



**UPM**  
UNIVERSITI PUTRA MALAYSIA  
BERILMU BERBAKTI

# The Importance of National Strategy for the Promotion of IP & Innovation



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50 mins

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# Contents



**Importance of national strategy**



**Transforming Malaysia into Innovation -  
led Economy**



**Lessons from successful nations**

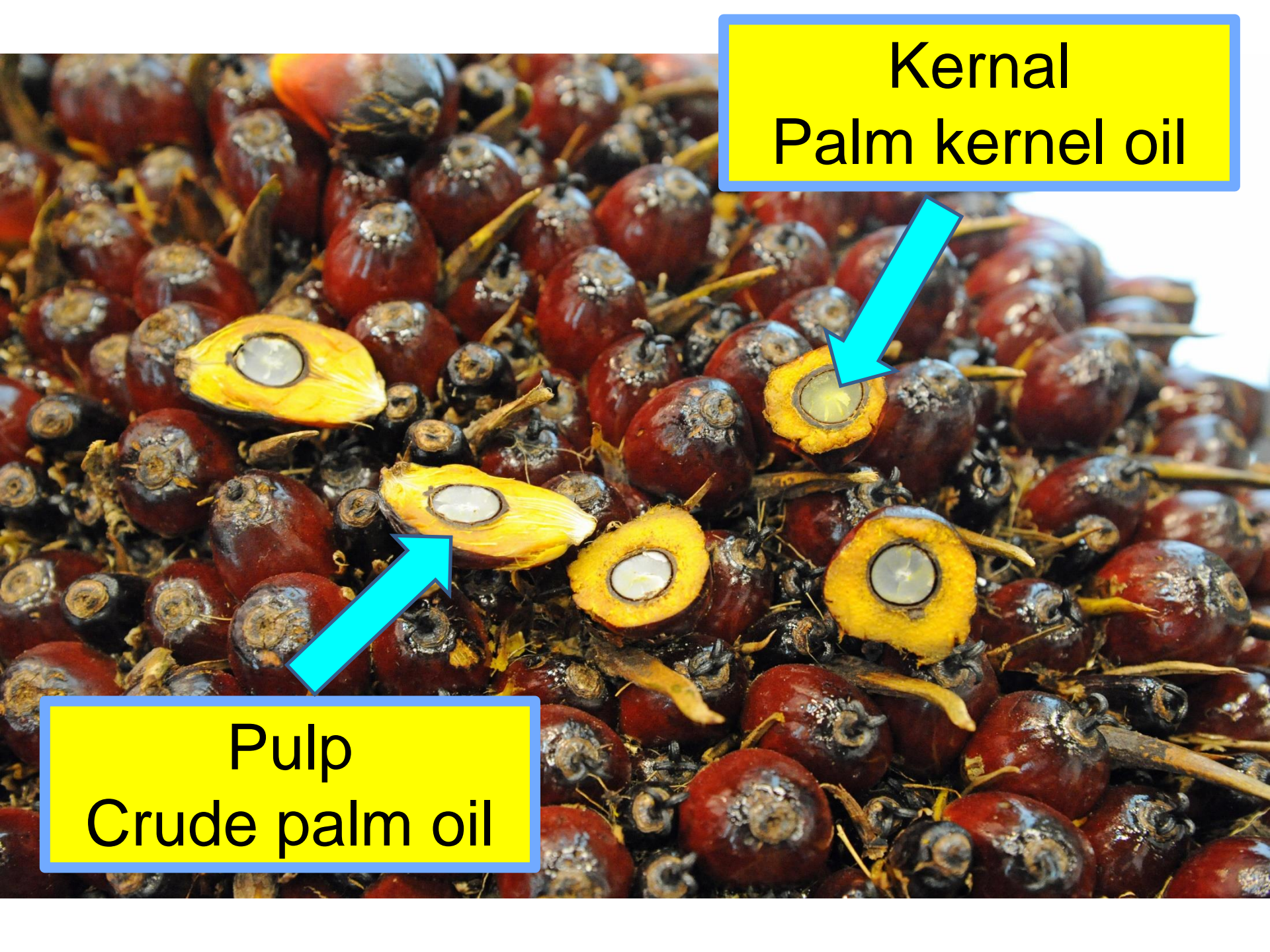


**Challenges**





Fresh fruit bunches



Kernal  
Palm kernel oil

Pulp  
Crude palm oil

**Palm oil industry**

**5 million ha**

**2<sup>nd</sup> world largest producer**

**Produced 18.7 million tonnes**

**2011 - \$26 B**

**Introduced from Africa to  
Malaysia!**



# Historical perspective

## Ghana

- ❑ British establish plantation in 1900
- ❑ Independence 1957
- ❑ Revive the industry to meet domestic industrial & consumption – small industry by global standard
- ❑ 2008 – 300,000 ha

## Malaysia

- ❑ British establish plantation in 1917
- ❑ Independence 1957
- ❑ Production increased dramatically & expanded into higher-value products
- ❑ 2008 > 2,000,000 ha

# IP strategy

- **Comprehensive national document**
- **Outlines how all policy developments & implementation to take place**
- **In a coordinated manner within a national framework**



# Strategies & Roadmaps

## MALAYSIAN POLICY

National Biomass Strategy 2020



**New wealth creation  
for Malaysia's palm oil**



**Increase growth National  
Income (GNI) to \$10  
billion**

**Success due to appropriate policies & strategies**



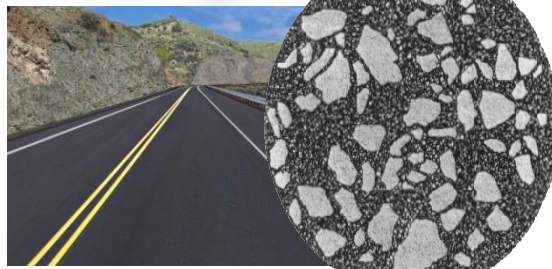
develop renewable

**Act of Parliament:**

- \$3.50 /MT of CPO produced for R&D = \$65 million
- \$.60 for promotional activities = \$12.5

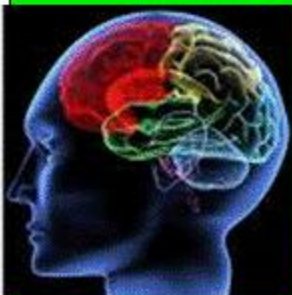
# Oil Palm

R&D



# Exploitation of oil palm phenolics

- Antioxidant
- Anti microbial
- Anti atherogenic
- Anti cancer
- Anti diabetic
- Anti hypertensive
- Anti inflammatory
- Anti obesity
- Anti spasmodic
- Anti thrombotic
- Anti allergenic
- Anti ulcer
- Memory enhancing



**Confirmed:**

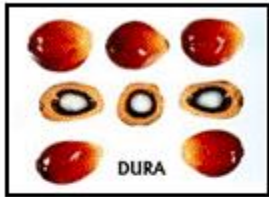
*In vitro,*  
*whole animal*  
*and*  
*microarray studies*



# GENETIC ENGINEERING OF THE OIL PALM



# Targeted Traits



**FRUIT FORM  
(SHELL)**



**TISSUE CULTURE  
UNIFORMITY**



**TENERA**



**FRUIT COLOUR**



**PISIFERA**

**YIELD**



**HEIGHT**



**DISEASE RESISTANCE**



# Diversification by adding value to biomass

Abundance of Biomass -  
80 million tons 2010  
110 million tons 2020



**10% oil**  
**90% biomass**



OIL PALM FRONDS



FRESH FRUIT BUNCH



OIL PALM TRUNK



Crude Palm Oil



Biofuel / Biodiesel



Palm Biomass



Fuel for CHP



Palm oil mill effluent (POME)



Biogas

# BIG PICTURE BIOMASS UTILIZATION FOR PALM OIL INDUSTRY EB GROUP

## BIG PICTURE

of ENVIRONMENTAL BIOTECHNOLOGY RESEARCH GROUP



**Waste to wealth**

- Generates revenue

Financial benefit to nation

20% OER (Malaysia average)

RM50 billion (2008)



If OER increased by 1%

500 million

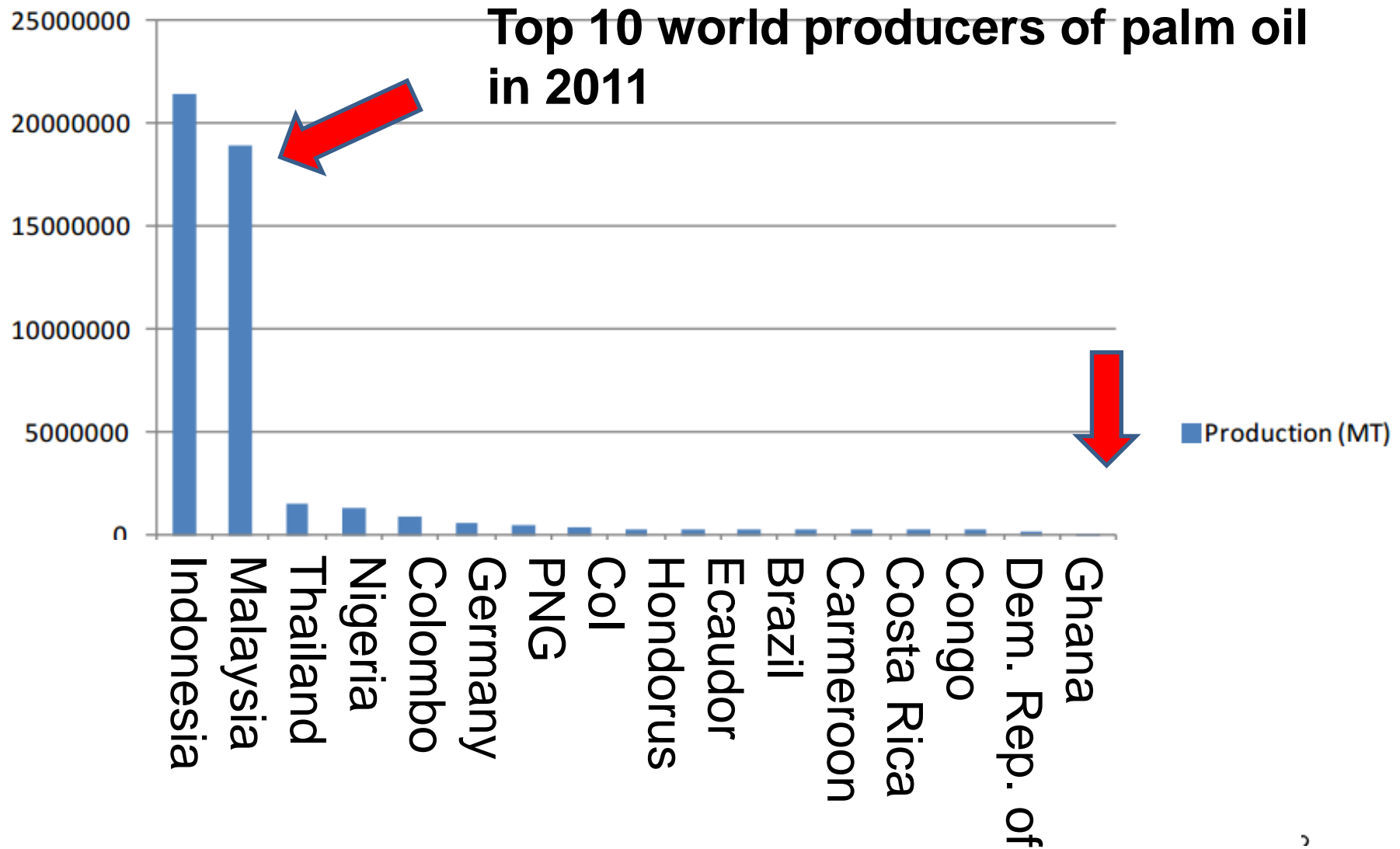
If OER increased by 2%

1000 million

**Wealth creation for Nation Building!**



# Ghana 1st country British started oil palm plantations in 19th century



# Disincentives for Palm Oil in Ghana

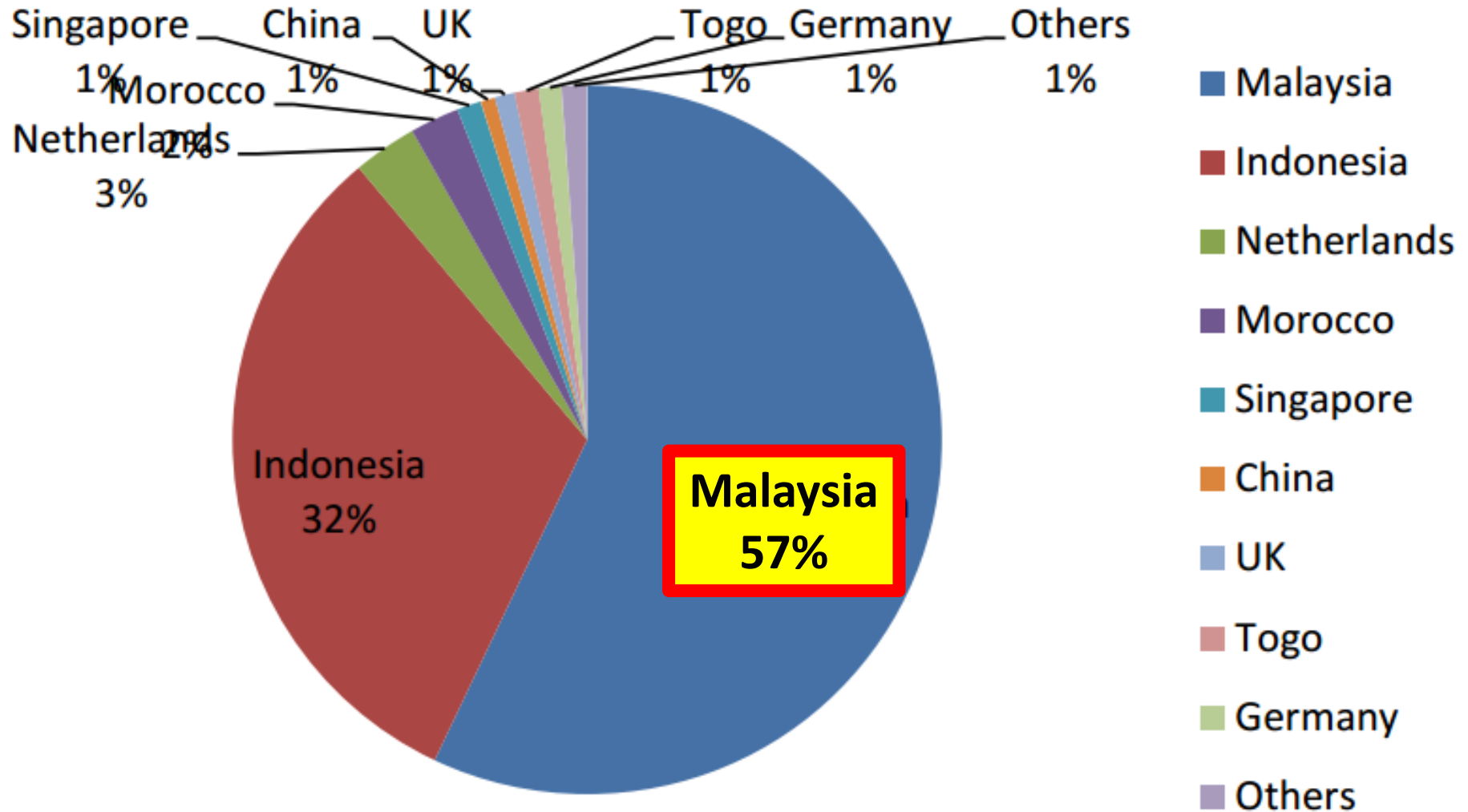
- ❑ Poor attention at policy level
- ❑ Lack of diversification into added products
- ❑ Negative impact
  - High access costs
  - Illicit taxation

## In Malaysia

- Several Strategies/ Policies
- Established Institutions
- Incentives - upstream & downstream products
- Capital Investment incentives

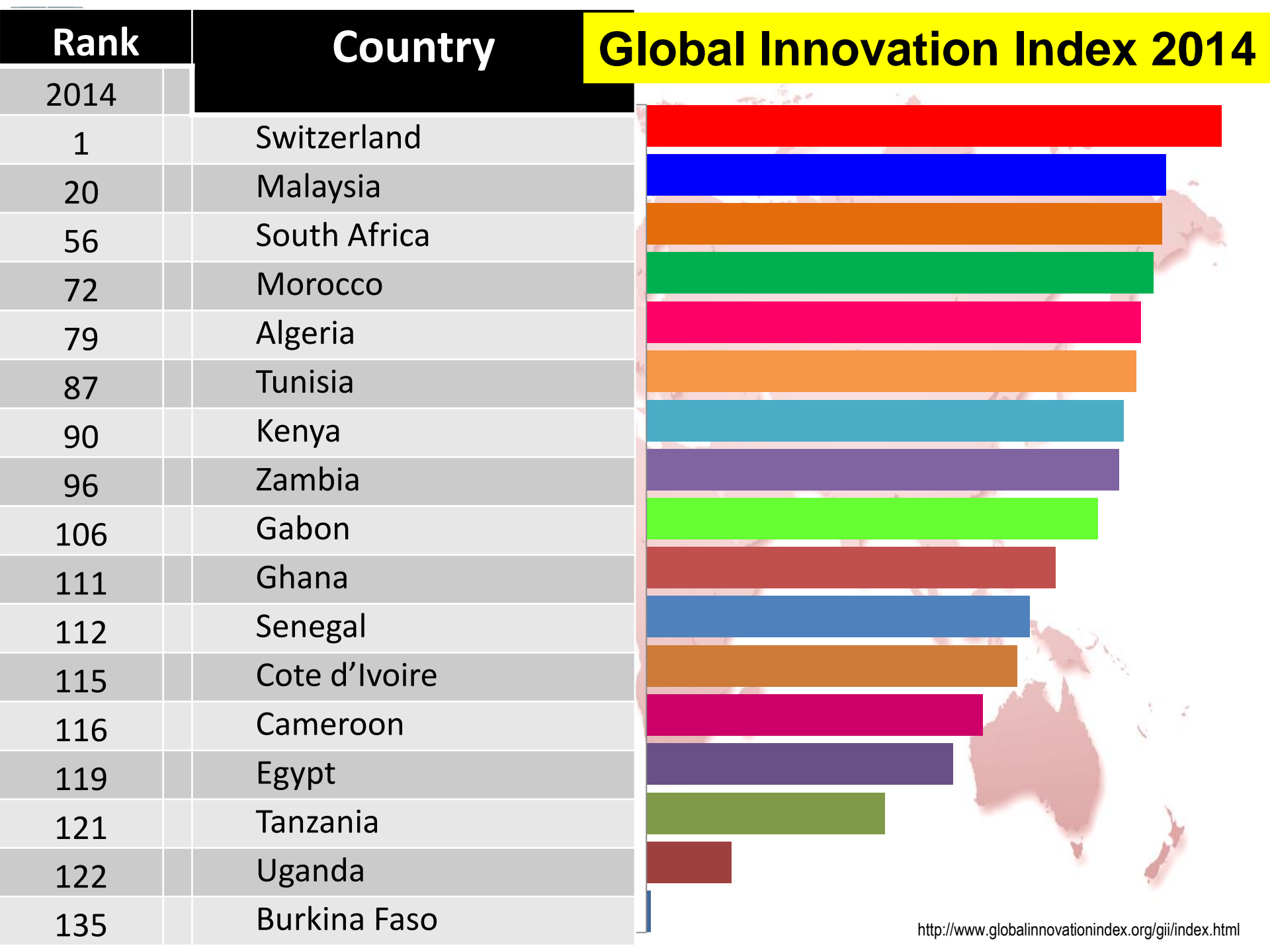
**Exploitation of IP & Appropriate Strategies/ Policies makes the difference between success & failure**

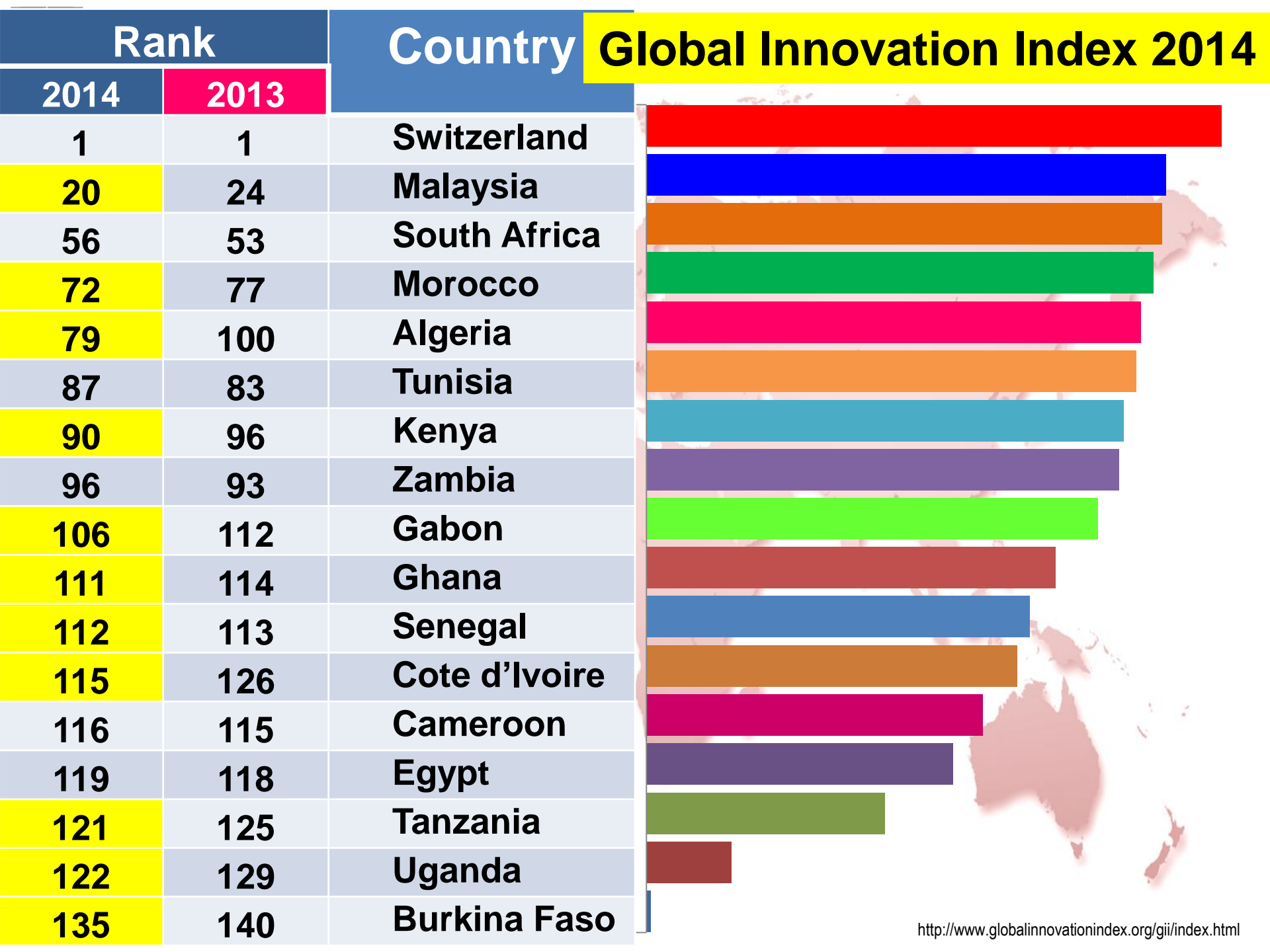
# Countries exporting palm oil to Ghana (average share, 2005-2010)



Source: UN Comtrade, 2012

# Global Innovation Index 2014





# *Role of strategies/Policies*

# Innovation a key factor

It's vital to help increase productivity, competitiveness



Business

INNOVATION is a vital ingredient to increasing productivity and ultimately raising the competitiveness of the country.

Through exploitation of the same basic resource.

Innovation and development will promote growth across the country.

The business process. For example, by ensuring a competitive right price.

Investing in science, research and education serves as a powerful engine of innovation in an economy.

The Government of action innovation system along four key dimensions; shaping a supportive ecosystem for innovation, creating innovation in place, funding innovation.

and nurturing new ventures through incubators. The success of innovation agenda requires the best academic leadership for programmes that support innovation, and will also partner with stakeholders that minimise the stigma of failure and allow those who failed in the first instance to

will be a push towards green technology through the National Green Technology Policy, in preparation for the next generation of products and services that are more competitive and safer. Regulatory changes are needed to drive innovation. There will be a push towards green technology through the National Green Technology Policy, in preparation for the next generation of products and services that are more competitive and safer.



to promote participation from the industry to co-sponsor employees to obtain industrial PhDs. Information technology (IT)

sector financing with Public Private Partnerships as an intermediate step. The Government will support development of knowledge-based schemes, improving innovation capabilities through specialised

**Without linking scientific knowledge to innovation strategy/policy, it is impossible to have sustainable development**

**Investing in science, research & education serves as a powerful engine of innovation in an economy**

**To increase productivity, & ultimately raising competitiveness of the country**

# *Transforming Malaysia into Innovation – led Economy*



# Policies

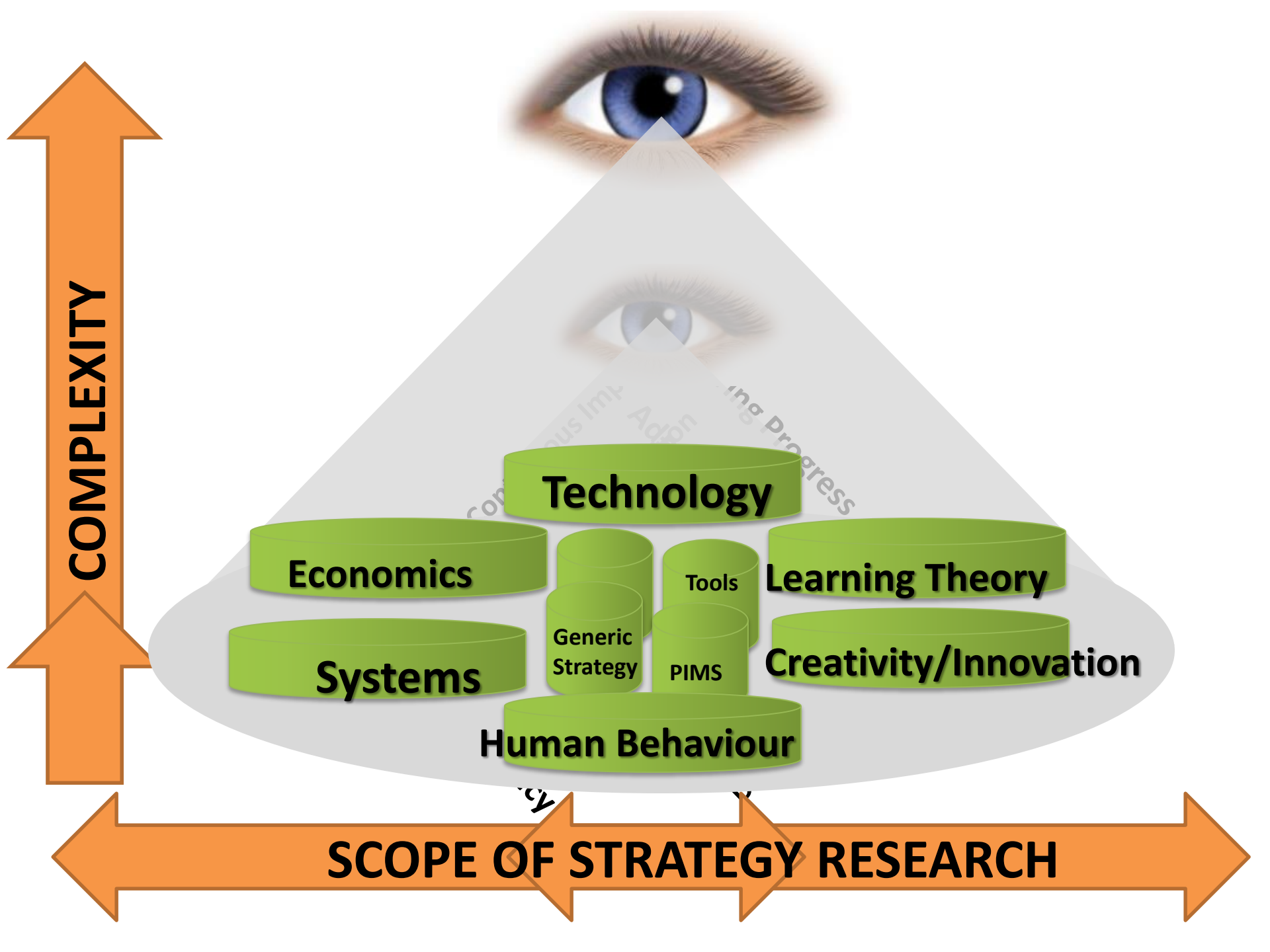


AGENSI INOVASI MALAYSIA

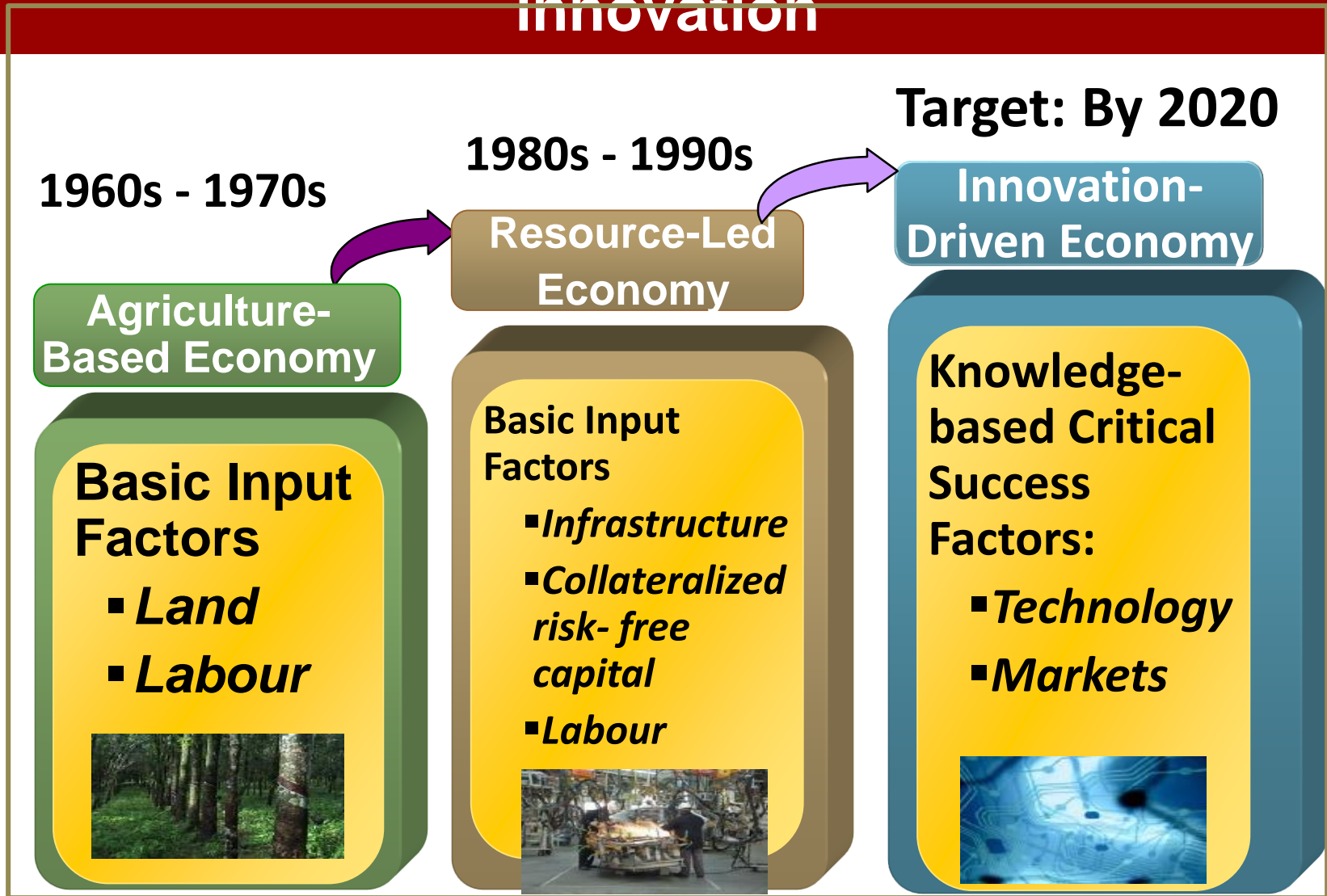
# INNOVATING MALAYSIA

A Joint Effort by  
**MOSTI & AIM**

**NATIONAL INNOVATION POLICY**



# Malaysia moving toward innovation-led economy, driven by knowledge, creativity, technology & innovation



# Continuous improvement

## Science in the nation has reached a crossroad and new strategies are needed

### *Injecting new vigour in nation's science agenda*

#### **MAKING TWO INITIATIVES WORK:**

Science in the nation has reached a crossroads and new strategies are needed

**S**CIENCE is important in nation-building. Not many would dispute that. A recent discourse on the future of science at the academy, which brought together two members of parliament and an ex-deputy minister, was unanimous on this.

The panel even went as far as articulating the need to urgently establish a parliamentary standing committee to monitor and debate on the state of science in the country.

In the United States, the President of the US National Academy of Sciences briefs the US Congress on the state of science every year. The reason why the US Academy of Sciences is given the task is because it is independent and can, therefore, report objectively.

Likewise, if Malaysia is to have a parliamentary standing committee, the academy's president is the right person to report to the committee.

Many sectors have benefited from the country's past investments in science. These include plantation, agriculture, electric, electronics and to some extent, construction.

Oil palm and rubber would not be where they are today without the prudent investment in science. The same goes for the information communication technology and electronics sectors.

It is imperative to replicate the need to have the right talent in the coming years.

The demands on science have also changed. The years ahead would witness the emergence of new sciences, such as nanotechnology, biogenetics and sustainability, just to name a few.

The impact of climate change will also be felt more in the coming years. Though spending by government has been on the rise, the same cannot be said for industry.

Getting industry to invest more in science continues to be a challenge.

In developed economies, it is not uncommon to see industry bearing almost 80 per cent of the country's spending on research and development (R&D).

We would not be wrong if we say that science in the country has reached a crossroads. New strategies are needed.



**Dr Ahmad Ibrahim**  
is fellow of the  
Academy of  
Sciences Malaysia

S2A has three thrusts: Science for Industry, Science for Wellbeing and Science for Governance.

Science for Industry essentially aims to motivate industry to invest more in research and innovation. In developed economies, more than 70 per cent of research funding is borne by industry.

This is especially true for applied research, or research closer to the market. It is the opposite here. Most of the funding comes from government.

Science for Wellbeing covers the investment in science for the public good. These include the science needed to resolve issues on the environment, climate change, public health and the like.

Science for Governance necessitates more transparency and accountability in the allocation of resources for science. After all, science is an expensive investment.

S2A very much reflects the new Science, Technology and Innovation (STI) Policy anchored by the

Energising Industry; Governance; Promotion; and, International Linkages.

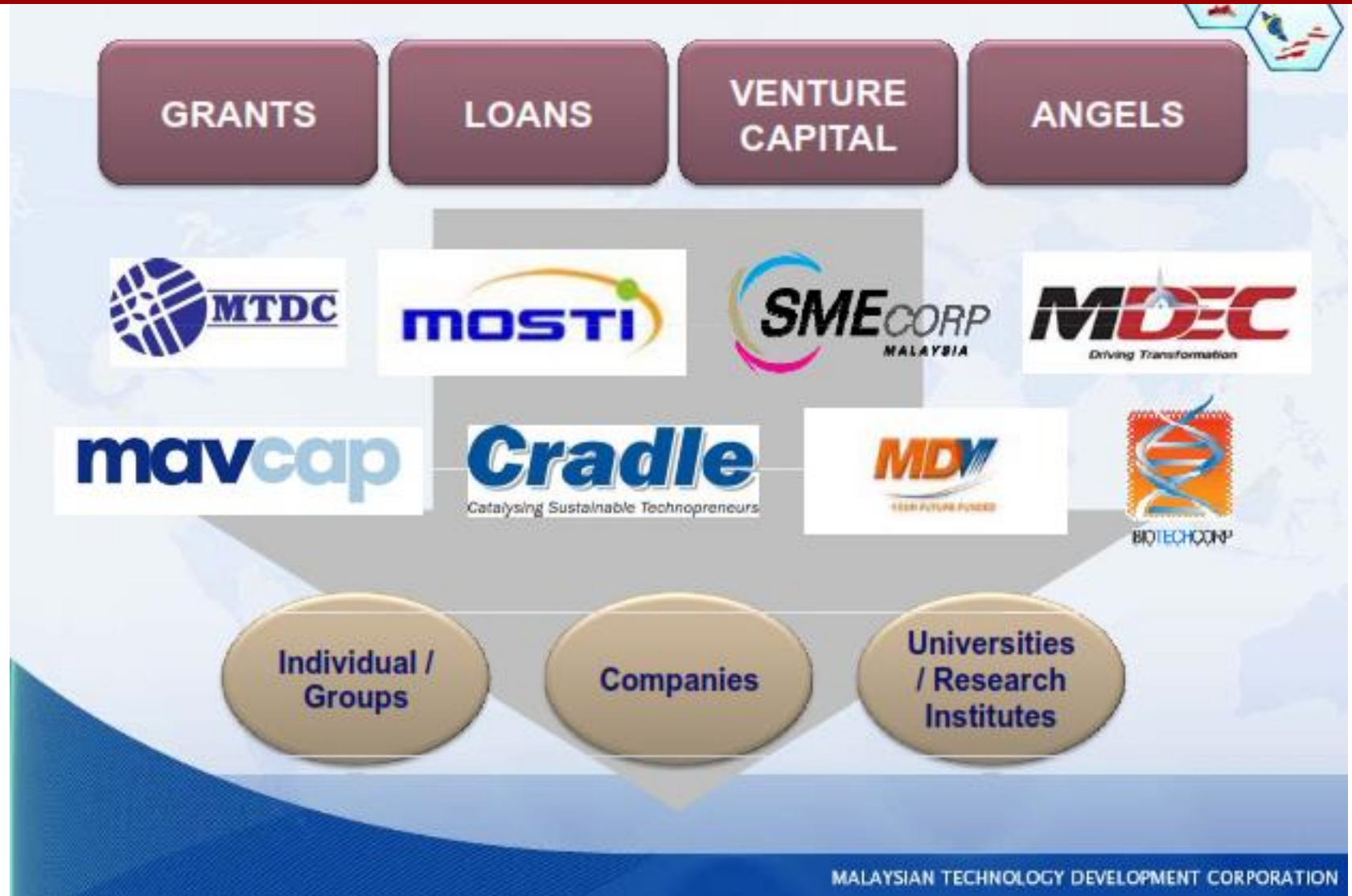
What is needed now is how to translate the two initiatives into action. Over the years, effective implementation of policies has always been the sore point. The monitoring mandate has always been weak.

What we need is a robust institutional framework to drive the efficient delivery of both initiatives. To get the best out of both plans, S2A and the STI Policy must converge. This is where the National Science and Research Council should be given the muscle to act.

The long awaited Science Act must be concluded soon. The Act will hopefully provide more teeth to a new institutional framework of science governance.

The new commitment shown by the government should pave the way for a refreshed mood on the positive future of science.

# New institutions/units established to provide financial support



# National Committees Headed by Cabinet Members

Committee	Chairperson
<b>Innovation Eco-System Committees</b>	
1. Innovation Skills	Dato Seri Mohamed Khaled Nordin
2 Intellectual Properties	Dato Seri Ismail Sabri Yaakob
3 Investment (Public Fund)	Datuk Seri Panglima Dr Maximus Johnity Ongkili
4 Innovation Megatrend	Prof Emeritus Tan Seri Dato Lim Kok Wing
<b>Wealth Creation Committees</b>	
1. Innovation Impact Projects	Dato Mustapa Mohamed
2. Investment (Equity)	Yan Sri Nor Mohamed Yakcop

By JEANNETTE GOON  
educate@thestar.com.my

THE advancement of research and development (R&D) is important in countries that aim to progress economically.

Recognising this, the Government has made R&D an area of focus in the economic and social development of the country.

The Higher Education Department in the Education Ministry has begun programmes and provided funding for these in order to drive R&D in the country.

Higher Education Department deputy director-general (IPTS sector) Prof Datuk Dr Roziah Omar said higher education institutions play a role in creating new talent through their research programmes.

In order to further spur the research excellence in local higher education institutions, the Malaysia Laboratories for Academia-Business Collaboration (MyLab) and Higher Institution Centre of Excellence (HiCoE) programmes were conducted.

The MyLab programme has a focus on four research areas — nanotechnology, biotechnology, aerospace and automotive technology — and they have received an RM17mil grant from the Education Ministry.

Second Education Minister Datuk Seri Idris Jusoh said the ministry had so far invested RM43mil in the first phase of the HiCoE programme and has received a return of RM59mil in the form of new talent, publication and research innovation.

“Through emphasis on R&D, there have been more papers

# R&D important for nation's growth



**Recognition:** Idris with the recipients. (From left) Prof Bassim, Prof Abdul Latif, Prof Zakri, Prof Ishak, Prof Zaini and Prof Roziah. - Bernama

published (written by local researchers), which will lead to more citations.

“There will also be development of new products,” said Idris after the ceremony.

He added that in a time period of five years (2007- 2012), there has been a 310% increase of papers published in international peer-reviewed journals.

“This is the highest increase in the world,” he said.

He recognised the achievement of four Malaysian scientists who were in the top 1% of researchers whose papers were cited.

As a result of the frequency with which they were referenced, they were also listed in the Thomson Reuters’ *The World’s Most Influential Minds 2014 report*.

They are Prof Dr Abdul Latif Ahmad and Prof Dr Bassim H. Hameed from Universiti Sains Malaysia, Prof Dr Ishak Hashim from Universiti Kebangsaan Malaysia and Prof Dr Saidur Rahman from Universiti Malaya.

Also present at the ceremony were MyLAB board of governors chairman Prof Tan Sri Zakri Abdul Hamid and Education Ministry secretary-general II Prof Datuk Seri Dr Zaini Ujang.

# Political commitment

Director  
SRI

PM







Public Service – **TOGETHER WE TRANSFORM**



# Think out of the box

By **TEH ENG HOCK**  
 enghock@thestar.com.my

The Civil Service needs to focus on innovation and creativity in today's competitive environment in order to change the public sector transformation.

Embracing innovation and creativity is key to successfully supporting the four pillars of the Government, namely the iMalaysia concept, the Government Transformation Programme, New Economic Model and the 10th Malaysian Plan.

Government agencies need to prioritise efforts in introducing innovation to all aspects, including management and service delivery to people and clients.

Innovation, coupled with proper planning, will help the country achieve its objective of being a high-income nation within a short period of time.

Prime Minister Datuk Seri Mohd. Najib Tun Abdul Razak had emphasised that the Government would transform Malaysia through a holistic innovative process, ranging from innovative administration in the private and public sector, societal innovation, urban and rural innovation, and branding innovation.

Other fields singled out for innovation were education, healthcare, transportation and social security.

through pre-cursors such as the iMalaysia concept, National Key Result Areas (NKRAs), Key Performance Indicators (KPI), New Economic Model, and the establishment of Special Taskforce to Facilitate Business (PEMUDAH), Performance Management and Delivery Unit (PEMANDU) and the National Economic Advisory Council (NEAC).

This underlined the Government's commitment in bringing about total innovation to bring the country to the next economic level.

"If previously, Quality Control Circle (QCC) focused on solving problems pertaining to main issues within departments, today, Innovative and Creative Circle (ICC) has given space to the members of its organisation to be innovative and creative in producing new ideas, without having to wait for issues or problems to occur within the department.

"In accordance to that member of the organisation must be more sensitive, concern, and proactive within their respective working environment, in line with the aim to improve our service," said Najib

He said: "If once upon a time we succeeded in transforming the economy from agriculture to industrial based, now we are moving forward towards a new economic model based on innova-



**Najib:** 'I do not want the automation culture to become the lifestyle among the civil servants'

While the achievements of the civil service had been measured in terms of productivity in the past, he said the civil

Government agencies have been encouraged to create an environment that is conducive for creative thinking,



The Prime Minister's Innovation Award trophy

The agencies and departments must also raise awareness on the necessity of the innovative approach in service delivery. This can be done through campaigns, exhibitions, seminars, talks and contests.

Internally, each agency and department must set up a mechanism which encourages and gathers ideas from its staff. All suggestions must be received regardless if it brings about a big o

# Innovation - Inland Revenue Board wins PM Award

27 May 2010 The Star

THE STAR, THURSDAY 27 MAY 2010

# Nation

thestar.com.my/news/nation

free seats  
kok >N18

Illegal sand mining  
angers folk >N29



Rep: We  
need more  
reports on  
activities  
>N6

## RM1mil award for IRB

### Reward could be used for bonus or training, says PM

**KUALA LUMPUR:** The Inland Revenue Board (IRB) has taken home a RM1mil incentive for winning the Prime Minister's Innovation Award.

The reward, said Prime Minister Datuk Seri Najib Tun Razak, could be used in any way deemed meaningful by the board – including for training purposes or to be given out as bonus.

Najib hoped the award would be a strong encouragement for the department – all the way from the head of department to the lowest level of staff – to want to perform even better.

The Prime Minister presented the award at a ceremony yesterday.

IRB chief executive officer Datuk Hasmah Abdullah said the department had always been negatively perceived by the public, but this would not dampen its determination to keep improving.

"Many people have the common perception that paying taxes is burdening. Our key to innovation is to make tax payment easy and we have done it successfully," she said after receiving the award from Najib.

Earlier in his speech, Najib said Malaysia had no choice but to be willing to embrace change in this globalised era. The public sector must be able to think out of the box and be creative

to bring about development.

"We need to engage new methodology and approach because other countries which were not our competitors before have changed and are competing against us," he said.

He added that the Government sector had taken a big leap when it introduced the National Key Result Areas and Key Performance Index to ensure that the country was not lagging behind when others were moving forward.

"There must be innovation in the government administration to ensure that its outcome will please and satisfy the *rakyat*," he said.

TS

Two

**Feminine feminist**

Miss Universe Malaysia 2010 Nadine Ann Thomas is a self-confessed feminist who is into make-up and looking pretty.

Biz

**TM's backhaul rates too high**

In Bhd says Telekom Malaysia backhaul charges are expensive and it is forced to build its own facilities.

ro

to move its headquarters Shah Alam soon. Meanwhile, were shocked to learn of

# Income Tax filing done Online

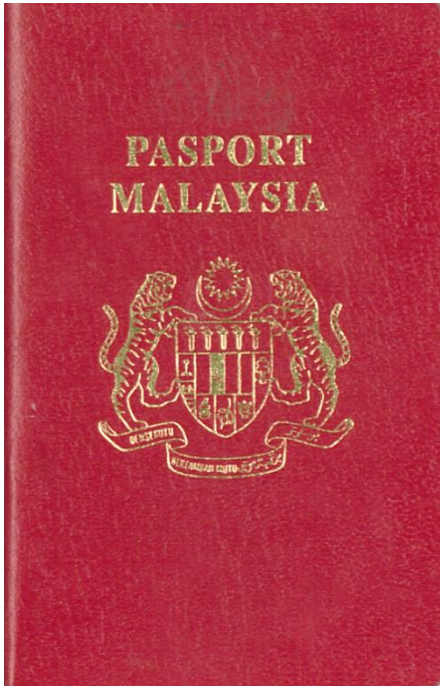


## E-Filing LHDNM Easy, simple & Safe

### PENGESAHAN PENERIMAAN e-BE BAGI TAHUN TAKSIRAN 2011 ACKNOWLEDGEMENT RECEIPT e-BE FOR YEAR OF ASSESSMENT 2011

Nombor Siri <i>Serial Number</i>	BE 240174
Nama <i>Name</i>	PROF DR MOHAMED SHARIFF BIN MOHAMED DIN
No. Cukai Pendapatan <i>Income Tax No.</i>	SG 02184673010
No. KP Baru <i>New IC No.</i>	490314055093
Jumlah Pendapatan <i>Total Income</i>	RM 209,402
Pendapatan Bercukai <i>Chargeable Income</i>	RM 190,369
Jumlah Cukai Yang Dikenakan <i>Total Tax Charged</i>	RM 10,144.94

# Renew passport

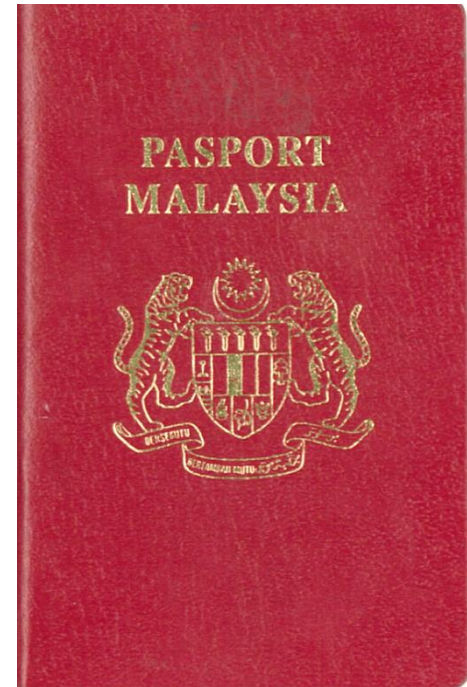


Deposit old passport



# Renew passport

Thumb  
print



2 hrs

New passport ready

# Passing immigration

Insert  
passport



# Passing immigration

A person wearing a light blue and white long-sleeved shirt, blue jeans, and a black backpack is standing at an immigration checkpoint. They are using a grey machine with a red scanner. A yellow arrow points from a cyan box labeled 'Thumb print' to the scanner. The background shows other people and airport equipment.

Thumb  
print

Used since 2003

# Commercialization: Moving to the global market



- Pakistan
- India
- Philippines
- South Africa
- Guam
- Papua New Guinea
- Thailand
- Vietnam
- Egypt
- Turkey
- United Arab Republic
- Indonesia
- Bangladesh
- China
- Sudan
- Cameroon
- Nigeria
- USA



**R&D  
necessary  
to make  
product  
technologically  
competitive**

**Gross sales >US\$7 Million**



# Biotechnology for Wealth Creation and Social Well-being

**Long term goals – going global**



**By 2020 Malaysia will be a global player in  
biotechnology & will generate at least 20 global  
Malaysian companies**

# *Lessons from successful nations*

# Top innovation country

## Switzerland No. 1 in 2014 Global Innovation Index



Global Innovation Index 2013:  
US rejoins five most-innovative nations, Switzerland keeps top spot



# Lessons from successful countries

1<sup>st</sup> :

- ❑ **Well-constructed innovation strategies**
- ❑ **Effective implementation**

Successfully able to influence &  
to **increase** their **innovation capacity** &  
competitiveness

# Top innovative countries

## Common in 26 nations

- **Inventor** – high academic achievement & high-tech advantage
- **Transformer** – attract inventive firms from other countries because of production & marketing expertise
- **Financier** - high R&D spend per capita & availability of local & foreign venture capital

# Challenges



# Strategy formulation

**Crystal clear strategy**

**Vague strategy will limit  
implementation**

# IP strategy

**Spells out**

- **How best to develop the talent base for an innovation system**



# Without IP strategy

**Waste valuable resources & miss opportunities to protect valuable assets**



# No single strategy works for all countries

- ❑ Each country is different & need to crafts its own strategy
- ❑ Understand comparative advantages & design innovation policies
- ❑ Exploit advantages & raise the odds of success

# Twin Towers

Shukaran

Thank you

