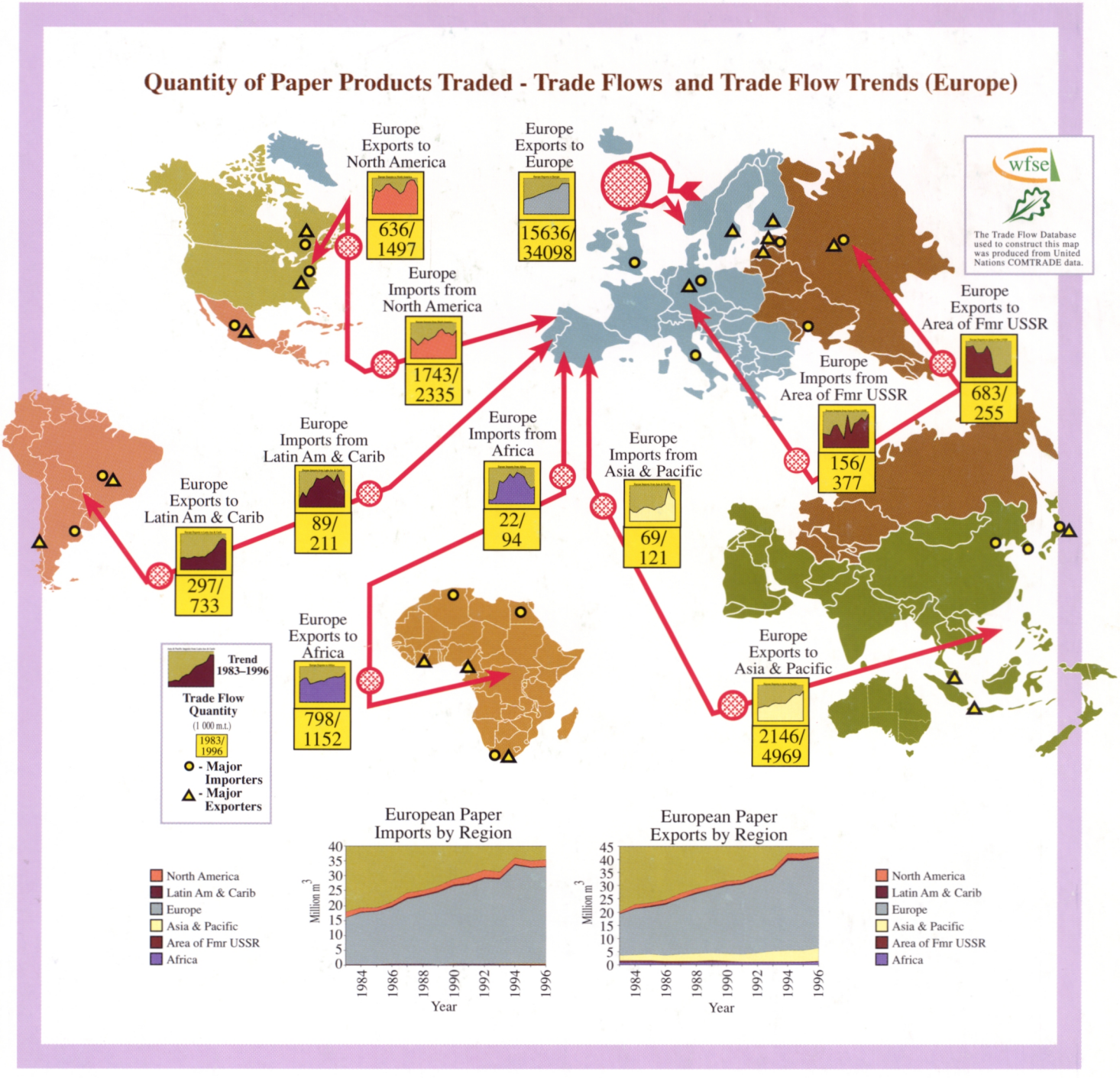
A Global Study of
Regional Trade Flows
of Five Groups of Forest Products



BRUCE MICHIE and STEPHEN KIN

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A Global Study of Regional Trade Flows of Five Groups of Forest Products

ABSTRACT

This study identifies and analyses global trade flows of major forest products by six regions. The study is divided into three parts. Part I is made up of an overview and descriptive text, part II is a display of forest products trade figures and part III a display of forest products trade flow maps. Important structural changes during the past decade make this study a timely addition to the understanding of global forest products trade. Prior to this study information on global forest products trade was limited to only few exporters and importers. This study uses data from the WFSE/EFI Trade Flow Database, the most detailed forest products trade flow database in the world. The study integrates annual bilaterial trade flow data covering 235 countries and territories with 26 basic forest products and various product aggregates covering the years 1983 to 1996. Industrial roundwood, sawnwood, panels, woodpulp, paper and misc products (other fiber pulp, recovered paper, fuelwood and charcoal) are the main product categories covered in the study. Africa, Area of the former USSR, Asia & Pacific, Europe, Latin America & Caribbean and North America (Canada & USA) are used as regional groupings. Past trade development patterns are analyzed to see how trade flows change over time. This study clearly demonstrates the value of trade flow data in studying the forest sector.

Key words: global, regional, forest products, trade flows.

PREFACE

This study is a product of the Multi Client project on Global Forest Products Trade Flows. Bruce Michie was responsible for processing data and producing charts and figures. Stephen Kin was responsible for identification of potential clients. The study is part of the World Forests, Society and Environment WFSE Research Program which is being jointly run by European Forest Institute, The Finnish Forest Research Institute and the United Nations University/Institute of Advanced Studies. The outputs are a printed study and an updateable CD-rom. The CD-rom will be available by summer 1999 and will include recently acquired data.

The purpose of the study has been to identify and include the most important regional forest products trade flows between 1983 and 1996 in an analytical format that is easily accessible to institutions and individuals interested in the forest sector.

The study gives annual trade flows for Africa, Asia & Pacific, Europe, Latin America & Caribbean, North America and the area of the former USSR. Trade flow data from 235 countries and territories with 26 different individual products are included. It is based on data from the WFSE/EFI Trade Flow Database the largest forest products trade flow database in the world.

The database was constructed using United Nations COMTRADE data. The database construction and management has been financed by WFSE and in part by EFI. The database has been used in various EFI research projects and reports, as well as in World Forests, Society and Environment book published by Kluwer Academic Publishers in 1999.

The study is aimed at forest industries, machine manufacturers, consulting companies, banks, research and educational institutions that need detailed and quantitatively analyzed data sets for a set of forest products trade flows on an aggregated regional basis.

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ACKNOWLEDGMENTS

The successful completion of this study wouldn't have been possible without contributions from various sources. We wish to express our sincere thanks to Dr. Susanna Laaksonen-Craig for the valuable suggestions and comments in the editing process. Thanks also to WFSE research program staff for their contributions. We express our appreciation for the valuable data provided by the United Nations COMTRADE statistical units in Geneva (more recently, New York). Our thanks also go to the various organizations, research institutes for their hospitality during our field work and initial contacts. Thanks to Johanna Torkkel who skillfully produced final lay-out of the printed report.

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* Source: Matti Palo and Jussi Uusivuori (eds.) 1999. World Forests, Society and Environment: Kluwer Academic Publishers. World Forests Volume 1. Dordrecht/London/Boston. 404 p.

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* Source: Matti Palo and Jussi Uusivuori (eds.) 1999. World Forests, Society and Environment: Kluwer Academic Publishers. World Forests Volume 1. Dordrecht/London/Boston. 404 p.

** The aggregate Total Industrial Roundwood is used in trade flow maps (Fuelwood and Charcoal are not included in this aggregate)

*** The aggregate Woodpulp is used in trade flow maps (Other Fiber Pulp and Recovered Paper are not included in this aggregate)

PART I OVERVIEW TEXT

1 Introduction

1.1 Background

Early investigations of UN COMTRADE trade flow data were conducted at IIASA and by FAO, Rome under the supervision of Philip Wardle. The first attempts by Gäbor Kornai and Franco Pontecorvi (Kornai, 1985; FAO, 1987) were accomplished using Fortran programs which read raw data and produced standard reports. Later attempts by Bruce Michie (FAO, 1991a; FAO, 1991b) used SAS programs to investigate and analyze the trade flow data in stages. Once the process became proven, an attempt to reconcile the largest trade flows with information obtained from FAO questionaires resulted, for the first time, in the production of FAO Yearbook (FAO, 1995) and ECE/FAO Timber Bulletin (ECE/FAO, 1995) trade flow tables from one unique database.

Inclusion of the full set of countries and products yields a database that, theoretically, gives the trade of any forest product that is traded between any two countries of the world. Only trade that goes unreported by both trading partners is missed. A demonstration of the scope of the trade flow database was made at EFI in 1995 when a full set of trade flow tables was placed on the Internet. This demonstration was composed of over 15,000 individual files giving the trade of 14 forest products for years 1992 and 1993. This demonstration can be found at the following web address:

http://www.efi.fi/~michie/Main/Trade/trade.htm

In 1996 work on the forest products database was supported by a Joensuu City Scholarship. This work, conducted by Bruce Michie at EFI (Michie and Wardle, 1998) involved the analysis of newly acquired data as well as developing a system for projecting bilateral trade flows (32 graphs are included in the working paper).

Starting in 1998 a subset of the WFSE/EFI Forest Products Trade Flow Database has been incorporated into EFI's Databank. EFI members can access the Databank over the Internet. European countries, countries making up the Area of the Former USSR, Canada, USA and Japan are included separately. All other countries are aggregated into continents.

The implications that expansion of the European Union may have for trade of forest products (including 40 graphs) forms the basis of an EFI Discussion Paper (Wardle and Michie, 1998). An analysis of ACP (Lomé convention) country trade with the European Union (including 36 graphs) forms the basis of a second discussion paper (Wardle and Michie, 1999).

The multi-client trade flow study is aimed at addressing issues relating to regional forest products trade flows around the world. Past trade development patterns are analyzed to see how regional trade flows vary through time. The outputs consist of a set of colored trade flow charts and maps. The pilot maps are already available in our Internet window (http://www.efi.fi/projects/worldforests/). Trade flows are represented by both quantities (cubic meters or metric tons) and values (current US dollars).

This study was necessitated by the fact that trading patterns may change dramatically through time. Analysis of these changes demand comprehensive analysis of a detailed bilateral forest products trade flow database. Realization of these needs has prompted the World Forests, Society and Environment Research Program (WFSE) to continue the updating, development and evaluation of the WFSE/EFI Trade Flow Database which

consists of 39 forest products and product aggregates constituting countries and territories trade flows between the 235 countries trading in the international market over the period 1983–1996. The set of products are the same as those that can be found in the FAO Yearbook of Forest Products (e.g. FAO, 1995). Some charts and maps included in this study (Those dealing with value trade of all forest products combined into one aggregate) were previously published in WFSE Volume I (edited by Palo and Uusivuori, 1999). The UN Statistical Division in Geneva (more recently, New York) provided the raw trade flow data that was used to construct the WFSE/EFI Trade Flow Database. Part II includes 18 pages of graphs (10 graphs per page) while Part III includes 36 trade flow maps (consisting of 456 graphs).

This study is aimed at forest industries, machine manufacturers, consulting companies, banks and other financial institutions, research and educational institutions, interested in detailed regionally analyzed trade flows for a several of forest products.

1.2 Purpose

The purpose of this study is to identify and include the most important international trade flows of forest products by six regions between 1983 and 1996 in an easily accessible printed report. In addition, our aim is to produce an updateable CD that will include trade flow summaries with animated regional sets of charts, maps and spreadsheets that are tailored to meet individual requirements. Our intention is to open up new possibilities for understanding the impact of trade on strategic decision making processes and to create new ideas for future scenario formulations on forest products trade.

This study is based on an existing database (Michie and Wardle 1998). The database includes all forest products traded by any two countries (during the years 1983 to 1996). The launching of trade flow data on the Internet in 1995 generated several queries regarding the availability of the trade flow data.

1.3 The structure of the study

The study is done in two modules. Module one is a descriptive printed report with a display of regional forest products trade flow charts and maps. Module two is a CD with animated regional trade flow charts, maps and spreadsheets. In this study of module one, the world is represented by six regions: namely; Africa, Asia & Pacific, Europe, Latin America & Caribbean, North America and the Area of the Former Soviet Union.

Part I is an overview. The figures for 1983 and 1996 are provided for scale (part II) and part III displays regional trade flow maps.

We would like to point out that the trade flow data for each reporting country (or region) is different from that of their trading partners (countries or regions) for the same trade flow. This is due to the delays (transportation and storage) that occur between the delivery of a product to an export customs area and subsequent collection from import customs authorities. Additionallly, export values are fob and import values are cif.

2 Recent Developments

2.1 WFSE/EFI Trade Flow Database

The data used in this study is from the WFSE/EFI database and the primary raw data for our database was purchased from the Commodity Trade Statistics Unit of the United Nations Statistical Division (UNSTAT) in Geneva (more recently, New York). Recent enhancements to the WFSE/EFI Trade Flow Database have advanced it to the point where it is operational.

The procedures used to process the data have been built over a number of years and are being continually revised and extended to include new checks and corrections. The result is a set of trade flows that include any forest product that has been traded between any two countries anywhere in the world. Many missing trade flows have been replaced with data from trading partners. Missing trade flow quantities are calculated using a variety of methods involving the existing

value of the trade flow and an average unit value that has been calculated from the data. The trade flow database which has been produced includes all of the basic FAO forest products plus several product aggregates.

Microsoft Access is the database package used to organize the trade flow data. Automated queries have been constructed that provide a range of reports with a minimum of effort. In addition, Microsoft Access allows the construction of user defined queries that can produce a wide variety of results with a relatively small amount of work.

The full list of databases with included products is given below:

Database		Number of records
Pulp97		145456
OTHFP	OTHER FIBRE PULP	
REPAP	RECOVERED PAPER	
WOODP	WOOD PULP (Total)	
BSPHA	BLEACHED SULPHATE	
BSPHI	BLEACHED SULPHITE	
DISOL	DISSOLVING	
MECHP	MECHANICAL	
SEMIC	SEMI-CHEMICAL	
USPHA	UNBLEACHED SULPHATE	
USPHI	UNBLEACHED SULPHITE	
IRWD97		155902
CHAR	CHARCOAL	
FUELW	FUELWOOD	
CHIPP	CHIPS & PARTS	
WOODR	WOOD RESIDUES	
INDRW	IND: ROUNDWOOD (WIR) - Total	
IRWNC	NC IND. ROUNWOOD (WIR)	
IRWDC	C IND. ROUNDWOOD (WIR)	
OINDR	OTHER IND ROUNDWOOD	
PULPW	PULPWOOD ROUND & SPLIT	
SLVLC	SAWLOGS & VENEER. C.	
SLVNC	SAWLOGS & VENEER NC.	
AllForP		172736
ALLFP	ALL FOREST PRODUCTS (Total)	
Sawnwd97		196648
TSNWD	SAWNWOOD (Total)	
CSNWD	SAWNWOOD C.	
NCSWD	SAWNWOOD NC.	

Database		Number of records
Panels97		273876
PANEL	PANELS (Total)	
FIBNC	FIBREBOARD NON COMP.	
FIBRC	FIBREBOARD COMP.	
PARTB	PARTICLE BOARD	
PLYWD	PLYWOOD	
VNEER	VENEER	
Paper97		342902
PAPER	PAPER AND PAPERBOARD (Total)	
NEWSP	NEWSPRINT	
OTHRP	OTHER PAPER AND PBD.	
PRWRI	PRINTING & WRITING	
Aggreg97		600591
ALLFP	ALL FOREST PRODUCTS (Total)	
CHAR	CHARCOAL	
FUELW	FUELWOOD	
INDRT	TOTAL IND ROUNDWOOD	
TSNWD	SAWNWOOD (Total)	
PANEL	PANELS (Total)	
OTHFP	OTHER FIBRE PULP	
REPAP	RECOVERED PAPER	
WOODP	WOOD PULP (Total)	
PAPER	PAPER AND PAPERBOARD (Total)	

2.2 Recent situation

International trade in forest products experienced many structural changes in the 1980s and early 1990s. The most obvious of these changes is the breakup of the former USSR but important changes in China, enlargement of the European Union and new free trading blocks like NAFTA and MERCOSUR have also occurred. Overall exports of forest products grew consistently during this period. Growth of the value of all forest products exported during 1983-1996 was at an annual rate of 8.2% (current dollars). Industrial roundwood exports increased at an annual rate of 4.8% (1.7 % growth in quantity) over the same period. Sawnwood exports increased 7.2% (3.5 % growth in quantity) annually, panels exports increased 10.4% (7.6 % growth in quantity) woodpulp exports increased 6.4% (4.0 % growth in quantity), paper exports increased 9.5% (5.7 % growth in quantity) and exports of miscellaneous products (fuelwood, charcoal, other fiber pulp and recovered paper) increased 8% annually (6.6 % growth in quantity).

Exports of all forest products from Latin America grew 11.3% annually. Exports from all other regions grew between 7.3% (North America) and 8.7% (Africa). Imports into Africa increased 2.5% while imports into the countries making up the Area of the Former Soviet Union grew 1.0% annually. The region with imports growing at the fastest rate (9.6%) was the Asia & Pacific region. Imports into other regions ranged between 7.3% (North America) and 8.0% (Latin America).

3 Regional trade flow trends

3.1 European Trade Trends

Europe is the world's leading exporter and importer of forest products. Its exports for 1983 and 1996 were 20.8 and 62.4 billion USD, respectively for an annual average growth rate of 8.4%. However, a substantial share of its total exports were traded internally. European imports from other regions in 1983 and 1996 were 6.8 and 13.9 billion USD, respectively (5.5% annual growth). Total European imports for 1983 and 1996 were 24.0 and 63.8 billion USD, respectively for an annual average growth rate of 7.5%. European exports to Africa, Area of the Former USSR, Asia & Pacific, Europe, Latin America and North America grew at annual rates of 3.4%, -1.0%, 8.5%, 8.8%, 10.6% and 10.6%, respectively. European imports from Africa, Area of the Former USSR, Asia & Pacific, Europe, Latin America and North America grew at annual rates of 5.1%, 7.7%, 1.5%, 8.2%, 10.0% and 5.1%, respectively.

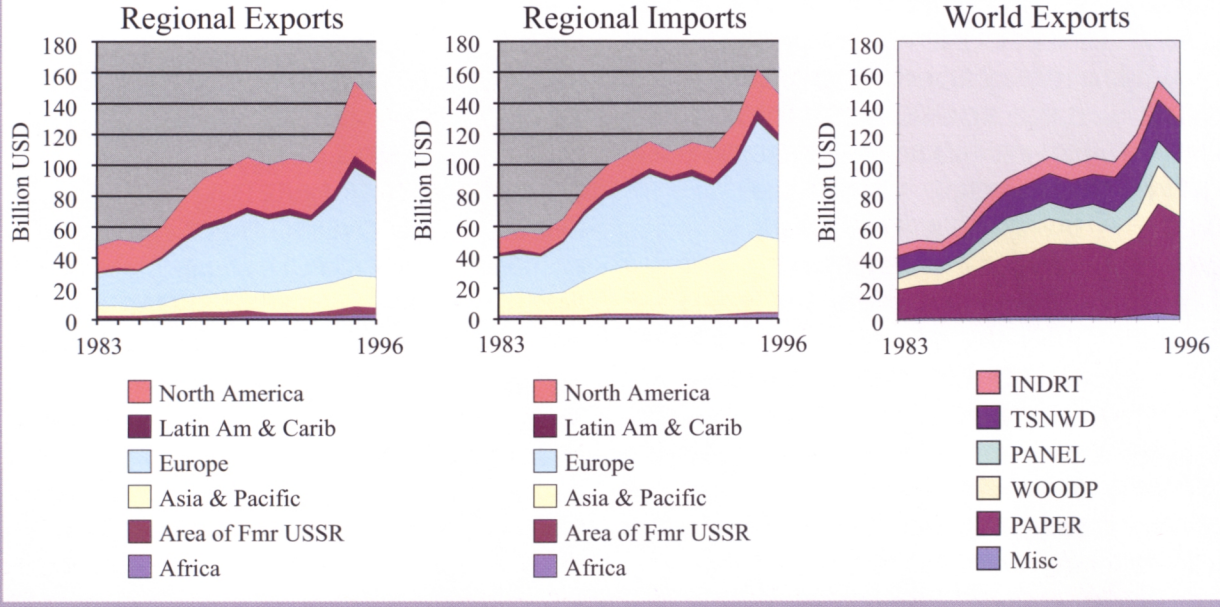

Figure 1: Value of World Trade of Forest Products

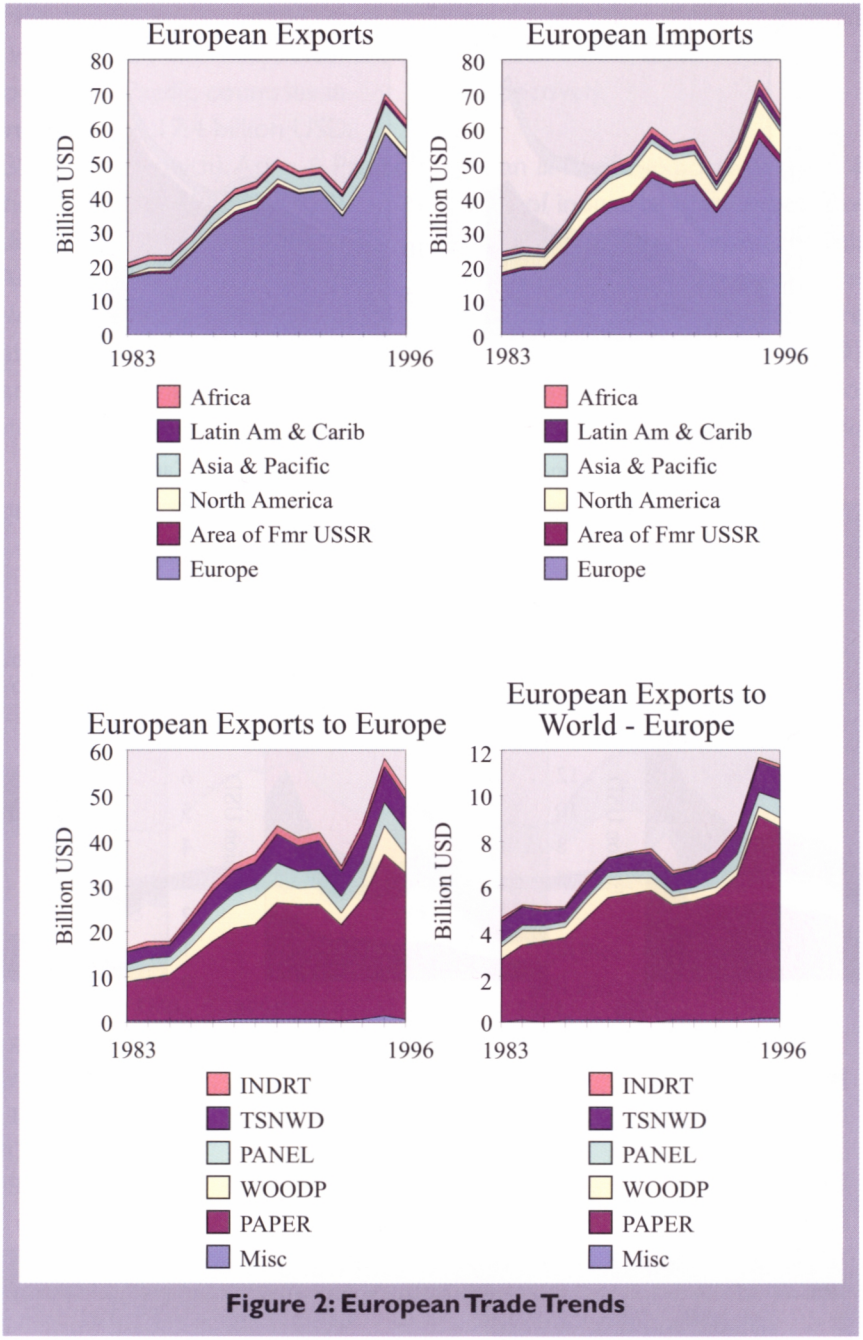

Figure 2: European Trade Trends

European exports were primarily paper products. European exports to European countries of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 5.6%, 6.7%, 9.3%, 5.3%, 10.2% and 7.2%, respectively. European exports to non-European countries of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 0.8%, 3.6%, 8.7%, -1.8%, 8.8% and 12.2%, respectively. European exports to European and non-European countries grew at 8.8% and 7.0% annual rates, respectively.

3.2 North American Trade Trends

North America is the world's second largest exporter and third largest importer of forest products. Its exports for 1983 and 1996 were 16.7 and 43.0 billion USD, respectively for an annual average growth rate of 7.3%. North American exports to Asia & Pacific, Europe, Latin America, North America and other regions grew at annual rates of 8.8%, 5.1%, 8.7%, 7.2% and -0.2%, respectively. North American imports from Asia & Pacific, Europe, Latin America, North America and other regions grew at annual rates of 4.3%, 11.5%, 13.9%, 6.8% and 11.1%, respectively.

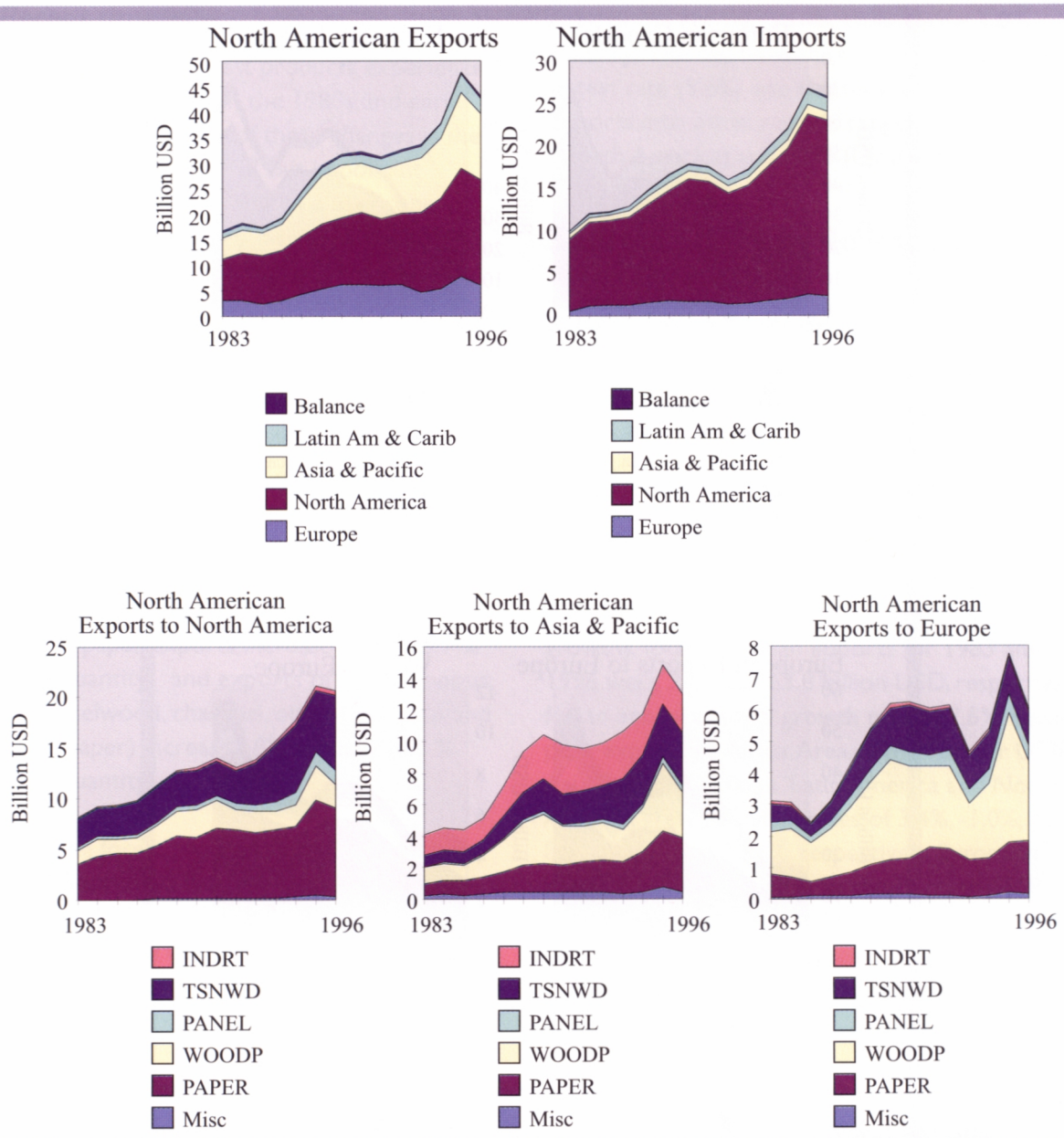

Figure 3: North American Trade Trends

North American exports to North America of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 8.5%, 7.6%, 13.8%, 4.2%, 7.0% and 9.6%, respectively. North American exports to Asian & Pacific countries of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 4.9%, 11.4%, 14.8%, 8.2%, 11.3% and 6.1%, respectively. North American exports to European countries of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of -1.2%, 4.6%, 3.7%, 5.2%, 6.3% and 5.6%, respectively. North American exports to North America, Asia & Pacific and Europe grew at 7.2%, 8.8% and 5.1% annual rates, respectively.

3.3 Asian & Pacific Trade Trends

The Asia & Pacific region is the world's third largest exporter and second largest importer of forest products. Its exports for 1983 and 1996 were 6.5 and 20.0 billion USD, respectively for an annual average growth rate of 8.6%. Asian & Pacific imports for 1983 and 1996 were 13.6 and 47.4 billion USD, respectively for an annual

average growth rate of 9.7%. A substantial share of its total exports were traded internally. Asian & Pacific exports to Asian & Pacific countries in 1983 and 1996 were 4.8 and 17.4 billion USD, respectively (9.83% annual growth). Asian & Pacific imports from other regions in 1983 and 1996 were 8.1 and 27.8 billion USD, respectively (9.5% annual growth). Asian & Pacific exports to Asia & Pacific, Europe, North America and other regions grew at annual rates of 9.8%, 2.6%, 3.6% and 3.7%, respectively. Asian & Pacific imports from Africa, Area of the Former USSR, Asia & Pacific, Europe, Latin America and North America grew at annual rates of 14.0%, 8.7%, 9.7%, 8.5%, 14.4% and 9.2%, respectively.

Asian & Pacific exports to Asian & Pacific countries of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 2.9%, 10.4%, 15.7%, 12.4%, 12.5% and 10.3%, respectively. Asian & Pacific exports to non-Asian & Pacific countries of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous

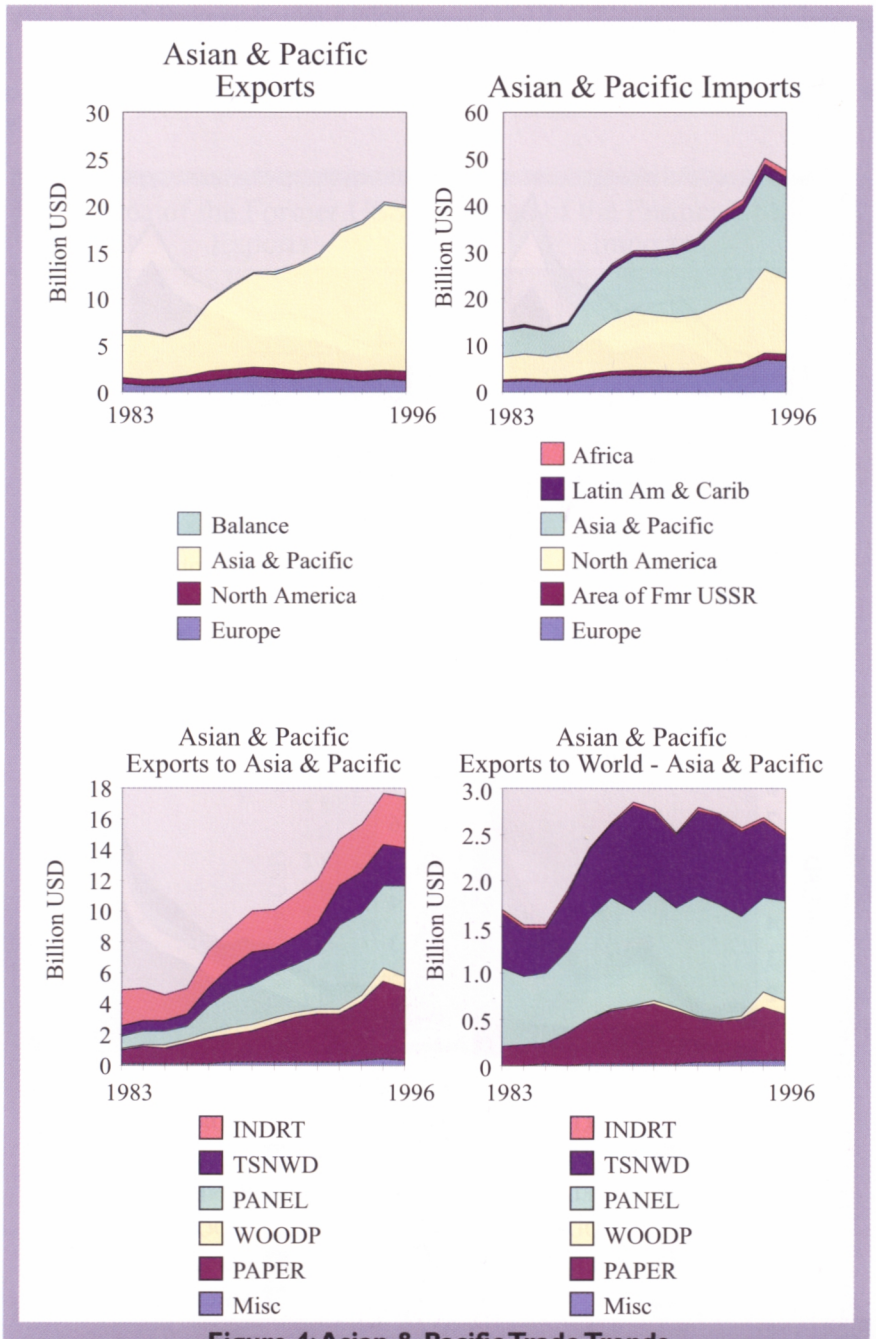

Figure 4: Asian & Pacific Trade Trends

products increased at annual rates of -1.3%, 1.6%, 1.7%, 30.2%, 7.4% and 15.1%, respectively. Asian & Pacific exports to Asian & Pacific and non-Asian & Pacific countries grew at 9.8% and 3.1% annual rates, respectively.

3.4 Latin American & Caribbean Trade Trends

Latin American exports for 1983 and 1996 were 1.4 and 6.1 billion USD, respectively for an annual average growth rate of 11.3%. Latin American imports in 1983 and 1996 were 1.8 and 5.1 billion USD, respectively (8.0% annual growth). Latin American exports to Africa, Asia & Pacific, Europe, Latin America and North America grew at annual rates of 6.1%, 13.1%, 10.2%, 9.4% and 13.7%, respectively. Latin American imports from Africa, Area of the Former USSR, Asia & Pacific, Europe, Latin America and North America grew at annual rates of 2.2%, 23.5%, 4.7%, 9.1%, 8.9% and 7.4%, respectively.

Latin American exports of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates

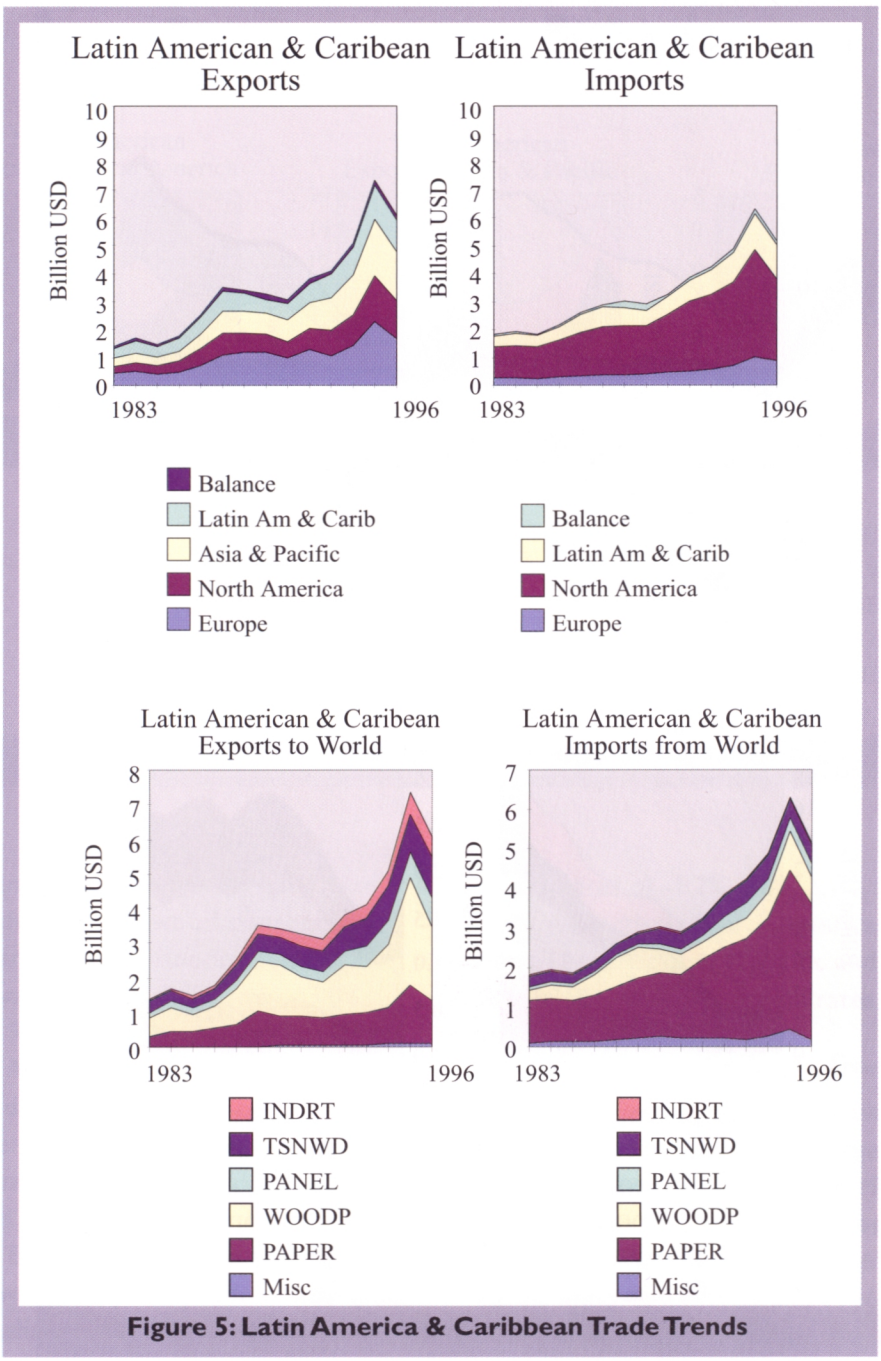

Figure 5: Latin America & Caribbean Trade Trends

of 17.4%, 9.8%, 11.8%, 11.0%, 11.2% and 13.3%, respectively. Latin American imports of industrial roundwood wood, sawnwood, panel products, woodpulp, paper and miscellaneous products increased at annual rates of 3.5%, 4.4%, 10.7%, 6.9%, 9.0% and 4.2%, respectively.

3.5 Area of Former Soviet Union Trade Trends

Exports from countries making up the Area of Former Soviet Union for 1983 and 1996 were 1.4 and 4.1 billion USD, respectively for an annual average growth rate of 8.0%. Imports into countries making up the Area of Former Soviet Union imports in 1983 and 1996 were 0.6 and 0.7 billion USD, respectively (1.0% annual growth).

Area of Former Soviet Union exports to Asia & Pacific, Europe and other regions grew at annual rates of 8.7%, 7.3% and 10.9%, respectively. Area of Former Soviet Union imports from Europe and other regions grew at annual rates of -0.8% and 19.1%, respectively.

Area of Former Soviet Union exports of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 6.1%, 5.0%, 15.1%, 11.4%, 15.9% and 7.8%, respectively.

3.6 African Trade Trends

African exports for 1983 and 1996 were 1.0 and 3.1 billion USD, respectively for an annual average

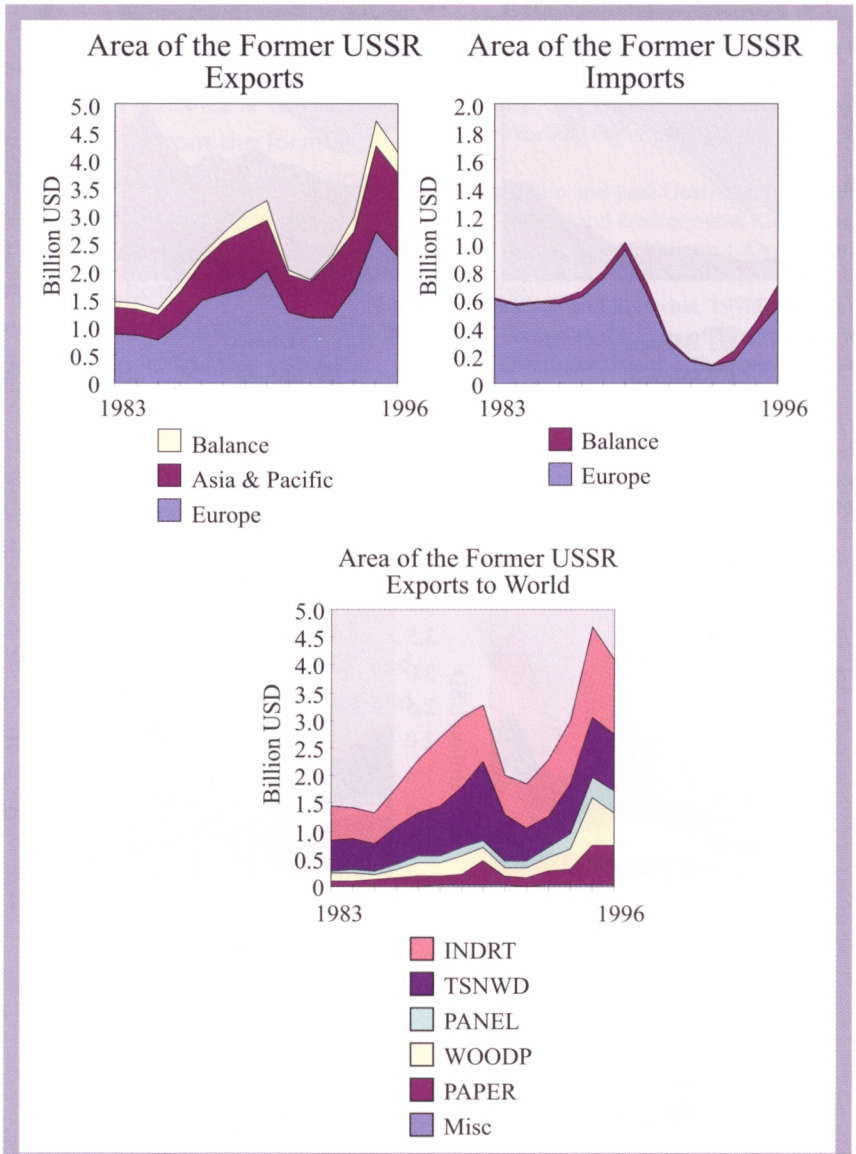

Figure 6: Area of Former Soviet Union Trade trends

growth rate of 8.7%. African imports in 1983 and 1996 were 2.3 and 3.1 billion USD, respectively (2.5% annual growth). African exports to Africa, Asia & Pacific, Europe and other regions grew at annual rates of 8.9%, 13.8%, 6.3% and 6.3%, respectively. African imports from Africa, Europe and other regions grew at annual rates of 9.0%, 2.2% and 1.7%, respectively.

African exports of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 5.6%, 11.5%, 8.3%, 11.8%, 13.2% and 14.4%, respectively. African imports of industrial roundwood, sawnwood, panel producs, woodpulp, paper and miscellaneous products increased at annual rates of 1.0%, 0.0%, 1.6%, 1.8%, 5.0% and 8.5%, respectively.

4 CONCLUSIONS

A general review of world export and import trade indicates that paper has the largest share of all forest products trade for both 1983 and 1996, followed by sawnwood trade. Asia & Pacific has increased its share both in exports and imports of

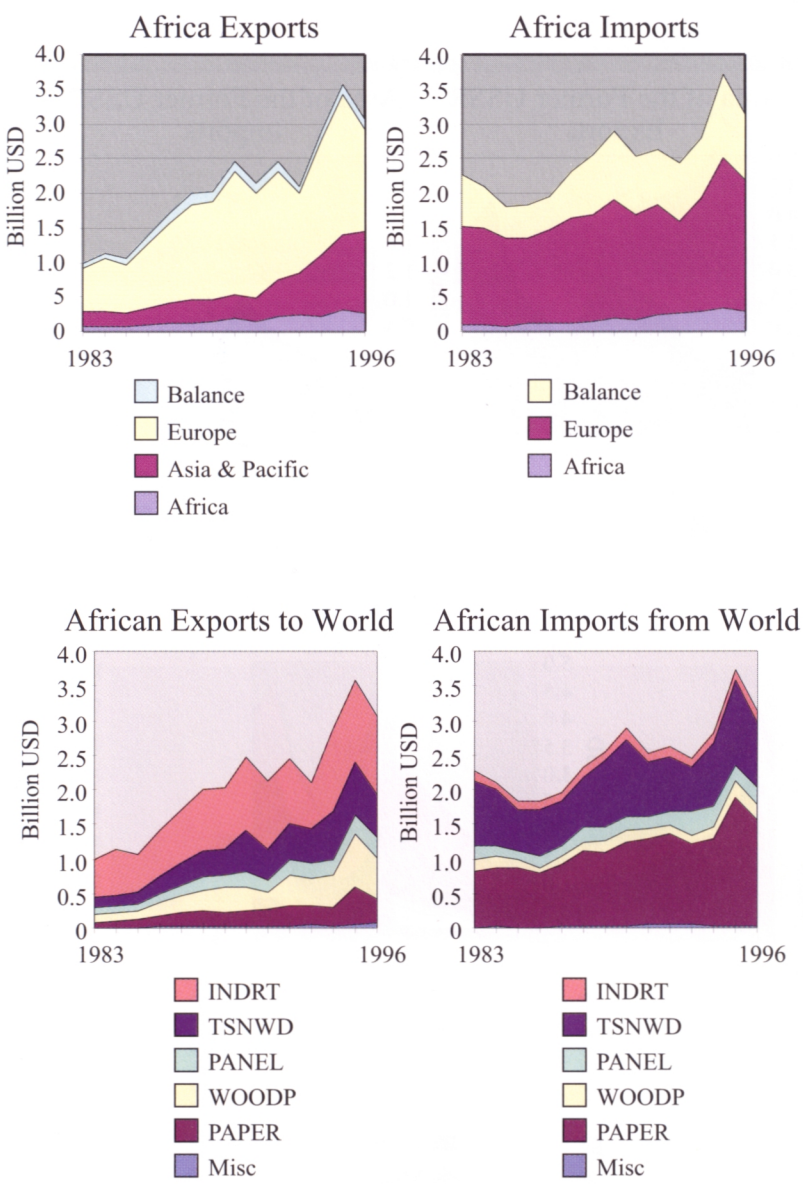

Figure 7: African Trade Trends

the world's forest products trade since 1983, while North America's share in the world's forest products trade has declined both in the exports and imports. The share of the most value added products in the world's forest products trade has increased considerably since the early 1980's.

At the regional trade level, paper has the highest share of all exports from Europe to world in both 1983 and 1996. Europe exports of paper to Europe accounted for 63% of total paper export trade in 1996. The outlook for Asia and Pacific trade with the rest of the world indicated that panels accounted for 42.5% of total exports in 1996. Latin America & Caribbean total exports to world indicated that woodpulp dominated the export market for forest products for both 1983 and 1996.

At the import level, the share of paper was 66.4% of total imports into Latin America & Caribbean in 1996 (see figs 5). Exports from the former USSR indicated that industrial roundwood dominated total exports to other regions. And industrial roundwood dominated all exports from Africa to other regions in both 1983 and 1996, while paper imports accounted for a major share of all forest products imports for the same periods (see fig 7).

The value of world total exports of all forest products by region in 1996 is in the order of magnitude as follows: Europe approximately 62.4 billion USD, North America 43.0 billion USD, Asia and Pacific 20.0 billion USD, Latin America 6.1 billion USD, the former USSR 4.1 billion USD and Africa 3.1 billion USD. Europe, North America and Asia & Pacific regional exports are primarily traded internally as only about a third of exports go to other regions.

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PART II FOREST PRODUCTS TRADE FIGURES

APPENDIX A

Products found in Graphs

	Individual Products Quantity Trade	Aggregate Forest Products
Total Paper		(PAPER)
Newsprint	(NEWSP)	
Other Paper & Paperboard	(OTHRP)	
Printing & Writing Paper	(PRWRI)	
Woodpulp		(WOODP)
Bleached Sulphate	(BSPHA)	
Dissolving	(DISOL)	
Mechanical	(Mech+Semi)	
Semichemical	(Mech+Semi)	
Unbleached Sulphate	(USPHA)	
Bleached Sulphite	(Sulphite)	
Unbleached Sulphite	(Sulphite)	
Miscellaneous Fibers		
Other Fiber Pulp	(OTHFP)	(Misc)
Recovered Paper	(REPAP)	(Misc)
Panels		(PANEL)
Non-compressed Fiberboard	(FiberBd)	
Compressed Fiberboard	(FiberBd)	
Particleboard	(PARTB)	
Plywood	(PLYWD)	
Veneer	(VNEER)	
Sawnwood		(TSNWD)
Coniferous Sawnwood	(CSNWD)	
Non-coniferous Sawnwood	(NCSWD)	
Industrial Roundwood-Wood in the Rough		
Coniferous Industrial Roundwood-Wood in the Rough	(C INDRW)	
Coniferous Sawlogs and Veneer Logs	(C INDRW)	
Non-coniferous Industrial Roundwood-Wood in the Rough	(NC INDRW)	
Non-coniferous Sawlogs and Veneer Logs	(NC INDRW)	
Pulpwood	(PULPW)	
Other Industrial Roundwood	(OINDR)	
Total Industrial Roundwood		(INDRT)
Industrial Roundwood-Wood in the Rough		
Chips & Particles	(CHIPWAST)	
Wood Waste	(CHIPWAST)	
Miscellaneous Fuels		
Fuelwood	(FLWDCHAR)	(Misc)
Charcoal	(FLWDCHAR)	(Misc)

Figure 1a: Value of World and European Trade of Forest Products

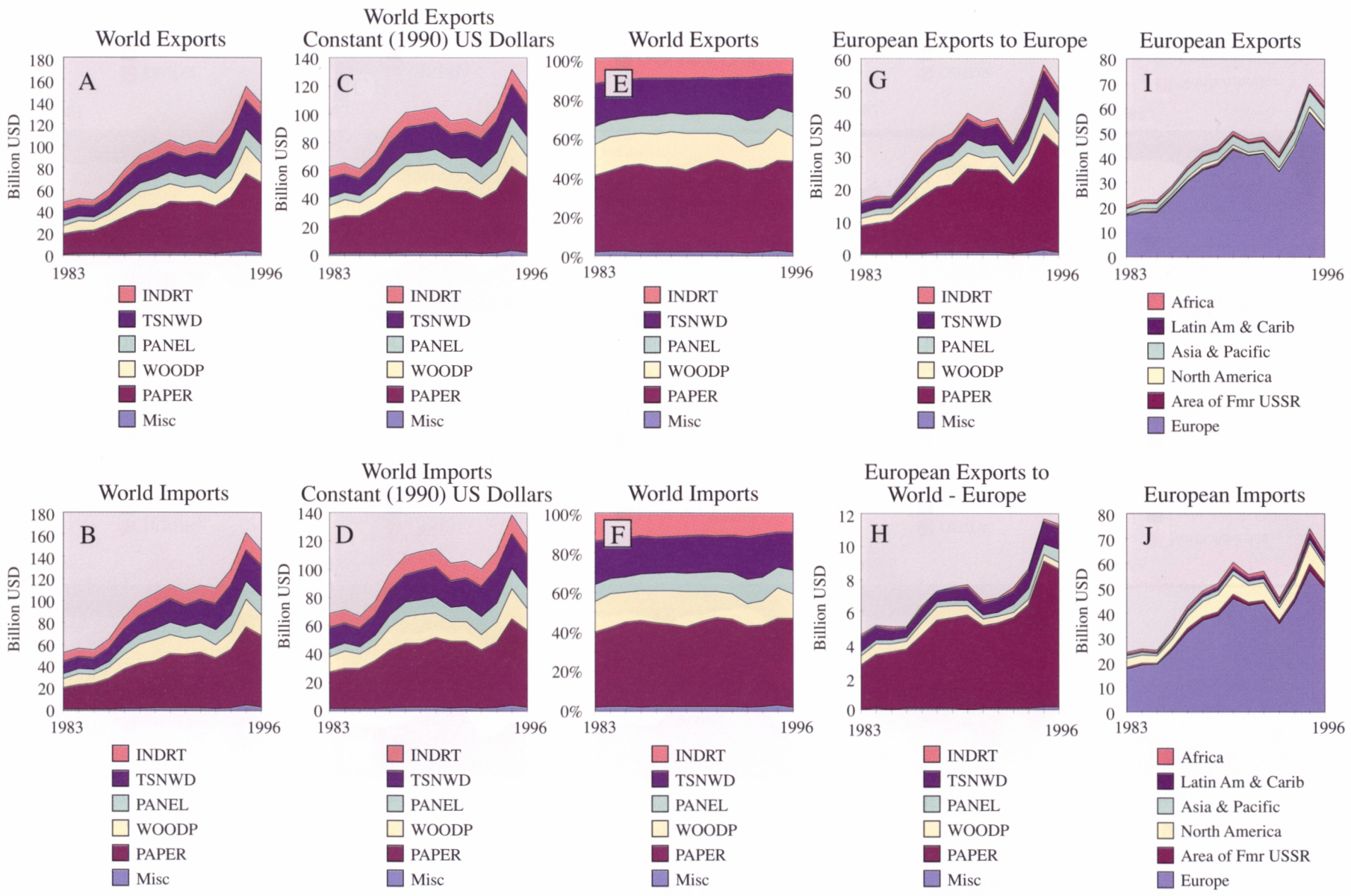


Figure 1b: Volume of World and European Trade of Roundwood Products

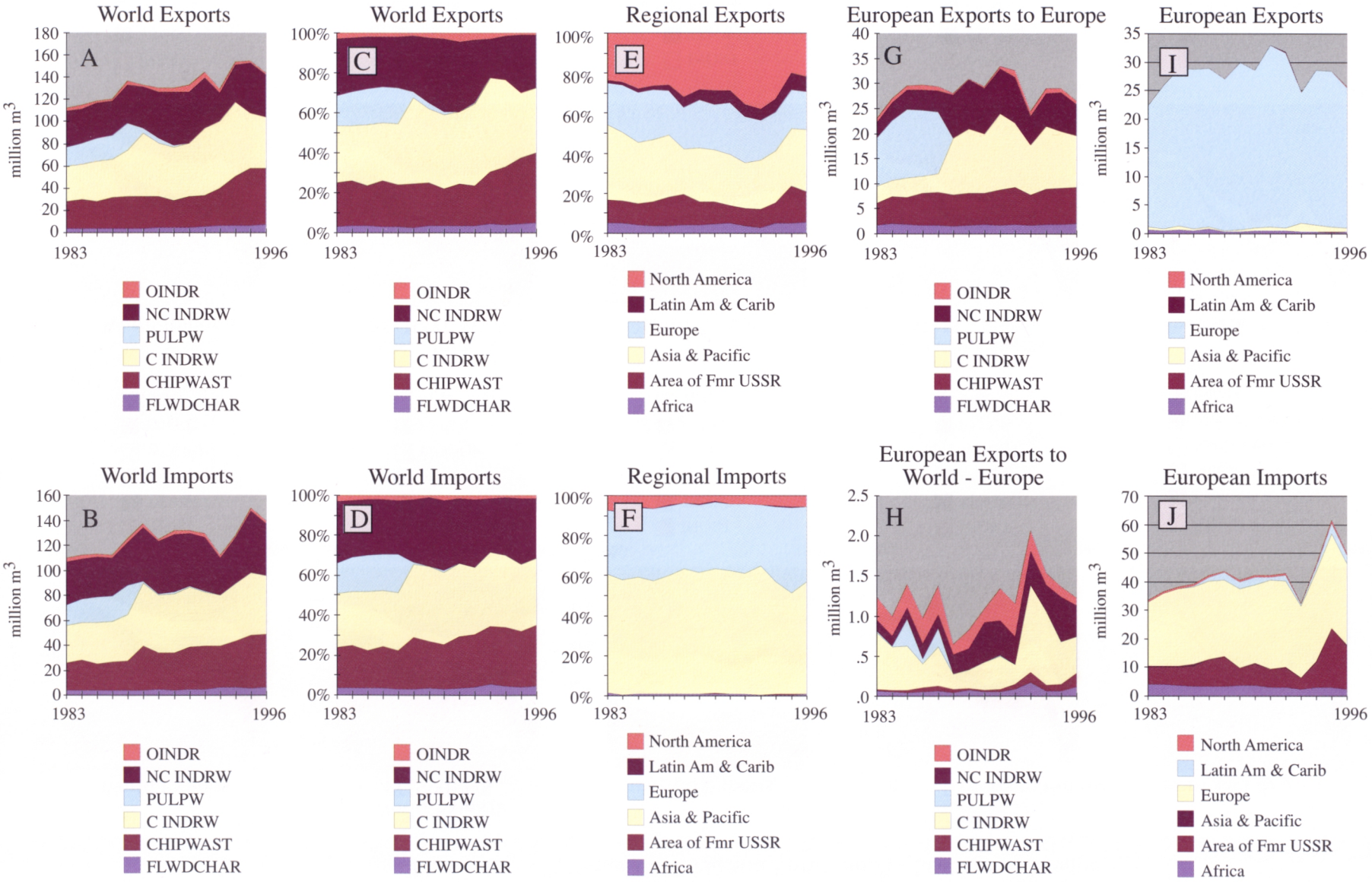


Figure 1c: Volume of World and European Trade of Sawnwood Products

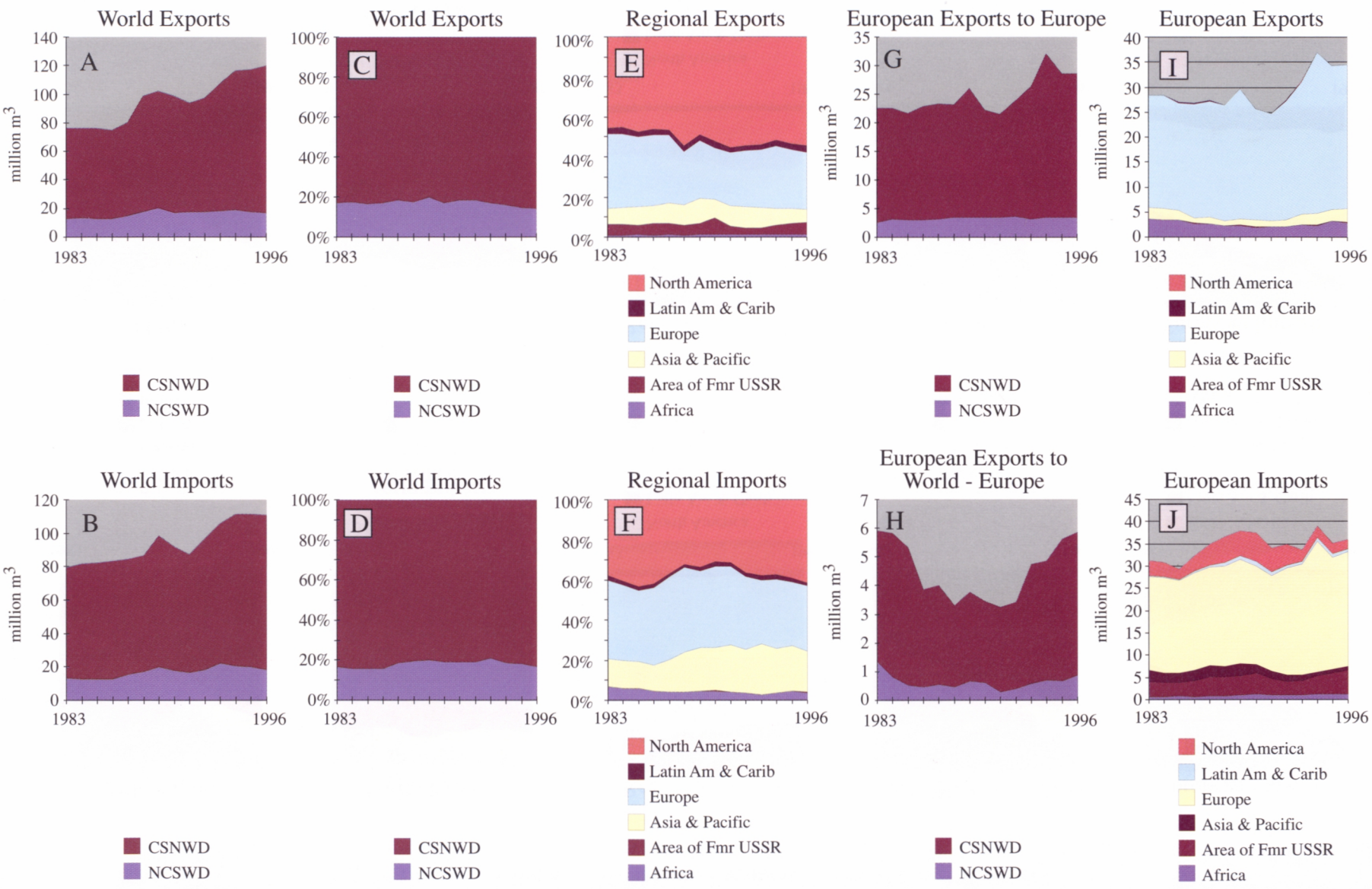


Figure 1d: Volume of World and European Trade of Panel Products

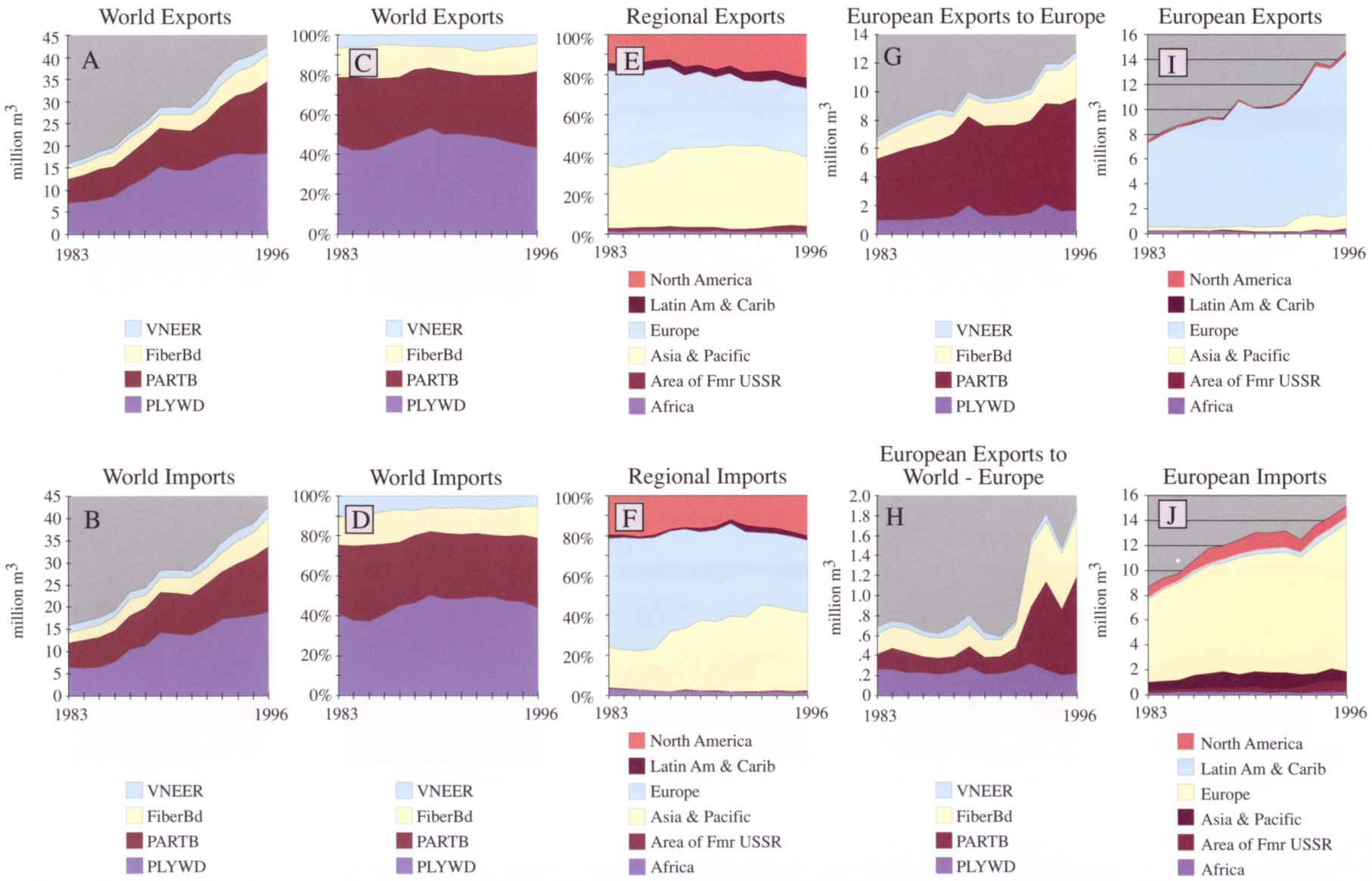


Figure 1e: Volume of World and European Trade of Pulp Products

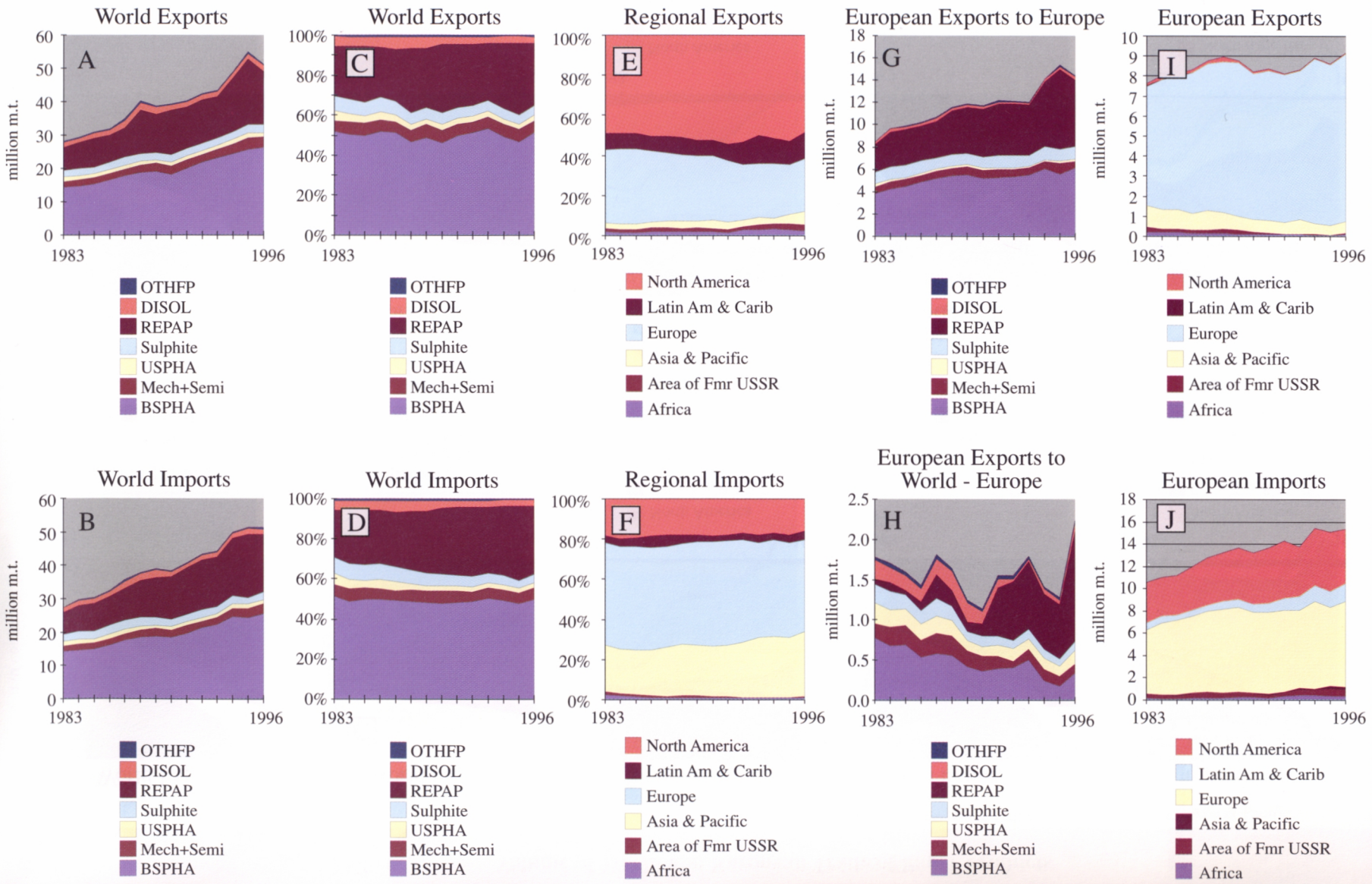


Figure 1f: Volume of World and European Trade of Paper Products

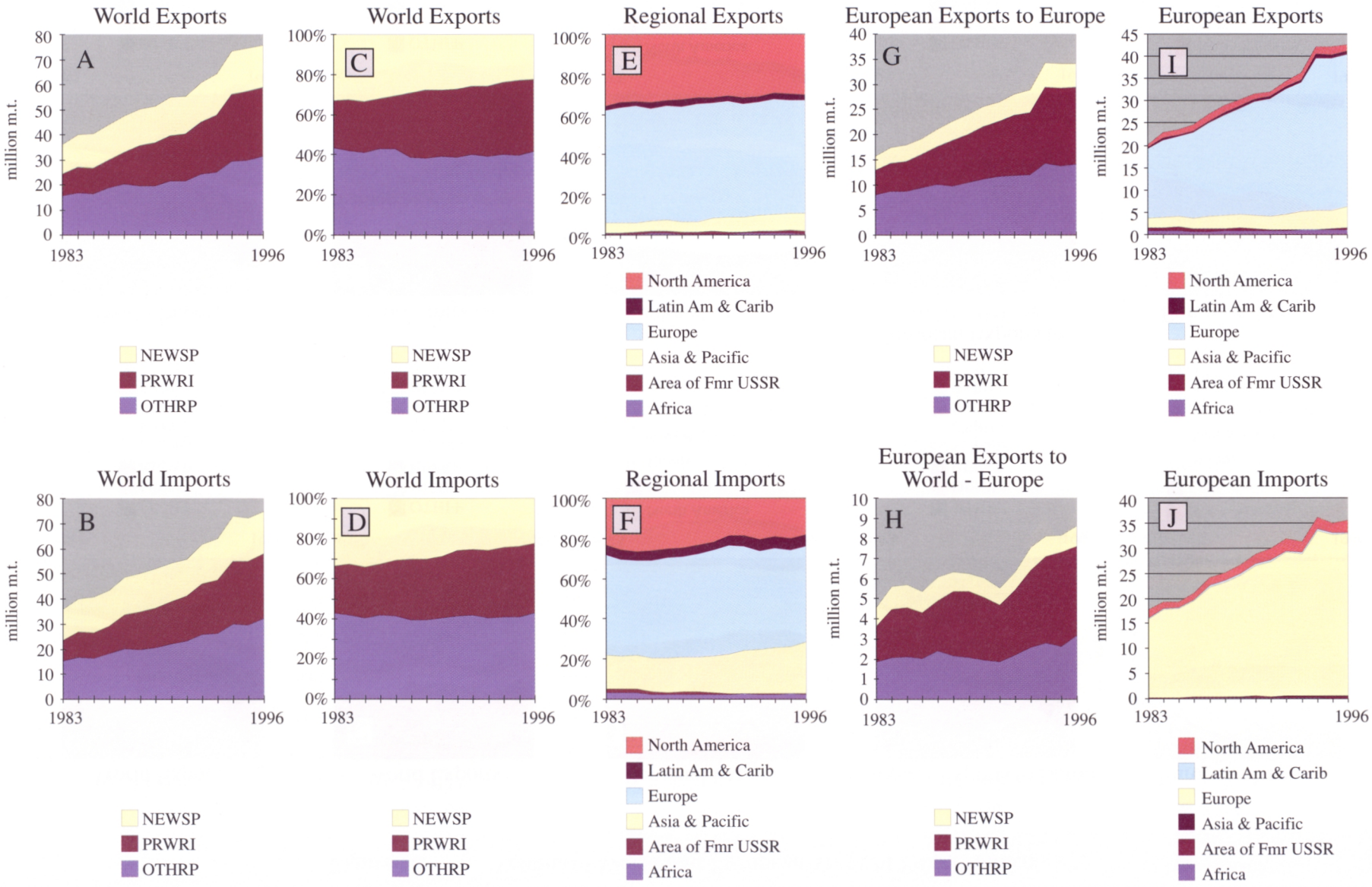


Figure 2a: Value of forest products regional trade with major regional trading partners

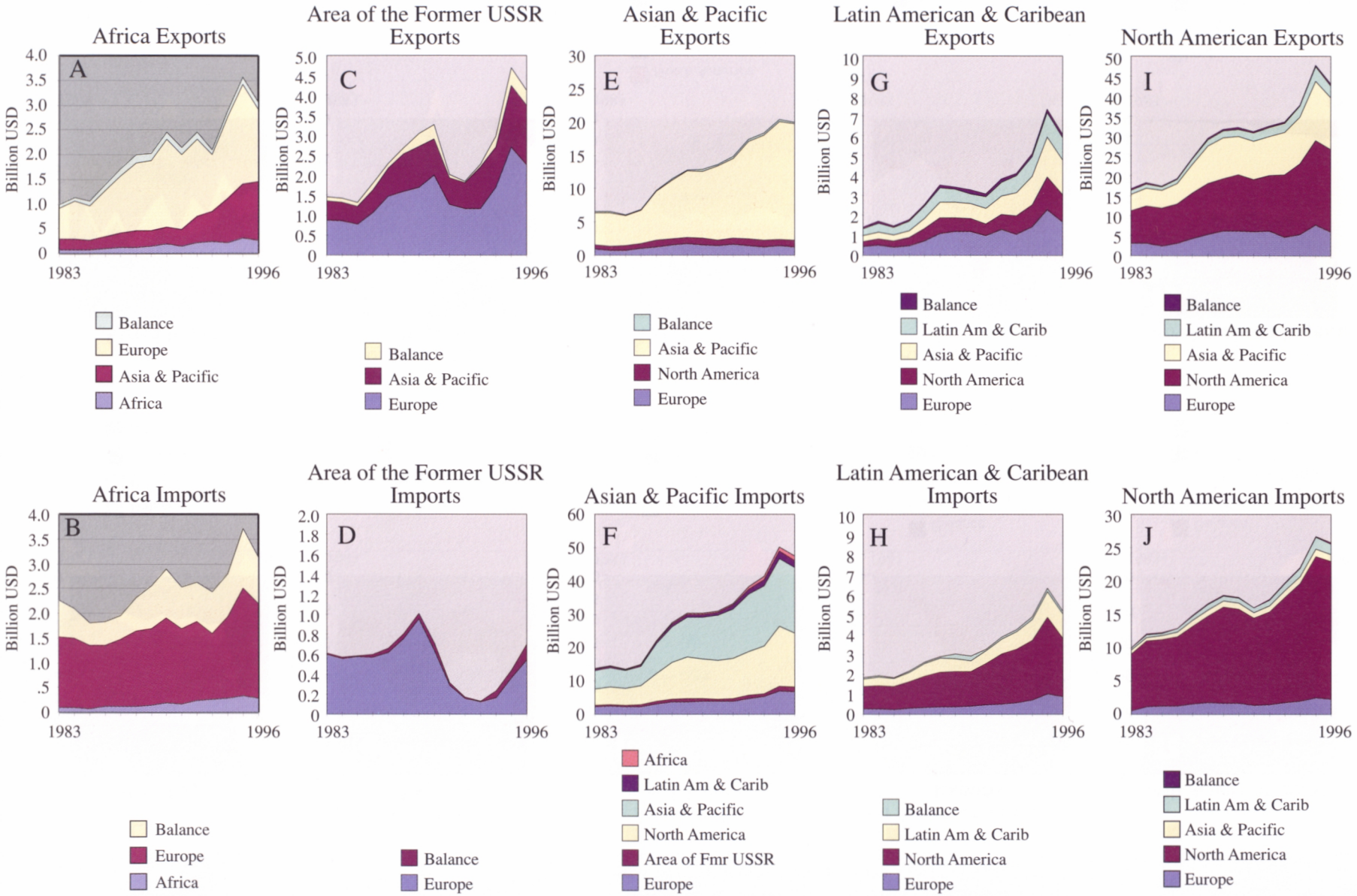


Figure 2b: Volume of Roundwood Products Regional Trade with Major Regional Trading Partners

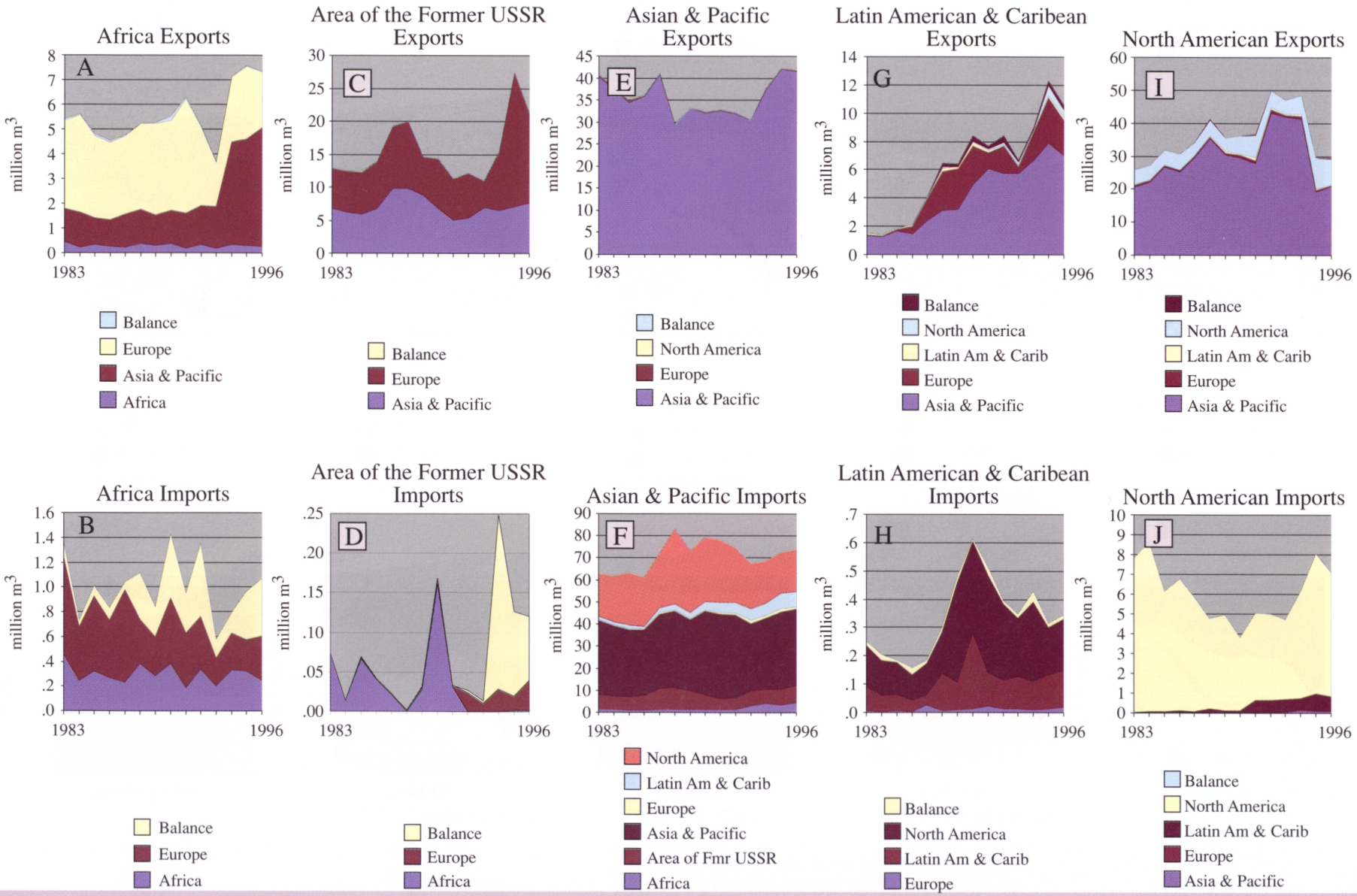


Figure 2c: Volume of Sawnwood Products Regional Trade with Major Regional Trading Partners

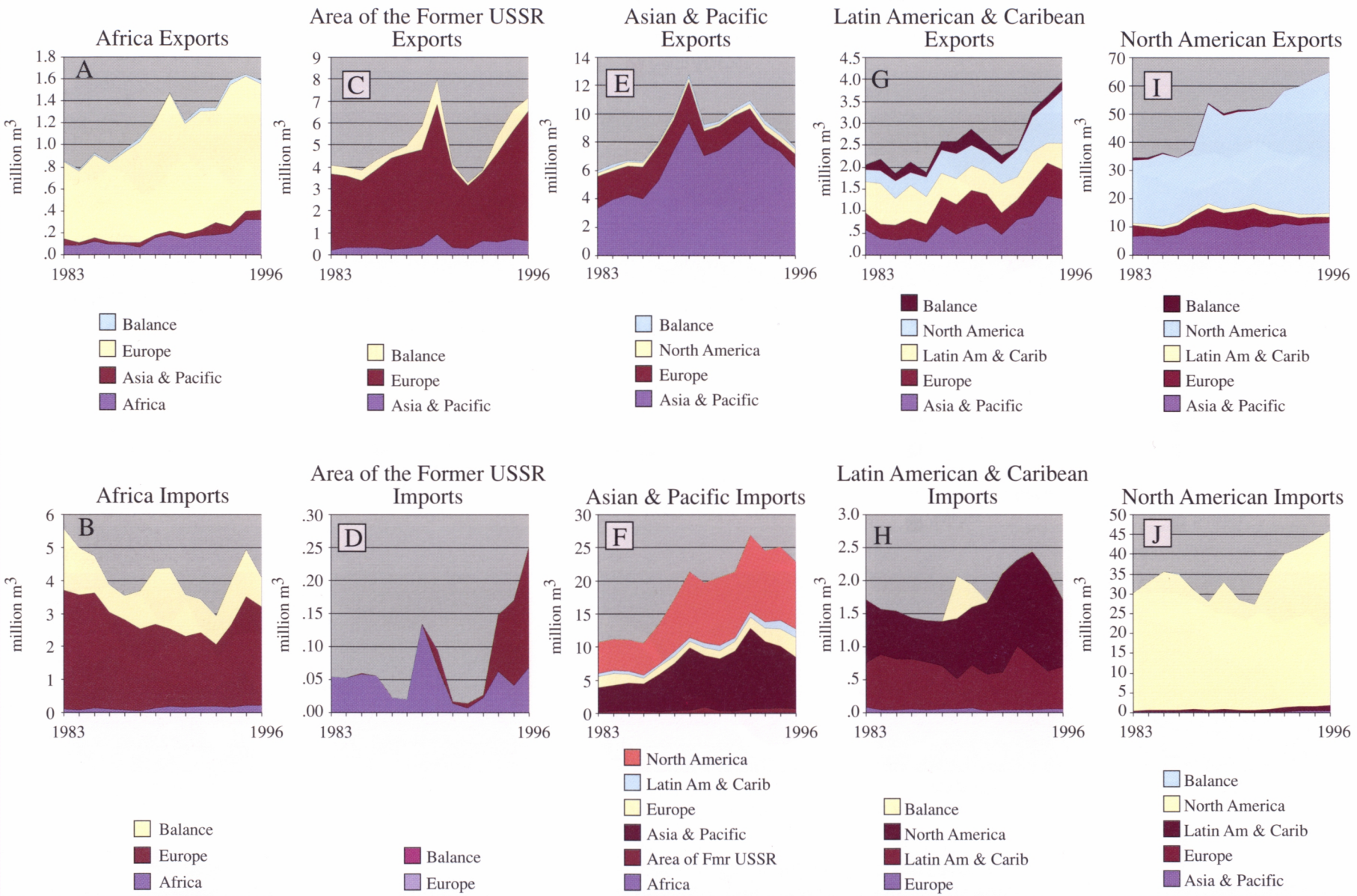


Figure 2d: Volume of Panel Products Regional Trade with Major Regional Trading Partners

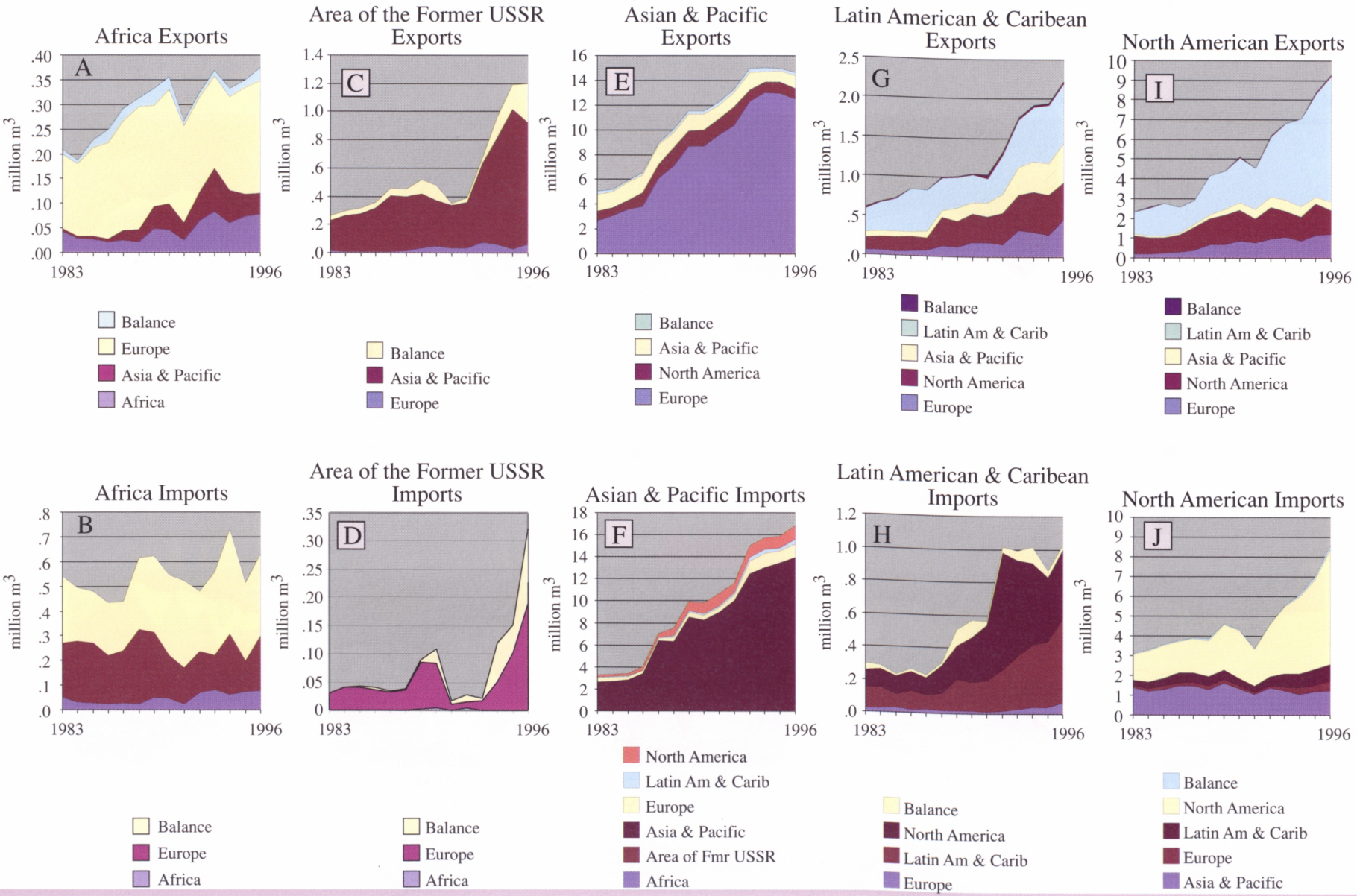


Figure 2e: Volume of Pulp Products Regional Trade with Major Regional Trading Partners

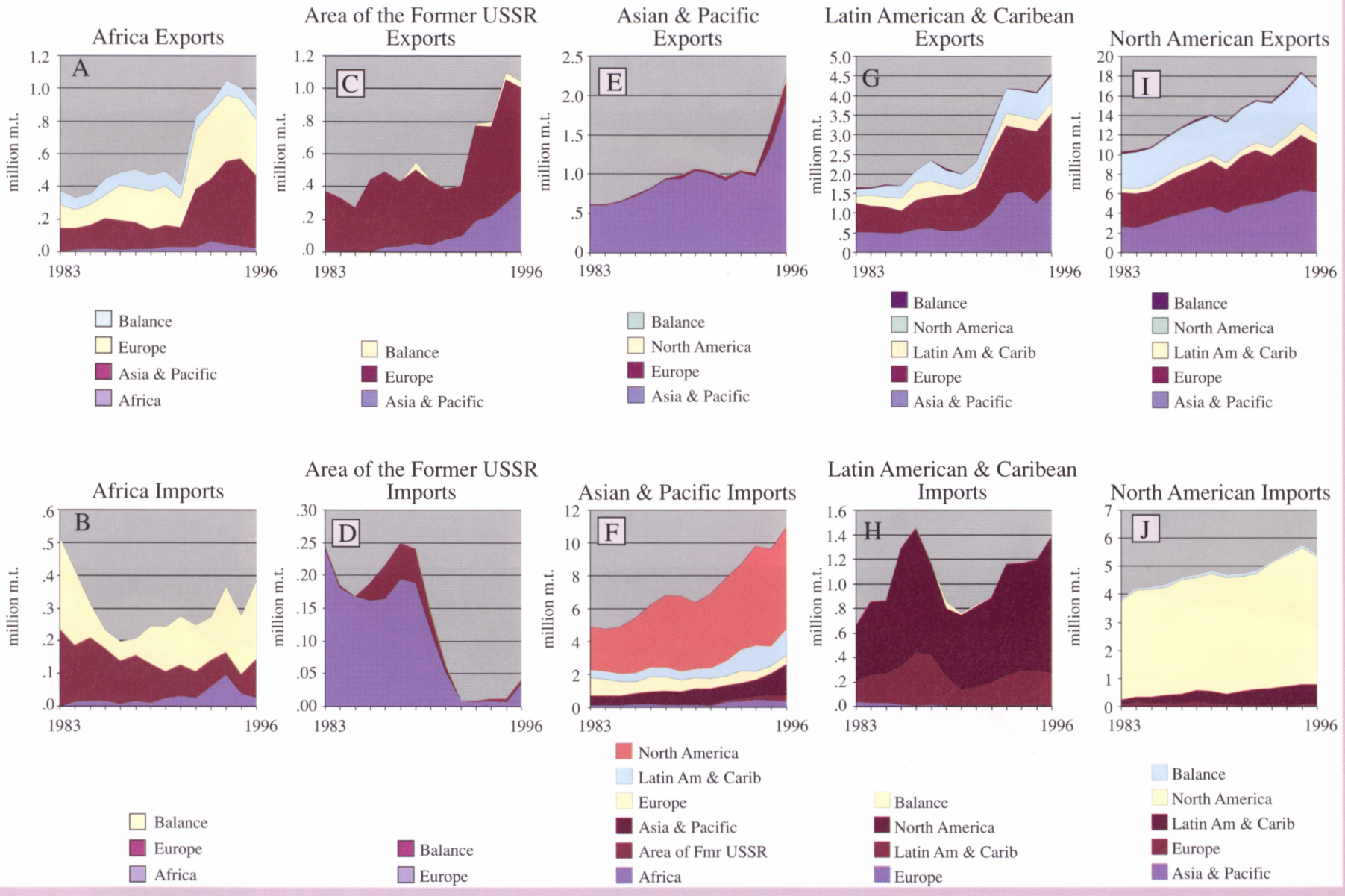


Figure 2f: Volume of Paper Products Regional Trade with Major Regional Trading Partners

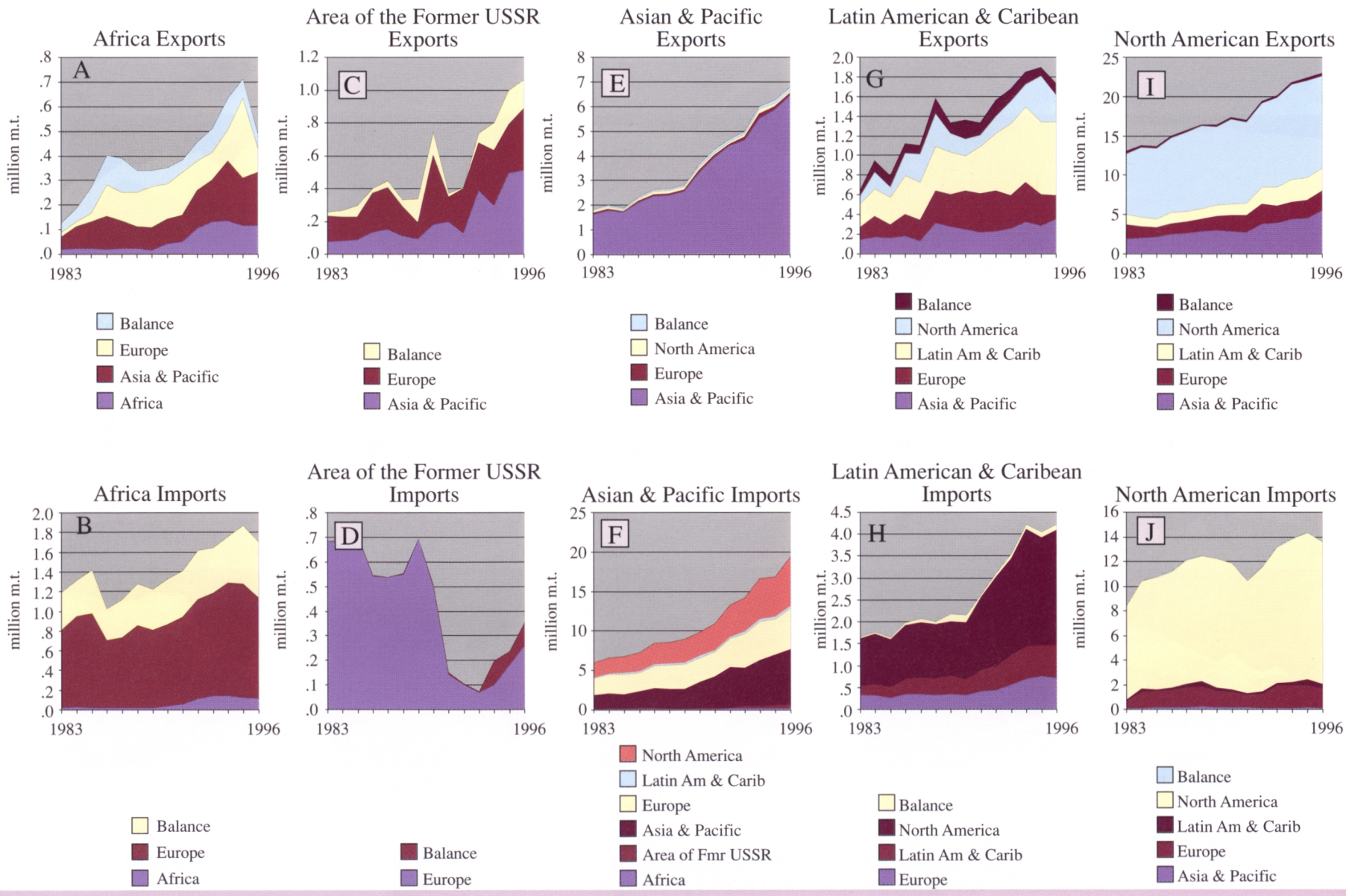


Figure 3a: Value of Forest Product of Selected Regional Trade Flows

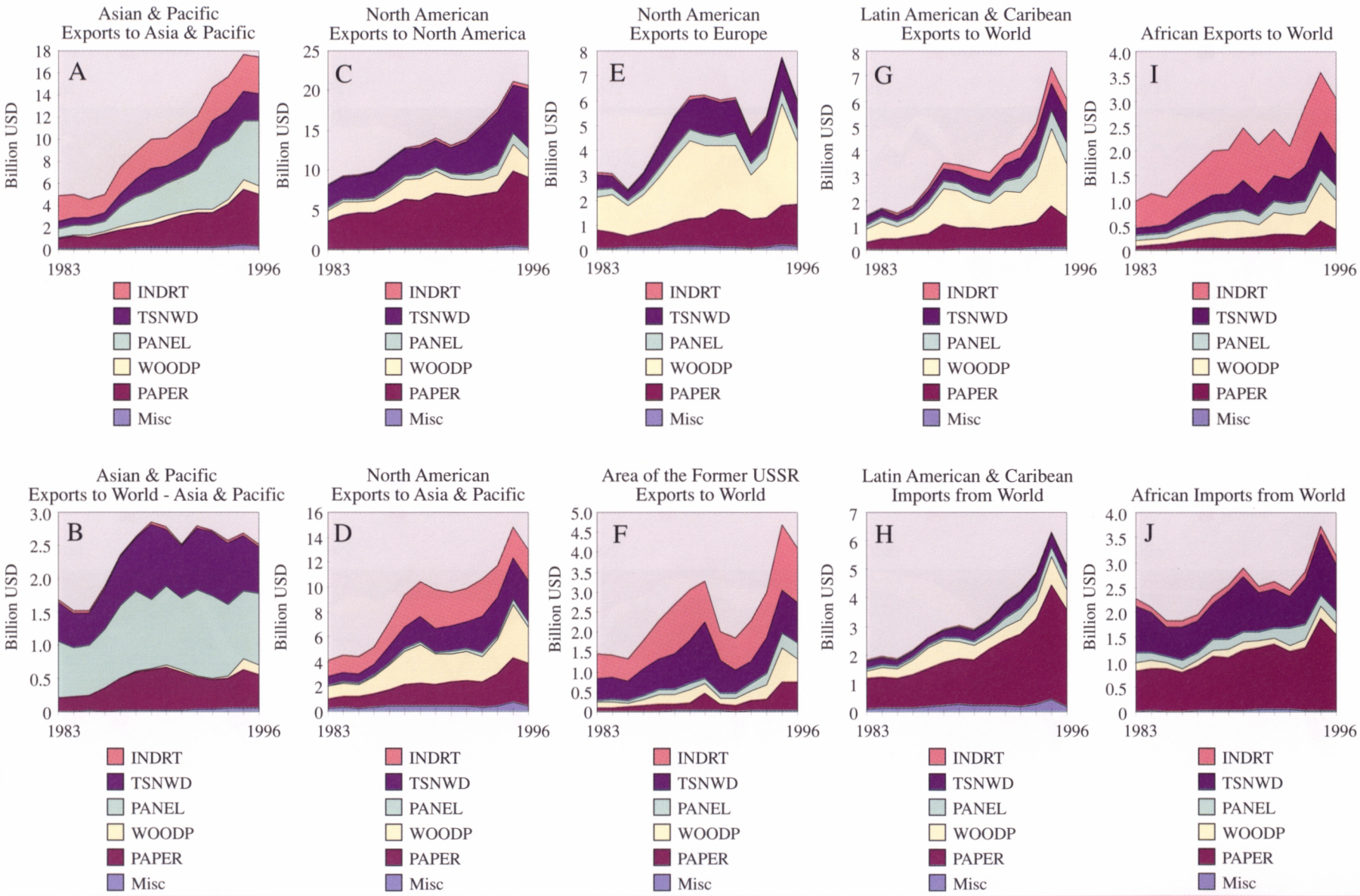


Figure 3b: Volume by Roundwood Product of Selected Regional Trade Flows

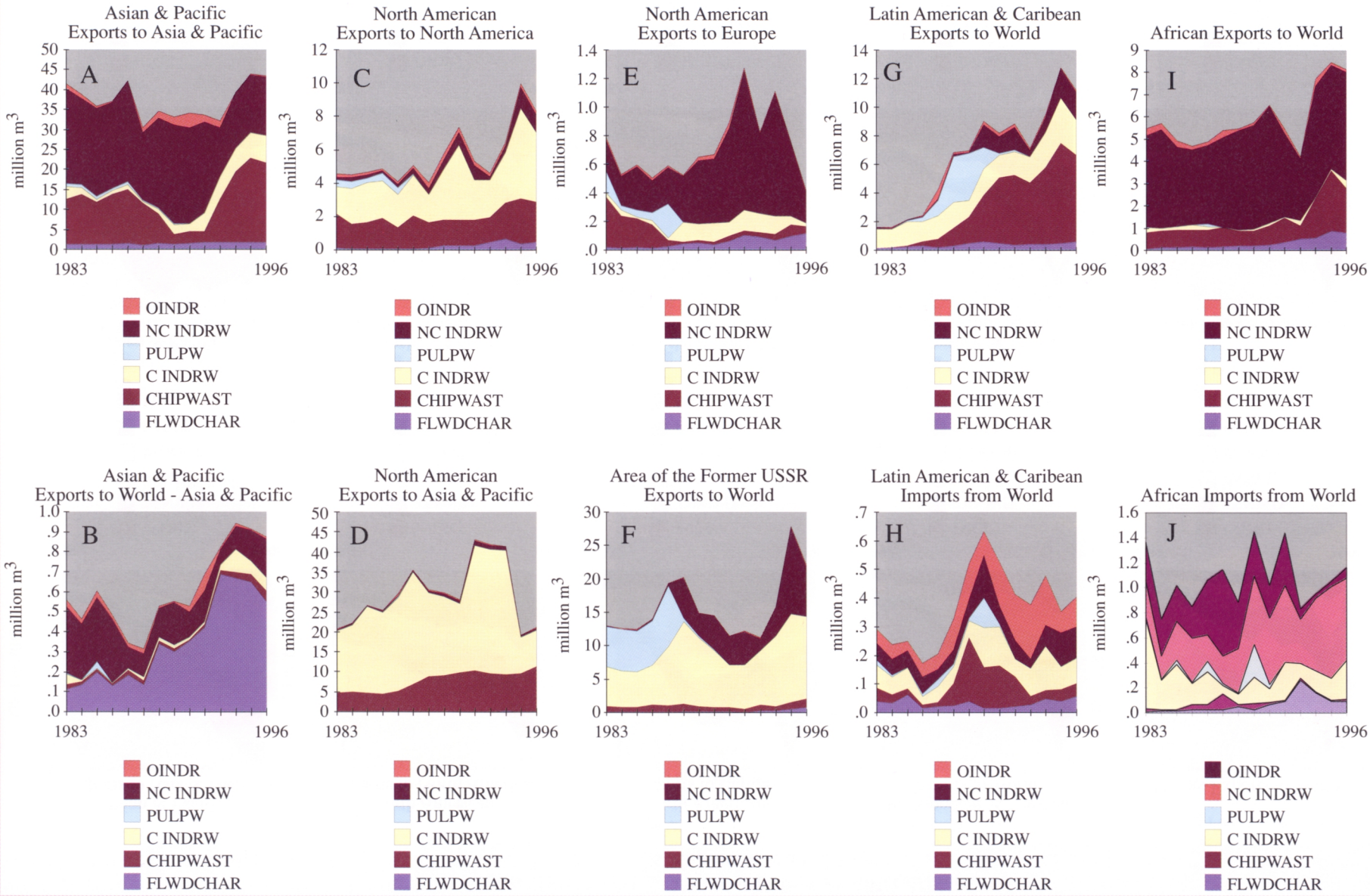


Figure 3c: Volume by Sawnwood Product of Selected Regional Trade Flows

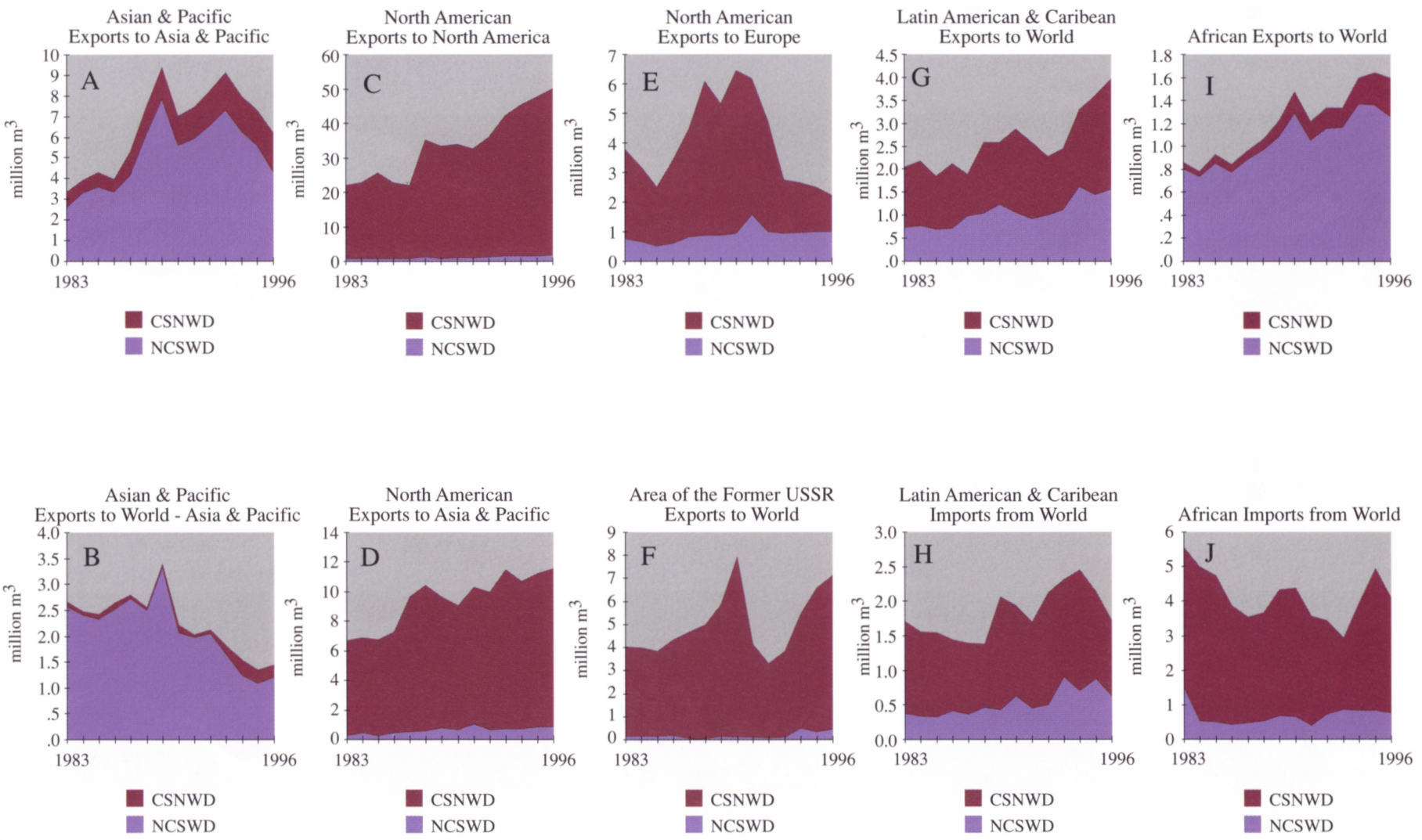


Figure 3d: Volume by Panel Product of Selected Regional Trade Flows

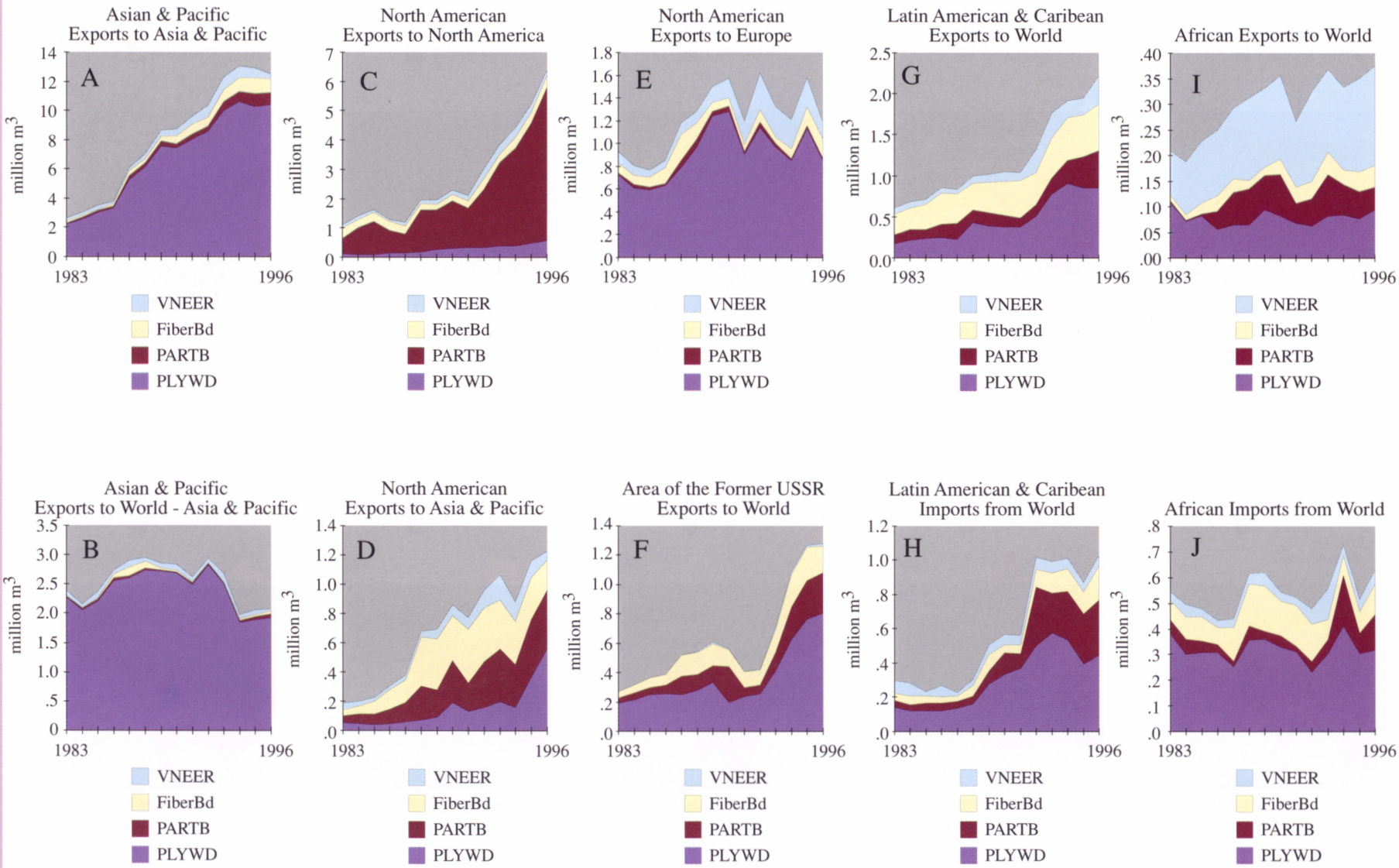


Figure 3e: Volume by Pulp Product of Selected Regional Trade Flows

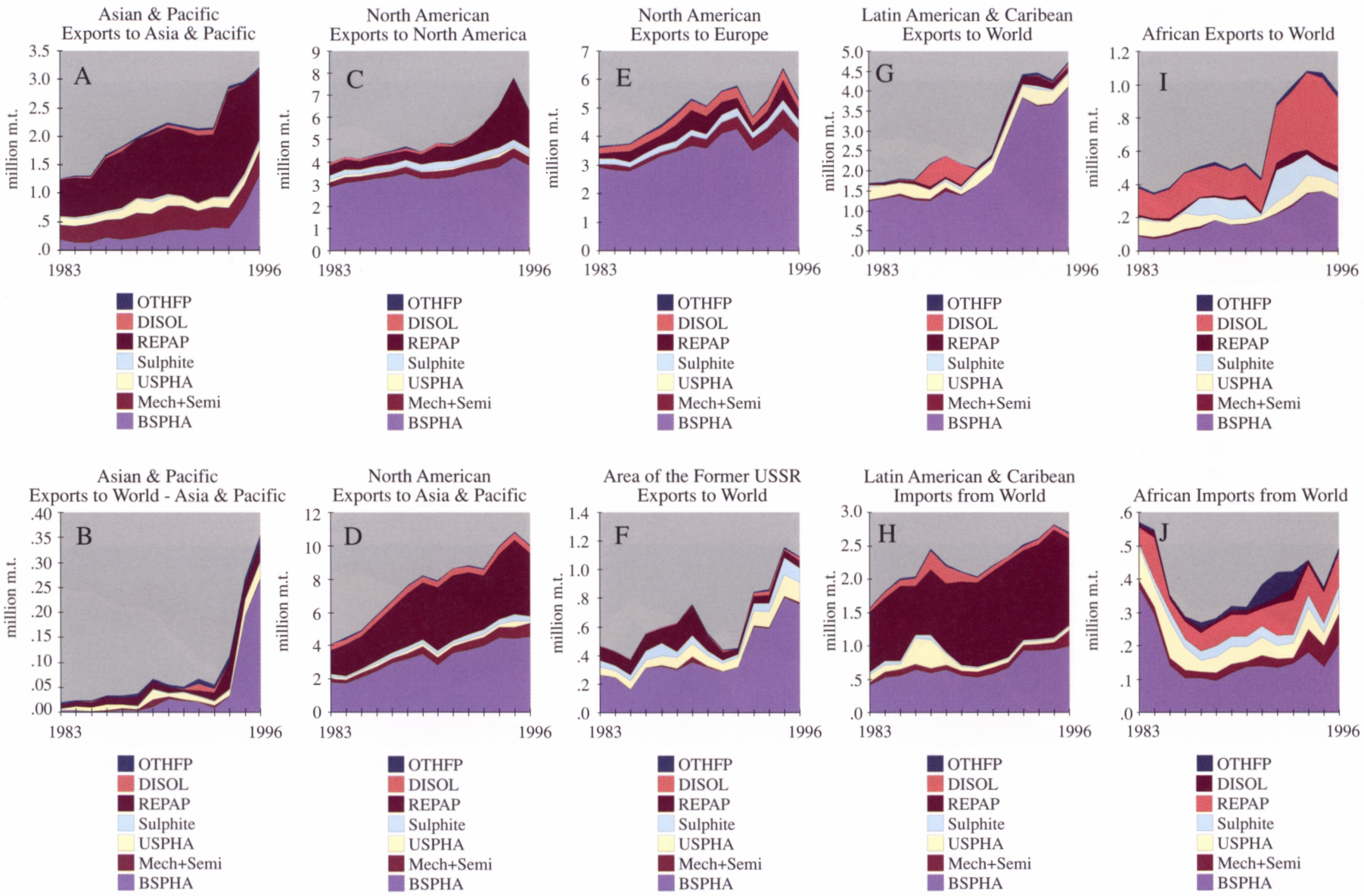
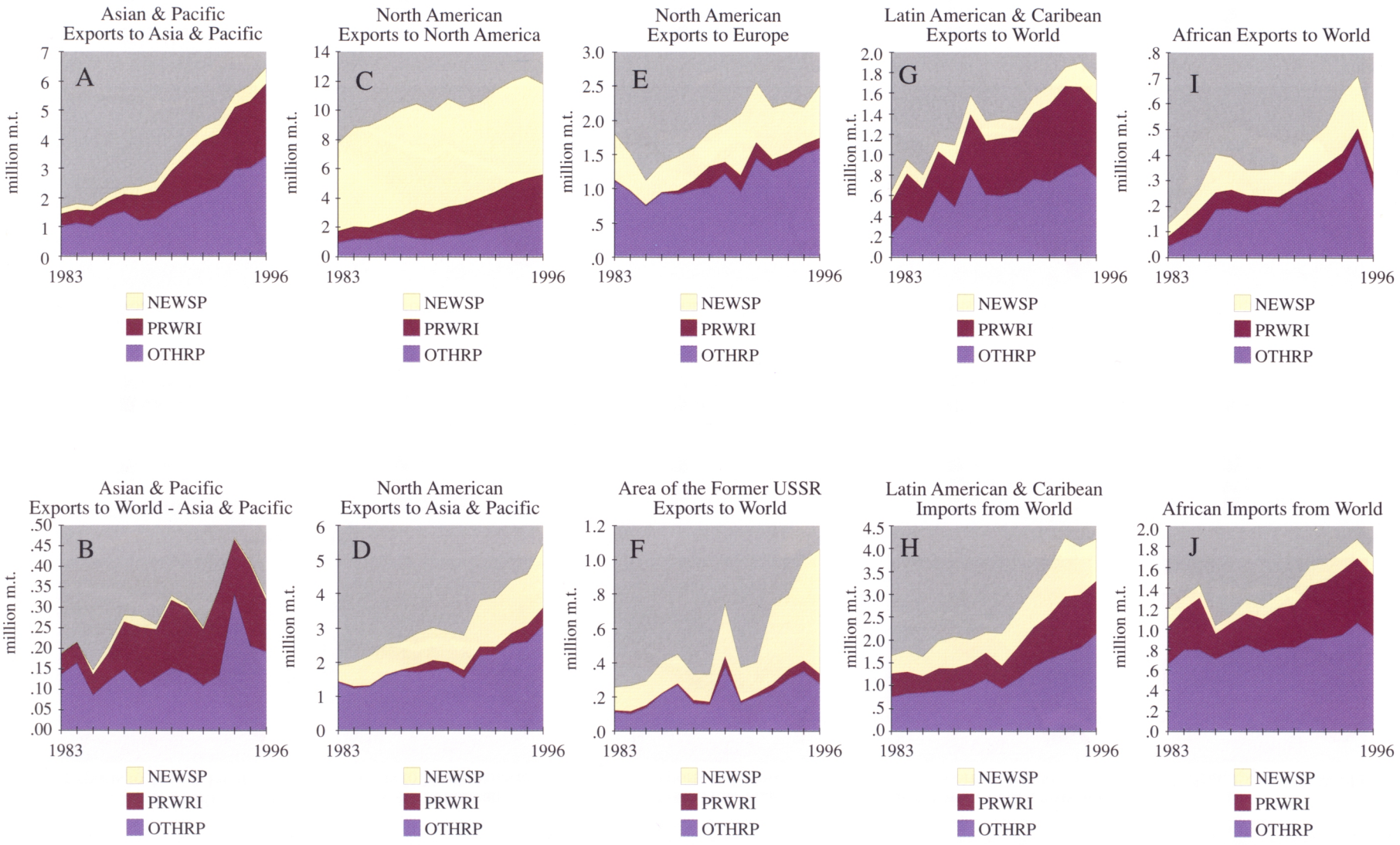
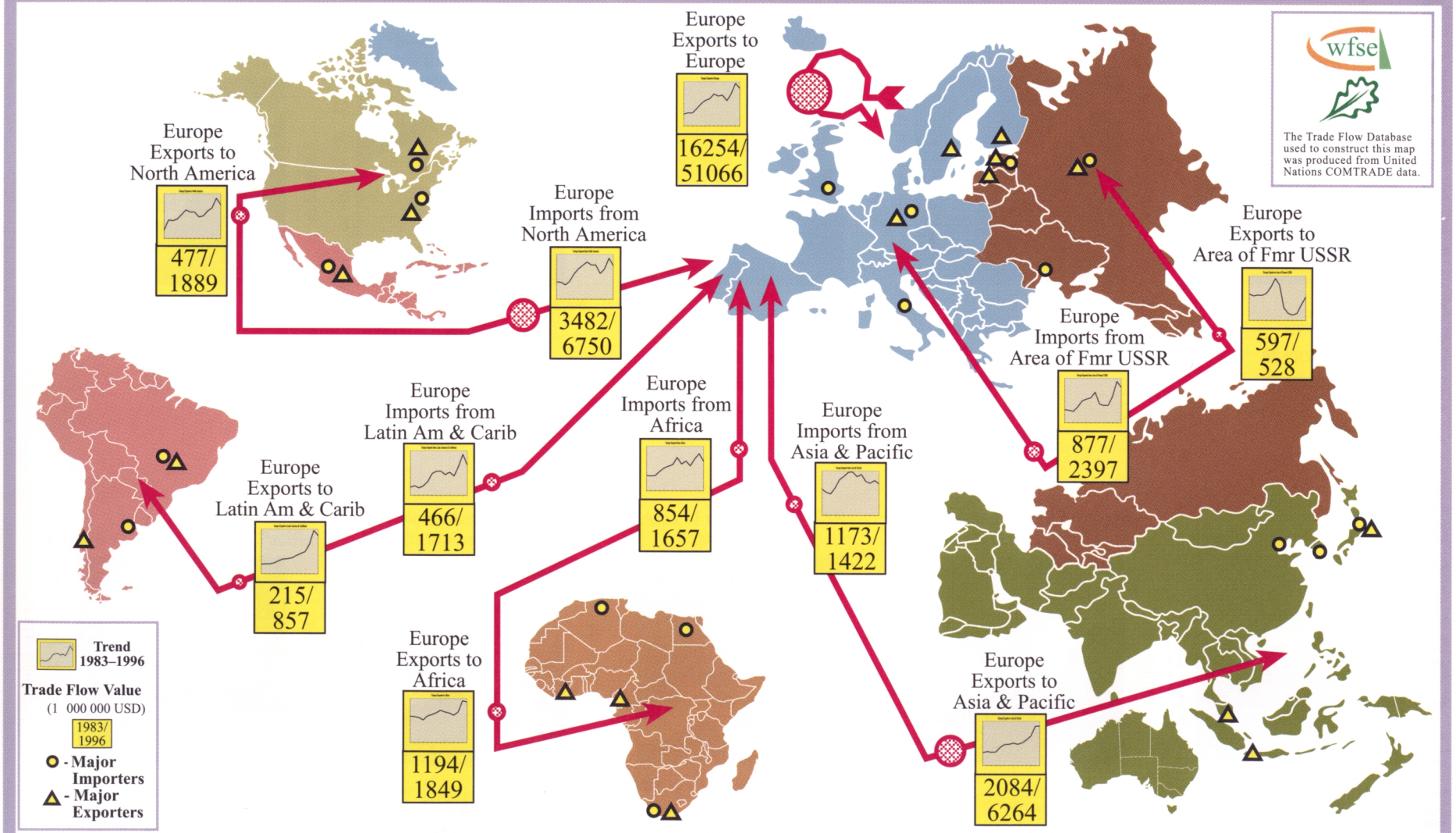


Figure 3f: Volume by Paper Product of Selected Regional Trade Flows

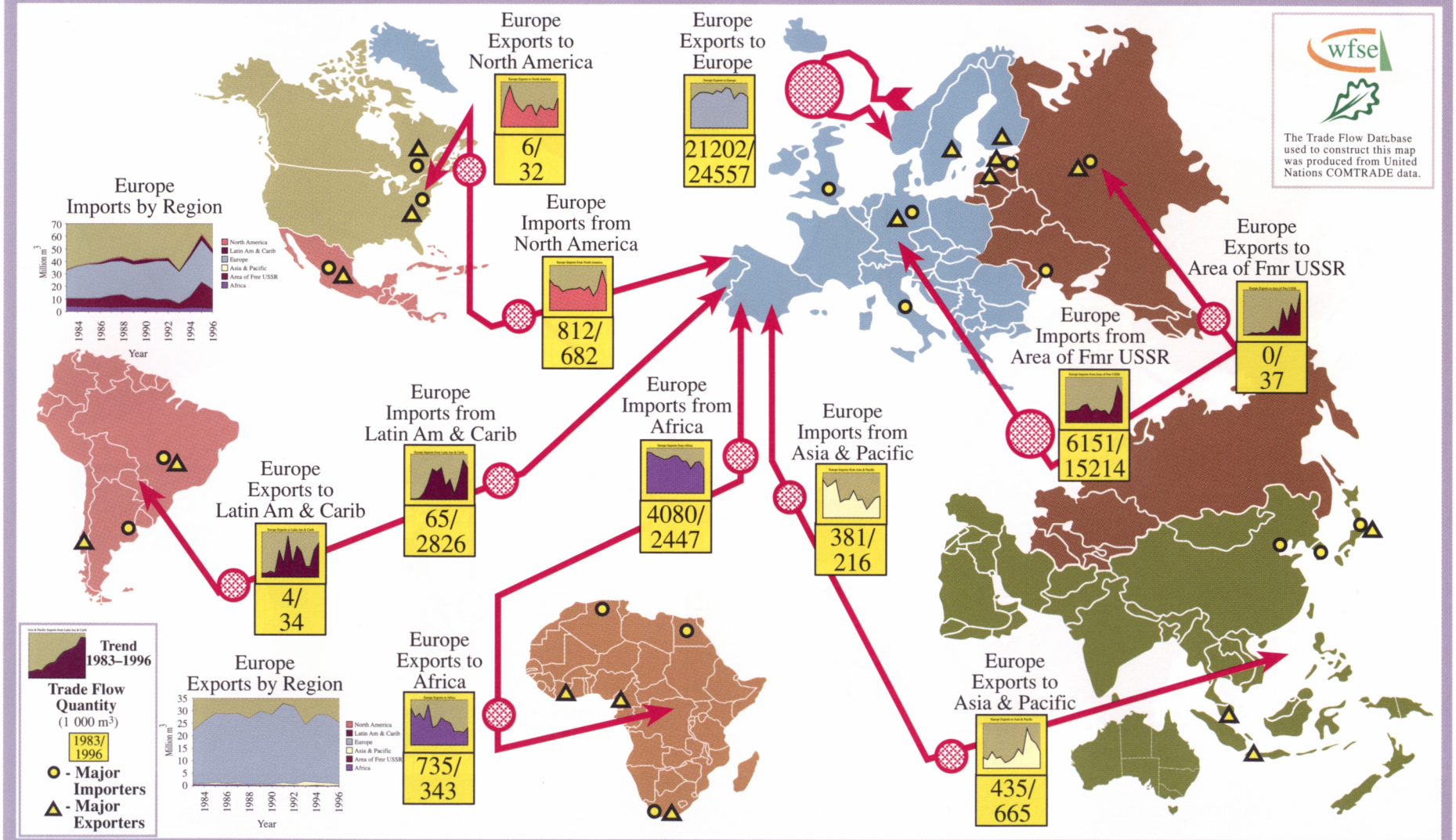


PART III FOREST PRODUCTS TRADE FLOW MAPS

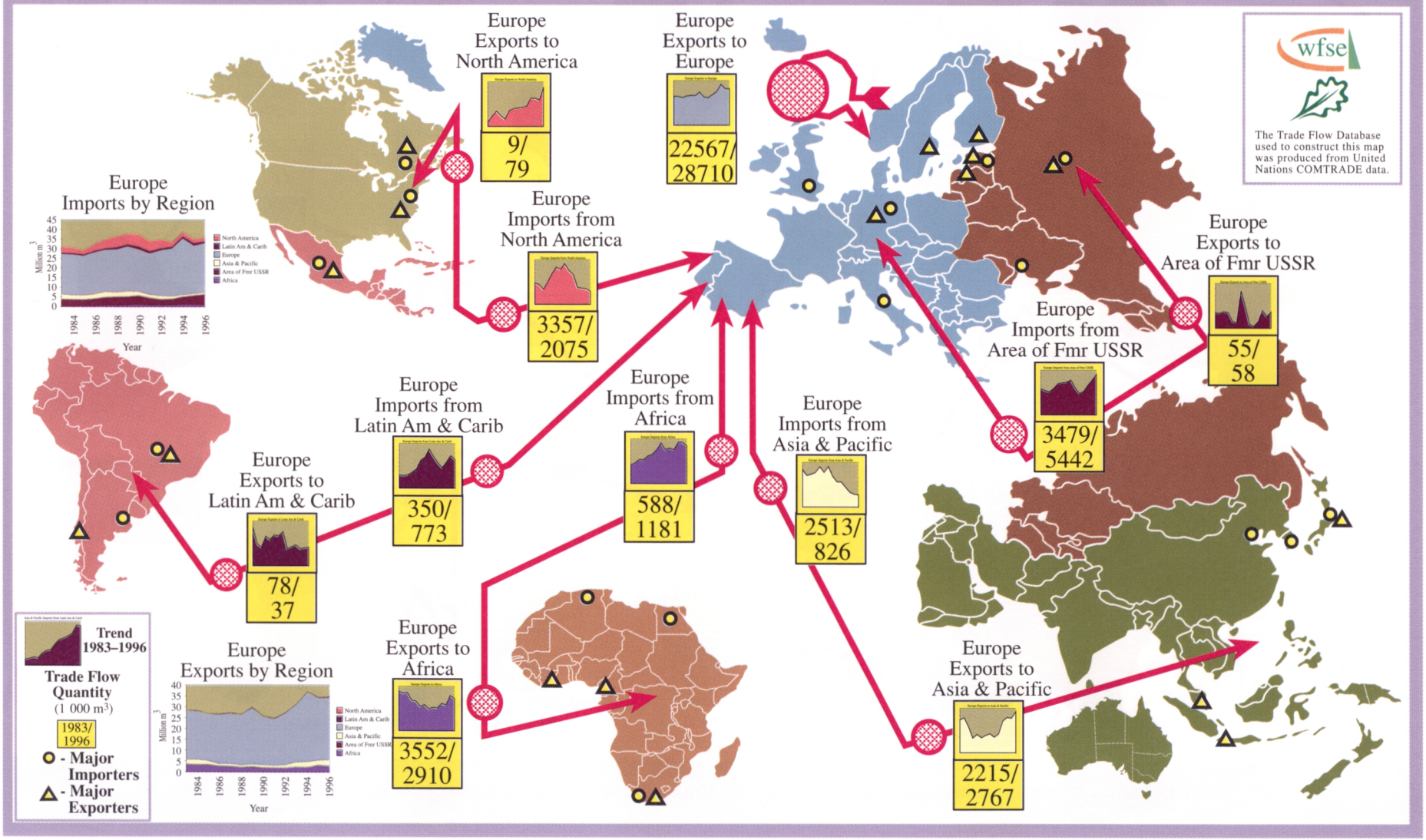
Map 1a: Value of All Forest Products Traded - Trade Flows and Trade Flow Trends (Europe)



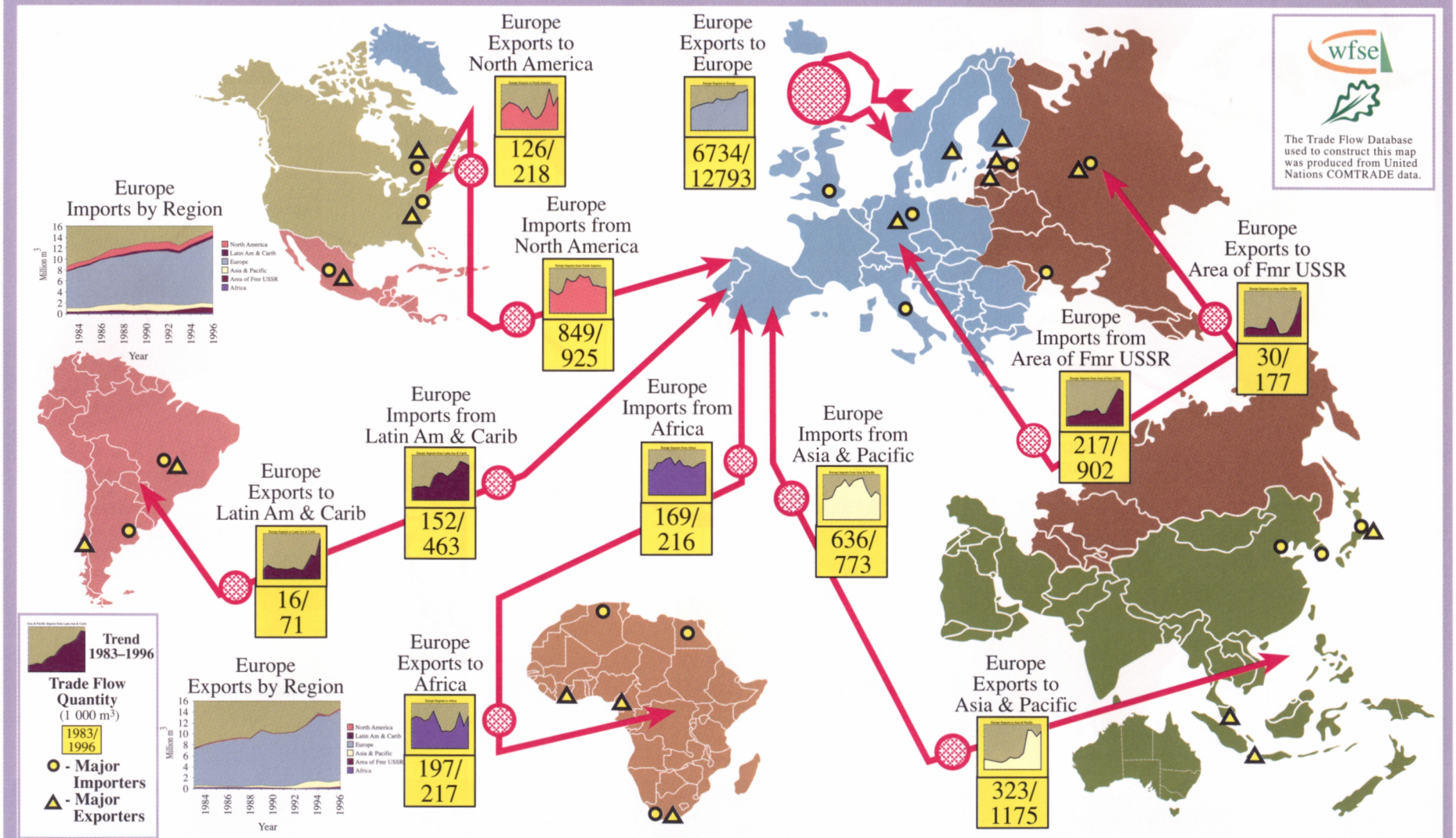
Map 1b: Quantity of Roundwood Products Traded - Trade Flows and Trade Flow Trends (Europe)



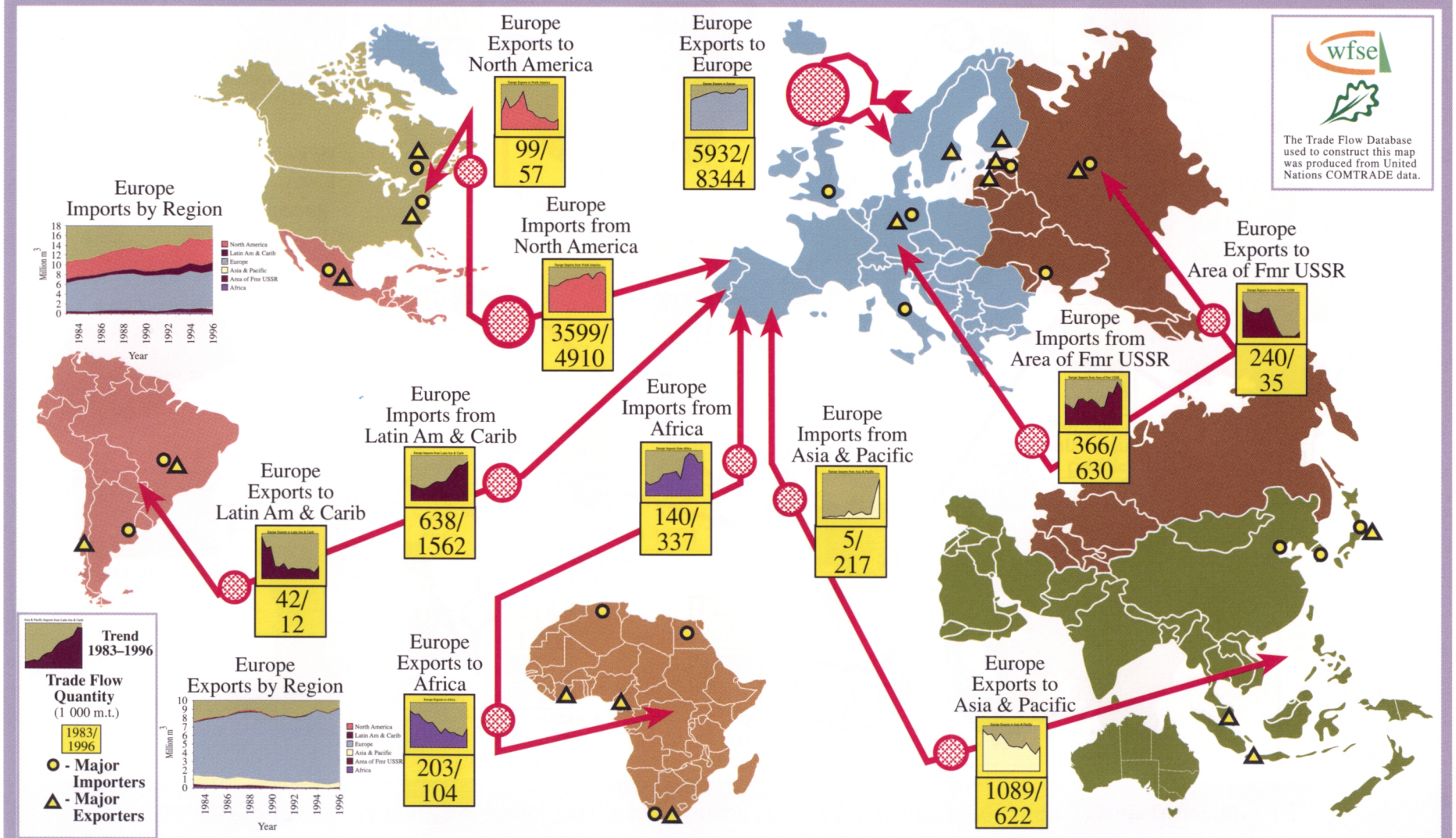
Map 1c: Quantity of Sawnwood Products Traded - Trade Flows and Trade Flow Trends (Europe)



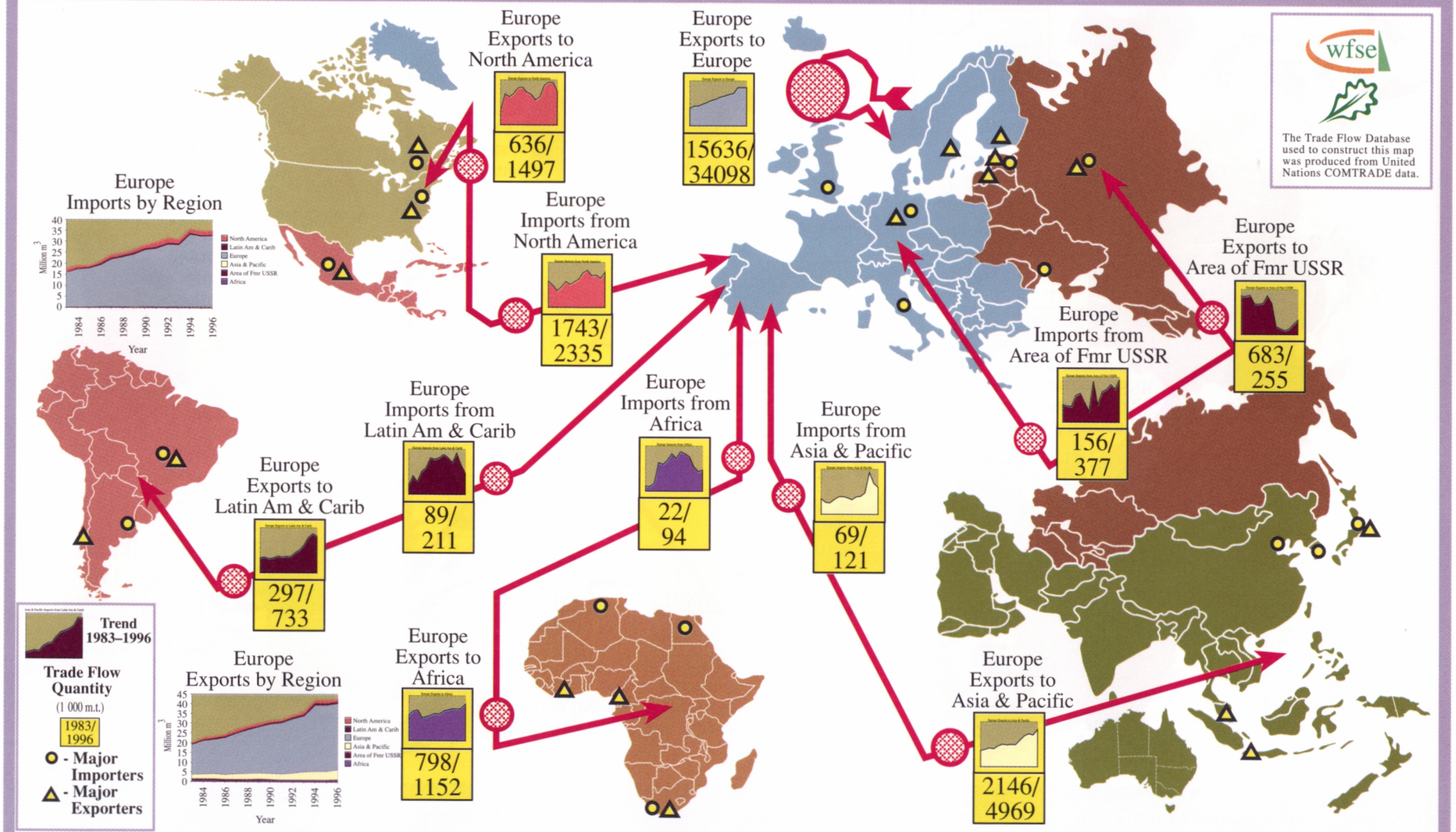
Map 1d: Quantity of Panel Products Traded - Trade Flows and Trade Flow Trends (Europe)



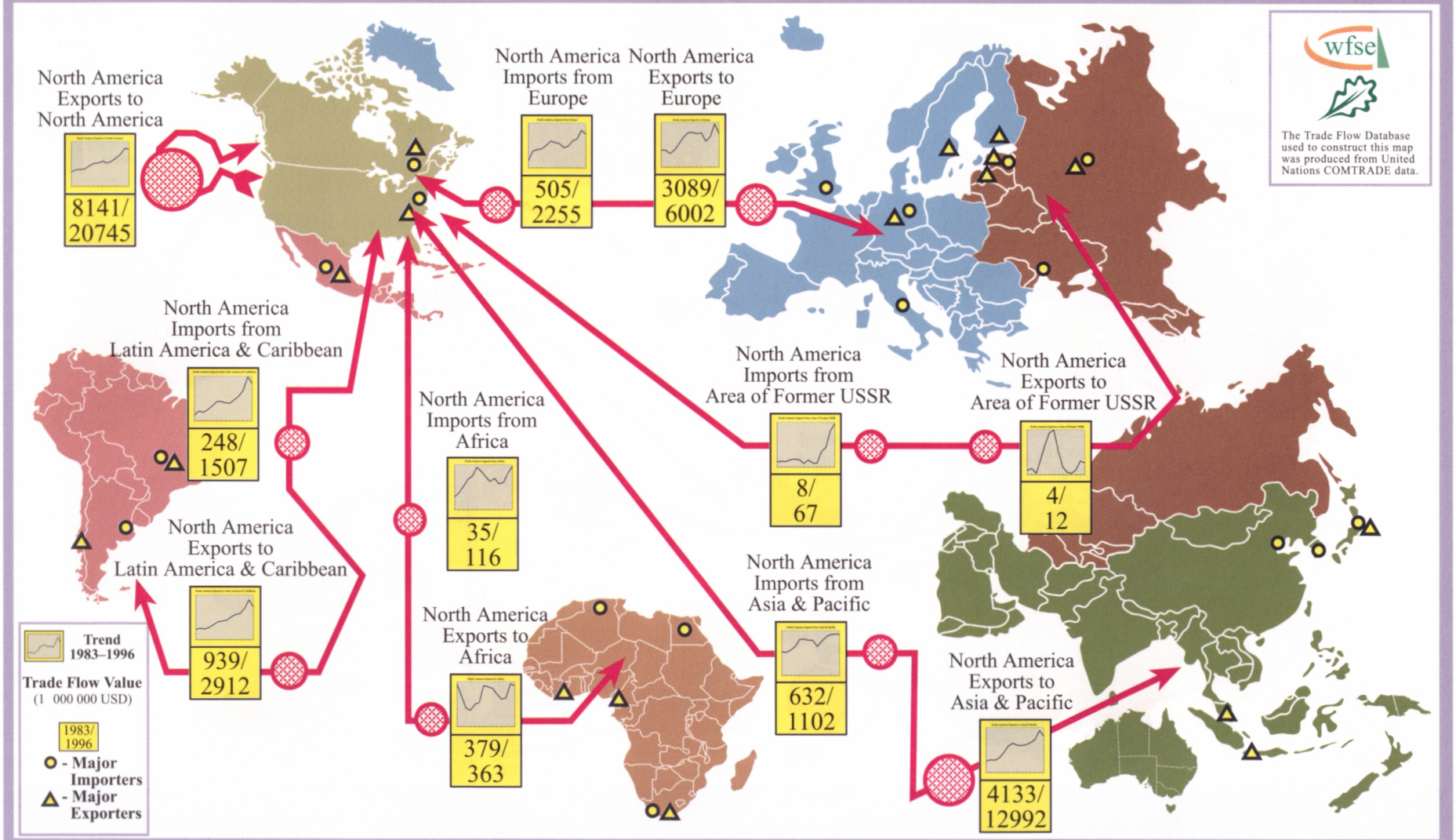
Map 1e: Quantity of Pulp Products Traded - Trade Flows and Trade Flow Trends (Europe)



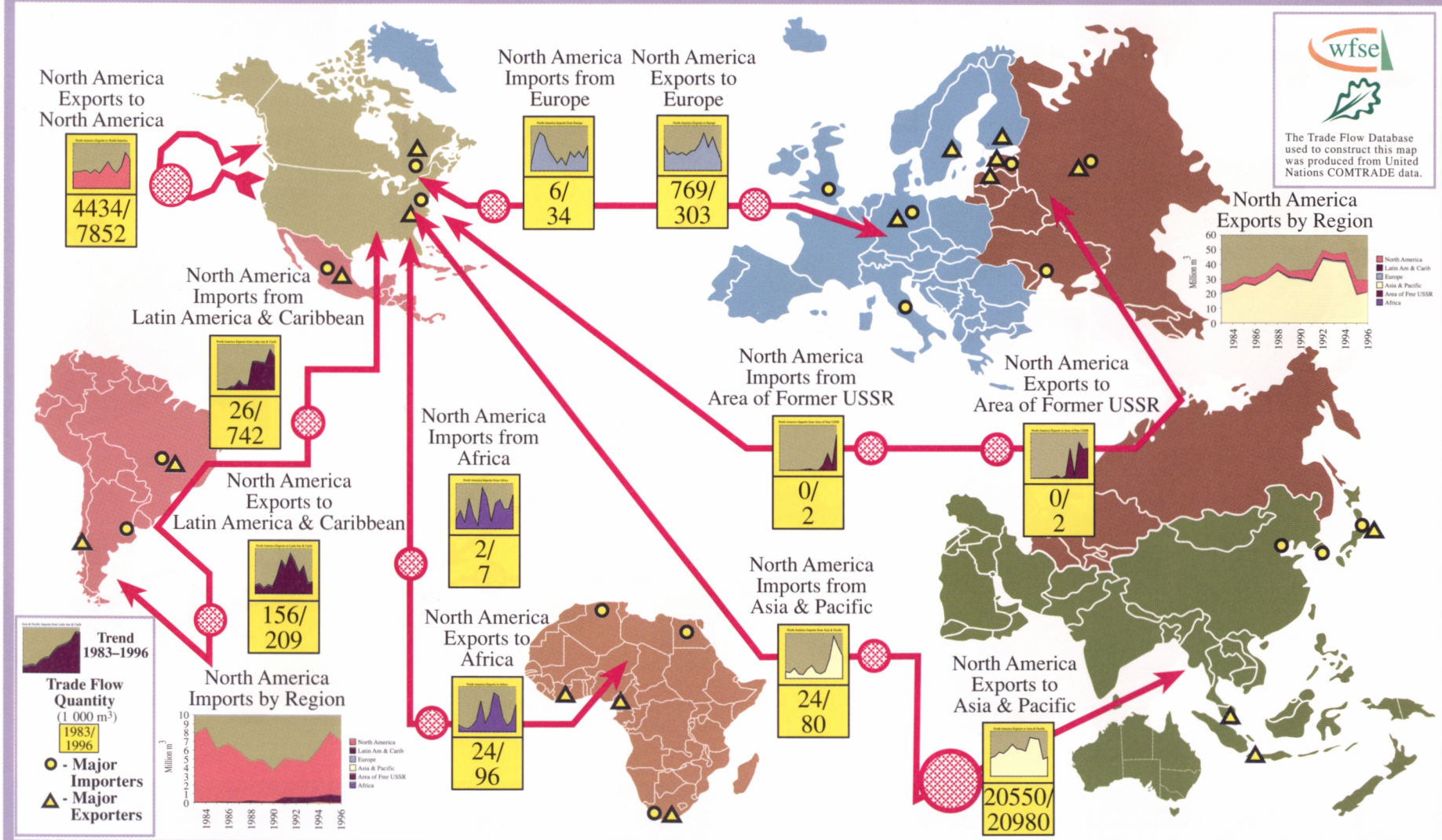
Map 1f: Quantity of Paper Products Traded - Trade Flows and Trade Flow Trends (Europe)



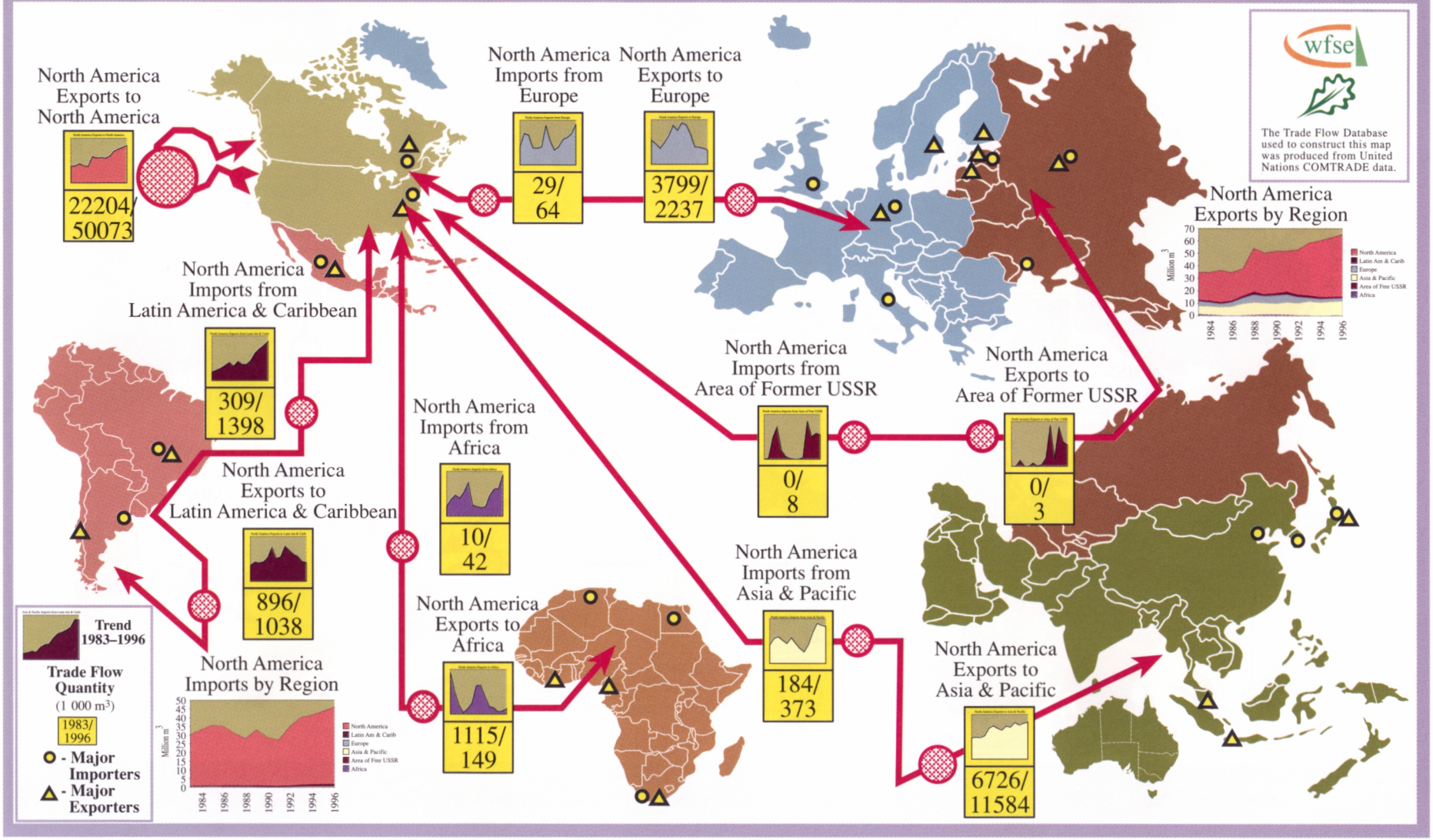
Map 2a: Value of All Forest Products Traded - Trade Flows and Trade Flow Trends (North America)



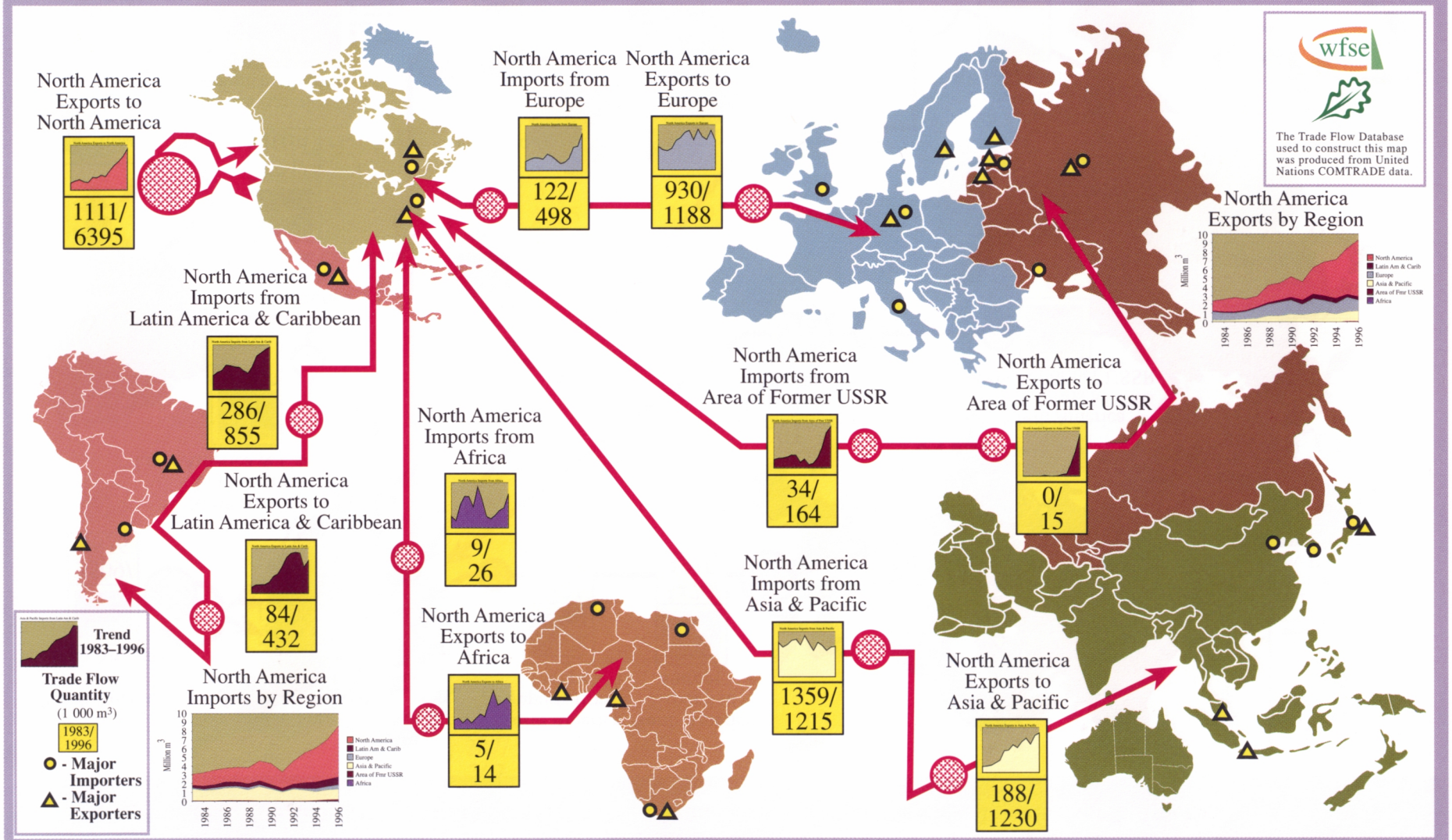
Map 2b: Quantity of Roundwood Products Traded - Trade Flows and Trade Flow Trends (North America)



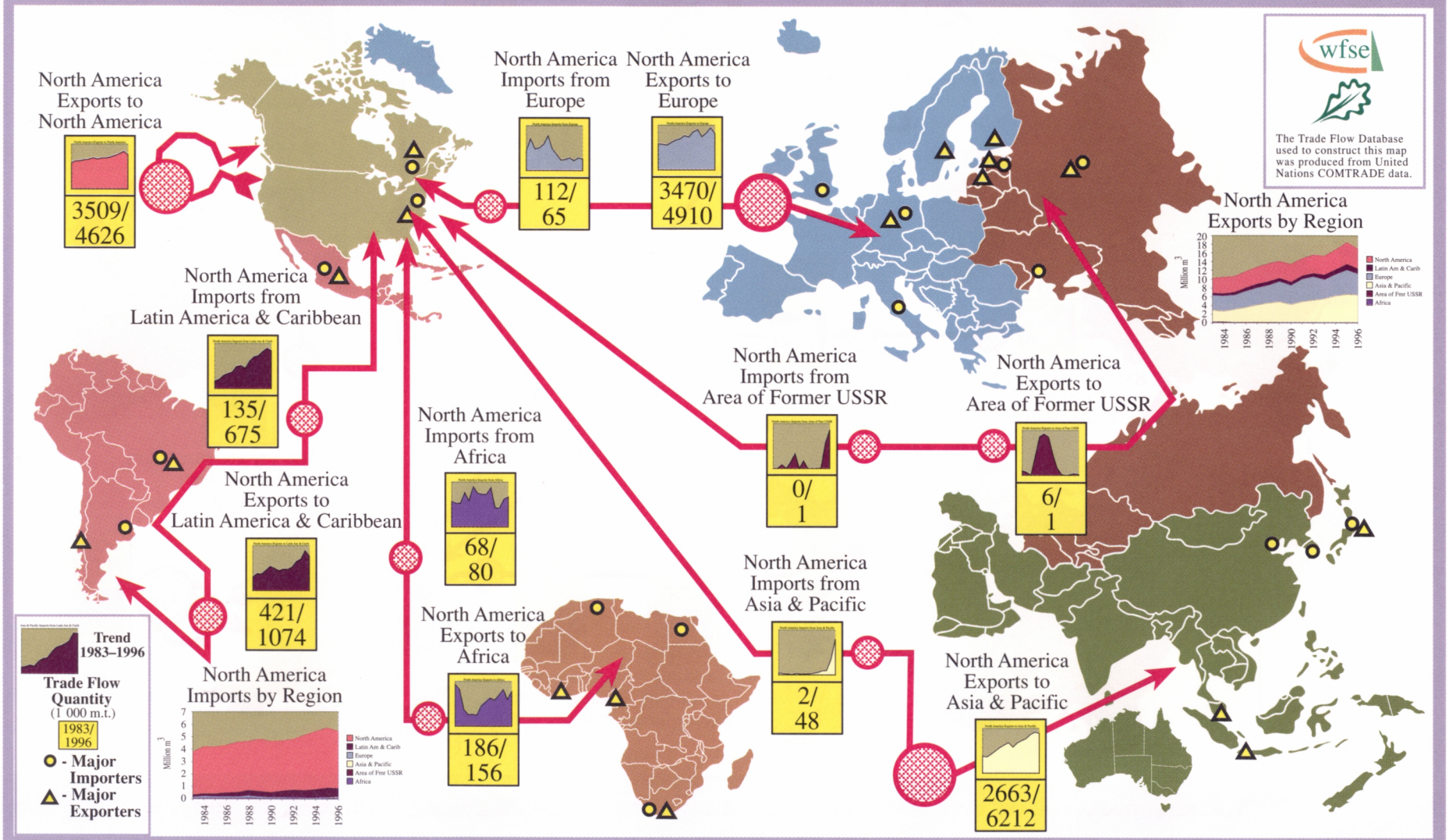
Map 2c: Quantity of Sawnwood Products Traded - Trade Flows and Trade Flow Trends (North America)



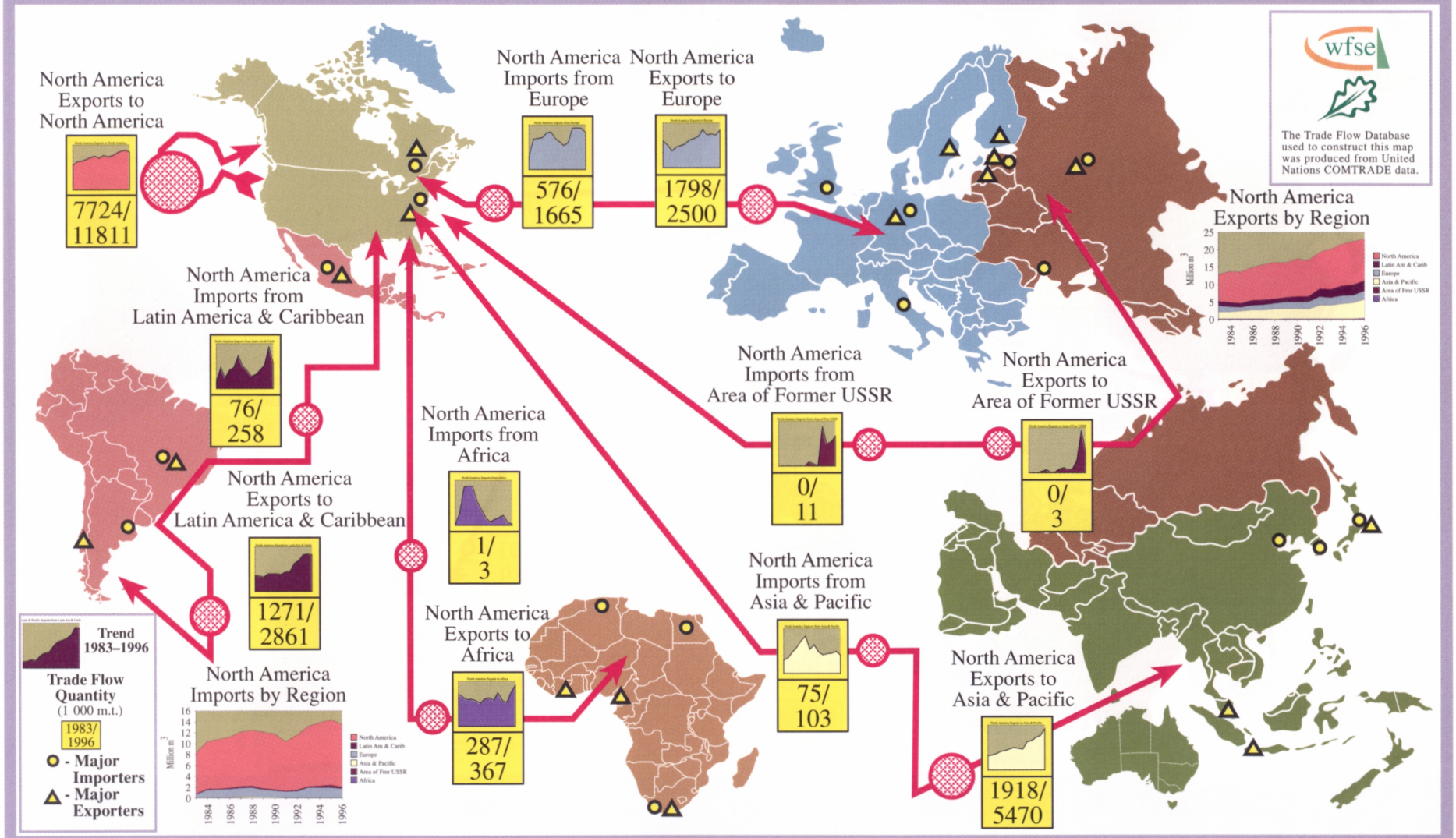
Map 2d: Quantity of Panel Products Traded - Trade Flows and Trade Flow Trends (North America)



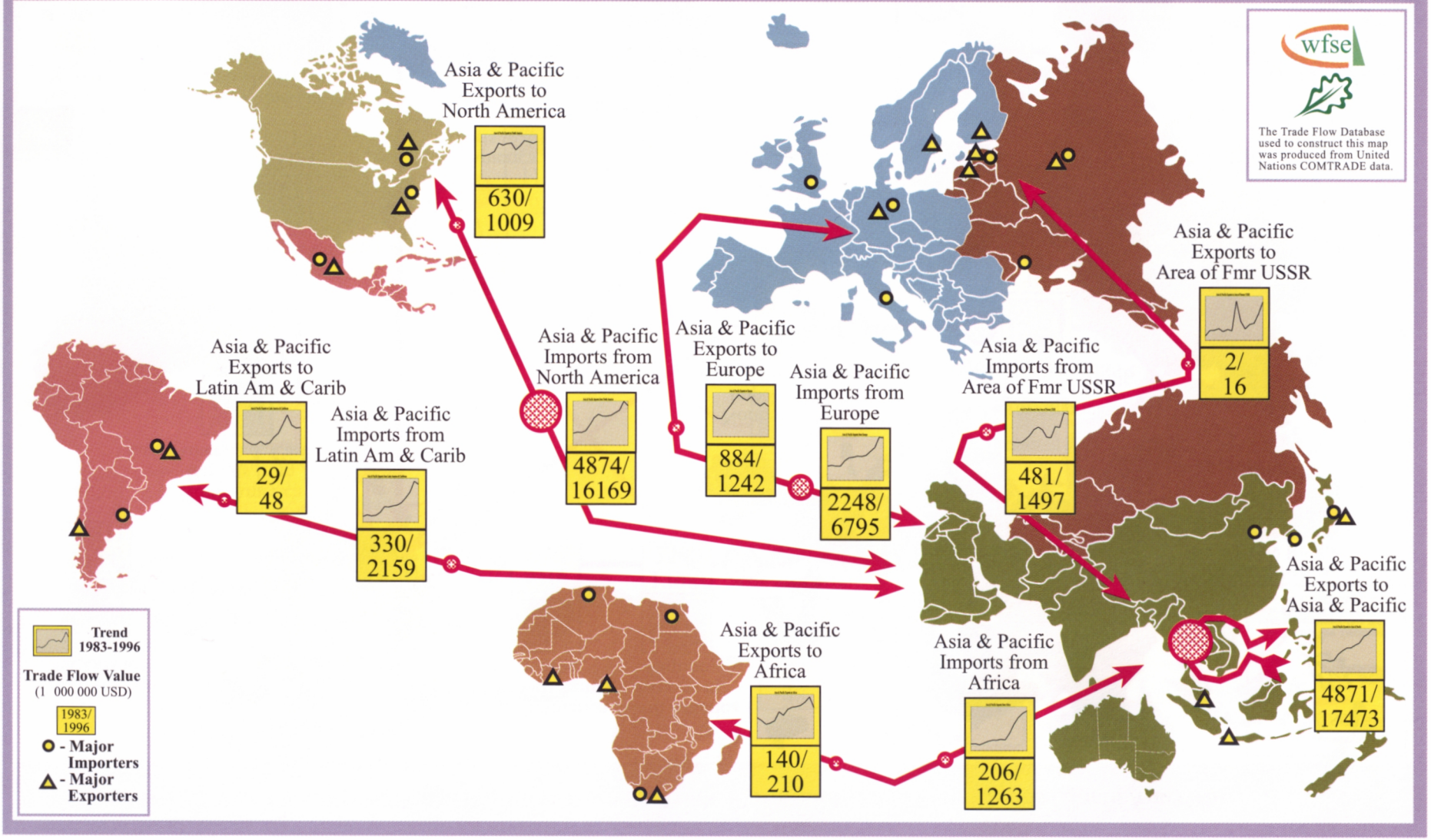
Map 2e: Quantity of Pulp Products Traded - Trade Flows and Trade Flow Trends (North America)



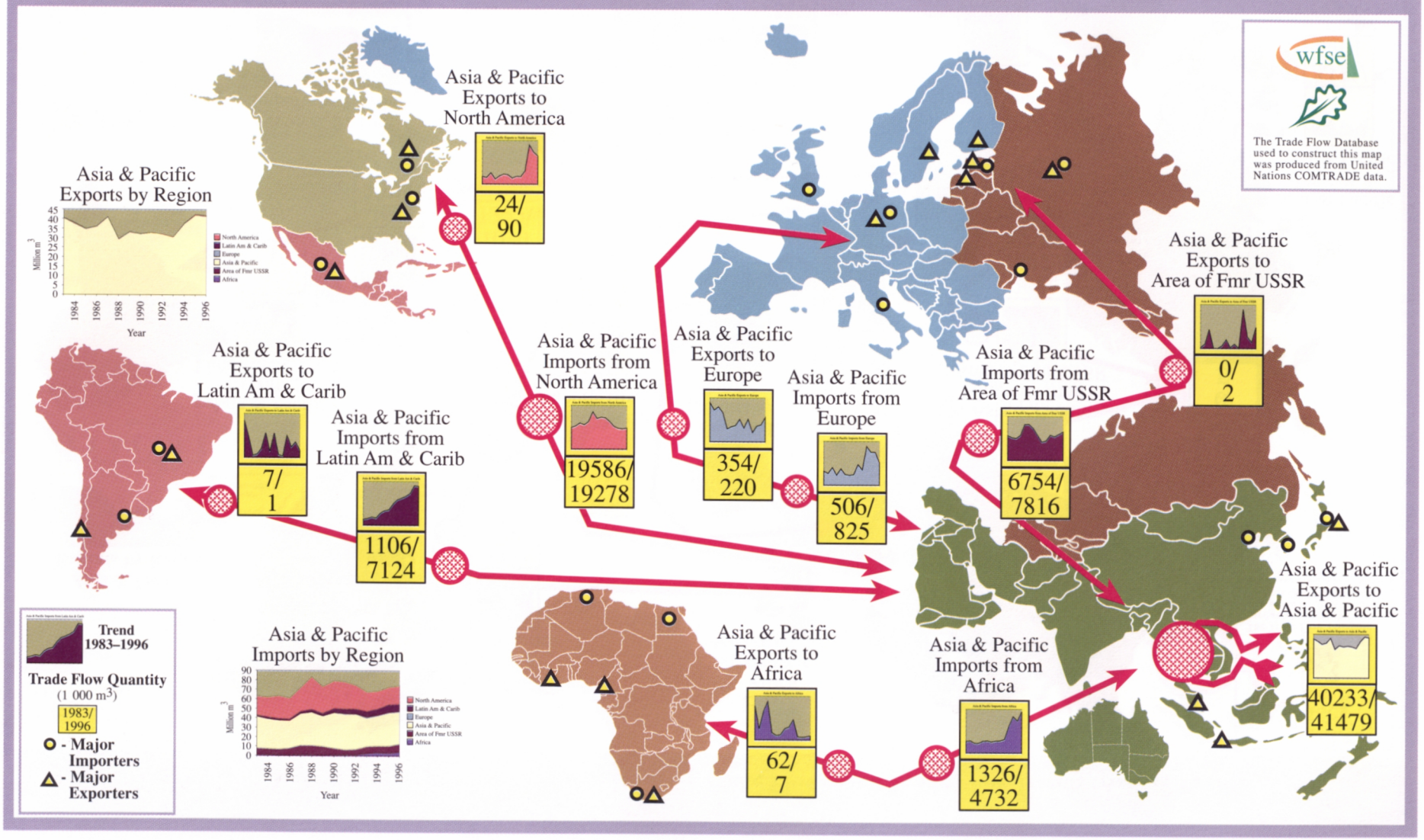
Map 2f: Quantity of Paper Products Traded - Trade Flows and Trade Flow Trends (North America)



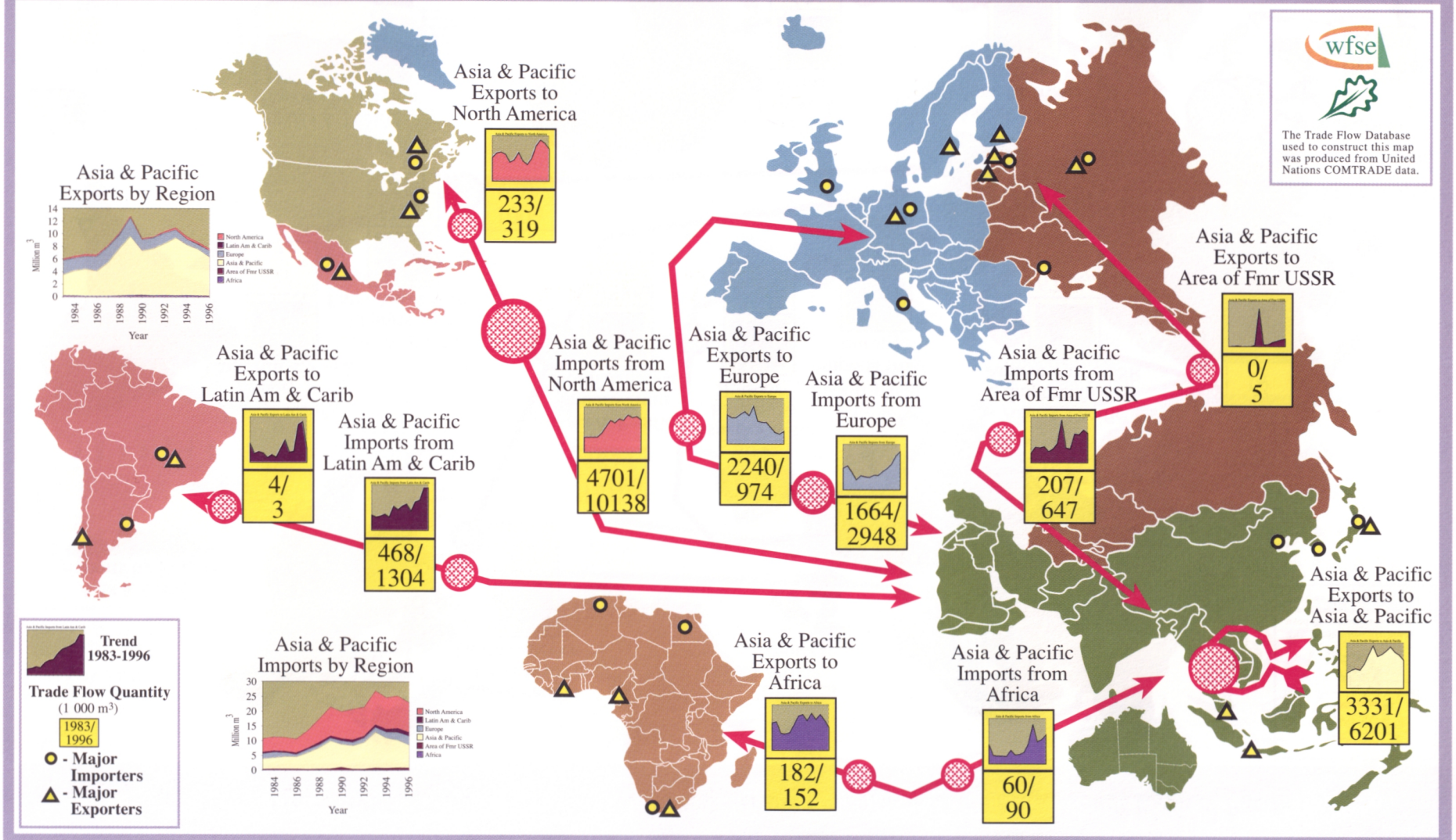
Map 3a: Value of All Forest Products Traded - Trade Flows and Trade Flow Trends (Asia & Pacific)



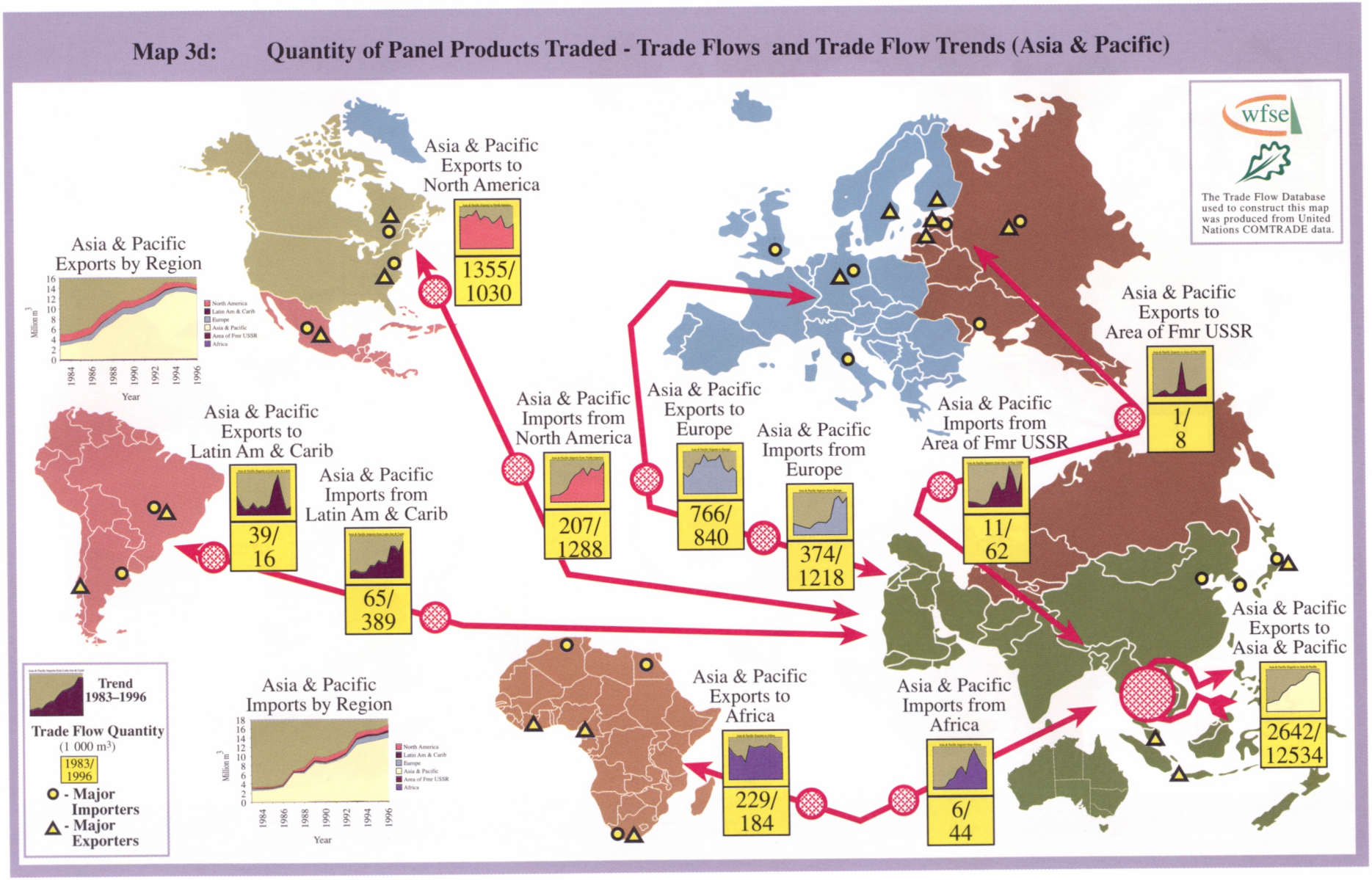
Map 3b: Quantity of Roundwood Products Traded - Trade Flows and Trade Flow Trends (Asia & Pacific)



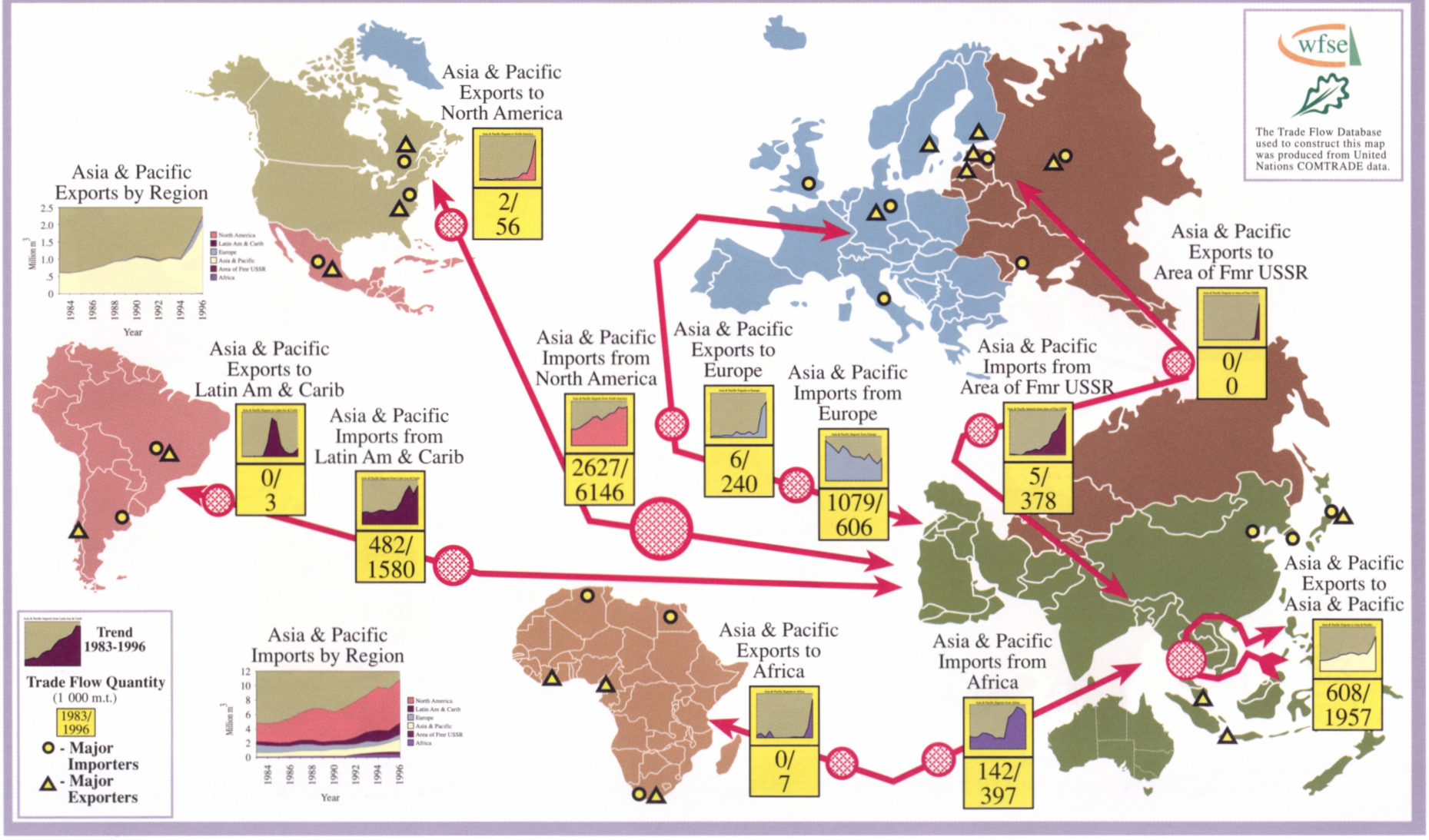
Map 3c: Quantity of Sawnwood Products Traded - Trade Flows and Trade Flow Trends (Asia & Pacific)



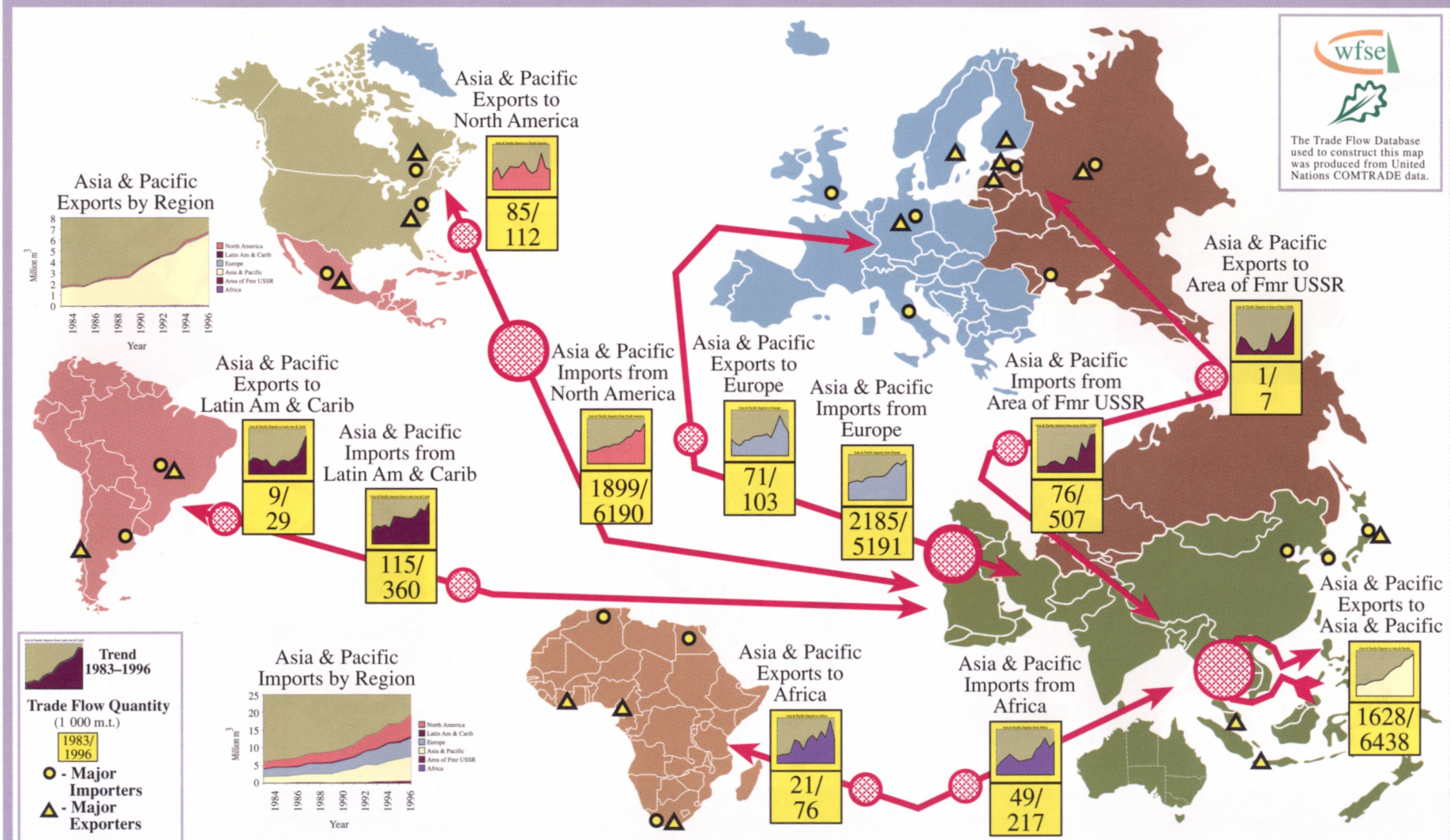
Map 3d: Quantity of Panel Products Traded - Trade Flows and Trade Flow Trends (Asia & Pacific)



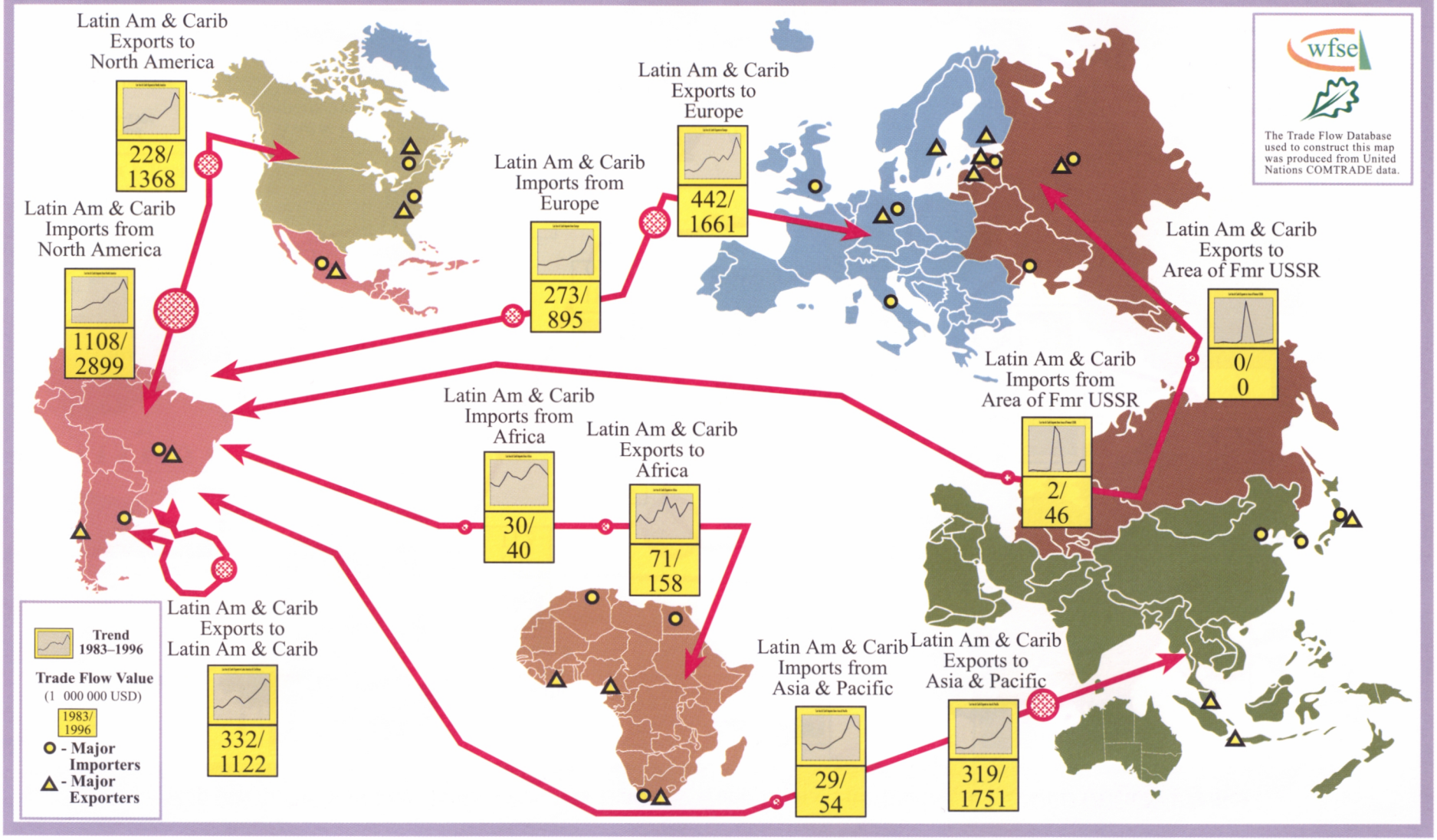
Map 3e: Quantity of Pulp Products Traded - Trade Flows and Trade Flow Trends (Asia & Pacific)



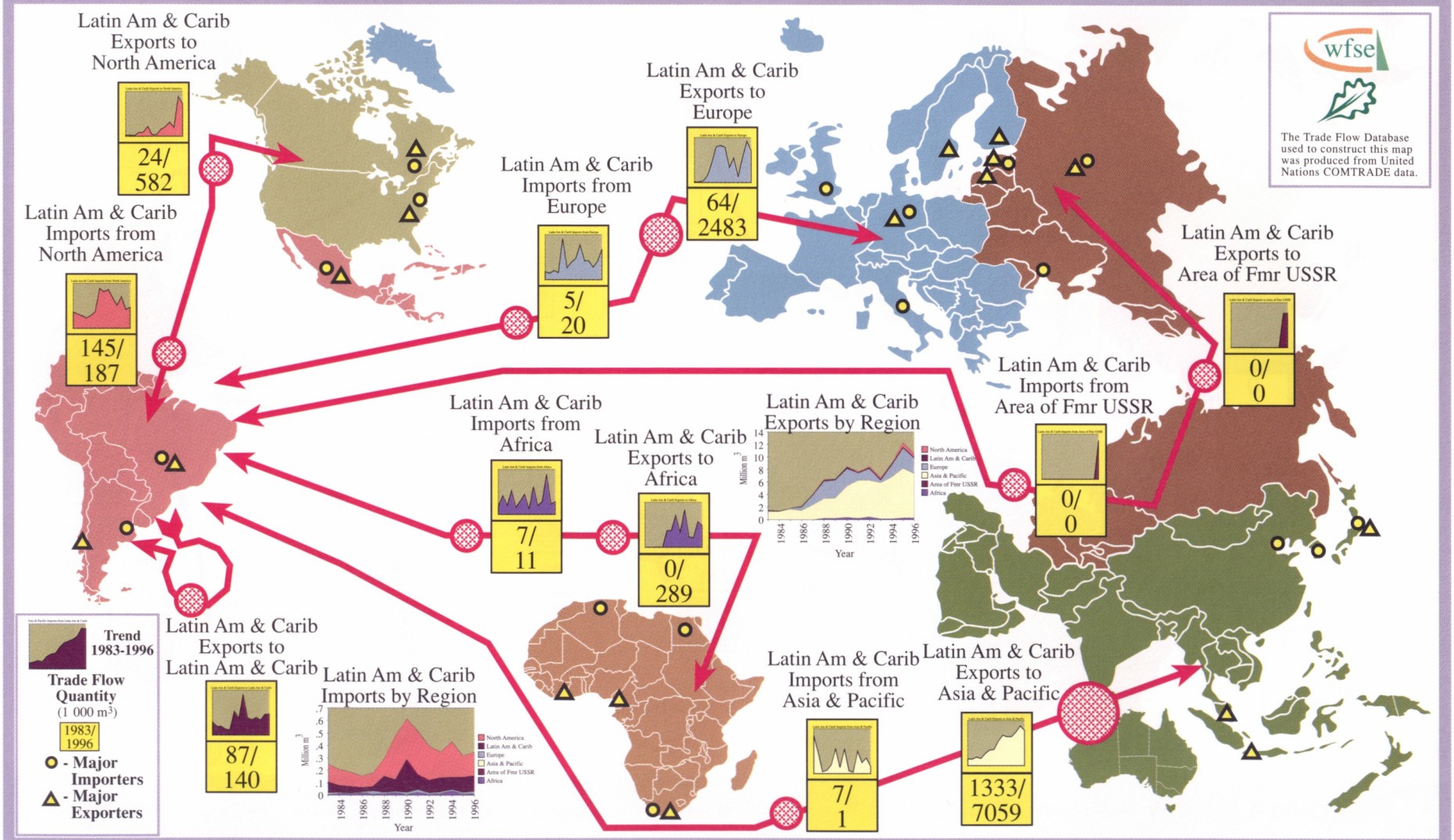
Map 3f: Quantity of Paper Products Traded - Trade Flows and Trade Flow Trends (Asia & Pacific)



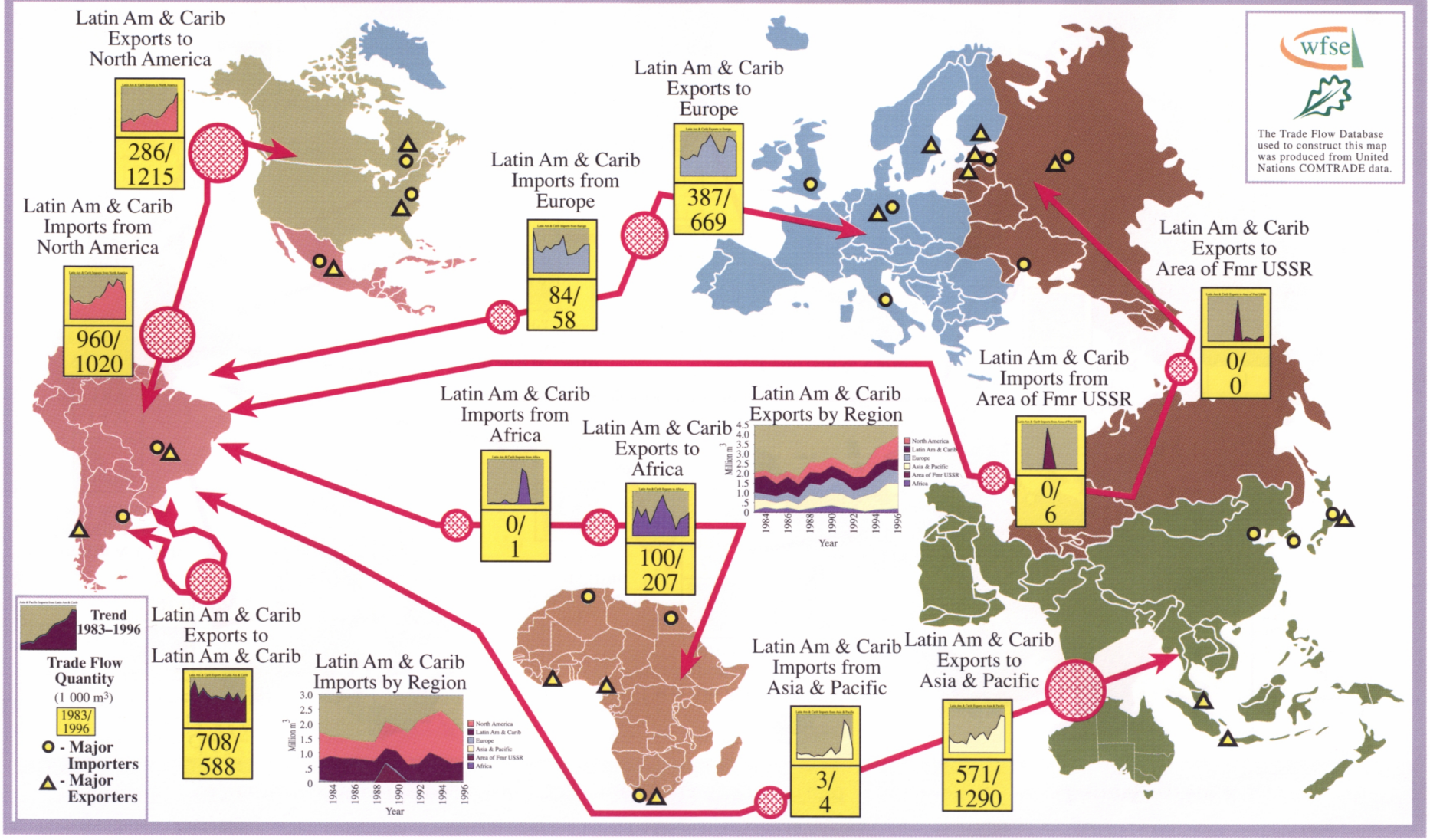
Map 4a: Value of All Forest Products Traded - Trade Flows and Trade Flow Trends (Latin America & Caribbean)



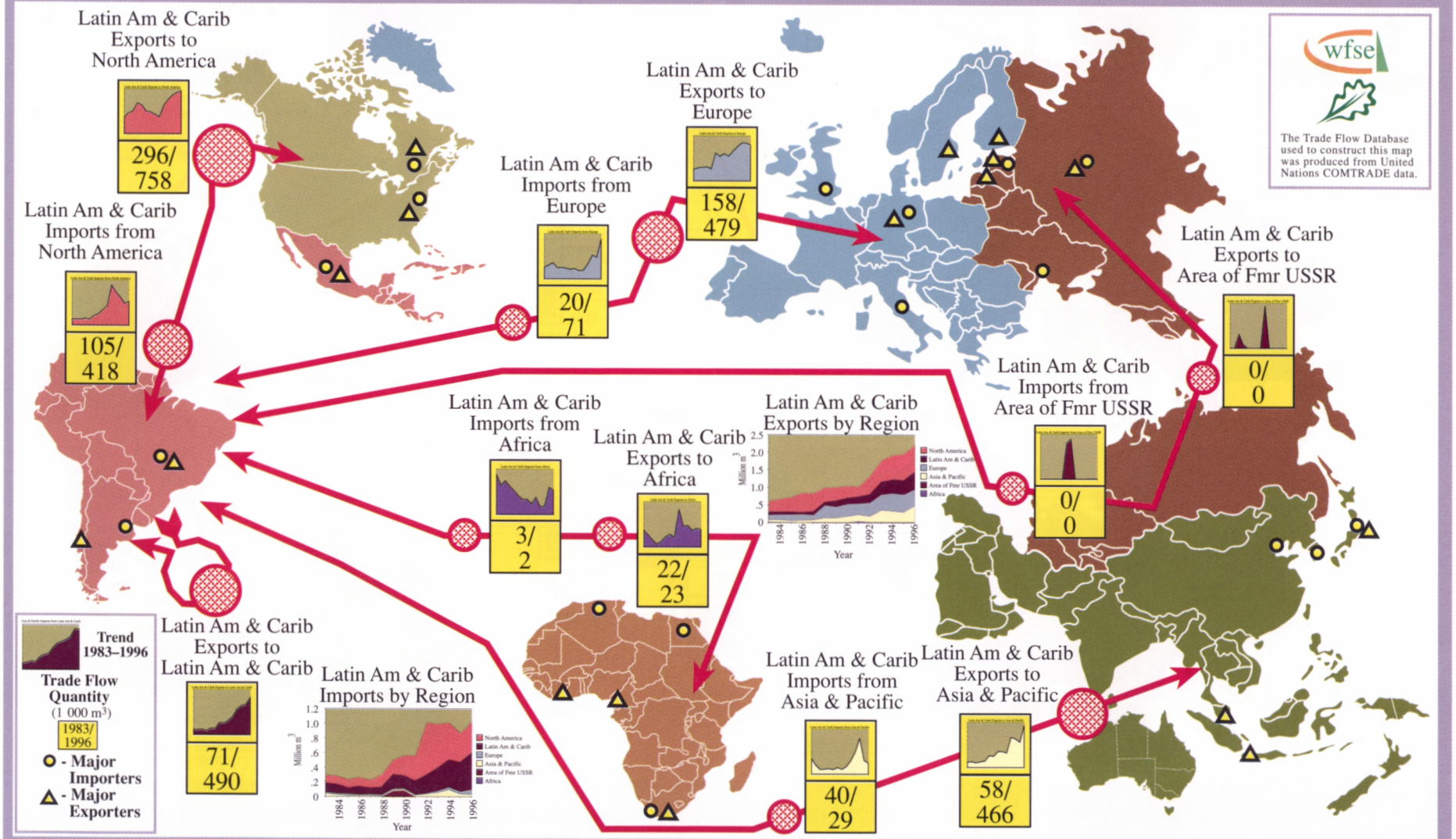
Map 4b: Quantity of Roundwood Products Traded - Trade Flows and Trade Flow Trends (Latin America & Caribbean)



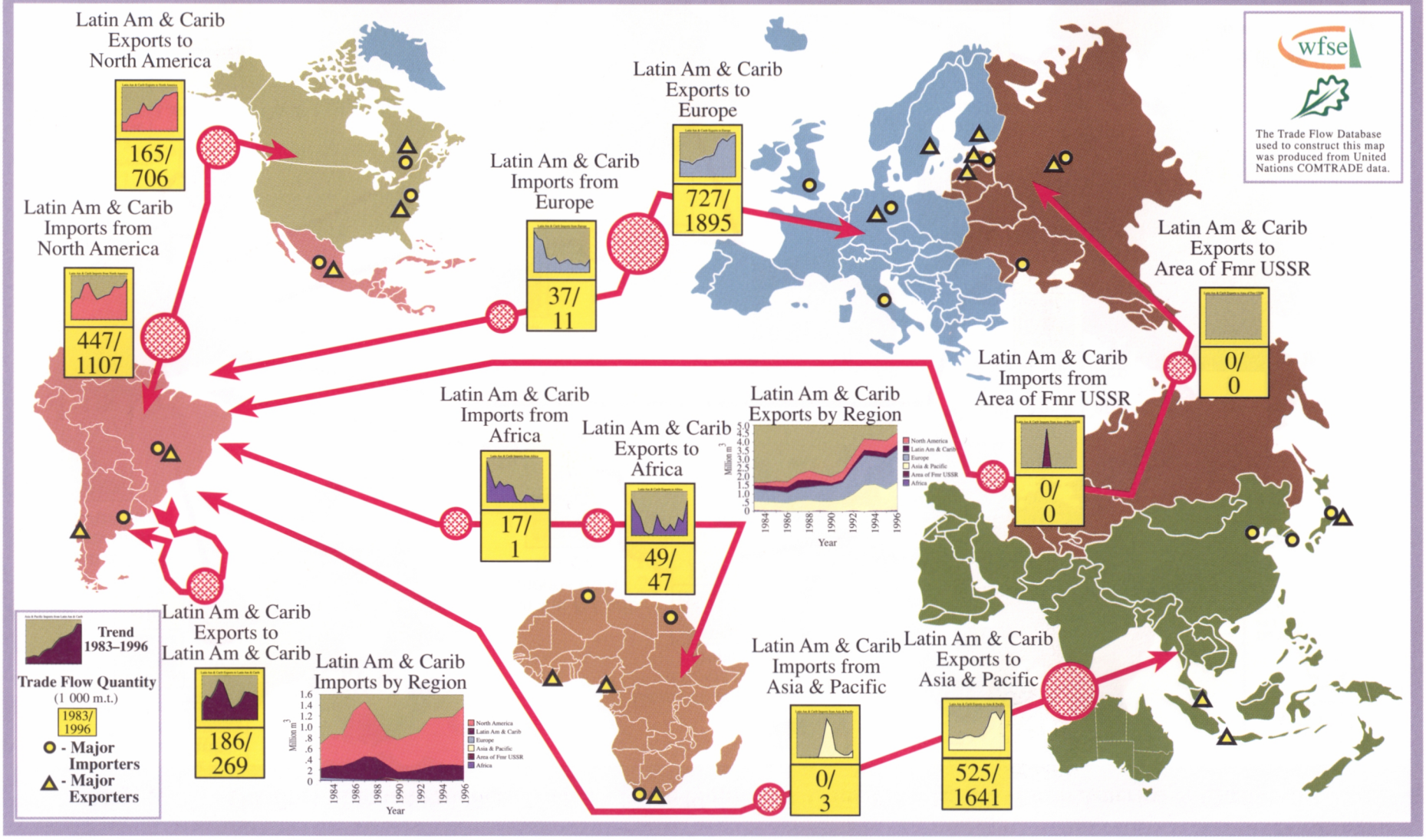
Map 4c: Quantity of Sawnwood Products Traded - Trade Flows and Trade Flow Trends (Latin America & Caribbean)



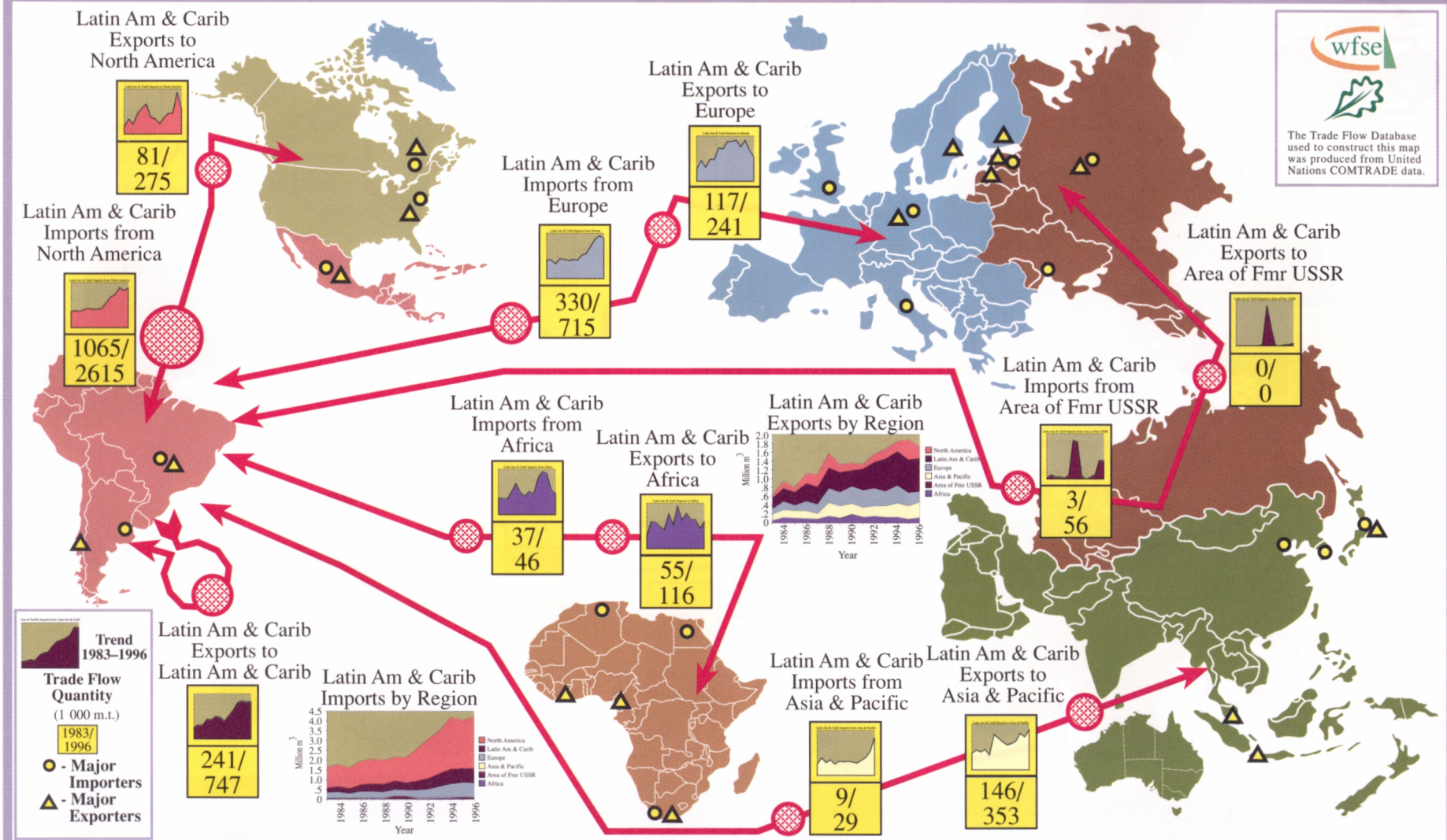
Map 4d: Quantity of Panel Products Traded - Trade Flows and Trade Flow Trends (Latin America & Caribbean)



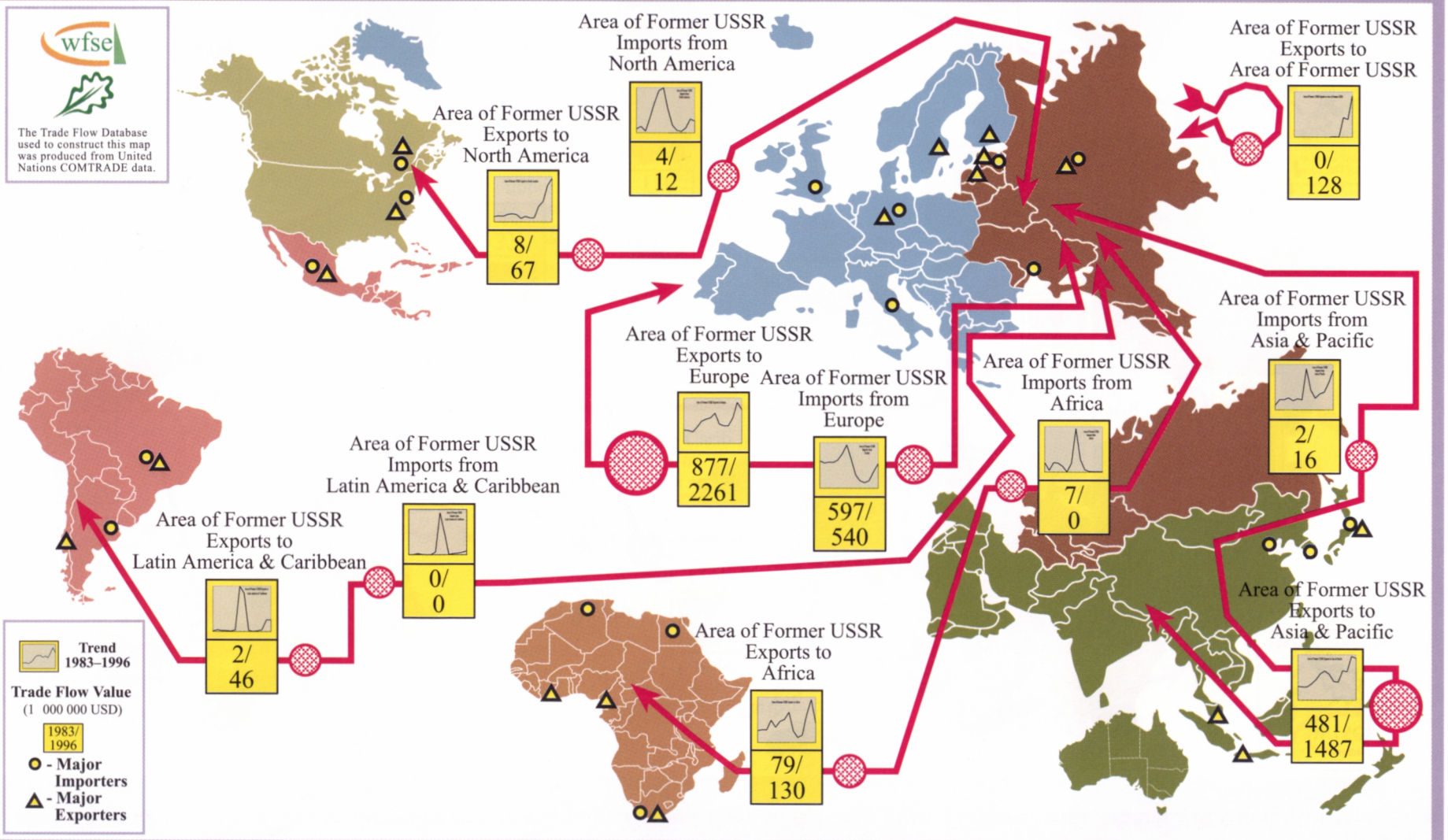
Map 4e: Quantity of Pulp Products Traded - Trade Flows and Trade Flow Trends (Latin America & Caribbean)



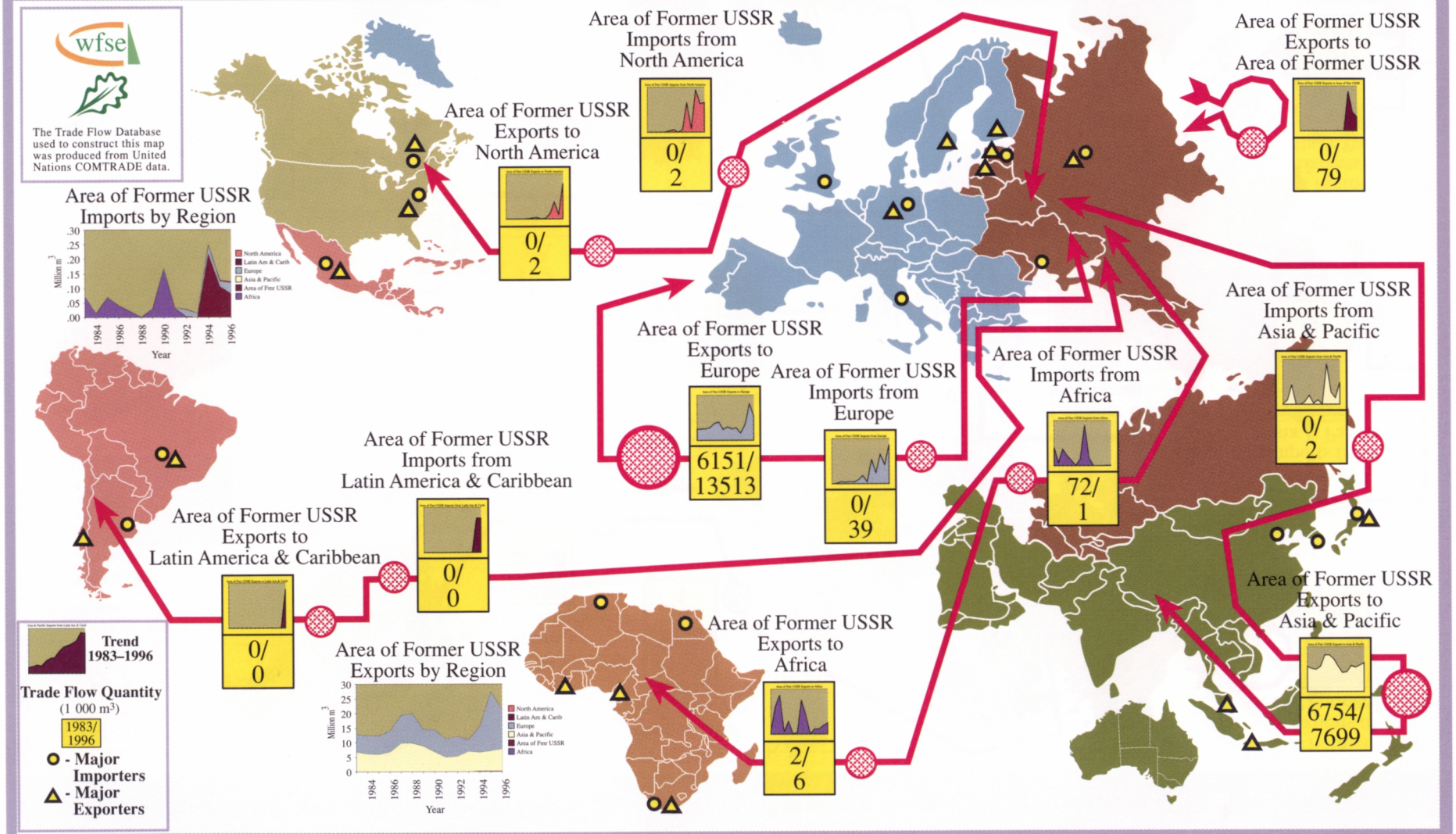
Map 4f: Quantity of Paper Products Traded - Trade Flows and Trade Flow Trends (Latin America & Caribbean)



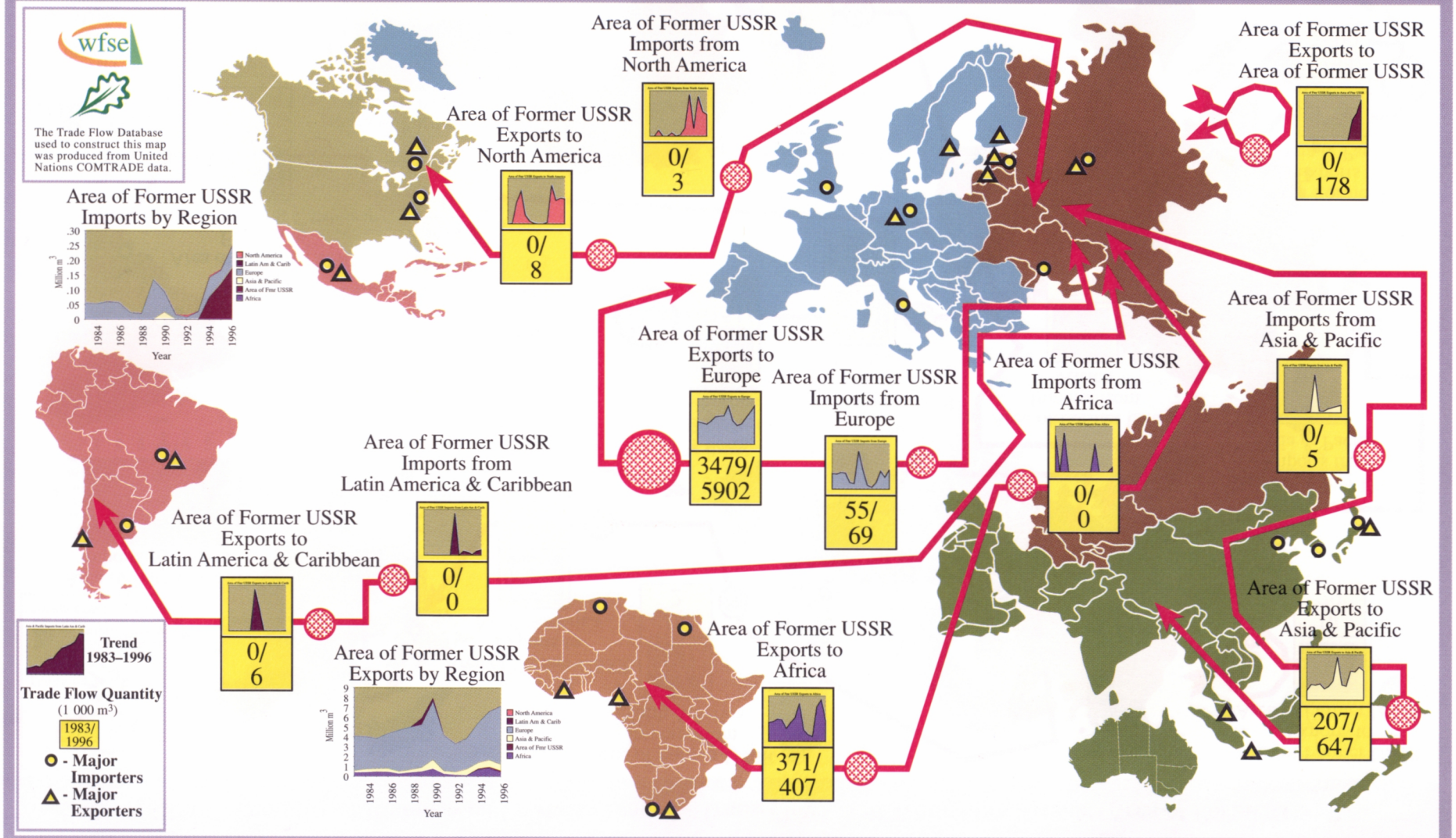
Map 5a: Value of All Forest Products Traded - Trade Flows and Trade Flow Trends (Area of Former USSR)



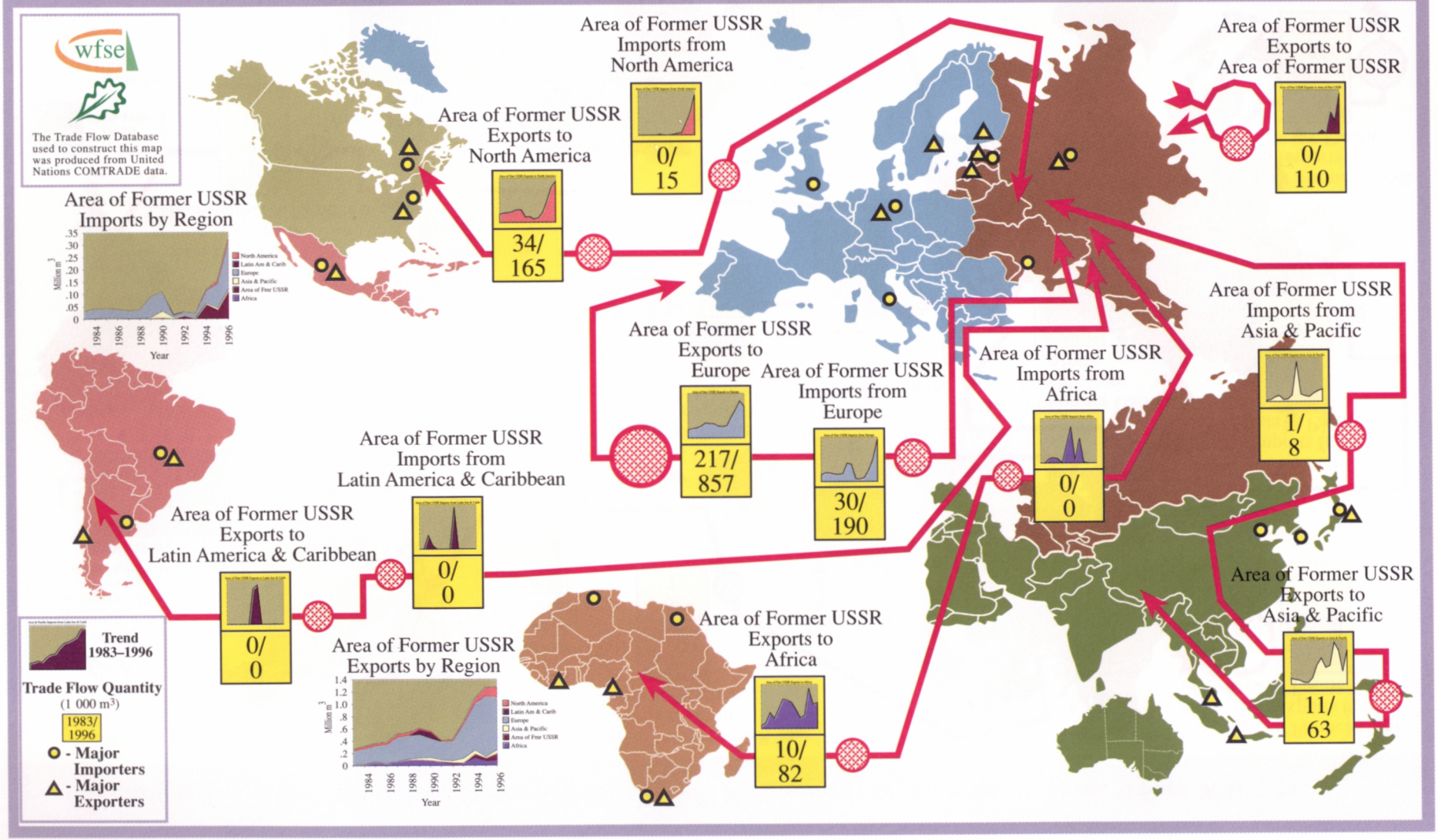
Map 5b: Quantity of Roundwood Products Traded - Trade Flows and Trade Flow Trends (Area of Former USSR)



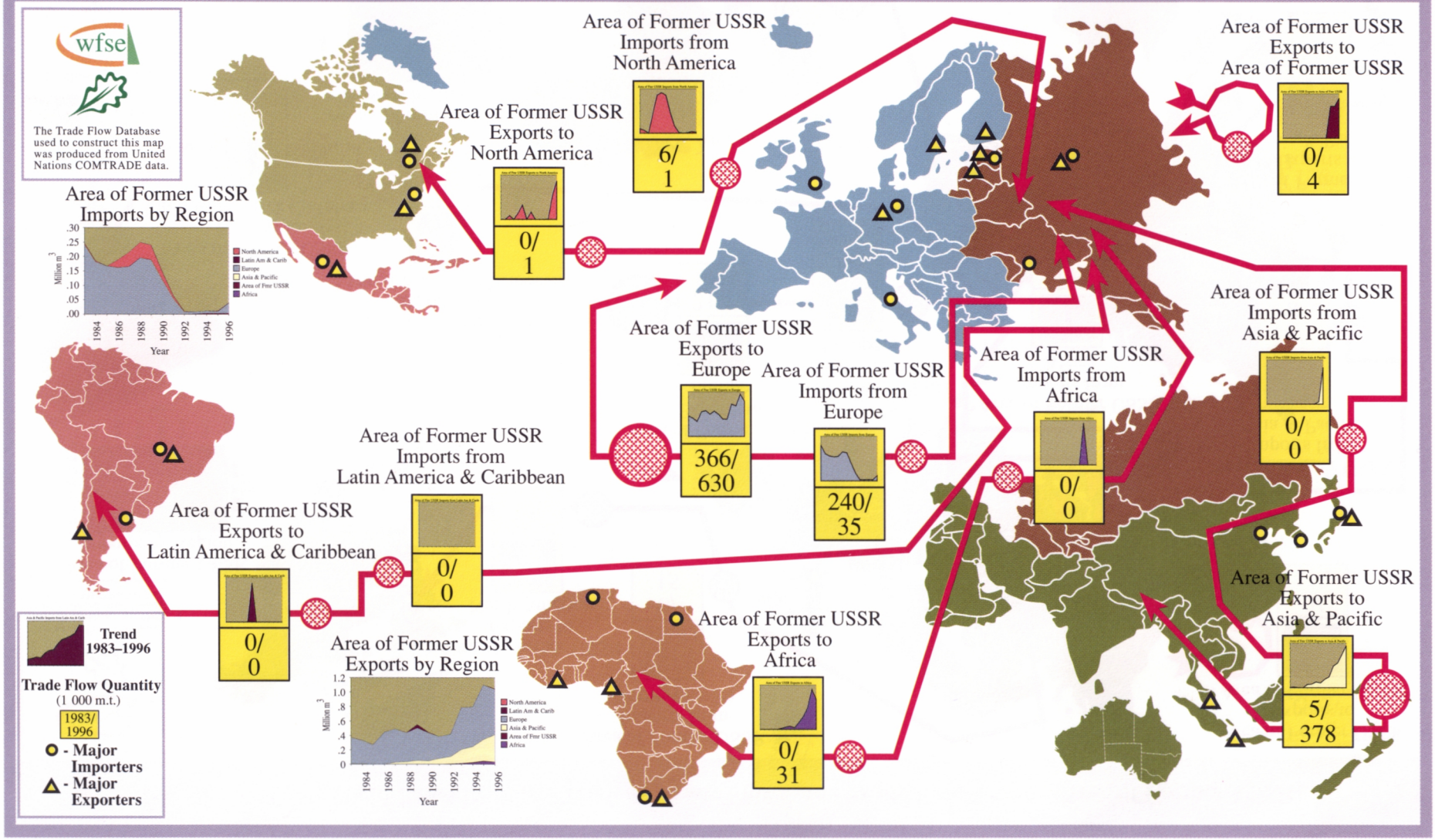
Map 5c: Quantity of Sawnwood Products Traded - Trade Flows and Trade Flow Trends (Area of Former USSR)



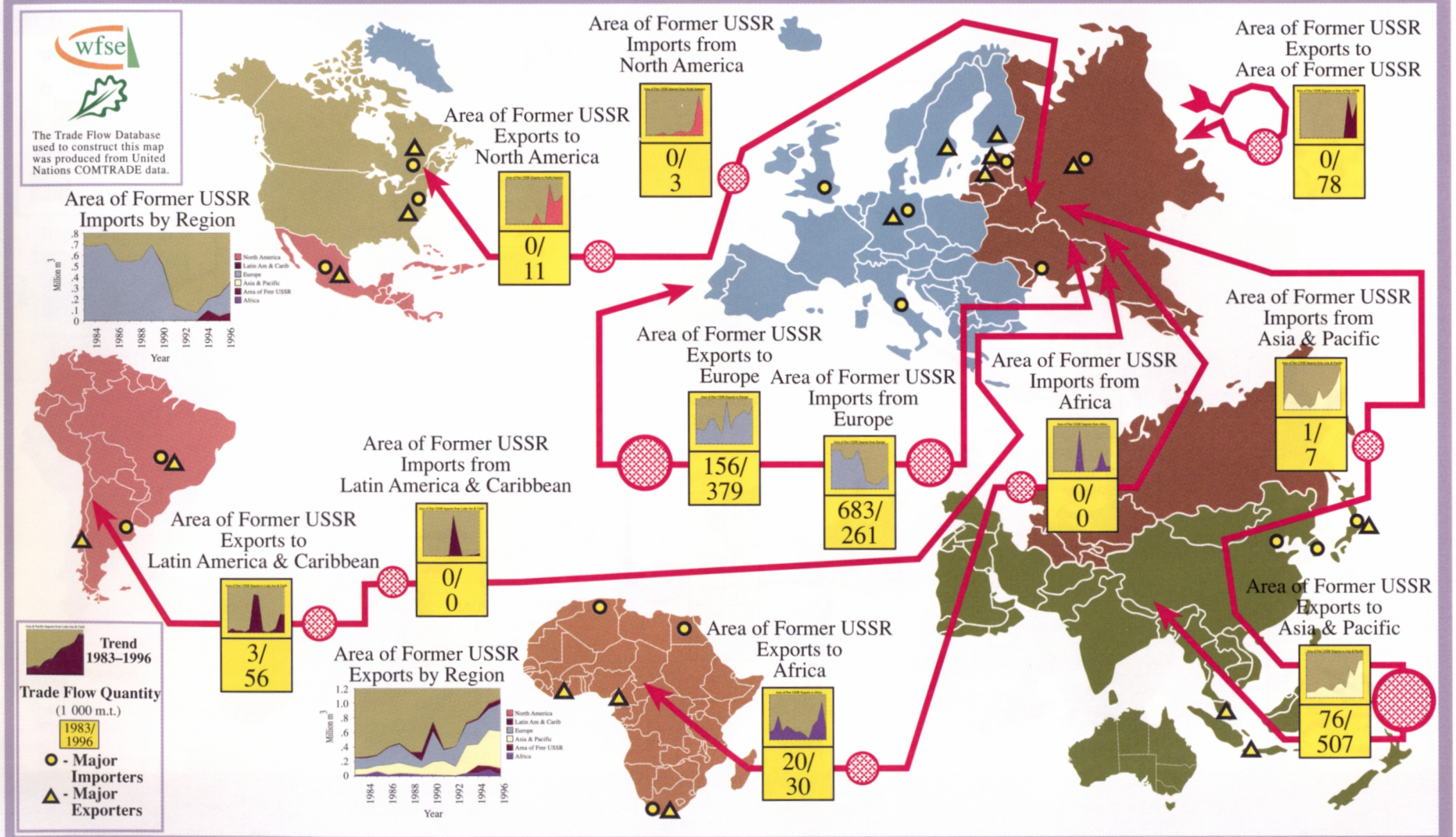
Map 5d: Quantity of Panel Products Traded - Trade Flows and Trade Flow Trends (Area of Former USSR)



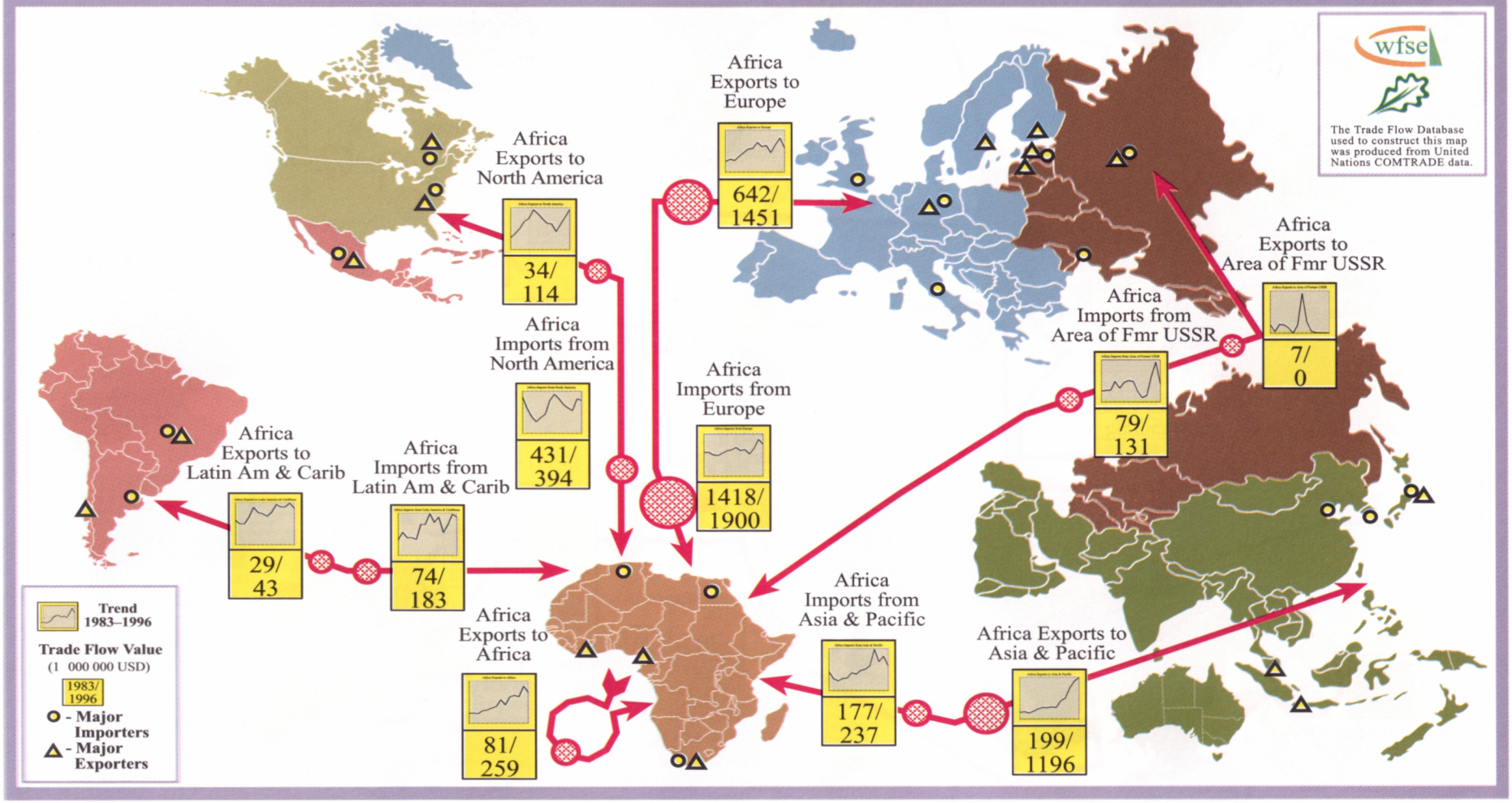
Map 5e: Quantity of Pulp Products Traded - Trade Flows and Trade Flow Trends (Area of Former USSR)



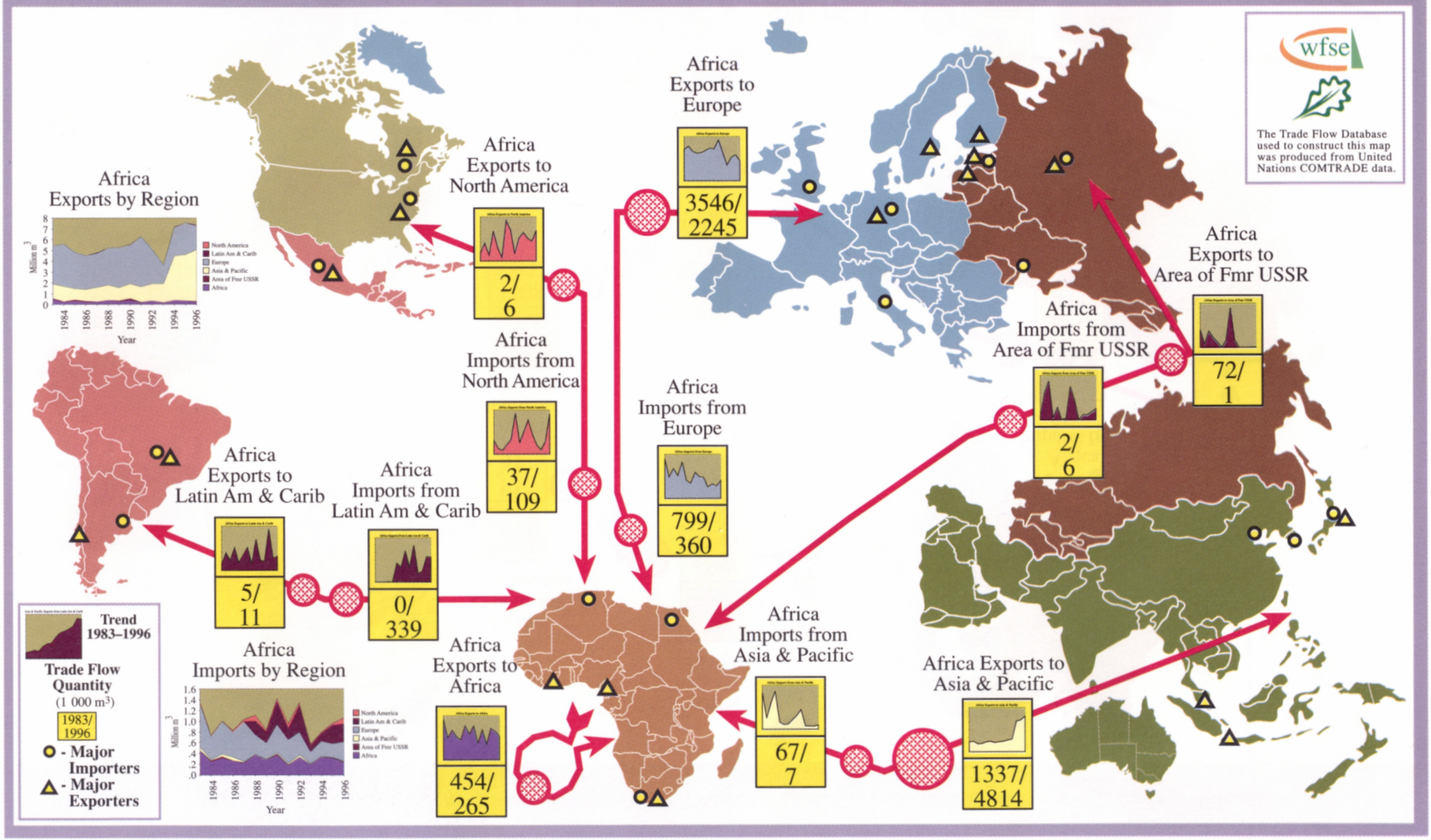
Map 5f: Quantity of Paper Products Traded - Trade Flows and Trade Flow Trends (Area of Former USSR)



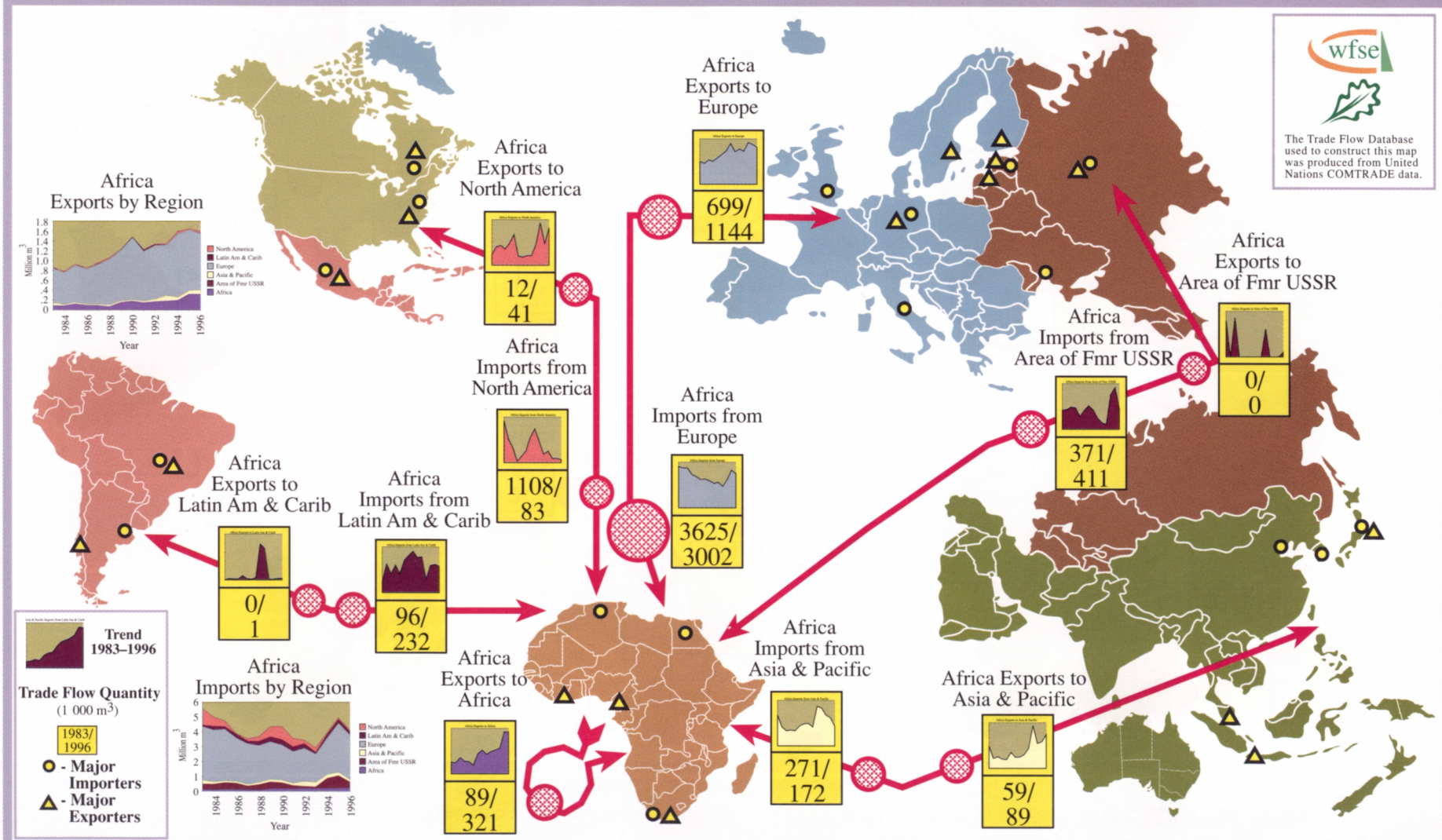
Map 6a: Value of All Forest Products Traded - Trade Flows and Trade Flow Trends (Africa)



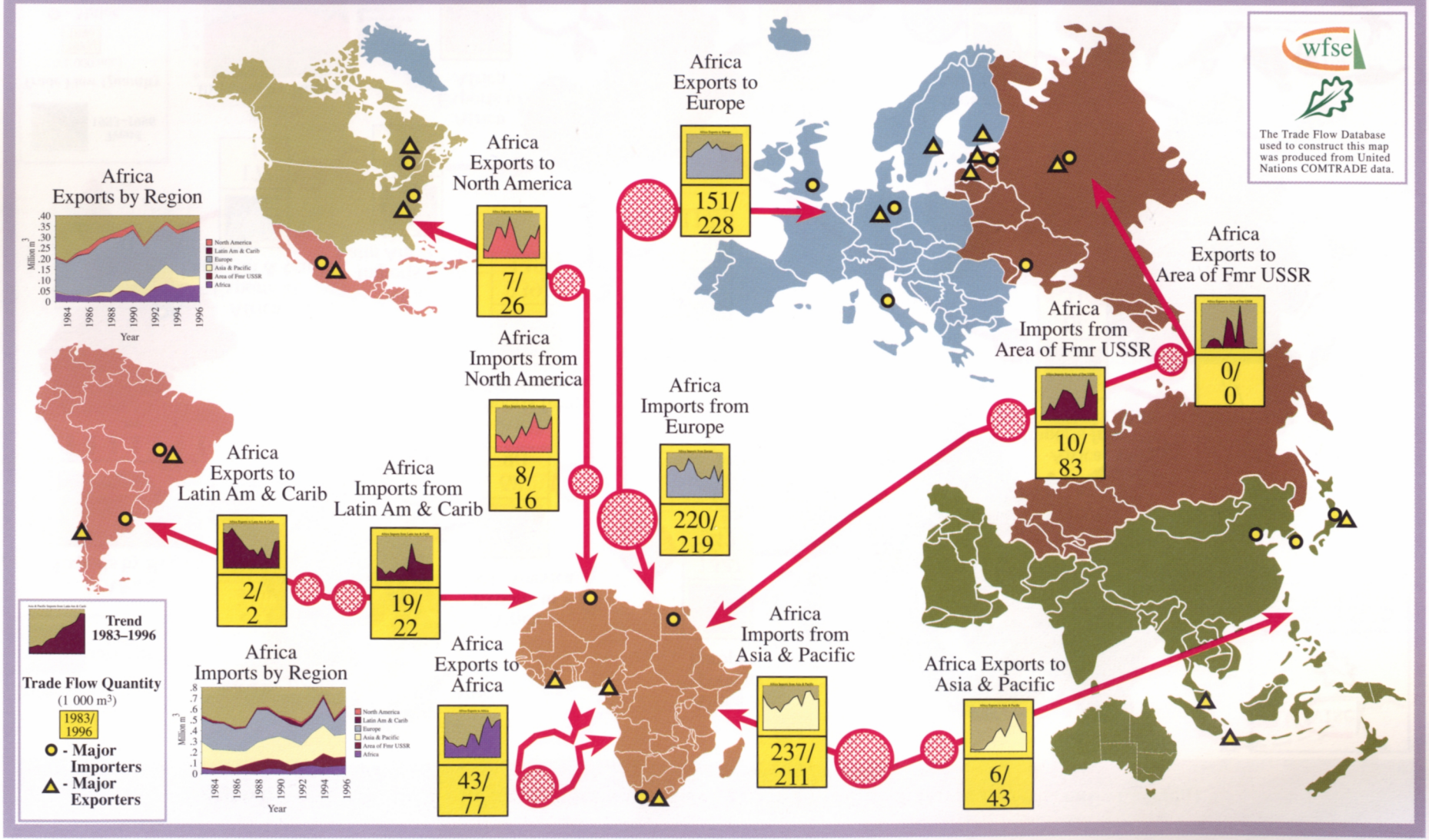
Map 6b: Quantity of Roundwood Products Traded - Trade Flows and Trade Flow Trends (Africa)



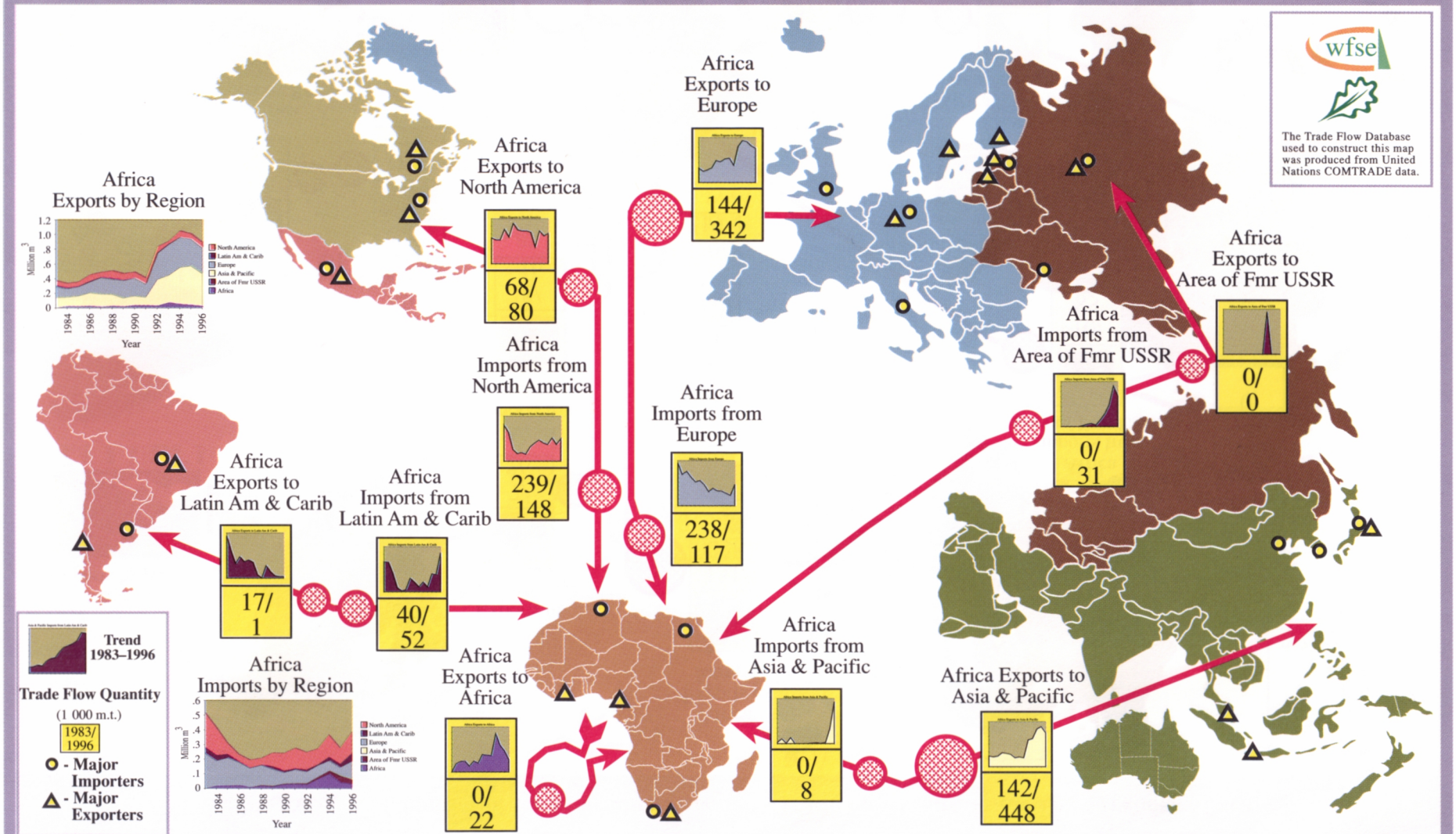
Map 6c: Quantity of Sawnwood Products Traded - Trade Flows and Trade Flow Trends (Africa)



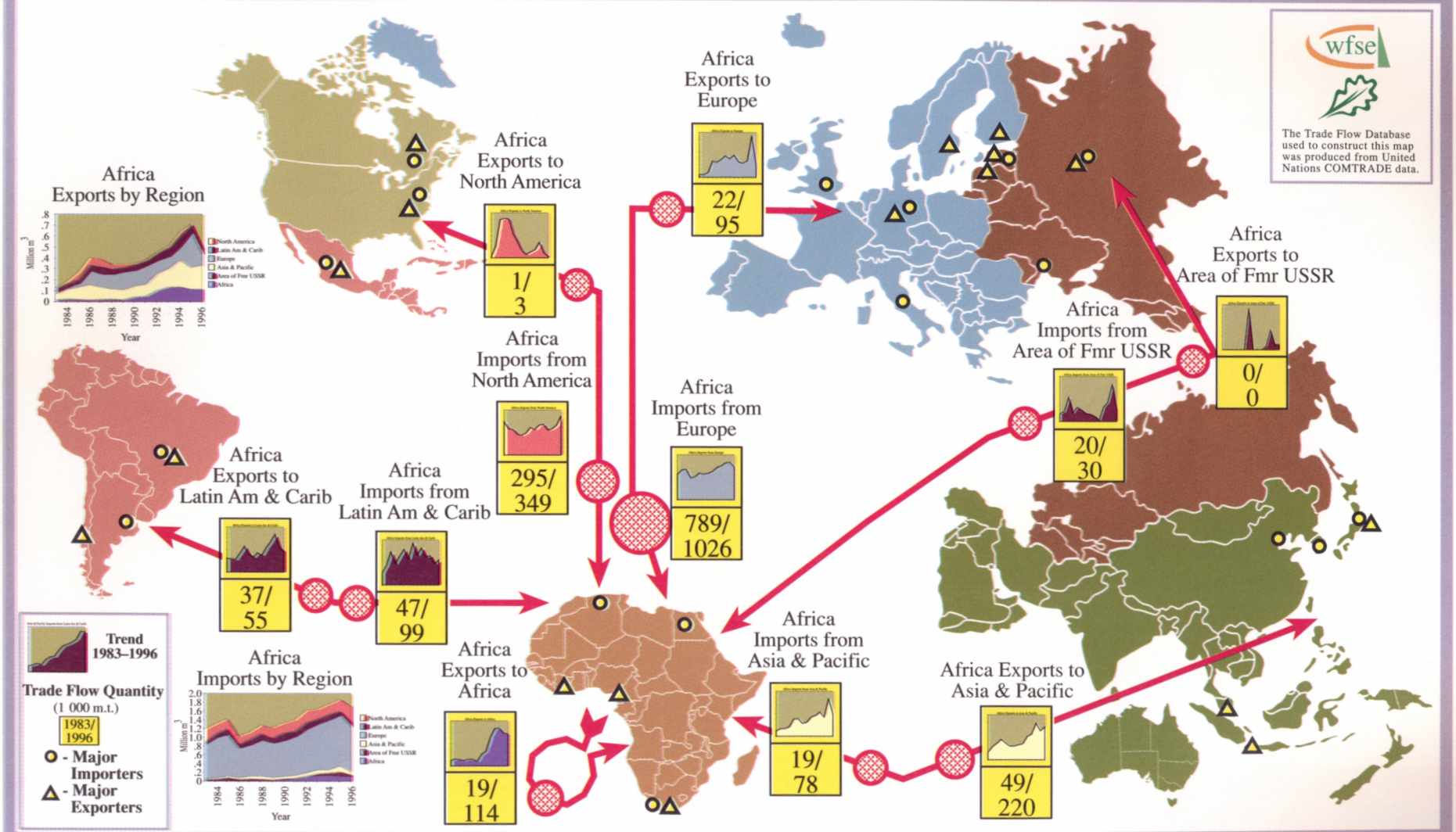
Map 6d: Quantity of Panel Products Traded - Trade Flows and Trade Flow Trends (Africa)



Map 6e: Quantity of Pulp Products Traded - Trade Flows and Trade Flow Trends (Africa)



Map 6f: Quantity of Paper Products Traded - Trade Flows and Trade Flow Trends (Africa)



This book is based on a global study of five groups of forest products trade flows. The analysis is done by grouping the world into six forest products trading regions. The important structural changes that occurred during the past decade make this study a timely addition to the understanding of global forest products trade.

Prior to this study information on global forest products trade was limited to only few exporters and importers. The integration of annual bilaterial trade flow data covering 235 countries and territories with 26 basic forest products and 13 product aggregates from 1983 to 1996 makes it the world's largest trade flow study.

Industrial roundwood, sawnwood, panels, woodpulp, paper and misc products (other fiber pulp, recovered paper, fuelwood and charcoal) are the main product categories covered in the study. Africa, Area of the former USSR, Asia & Pacific, Europe, Latin America & Caribbean and North America (Canada & USA) are used as regional groupings. Past trade development patterns are analyzed to see how trade flows change over time. This study clearly demonstrates the value of trade flow data in studying the forest sector.

The study is structured as follows: Part 1 gives an overview and descriptive text; Part 2 is a display of 180 trade flow figures, and Part 3 displays 36 trade flow maps and trends. Both figures and maps are published in colours. .









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