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ON

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(As of August 4th, 1994)

FINAL REPORT

THE FEASIBILITY STUDY ON CAI LAN PORT CONSTRUCTION PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM

APPENDICES

FEBRUARY 1995

ABBREVIATIONS

B	
B	Biochemical Oxygen Demand
BS	British Standard
C	
C.D	Chart Datum
C.I.F.	Cost Insurance and Freight
CBR	California Bearing Ratio
CFC	The Conversion Factor for Consumption
CFS	Container Freight Station
COD	COD Chemical Oxygen Demand
CY	Container Yard
D	
D	Deformed
DAP	Di-Ammonium Phosphate
DL	Site Datum Level
Do	Do Dissolved Oxygen
DWT	Dead Weight Tonnage
E	
EIA	Environmental Impact Assessment Initial Environment Evaluation
EIRR	Economic Internal Rate of Return
EPZ	Export Processing Zone
F	
FCL	Full Container Load
FIRR	Financial Internal Rate of Return
F.O.B.	Freight on board
ft.	foot/feet
G	
GDP	Gross Domestic Product
GPA	Gross Product of Agriculture
GPI	Gross Product of Industry
GRP	Gross Regional Product

H

HWL	High Water Level

J

JIS	Japanese Industrial Standard
JICA	Japan International Cooperation Agency

L

LCL	Less than Container Load
LWL	Low Water Level

M

MOTAC	Ministry of Transport and Communication (1993)
MOT	Ministry of Transport (1994)

N

N.A	None Available
NCPFP	The National Committee for Population and Family Planning

P

PETROLIMEX	Vietnam National Petroleum Export-Import Co.

R

R.C	Reinforced Concrete
RWL	Residual Water Level

S

SCF	Standard Conversion Factor
SSP	Single Super Phosphate

T

TCVN	Vietnamese Standard
TEDI	Transport Engineering Design Incorporated(1994)
	Transport Engineering Design Institute (1993)
TESI	Transport Science and Economic Institute
TEU	Twenty Equivalent Unit

U

UNDP	United Nations Development Program
US$	United States Dollar

V

VINAFOOD 1	Vietnam Central Food Corporation 1
VINAMARINE	Vietnam National Maritime Bureau
VND	Vietnam Dong

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APPENDIX 1

REFERENCES

APPENDIX 1

REFERENCES

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6	ECONOMY AND FINANCE OF VIETNAM 1986-1992	0	STATISTICAL PUBLISHING HOUSE
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APPENDIX 2

LIST OF CONTACT ORGANIZATIONS

APPENDIX 2 LIST OF CONTACT ORGANIZATIONS

MINISTRY OF TRANSPORT AND COMMUNICATION

Le Ngoc Hoan	Vice Minister
La Ngoc Khue	Vice Minister
Tran Doan Tho	Deputy Director, Planning & Investment Department
Le Nhat Tien	Vice General Director, International Relations Department

QUANG NINH PROVINCE

Ngo Dinh Tho	Vice Chairman
Tran Quyen	Head of External Economic Department
Hoang Anh Son	Vice Director
Vu Thanh Loc	Official of External Economic Department
Nguyen Trong Chi	Official of Quang Ninh People's Committee
Nguyen Quang Chau	Head of Science - Technology and Environment Department
Nguyen Duy Hung	Head of Transport Department
Bui Dinh Hong	Vice Director Transport Department
To Van Tu	Head of Construction Department
Nguyen Dinh Than	Head of Tourism Department
Vu Quang Mon	Vice-Director of Provincial Planning Department
Pham Ham Toan	Official of Transport Department
Nguyen Ngoc Thanh	Official of Provincial Planning Department
Pham Dinh Tham	Deputy Director (construction)
Nguyen Van Doc	Expert (transportation)
Dao Le Trung	Expert (tourism)

SCCI

Nguyen Bich Dat	Deputy Director
Nguyen Quang Toan	Director Development

OFFICE OF THE GOVERNMENT

Pham Quang Minh	Deputy Director In charge of transport
Kieu Tien Quang	Deputy Director
Le Quoc Hiep	Senior expert in charge of sea transport

MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT

Nguyen Khac Kinh	Deputy Director Environment Department
Le Quy An	Vice Minister
Ms. Sang	National Environment Agency

MINISTRY OF FINANCE

Thai Ba Can	Ministry of Finance
Le Dinh Quy	Deputy Chief of Division
Nguyen Ba Tai	Expert

STATE PLANNING COMMITTEE

Nguyen Toai	Economist (Transportation)
Nguyen Vuong Ta	General Director (Institute for long term development & regional planning)

MINISTRY OF CONSTRUCTION

Ngo Duc Tri	Vice - Director
Ngo Trung Hai	Architect
Pham Van Nghi	Architect
Doan ngoc Thuc	Architect
Hoang Khac Tung	Engineer (Transport engineer)
Nguyen Tuyet Mai	Engineer (Transport engineer)

ECONOMIC SCIENTIFIC INSTITUTE OF COMMUNICATION AND TRANSPORT MINISTRY

Nguyen Duc Truy	Director
Nguyen Dinh Dang	Deputy Director
Trinh Thi Nhung	Deputy Director
Nguyen Quang Bau	Economic forecast
Pham Kim Hanh	Economic forecast
Nguyen Thi Vuot	Economic forecast
Nguyen Manh Ung	Economic analysis

HAI PHONG PORT

Cao Tien Thu	Director
Le Duc Kinh	Vice Director
Truong Van Thai	Secretary
Vu Nam Thang	Manager
Truong Quang Duc	Expert

VIETNAM NATIONAL MARITIME BUREAU

Nguen Dinh Quan	Director
Bui Van Trung	Vice Director
Vu Huy Cuong	Vice Director Investment and Planing Department
Tran Van Nghi	Projects Manager
Nguyen Huu Chi	Expert (investment, planning)
Dao Trong Long	Basic Construction Department

MINISTRY OF HEAVY INDUSTRY

Nguyen Xuan Chuan	Director (international co.)

KOREA CONSULTANTS INTERNATIONAL

Jun-Gu Kim	Team Leader
Hyo Bae Kim	Structural Engineer
Jong Sub Kim	Soil/Material Engineer

MINISTRY OF AGRICULTURE

National Institute of Agricultural Planning and Projection

Tran An Phong	Director General KANEMATSU CORPORATION
Katayasu Fujiwara	Deputy General Manager

MINISTRY OF ENERGY

Dao Duc Duc	Deputy Director (foreign cooperation)
Le Manh Thu	Eng. (economic planning)

TOMEN CORPORATION

Takashi Ohara	General Manager
Shinichi Ushijima	Manager
Do Thi Chung	Manager

VIETNAM STEEL CORPORATION

Dao Duc Dinh	Director
Nguyen Huu Tho	Project Nanager

CEMENT CONSULTING, INVESTMENT AND DEVELOPMENT COMPANY

Tong Van Nga	Director
Nguyen Minh Duc	Deputy Director
Do Ngoc Long	Eng.,
Pham Gia Hanh	Eng.,

MITSUBISHI CORPORATION

Sadao Ito	General Manager

MARUBENI CORPORATION

Nobuyoshi Suzuki	General Manager
Masao Isozaki	Manager

FERCHEMCO

To Xuan Duong	Deputy Director (planning,marketing)
Chu Xuan Tuyen	Engineer (invest, construction)
Nguyen Van Vuong	Engineer (planning, marketing)

THIESS

Nguyen Minh Phuong	Area Manager

VITRANSCHART

Duong Phuong Lien	Chief, Marketing

VIETFRACHT

Trinh Trong Giao	Acting Manager

STATE COMMITTEE FOR COOPERATION AND INVESTMENT

Phan Huu Thang	Deputy Director (Project Monitoring)
Tran Hong Ky	Expert (EPZ)

HAIPHONG OFFICE FOR EXTERNAL ECONOMIC RELATIONS

Nguyen Dinh Quan	Director
Nguyen Huu Thong	Administrative Director

QUANG NINH IMPORT EXPORT COMPANY

Nguyen Van Khiem	Director
Pham Thi Minh Thuy	Deputy Director

PHARUNG SHIPYARD COMPANY

Le Loc	Managing Director

CHINH FONG HAI PHONG CEMENT CORP.

Nguyen Dinh Chinh	Deputy General Director

RENONG BERHD

Virat Dinrat	General Manager

VIETNAM CENTRAL FOOD CORPORATION 1

Nguyen Hoa Binh	Deputy Director (foreign economic)

PETRONAS

Iqbal G Abdullah	General Manager
Salleh Fadzil Hasan	Country Manager

KANEMATSU CONSULTANTS INTERNATIONAL

Katayasu Fujiwara	Deputy General Manager

APPENDIX 3

TYPICAL ECONOMIC ACTIVITIES OF 53 PROVINCES AND CITIES

APPENDIX 3

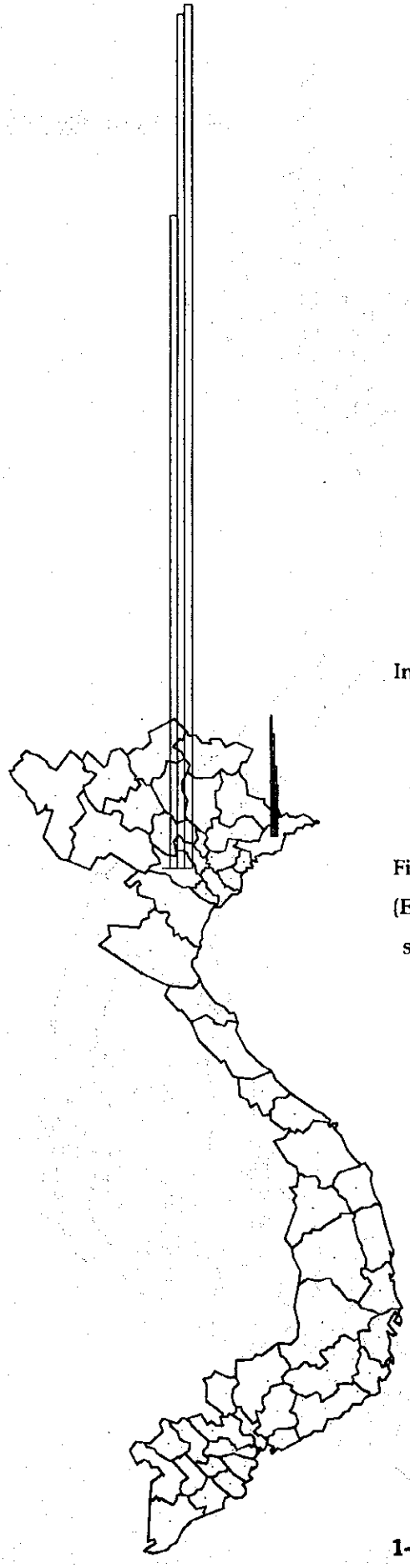
INDUSTRIAL PRODUCTS

AGRICULTURE AND BREEDING

EXPORT

IMPORT

APPENDIX 3 Typical Economic Activities of 53 Provinces and Cities



INDUSTRIAL PRODUCTS

In 1992

WHOLE COUNTRY

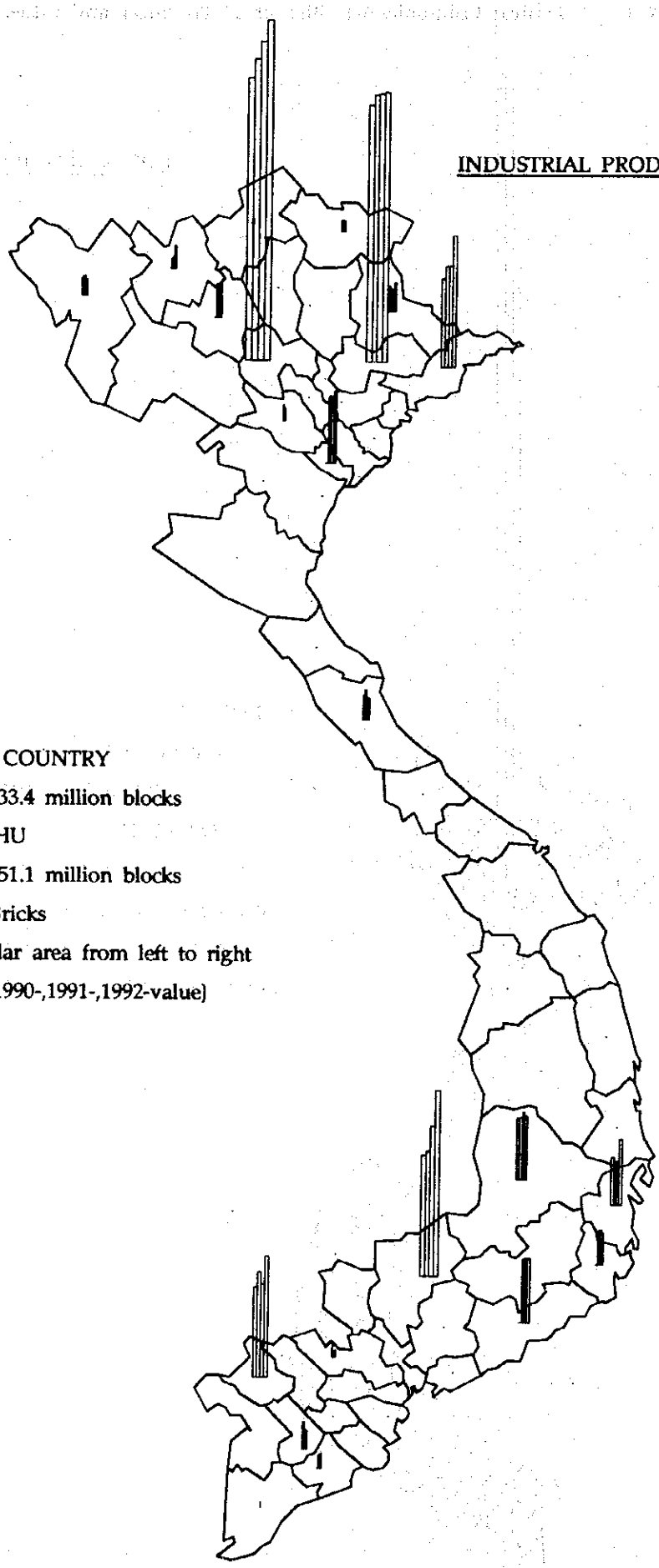
1,018 million KW*H

HOA BINH

961 million KW*H

Figure A3-1 Electric Power

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

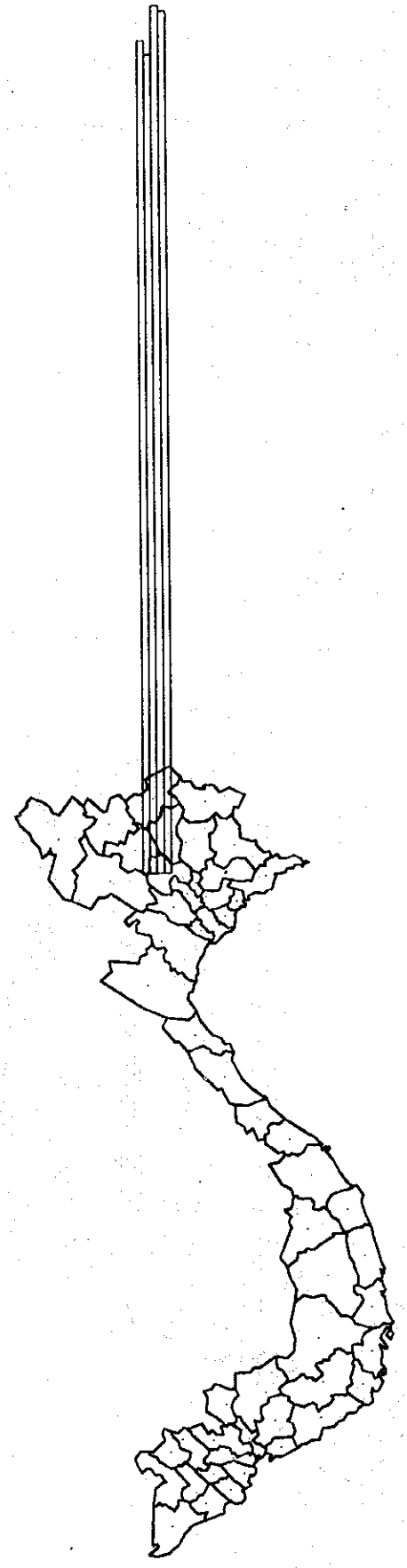
1,133.4 million blocks

VINH PHU

251.1 million blocks

Figure A3-2 Bricks

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



INDUSTRIAL PRODUCTS

In 1992

WHOLE COUNTRY

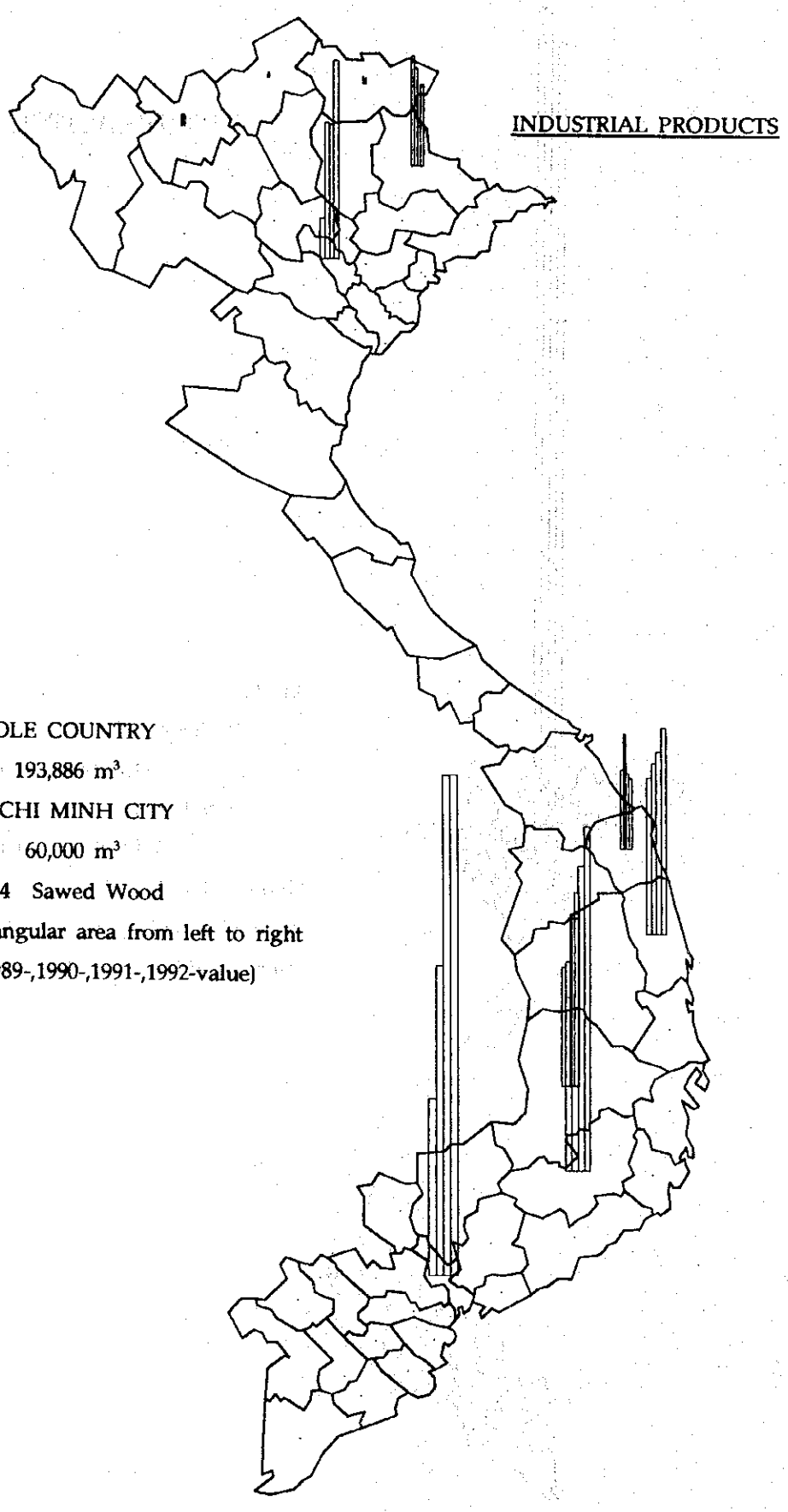
311.7 thousand tons

VINH PHU

311.0 thousand tons

Figure A3-3 Fertilizer

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

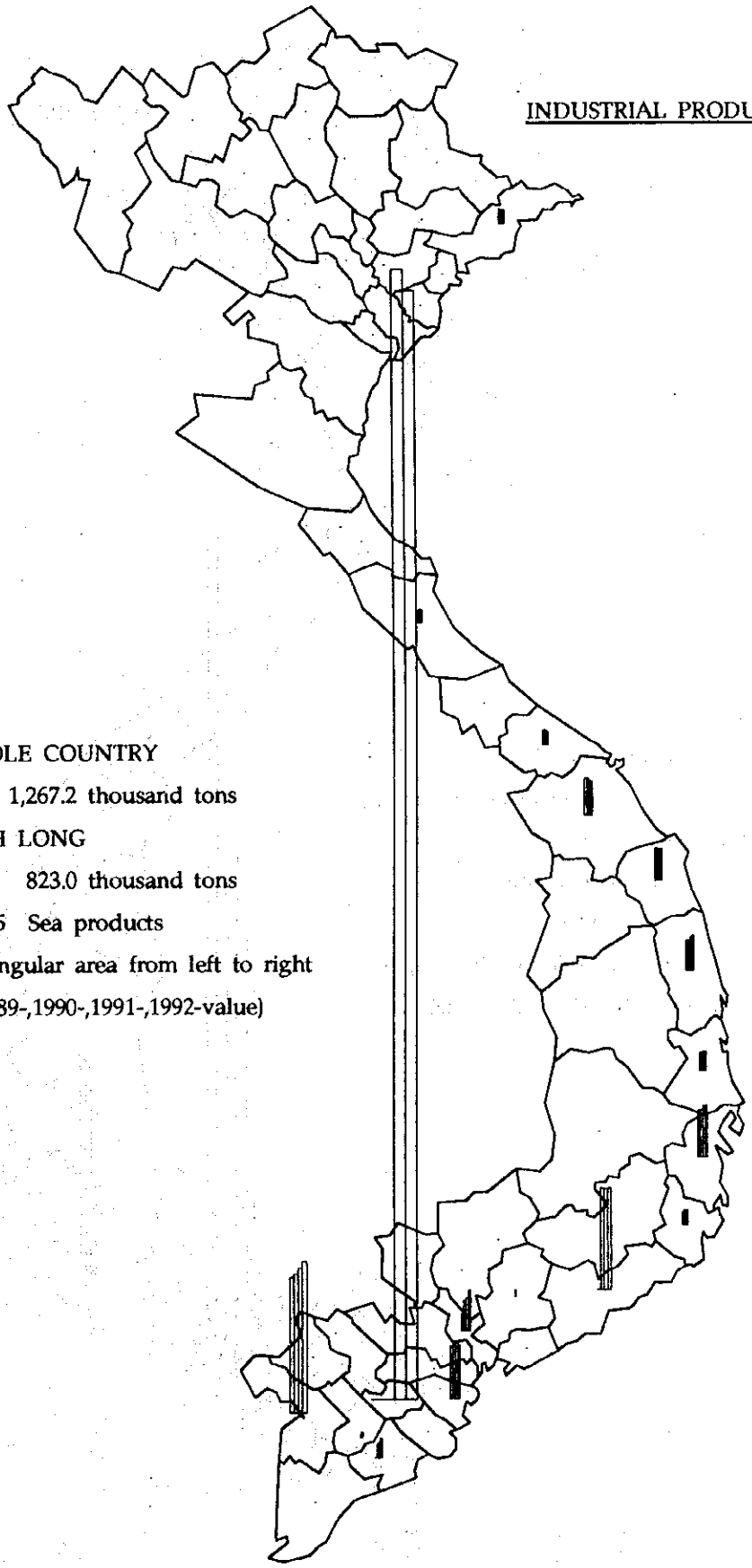
193,886 m^3

HO CHI MINH CITY

60,000 m^3

Figure A3-4 Sawed Wood

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

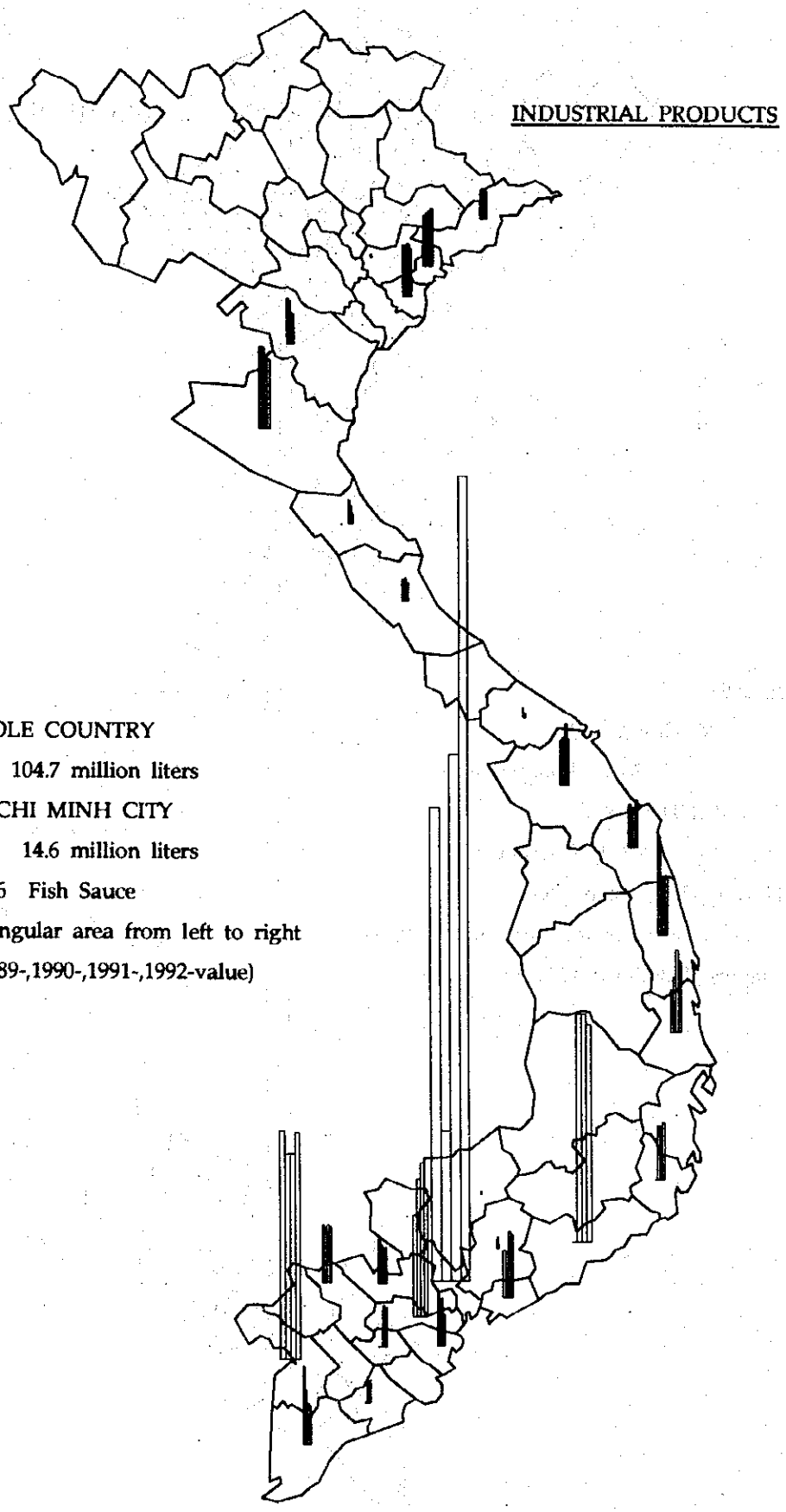
1,267.2 thousand tons

VINH LONG

823.0 thousand tons

Figure A3-5 Sea products

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

104.7 million liters

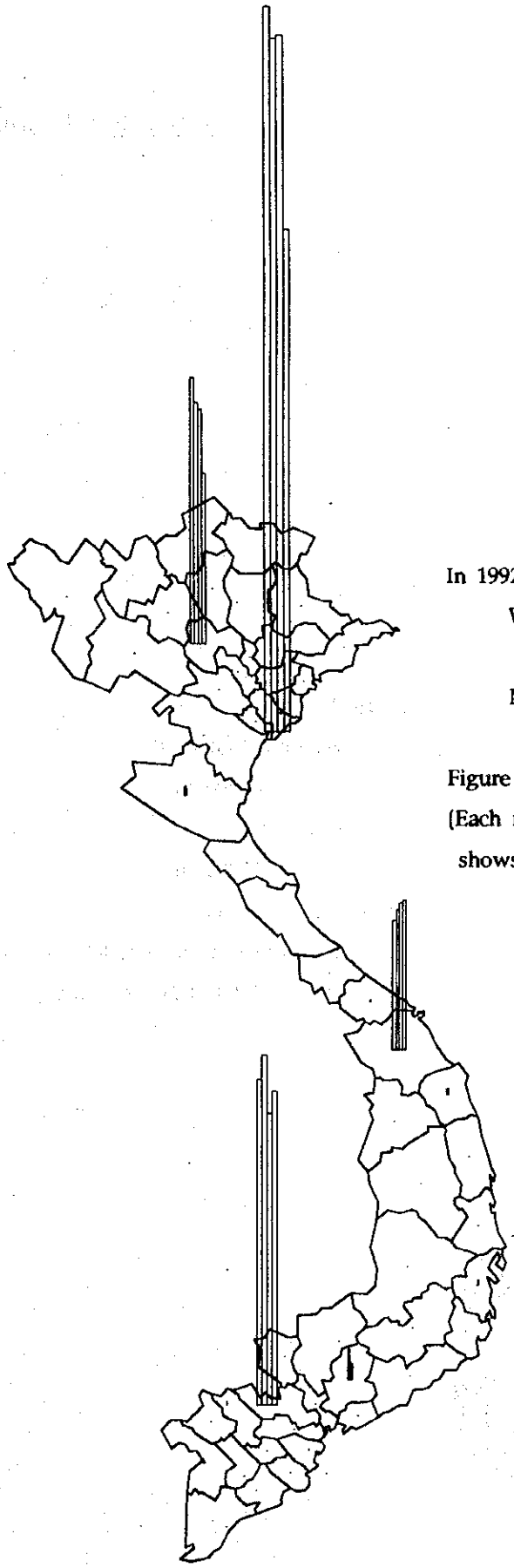
HO CHI MINH CITY

14.6 million liters

Figure A3-6 Fish Sauce

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

INDUSTRIAL PRODUCTS



In 1992

WHOLE COUNTRY

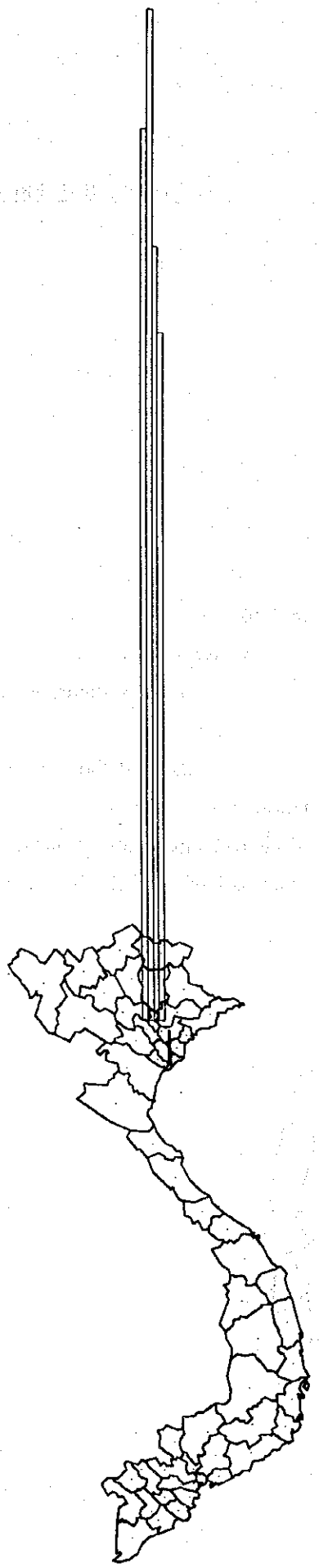
69,660.4 thousand meters

NAM HA

29,807.0 thousand meters

Figure A3-7 Fabrics

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

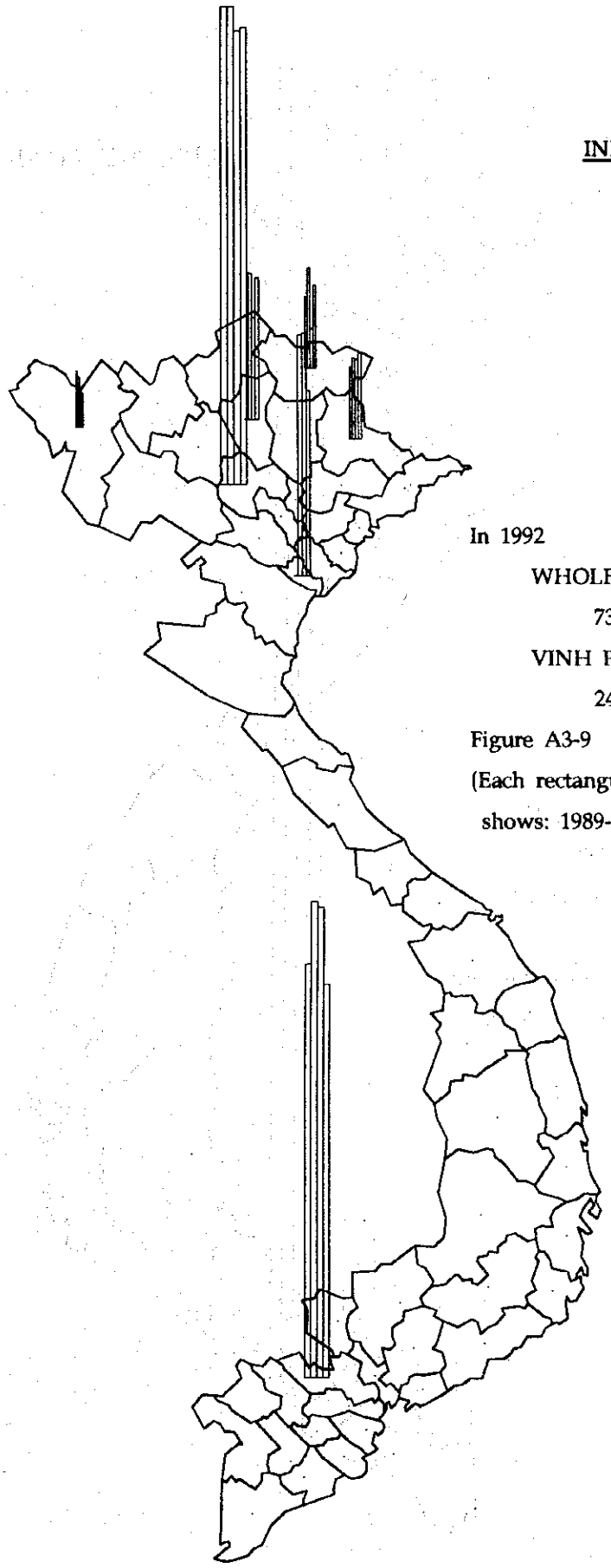
29,700 units

HA NOI

29,300 units

Figure A3-8 Bicycle

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



INDUSTRIAL PRODUCTS

In 1992

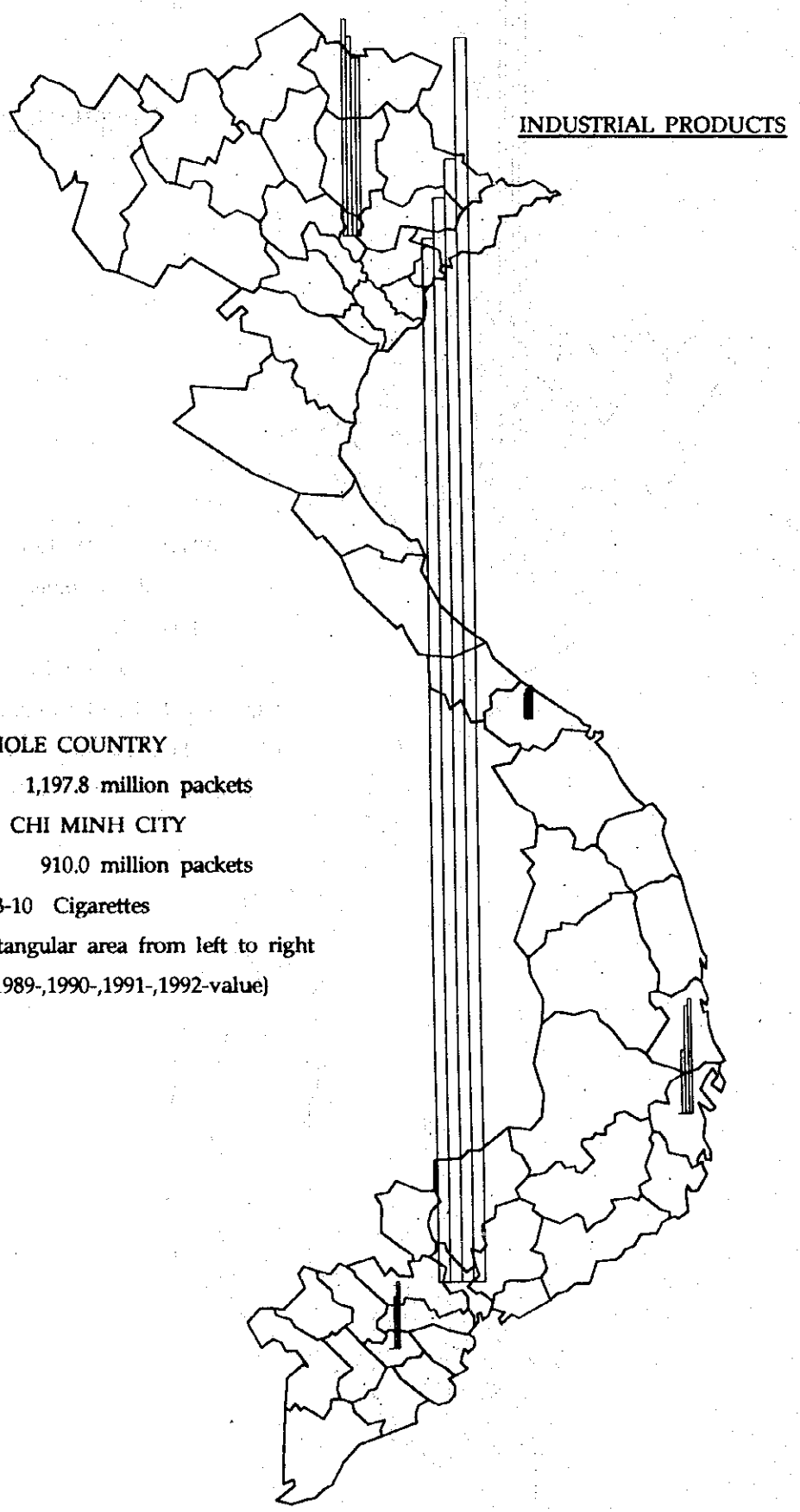
WHOLE COUNTRY

735,697 units

VINH PHU

243,000 units

Figure A3-9 Hand Farming Implements
(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

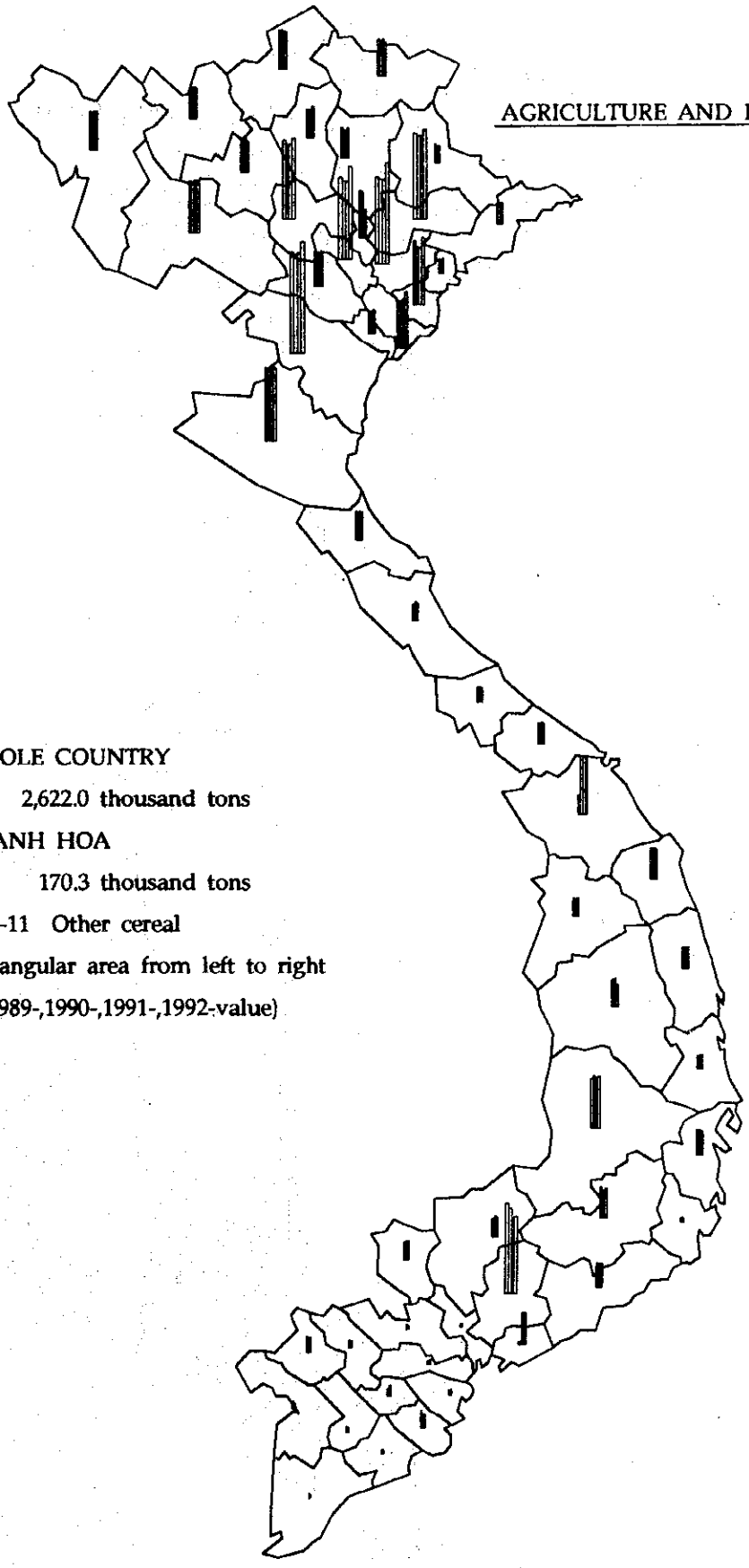
1,197.8 million packets

HO CHI MINH CITY

910.0 million packets

Figure A3-10 Cigarettes

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

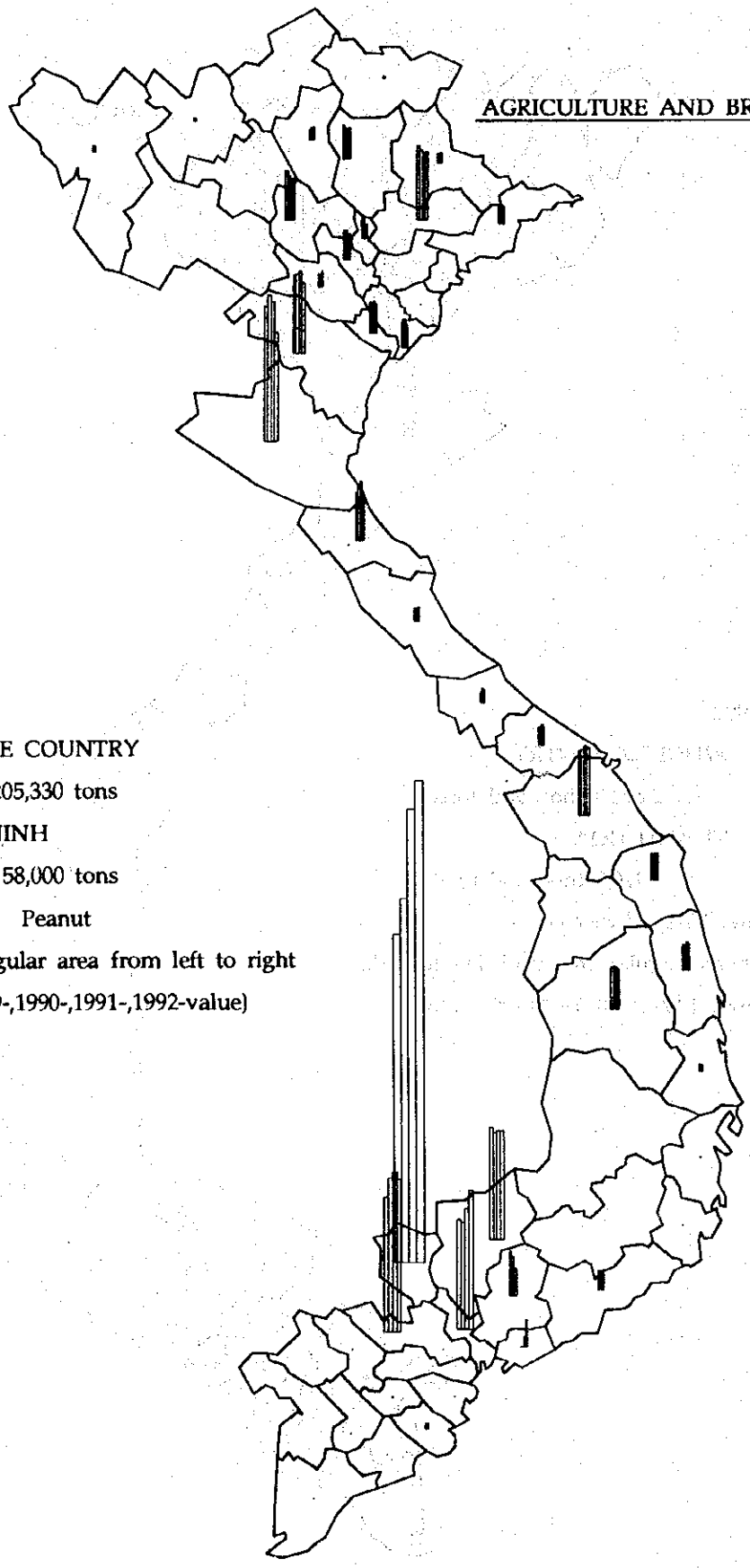
2,622.0 thousand tons

THANH HOA

170.3 thousand tons

Figure A3-11 Other cereal

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

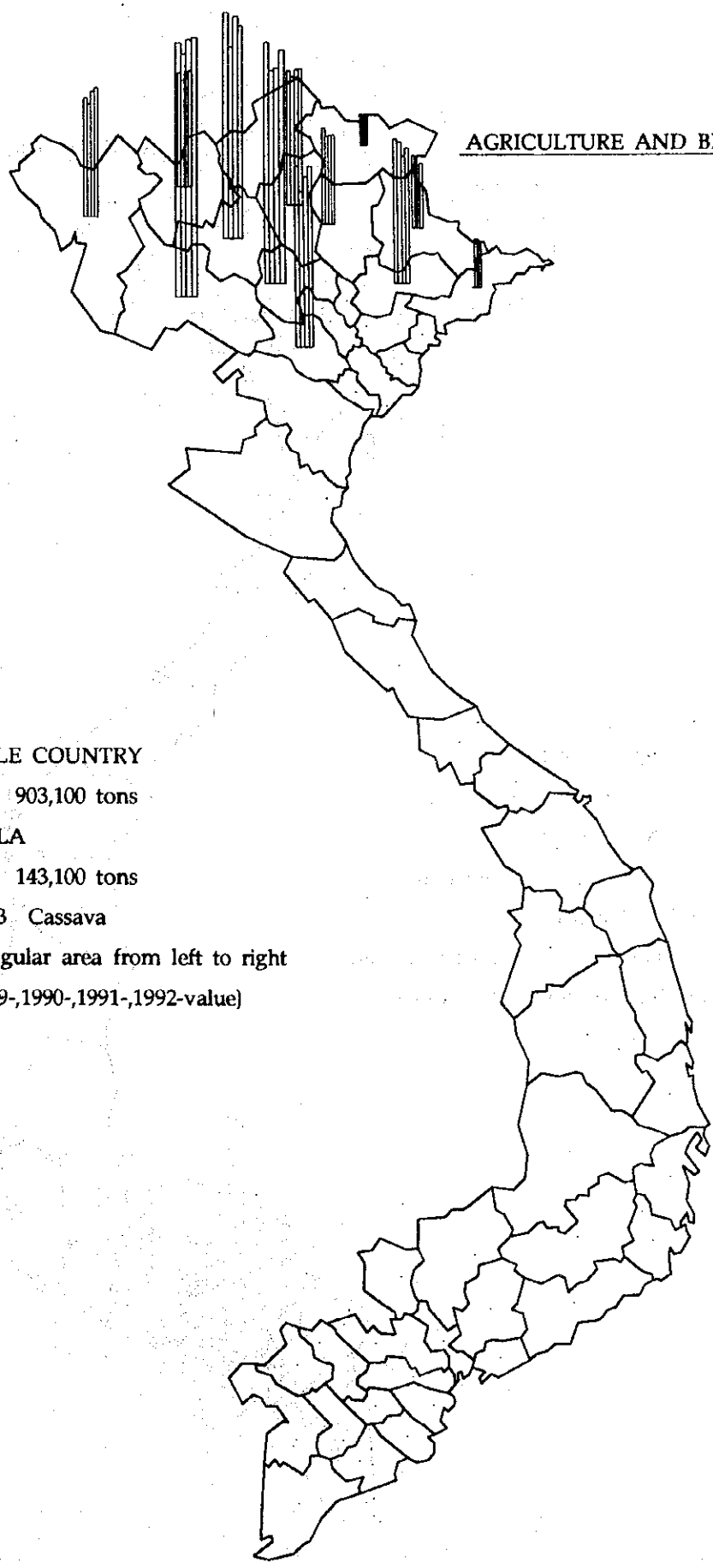
205,330 tons

TAY NINH

58,000 tons

Figure A3-12 Peanut

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

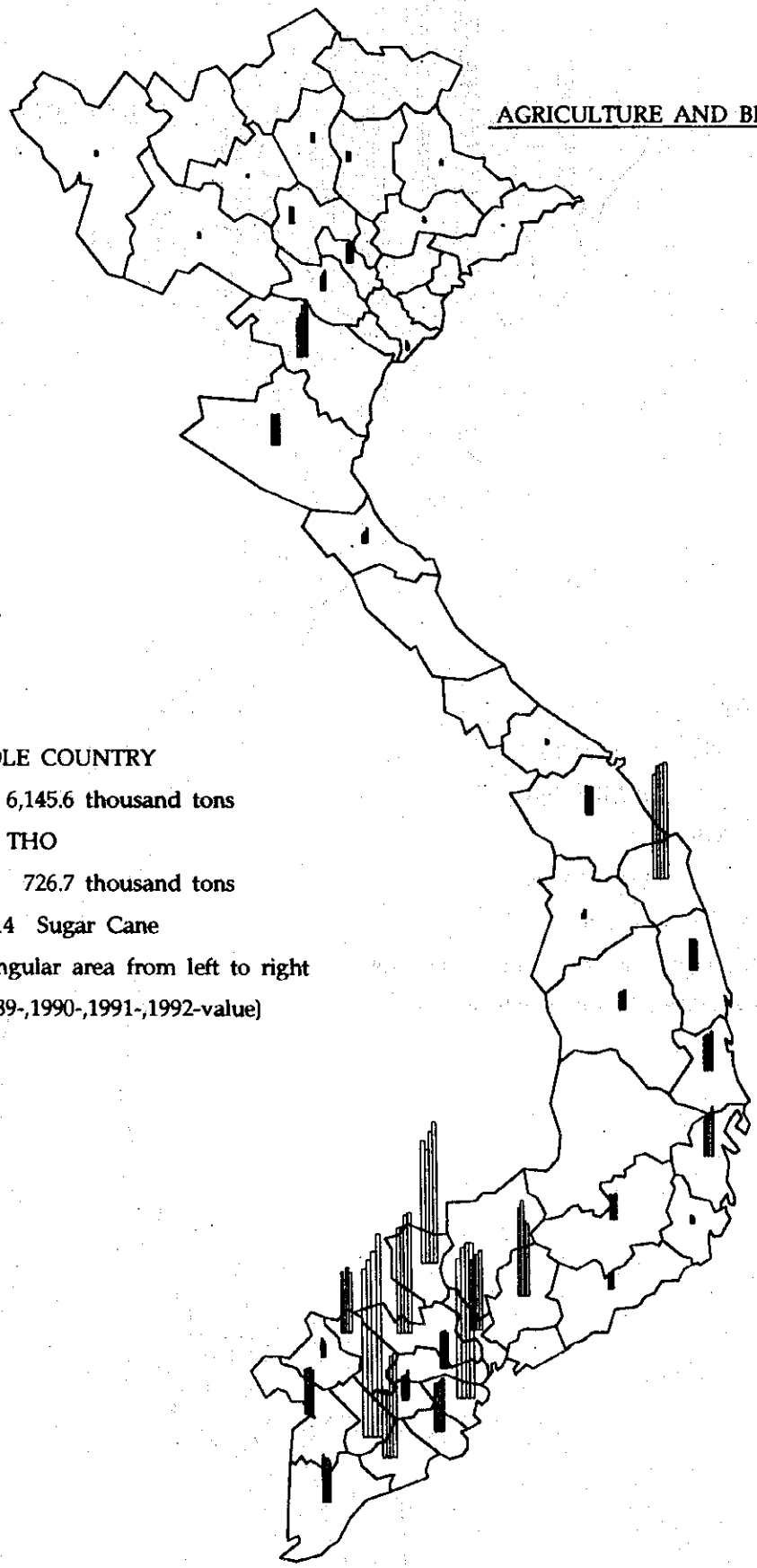
903,100 tons

SON LA

143,100 tons

Figure A3-13 Cassava

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

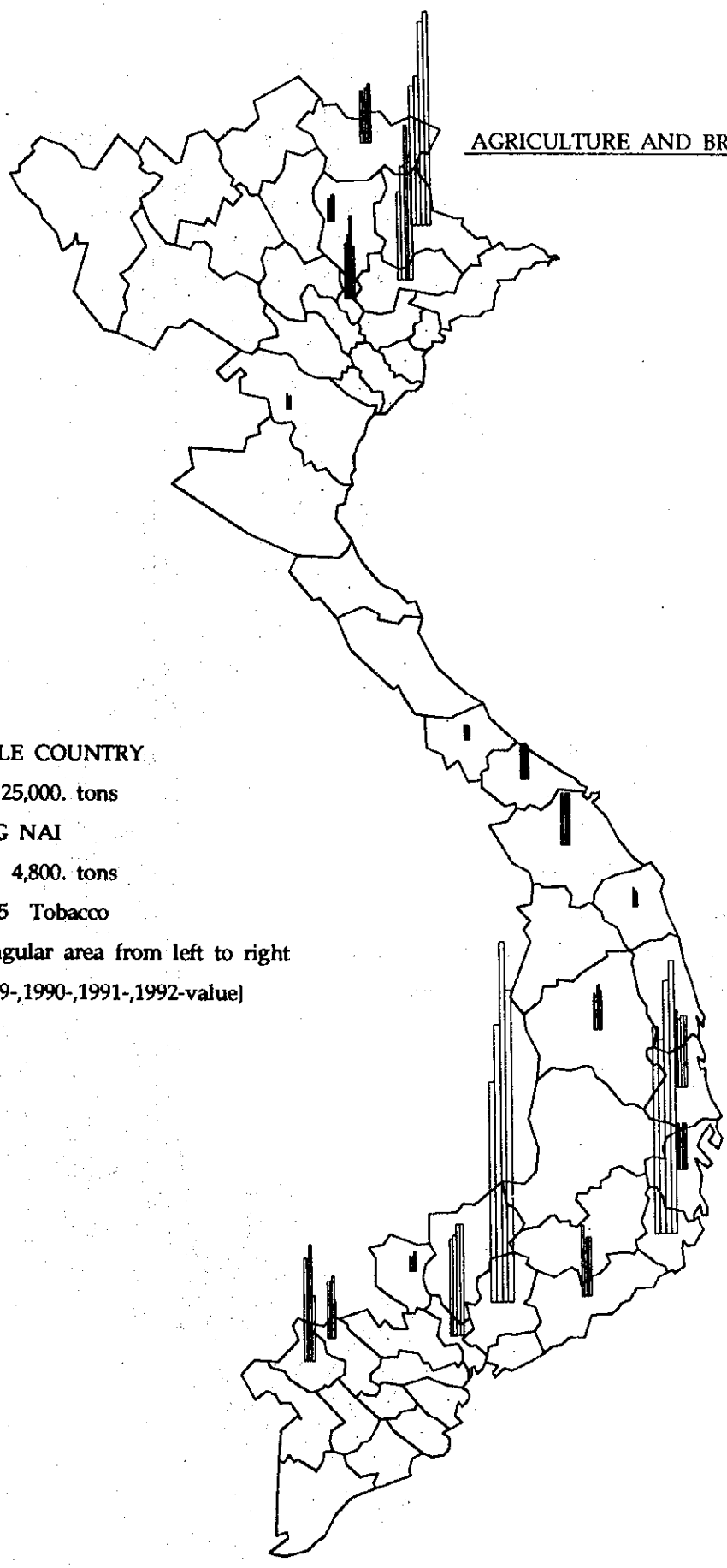
6,145.6 thousand tons

CAN THO

726.7 thousand tons

Figure A3-14 Sugar Cane

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

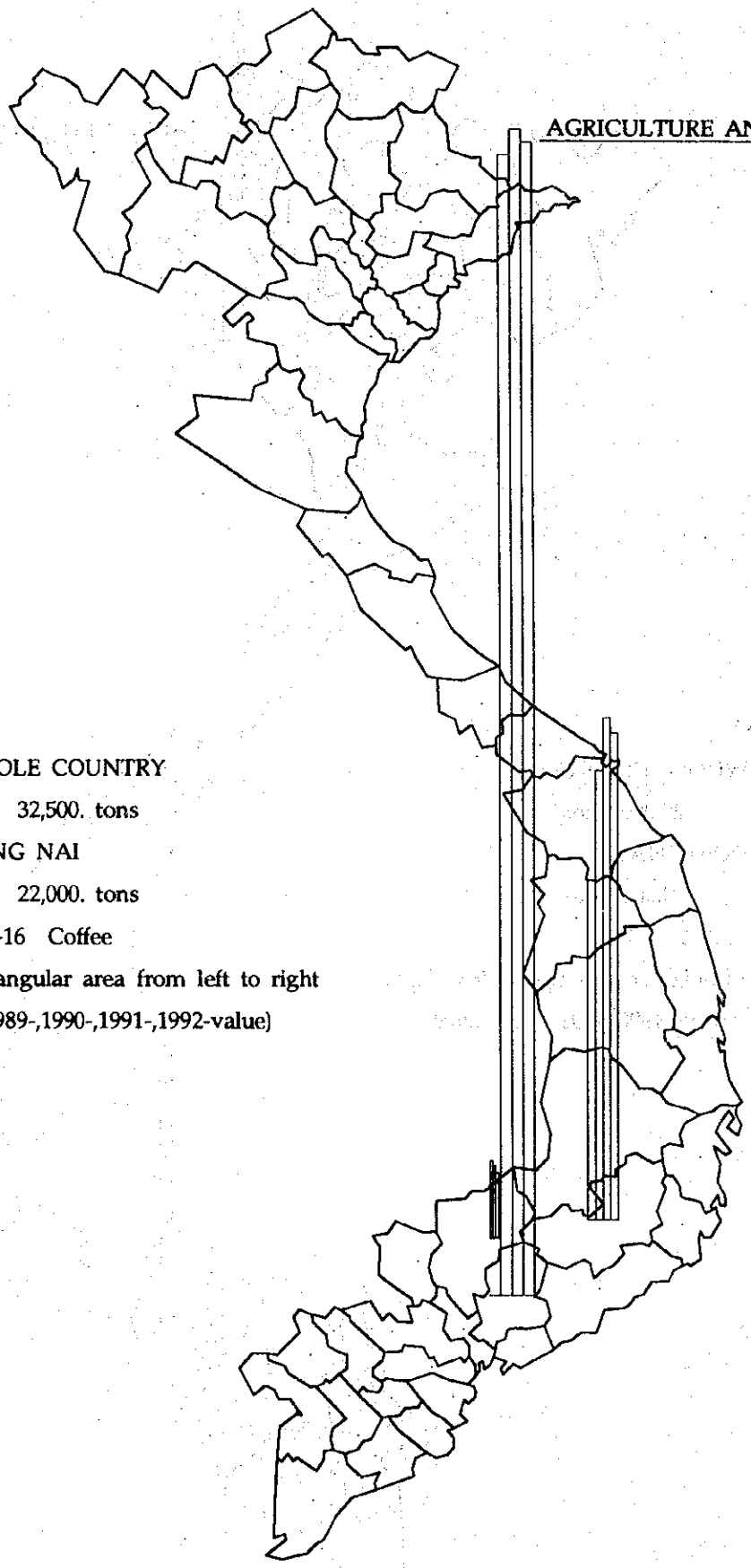
25,000. tons

DONG NAI

4,800. tons

Figure A3-15 Tobacco

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

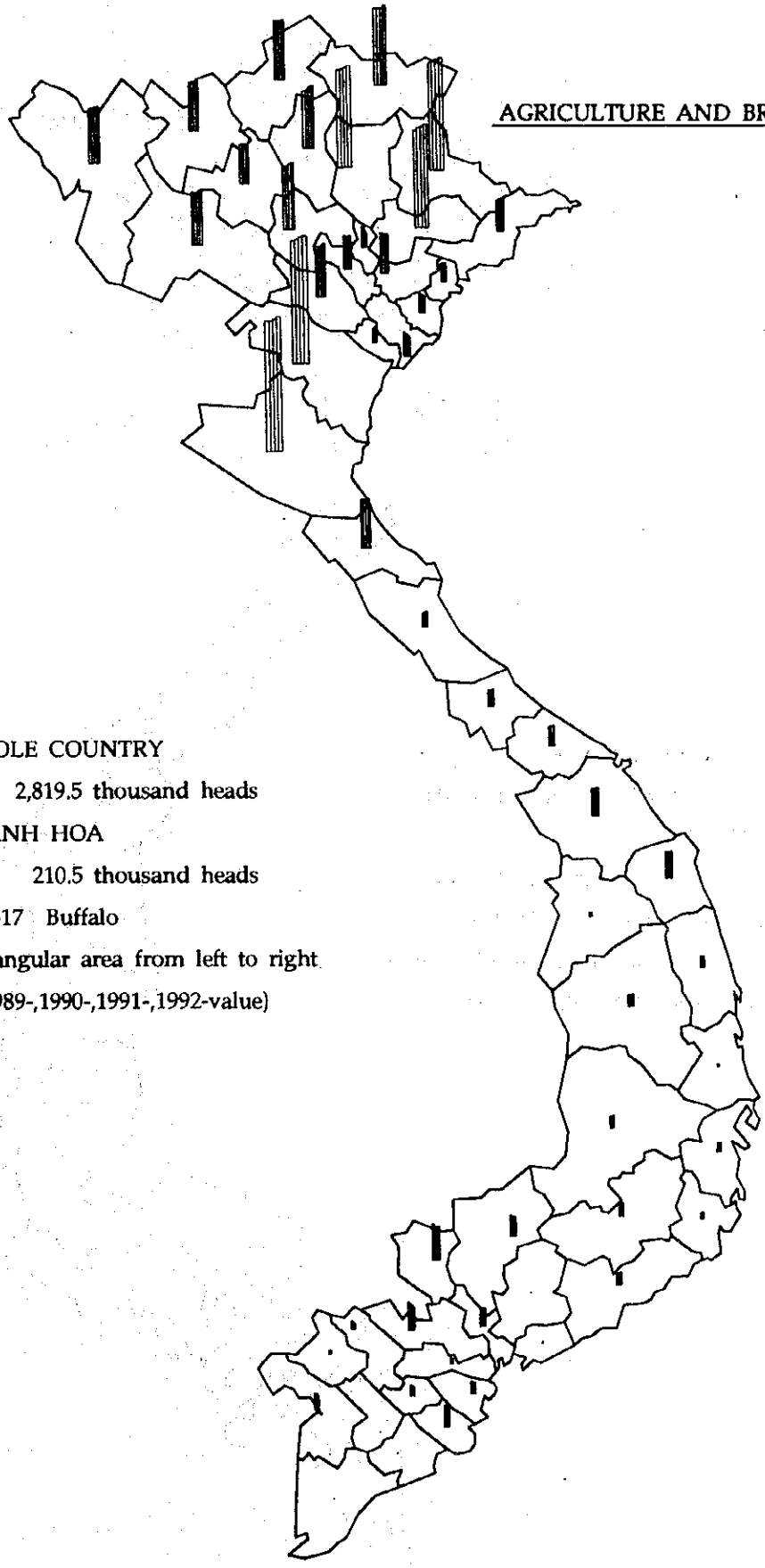
32,500. tons

DONG NAI

22,000. tons

Figure A3-16 Coffee

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

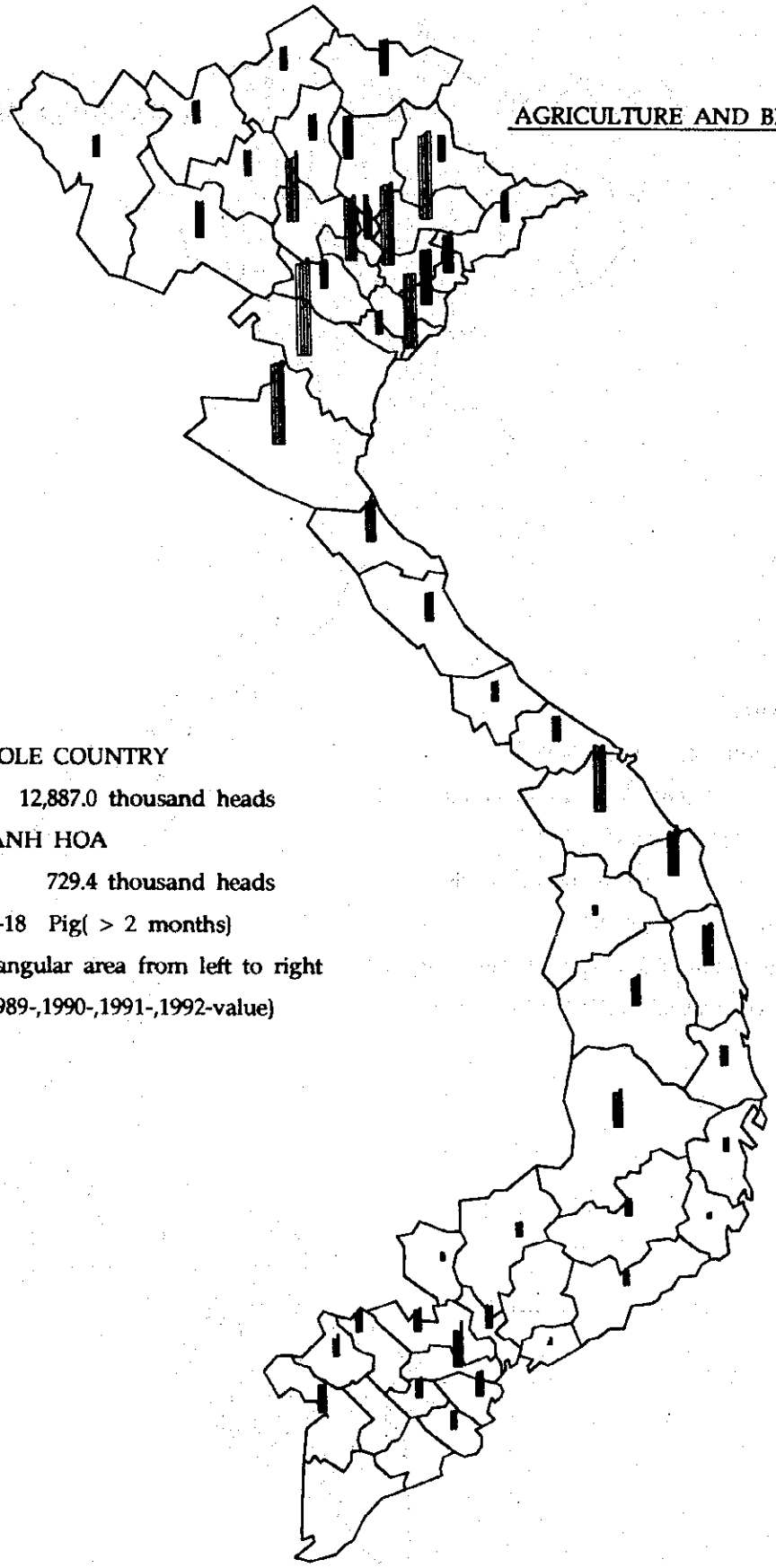
2,819.5 thousand heads

THANH HOA

210.5 thousand heads

Figure A3-17 Buffalo

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

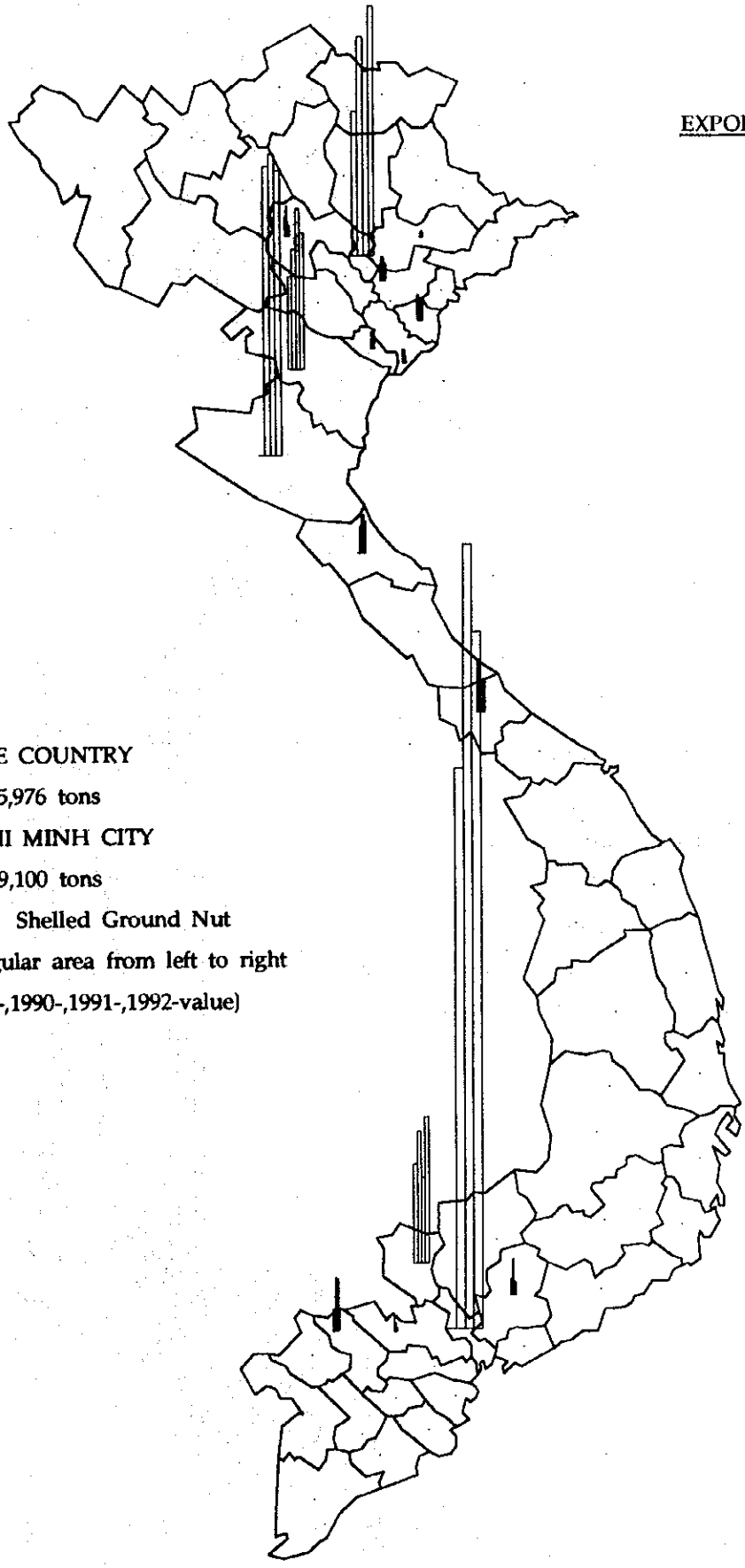
12,887.0 thousand heads

THANH HOA

729.4 thousand heads

Figure A3-18 Pig(> 2 months)

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

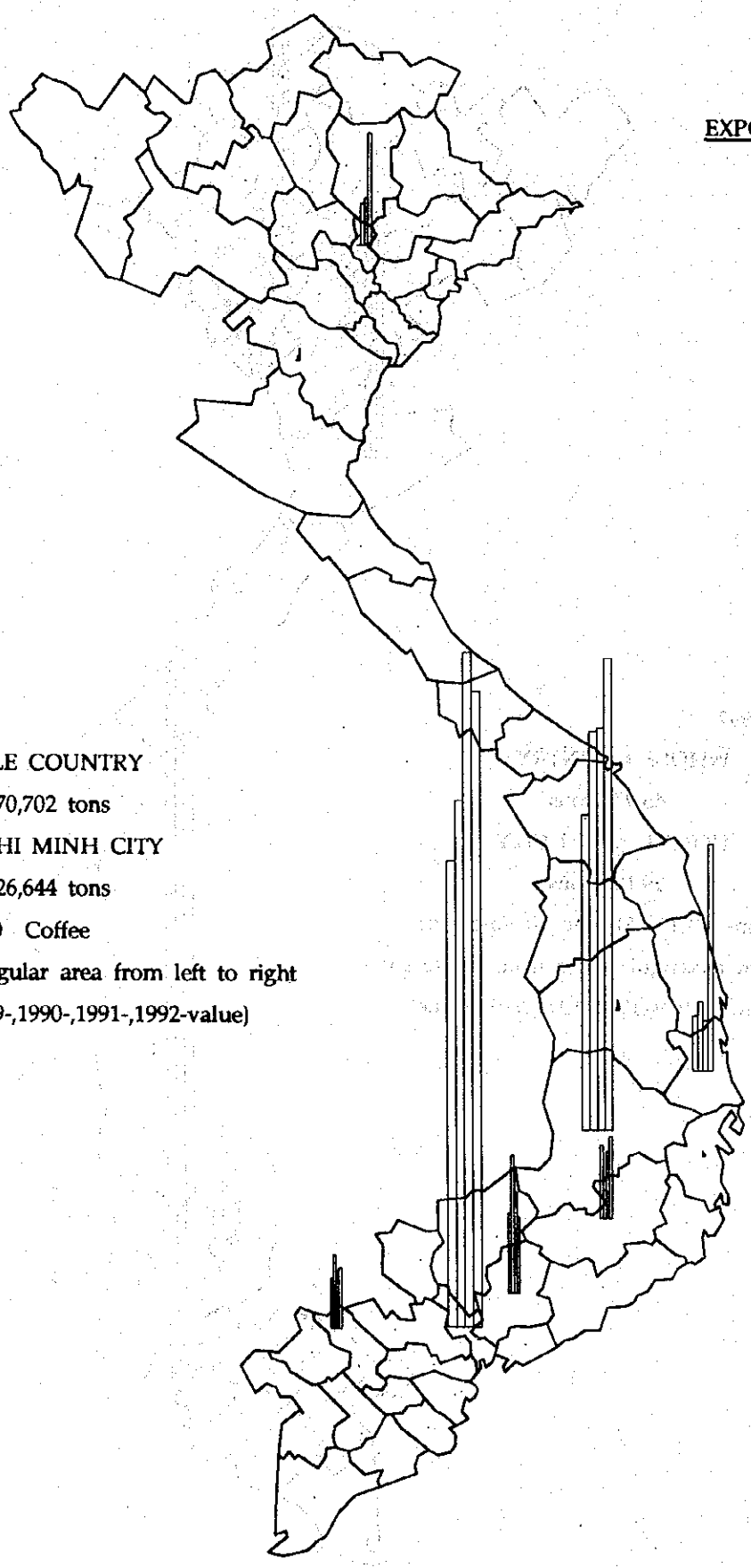
45,976 tons

HO CHI MINH CITY

19,100 tons

Figure A3-19 Shelled Ground Nut

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

70,702 tons

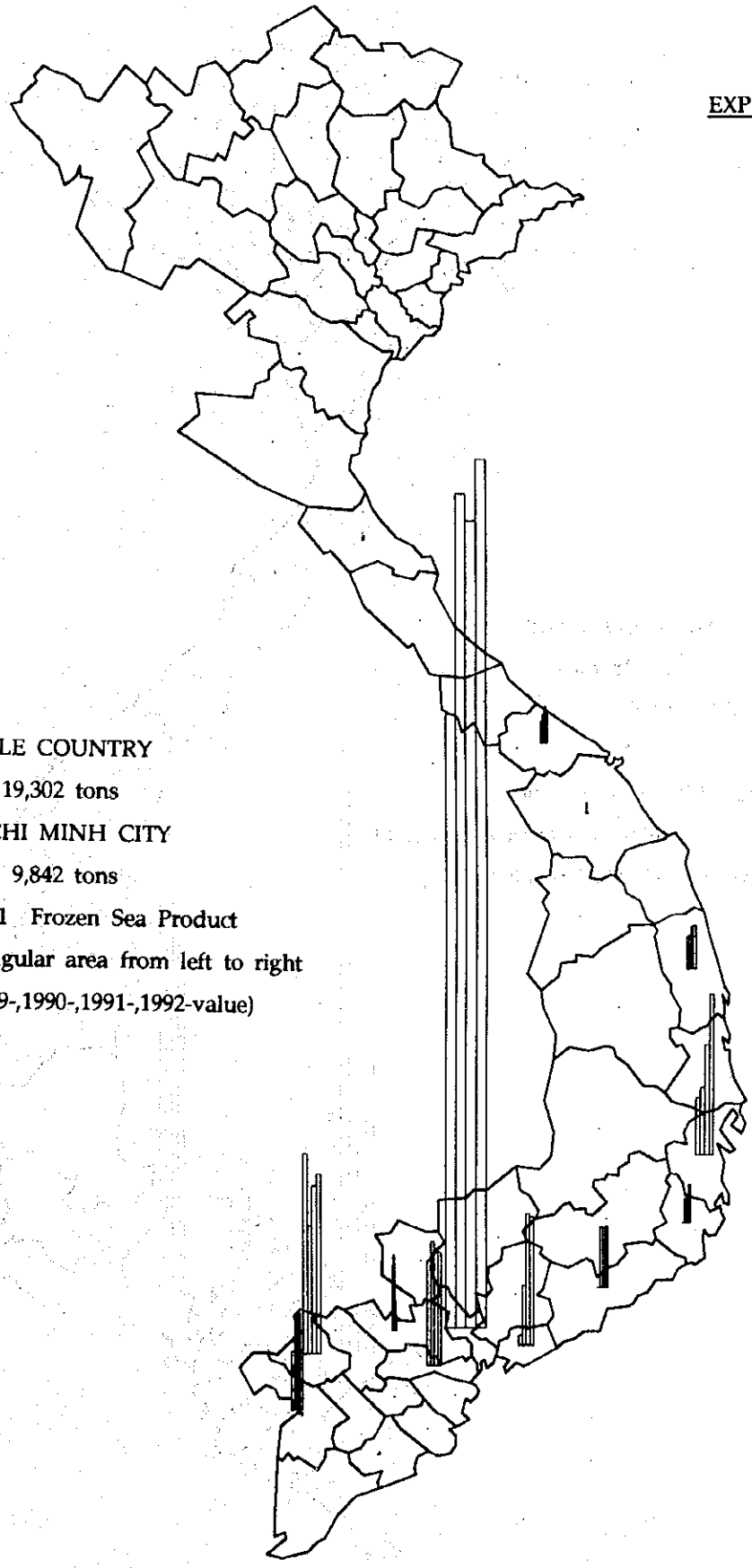
HO CHI MINH CITY

26,644 tons

Figure A3-20 Coffee

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

EXPORT



In 1992

WHOLE COUNTRY

19,302 tons

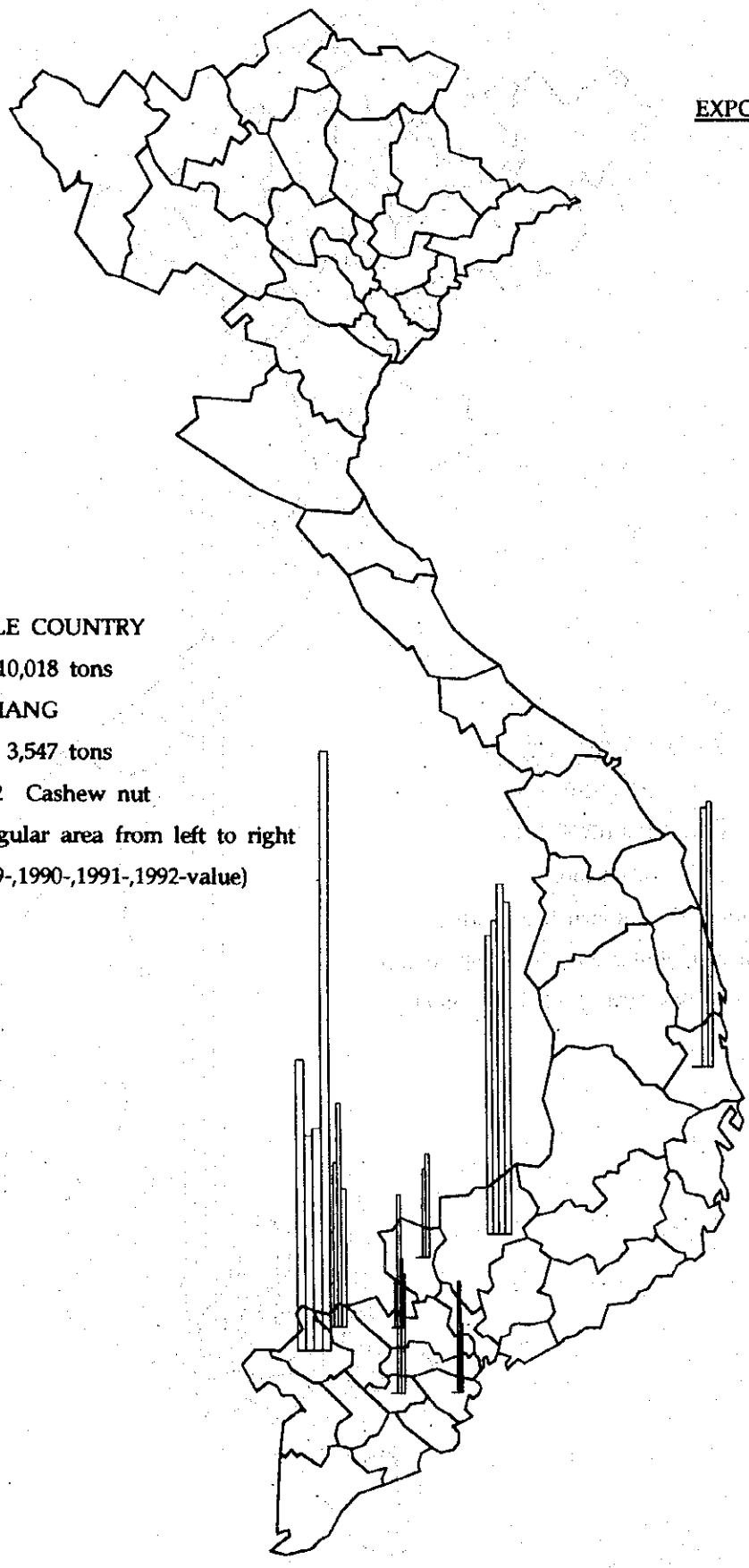
HO CHI MINH CITY

9,842 tons

Figure A3-21 Frozen Sea Product

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

EXPORT



In 1992

WHOLE COUNTRY

10,018 tons

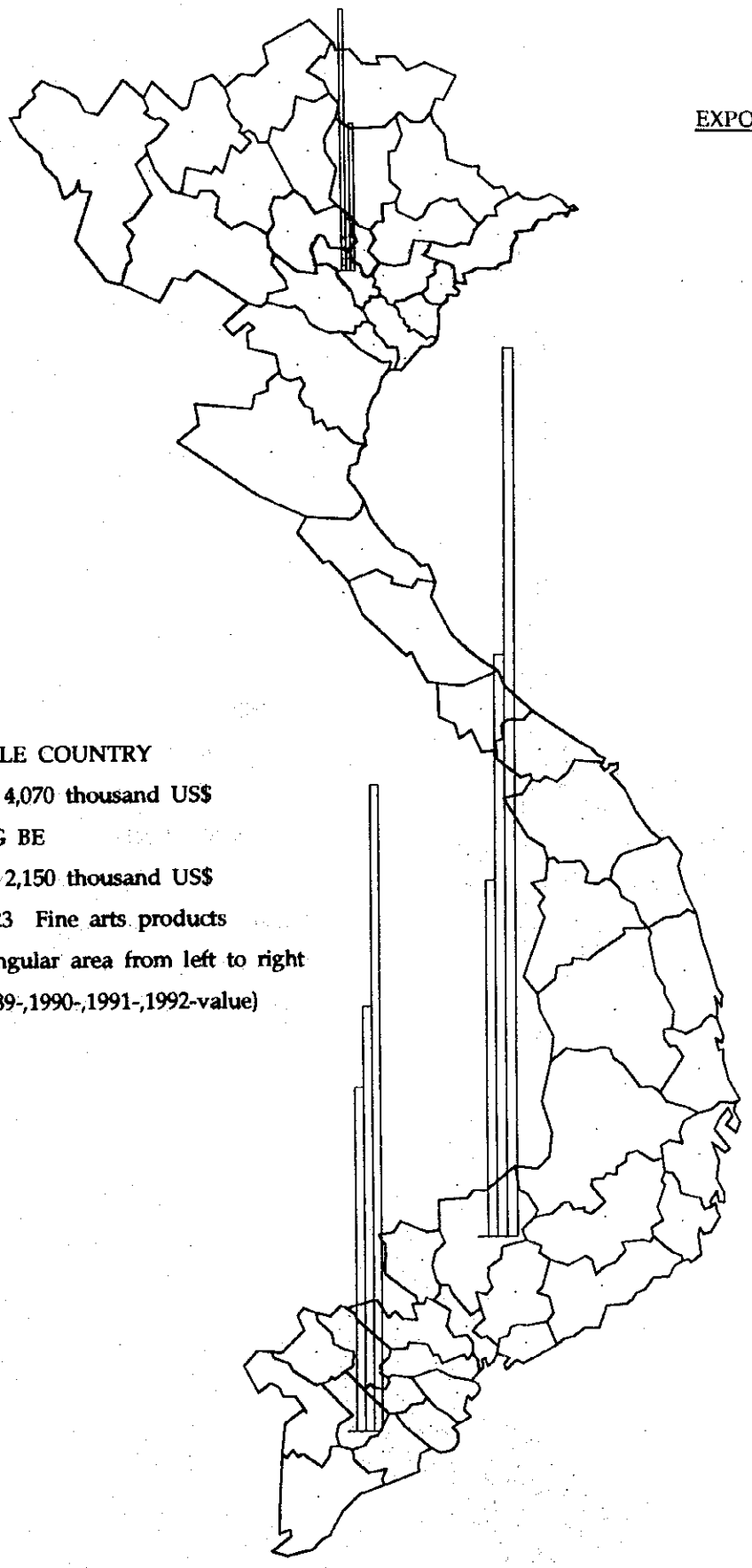
AN GIANG

3,547 tons

Figure A3-22 Cashew nut

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

EXPORT



In 1992

WHOLE COUNTRY

4,070 thousand US$

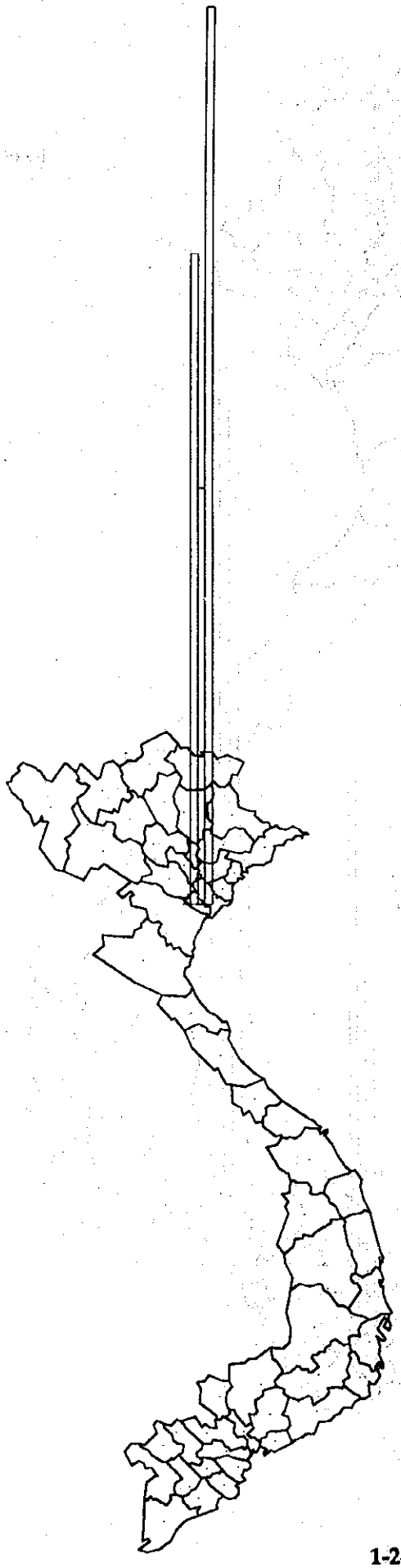
SONG BE

2,150 thousand US$

Figure A3-23 Fine arts products

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

EXPORT



In 1992

WHOLE COUNTRY

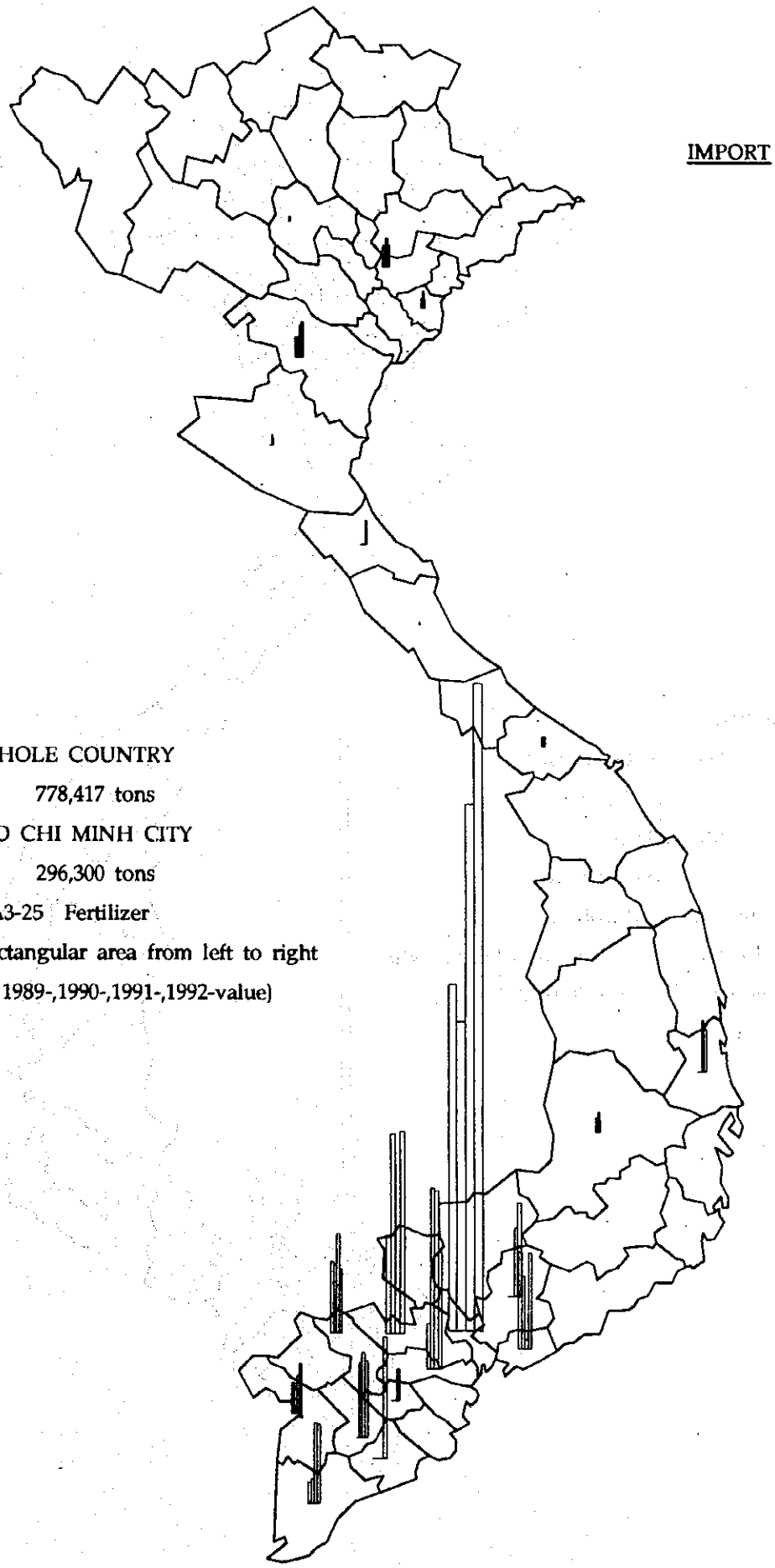
162.0 thousand m^2

NINH BINH

162.0 thousand m^2

Figure A3-24 Rush carpet

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

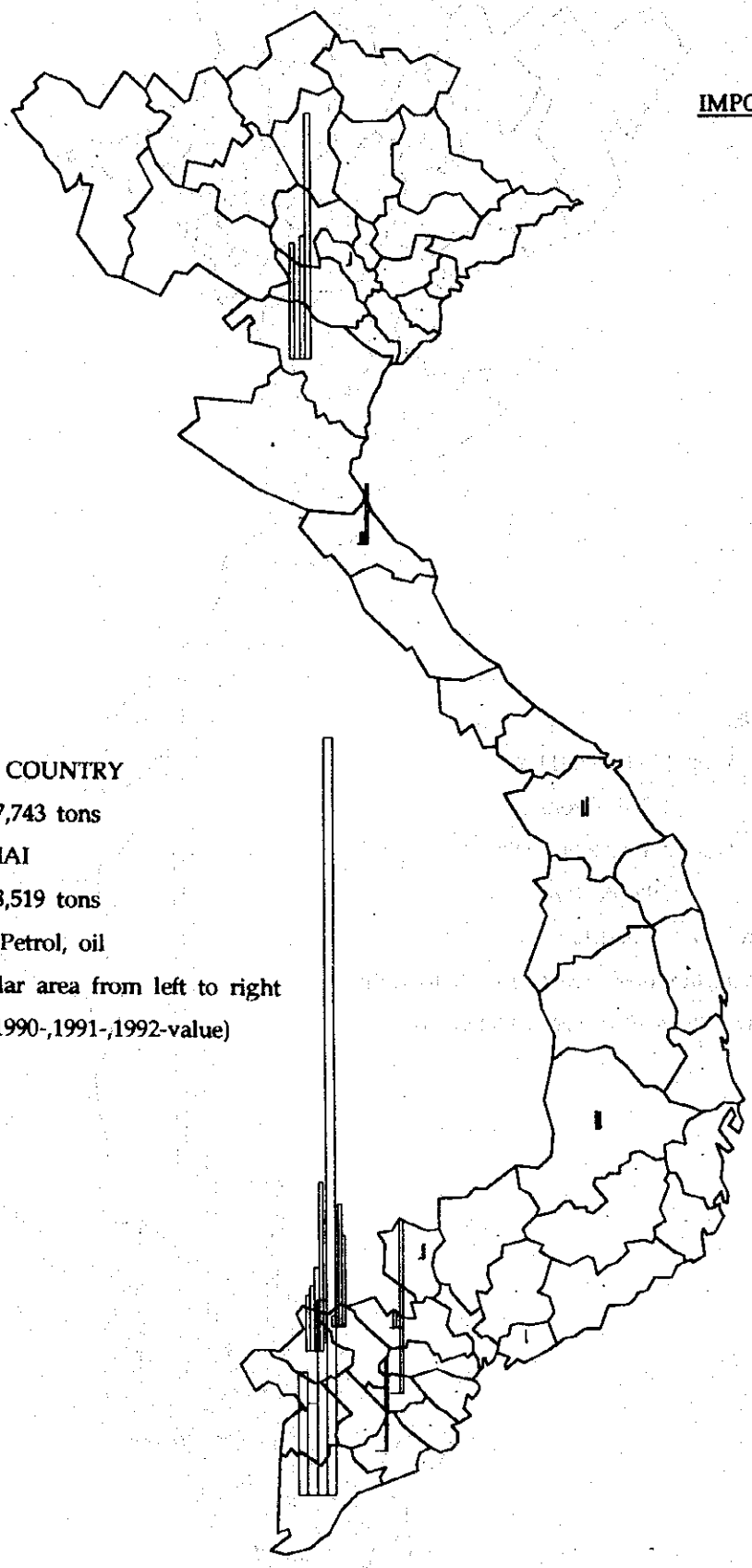
778,417 tons

HO CHI MINH CITY

296,300 tons

Figure A3-25 Fertilizer

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

197,743 tons

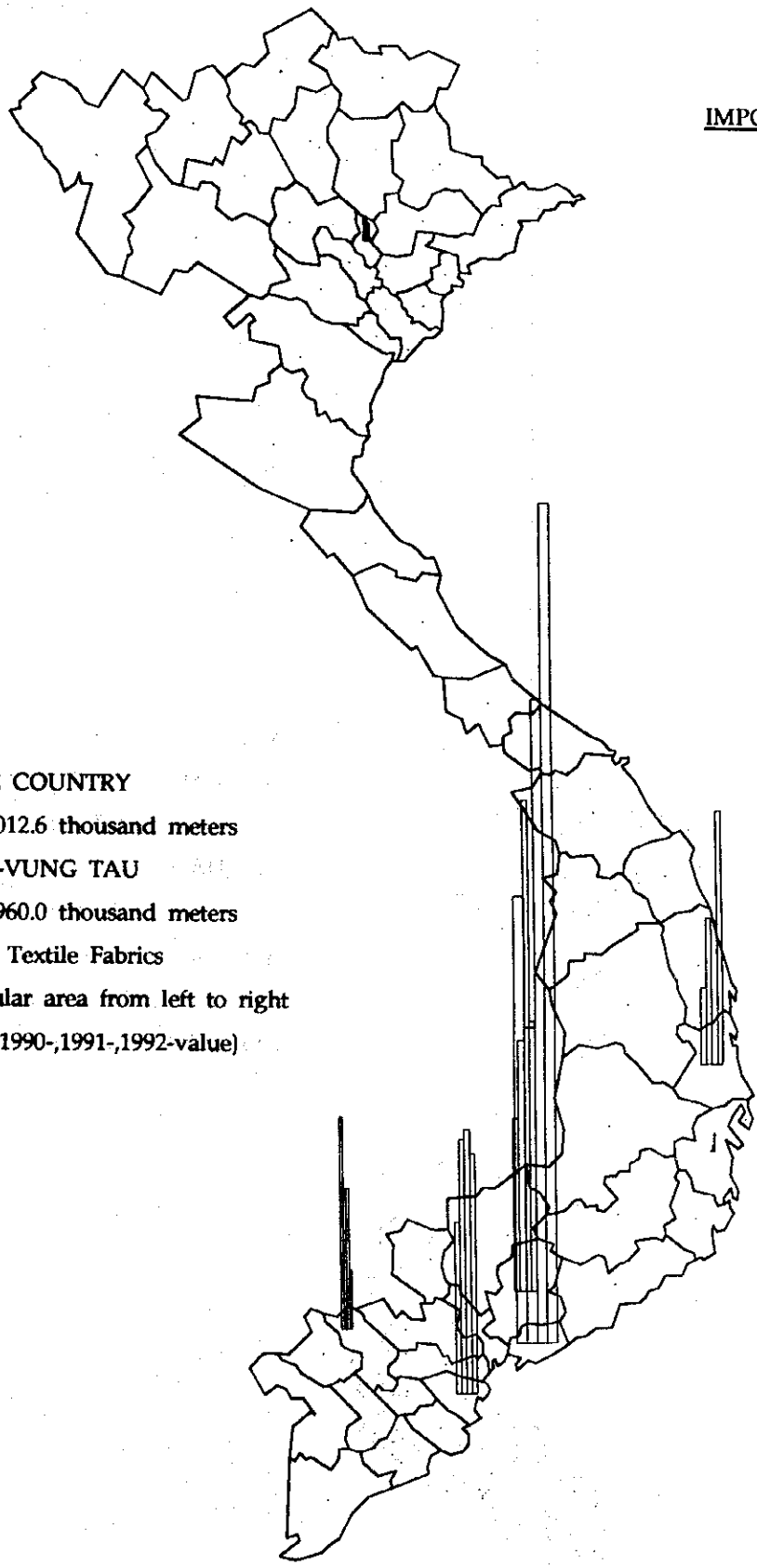
MINH HAI

88,519 tons

Figure A3-26 Petrol, oil

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

IMPORT



In 1992

WHOLE COUNTRY

8,012.6 thousand meters

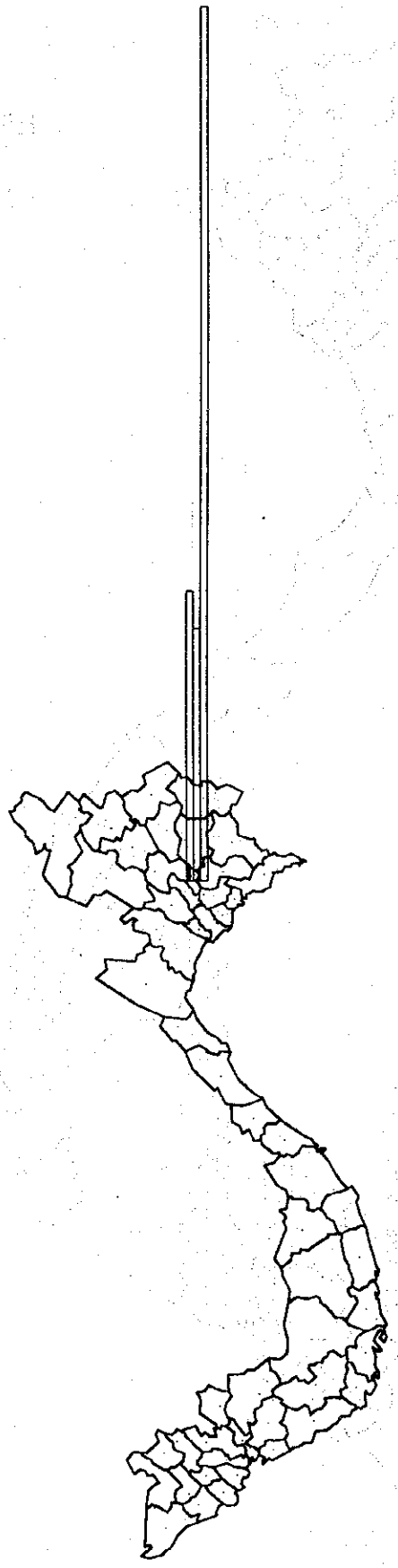
BA RIA-VUNG TAU

3,960.0 thousand meters

Figure A3-27 Textile Fabrics

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

IMPORT



In 1992

WHOLE COUNTRY

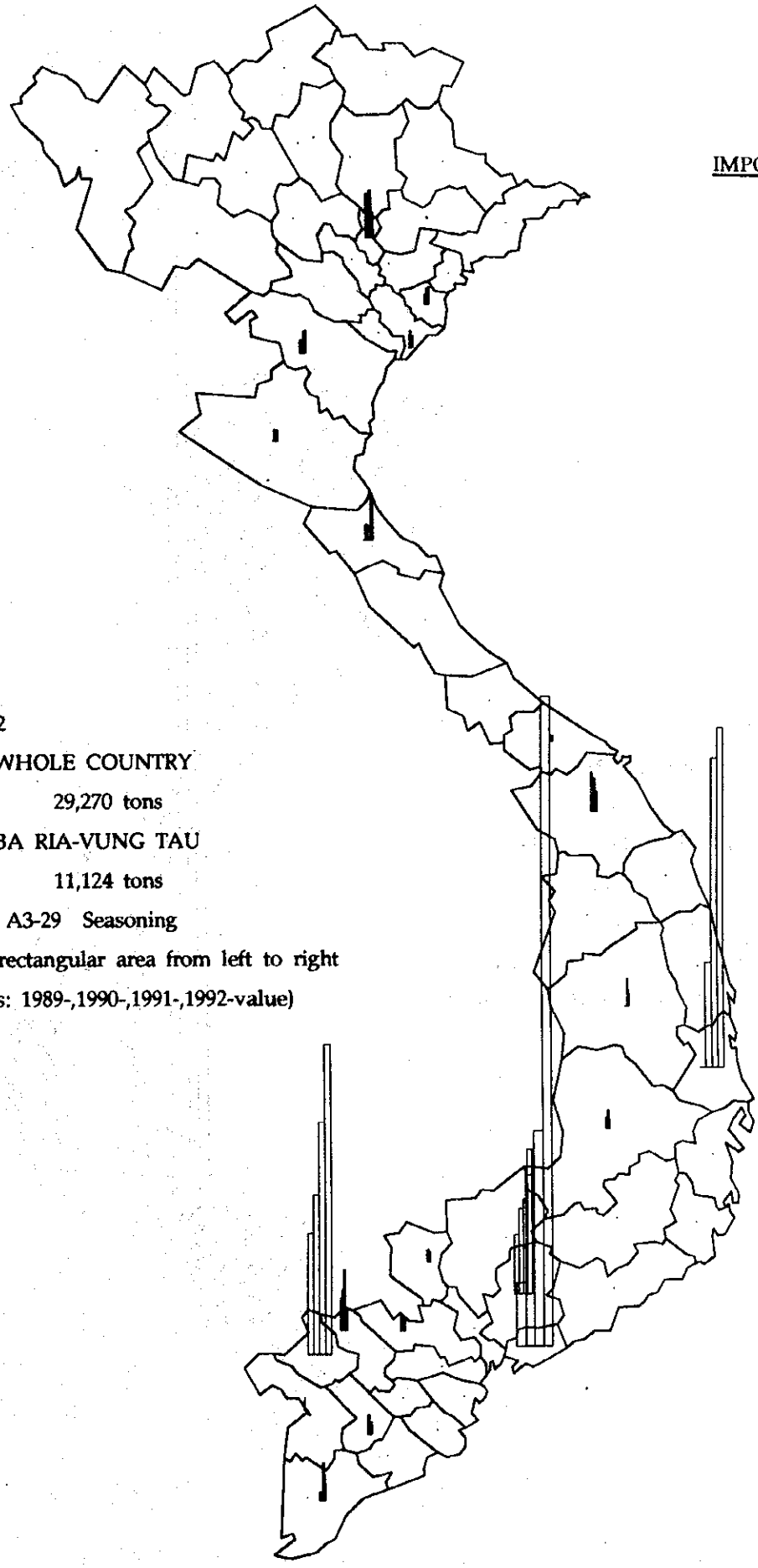
64,737 units

HA NOI

64,737 units

Figure A3-28 TV-receiver

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)



In 1992

WHOLE COUNTRY

29,270 tons

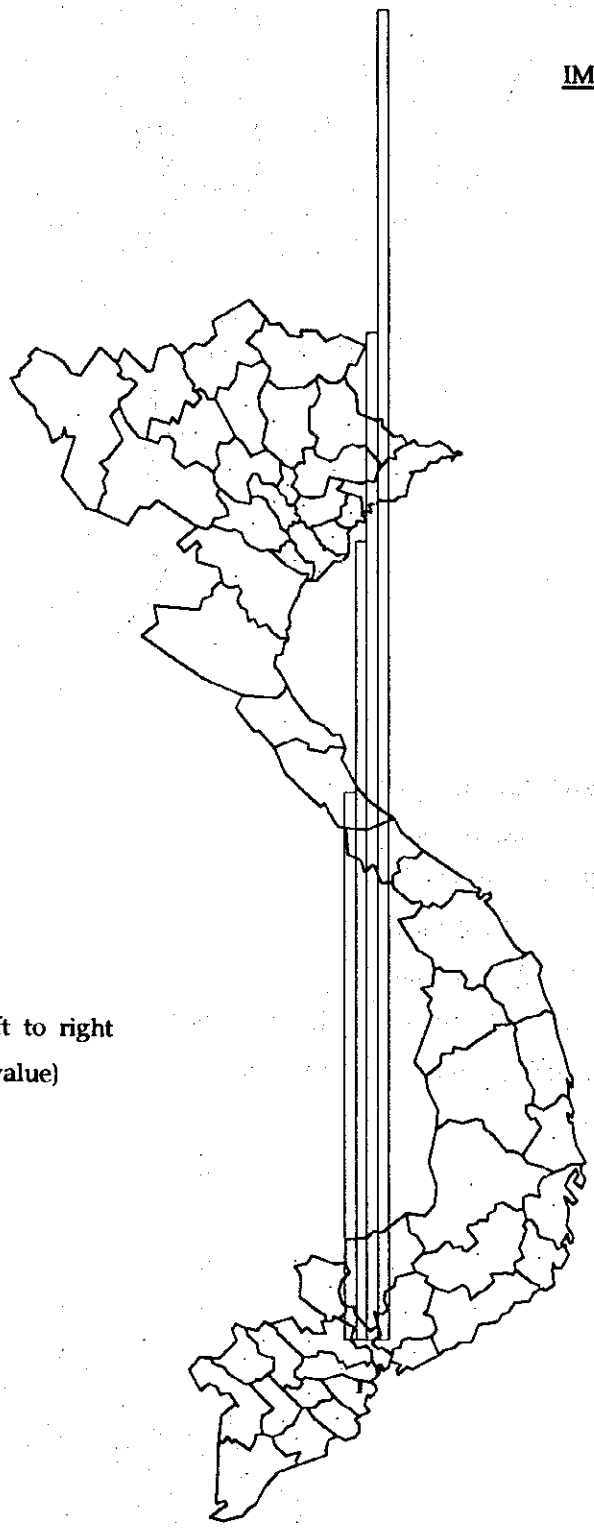
BA RIA-VUNG TAU

11,124 tons

Figure A3-29 Seasoning

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

IMPORT



In 1992

WHOLE COUNTRY

42,193 tons

HO CHI MINH CITY

41,781 tons

Figure A3-30 Plastic

(Each rectangular area from left to right shows: 1989-,1990-,1991-,1992-value)

APPENDIX 4

CHANNEL DREDGING VOLUME

CUA LUC TO CAI LAN
DREDGING VOLUME

June 1994 -11.0 m 130m

Sections	S. Dist. (m)	Distance (m)	Area (m2)	Av. Area (m2)	Volume (m3)	Remarks
No 1	100	100		0	0	
No 2	200	100		0	0	
No 3	400	200	0	0	0	
No 4	500	100	0	4.44	444	
No 5	600	100	8.88	58.54	5854	
No 6	700	100	108.2	158.445	15844.5	
No 7	800	100	208.69	296.69	29669	
No 8	900	100	384.69	418.73	41873	
No 9	1000	100	452.77	531.8	53180	
No 10	1100	100	610.83	688.355	68835.5	
No 11	1225	125	765.88	791.885	98985.625	
No 12	1325	100	817.89	846.255	84625.5	
No 13	1425	100	874.62	920.81	92081	
No 14	1525	100	967	1025.61	102561	
No 15	1625	100	1084.22	1119.06	111906	
No 16	1725	100	1153.9	1258.73	125873	
No 17	1825	100	1363.56	1398.175	139817.5	
No 18	1925	100	1432.79	1468.215	146821.5	
No 19	2025	100	1503.64	1536.4	153640	
No 20	2070	45	1569.16	1486.885	66909.825	
No 21	2145	75	1404.61	1306.75	98006.25	
No 22	2250	105	1208.89	1077.94	113183.7	
No 23	2360	110	946.99	793.97	87336.7	
No 24	2470	110	640.95	484.015	53241.65	
No 25	2575	105	327.08	321.34	33740.7	
No 26	2680	105	315.6	392.455	41207.775	
No 27	2780	100	469.31	420.78	42078	
No 28	2880	100	372.25	294.975	29497.5	
No 29	2980	100	217.7	287.005	28700.5	
No 30	3080	100	356.31	537.685	53768.5	
No 31	3180	100	719.06	359.53	35953	
Total					1955635.225	

CUA LUC - HON MOT
1994 JUNE -11.0m Wide : 130m
DREDGING VOLUME

Section	S Dist.	Distance	Area (m2)	AV. area	Volume (m3)	Remarks
No 0	0	0	0	0	0	
No 21	2250	2250	0	0	0	
No 22	2350	100	0	0	0	
No 23	2450	100	0	0	0	
No 24	2550	100	0	0	0	
No 25	2650	100	0	0	0	
No 26	2750	100	0	0	0	
No 27	2850	100	0	70.025	7002.5	
No 28	2950	100	140.05	178.775	17877.5	
No 29	3050	100	217.5	254.97	25497	
No 30	3150	100	292.44	324.58	32458	
No 31	3250	100	356.72	397.98	39798	
No 32	3350	100	439.24	455.325	45532.5	
No 33	3450	100	471.41	502.14	50214	
No 34	3550	100	532.87	553.26	55326	
No 35	3650	100	573.65	587.565	58756.5	
No 36	3750	100	601.48	609.1	60910	
No 37	3850	100	616.72	637	63700	
No 38	3950	100	657.28	662.68	66268	
No 39	4050	100	668.08	681.86	68186	
No 40	4150	100	695.64	694.07	69407	
No 41	4250	100	692.5	697.275	69727.5	
No 42	4350	100	702.05	682.285	68228.5	
No 43	4450	100	662.52	681.015	68101.5	
No 44	4550	100	699.51	695.925	69592.5	
No 45	4650	100	692.34	715.665	71566.5	
No 46	4750	100	738.99	743.635	74363.5	
No 47	4850	100	748.28	767.69	76769	
No 48	4950	100	787.1	807.36	80736	
No 49	5050	100	827.62	828.78	82878	
No 50	5150	100	829.94	852.54	85254	
No 51	5250	100	875.14	930.655	93065.5	
No 52	5350	100	986.17	986.765	98676.5	
No 53	5450	100	987.36	1004.13	100413	
No 54	5550	100	1020.9	1030.915	103091.5	
No 55	5650	100	1040.93	1046.52	104652	

1994 JUNE -11.0m Wide : 130m

DREDGING VOLUME

Section	S Dist.	Distance	Area (m2)	AV. area	Volume (m3)	Remarks
No 56	5750	100	1052.11	1039.645	103964.5	
No 57	5850	100	1027.18	1025.33	102533	
No 58	5950	100	1023.48	1024.74	102474	
No 59	6050	100	1026	1023.565	102356.5	
No 60	6150	100	1021.13	1010.34	101034	
No 61	6250	100	999.55	996.92	99692	
No 62	6350	100	994.29	1011.635	101163.5	
No 63	6450	100	1028.98	1043.02	104302	
No 64	6550	100	1057.06	1035.95	103595	
No 65	6650	100	1014.84	1028.155	102815.5	
No 66	6750	100	1041.47	1052.82	105282	
No 67	6850	100	1064.17	1057.31	105731	
No 68	6950	100	1050.45	1023.505	102350.5	
No 69	7050	100	996.56	1024.18	102418	
No 70	7150	100	1051.8	1039.73	103973	
No 71	7250	100	1027.66	1026.765	102676.5	
No 72	7350	100	1025.87	1010.255	101025.5	
No 73	7450	100	994.64	997.33	99733	
No 74	7550	100	1000.02	967.07	96707	
No 75	7650	100	934.12	944.82	94482	
No 76	7750	100	955.52	948.57	94857	
No 77	7850	100	941.62	957.78	95778	
No 78	7950	100	973.94	982.665	98266.5	
No 79	8050	100	991.39	983.955	98395.5	
No 80	8150	100	976.52	928.28	92828	
No 81	8250	100	880.04	906.95	90695	
No 82	8350	100	933.86	908.535	90853.5	
No 83	8450	100	883.21	870.41	87041	
No 84	8550	100	857.61	847.36	84736	
No 85	8650	100	837.11	834.845	83484.5	
No 86	8750	100	832.58	836.13	83613	
No 87	8850	100	839.68	807.835	80783.5	
No 88	8950	100	775.99	782.68	78268	
No 89	9050	100	789.37	775.63	77563	
No 90	9150	100	761.89	757.865	75786.5	

1994 JUNE -11.0m Wide : 130m

DREDGING VOLUME

Section	S Dist.	Distance	Area (m2)	AV. area	Volume (m3)	Remarks
No 91	9250	100	753.84	726.235	72623.5	
No 92	9350	100	698.63	679.46	67946	
No 93	9450	100	660.29	668.81	66881	
No 94	9550	100	677.33	683.45	68345	
No 95	9650	100	689.57	673.23	67323	
No 96	9750	100	656.89	639.94	63994	
No 97	9850	100	622.99	613.455	61345.5	
No 98	9950	100	603.92	599.21	59921	
No 99	10050	100	594.5	574.215	57421.5	
No 100	10150	100	553.93	525.255	52525.5	
No 101	10250	100	496.58	459.815	45981.5	
No 102	10350	100	423.05	351.115	35111.5	
No 103	10450	100	279.18	163.53	16353	
No 104	10550	100	47.88	23.94	2394	
No 105	10650	100	0	0	0	
No 148	14950	4300	0	0	0	
No 149	15050	100	0	0	0	
No 150	15150	100	0	0	0	
			59974.72	59974.72	5997472	