

20th Symposium on National Productivity

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Presentation by

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SMEDA

Scheme of Presentation

- **Significance of SMEs in Pakistan's Economy**
- **SMEDA's SME Development Strategy**
- **Productivity & Quality**
 - Impediments in Pakistan
 - Productivity Tools - Current Status of Auto Parts Manufacturing Sector
 - Counter Measures for Bottlenecks
 - Key Interventions (proposed)
- **SMEDA Industry Support Program**
- **Proposed Way Forward**

SME Sector in Pakistan

3.2 Million SMEs

Contribution to GDP 40 %

Share in Exports over 40 %

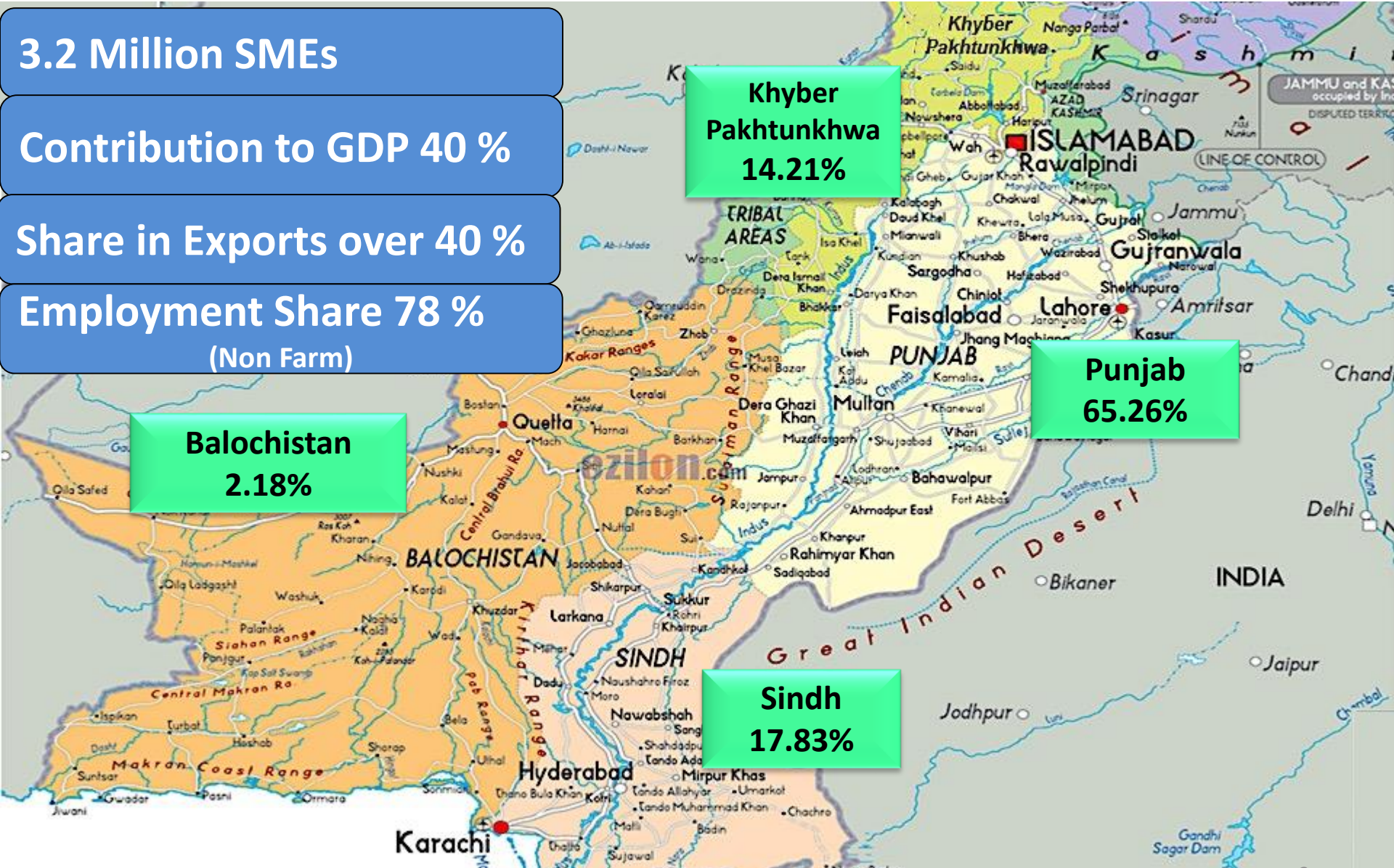
Employment Share 78 %
(Non Farm)

Khyber
Pakhtunkhwa
14.21%

Punjab
65.26%

Balochistan
2.18%

Sindh
17.83%



Major Issues of SMEs

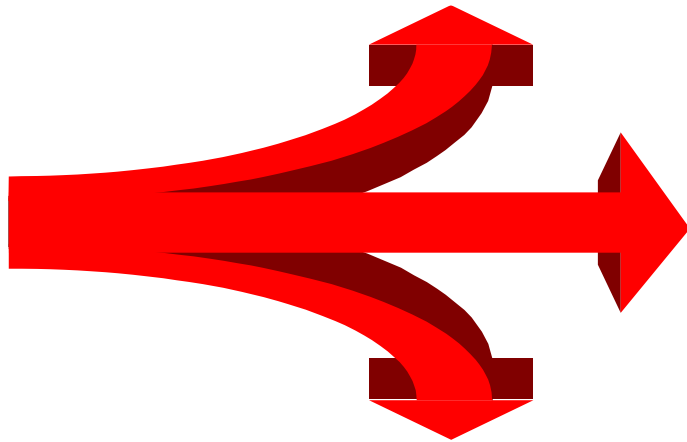
- Technology Low Technology Base
- Financing Lack of Access to Finance
- Marketing Lack of Market Information
- HRD Shortage of Skilled Workforce
- Regulatory Govt. Rules – Impediments
- Productivity & Quality Non Competitive

**Amongst the lowest Factor Productivity,
Value Addition**

SME Development Strategy

Building a Conducive Environment

- Proposing and facilitating changes in Policy and Regulatory Environment
- Reducing the Cost of Doing Business
- Facilitating Government-SME Interface



Developing Sectors and Clusters

- Sector Strategies Development and Implementation
- Cluster Development
- Common Facility Centers (CFCs)

Provision and Facilitation of Services

- Investment Facilitation (Helpdesk, Pre-feasibilities, Business Plans etc.)
- Technical services, Training, Finance, Business Information, Marketing, and legal support
- **Productivity and Competitiveness Improvement**

Productivity and Quality

Impediments in Pakistan (4M 1E)

A. MANPOWER / SKILLED WORKFORCE

- Lack of focus on skilled work force as a competitive tool
- Demand & Supply Gap (Skill Set Gap)
- Lack of competency based curriculum

B. MACHINE / TECHNOLOGY

- Obsolete Technology
- Less focus towards preventive maintenance
 - Machine breakdown
 - Low productivity and line efficiency
 - Shorten machine life
- No New Product Development

Impediments in Pakistan (4M 1E)

C. MATERIAL

- Low quality material
- Non Standardized Raw Materials
- Improper material handling

D. METHOD / PROCESS

- Conventional Production / Manufacturing Concepts
- Less Efficient Methods
- Unbalanced Production / Assembly lines

E. ENVIRONMENT (SAFE WORKPLACES)

- Poor Housekeeping
- Unsafe Work Environment
- No use of Personal Protective Equipment (PPE)
- Lack of Procedural Instructions / SOPs

Productivity Tools in Auto Parts Manufacturing Sector - Current Status

PRODUCTIVITY TOOLS	VERY LOW	LOW	MEDIUM	HIGH
5S		T, v	Δ	
KAIZEN		T, v	Δ	
3M Elimination	T, v	Δ		
Standardized Work	v	T	Δ	
Visual Inspection		v	T, Δ	
Skill Map	T, v	Δ		
4M Change Point Control	T, v	Δ		
HEIJUNKA (Prod. Levelling)	v	T	Δ	
TPS - JIDUKA	T, v		Δ	
TPS - Just in Time (JIT)	T, v		Δ	
Line Balancing (Fundoshi)	T, v		Δ	
Dojyo (in house Training Facility)	T, v	Δ		

Awareness = Δ Technical Know How = T Implementation = v

Countermeasures for Bottlenecks

#	Type	Description
1	HUMAN RESOURCE	<ul style="list-style-type: none"><input type="checkbox"/> Awareness about benefits – Top Management<input type="checkbox"/> Skill Mapping<input type="checkbox"/> Industry Specific Skill Development Centers<input type="checkbox"/> Strengthen Industry Academia Linkages<input type="checkbox"/> Skills Olympic Competition
2	MACHINE / TECHNOLOGY	<ul style="list-style-type: none"><input type="checkbox"/> Benchmark: same/other industries and nations<input type="checkbox"/> Adoption of New Technologies - Economies of Scale<input type="checkbox"/> Technology Incubation Centers<ul style="list-style-type: none">▪ R&D▪ Product Development▪ Technology Transfers / Licensing▪ Reverse Engineering
3	MATERIAL	<ul style="list-style-type: none"><input type="checkbox"/> Adoption / Establishment of Standards for Materials<input type="checkbox"/> Use of High Performance Materials<input type="checkbox"/> Production of standardized Materials locally

Countermeasures for Bottlenecks

#	Type	Description
4	METHOD / PROCESS	<ul style="list-style-type: none"><input type="checkbox"/> Implementation of Lean Manufacturing System (e.g. 5S, 5T, 4M Change Point, Line Balancing etc.)<input type="checkbox"/> Energy Efficient Manufacturing Processes
5	ENVIRONMENT (SAFE WORKPLACES)	<ul style="list-style-type: none"><input type="checkbox"/> Implementation of 5 S<input type="checkbox"/> Mandatory use of PPE

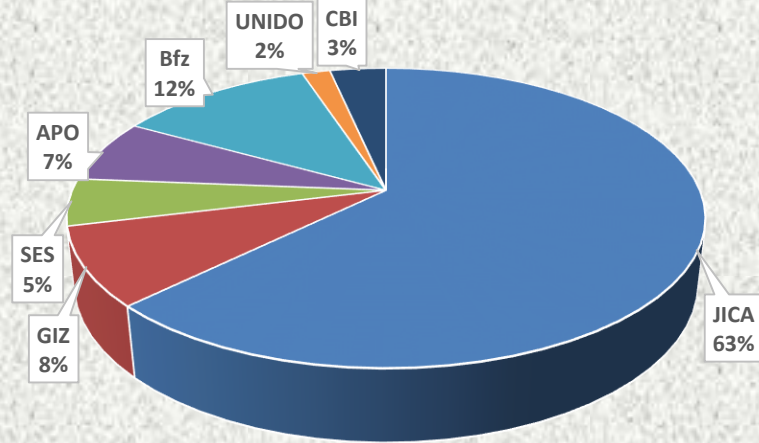
SMEDA Industry Support Program

Industry Support Program

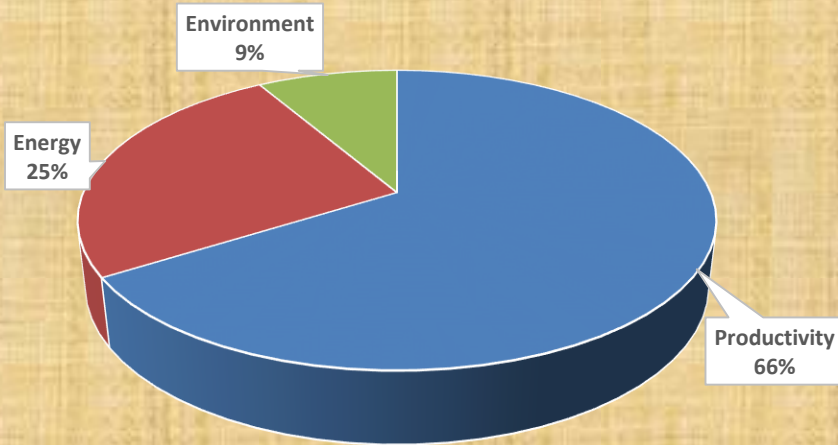
- Provision of Technical Support to SME Sectors since 2003
- Main Focus on Reducing Production & Energy inefficiencies
- Technical Support from Int'l Development Partners including;
 - Japan International Cooperation Agency (JICA)
 - German International Cooperation (GIZ)
 - Training & Development Centers of Bavarian Employers' Association (bfz), Germany
 - United Nation Industrial Development Organization (UNIDO)
 - Asian Productivity Organization (APO), Japan
 - Senior Experts Service (SES), Germany
 - Centre for the Promotion of Imports from developing countries (CBI), Netherlands

Foreign Experts Engaged by SMEDA

Engagement of Foreign Experts



Engagement of Foreign Experts



Sr. No.	Foreign Partners	Areas of Expertise			Total
		Prod.	Energy	Environ. (GP)	
1	JICA	31	6		37
2	GIZ		5		5
3	SES	3			3
4	APO	3	1		4
5	Bfz		2	5	7
6	UNIDO		1		1
6	CBI	2			2
	Total	39	15	5	59

Key Achievements

- SMEs Facilitated: 581
 - Productivity 348
 - Energy Efficiency 228
 - HS&E (Fire Safety) 5
- Savings Identified (Energy)
 - KWh 150 Million KWh
 - CO₂ Emissions Reduction 74,000 MT
- Training Workshops / Seminars: 165
- Best Practices Reports / Training Manuals: 08
- Key SME Sectors:
Textiles, Light Engineering, Auto Parts, Foundry, Footwear, Sports Goods
Fan, Food Processing, Marble, Chemical, Forging

JICA Experts Team (JET) at Floor Shop



Investigating Power Generator



Air Pressure Measurement



Electricity Measurement



Investigating Injection Molding Machine

Industry Support Program - Example



BEFORE

Improper stacking resulting in scratches and dents on product



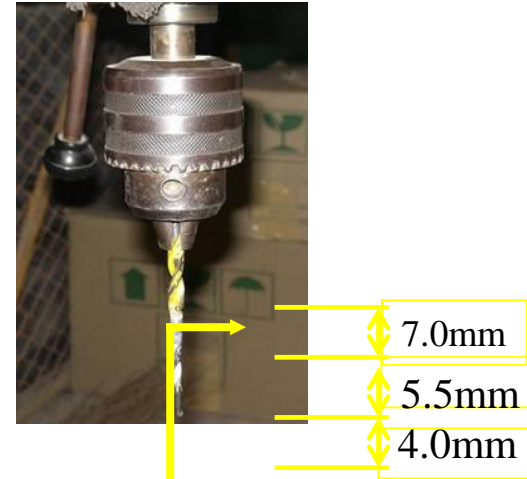
AFTER

Defect rate reduced to approximately 1 from 7 (87% reduction)

Industry Support Program - Example



Three drill bits use for three holes



One drill bit for three holes

Improvement Areas	Before	After	Improvement
Daily Production	240 pcs	420 pcs	75 %
Line Balance Efficiency	61.5 %	85.7 %	40 %
Work in Process Inventory	7 pcs	3 pcs	60 %
Lead time	30 days	12 days	60 %
Setup Time	35 min	15 min	57 %
Productivity Improvement			75 %

Proposed Way Forward

- Productivity benchmarking for prominent sectors viz-a-viz Pakistan and developed countries.
- Development of Integrated Productivity model to help integrating into global value chains.
- Capacity building of Business Support Organizations for effective delivery.
- Initiatives for strengthening industry-academia linkages for commercializing R&D.
- Rationalization of current regulatory regime to address the issue of high cost of doing business.

Proposed Way Forward

- Faculty / Industrial Experts exchange programs with countries having advanced Productivity Level
- Support fund for;
 - Promoting new technologies.
 - Establishment of Technology Incubation Centers
 - Transfer of technology through JVs, Licensing, IPRs etc.

**Thank You for your Kind
Attention**