



# **TECHNOLOGY, EXPORTS AND DEVELOPMENT: NEW OPPORTUNITIES FOR BUSINESS**

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# THREE COMPONENTS:

1. TECHNOLOGY ABSORPTION AND MANUFACTURING EXPORTERS
2. BUILDING BACKWARD LINKAGES FROM THE COMMODITY SECTOR
3. NEW FORMS OF ENTREPRENEURSHIP



# DRAWN FROM WORLD BANK STUDY

- FOSTERING TECHNOLOGY ABSORPTION IN ENTERPRISES IN SOUTHERN AFRICA (SOUTH AFRICA; MAURITIUS; LESOTHO; NAMIBIA)

EXPORT ORIENTED SECTORS

FIRM CASE STUDIES AND SURVEY DATA

# TECHNOLOGY ACQUISITION AND ABSORPTION IS KEY

- SIGNIFICANTLY BEHIND THE GLOBAL FRONTIER
- SOUTH AFRICA PARTIAL EXCEPTION IN A VERY FEW AREAS – MINING EQUIPMENT AND SPECIALIST SERVICES; ICT
- YET MUCH POLICY SUPPORT IS STILL FOCUSED ON INNOVATION
- VERY FEW FIRMS ACCESS ANY FORM OF SUPPORT

# 1. PRIMARY CHANNEL ACQUISITION OF PLANT AND EQUIPMENT

- SOUTH AFRICA – 80%; MAURITIUS 54%.
- ENHANCED WHEN ACCOMPANIED BY TRAINING AND SKILLING
- CHURN IN TRAINED OPERATIVES RESULTS IN TOO LITTLE TRAINING
- ONE POSSIBLE POLICY RESPONSE – MAURITIUS TDS.

## 2. LEARNING BY EXPORTING

- ENTRY INTO EXPORT MARKETS STRONGLY ASSOCIATED WITH TECHNOLOGY UPGRADING
- COMPETITION AND STANDARDS REQUIRE UPGRADING
- IN PART A RESULT OF INCREASED SCALE
- TECHNOLOGICAL COMPETENCIES A DETERMINANT OF THE EXPORT DESTINATION

# 3. FOREIGN DIRECT INVESTMENT



- FOREIGN FIRMS:
  - MORE PRODUCTIVE
  - EMPLOY MORE SKILLS
  - TRAIN MORE
  - MORE INNOVATIVE
  - MORE EXPORT ORIENTED

BUT EXPORTS OFTEN LOW COST ASSEMBLY PRODUCTS  
E.G. LESOTHO TEXTILES

# FDI (2) : TECHNOLOGY SPILLOVERS

A KEY BENEFIT: BUT HEAVILY DEPENDENT ON

(A) TECHNOLOGICAL CAPACITIES OF LOCAL  
FIRMS

(B) ACCESS TO SKILLS

MAY BE NO SPILLOVERS – LESOTHO CLOTHING



# FDI (3): KEY CONSTRAINTS



- LABOUR MARKET INFLEXIBILITY
- REGULATORY AND POLITICAL UNCERTAINTY
- CORRUPTION
- CRIME
- EXCHANGE CONTROLS
- SKILLS

## 4. SKILLS

- SHORTAGES ARE UBIQUITOUS (LESS SO IN MAURITIUS)
- CONSTRAINT FOR ALL FIRMS BUT HEAVIEST INCIDENCE FALLS ON NEW ENTRANTS; SMALL AND LESS CAPITALISED FIRMS
- BY CONTRAST, WELL-ESTABLISHED FIRMS “CORNER THE MARKET”
  
- LIMITS TECHNOLOGY ABSORPTION
- ADDS SIGNIFICANTLY TO COST
- REDUCES COMPETITION
- CONSTRAINS FDI



# SKILLS (2): FIRM RESPONSE AND POLICY

- SOME TRAINING – BUT LIMITED
- IMPORTATION – BUT CONSTRAINED
- NOT INVESTING
- INCREASING K INTENSITY

ENHANCE THE INCENTIVE TO TRAIN

RELAX RESTRICTIONS ON IMMIGRATION

## 5. FIRM LEVEL R&D

- R&D CORRELATED WITH FIRM PRODUCTIVITY
- A DETERMINANT OF FIRM LEVEL TECHNOLOGY ABSORPTION
- IMPORTANT FOR IDENTIFICATION, SELECTION AND ADAPTATION

# FIRM LEVEL R&D POLICY

- TAX ALLOWANCES FOR R&D. LIMITED EFFICACY
- DIRECT GRANTS – LIMITED REACH.

EASIER ACCESS

EXTEND LIST OF QUALIFYING EXPENDITURES

CARRY FORWARD OF THE TAX DEDUCTION

## 6. COLLABORATION WITH PUBLIC RESEARCH INSTITUTIONS

- WEAK - ALL COUNTRIES
- SOUTH AFRICA – SCIENTIFIC KNOWLEDGE NOT BEING ACCESSED BY FIRMS (INNOVATION CHASM)

MATCHING GRANTS TO CONSORTIA OF COS.  
AND RESEARCH INSTITUTIONS.

CONSORTIA TO BE BUSINESS LED

# 7. ENHANCING INNOVATION AT THE FRONTIER

- SOUTH AFRICA HAS SOME CAPACITIES AT THE GLOBAL TECHNOLOGY FRONTIER
- MINING EQUIPMENT AND SPECIALIST SERVICES
- ICT.

INNOVATION AND PRODUCTION

A REGIONAL HUB

AREAS OF CONSIDERABLE OPPORTUNITY



# INNOVATION AT THE FRONTIER: POLICY

- MAJOR OPPORTUNITIES BUT ALSO CONSTRAINTS:
  - MAJOR POLICY THRUST PROVISION OF SKILLS:  
AT ALL LEVELS



# BACKWARD LINKAGES FROM EXPORT ORIENTED COMMODITY SECTOR

## FACTORS FAVOURING LOCAL LINKAGES:

- THE COMMODITIES BOOM
- MORE OPEN POLICIES COMBINED WITH DEMANDS FOR LOCAL DEVELOPMENT
- INCREASE IN OUTSOURCING
- JUST-IN-TIME INPUT REQUIREMENTS
- NEW APPROACH BY LARGE MINING TNCs



# POLICY DESIGN

- COLLABORATION WITH COMMODITY EXPORTERS
- GRADUALLY STRENGTHEN THE TECHNOLOGICAL CAPACITIES OF LOCAL SUPPLIERS



# NEW FORMS OF ENTREPRENEURSHIP

HYBRID ENTREPRENEURSHIP: MARKET – SOCIAL  
–ENVIRONMENTAL

INNOVATION INTERMEDIARIES

DISRUPTIVE TECHNOLOGIES

AIMED AT POOR CONSUMERS

- EG IN KENYAN AGRICULTURE.