BREAK-AWAY SESSION 3:
Fishing In A Bigger Pond:
Opportunities for the Metals and Engineering Sector in Southern Africa?

A Decision Support Model Approach

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The situation …

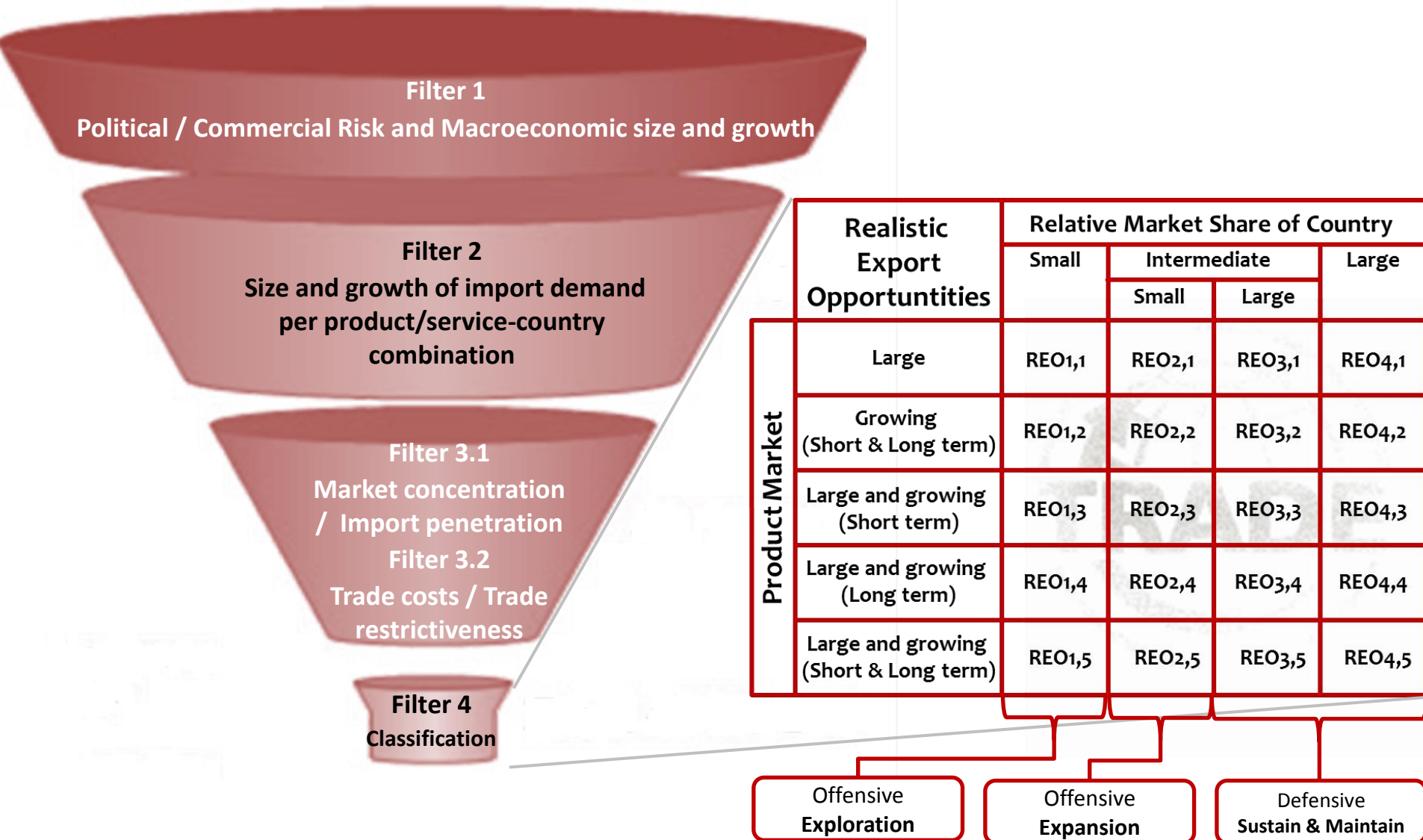**South Africa's export promotion and development at a crossroads:**

- ➢ Relatively low levels of competitiveness

- ➢ Lacklustre export performance

- ➢ Shrinking demand in traditional export markets

- ➢ Continued reliance on commodity-type exports

- ➢ Dependency on value-added manufactured imports

- ➢ Non-mineral exports and service exports under-performing

- ➢ Weak integration into global and regional value chains

Symptomatic of the Sub-Saharan (SSA) region as a whole:

- ➢ Geographical disadvantages

- ➢ High transport costs

- ➢ Relatively little export diversification

- ➢ Market access challenges, including:

  - • High and/or changeable tariffs

  - • Infrastructural and logistical hurdles, leading to delays and added cost in clearing and delivering goods

  - • Excessive bureaucracy

  - • Corruption

  - • Difficulty in accessing useful market information

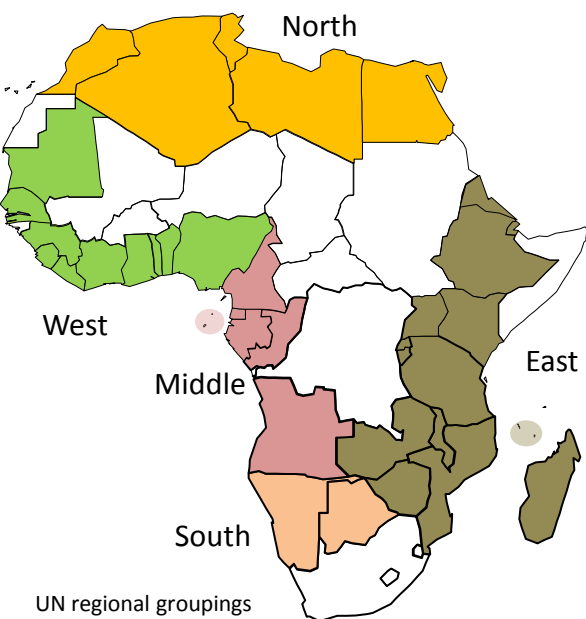- ➢ Limited intra-regional trade (less than 10% of SSA's total trade)

Towards a solution …
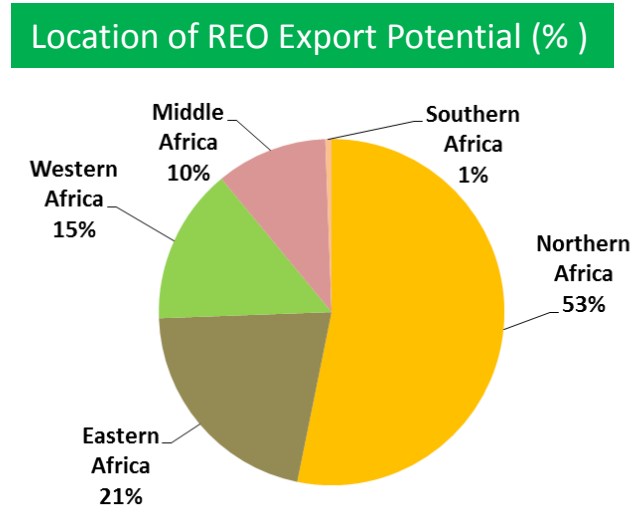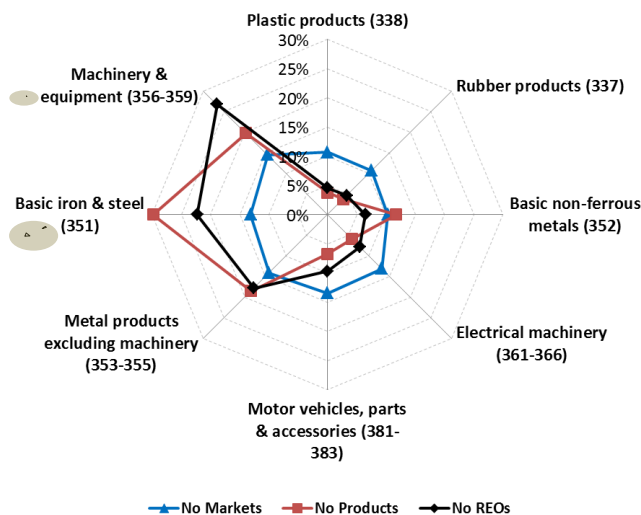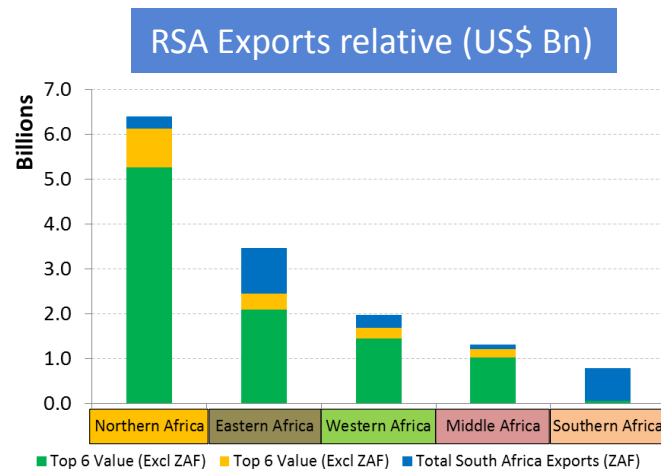## The Decision Support Model (DSM) approach

Filter 1
Political / Commercial Risk and Macroeconomic size and growth

Filter 2
Size and growth of import demand per product/service-country combination

Filter 3.1
Market concentration / Import penetration
Filter 3.2
Trade costs / Trade restrictiveness

Filter 4
Classification

Realistic Export Opportunties	Relative Market Share of Country			
	Small	Intermediate		Large
		Small	Large	
Large	REO1,1	REO2,1	REO3,1	REO4,1
Growing (Short & Long term)	REO1,2	REO2,2	REO3,2	REO4,2
Large and growing (Short term)	REO1,3	REO2,3	REO3,3	REO4,3
Large and growing (Long term)	REO1,4	REO2,4	REO3,4	REO4,4
Large and growing (Short & Long term)	REO1,5	REO2,5	REO3,5	REO4,5

Product Market

Offensive **Exploration**

Offensive **Expansion**

Defensive **Sustain & Maintain**

Example outcomes …
Metals and Engineering Sector – AFRICA

DECISION SUPPORT MODEL (DSM)

- 42 Markets with potential (no country risk applied)
- 238 Products (spread across various sectors)
- 1 785 total realistic export opportunities (REOs)

Realistic Export Opportunities	Relative Market Share of Country				
	Small	Intermediate		Large	
		Small	Large		
Large	7	1	2	2	12
Growing (Short & Long term)	783	288	135	522	1728
Large and growing (Short term)	1				1
Large and growing (Long term)	9	1	1	1	12
Large and growing (Short & Long term)	25	2	1	4	32
	825	292	139	529	1785

(Product Market)

RSA Exports relative (US$ Bn)

Billions — Northern Africa, Eastern Africa, Western Africa, Middle Africa, Southern Africa

Legend: Top 6 Value (Excl ZAF) ■ Top 6 Value (Excl ZAF) ■ Total South Africa Exports (ZAF) ■

Radar chart categories:
- Plastic products (338)
- Rubber products (337)
- Basic non-ferrous metals (352)
- Electrical machinery (361-366)
- Motor vehicles, parts & accessories (381-383)
- Metal products excluding machinery (353-355)
- Basic iron & steel (351)
- Machinery & equipment (356-359)

Legend: No Markets, No Products, No REOs

Map: North, West, Middle, East, South — UN regional groupings

Location of REO Export Potential (%)

- Northern Africa 53%
- Eastern Africa 21%
- Western Africa 15%
- Middle Africa 10%
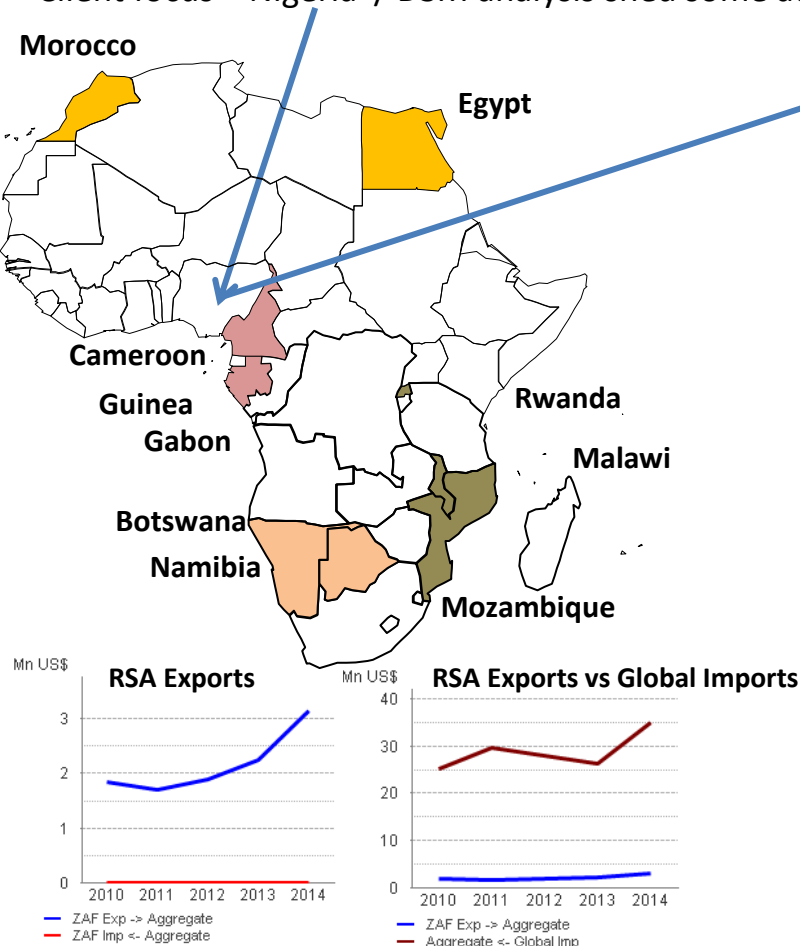- Southern Africa 1%

Example outcomes …
Metals and Engineering Sector – AFRICA

- HS721631 - Angles, shapes & sections of iron/non-alloy steel, U sections, not further worked than hot-rolled/hot-drawn/ extruded, of a height of 80mm/more

- Client focus = Nigeria / DSM analysis shed some additional light on nature of opportunity
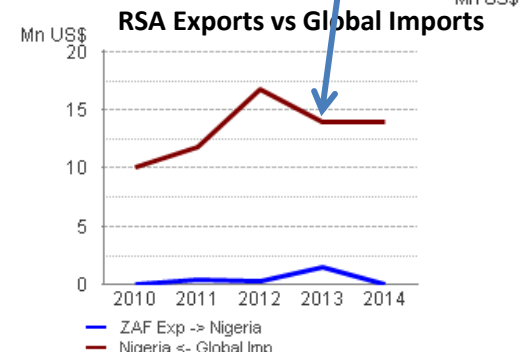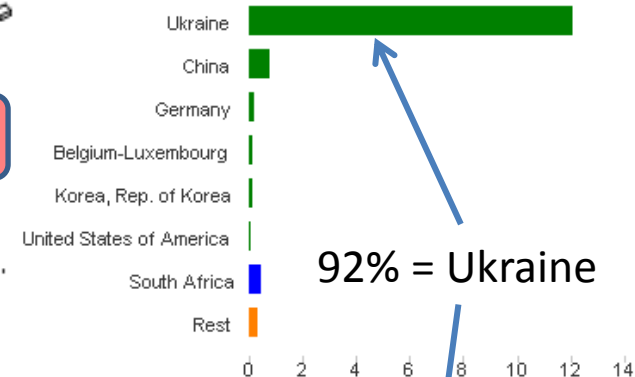

Nigeria ?

Avg Time Weighted Value of Top 6 [US$ '000]: 2 224.07

DSM Filters

Econ & Risk (1)	▼	Yes
Size & growth (2)	▼	Yes
Concentration (3…	▼	No
Accessibility (3.2)	▼	No
Maturity (RCA>1)	▼	Yes
Proxy Production…	▼	Yes
HHI_index	▼	0.787…

COMPETITORS: Ukraine, China, Germany, Belgium-Luxembourg, Korea, Rep. of Korea, United States of America, South Africa, Rest

92% = Ukraine

RSA Exports

RSA Exports vs Global Imports

Summary & conclusions

Metals and Engineering products

➢ DSM approach identifies **1 785 realistic export opportunities (market-product combinations**).

➢ **North Africa** contains a relatively large block of potential for South African products, followed by **East** and then **West Africa.**

More general observations based on intra-Africa research:

➢ **Barriers to trade** in products and services add to **trade costs** and **lose export opportunities.**

➢ Reducing trade costs through **trade facilitation policy reform** can help developing countries (especially in SSA) to **diversify** into more dynamic sectors.

➢ **Trade facilitation and cost reduction strategies** can help to:
  • Unlock SSA's **economic potential**
  • Stimulate more **intra-regional trade** of goods and services produced within the SSA region

➢ And **better market intelligence** should be at the centre of strategic decision making and trade facilitation initiatives to increase trade in goods and services between SSA countries.

In summary

➢ The **DSM** approach provides short and longer term benefits to government and industry stakeholders:
  • In the **short term**, easier-to-access markets with fairly low barriers to entry
  • In the **longer term,** less accessible markets which call for intervention at the strategic/policy level

Supporting slides

1. Context (1)

The challenge…

International opportunities and sluggish growth at home are forcing successful businesses to consider exporting and to join Global Value Chains

Most export strategies revolve around the issues of:

- Which regions/countries are worth pursuing and spending money on?

- How should the available product range be tailored so as to take advantage of the opportunities present in the market(s) and GVCs?

- Which export opportunities should we focus our attention on, given the constraints of time, money, manpower and/or expertise?

From data to intelligence…

Nature of international trade information and analysis easily leads to an "overload" of information..

- International country risk: commercial and political
- Market potential size and growth trends
- Market concentration
- Market access barriers:
    - Tariffs and non-tariff barriers
    - Transport logistics costs and time, etc
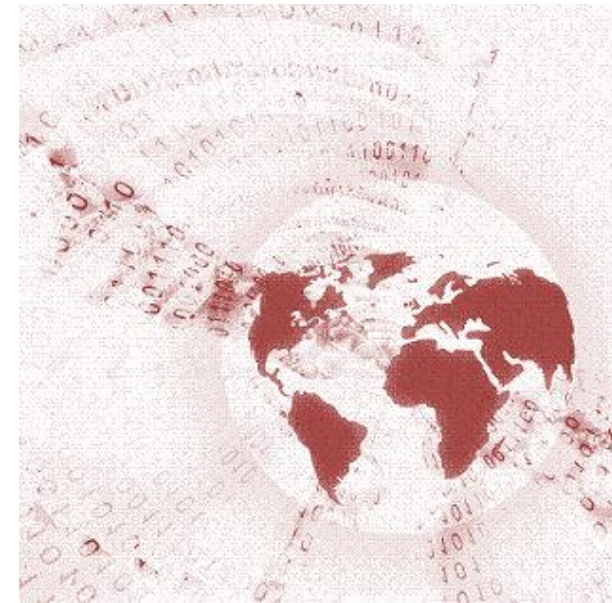
Need to distil information overload to strategic decision making…

From data to intelligence...

- Example 1: Company based
  – in which countries is there a realistic demand for my company's products e.g. fresh apricots, kiwis, wool, citrus, nuts, grapes etc. ?

- Example 2: Sector / council based
  – What are the export opportunities in the various agricultural subsectors, e.g. primary, per sub sector, e.g. deciduous fruit, in the world, in a country and who are my competitors, etc.

- Example 3: Government - national/provincial/Export council/association
  - There is a agricultural trade show in Zambia – for which agricultural products from SA does Zambia have a realistic demand?

The Harmonized System (HS)

- Is a numerical classification system of products used as a basis for international trade statistics by almost all countries.

- Is harmonized up to six digits (**HS-6**) – this means you can compare HS data between countries.

- Is broken down into 3 clusters:
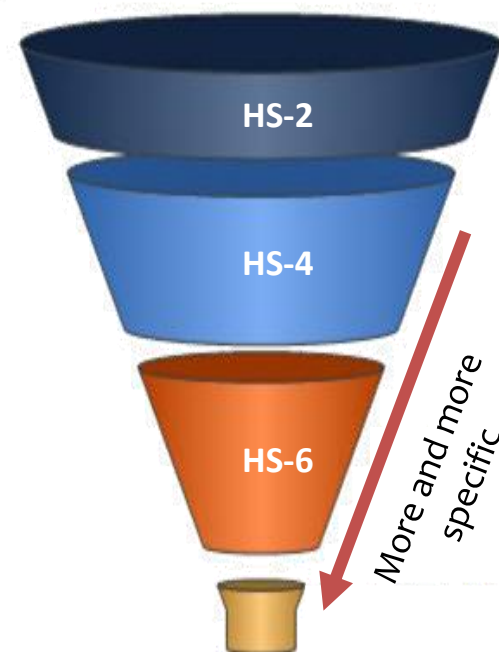
  -> HS-2 digit: the chapter of the good (sector)

  E.g. 08   = Edible fruit and nuts; peel of citrus fruit or melons

  -> HS-4 digit: groupings within the chapter (sub-sector)

  E.g. 0809 = Apricots, cherries, peaches (including nectarines), plums and sloes, fresh.

  -> HS-6 digit : product(s) within the grouping

  E.g. 080910 = Apricots, fresh

Source: ITC

A key national need..

"…the lack of a scientific method to prioritise markets and products resulted in a shotgun approach to export promotion…The challenge lies in how to select and prioritise markets from a global list of export opportunities… "

- The TRADE research team developed a **Decision Support Model (DSM)**, a scientific approach to identifying high-potential export opportunities (goods and services). The original DSM was developed in Belgium in 1995 by Prof Ludo Cuyvers and colleagues and since 2007, the model has been refined and updated for South Africa's circumstances.

- Complementing the DSM is the **Trade Navigator**, an interactive an interactive software platform that presents the results of the DSM in a user-friendly way.

DSM methodology in a nutshell

The DSM uses a sequential filtering process (4 filters)

that eliminates less promising export opportunities, and

focuses on those country-product combinations

that show the most potential

DSM methodology in a nutshell (2)

Considers demonstrated market (import) demand

Based on historical information (currently no forecasting / projections)
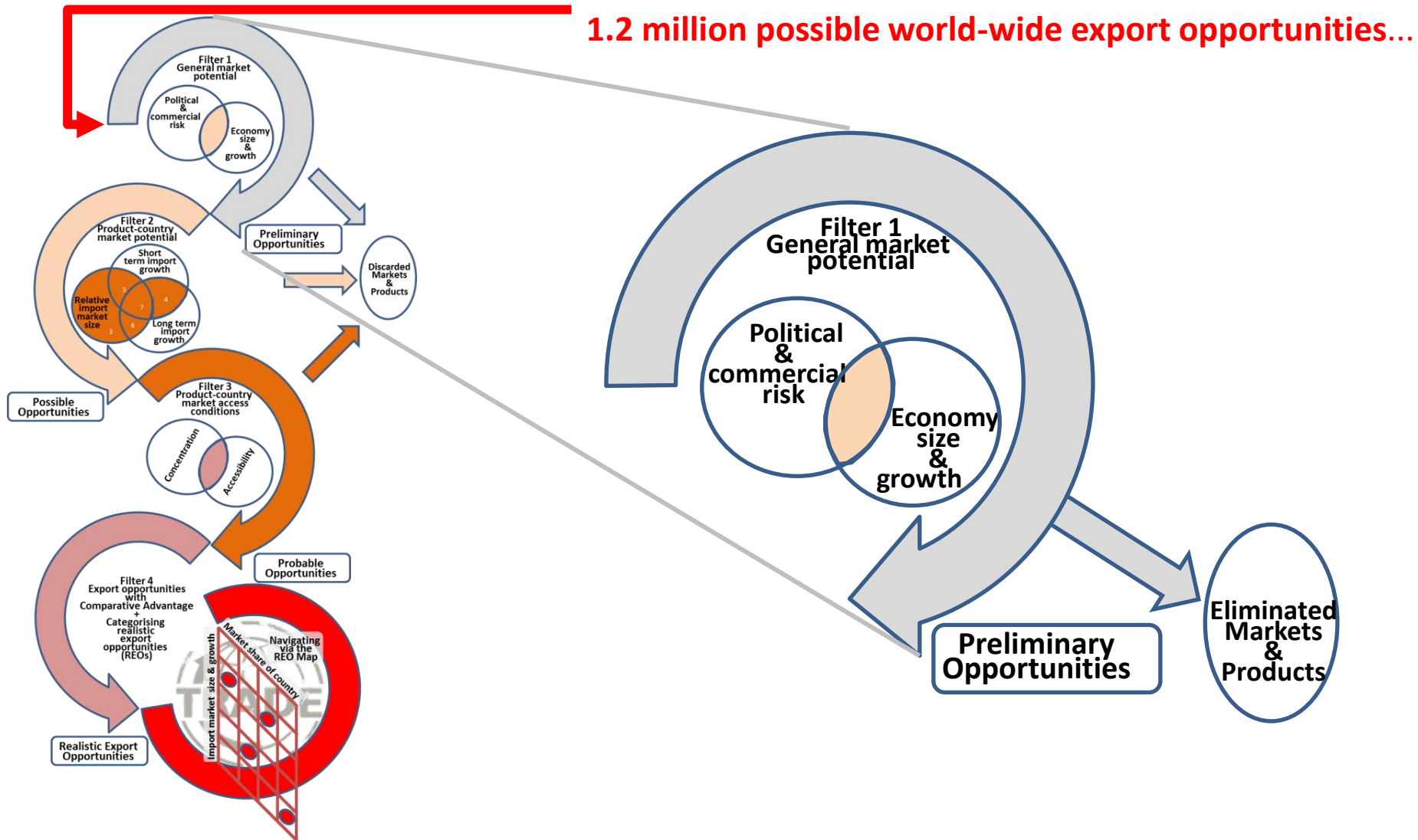
Does not explicitly consider production side

2. DSM methodology- the filtering process
Filter 1.1: Political and commercial risk ratings
Filter 1.2: Macro-economic size and growth

1.2 million possible world-wide export opportunities…

Filter 3.1: Import market concentration
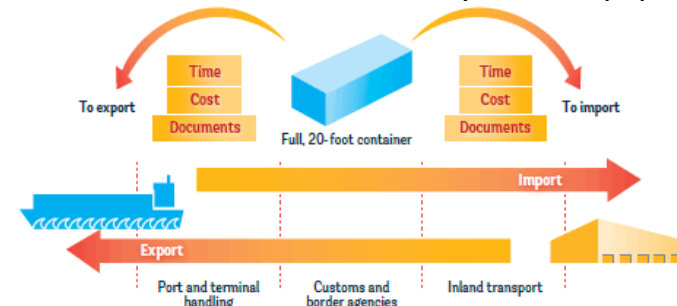## Filter 3.2: Import market accessibility
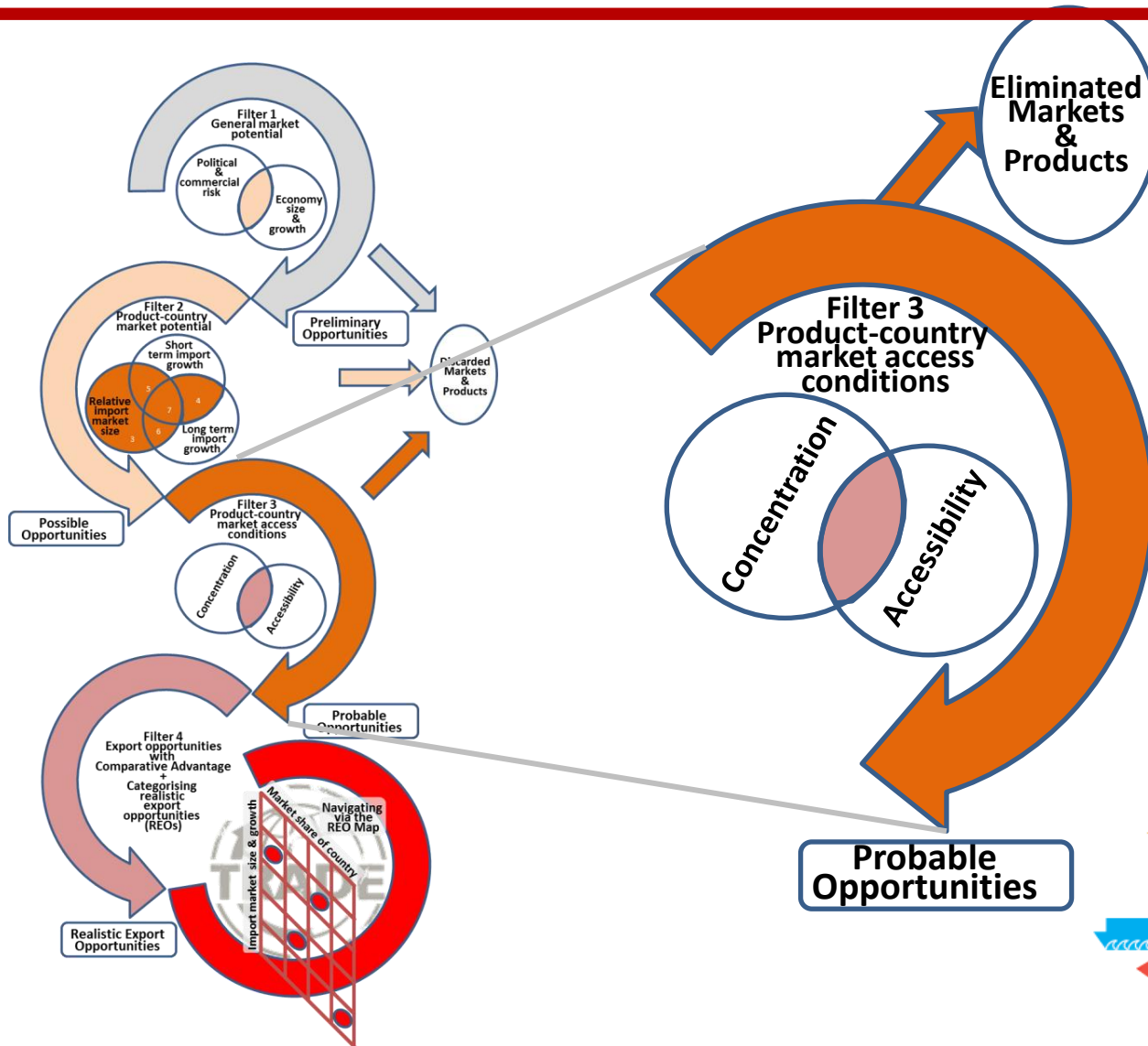
Concentration
i) Negative correlation between export performance and market concentration (few suppliers)
ii) If limited resources = inefficient to focus on heavily concentrated markets. Consider degree of concentration in a market (Herfindahl-Hirshmann Index)

Accessibility
Use trade cost as proxy for trade barriers – consists of:
(i)   tariffs,
(ii) international shipping cost
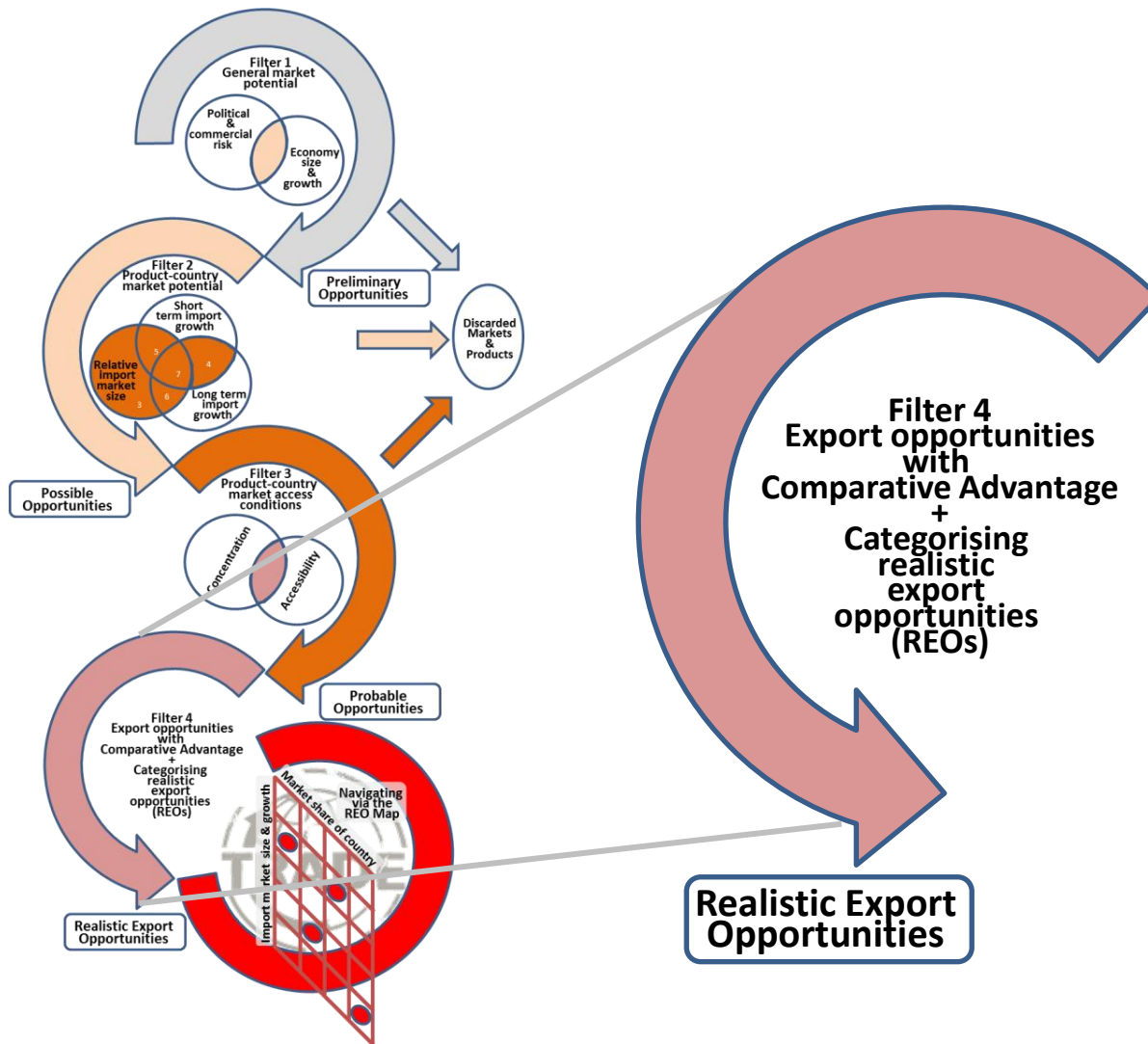(iii) domestic cost to import
       all in *ad valorem* equivalent (%)

Source: World Bank Group

Filter 4: Export opportunities with Comparative Advantage (RCA > 1)

Revealed Comparative Advantage (RCA)

i) Ensures only products in which exporting country (e.g. RSA) has a significant presence are selected as export opportunities

Revealed Trade Advantage (RTA)
- local production versus exports

i) Index accounts for exports and imports simultaneously and is used as an indicator of product-level competitiveness

ii) Corrects for re-exports

Export market potential

i) Determined as average value of each product-country combination of the top six competitors (excluding the exporting country e.g. RSA)

ii) Realistic indication of the size of the export opportunities relative to one another

Navigating to your objective
– the REO Map™ (realistic export opportunities)...

DECISION SUPPORT MODEL (DSM)
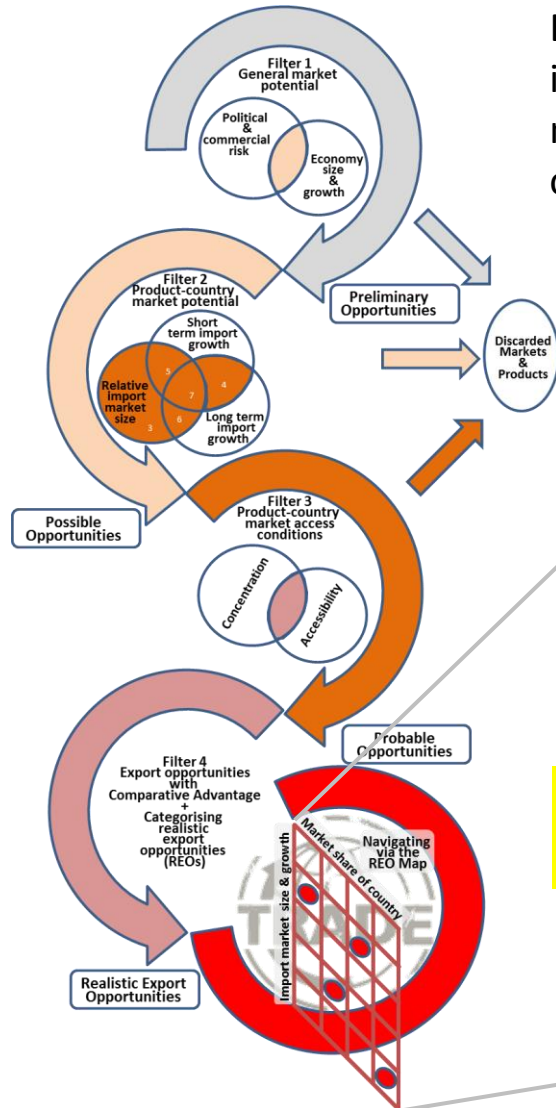
Example: HS721610: Angles, shapes & sections of iron/non-alloy steel, U / I / H sections of iron/non-alloy steel, not further worked than hot-rolled/hot-drawn/extruded, of a height of <80mm
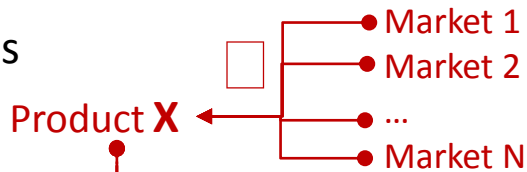
Zambia US$0.1mn

Malaysia US$ 2mn

Saudi Arabia US$ 3mn

Realistic Export Opportunties	Relative Market Share of Country			
	Small	Intermediate		Large
		Small	Large	
Large	$REO_{1,1}$	$REO_{2,1}$	$REO_{3,1}$	$REO_{4,1}$
Growing (Short & Long term)	$REO_{1,2}$	$REO_{2,2}$	$REO_{3,2}$	$REO_{4,2}$
Large and growing (Short term)	$REO_{1,3}$	$REO_{2,3}$	$REO_{3,3}$	$REO_{4,3}$
Large and growing (Long term)	$REO_{1,4}$	$REO_{2,4}$	$REO_{3,4}$	$REO_{4,4}$
Large and growing (Short & Long term)	$REO_{1,5}$	$REO_{2,5}$	$REO_{3,5}$	$REO_{4,5}$

Product Market

Offensive **Exploration**

Offensive **Expansion**

Defensive **Sustain & Maintain**

2. DSM methodology
REO export maturity, market share, growth and diversification matrix conceptual model

Product focus… (1)

Product focus – Q2 Green (new) pastures... (2)

"Green (new) pastures"

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Q2
"Mature products"
"New" Markets
Growth Potential

Reference sample relative to max US$ 65.6 mn

HS080540:Grapefruit fresh/dried

HS080510:Oranges, fresh/dried

HS080290:Nuts, n.e.s., fresh/dried, whether or not shelled/peeled
* Includes HS080260 - Macadmia nuts

HS080940:Plums & sloes, fresh

HS080610:Grapes, fresh

HS080820:Pears & quinces, fresh

HS080550:Lemons (Citrus limon/limonum) & limes (Citrus aurantifolia/latifolia), fresh/dried

HS080810:Apples, fresh

HS080620:Grapes, dried

HS080440:Avocados, fresh/dried

HS080520:Mandarins, incl. tangerines & satsumas; clementines, wilkings & sim. citrus hybrids, fresh/dried

HS080590: Citrus fruit (excl. of 0805.10-0805.50), fresh/dried

HS081340:Dried fruit (excl. of 08.01-08.06 & 0813.10-0813.30)

HS080910:Apricots, fresh

HS080930:Peaches, incl. nectarines, fresh

HS081310:Apricots, dried

HS081090:Fresh fruit, n.e.s.

HS081020:Raspberries, blackberries, mulberries & loganberries, fresh

HS081040:Cranberries, bilberries & oth. fruits of the genus Vaccinium, fresh

HS081290:Fruit (excl. cherries) & nuts, provisionally presvd. but unsuit. in that state for immediate consumption

HS081330:Apples, dried

HS080430:Pineapples, fresh/dried

RCA > 1

| 70 | 65 | 60 | 55 | 50 | 45 | 40 | 35 | 30 | 25 | 20 | 15 | 10 | 5 | - |

REOxy 1,1-5 to REOxy 2,1-5

Number of Opportunities

Indicates potential of more than US$ 10 million

Size of bubble = avg potential per opportunity (US$)

Market focus… (1)

"Green (new) pastures"   "Brown fields"

Q2 "New" Markets On average "mature products" Growth Potential

Q1 Existing Markets On average "mature products" Growth Potential

Q3 "New" Markets On average "less mature products" Growth Potential

Q4 "Existing" Markets On average "less mature products" Growth Potential

Basket of Products avg RCA > 1

Basket of Products avg RCA < 1

45 40 35 30 25 20 15 10 5 - 5 10 15 20 25 30 35 40 45

"Blue sky"   Number of Opportunities   "Grey fields"

Size of bubble = avg potential for products in country basket of opportunities (US$)

Indicates potential of more than US$ 10 million

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3. Outcomes

Market focus – Q2 Green (new) pastures... (2)

"Green (new) pastures"

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Q2
"New" Markets
On average
"mature products"
Growth Potential

Reference sample
relative to max
US$ 39.0 mn
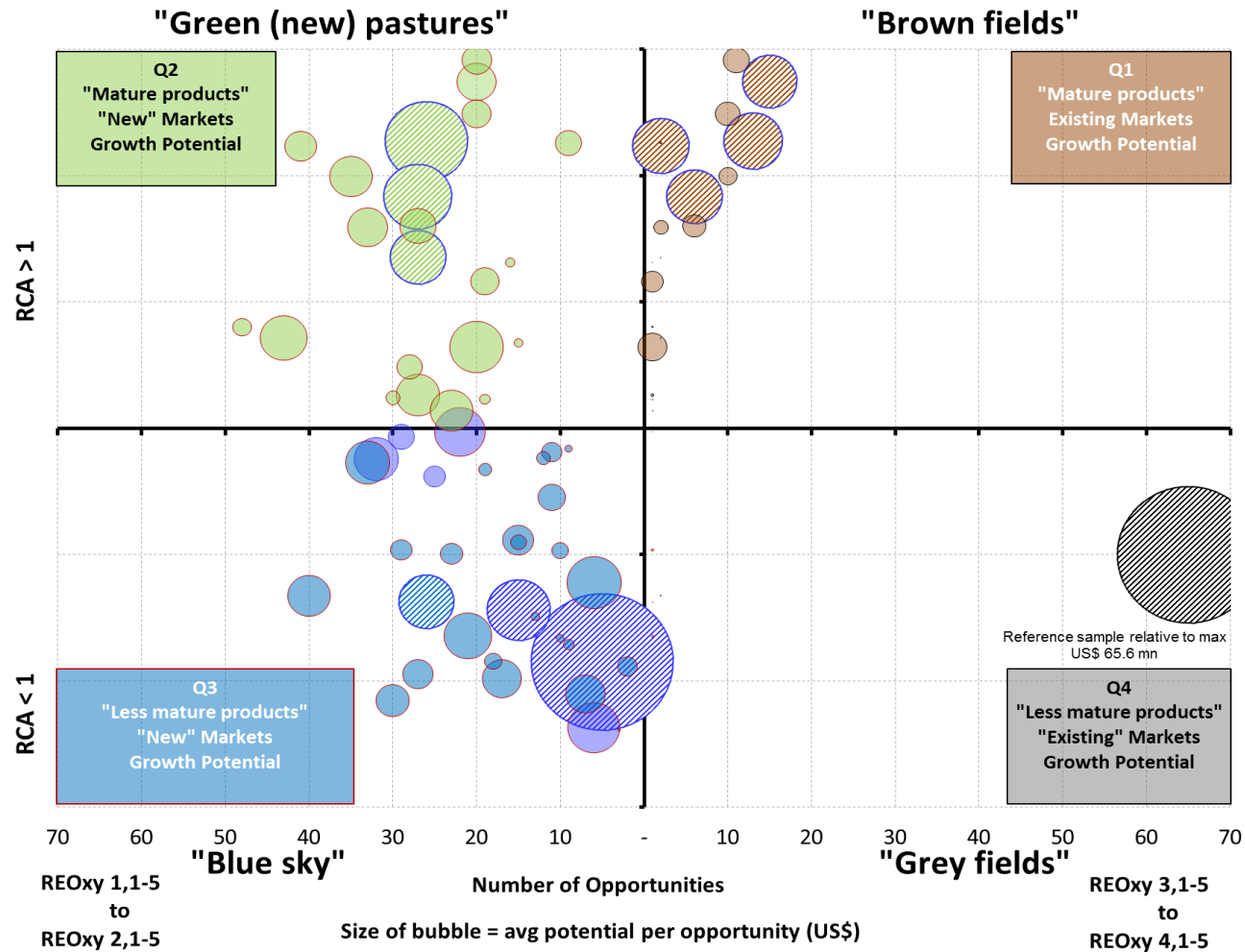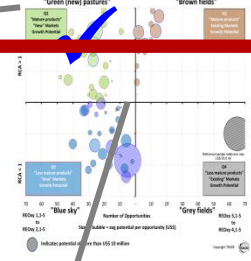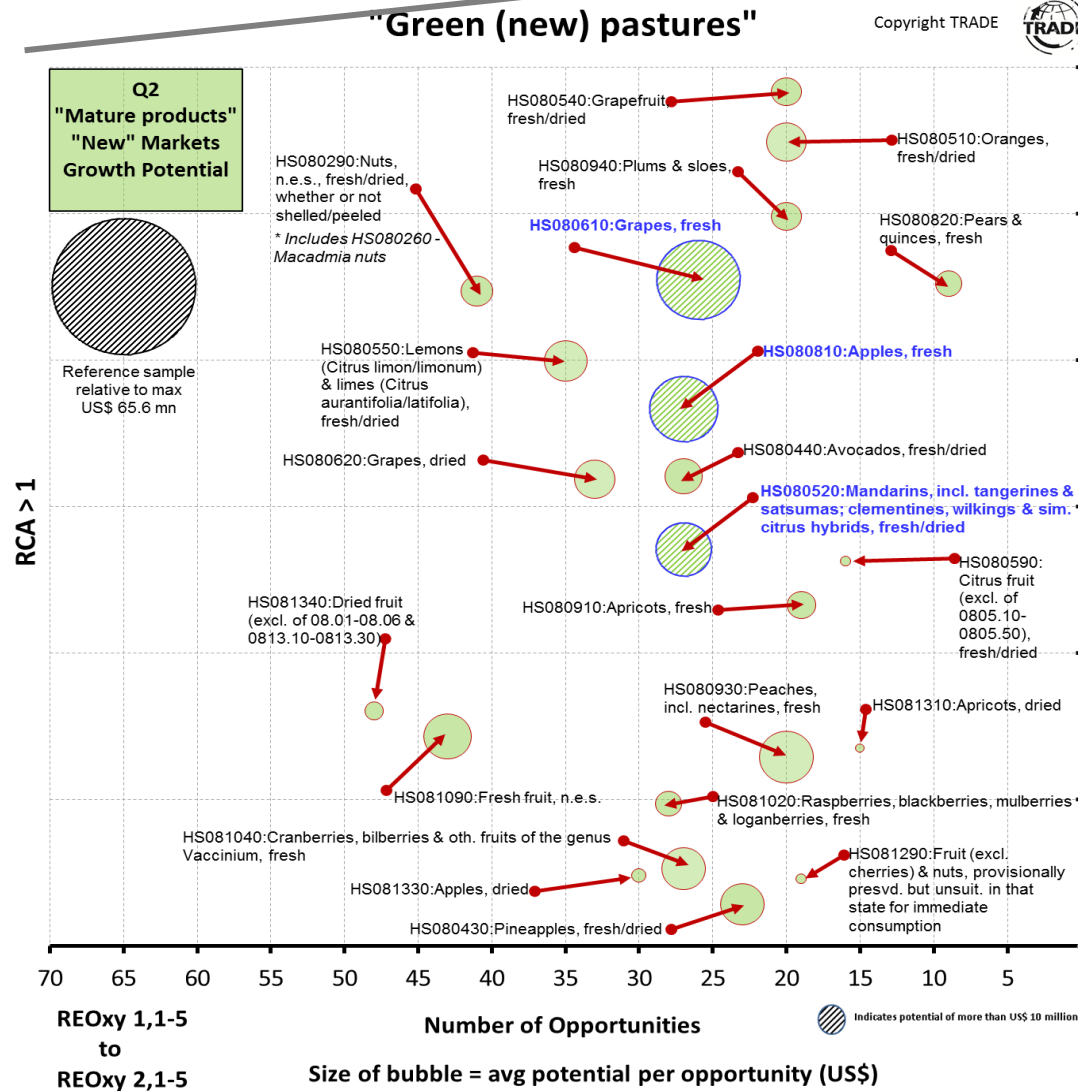
Basket of Products avg RCA > 1

Indicates potential of more than US$ 10 million

Number of Opportunities
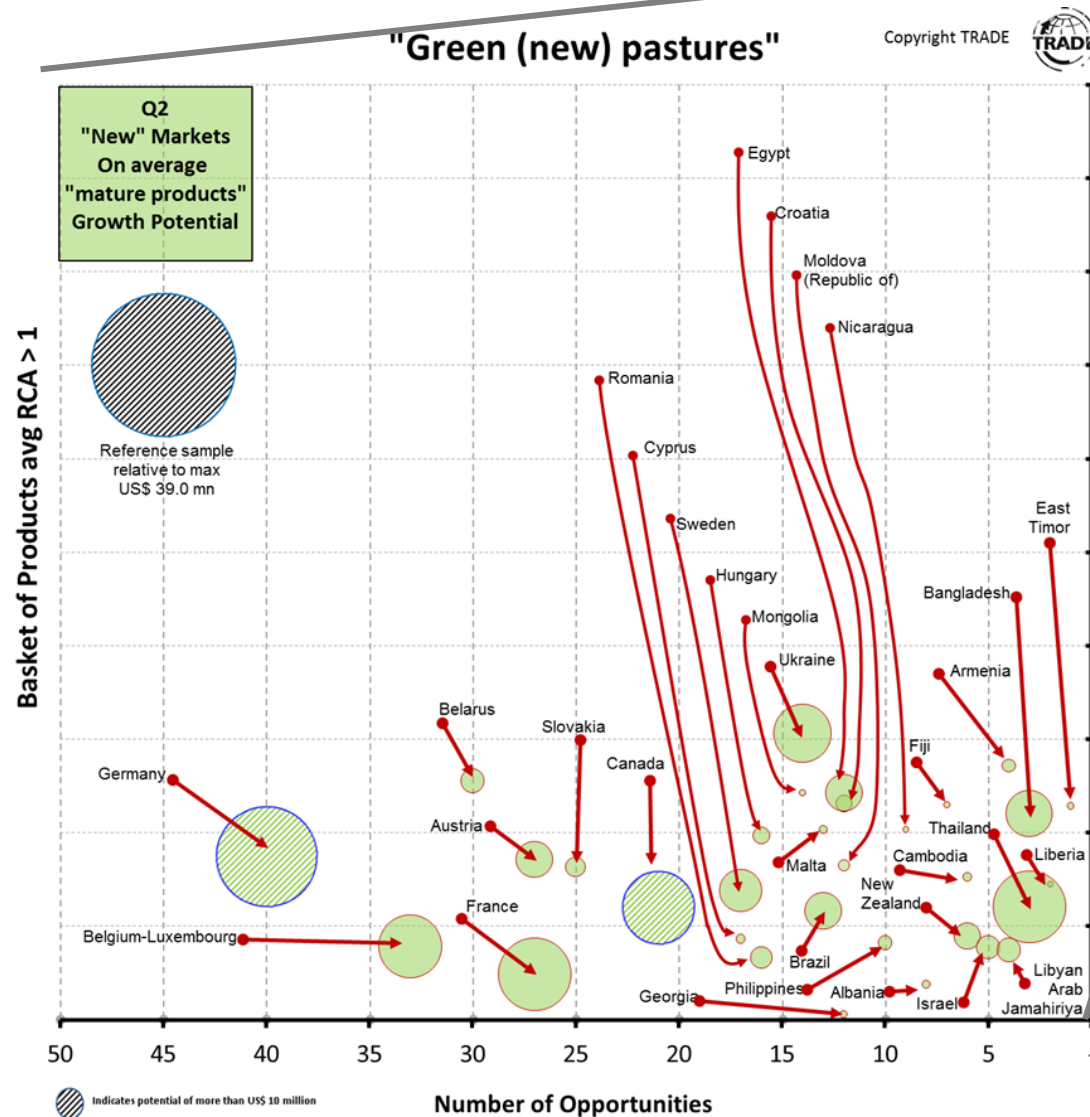
4. DSM methodology- the filtering process

- Accessible via User-friendly interface
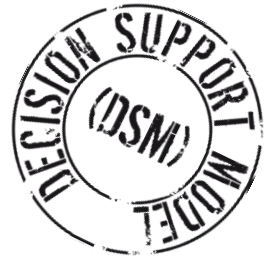

TRADE DSM Navigator™

Easy to use – quick access to information from different perspectives e.g.:

- per HS-6 product level
- per individual sector
- per trading (importing) country, e.g. the Netherlands
- per region (e.g. Africa or SADC)
- Other classifications (such as e.g. agro industry, SIC)
- Extractable directly into MS Excel
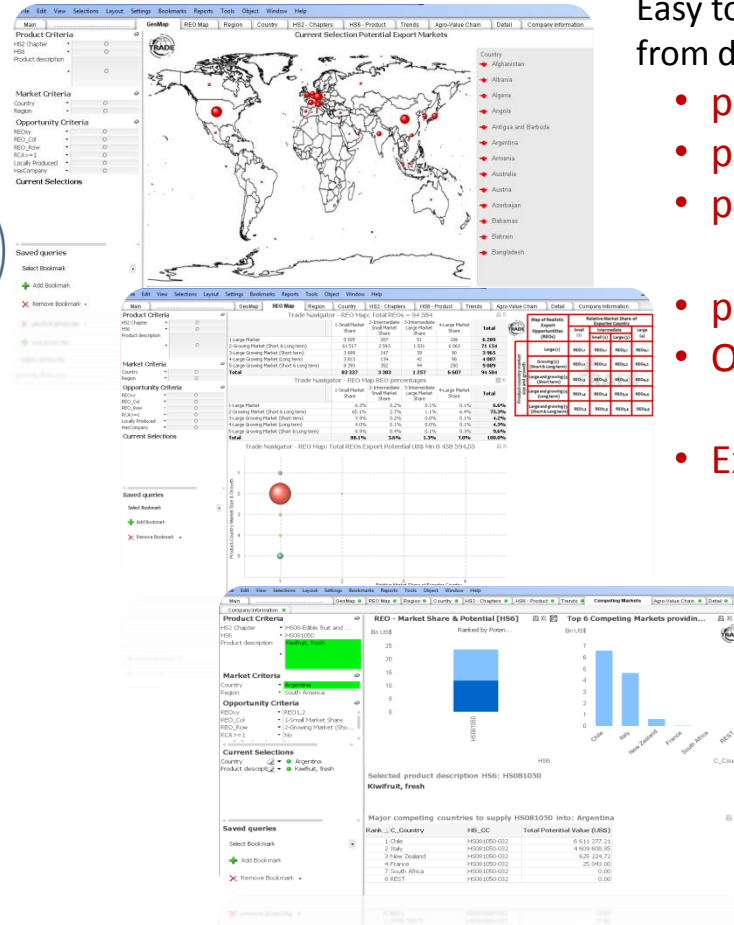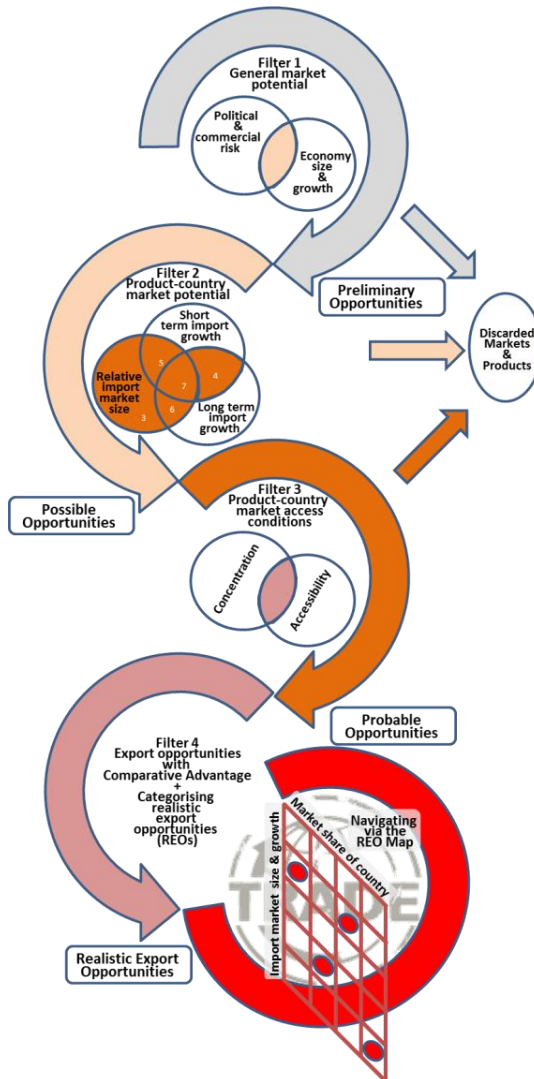
5. Summary and benefits of the
TRADE DSM Navigator™

- **TRADE DSM Navigator™** - is extremely rigorous and thorough in its approach. It is the only market selection methodology that includes all possible product-country combinations in the world at an HS-6 product level & EBOP services sub-sector level.

- It is much more time-efficient than traditional approaches to market and product/service selection.

- It can be loaded onto individual computers and accessed via an easy-to-use interface, making it portable and convenient.

- It helps to inform export growth strategies in existing and/or new markets.

- It encourages the efficient allocation of resources, thereby helping organisations to advance their export initiatives in a timeous and cost-effective manner.