

# Identifying realistic export opportunities for Rwanda based on the TRADE-DSM approach



## In brief

- The Decision Support Model (DSM) is a tool to facilitate systematic export market selection. This is done by identification of relatively easier-to-access products and markets with lower barriers to entry that exhibit demonstrated import demand and are not too concentrated from an import supply perspective.
- The purpose of this paper is to illustrate how the outcomes from the DSM approach can be applied in planning and assessing export promotion activities in Rwanda.
- The export opportunities identified from the DSM are broadly in line with Rwanda's National Export Strategy. This includes opportunities in agro-processing and agrochemical products, foods, beverages, metal, wood and construction materials.
- For each of these target products, the DSM provides a detailed overview of which markets currently demand such goods, and how large Rwanda's additional export potential is.
- The analysis also offers new, unexplored areas of export diversification including aeronautic maintenance, mining and drilling maintenance, and plastics related manufacturing

*This project is funded  
by IGC Rwanda*

## The Decision Support Model

The Decision Support Model (DSM) is a tool to facilitate systematic export market selection through identification of ‘Realistic Export Opportunities’ (REOs) for firms wanting to expand their sales reach into foreign markets. It also offers alternatives to exporters where they are facing saturation and/or declining growth in their traditional markets. The DSM considers all possible worldwide product-country combinations and, using four filters, progressively eliminates less promising markets until those with the greatest prospects of success are revealed:

- Filter 1 assesses country political and commercial risk, macroeconomic size and growth performance.
- Filter 2 assesses market potential, determined by size and growth of specific products’ import demand.
- Filter 3 examines country accessibility in terms of their different barriers to entry (including shipping time and cost, logistical efficiency, and tariffs and non-tariff barriers) and market concentration.
- Filter 4 compares the “home” market’s export performance (in this case Rwanda), to the performance of the top six competitors in each market. This can indicate a potential “additional” size of different export opportunities from the perspective of the “home” market, relative to exports to the target market.

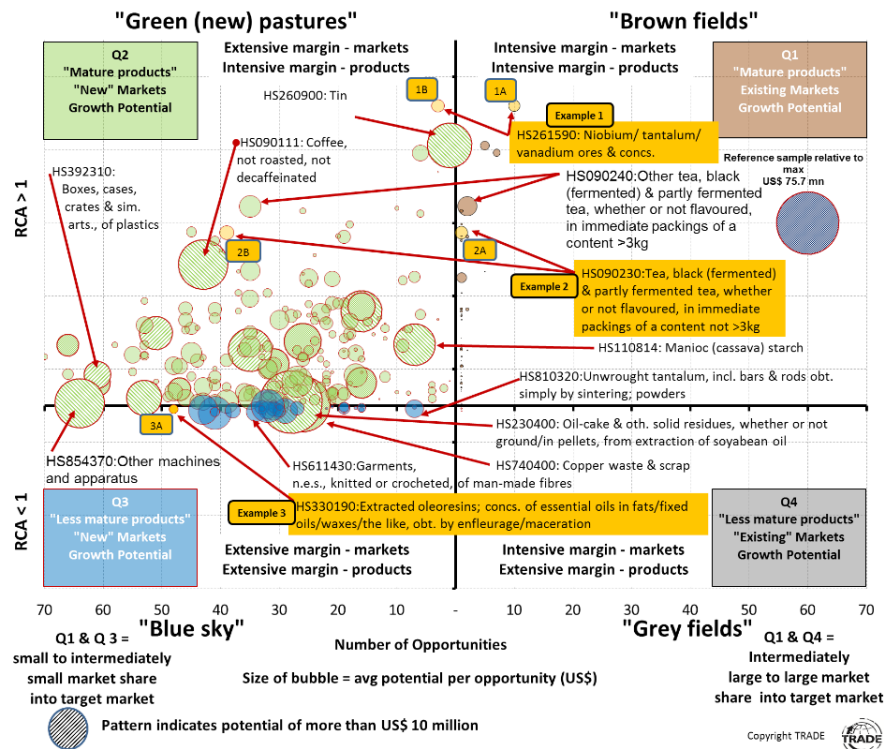
This approach provides a realistic indication of the potential market value that the “home” market could “target” to obtain, in addition to its existing exports to the target market.

## Export opportunities by product type

The DSM approach provides outcomes at the Harmonised Systems Classification (HS) 6-digit product level for all country-product combinations. Figure 1 reflects these export opportunities for Rwanda along two dimensions: new versus existing markets on the x-axis and new versus mature products on the y-axis. This maps out high-potential export opportunities along four quadrants:

1. ‘Brown fields’ (top-right) represent mature products with growth potential in mature markets;
2. ‘Green pastures’ (top-left) represent mature products with growth potential in new markets;
3. ‘Blue sky’ (bottom-left) represent less mature export products with growth potential in new markets;
4. ‘Grey fields’ (bottom-right) represent less mature products with growth potential in mature markets.

**Figure 1: DSM Matrix: Realistic Export Opportunities for Rwanda**



This note does not aim to provide a complete overview of all options, but to illustrate functionalities of the DSM approach. The first benefit is that it provides an overview of the many different types of export opportunities that are open to Rwanda. Some of these relate to additional opportunities for mature products, such as minerals (Example 1 in Figure 1: Niobium/ tantalum/vanadium) and tea (Example 2 in Figure 2).

A second benefit of the DSM is that for each product, it provides a detailed overview of which markets currently demand such goods, and what Rwanda’s additional export potential is (taking into consideration factors such as trade cost and import tariffs). This is reflected here by the case of Essential Oils (Example 3 in Figure 3), which represents a less mature product. Table 1 shows that there are 48 potential markets that would be accessible to Rwanda’s exports of this product, which should be further investigated. Taking into consideration transport costs and import tariffs faced by Rwanda, this overall market could service over USD\$ 72 million. The DSM thus offers an important evidence-based complement for Rwanda’s economic planning and export strategy.

**Table 1: Major Export markets for Essential Oils (HS 3301.90) for Rwanda (RWA)**

Item	Country	[A]	[B]	[C]	[D]	[E]
		Target Market(s) Total Imports `000 US\$	RWA Current Exports to Target Market(s) `000 US\$	RWA Additional Export Potential to Target Market(s) `000 US\$	Target Market(s) Imports from top 6 competitors (Excl. RWA) `000 US\$	Target Market(s) Imports REST OF WORLD (Excl. RWA & top 6 competitors) `000 US\$
		537 432.33	0.29	72 124.63	432 747.78	104 684.26
1	United States of America	126 276.88	0.00	17 951.24	107 707.47	18 569.41
2	India	40 281.04	0.00	6 113.62	36 681.74	3 599.30
3	China	40 530.24	0.00	5 652.61	33 915.63	6 614.61
4	United Kingdom	41 658.00	0.00	5 301.97	31 811.81	9 846.18
5	Germany	43 311.21	0.00	5 117.20	30 703.18	12 608.03
6	France	44 075.30	0.00	5 032.04	30 192.22	13 883.08
7	Japan	25 760.13	0.00	3 363.96	20 183.75	5 576.38
8	Spain	20 833.92	0.00	2 813.05	16 878.30	3 955.61
9	Belgium-Luxembourg	19 908.00	0.00	2 758.71	16 552.26	3 355.74
10	Netherlands	22 039.23	0.00	2 536.28	15 217.67	6 821.56
	Rest (38)	11 2758.4	0.29	15 483.96	92 903.75	19 854.35

## A Portfolio of focus export products and markets for Rwanda

Based on a more detailed analysis on a country level for the focus countries, a “portfolio” of focus products and markets is created in the Annex. This takes the top 25 products, grouped across 16 different sectors<sup>1</sup> and arranged in descending order in terms of additional potential export value for Rwanda. The overall priority products include:

1. S11: Beverages (81 potential markets valued at potential of US\$ 115.2 million)
2. S02: Dairy products and birds’ eggs (77 potential markets valued at US\$ 59.7 million)
3. S04: Cereals and cereal preparations (69 potential markets valued at US\$ 30.9 million)
4. S05: Vegetables and fruit (67 potential markets valued at US\$ 17.3 million)
5. S28: Metalliferous ores and metal scrap (5 potential markets valued at US\$ 11.4 million)
6. S71: Power-generating machinery and equipment (30 potential markets valued at US\$ 9.0 million)
7. S89: Miscellaneous manufactured articles, n.e.s. (93 potential markets valued at US\$ 8.2 million)
8. S00: Live animals other than animals of division 03 (1 potential markets valued at US\$ 7.7 million)
9. S72: Machinery specialized for particular industries (53 potential markets)

1. Sectors are defined by 2-digit Standard International Trade Classification (SITC) chapters

- valued at US\$ 6.8 million)
- 10.S73: Metalworking machinery (70 potential markets valued at US\$ 6.2 million)
  - 11.S08: Feeding stuff for animals - not including un-milled cereals (26 potential markets valued at US\$ 6.1 million)
  - 12.S21: Hides, skins and fur-skins, raw (2 potential markets valued at US\$ 6.1 million)
  - 13.S07: Coffee, tea, cocoa, spices, and manufactures thereof (3 potential markets valued at US\$ 4.1 million)
  - 14.S55: Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations
  - 15.S09: Miscellaneous edible products and preparations (3 potential markets valued at US\$ 0.7 million)
  - 16.S57: Plastics in primary forms (29 potential markets valued at US\$ 0.5 million)

## General conclusion on realistic export opportunities

The purpose of this paper is not to be exhaustive nor authoritative, but rather illustrative of how the outcomes from the DSM approach can be applied for decision making with specific relevance to Rwanda's policy makers in their journey of planning and building the country's economy.

The export opportunities identified from the 'portfolio' of focus products and markets identified by the DSM approach (Annex) are broadly in line with Rwanda's National Export Strategy. This includes opportunities in agro-processing and agrochemical products, foods, beverages, metal, wood and construction materials. The added-value of the DSM approach here is that for each target product, it provides a detailed overview of which markets currently demand such goods, and what Rwanda's additional export potential is (taking into consideration factors such as trade cost and import tariffs). This offers an important evidence-based complement to Rwanda's existing National Export Strategy.

Besides the usual suspects, this research also opens up three 'unexplored' export opportunities. The first relates to the region's aerospace activity requiring maintenance, refurbishment and support services. Rwanda's central location, nearby regional demand (e.g. from eastern DRC) combined with its aspiration to become a logistics hub makes such a focus worth exploring further. The analysis points to Germany as a potential key partner for the region in the aerospace related maintenance, refurbishment and support services. The region also has major mining and exploration activities that require similar products and services. The DSM indicates that it may make sense to approach the global major mining equipment producers in a similar fashion to explore potential options that could be beneficial to all parties. A third area relates to the manufacture of plastics (including recycling and repurposing of waste plastics into required plastic products such as water tanks, cases and boxes). These should also be further

investigated, as the region does have a demonstrated need and import demand for such products and they are associated with a high employment requirement and can facilitate value addition by moving into higher skill- and technology intensive production processes.

In conclusion, Rwanda should continue to focus on interventions that help build systems, create networks, develop institutions and align strategic priorities. As an immediate priority it would be useful to cross-check key assumptions and possibly deepen the analysis of current findings to ensure robustness. Thereafter, to sensibly and responsibly inform strategic decisions, more detailed investigation and evaluation of each of the opportunities identified for Rwanda by the DSM approach is required. The current outcomes help point the way in which policy makers could focus.

# Annex 1: A Portfolio of Focus Products and Markets for Rwanda

For focus countries value ranges of potential are indicated by colour of the cell:

SITC Rev 4 Sector	Skill & Technology intensity	HS-6 digit	Description	Regional focus countries										Rest of World				Total No	Potential (Mn US\$)		
				<= US\$ 0.5 mn					< US\$ 0.5 mn <= US\$ 1 mn					> US\$ 1 mn							
				Burundi	Congo	DRC	Kenya	Somalia	South Sudan	Tanzania	Uganda	Global Q1	Global Q2	Global Q3	Global Q4						
S11:Beverages	Non-fuel primary commodities		Beer made from malt	1	1	1				1					31				35	38.47	
			Waters, incl. min. waters & aerated waters, cont. added sugar/oth. sweetening matter/flavoured							1								42		43	16.42
			Mineral waters (nat./art.) & aerated waters, not cont. added sugar/oth. sweetening matter/flavoured		1	1														3	4.77
S02:Dairy products and birds' eggs	Non-fuel primary commodities		Sub-total (number, total potential value)	1	2	2				1				2	31	42			81	115.2	
			Birds' eggs, in shell, fresh/presvd./cooked		1		1										39			43	58.69
			Milk in powder/granules/oth. solid form, fat content by wt. not >1.5%			1	1													3	31.29
S04:Cereals and cereal preparations	Non-fuel primary commodities		Milk & cream, concentrated (excl. in powder), unsweetened			1											30		31	25.25	
			Sub-total (number, total potential value)	1	2	2	1					2	39	30				77	59.7		
			Sweet biscuits	1		1										63			66	14.74	
S05:Vegetables and fruit	Non-fuel primary commodities		Broken rice			1													1	6.07	
			Maize (corn) flour			1														2	10.11
			Sub-total (number, total potential value)	1	2	2	1					1	63						69	30.9	
S28:Metalliferous ores and metal scrap	Non-fuel primary commodities		Tomatoes, prepd./presvd. othw. than by vinegar/acetic acid, other than whole/in pieces		1														36	13.22	
			Peas (Pisum sativum), dried, shelled, whether or not skinned/split				1										28			31	4.04
			Sub-total (number, total potential value)		1	2						1	62						67	17.3	
S71:Power-generating machinery and equipment	Medium skill- and technology intensive manufactures		Tin ores & concentrates											5					5	6.16	
			Sub-total (number, total potential value)																	5	6.16
			Spark-ignition recip./rotary int. comb. piston engines for aircraft				1										27			30	4.42
S89:Miscellaneous manufactured articles, n.e.s.	Medium skill- and technology intensive manufactures		Sub-total (number, total potential value)				1												93	9.0	
			Boxes, cases, crates & sim. arts., of plastics				1										58			61	8.98
			Imitation jewellery other than of base metal		1														30		32
S00:Live animals other than animals of division 03	Non-fuel primary commodities		Sub-total (number, total potential value)		1		1								58	30			93	8.2	
			Live bovine animals other than pure-bred breeding animals			1														1	6.14
			Parts suit. for use solely/princ. with the boring/sinking mach. of 8430.41/8430.49	1													51			53	0.73

S73: Metalworking machinery	Medium skill- and technology intensive manufactures	Drilling machines other than way-type unit head machines, op. by removing metal, other than numerically controlled	1	1	-	-	-	-	-	1	-	67	-	-	70	3.41	6.8
Sub-total (number, total potential value)																	6.2
S08: Feeding stuff for animals (not including unmilled cereals)	Non-fuel primary commodities	Oil-cake & oth. solid residues, whether or not ground/in pellets, from extraction of soyabean oil	1	-	-	1	-	-	-	1	-	23	-	-	26	7.71	6.1
S21: Hides, skins and furskins, raw	Non-fuel primary commodities	Whole bovine (incl. buffalo)/equine hides & skins, wt. per skin not >8kg (simply dried)/10kg (dry-salted)/16kg (fresh/wet-salted/othw. presvdl.)	-	-	-	1	-	-	-	1	-	-	-	-	2	0.48	6.1
S07: Coffee, tea, cocoa, spices, and manufactures thereof	Non-fuel primary commodities	Tea, black (fermented) & partly fermented tea, whether or not flavoured, in immediate packings of a content not >3kg Other tea, black (fermented) & other partly fermented tea, whether or not flavoured, in immediate packings of a content >3kg	-	-	-	1	-	-	-	1	-	-	-	-	1	11.38	4.1
Sub-total (number, total potential value)																	4.1
S55: Essential oils and resins and perfume materials; toilet, polishing and cleansing preparations	High skill- and technology intensive manufactures	Scouring pastes & powders & oth. scouring preps.	1	1	-	-	-	-	-	-	-	49	-	-	51	6.76	3.0
S09: Miscellaneous edible products and preparations	Non-fuel primary commodities	Tomato ketchup & oth. tomato sauces	1	-	1	-	-	-	-	1	-	-	-	-	3	0.67	0.7
S57: Plastics in primary forms	High skill- and technology intensive manufactures	Waste, parings & scrap, of plastics n.e.s. in 39.15	-	-	-	-	-	-	-	1	-	-	28	-	29	6.07	0.5
Sub-total (number, total potential value)																	298
Total			7	8	8	12	2	1	6	11	5	470	102	-	632	-	298