. The information needs of MSMEs are available and accessible.
8. MSMEs are gender responsive and environment-friendly.

## A2F Results Statements

The contribution of the MSME sector to GVA has increased to 40% by 2016

MSME sector employment has reached 2 million by 2016

Access to Finance (A2F)

1. The financial products, services and support programs that MSMEs need are sustainably available even to start-up MSMEs and MSMEs operating in the countryside.
2. The cost of obtaining MSME loans is reasonable and affordable.
3. The requirements that MSMEs need to comply with to obtain loans are reasonable and manageable.
4. The process that MSMEs need to follow and documents that must be submitted to obtain loans is simplified and streamlined.
5. MSMEs are trained in financial management and are able to understand and speak the language of financial institutions, while financial institutions are trained to understand and speak the language of MSMEs.
6. Financial products and services for MSME lending are gender-responsive and environment friendly.
7. The information needed by MSMEs to access financial resources are available and easily accessible.
8. The assistance extended by stakeholders to MSMEs in accessing funds are coordinated, relevant and effective.

## A2M Results Statements

The contribution of the MSME sector to GVA has increased to 40% by 2016

MSME sector employment has reached 2 million by 2016

Access to Markets (A2M)

1. MSMEs have maintained their existing markets and penetrated new and emerging markets locally and globally.
2. MSMEs are competitive locally and globally.
3. Marketing support systems are established and are operating on a sustainable basis.
4. MSMEs are implementing the value chain approach and are highly benefited by it.
5. MSMEs are using information technology and intellectual property system to develop a sustainable market share and gain competitive advantage for their products and services.
6. Market information needed by MSMEs is available and freely accessible.
7. MSMEs have considerable share in the sustainable development market locally and globally.
8. Government support programs (e.g. One Town, One Product (OTOP) Program) to help MSMEs access local and global markets are coordinated and highly satisfactory.

## P&E Results Statements

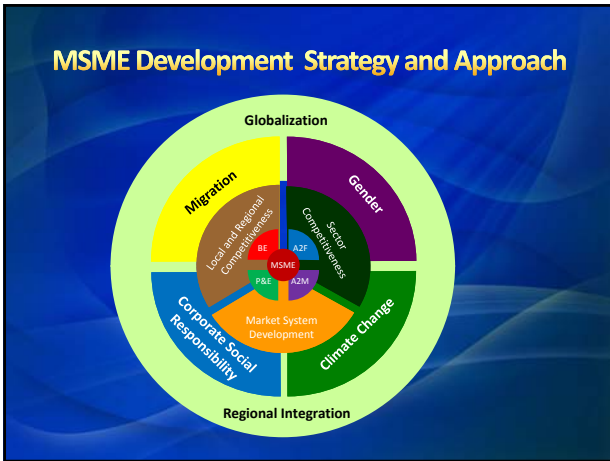
The contribution of the MSME sector to GVA has increased to 40% by 2016

MSME sector employment has reached 2 million by 2016

Productivity and Efficiency (P&E)

1. Government programs and policies on productivity enhancement are coordinated, effective and highly satisfactory.
2. The MSME workforce is highly motivated and is equipped with the appropriate skills and attitude needed by MSMEs.
3. The working environment of MSMEs fosters greater productivity and efficiency among the workforce.
4. MSMEs are using gender-responsive and environment friendly technologies.
5. MSMEs are compliant with international quality standards.
6. MSMEs are using state of the art productivity enhancing technologies.
7. Information on productivity enhancement is available and freely accessible to MSMEs.





### Global Themes

#### Corporate Social Responsibility

- MSMEs can supply raw materials and services to large enterprises
- MSMEs can be the beneficiaries of CSR activities such as capacity building or technology transfer programs
- MSME operational "code of ethics"

### Global Themes

#### Globalization

- promotes the participation of SMEs in global production networks through outsourcing and subcontracting activities
- maximizes opportunities for SMEs in a more open and highly competitive market

## Thank you.

**BUREAU OF MICRO, SMALL AND MEDIUM ENTERPRISE DEVELOPMENT**  
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 www.dti.gov.ph

## PERU

### SMES ACCESS TO TECHNOLOGY

#### GOALS FOR SMEs ACCESS TO TECHNOLOGY

- ECONOMY LEVEL:
- Inclusive growth
- Strengthen involvement of SMEs in technology development
- Develop a scheme whereby universities produce new technology /patent rights
- Increase substantially cooperation between different size of companies in R&D.

## (continued)

- Setting up of a strong and efficient alliance among government, private sector (SMEs) and universities for technology creation.
- Devise a mechanism to finance access to technology (financing vs. Access to technology)
- REGIONAL LEVEL
- Take advantage of existing Free Trade Agreements to foster technology development in SMEs

## (continued)

- APEC LEVEL
- Eliminate nine chokepoints, as defined by the Joint Ministerial Statement of SME & Trade Ministers (Big Sky Montana, USA, 2011). One of them is access to technology, and the main one access to financing.

  
Department of  
Commerce & Industry  
Papua New Guinea

## SME Workshop on Access to Technology

Jakarta – Indonesia 6<sup>th</sup> –7<sup>th</sup> February, 2012

**Prepared by:**  
1. Mr. Bede Tomokita – First Assistant Secretary Industry Division  
2. Mr. Buckley Tine – Research Analyst Policy, Planning & Information Division

### Presentation Outline:


- Overview of PNG Economy
- Main Economic Growth Policy & Framework
  - *Sectoral Policies Supporting SME Growth and Expansion;*
- Regional Centre for Technology and Innovation (RCTI)
- Summary
- END

### Over View of PNG Economy


- PNG is an agro-based economy and agriculture plays a dominant role. PNG produce and export coffee, cocoa, copra, palm kernels, tea, sugar, rubber and vanilla.
- However, recently Mining & LNG has overtaken agriculture. Becoming the dominant player in the economic growth.
- **Major Exports** include minerals e.g. Gold, copper, silver, nickel and crude oil (LNG), petroleum and agriculture products e.g. Timber, coffee, palm oil, cocoa, and copra.

### Cont'

- **Major Imports** includes chemicals, machineries, motor vehicles, electronic and other manufactured goods.



Tea Plantations in the  
Highland of PNG



The Open cut Panguna Copper Mines in the  
Autonomous Region of Bougainville .

### Main Economic Growth Policies and Framework

**VISION 2050-** *Is the overarching roadmap for the prosperity of the country and aspiration of the people of Papua New Guinea for the next thirty years.*

WEALTH CREATION  
PILLAR No. 2

- SME Sector
  - To be the driver in V2050 Wealth Creation under the

### National Policies Supporting SME Growth and Expansion;

- Vision 2050 – Wealth Creation
- PNG Development Strategy Plan (DSP) 2010–2030 – Promoting & Supporting SME Sector
- Midium Term Development Plan (MTDP) 2011–2015

### Sectoral Policy Supporting SME Growth and Expansion;

- Small And Medium Enterprises Policy (1998)

## SME Constrains in PNG

### ▶ Small And Medium Enterprises (SME) Policy (1998) Identified Constraints experienced by the SME Sector

- Lack of access to Technology
- Lack of Skilled Human Resources
- Lack of access to Markets
- Lack of access to Business information
- Lack of access to Business Finance
- Lack of access to Business infrastructure

## Regional Centre for Technology & Innovation (RCTI)

- ▶ The Appropriate Technology Development Program is a project developed to address the constraints on lack of technologies for the SME Sector as identified in the SME Policy (1998).
- ▶ The project is a ten (10) year sectoral plan approved by the National Executive Council to be funded under PIP but it is a major activity of the Small & Medium Industries (SMI) Section, of the Industry Division.

## NEC APPROVAL

- ▶ NEC DECISION No. 221/2005, Meeting No. 47/2005 dated 3rd October 2005
- ▶ Directed Department of National Planning and Monitoring to fund the program under Development Budget (PIP)
- ▶ Directed all stakeholders to work with DCI in implementing the program.
- ▶ Endorsed donor funding assistance to the program
- ▶ Directed that the Regional Centre for Technology and Innovation be established to coordinate all activities of the program.

## VISION STATEMENT

"Our vision is to promote downstream processing of locally available natural resources into value added products using appropriate technology."

## Objective

- ▶ The Industry Division under the Department in rendering its support to the project hope to see the project meet its main objective

## Activity

- ▶ The main activity of the ID is to monitor the progress of the project (RCTI), guide, promote, and facilitate for other necessary support financially and politically with the aim to see the project a success story.

## Resource

- ▶ The Industry Division under the Department of Commerce & Industry plays a coordinating role in this project which an officer is required to work closely with the project to provide the necessary support as and when required. In doing so the officer will require K2,000.00 to undertake tasks involved.

## Justification

This is a government supported and funded project

## FUNDING SOURCES

- ▶ NATIONAL GOVERNMENT (PIP)
- ▶ PROVINCIAL GOVERNMENTS (Counterpart funding)
- ▶ DONOR AGENCIES
- ▶ PROJECT SELF FINANCING

## Outcome

- ▶ To eventually see the expansion of the project which has government support and funding.

## Benefit

- ▶ The rural population will benefit greatly as they utilize their natural resources, using technologies proven to be appropriate for PNG. The Country will benefit in exports and savings from import substitutions. There will be training of national in manufacture and maintenance of machines. Etc....

## IMPLEMENTATION STRATEGIES

1. ESTABLISH COORDINATION CENTRE.  
THE REGIONAL CENTER FOR TECHNOLOGY & INNOVATION (RCTI)
2. NETWORK WITH MAJOR STAKEHOLDERS
3. PROFILE NATURAL RESOURCES
4. PROFILE APPROPRIATE TECHNOLOGIES
5. DESIGN/MODIFY & MANUFACTURE TECHNOLOGIES
6. PILOT TECHNOLOGIES
7. CARRY OUT EXTENSION SERVICES  
– Technical Training & Commercialization
8. CONDUCT PROJECT MONITORING AND EVALUATION

## SECTORS TO BE TARGETED

1. AGRICULTURE & LIVESTOCK
2. COASTAL FISHERIES
3. SMALL SCALE FORESTRY
4. LOW-COST HOUSING
5. RENEWABLE ENERGY
6. RURAL TRANSPORTATION

## PROGRESS TO-DATE

### ESTABLISHMENT OF COORDINATION CENTRE (RCTI)

- ▶ SUCCESSFULLY SOUGHT NEC APPROVAL FOR IMPLEMENTATION OF PROGRAM.
- ▶ SUCCESSFULLY SOUGHT GOVERNMENT FUNDING UNDER DEVELOPMENT BUDGET. (2007 - 2011)
- ▶ LAUNCHED STRATEGIC PLAN IN JANUARY 2008.
- ▶ PREPARED DPM SUBMISSION SEEKING APPROVAL OF RCTI ORGANISATION STRUCTURE.

## Con't...

### NETWORKING WITH MAJOR STAKEHOLDERS

HELD CONSULTATIONS WITH:-

- 1 NATIONAL GOVERNMENT DEPARTMENTS & STATUTORY AUTHORITIES;
- PROVINCIAL GOVERNMENTS/ADMINISTRATIONS;
- 3 RESEARCH AGENCIES;
- 4 FUNDING AGENCIES;
- 5.INTERNATIONAL TECHNOLOGY TRANSFER ORGANIZATIONS;
- 6. PRIVATE/SME & INFORMAL SECTOR REPRESENTATIVES;

**Con't..**

7. SIGNED MOU WITH UNITECH IN 2004.
8. VISITED PROVINCES IN MOMASE AND NEW GUINEA ISLANDS REGIONS, AND ORO AND MILNE BAY PROVINCES IN THE SOUTHERN REGION, TO SEEK VIEWS AND SUPPORT OF THOSE PROVINCIAL ADMINISTRATIONS.
9. IDENTIFIED NATURAL RESOURCES, SKILLED HUMAN RESOURCES, ENGINEERING AND TRAINING FACILITIES.
10. CURRENTLY WORKING ON MOU'S WITH EDUCATION DEPARTMENT ON CURRICULUM DEVELOPMENT, AND SBDC/SIC ON ENGINEERING FACILITIES.
11. MADE INITIAL PAYMENT OF K100,000 TO UNITECH FOR DESIGNING, MANUFACTURE AND TESTING OF IDENTIFIED APPROPRIATE TECHNOLOGIES

**RESEARCH AND DEVELOPMENT WORK (DESIGN/MODIFY & MANUFACTURE TECHNOLOGIES)**

*RCTI HAS IDENTIFIED (8) PRIORITY INDUSTRIES WITH ABUNDANT NATURAL RESOURCES FOR IMMEDIATE TECHNOLOGY DEVELOPMENT: UNITECH HAS COMMENCED WORK ON IMMEDIATE DEVELOPMENT OF ELEVEN (11) APPROPRIATE TECHNOLOGIES FOR TESTING AND SUBSEQUENT INTRODUCTION TO RESOURCE OWNERS.*

**1. RICE PRODUCTION**

- 1.1 RICE DRYER
- 1.2 MANUAL RICE HULLER/MILL (AVAILABLE)
- 1.3 MANUAL RICE THRESHER

**2. COCONUT OIL PRODUCTION**

- 2.1 ELECTRIC COCONUT SCRAPER (AVAILABLE)
- 2.2 COCONUT OIL EXPELLER
- 2.3 COCONUT OIL FILTRATION PROCESS

**3. CEMENT & CLAY BRICKS PRODUCTION**

- 3.1 CEMENT BRICK MOULD (AVAILABLE)
- 3.2 CLAY BRICK MOULD (AVAILABLE)

**4. PEANUT BUTTER PRODUCTION**

- 4.1 PEANUT BUTTER MAKING MACHINE (AVAILABLE)
- 4.2 PEANUT SHELLER
- 4.3 PEANUT ROASTER (AVAILABLE)

**Con't....**

5. FRUIT JUICE PROCESSING
6. ROOT CROPS PROCESSING
7. RENEWABLE ENERGY (MINI MICRO HYDROS)
8. RURAL TRANSPORTATION

**SOME EXAMPLES OF APPROPRIATE TECHNOLOGIES BEING DEVELOPED BY RCTI AND UNITECH, INCLUDING; .....**

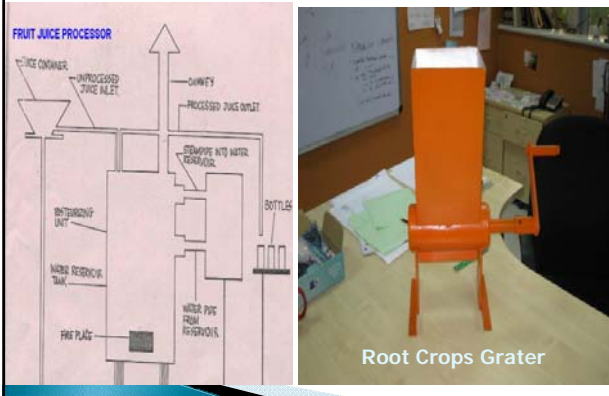
**AGRICULTURE & LIVESTOCK SECTOR**



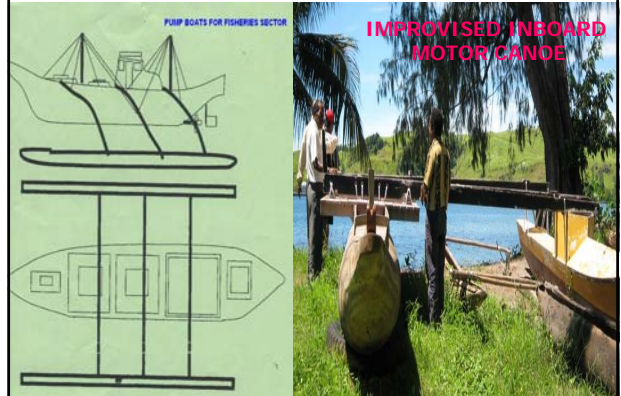
**Agriculture Sector. Con't...**



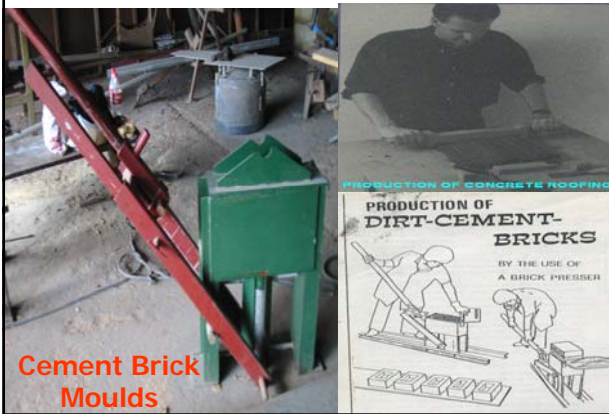
### Agriculture Sector, Con't....



### COASTAL FISHERIES SECTOR



### LOW-COST HOUSING/CONSTRUCTION SECTOR



**THANK YOU**

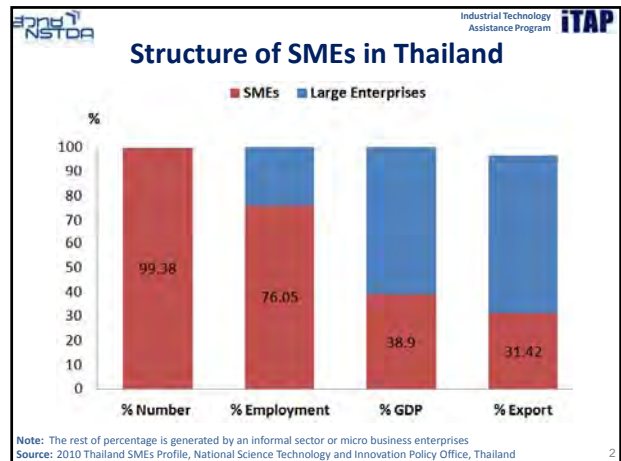
**EM TASOL (MEANS  
"THE END" IN PIGIN  
PNG'S COMMON  
SPOKEN LANGUAGE)**



**The definition of manufacturing SMEs in Thailand**

	No. of employment	Amount of fixed asset
<b>Small and Medium enterprise</b>	less than 200	≤ THB 200 million (~ USD 6.1 million)

Source: The Office of Small and Medium Enterprise Promotion (OSMEP), Thailand



**Status of SMEs in Thailand**

- The SME sector contributes
  - ✓ 99.38% of total enterprises in Thailand
  - ✓ 76.05% of total employment
  - ✓ only 38.9% of GDP and 31.42% of export
- High risk and economic instability if large enterprises move production base to other countries
- High proportion of SMEs generates income to majority of population
- SMEs is important to Thai economy and competitiveness of the country
- To reduce risk, Thailand needs to strengthen the SME sector in order to improve economic stability and competitiveness

**SME's Needs related to Technology Perspective**

**Solve Day-to-day Problem :** Inconsistency of quality, low productivity, low efficiency, shortage of raw material and packaging  
 Reduce production cost, energy consumption  
 Repair, Rework, Reuse, Recycle  
 Add value of existing products  
 Certify standards and regulations  
 Develop new products, new processes etc.

**Options**

1. Buy it
2. Subcontract out
3. Collaboration with alliances
4. Create it by yourself

**Obstacle of SMEs**

1. Don't know what to do
2. Don't know how to do
3. Don't have staff to do
4. Don't have anyone to help
5. Don't have money to do

**Problems and difficulties of SMEs to upgrade their technological capability**

**Internal constraints**

- Lack of finance and access to capital fund because they are small
- Lack of accessibility to information of new technology, knowledge and market insight
- Weak links with knowledge providers e.g. university and research institute, thereby inhibiting knowledge and technology transfer
- Limited resources and low internal capability to perform effective R&D or to spot opportunity for technological development and innovation
  - ✓ Lack of S&T personal and managerial skills to manage the effective R&D
  - ✓ Lack of entrepreneurial skills to commercialize their ideas
- Individual perception e.g. risk-averse, negative to networking with others.

**Problems and difficulties of SMEs to upgrade their technological capability**

**State constraints**

- Ineffective of SMEs policy deployment to agencies relating to SME innovation promotion
- Weak links and networking among support agencies
- Limited S&T manpower to support an industrial sector
- Limited financial scheme and support for technological development and innovation in SMEs

Industrial Technology Assistance Program **ITAP**

### Constraints and success factors for Government-University-Industry network development

From the perspective of public agencies and universities	From the perspective of industry
<ul style="list-style-type: none"> <li>• Weak policy measures at middle level</li> <li>• Unclear policy for IP management for industrial development projects</li> <li>• No motivation and incentives for academic staff</li> <li>• Unclear procedure and poor administration for collaborative project</li> <li>• Different point of views and management orientation between academia and business</li> <li>• Strict and inflexible process of public agencies that does not support quick response to the demand of industry</li> </ul>	<ul style="list-style-type: none"> <li>• Discontinuous support, political conflict, and conflict between public agencies</li> <li>• Government/universities: slow to response and have different perspectives; lack of active support agencies and information centre</li> <li>• Limited good experts for machine development and technological consultancy</li> <li>• Dishonest of public staff including corruption problem and unfair treat</li> <li>• Ineffective short-course training, and no specific focus and actual implementation (e.g. too basic subjects, and lack of on-site implementation, good teaching materials, and good instructors)</li> </ul>

7

Industrial Technology Assistance Program **ITAP**

### Success factors of universities and research staff for industrial collaboration and networking

- Continuous projects and support for long-term development and innovation; and based on actual need of industry;
- Clear action plan, project assessment and follow-up systems in each steps of collaborative projects;
- Trustworthiness, patience, commitment and determination of working staff;
- Ability to adjust and accept attitude and culture differences among various parties involved in the projects;
- Allocation of permanent staff to manage and follow up project progress; and
- Professional practices and proactive actions of public staff

8

Industrial Technology Assistance Program **ITAP**

### Some examples of current SMEs-supporting programs in Thailand

**Infrastructure**

- 5 Regional Science park : Rental spaces for R&D units of private sector
- University's Business Incubators

**Finance**

- Co-investment
- Soft loans
- Tax incentives : R&D projects/ donation for R&D

9

Industrial Technology Assistance Program **ITAP**

**IP services**

- Patent searching
- Patent preparation & filing
- Licensing
- Benefit-sharing

**Technology transfer / Technology Development**

- Intermediary to match industrial needs with the right expert

10

Industrial Technology Assistance Program **ITAP**

### Country's interest

- Government support is conducted continually for long-term development
- Monitoring and evaluation system
- Collaboration among SMEs supporting organizations + **Systematic workflow**
- Intermediary is a catalyst and facilitator to link collaboration between academia and industry
- Country's focus industry and concrete plan to stimulate development and innovation.

11

Industrial Technology Assistance Program **ITAP**

### Country's interest

**Industry**

- Capital funding for new technology business
- Insufficient number of R&D personnel in industry to increase absorptive capability of industry

**Academia**

- Rewarding scheme should be improved to encourage academia to work for industry : KPI, benefit sharing-scheme
- Most research results are not commercializable.

12

Industrial Technology Assistance Program **ITAP**

## For Region

- Neighbouring : Raw material /create value chain across the region / cluster development
- South and East Asia: Investment in APEC countries
- Latin America: Marketing arm in Latin America Region

- Share information / research results / patents

13

Industrial Technology Assistance Program **ITAP**

## For APEC

- Gather good practices
- Facilitate the adoption of good practices

14

Industrial Technology Assistance Program **ITAP**

## Policy recommendations

- Increase high quality S&T manpower to support the industry (e.g. student and staff exchange program, incentive & award establishment to encourage public-private collaboration)
- Strengthen university and support agencies to provide effective services to SMEs
- Improve S&T infrastructure to support private sector investment in research and technological capability development
  - ✓ physical infrastructure (e.g. science park, testing laboratory)
  - ✓ non-physical infrastructure (e.g. legal system, tax incentives, financial support)

15

Industrial Technology Assistance Program **ITAP**

## Policy recommendations

**In developing countries, innovation intermediary should be established as a catalyst of innovation process**

- Bridging knowledge providers, support agency and SMEs (mapping & matching supply and demand)
- Strengthening linkages and creating knowledge networks between knowledge producing agents, industry (mainly SMEs), and government policy and support organizations
- Provision of management and support for R&D and innovation
- Financial support for R&D and innovation

16