

INTERNATIONAL SOCIETY OF SUGAR CANE TECHNOLOGISTS

11th Germplasm & Breeding
&
8th Molecular Biology Workshops

Pushing the frontiers of sugar cane improvement

1 to 5 June 2015
Saint-Gilles, Réunion Island

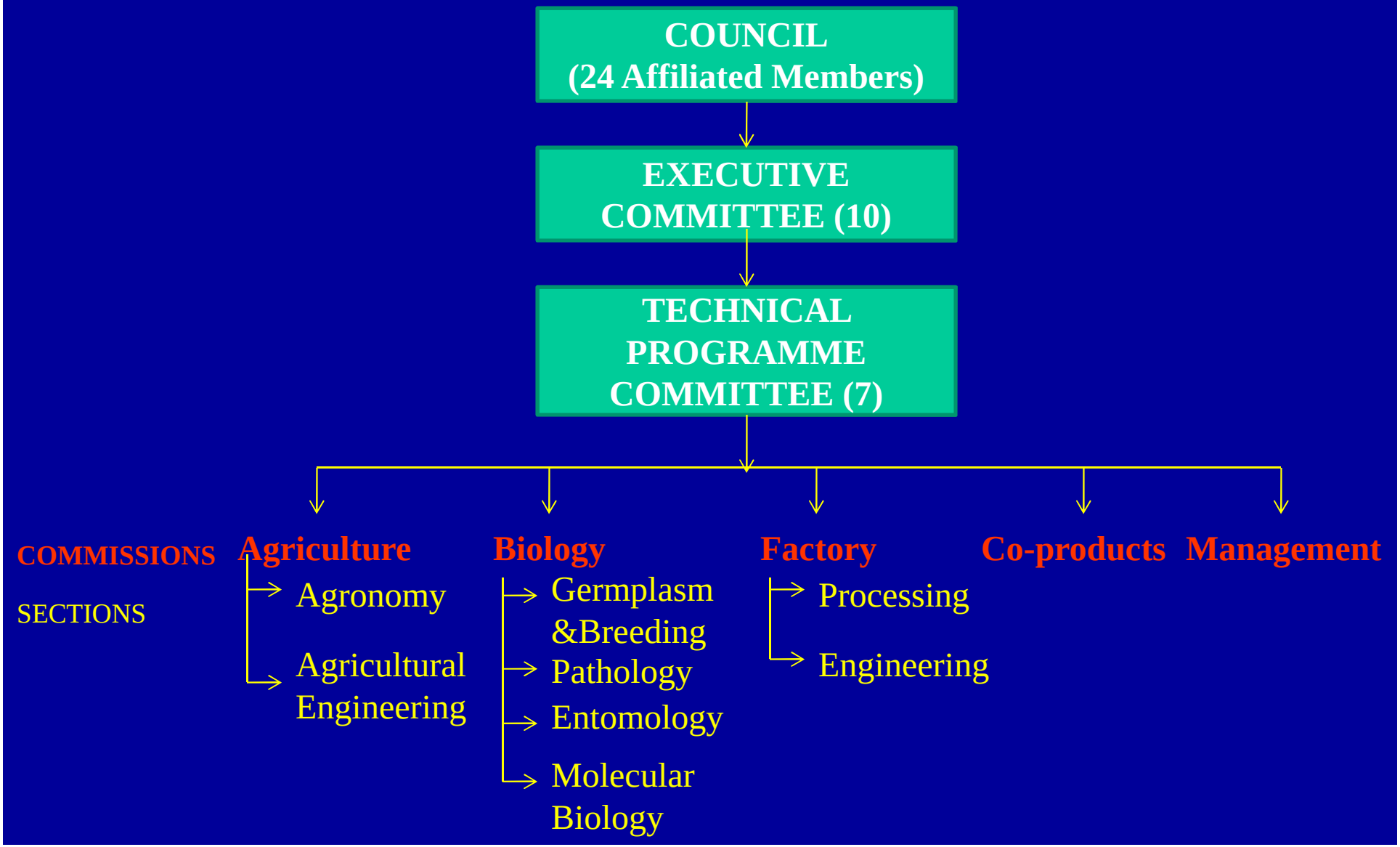
ISSCT

- **Created 1924 in Hawaii**
- **Permanent Secretariat 1996 (MSIRI Mauritius)**
- **Secretariat 2007**
- **Congresses every three years except in World War II**
- **Specialized Workshops since 1984 during inter-congress period**
- **Projects:**
  Collection of sugar cane germplasm
  Maintenance of World Sugarcane Collections in Cananore, India and Florida, USA
  Establishment of specialized Consortia
- **1448 Members from 64 countries**

Website: www.issct.org

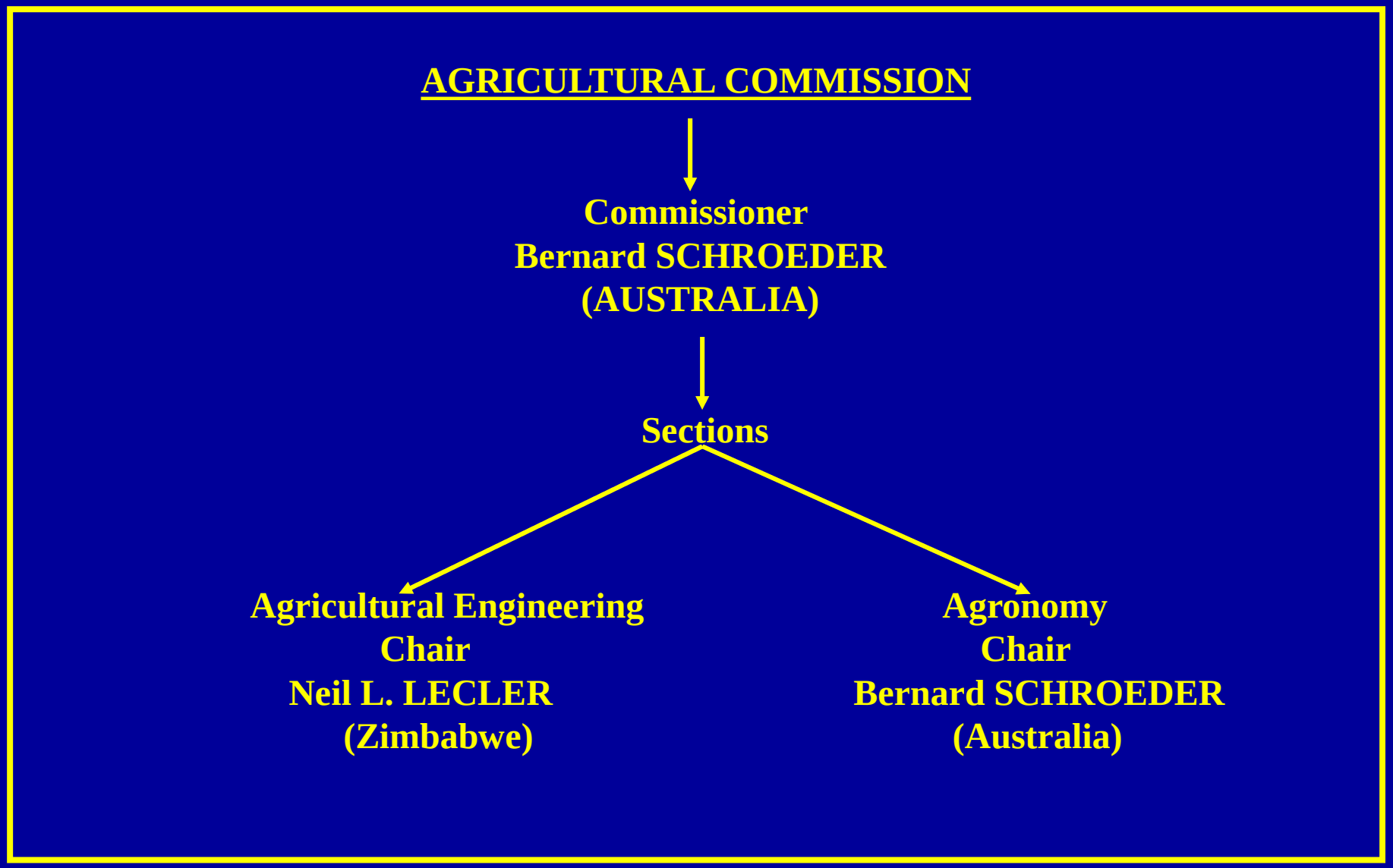
I S S C T

Organigram

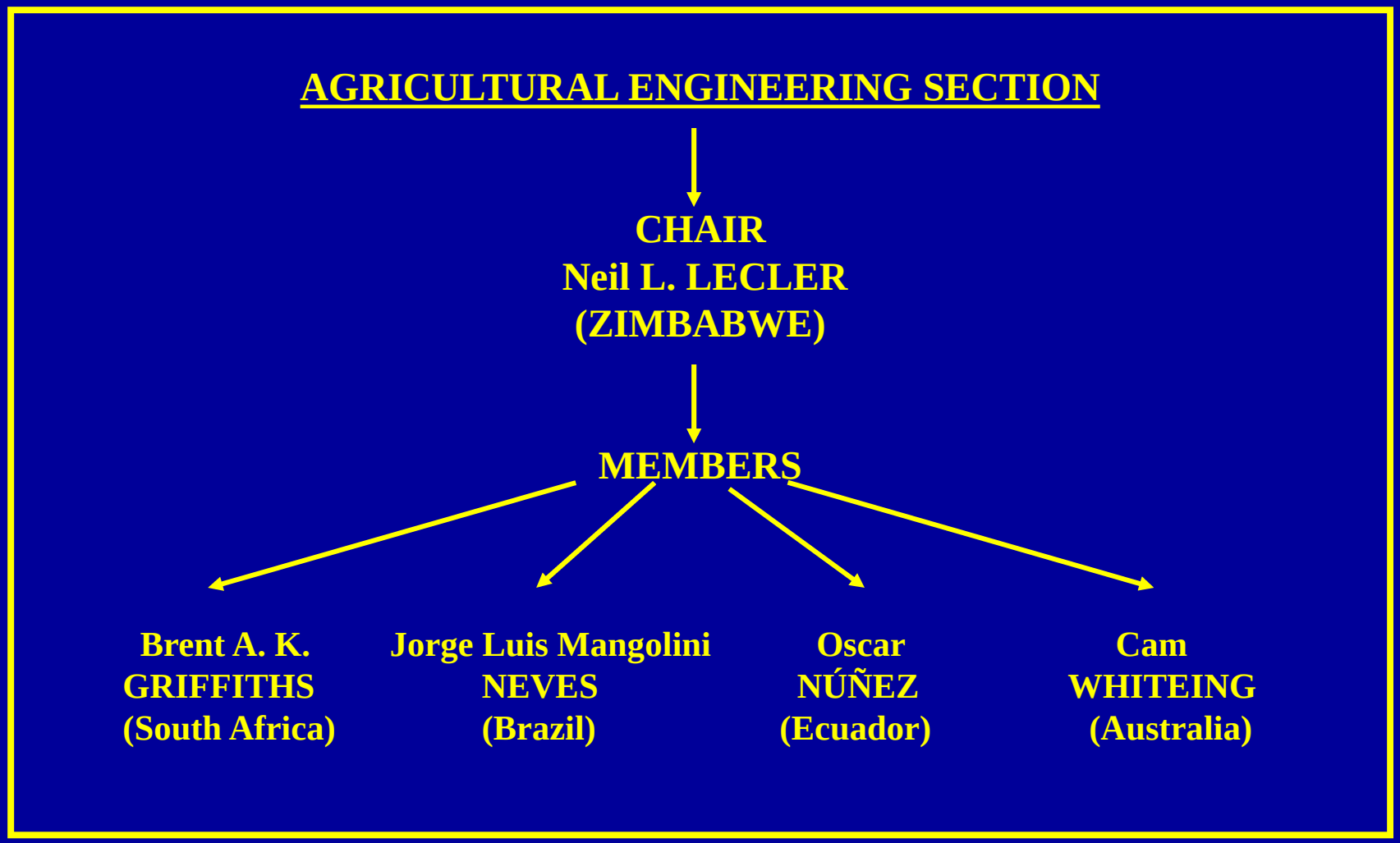


EXECUTIVE COMMITTEE		
Timothy John MURRAY, Chair	Canegrowers	South Africa
Philippe ROTT, Vice-Chair	CIRAD/ University of Florida	France/USA
Robert Gilbert, Chair TPC	University of Florida	USA
William BURNQUIST	CTC	Brazil
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Freddie MARTIN	Louisiana State University	USA
Raul REISSNER	ATAM	Mexico
Jorge SCANDALIARIS	EEAOC	Argentina
Jean Claude AUTREY (ex-officio), General Secretary	ISSCT	Mauritius

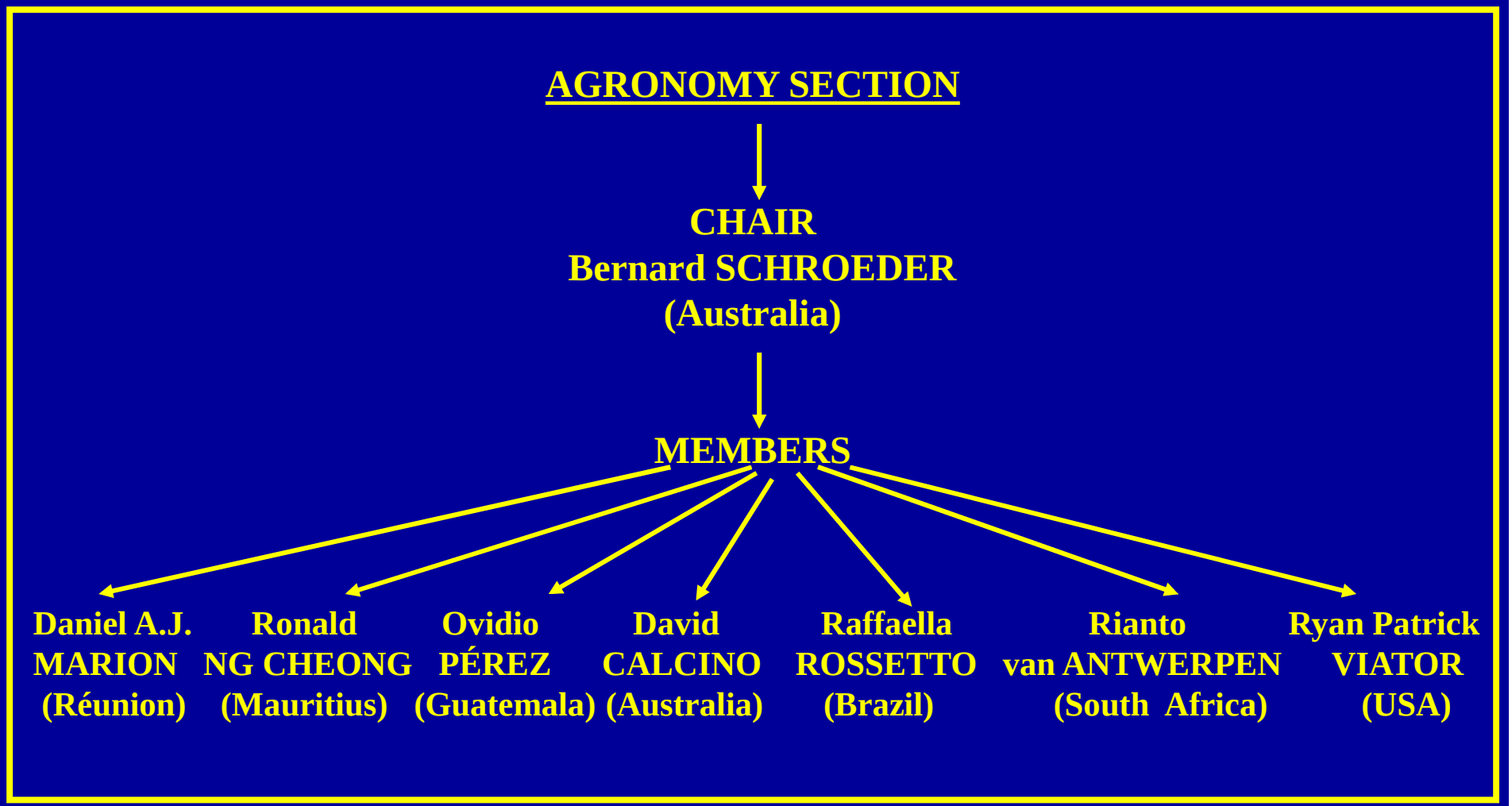
ISSCT OFFICE BEARERS



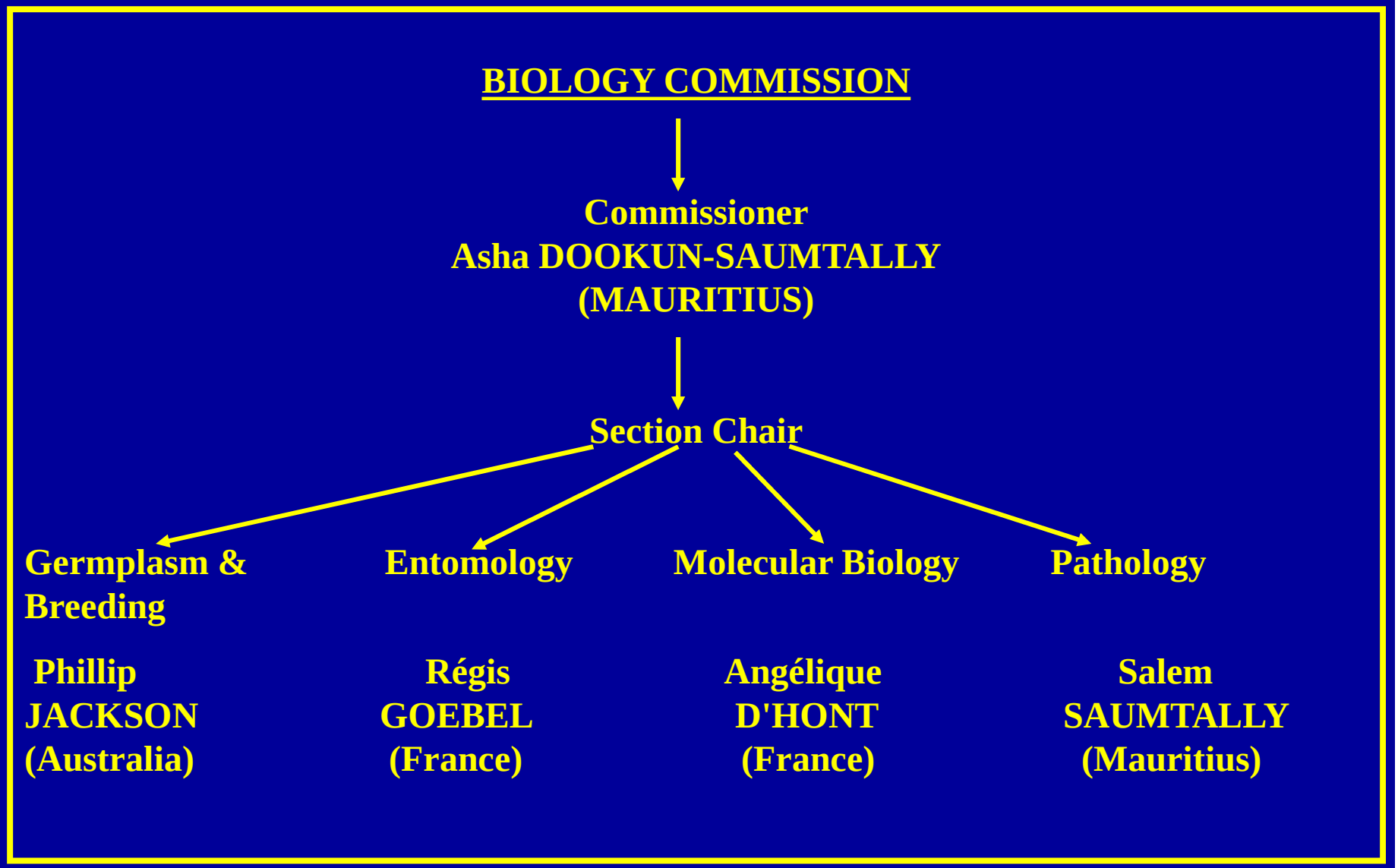
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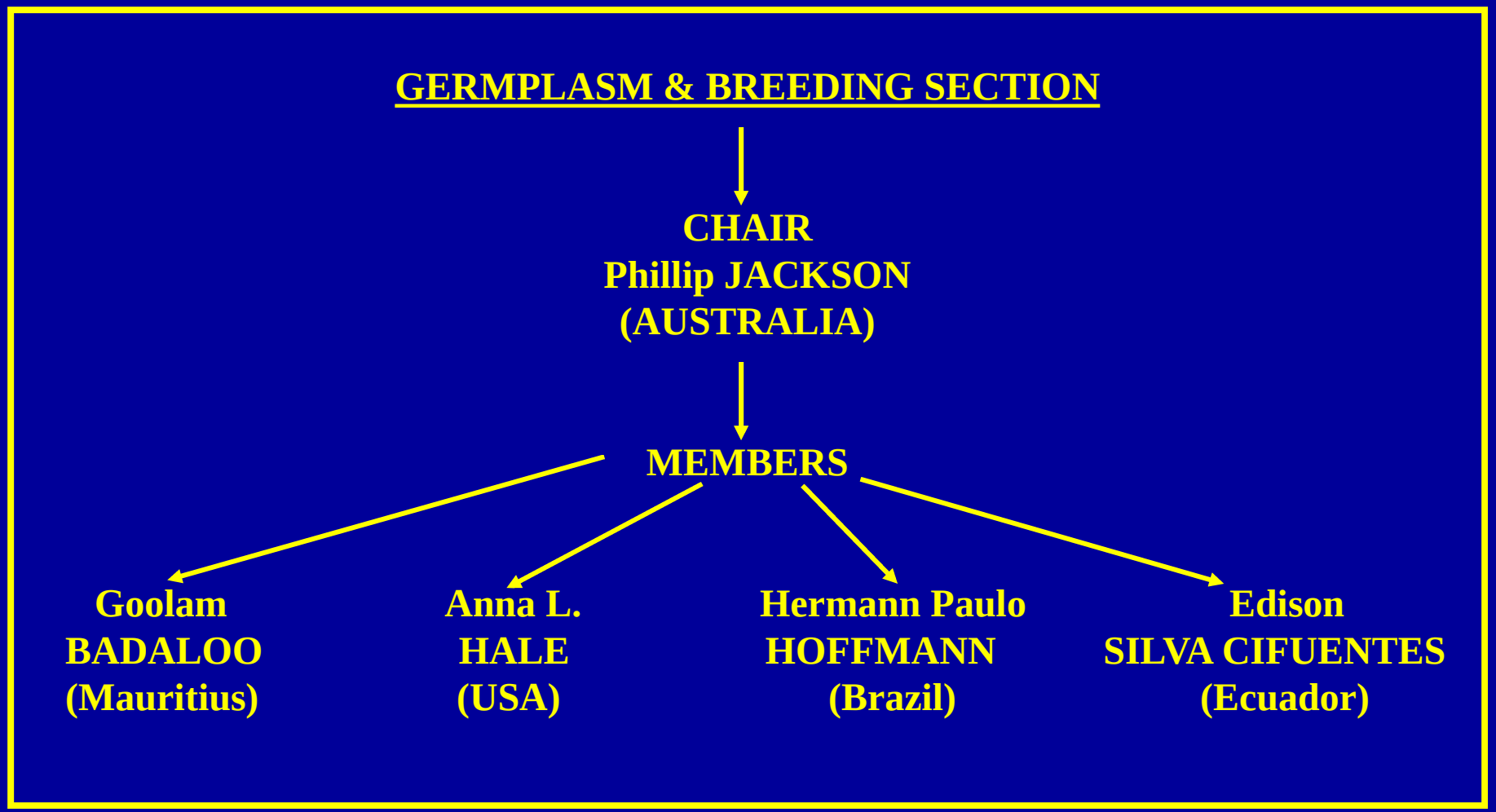
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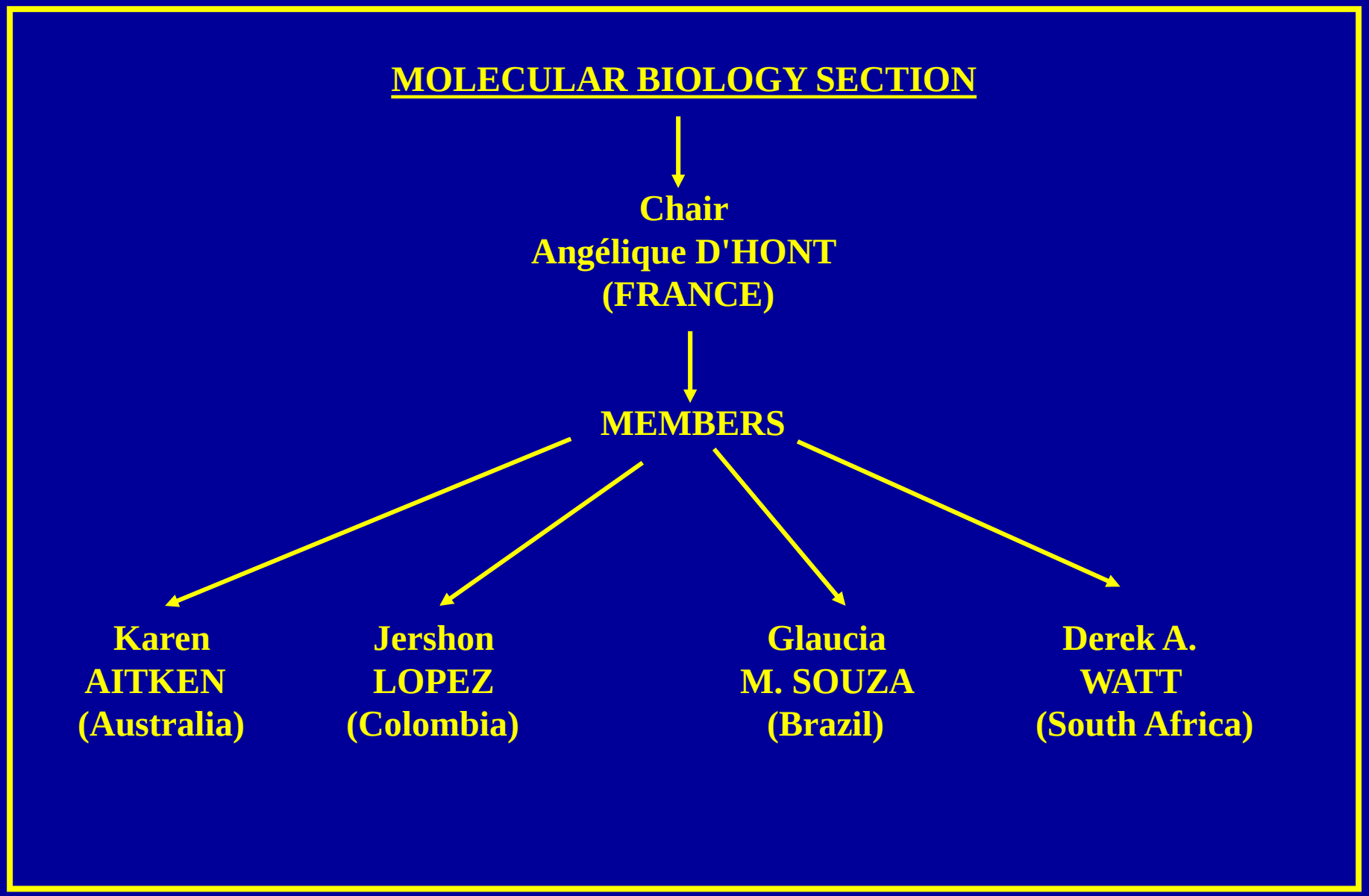
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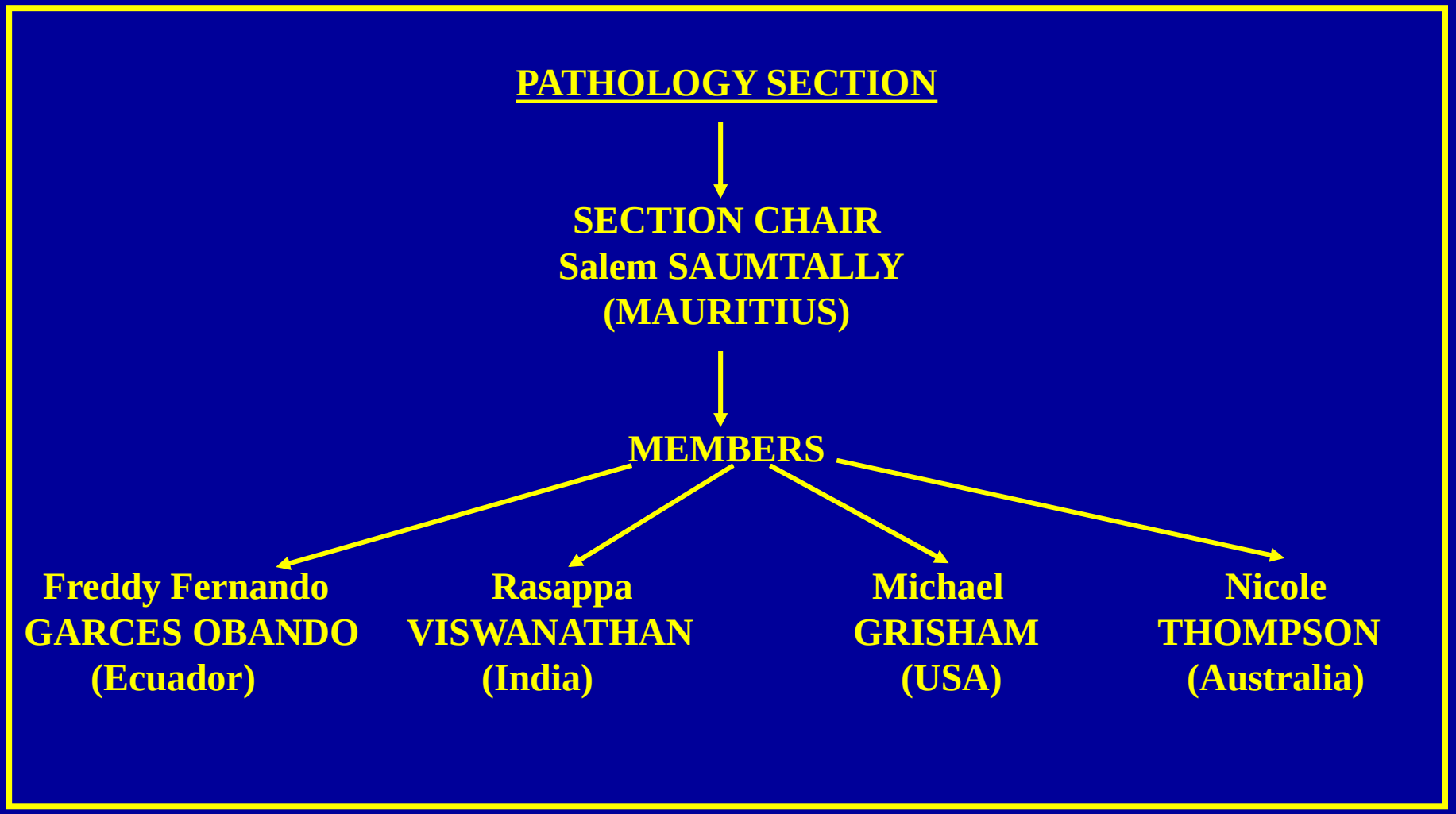
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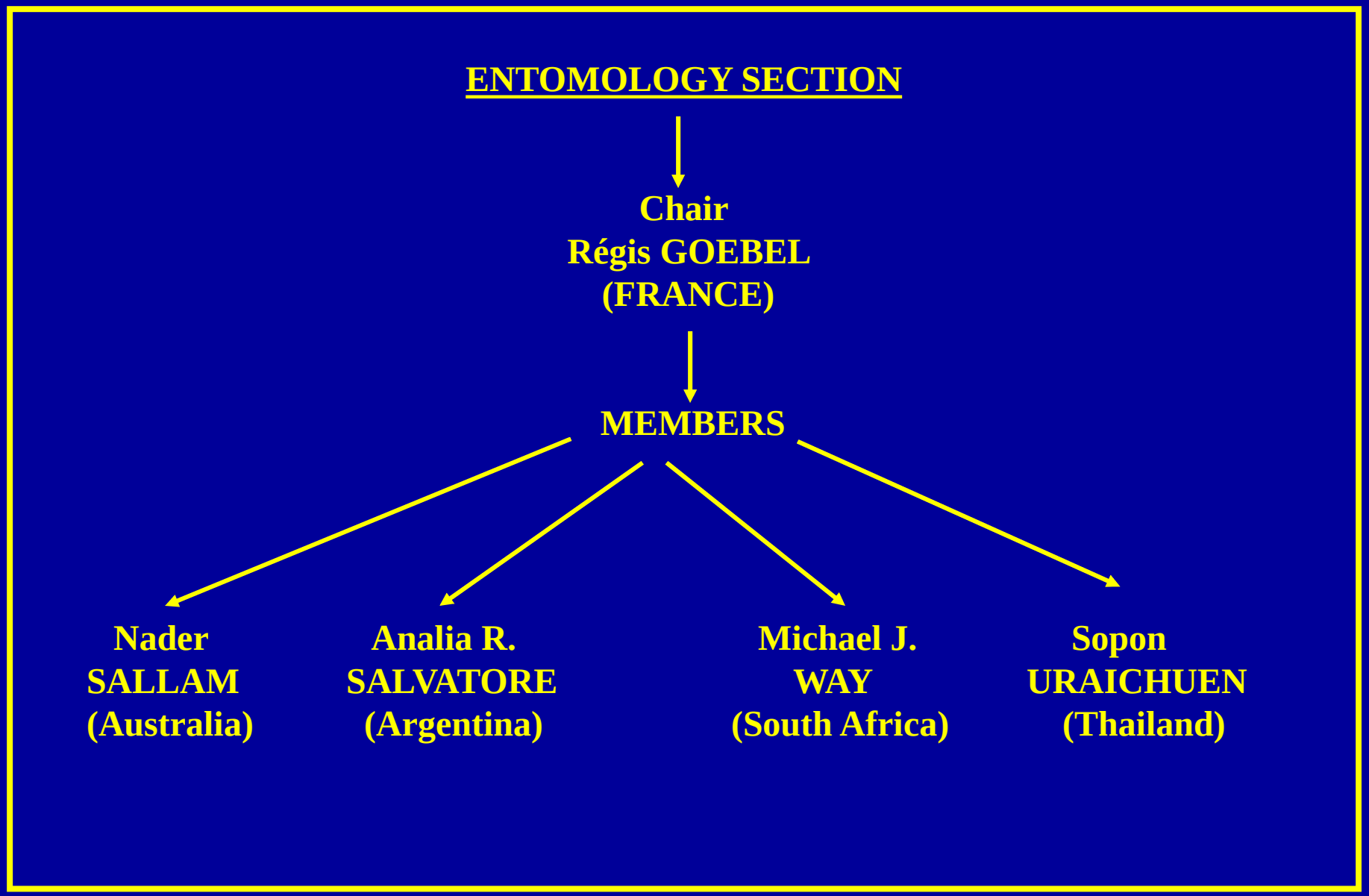
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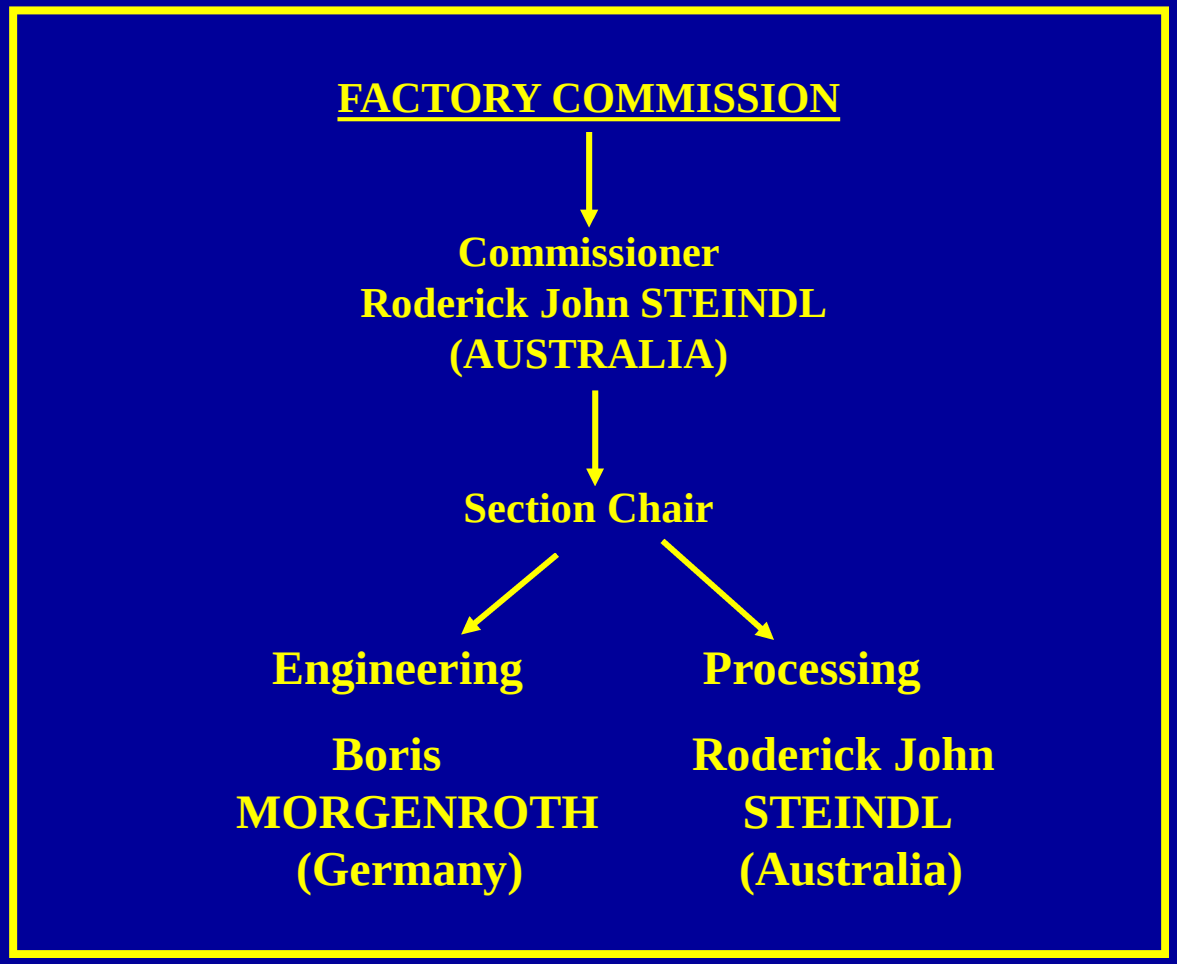
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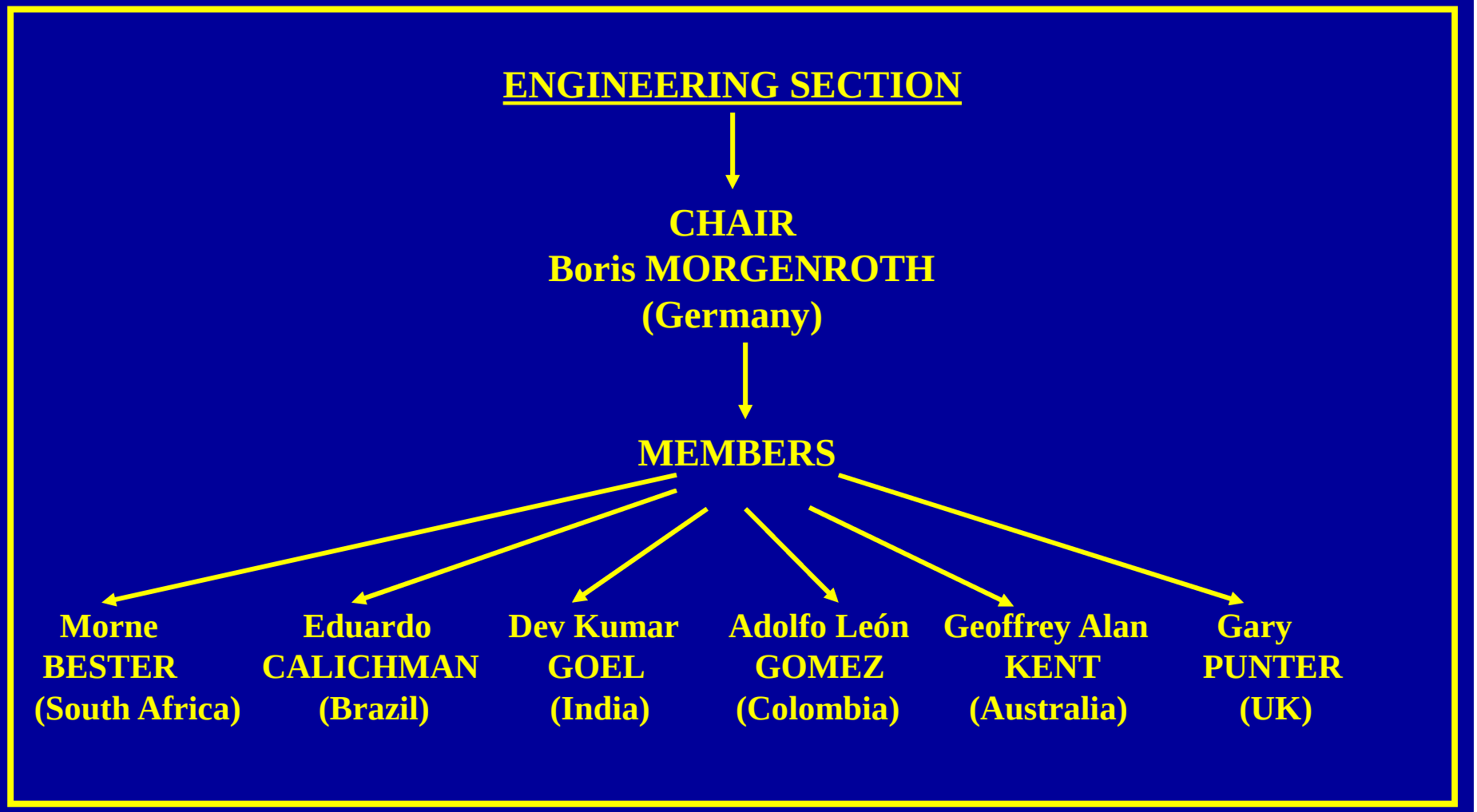
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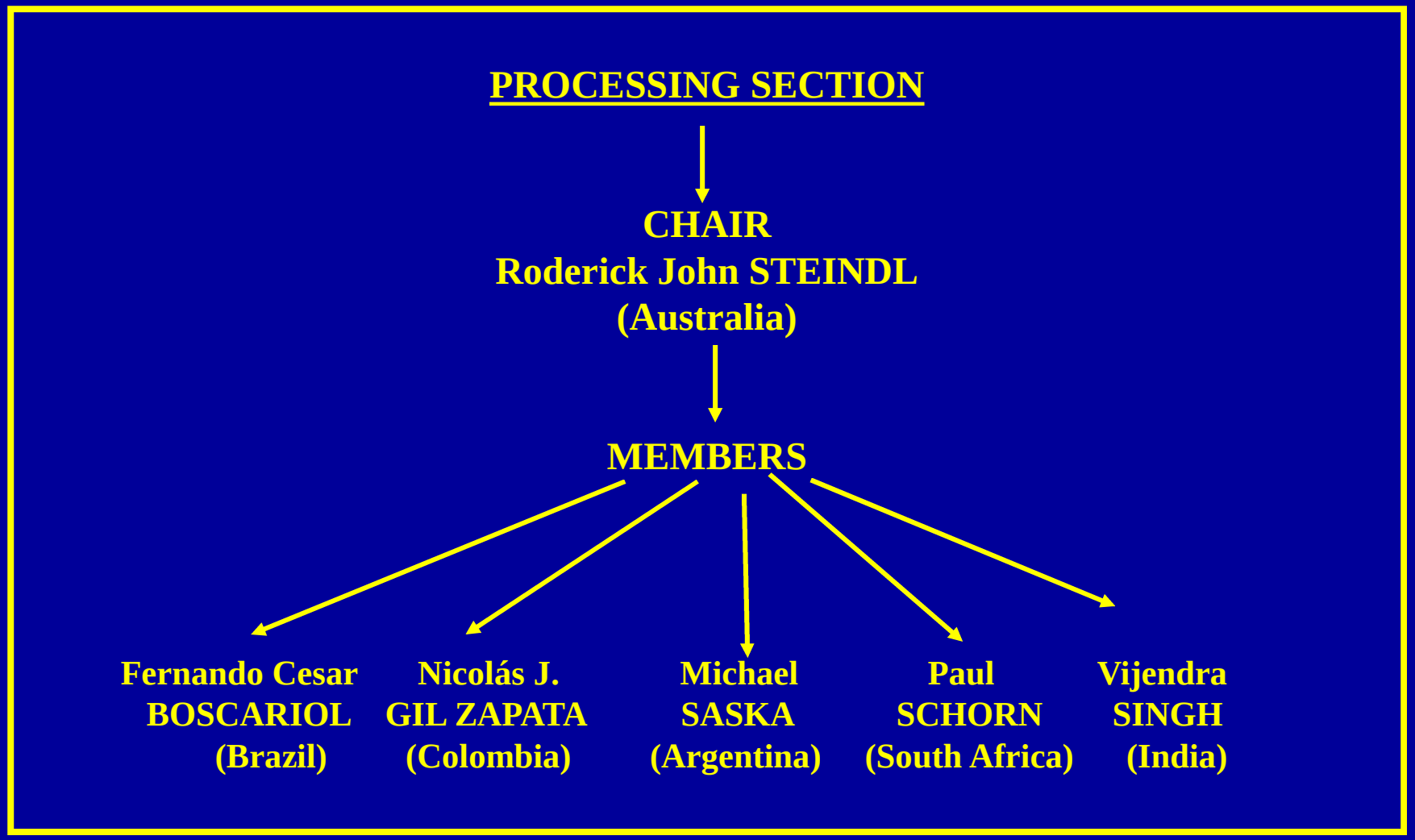
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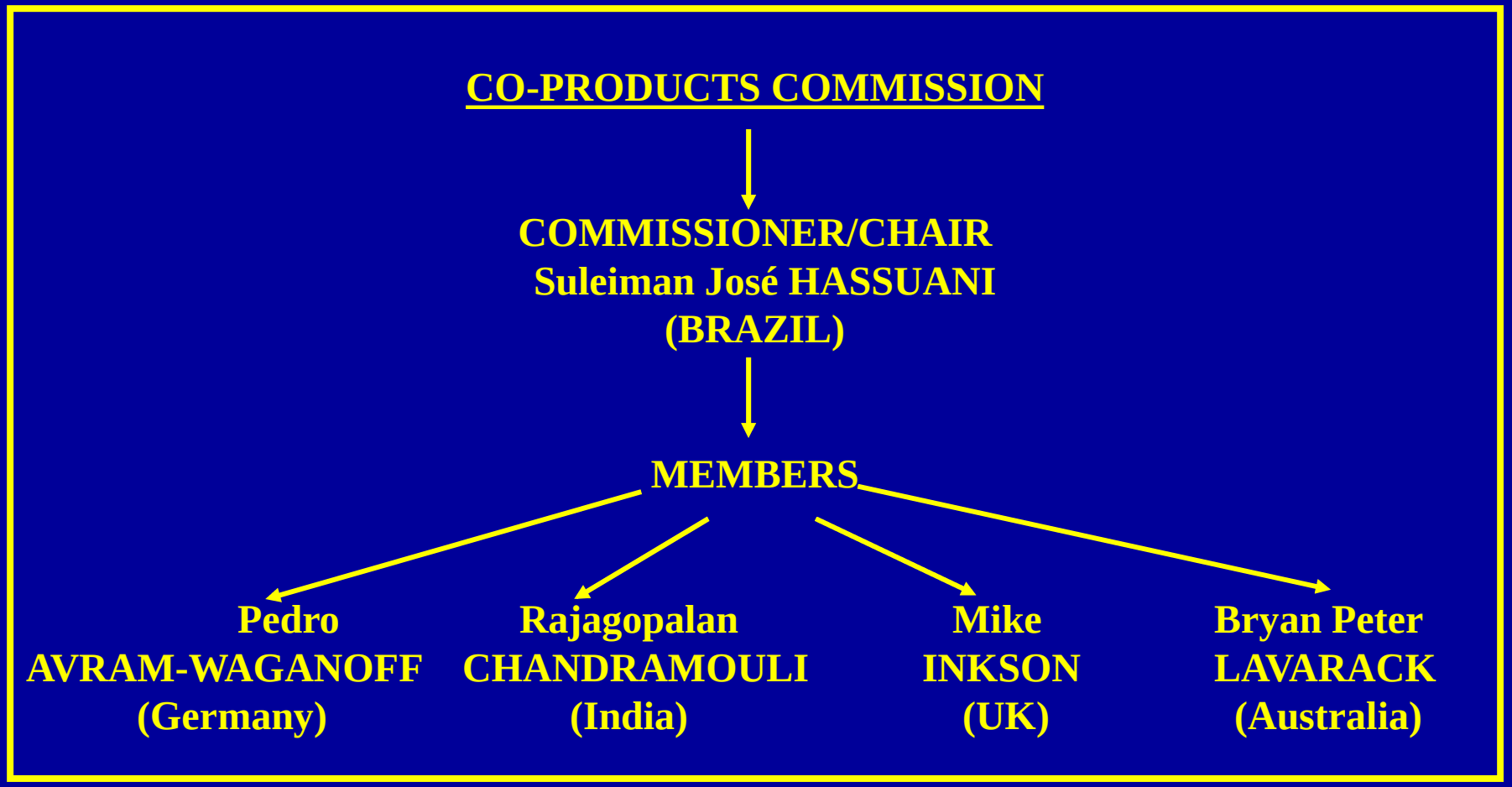
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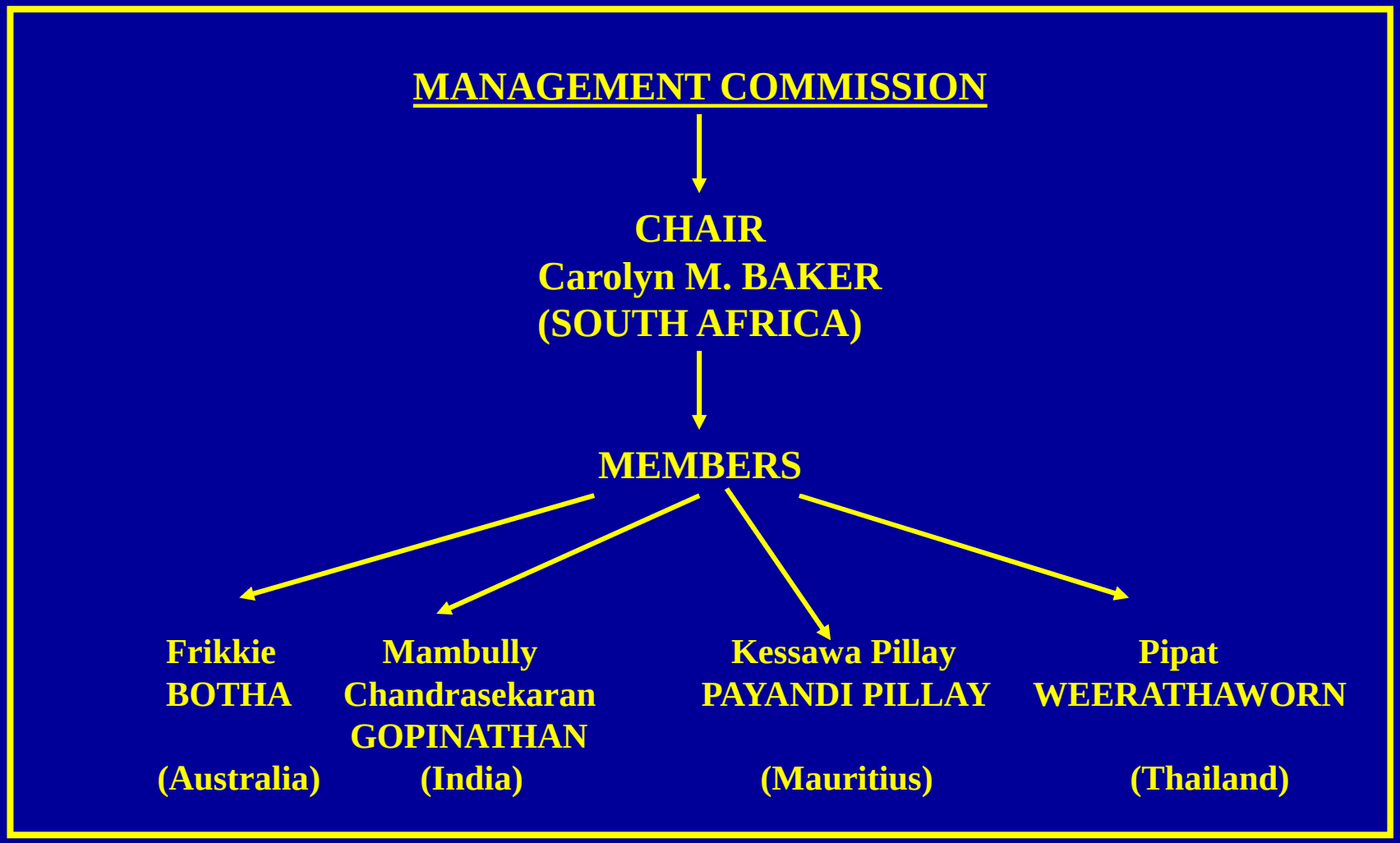
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I S S C T

MISSION STATEMENT

The Society is committed to the economic and sustainable advancement of the sugar cane industries of the world and associated communities, through promoting innovative research, development and the adoption of technology…..

I S S C T

MEMBERSHIP:

- Individual US$ 140
- Institutional US$ 300 (Research Institutions)
- Affiliate US$ 300 (Main technologists society)
- Associate US$ 300 (Other technologists societies)
- Corporate US$ 2 000 (Commercial companies)

Membership lasts for some three years from the end of one congress to the end of the following one

International Society of Sugar Cane Technologists Schedule of Workshops 2013-2016		
Section	**Venue**	**Date**
Factory Engineering & Processing	SOUTH AFRICA	24 to 28 August 2014 82 participants, 16 countries
Germplasm & Breeding / Molecular Biology	REUNION ISLAND	1 to 5 June 2015
Agricultural Engineering & Agronomy	SOUTH AFRICA	24 to 28 August 2015
Entomology & Pathology	ECUADOR	14 to 18 September 2015
Co-Products	USA	8 to 13 November 2015
Management	THAILAND	December 2016 during Congress

INTERNATIONAL SUGARCANE BIOMASS UTILIZATION CONSORTIUM (ISBUC)

International Society of Sugar Cane Technologists (ISSCT)	MAURITIUS
Mauritius Sugarcane Industry Research Institute (MSIRI)	MAURITIUS
SA Canegrowers Association	SOUTH AFRICA
C-SIIB Management Pty. Ltd. (CRC Sugar Industry Innovation Through Biotechnology), University of Queensland	AUSTRALIA
eRcane (formerly Centre D'essai De Recherche et de Formation (CERF)	REUNION
Kenana Sugar Company Limited (KENANA)	SUDAN
CENGICANA	GUATEMALA
ZeaChem Inc.	USA
Cosan S/A Industria E Comercio	BRAZIL
South African Sugar Association (SASA)	SOUTH AFRICA

INTERNATIONAL SUGARCANE BIOMASS UTILIZATION CONSORTIUM (ISBUC)

Sugar Research and Innovation, Queensland University of Tech.	AUSTRALIA
Tongaat Hulett Sugar	SOUTH AFRICA
Mitr Phol Sugarcane Research Centre	THAILAND
Sugar Milling Research Institute (SMRI)	SOUTH AFRICA
Omnicane Milling Operations Ltd. & Omnicane Thermal Energy Operations (La Baraque) Limited	MAURITIUS
Associação Brasileira de Luz Síncrotron (ABTLuS) – Brazilian Association for Synchrotron Light Technology	BRAZIL
Sugar Research Limited (SRL)	AUSTRALIA
Instituto de Pesquisas Tecnológicas do Estado de Sao Paulo - SA (IPT)	BRAZIL
Dedini S/A Indústrias De Base	BRAZIL
Centro de Tecnologia Canavieira (CTC)	BRAZIL
NSL Sugars Limited	INDIA

International Consortium for Sugarcane Biotechnology - (ICSB)

- 1988-1989 : Informal agreement between HSPA & CTC (Brazil) to jointly fund a research project
- 1991 : Agreement to form a group to jointly sponsor research projects (4 countries, 7 institutions)
- 1992 : Formalization of the ICSB - 10 members
- 2015 : ICSB has 19 members from 14 countries

Member countries:

Argentina, Australia, Brazil, Colombia, Ecuador, France, Guatemala, India, Mauritius, Philippines, South Africa, Thailand, USA, West Indies

International Consortium for Sugarcane Biotechnology- (ICSB)

1998-2010: 29 research projects funded for > US $ 5 000 000

Membership fee: US $ 2 000 annually

Meetings: One business meeting held annually

Members who do not sponsor a specific project are not entitled to its results, however can join in at a later stage but with a higher fee involved

XXVIII CONGRESS, São Paulo, BRAZIL
24 – 27 JUNE 2013
AWARD BEST PAPER

Shields were awarded to the Senior Authors of the Best Papers of each Commission as follows:

"James E. Irvine" Award for best paper Agriculture Commission
Abraham Singels (South Africa)

"Robert Antoine" Award for best paper Biology Commission
Glaucia Mendes Souza (Brazil)

"Emile Hugot" Award for best paper Factory Commission
Raul Joan Sabadi Diaz (Cuba)

"Maurice Paturau" Award for best paper Co-Products Commission
Fabio R. M. Batista (Brazil)

"H. William Kerr" Award for best paper Management Commission
Jack Fisher (UK)

The awards are named after past sugar cane technologists, members of ISSCT, who had distinguished themselves in the respective disciplines.

A certificate was delivered to all Senior Authors and Co-Authors of the awarded papers as listed below:

1. A. Singels, M. Jones, F. Marin, A. Ruane, P. Thorburn: Predicting climate change impacts on sugarcane production at sites in Australia,Brazil and South Africa using the CANEGRO model

2. G. M. Souza, C. Lembke, M. Nishiyama, S. Ferreira, M. Dal-Bianco, P. Sato, C. Hotta, M. Carneiro, M. Loureiro, H. Carrer, L. Endres, H. Hoffmann, M. Sanches and M. Menossi: Sugarcane genome sequencing and gene discovery: getting closer to sugar content, fibre and drought traits

3. R. J. Sabadi Diaz, N. Garrido and D. Pello: Cogeneration issues in a greenfield project

4. F.R. M. Batista and A. J. A. Meirelles: Computational simulation applied to improve fuel bioethanol distillation

5. J. Fisher: The variability and drivers of the carbon footprint of cane sugar

ISSCT WEBSITE
www.issct.org

Updated frequently

Announcements in English, French and Spanish

Proceedings of 27 congresses freely available online and searchable by author, title, keywords, etc… One of the largest database on sugar cane scientific literature online.

Proceedings of XXVIII Congress 2013 in Members' Corner

XXIX Congress

The XXIX Congress will be hosted by the Thailand Society of Sugar Cane Technologists (TSSCT)

The XXIX Congress will be held in Chiang Mai, in the North of Thailand from 5 to 8 December 2016
The Pre-Congress Tour will start in Khon Kaen on 2 December and will last two days
The Post-Congress Tour will be held from 9 to 11 December and will end in Bangkok

The Mid-Term Meeting of the ISSCT Executive Committee was held from 26 to 30 January 2015 in Chiang Mai.

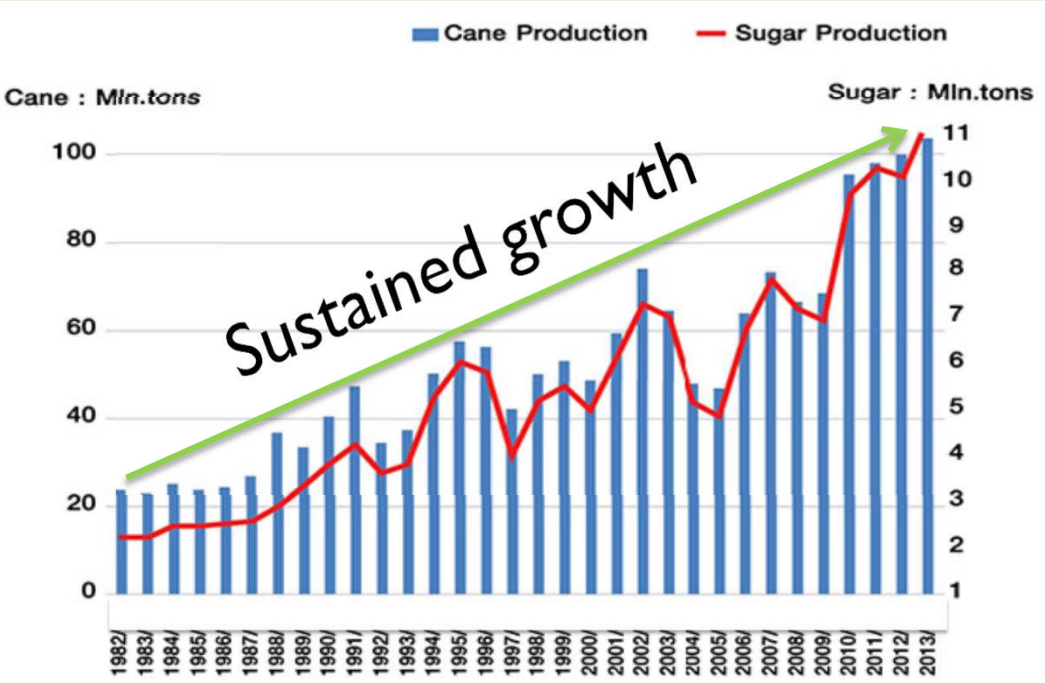
For more information, visit
ISSCT website: www.issct.org

MITR PHOL GROUP

Thailand Sugar Industry

2nd EXPORTER

4th PRODUCER

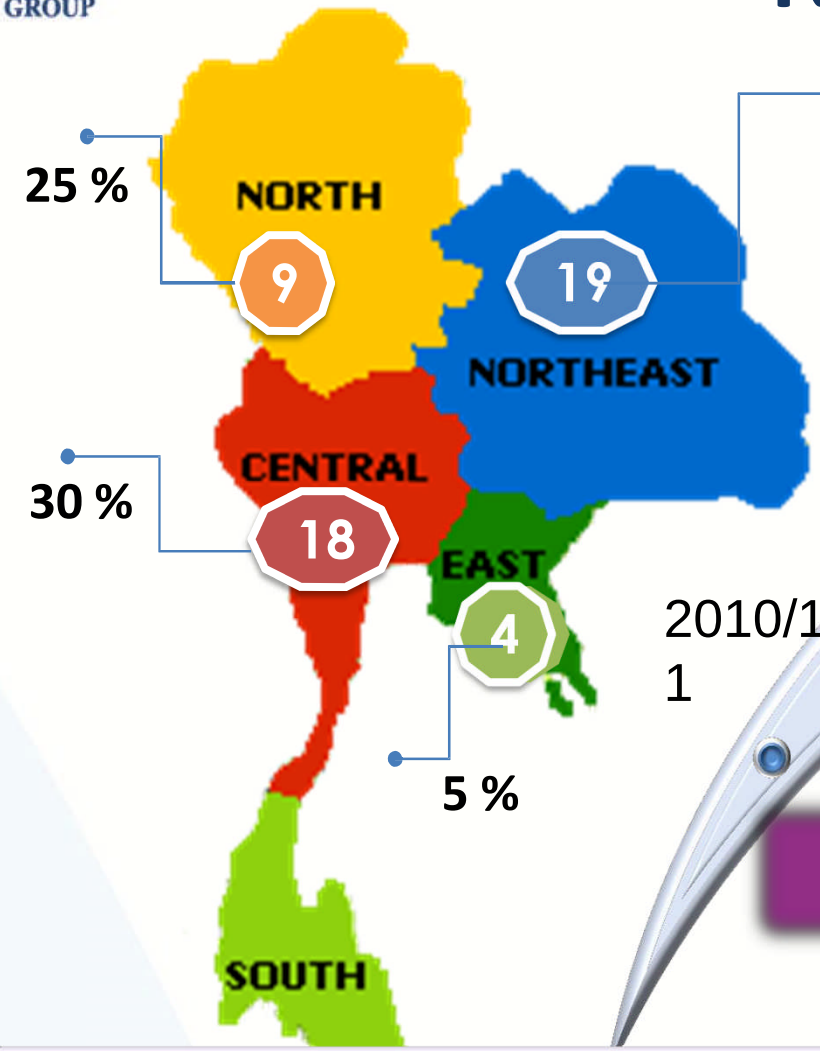


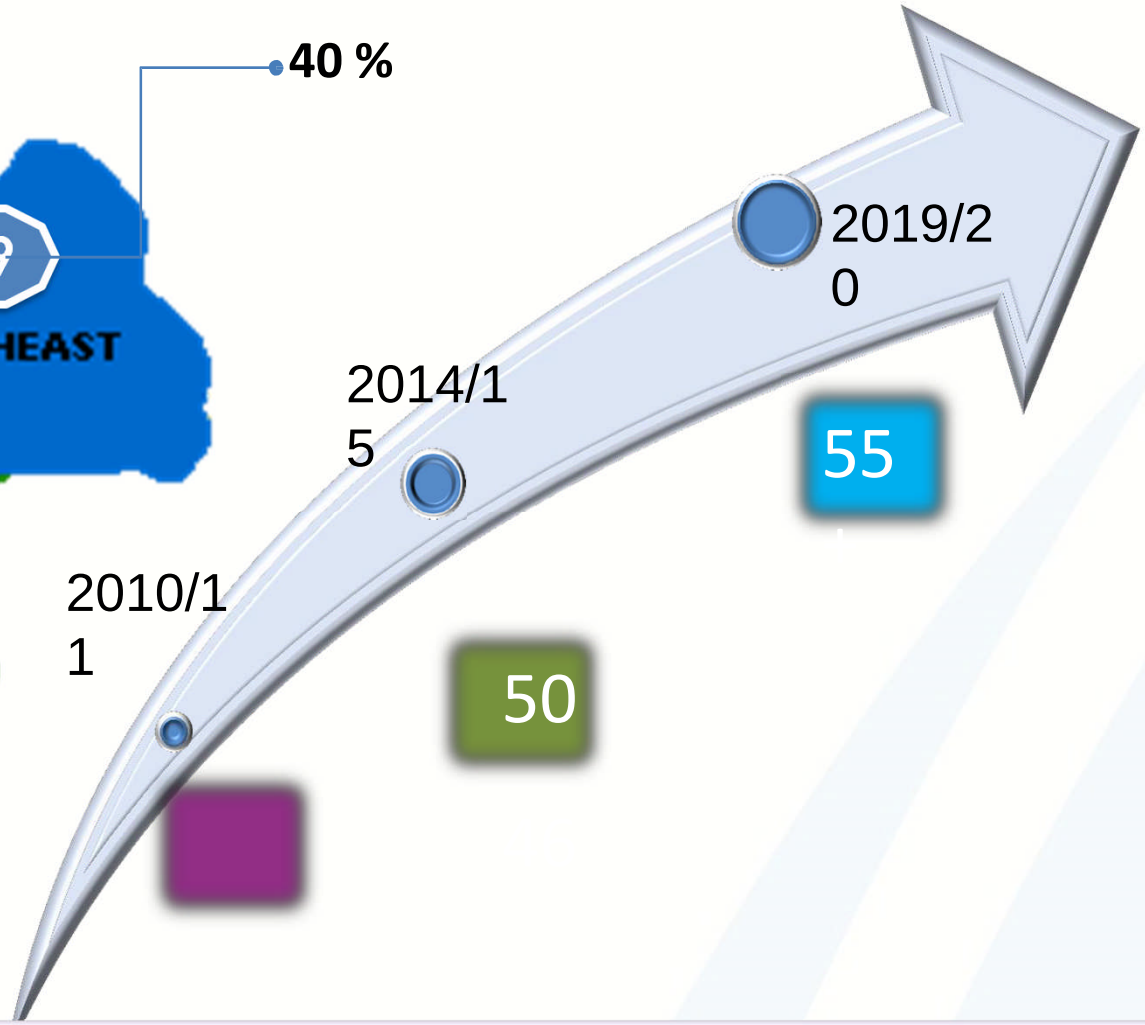
Sugar 2013/14

11.3 mln MT

MITR PHOL GROUP

No. of Sugar mills





Expecting positive growth in future with Govt policy on Crop zoning

Challenges ahead

- Cane area 1.5 million ha
- About 200,000 farmers (7.5 ha/ farmer)
- Rainfed area ≈ 85%
- Average cane yield 72 t/ha
- Manual cane harvesting 85-90%
- Daily Crushing ≈ 1mln MT
- Crushing period 120 days









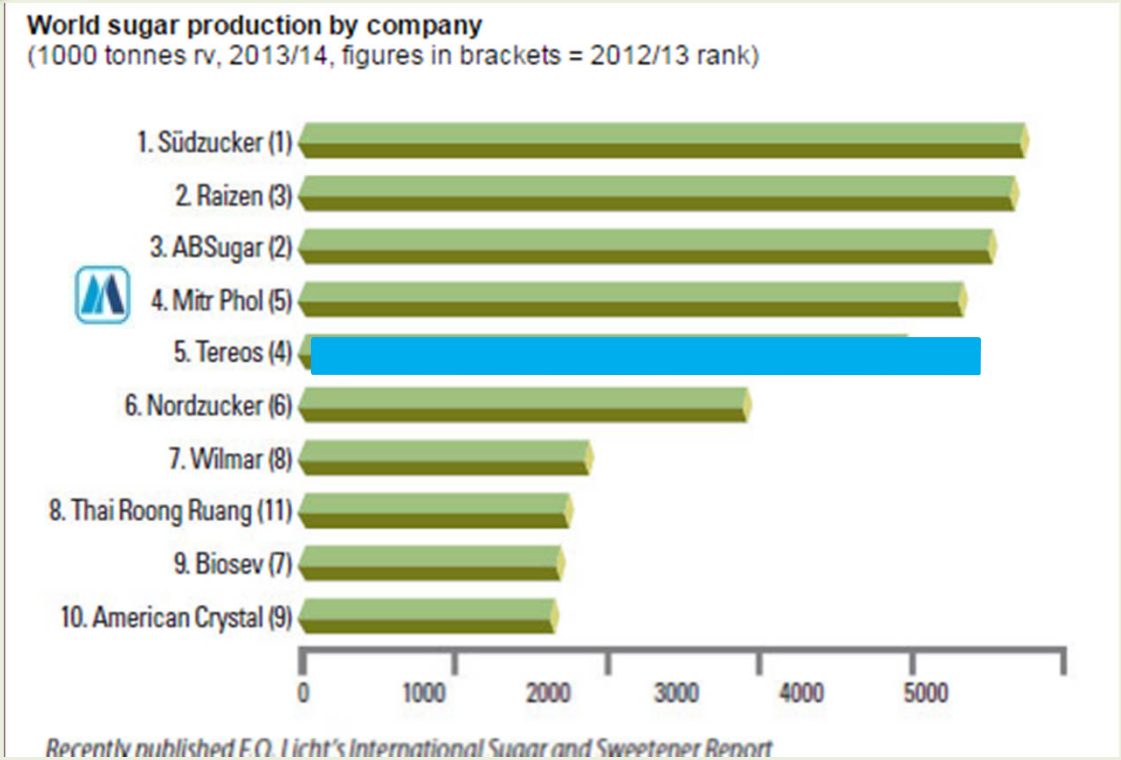
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Mitr Phol Profile

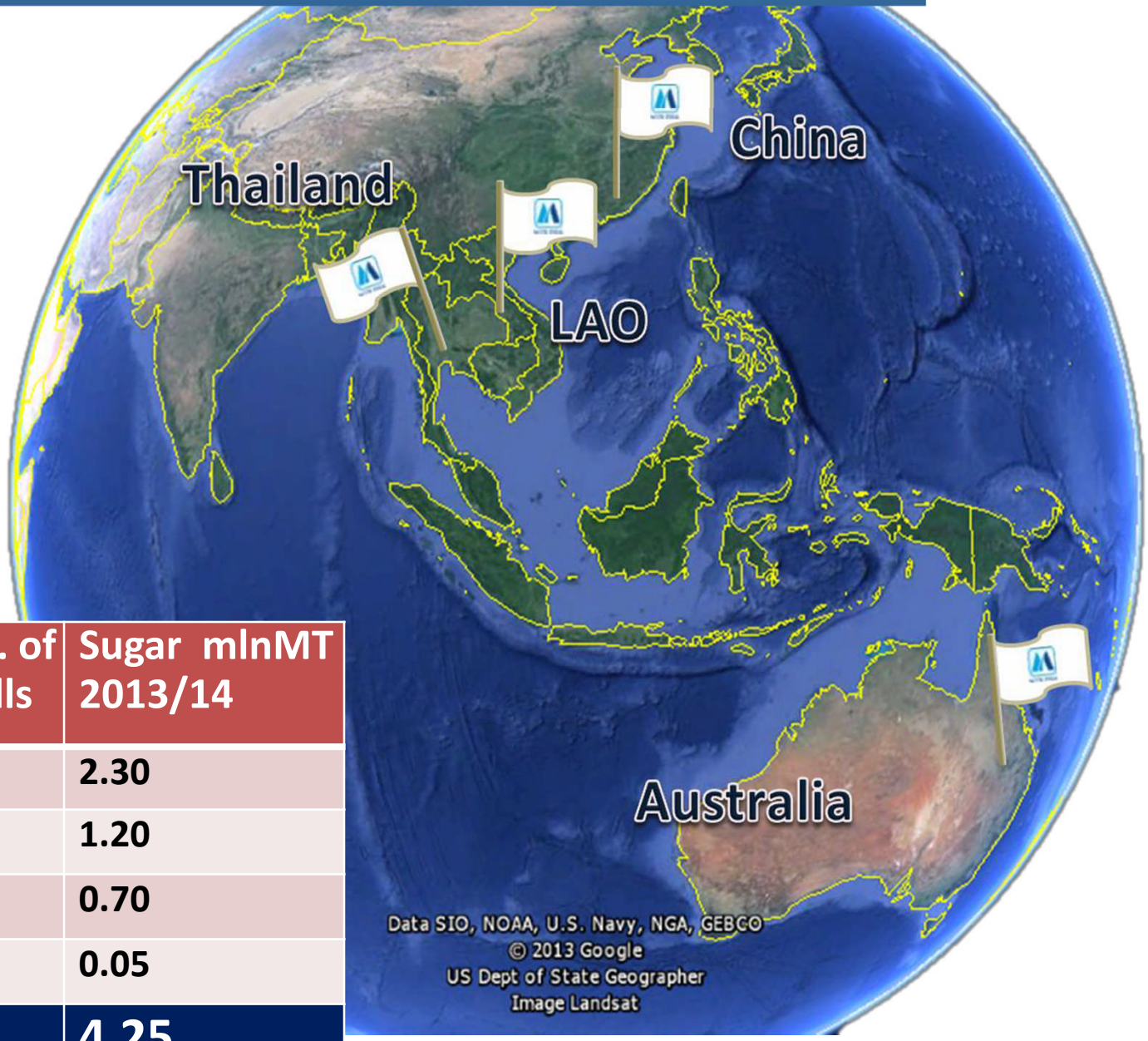
VDO

1st ASIA

4th GLOBAL



Mitr Phol Global Presence



Country	No. of Mills	Sugar mlnMT 2013/14
Thailand	6	2.30
China	6	1.20
Australia	4	0.70
Lao PDR	1	0.05
Total	**17**	**4.25**

MITR PHOL GROUP

Mitr Phol Sugar and Bio-Product Business

MITR PHOL Innovation & Research Center

Research & Development

ศูนย์วิจัยและพัฒนา

MITR PHOL Sugar

ธุรกิจน้ำตาล

Sugar

MITR LAO

Biomass Power

ธุรกิจไฟฟ้าชีวมวล

MITR PHOL RenewEnergy

ธุรกิจเอทานอล Ethanol

Pulp & Paper

ธุรกิจกระดาษ

PANEL PLUS

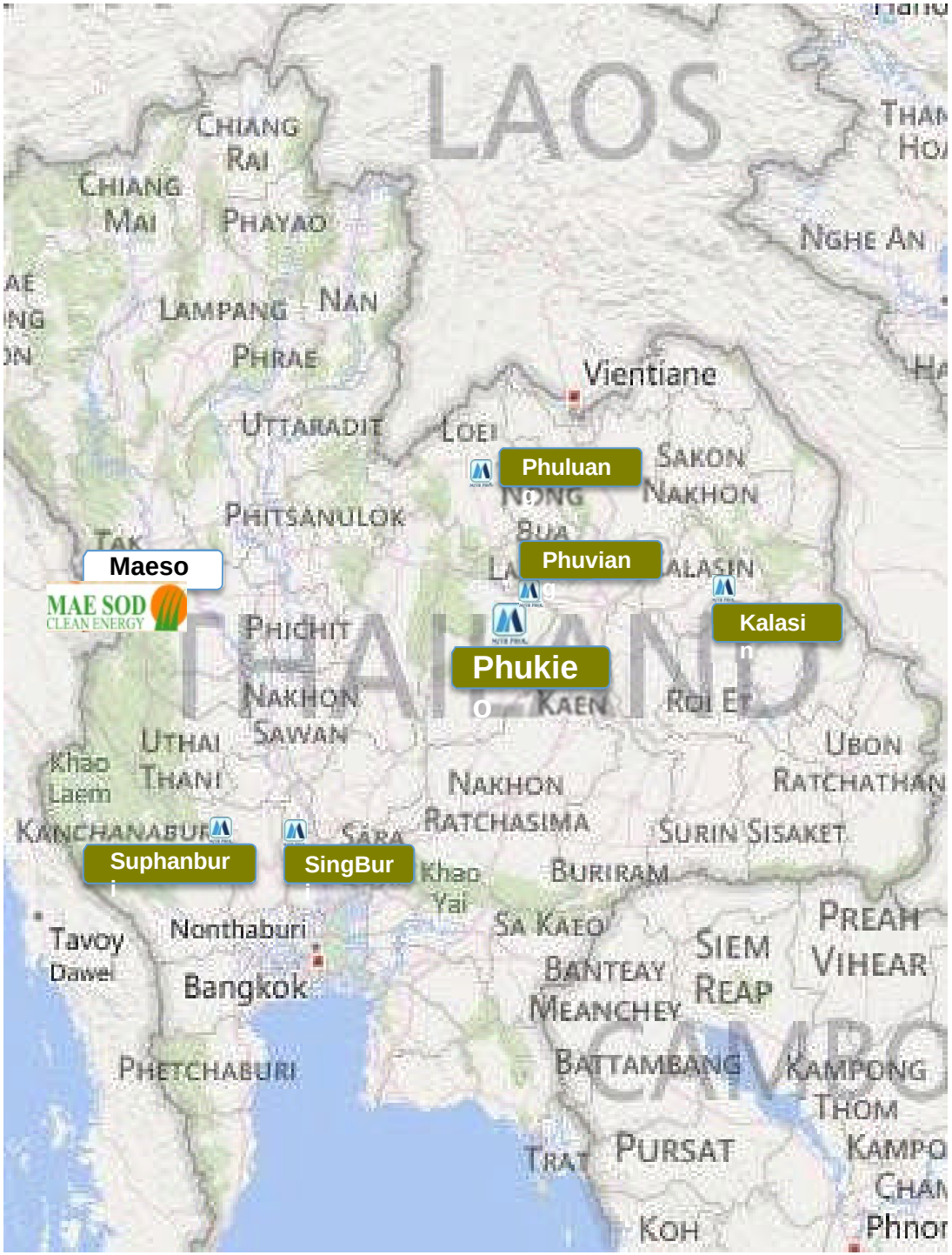
ธุรกิจปาร์ติเกิลบอร์ด

Particle Board

ปุ๋ยน้ำชีวภาพ

Liquid, Organic Fertilize

Soil Mate



Mitr Phol Thailand

20% Sugar share in Thailand

Location	Cane TCD	Power MW	Ethanol KLPD
Phukieo	26,500	76.4	500
Phuviang	37,000	70.0	
Phuluang	21,000	67.0	
Kalasin	32,000	68.0	200
Suphanburi	49,000	113.6	200
Singburi	15,000		
Maesod	4,000		200
TOTAL	180,500	395	1100

*For sugar

2. Dumps Nos. 7 & 8 (Cane unloading Small trucks)





- Support many small scale farms from nearby areas
- This capacity is about 3000 Tonnes/day

MITR PHOL Sugar

3. Evaporator Section



- Five stages of Robert Evaporators designed to save energy

4. Vacuum Pan Section



- Utilize droplet entrainment that traps sugar in the condensers of the CVPs to recover any remaining sugar in the condensers

5. Centrifugal Section



- Utilize safety guards for our grade A-sugar centrifuges to prevent accidents
- This system lower the lost time frequency compared to past, now LTFR is 0.57”

6. GMP Warehouse







- Plan to install Robotic lifting equipment this year

9. Mitr Phol Bio-Fuel



- Plant 1 produces solely 99.5% ethanol
- Plant 2 produces both 95% and 99.5% ethanol
- Combined capacity 500,000 lpd, 17% of Ethanol consumption in Thailand

Research and Innovation Centre

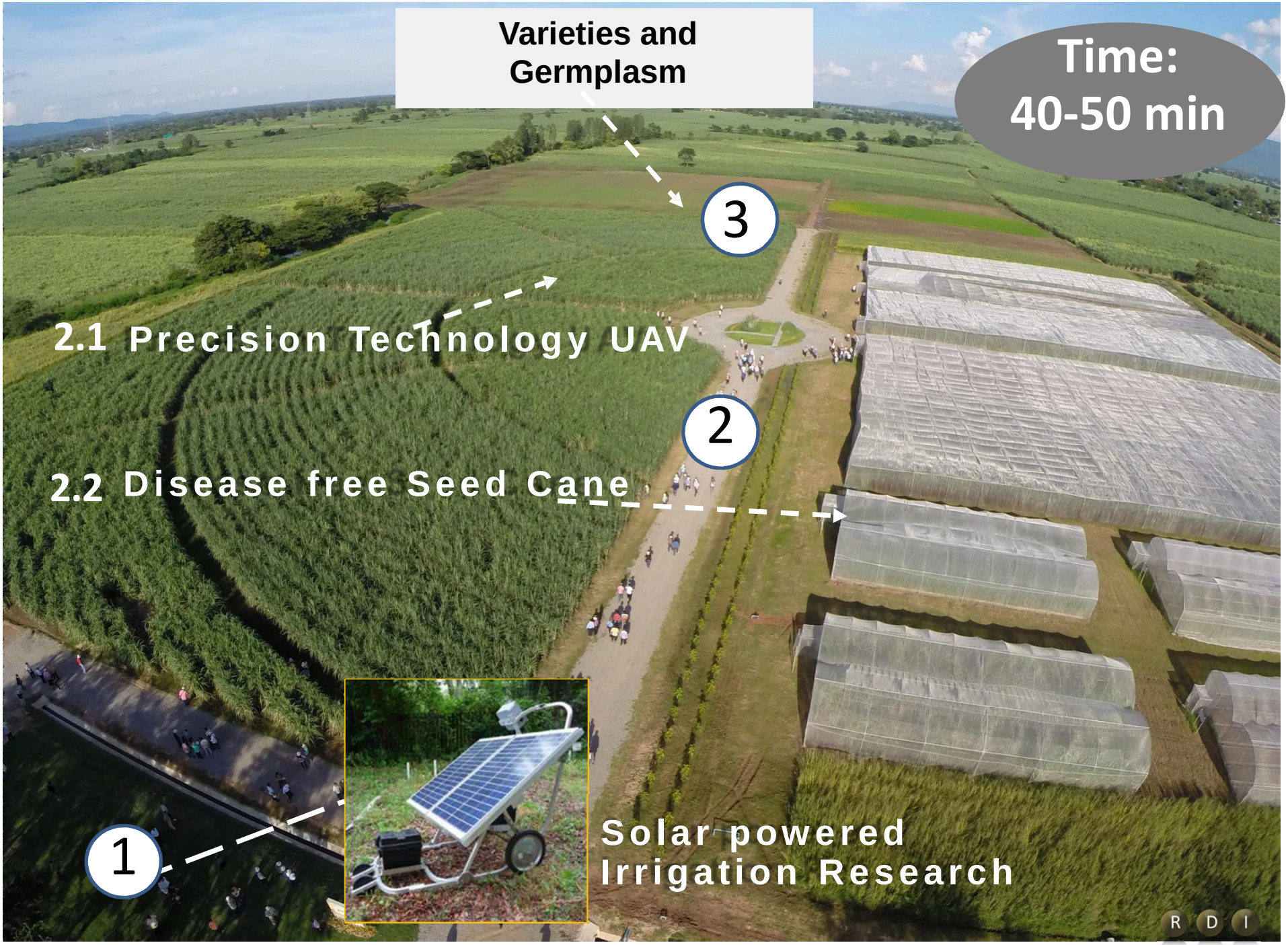


son,
Sugar Lab

GIS system

1997

2014


Varieties and Germplasm
Time: 40-50 min
3
2.1 Precision Technology UAV
2
2.2 Disease free Seed Cane
1
Solar powered Irrigation Research
R D I

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Area holding of Cane Growers







Cane Area (ha.)	No. Grower	%
3 <	21,399	76.63
3- 11	3,054	10.94
11- 27	2,359	8.45
27- 61	537	1.92
61- 112	385	1.38
>112	191	0.68

❖ Total Grower = 27,925 (2013/14)


Welcome to
The Largest Sugar Mill
In The World

Kaset Thai International Sugar Corporation Ltd (KTIS)

More than sugar

- Capacity: 56 000 TCD
- Sugar operation – 800 000 tonnes over 120 days
- Ethanol: 250 000 litre per day
- Biogas from vinasse: 8 MW
- Biofertilizer
- Electricity: 125 MW, 105 bar, 540^{o} C (bagasse + trash)
- Pulp operation






THANK YOU
SUGAR CANE AT ITS BEST