

附表

付表 1-1 国際協力事業団調査団員およびインドネシア国カウンター・パート一覧

Name	Expertise/ Position	Institution
JICA Study Team		
1. Yutaka MATSUMOTO	Team Leader	JICA
2. Fumihiko FURUICHI	Farm Economy	JICA
3. Hiroshi DAITOU	Seedling Production	JICA
4. Mochd. BAGA KALIE	Cultivation/ Extension	JICA
5. Takeshi SAITO	Post-harvest & Marketing	JICA
6. Ridwan D. MAERWY	Rural Society/ Gender	JICA
7. Masafumi IKENO	Institutional Development/ Farmers' Organization	JICA
8. Irlan SOEJONO	Market Analysis	JICA
9. Kenji KYOIZUMI	Infrastructure & Facilities	JICA
DGFCH Counterpart		
1. Yul H. Bahar	Environmentalist and Crops Product Processing	Directorate of Programming Development, DGFCH
2. Sri Wijayanti	Agronomist and Horticulturist	Directorate of Programming Development, DGFCH
3. Winny D. Wibawa	Soil Scientist and Horticulturist	Directorate of Horticulture Production Development, DGFCH
4. Muhammad	Horticulture Seed Production Specialist	Directorate of Seed Development, DGFCH
5. Kismo Satmoro	Post-harvest Processing and Social-economist	Directorate of Farm Business and Processing Development, DGFCH
Provincial Counterpart		
1. L. H. Dalimunthe	Agricultural Production	North Sumatra, PRAS
2. Sugeng	Post-harvest and Marketing	ditto
3. Balk Pinem	Social Analysis & Farm Economy	ditto
4. Ida Noerdiyati	Agricultural Production	West Java, PRAS
5. Sodikin	Post-harvest and Marketing	ditto
6. Almursyid	Social Analysis & Farm Economy	ditto
7. Suhardjo	Agricultural Production	East Java, PRAS
8. Sədono	Post-harvest and Marketing	ditto
9. Tony	Social Analysis & Farm Economy	ditto
10. Achmad Kasiyani	Agricultural Production	South Sulawesi, PRAS
11. Nufri Esten	Post-harvest and Marketing	ditto
12. Syafnimar	Social Analysis & Farm Economy	ditto

付表 2-1 食用作物・園芸作物の生産目標 (1994/95年-1998/99年)

(Unit: 1,000 tons)

No.	Target Crops	End of Replita V (1993/94) *	1994/95	1995/96	1996/97	1997/98	1998/99	Growth Rate (% / year)	Average 1993/94-1998/99 (%)
1.	Unhusked Rice **	48,200	49,169	50,157	51,165	52,194	53,243	(2.01)	50,688 (40.44)
2.	Milled Rice	31,330	31,960	32,602	33,257	33,926	34,608	(2.01)	32,947 (26.29)
3.	Corn	7,987	8,788	8,601	8,925	9,261	9,611	(3.77)	8,862 (7.07)
4.	Soybean	1,792	1,840	1,907	1,968	2,030	2,095	(3.17)	1,939 (1.55)
5.	Cassava	16,356	16,384	16,412	16,439	16,467	16,495	(0.17)	16,426 (13.11)
6.	Sweet Potato	2,277	2,334	2,381	2,424	2,467	2,509	(1.96)	2,399 (1.91)
7.	Peanut	703	723	744	770	800	840	(3.64)	763 (0.61)
8.	Mungbean	310	335	352	359	388	407	(5.00)	359 (0.29)
9.	Vegetables	4,377	4,600	4,835	5,081	5,341	5,613	(5.10)	4,975 (3.97)
10.	Fruits	5,388	5,609	5,839	6,078	6,327	6,587	(4.10)	5,971 (4.76)
	Total	118,720	121,742	123,830	126,466	129,201	132,008	(2.14)	125,328 (100.00)

Notes : * Estimated realization values (last year of Replita V)

** Milled dry rice grain

Source : Policy and Development Pattern of Food Crop and Horticulture Crops, DGFCH, Ministry of Agriculture.

付表 2-2 産業別国内総生産 (1994-1996年)

Industrial Origin	At Current Market Price					At Constant 1993 Market Price						
	1994	Percentage Distribution in 1994 (%)	1995	Percentage Distribution in 1995 (%)	1996	Percentage Distribution in 1996 (%)	1994	Growth Rate (%)	1995	Growth Rate (%)	1996	Growth Rate (%)
	(Billion Rp.)		(Billion Rp.)		(Billion Rp.)		(Billion Rp.)		(Billion Rp.)		(Billion Rp.)	
1. Agriculture, livestock, forestry and fishery	66,071.5	(17.3)	77,896.2	(17.1)	88,040.8	(16.5)	59,291.2	(0.56)	61,885.2	(4.38)	63,742.6	(3.00)
• Farm food crops	34,941.0	(9.1)	42,199.6	(9.3)	47,622.1	(8.9)	31,407.8	(2.14)	32,951.7	(4.92)	33,647.0	(2.11)
• Non food crops	10,587.2	(2.8)	12,666.6	(2.8)	14,147.8	(2.7)	9,471.6	(5.07)	9,912.0	(4.65)	10,330.6	(4.22)
• Livestock and products	7,102.3	(1.9)	8,078.7	(1.8)	9,347.1	(1.8)	6,451.4	(4.01)	6,789.5	(5.24)	7,132.4	(5.05)
• Forestry	6,897.4	(1.8)	7,390.4	(1.6)	7,883.0	(1.5)	6,300.9	(0.53)	6,303.6	(0.04)	6,384.2	(1.28)
• Fishery	6,543.6	(1.7)	7,360.9	(1.7)	9,040.8	(1.7)	5,659.5	(5.10)	5,928.4	(4.75)	6,248.4	(5.40)
2. Mining and quarrying	33,507.1	(8.8)	40,194.7	(8.8)	45,915.7	(8.6)	33,261.6	(5.60)	35,502.2	(6.74)	37,568.6	(5.82)
3. Manufacturing industry	89,240.7	(23.3)	109,688.7	(24.1)	135,580.9	(25.5)	82,649.0	(12.36)	91,637.1	(10.88)	102,259.7	(11.59)
4. Electricity, gas and water supply	4,577.1	(1.2)	5,655.4	(1.2)	6,593.7	(1.2)	3,702.7	(12.54)	4,291.9	(15.91)	4,840.5	(12.78)
5. Construction	28,016.9	(7.3)	34,451.9	(7.6)	42,024.8	(7.9)	25,857.5	(14.86)	29,197.8	(12.92)	32,923.7	(12.76)
6. Trade, hotels and restaurants	63,858.7	(16.7)	75,639.8	(16.6)	88,877.8	(16.7)	59,504.1	(7.61)	64,230.8	(7.94)	69,372.0	(8.00)
7. Transport & communication	27,352.7	(7.2)	30,795.1	(6.8)	34,926.3	(6.6)	25,188.6	(8.34)	27,328.6	(8.50)	29,701.1	(8.68)
8. Financial, ownership & business	34,505.6	(9.0)	39,510.4	(8.7)	44,371.4	(8.3)	30,901.0	(10.17)	34,313.0	(11.04)	37,400.6	(9.00)
9. Services	35,089.4	(9.2)	40,681.9	(9.0)	46,299.4	(8.7)	34,285.1	(2.77)	35,405.7	(3.27)	36,610.1	(3.40)
Gross Domestic Product (GDP)	382,219.7	(100.0)	454,514.1	(100.0)	532,630.8	(100.0)	354,640.8	(7.54)	383,792.3	(8.22)	414,418.9	(7.98)

Source : Statistical Year Book of Indonesia, 1995 & 1996, CBS.

付表 2-3 食用作物園芸総局における果樹栽培関連課別の職員数

(Unit: Person)

	Number of Head	Number of Staff	Total
[Directorate of Horticulture Production]			
Subdirectorates of Fruit Production:	1	10	11
- Head of Subdirectorates	1		1
• Section of Land Cultivation	1	3	4
• Section of Production Input & Facilities	1	2	3
• Section of Technology Application	1	2	3
Total	4	7	11
[Directorate of Seeds]			
[Subdirectorates of Horticulture Seeds]			
Head of Subdirectorates	1		1
• Section of Fruit	1	2	3
• Section of Vegetables	1	2	3
• Section of Ornamental	1	2	3
• Section of Medical Plants	1	2	3
Total	5	8	13
[Directorate of Plant Protection]			
Subdirectorates of Integrated Pest			
Head of Subdirectorates	1		1
• Section of Pest Control	1	1	2
• Section of Disease Control	1	2	3
• Section of Storage Pest	1	2	3
• Section of Weed Control	1	1	2
Total	5	6	11
[Directorate of Farm Business and Processing]			
[Subdirectorates of Horticulture Post Harvest]			
Head of Subdirectorates	1		1
• Section of Quality	1	3	4
• Section of Processing Technique	1	2	3
• Section of Post Harvest	1	2	3
• Section of Machine and Infrastructure Technique	1	1	2
Total	5	8	13

Source: DGI/CIH, 1998

付表 3-2 対象果実の生産量、収穫面積および収量 (1984年—1996年)

Production							Unit : ton
Year	Avocado	Banana	Duku	Durian	Mango	Rambutan	Salak
1984	58,097	1,991,698	69,614	146,866	442,244	108,328	46,456
1985	62,802	1,908,627	53,032	150,575	416,444	93,282	94,889
1986	72,234	2,079,058	75,688	200,222	415,041	199,207	87,605
1987	71,530	2,192,322	62,522	199,361	515,949	184,643	114,861
1988	62,520	2,046,379	101,464	193,200	531,968	226,850	114,861
1989	61,303	2,192,060	46,985	139,193	445,014	146,889	97,458
1990	84,592	2,410,999	79,899	242,585	508,889	270,686	160,782
1991	91,420	2,471,925	79,779	205,341	640,459	335,792	186,394
1992	93,267	2,650,841	81,014	152,501	484,782	273,425	197,586
1993	93,999	2,643,812	59,610	170,871	460,357	277,790	348,728
1994	102,037	3,086,557	88,214	268,562	668,048	323,495	292,246
1995	162,697	3,805,431	143,060	289,648	888,960	364,036	* 662,547
1996	197,871	3,007,743	111,542	341,635	839,285	* 987,953	285,746
Average	93,413	2,499,035	80,956	207,735	558,265	233,702	168,968

Harvested Area							Unit : ha
Year	Avocado	Banana	Duku	Durian	Mango	Rambutan	Salak
1984	16,897	187,627	15,777	31,851	89,326	39,928	8,261
1985	20,030	159,593	13,117	31,769	87,831	28,303	9,605
1986	20,816	128,319	25,287	38,814	97,113	* 194,874	10,362
1987	22,543	175,616	16,734	41,618	121,284	47,909	20,396
1988	* 203,665	169,663	16,409	36,054	104,861	51,102	17,878
1989	21,709	127,843	5,746	24,859	112,113	46,105	23,110
1990	23,828	132,454	11,371	43,756	124,790	66,574	22,704
1991	26,871	135,065	10,956	42,758	159,031	77,069	15,309
1992	27,744	76,535	10,461	36,024	139,563	73,676	8,599
1993	19,185	70,721	8,349	31,383	126,184	66,423	14,626
1994	14,856	50,041	25,428	56,318	133,454	66,250	16,752
1995	19,377	49,044	15,636	46,341	196,604	80,666	18,775
1996	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Average	21,260	121,877	14,606	38,462	124,346	58,546	15,531

Yield							Unit : ton/ha
Year	Avocado	Banana	Duku	Durian	Mango	Rambutan	Salak
1984	3.44	10.62	4.41	4.61	4.95	2.71	5.62
1985	3.14	11.96	4.04	4.74	4.74	3.30	9.88
1986	3.47	16.20	2.99	5.16	4.27	1.02	8.45
1987	3.17	12.48	3.74	4.79	4.25	3.85	5.63
1988	0.31	12.06	6.15	5.36	5.07	4.44	6.42
1989	2.82	17.15	8.18	5.60	3.97	3.19	4.57
1990	3.55	18.20	7.03	5.54	4.08	4.07	7.08
1991	3.40	18.30	7.28	4.80	4.03	4.36	12.18
1992	3.36	34.64	7.74	4.23	3.47	3.71	22.98
1993	4.90	37.38	7.14	5.44	3.65	4.18	23.84
1994	6.90	61.70	3.50	4.80	5.00	4.90	17.40
1995	8.40	77.60	9.10	6.30	4.50	4.50	35.30
1996	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Average	3.91	27.36	5.94	5.11	4.33	3.69	13.28

Source : DGFCH

Note : Data for mangosteen and marquisa are not available.

* : rejected due to extraordinary figure

n.a. : not available

付表 3-3 食品加工量と価格 (1995年)

Manufacture Code	Item	Unit	Quantity	Value (million Rp.)
31121	Fruit concentrate	1,000 l	12,553	16,947
31131	Canned Pineapple	ton	199,789	109,883
	Canned Fruits	ton	941	3,993
	Sweetend Fruit	ton	125	349
	Papaya Juice	ton	93	69
	Jam	ton	1	6
31133	Sweetened Fruits	ton	357	285
	Salted Fruits	ton	4	6
31134	Jam	ton	312	865
	Papaya Paste	ton	335	301
31141	Canned Fruit	ton	97.4	341
31179	Banana Cake Chip	ton	50	243
	Banana Jam	ton	22	46
	Pineapple Jam	ton	15	29
31184	Syrup Marquisa	1,000 l	12	34
31222	Sun Dry Banana	ton	17	134
31241	Fruit Juice	1,000 l	148	178
31246	Banana Chips	ton	50	150
31249	Banana Chips	ton	4	13
31320	Marquisa Juice	l	650	2
31330	Fruit Juice	1,000 l	1,672	841
31340	Fruit Juice	1,000 l	10,068	2,215
	Marquisa Juice	1,000 l	337	504
	Orange Juice	1,000 l	247	62
	Orange Paste Drink	1,000 l	493	61

Source : Manufacturing Statistics; Manufacture of Food, Beverage and Tobacco 1995; BPS

付表 3-4 一人当たり果実消費量

(Unit kg/year)

Fruit	Nationwide			Urban			Rural		
	1987	1993	1996	1987	1993	1996	1987	1993	1996
Orange	0.73	0.94	1.3	1.3	1.72	2.34	0.57	0.52	0.78
Mango	0.99	0.52	2.13	0.83	0.47	2.29	1.04	0.52	2.03
Apple		0.21	0.68	0.26	0.52	1.4		0.05	0.26
Avocado	0.16	0.16	0.21	0.26	0.31	0.31	0.16	0.12	0.16
Rambutan		3.48	2.44		4.94	3.22		2.76	2.03
Duku		0.16	0.16		0.21	0.26		0.12	0.12
Durian		0.52	0.52		0.68	0.57		0.47	0.52
Salak		0.62	1.2		0.83	1.46		0.52	1.09
Pineapple	0.99	1.04	0.94	0.73	0.73	0.68	1.09	1.2	1.04
Banana	12.95	12.58	9.05	10.61	9.67	6.81	13.78	13.99	10.3
Papaya	4.68	3.02	2.86	4.73	4.26	3.95	4.73	2.39	2.29
Watermelon		0.47	0.78		0.88	1.2		0.21	0.52
Others	11.18	2.29	2.24	11.02	1.51	1.92	10.19	2.65	2.39
Total	30.95	26	24.49	29.75	26.76	26.47	30.56	25.48	23.5

Source : Expenditure for Consumption of Indonesia, 1987, 1993 & 1996, National Economic Survey; BPS

付表 3-5 果実・食料にかかる月平均一人当たり支出額

(Unit : Rp.)

Year	Urban		Rural		Nationwide	
	Food	Fruit	Food	Fruit	Food	Fruit
1993	31,908	1,766	21,228	905	24,772	1,191
		(5.5%)		(4.3%)		(4.8%)
1996	48,278	3,000	33,345	1,469	38,725	2,021
		(6.2%)		(4.4%)		(5.2%)

Source : Statistical Year Book, 1995 & 1996; BPS

付表 3-6 生鮮・冷凍果実の輸出量と価格 (1996年)

Fruit	Weight (tons)	FOB Value (US\$ 1,000)	Rate (\$/ton)
Bananas including Plantains, Fresh	101,495.1	19,287.2	190
Bananas including Plantains, Dried	806.1	776.2	963
Pineapples, Fresh or Dried	11,336.8	6,905.1	609
Avocado, Fresh or Dried	5.1	5.3	1,039
Guava, Fresh or Chilled	5.9	5.7	966
Mango, Fresh or Chilled	566.3	543.5	960
Mangosteen, Fresh or Chilled	1,981.4	1,523.8	769
Papaya, Fresh	14.0	13.6	971
Durian, Fresh	307.1	212.2	691
Langsat/Duku, Fresh	32.9	43.5	1,322
Rambutan, Fresh	67.0	175.6	2,621
Other Tropical Fruits, Fresh	565.4	785.0	1,388

Source : Indonesia Foreign Trade Statistics, Exports, 1996, Vol.2; BPS

付表 3-7 熱帯果実の輸入量と価格 (1996年)

Fruit	Weight (tons)	CIF Value (US\$1,000)
Mango, Fresh or Chilled	40.5	75.7
Avocado, Fresh or Dried	14.5	33.1
Langsat/Duku Fresh	7.4	7.7
Other Tropical Fruit, Fresh	5,019.3	4,264.0
Apples, Fresh	37,638.7	28,813.5
Mandarin, Fresh	34,850.8	18,615.8
Pear and Quince, Fresh	22,155.5	17,061.7
Orange, Fresh	14,952.3	8,739.6
Date, Fresh	12,304.7	3,887.7
Kiwifruit, Fresh	709.9	757.2
Coconut in shell	625.0	958.4

Source : Indonesia Foreign Trade Statistics, Imports 1996, Vol. 2; BPS

付表 4-1 調査対象地域における人口状況

Province	Area (km ²)	Population (1,000)		Population Density in 1996 (Persons /km ²)	Annual Growth Rate 1990-96 (%)	No. of Households		Average Household Member (96)	Working Population		No. of Workers in Primary Sector*		Migrant Status in 1995	
		1990	1996 (%)			1995	(%)		No. in 1996	(%)	1996	(%)**	Migrant	(%)***
- North Sumatra	70,787	10,252	11,306 (5.70)	160	(1.64)	2,346,000	(5.14)	4.8	4,607,166	(5.38)	2,506,947	(2.93)	1,025,451	(9.07)
- West Java	46,300	35,382	40,118 (20.23)	866	(2.12)	9,453,000	(20.71)	4.2	15,176,561	(17.71)	4,672,419	(5.45)	1,891,615	(4.72)
- East Java	47,921	32,488	34,124 (17.20)	712	(0.82)	8,648,000	(18.94)	3.9	16,414,278	(19.15)	7,024,431	(8.20)	2,879,389	(8.44)
- South Sulawesi	72,781	6,980	7,693 (3.88)	106	(1.63)	1,635,000	(3.58)	4.7	3,031,873	(3.34)	1,751,904	(2.04)	792,342	(10.30)
Study Area (% to Total)	237,789 (12.39)	85,102 (47.48)	93,241 (47.01)	392 (388.24)	(1.53)	22,082,000 (48.37)	(48.37)	4.2	39,229,878 (45.77)	(45.77)	15,955,701 (42.30)	(18.62)	6,588,797 (36.74)	(7.07)
Indonesia	1,919,317	179,248	198,343 (100.00)	101	(1.70)	45,653,000 (100.00)	(100.00)	4.3	85,701,813 (100.00)	(100.00)	37,720,251 (44.01)	(44.01)	17,935,599 (9.04)	(9.04)

Note : * Population aged 10 years and over who are working in Primary Sector including Agriculture, Forestry, Hunting and Fishery.

** % to the total working population.

*** % to the national total population in 1996.

Source : Statistical Year Book of Indonesia, 1995 & 1996.

付表 4-2 農業土地利用(1995年)

Land Use / Province	North Sumatra (ha) (%)	West Java (ha) (%)	East Java (ha) (%)	South Sulawesi (ha) (%)	Study Area (ha) (%)	Indonesia (by Category) (ha) (%)
House compounds and Surroundings (% to Indonesia Total)	309,186 (7.36) (6.0)	466,015 (13.83) (9.0)	587,984 (18.38) (11.4)	167,517 (5.50) (3.2)	1,530,702 (11.08) (29.7)	5,155,422 (8.91) (100.0)
Dryland & garden for crop cultivation (% to Indonesia Total)	663,205 (15.78) (5.8)	997,590 (29.60) (8.8)	1,164,452 (36.40) (10.2)	662,960 (21.79) (5.8)	3,488,207 (25.25) (30.7)	11,368,507 (19.65) (100.0)
Meadows (% to Indonesia Total)	197,953 (4.71) (10.5)	38,619 (1.15) (2.0)	2,872 (0.09) (0.2)	285,569 (9.38) (15.1)	525,013 (3.80) (27.8)	1,889,399 (3.27) (100.0)
Dyke (Brackish fishery) (% to Indonesia Total)	9,653 (0.23) (2.3)	35,212 (1.04) (6.3)	51,914 (1.62) (12.3)	107,298 (3.53) (25.4)	204,077 (1.48) (46.3)	422,564 (0.73) (100.0)
Water pond (Inland fishery) (% to Indonesia Total)	7,530 (0.18) (4.1)	30,853 (0.92) (16.9)	2,012 (0.06) (1.1)	12,858 (0.42) (7.1)	53,253 (0.39) (29.2)	182,156 (0.31) (100.0)
Temporarily fallow land (% to Indonesia Total)	400,089 (9.52) (5.7)	50,959 (1.51) (0.7)	20,095 (0.63) (0.3)	178,166 (5.85) (2.6)	649,309 (4.70) (9.3)	6,967,938 (12.04) (100.0)
Wood land (% to Indonesia Total)	429,593 (10.22) (4.5)	212,900 (6.32) (2.2)	54,409 (1.70) (0.6)	490,718 (16.13) (5.1)	1,187,620 (8.60) (12.4)	9,555,010 (16.51) (100.0)
Agricultural estates (% to Indonesia Total)	1,643,920 (39.13) (11.9)	385,057 (11.43) (2.8)	167,498 (5.24) (1.2)	507,217 (16.67) (3.7)	2,703,692 (19.57) (19.5)	13,835,746 (23.91) (100.0)
Wetland (Paddy field) (% to Indonesia Total)	540,576 (12.87) (6.4)	1,152,753 (34.21) (13.6)	1,147,539 (35.87) (13.5)	630,798 (20.73) (7.4)	3,471,666 (25.13) (40.9)	8,484,687 (14.66) (100.0)
Total Agricultural Land (% to Indonesia Total)	4,201,705 (100.00) (7.3)	3,369,958 (100.00) (5.8)	3,198,775 (100.00) (5.5)	3,043,101 (100.00) (5.3)	13,813,539 (100.00) (23.9)	57,861,429 (100.00) (100.0)
% to Total Land Area	- (58.6)	- (78.1)	- (66.7)	- (48.7)	- (61.3)	- (29.9)

Source : Statistical Year Book of Indonesia, 1995 & 1996.

付表 4-3 北スマトラ州における園芸農家戸数 (1983&1993年)

District / Municipality	1983		1993		Growth Ratio (1983=100)
	Total	(%)	Total	(%)	
1. Nias	19,504	(7.64)	41,665	(17.43)	113.62
2. Tapanuli Selatan	26,527	(10.39)	29,513	(12.34)	11.26
3. Tapanuli Tengah	3,303	(1.29)	5,424	(2.27)	64.21
4. Tapanuli Utara	41,059	(16.09)	31,126	(13.02)	-24.19
5. Labuan Batu	17,444	(6.84)	8,698	(3.64)	-50.14
6. Asahan	17,434	(6.83)	7,999	(3.35)	-54.12
7. Simalungun	35,448	(13.89)	16,110	(6.74)	-54.55
8. Dairi	6,681	(2.62)	11,409	(4.77)	70.77
9. Karo	14,693	(5.76)	22,988	(9.61)	56.46
10. Deli Serdang	45,207	(17.71)	36,804	(15.39)	-18.59
11. Langkat	21,142	(8.28)	22,737	(9.51)	7.54
12. Sibolga	80	(0.03)	41	(0.02)	-48.75
13. Tanjung Balai	182	(0.07)	345	(0.14)	89.56
14. Pematang Siantar	329	(0.13)	103	(0.04)	-68.69
15. Tebing Tinggi	868	(0.34)	1,118	(0.47)	28.80
16. Medan	4,668	(1.83)	1,778	(0.74)	-61.91
17. Binjai	638	(0.25)	1,231	(0.51)	92.95
Total	255,207	(100.00)	239,089	(100.00)	-6.32

Source : Biro Pusat Statistik Jakarta, Sensus Pertanian 1993, Seri H.2 North Sumatera, 1993.

付表 4-4 西ジャワ州における園芸農家戸数 (1983&1993年)

District / Municipality	1983		1993		Growth Ratio (1983=100)
	Total	(%)	Total	(%)	
1. Pandeglang	55,803	(3.92)	37,522	(4.44)	-32.76
2. Lebak	80,550	(5.66)	36,855	(4.36)	-54.25
3. Bogor	128,997	(9.07)	69,612	(8.23)	-46.04
4. Sukabumi	90,113	(6.34)	64,950	(7.68)	-27.92
5. Cianjur	107,593	(7.57)	50,197	(5.93)	-53.35
6. Bandung	99,861	(7.02)	63,876	(7.55)	-36.04
7. Garut	111,767	(7.86)	66,712	(7.89)	-40.31
8. Tasikmalaya	93,875	(6.60)	54,361	(6.43)	-42.09
9. Ciamis	133,385	(9.38)	57,866	(6.84)	-56.62
10. Kuningan	59,761	(4.20)	24,897	(2.94)	-58.34
11. Cirebon	28,170	(1.98)	21,347	(2.52)	-24.22
12. Majalengka	68,248	(4.80)	35,607	(4.21)	-47.83
13. Sumedang	66,817	(4.70)	40,090	(4.74)	-40.00
14. Indramayu	31,541	(2.22)	32,390	(3.83)	2.69
15. Subang	60,308	(4.24)	38,541	(4.56)	-36.09
16. Purwakarta	26,201	(1.84)	14,367	(1.70)	-45.17
17. Karawang	38,716	(2.72)	20,979	(2.48)	-45.81
18. Bekasi	55,663	(3.91)	34,931	(4.13)	-37.25
19. Tangerang	31,958	(2.25)	25,061	(2.96)	-21.58
20. Serang	48,130	(3.38)	52,202	(6.17)	8.46
21. Kodya Bogor	301	(0.02)	451	(0.05)	49.83
22. Kodya Sukabumi	571	(0.04)	161	(0.02)	-71.80
23. Kodya Bandung	2,234	(0.16)	2,405	(0.28)	7.65
24. Kodya Cirebon	1,369	(0.10)	559	(0.07)	-59.17
25. Kodya Tangerang	0	(0.00)	0	(0.00)	-
Total	1,421,932	(100.00)	845,939	(100.00)	-40.51

Source : Biro Pusat Statistik Jakarta, Sensus Pertanian 1993, West Java Province.

付表 4-5 東ジャワ州における園芸農家戸数 (1983&1993年)

District / Municipality	1993			% of Hort. Farmers to Total Farm Households
	Total Farm Households	No. of Horticulture Farmers	(%)	
1. Pacitan	115,311	35,055	(4.29)	30.40
2. Ponorogo	152,556	26,896	(3.30)	17.63
3. Trenggalek	117,985	8,920	(1.09)	7.56
4. Tulung Agung	121,884	14,553	(1.78)	11.94
5. Blitar	154,511	33,637	(4.12)	21.77
6. Kediri	149,958	43,788	(5.36)	29.20
7. Malang	277,539	75,768	(9.28)	27.30
8. Lumajang	128,832	35,854	(4.39)	27.83
9. Jember	234,144	37,159	(4.55)	15.87
10. Banyuwangi	165,759	30,500	(3.74)	18.40
11. Bondowoso	121,252	19,667	(2.41)	16.22
12. Situbondo	89,463	17,365	(2.13)	19.41
13. Probolinggo	155,007	47,866	(5.86)	30.88
14. Pasuruan	157,823	39,992	(4.90)	25.34
15. Sidoarjo	55,102	8,447	(1.03)	15.33
16. Mojokerto	90,245	20,034	(2.45)	22.20
17. Jombang	98,431	12,294	(1.51)	12.49
18. Nganjuk	123,278	30,856	(3.78)	25.03
19. Madiun	94,114	13,656	(1.67)	14.51
20. Magetan	98,383	23,258	(2.85)	23.64
21. Ngawi	138,052	10,409	(1.28)	7.54
22. Bojonegoro	189,249	26,627	(3.26)	14.07
23. Tuban	157,087	45,744	(5.60)	29.12
24. Lamongan	178,579	20,287	(2.49)	11.36
25. Gresik	94,069	20,215	(2.48)	21.49
26. Bangkalan	120,740	32,141	(3.94)	26.62
27. Sampang	131,187	33,479	(4.10)	25.52
28. Pamekasan	109,813	19,195	(2.35)	17.48
29. Sumenep	221,349	32,538	(3.99)	14.70
Total	4,041,702	816,200	(100.00)	20.19

Source : Biro Pusat Statistik Jakarta, Sensus Pertanian 1993, Seri H.13, East Java, 1993.

付表 4-6 南スラウェシ州における園芸農家戸数 (1983&1993年)

District / Municipality	1993			% of Hort. Farmers to Total Farm Households
	Total Farm Households	No. of Horticulture Farmers	(%)	
1. Selayar	16,443	3,496	(1.75)	21.26
2. Bulukumba	54,898	16,516	(8.26)	30.08
3. Bantaeng	22,095	8,130	(4.07)	36.80
4. Jeneponto	48,427	14,884	(7.45)	30.73
5. Takalar	25,657	7,429	(3.72)	28.96
6. Gowa	63,638	21,702	(10.86)	34.10
7. Sinjai	28,471	7,775	(3.89)	27.31
8. Maros	33,893	6,381	(3.19)	18.83
9. Pangkep	28,807	3,088	(1.54)	10.72
10. Barru	17,153	3,112	(1.56)	18.14
11. Bone	94,972	18,296	(9.15)	19.26
12. Soppeng	35,295	6,707	(3.36)	19.00
13. Wajo	53,889	13,932	(6.97)	25.85
14. Sidrap	30,366	6,833	(3.42)	22.50
15. Pinrang	38,531	7,194	(3.60)	18.67
16. Enrekang	23,169	8,719	(4.36)	37.63
17. Luwu	108,882	20,972	(10.49)	19.26
18. Tator	62,467	2,770	(1.39)	4.43
19. Polmas	58,237	10,378	(5.19)	17.82
20. Mjene	14,958	3,164	(1.58)	21.15
21. Mamuju	32,017	5,836	(2.92)	18.23
22. Ujung Pandang	7,120	1,812	(0.91)	25.45
23. Pare-Pare	2,532	757	(0.38)	29.90
Total	901,917	199,883	(100.00)	22.16

Source : Biro Pusat Statistik Jakarta, Sensus Pertanian 1993, South Sulawesi Province.

付表 4-7 調査対象地域における食用作物生産量 (1995 年)

(Unit: 1,000 ton)

Province / Area	Paddy (%)	Maize (%)	Cassava (%)	Potato (%)	Peanut (%)	Soyabean (%)	Total (%)	Population (1,000)	Per Capita Food Crop ^a Production	Land Area in 1995 (km ²)	Ratio of Total Production/Area (ton / km ²)
- North Sumatra	3,134.5 (6.3)	371.6 (4.5)	373.3 (2.4)	117.3 (5.4)	32.1 (4.2)	49.7 (3.0)	4,078.5 (5.2)	11,115	(0.37)	71,680	(56.90)
- West Java	10,722.7 (21.6)	332.2 (4.0)	1,700.3 (11.0)	489.3 (22.5)	1,174 (15.4)	93.7 (5.7)	13,437.6 (17.2)	39,207	(0.34)	43,177	(311.68)
- East Java	8,572.7 (17.2)	2,820.9 (34.2)	3,381.9 (21.9)	239.4 (11.0)	145.1 (19.1)	487.2 (29.0)	15,647.2 (20.0)	33,844	(0.46)	47,923	(326.51)
- South Sulawesi	3,727.1 (7.5)	738.9 (9.0)	604.7 (3.9)	89.4 (4.1)	86.3 (11.4)	77.2 (4.6)	5,323.6 (6.8)	7,558	(0.70)	62,483	(85.20)
Study Area	26,157.0 (52.6)	4,263.6 (51.7)	6,060.2 (39.2)	935.4 (43.1)	380.9 (50.1)	709.8 (42.3)	38,506.9 (49.3)	91,724	(0.42)	225,263	(170.94)
Indonesia	49,744.1 (100.0)	8,245.9 (100.0)	15,441.5 (100.0)	2,171.0 (100.0)	760.1 (100.0)	1,680.0 (100.0)	78,042.6 (100.0)	194,755	(0.40)	1,937,179	(40.29)

付表 4-8 貧困層の人口と比率 (1993 年&1996 年)

Province	Urban Area				Rural Area				Urban and Rural Area			
	No. of Population Below Poverty Line		Poverty Line (Rp./Cap./Month)		No. of Population Below Poverty Line		Poverty Line (Rp./Cap./Month)		No. of Population Below Poverty Line		% to the Total Population ('96)	
	1993 (%)	1996 (%)	1993	1996	1993 (%)	1996 (%)	1993	1996	1993 (%)	1996 (%)	1993 (%)	1996 (%)
- North Sumatra	494,479 (5.7)	457,037 (6.3)	26,822	40,356	837,152 (4.9)	777,157 (5.1)	19,117	30,091	1,331,631 (5.1)	1,234,184 (5.5)	10.92	10.92
- West Java	2,327,139 (26.7)	1,879,653 (26.1)	30,559	41,688	2,285,213 (13.3)	2,082,458 (13.6)	20,497	30,356	4,612,352 (17.6)	3,962,111 (17.6)	9.88	9.88
- East Java	1,704,433 (19.6)	1,520,902 (21.1)	26,680	36,452	2,719,276 (15.8)	2,525,627 (16.5)	16,924	25,519	4,423,709 (17.1)	4,046,529 (18.0)	11.86	11.86
- South Sulawesi	257,162 (3.0)	241,230 (3.4)	25,024	36,281	401,990 (2.3)	375,901 (2.5)	16,033	21,614	659,152 (2.5)	617,131 (2.7)	8.02	8.02
Study Area	4,783,213 (55.0)	4,098,822 (56.9)	-	-	6,243,631 (36.3)	5,761,143 (37.7)	-	-	11,026,844 (42.6)	9,859,955 (43.8)	10.57	10.57
Indonesia	8,700,000 (100.0)	7,200,000 (100.0)	27,905	38,246	17,200,000 (100.0)	15,300,000 (100.0)	18,244	27,413	25,900,000 (100.0)	22,500,000 (100.0)	11.34	11.34

Source : Statistical Year Book of Indonesia 1996.

付表 4-9 対象果実の州別年収穫面積

Avocado (Unit: ha)

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	691	760	323	461	426	532
West Java	11,804	8,218	6,283	3,552	4,694	6,911
East Java	7,013	6,594	5,524	3,248	4,881	5,452
South Sulawesi	1,207	3,541	2,188	2,676	2,019	2,326
Indonesia	26,871	27,744	19,185	14,856	19,377	21,607

Banana

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	3,417	4,232	1,694	1,041	1,406	2,358
West Java	47,814	12,431	12,088	12,079	13,713	19,625
East Java	19,716	13,280	12,129	6,693	6,534	11,670
South Sulawesi	4,875	979	2,718	2,110	2,390	2,614
Indonesia	138,065	76,535	70,721	50,041	49,044	76,281

Durian

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	2,701	5,303	2,246	3,507	3,181	3,388
West Java	8,707	4,653	4,038	6,657	4,126	5,636
East Java	4,057	3,271	3,143	2,049	3,096	3,123
South Sulawesi	2,272	1,853	2,710	2,209	2,811	2,371
Indonesia	42,742	36,024	31,383	56,318	46,341	42,562

Duku

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	718	508	648	348	339	512
West Java	1,464	1,127	1,184	1,556	2,509	1,568
East Java	455	1,458	460	802	403	718
South Sulawesi	1,536	1,203	1,184	3,802	2,137	1,972
Indonesia	10,956	10,461	8,349	25,428	15,636	14,166

Mango

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	1,708	761	382	5,063	953	1,773
West Java	26,623	23,250	24,648	20,079	24,921	23,905
East Java	58,436	56,889	47,045	48,942	83,295	58,915
South Sulawesi	15,065	9,514	5,768	13,182	7,831	10,272
Indonesia	159,031	139,623	126,184	133,454	196,604	150,979

Mangosteen

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	-	-	-	-	755	755
West Java	-	-	-	-	1,454	1,454
East Java	-	-	-	-	478	478
South Sulawesi	-	-	-	-	83	83
Indonesia	-	-	-	-	5,162	5,162

Marquisa (in ton)

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	-	-	-	-	-	-
West Java	-	-	-	-	-	-
East Java	-	-	-	-	-	-
South Sulawesi	-	-	-	-	-	-
Indonesia	-	-	-	-	-	-

Rambutan

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	2,035	3,987	2,342	1,353	1,350	2,213
West Java	23,484	19,077	15,572	16,394	11,295	17,146
East Java	11,059	12,475	10,729	6,329	9,006	9,920
South Sulawesi	788	1,731	1,907	761	1,902	1,418
Indonesia	77,069	73,676	66,423	66,250	80,666	72,817

Salak

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	98	109	370	3,113	3,676	1,473
West Java	4,924	2,478	2,387	2,262	7,073	3,825
East Java	659	696	5,245	388	494	1,496
South Sulawesi	444	314	831	281	263	428
Indonesia	15,309	8,599	14,626	16,752	18,775	14,812

Source: Direktorat Bina Program

Direktorat Jenderal Tanaman Pangan & Hortikultura
Tahun 1994, 1995, 1996 & 1997

付表 4-10 対象果実の州別収量

Avocado (Unit: ton/ha)

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	4.3	3.2	7.9	7.5	6.6	5.3
West Java	4.0	4.6	6.5	12.4	16.2	7.1
East Java	3.5	3.6	3.7	6.9	7.2	4.6
South Sulawesi	2.6	3.2	2.8	2.3	2.3	2.8
Indonesia	3.4	3.4	4.9	6.9	8.4	5.0

Banana

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	20.0	24.0	52.4	104.1	73.0	39.8
West Java	12.8	59.3	63.4	76.2	82.5	42.5
East Java	30.2	30.3	29.6	74.2	103.5	43.4
South Sulawesi	40.7	224.7	91.2	111.1	81.5	83.8
Indonesia	18.3	34.6	37.4	61.7	77.6	38.4

Durian

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	5.8	5.8	10.6	11.0	14.8	9.2
West Java	6.6	5.1	7.0	7.2	7.3	6.7
East Java	4.1	4.6	4.7	6.3	10.2	5.8
South Sulawesi	4.3	0.3	2.6	3.3	4.6	3.2
Indonesia	4.8	4.2	5.4	4.8	6.3	5.1

Duku

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	7.8	8.2	4.3	6.7	11.5	7.4
West Java	9.6	12.9	13.8	7.9	5.9	9.2
East Java	6.7	6.1	9.3	5.6	20.8	8.1
South Sulawesi	8.3	12.2	7.7	4.2	9.1	7.3
Indonesia	7.3	7.7	7.1	3.5	9.1	6.4

Mango

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	2.1	3.2	10.4	1.0	6.1	2.4
West Java	6.7	4.7	4.3	8.0	5.5	5.8
East Java	5.0	3.3	3.4	5.1	4.8	4.4
South Sulawesi	0.5	2.6	4.5	2.7	7.2	2.9
Indonesia	4.0	3.5	3.6	5.0	4.5	4.2

Mangosteen

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	-	-	-	-	4.1	4.1
West Java	-	-	-	-	4.6	4.6
East Java	-	-	-	-	14.4	14.4
South Sulawesi	-	-	-	-	2.4	2.4
Indonesia	-	-	-	-	7.0	7.0

Marquisa

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	-	-	-	-	-	-
West Java	-	-	-	-	-	-
East Java	-	-	-	-	-	-
South Sulawesi	-	-	-	-	-	-
Indonesia	-	-	-	-	-	-

Rambutan

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	1.5	2.3	1.7	9.2	7.0	3.5
West Java	6.4	5.3	6.6	7.0	5.5	6.2
East Java	4.4	4.1	3.8	7.0	5.5	4.7
South Sulawesi	2.9	3.4	2.0	7.8	3.3	3.4
Indonesia	4.4	3.7	4.2	4.9	4.5	4.3

Salak

Province	Year					Average
	1991	1992	1993	1994	1995	
North Sumatra	15.7	22.4	13.5	35.4	32.8	32.5
West Java	13.9	39.4	95.3	30.6	53.6	44.0
East Java	43.8	21.8	7.0	22.5	48.3	15.6
South Sulawesi	13.0	26.8	19.3	32.8	68.1	27.0
Indonesia	12.2	23.0	23.8	17.4	35.3	22.8

Source: Direktorat Bina Program
 Direktorat Jenderal Tanaman Pangan & Hortikultura
 Tahun 1991, 1995, 1996 & 1997

付表6-1 果樹園開発に関わる調査対象州の概要

Major Items (Indicators)	(year)	North Sumatra	West Java	East Java	South Sulawesi	Remarks
1. Horticultural Dev. Authority	(1997)	- North Sumatra Provincial DIPERTA (Diperta Propinsi or PRAS)	- West Java Provincial DIPERTA (Diperta Propinsi or PRAS)	- East Java Provincial DIPERTA (Diperta Propinsi or PRAS)	- South Sulawesi DIPERTA (Diperta Propinsi or PRAS)	- DGECH at Central Government Level
2. Agro-Ecological Conditions 2.1 Climatic Factor 2.2 Edaphic Factor 2.3 Physiographic Factor	(1997)	- Wet to very wet - Low and high upland - Flat to steep slope	- Wet to very wet - Low upland - Flat to undulating	- Rather wet, wet to very wet - Low Upland - Flat to steep slope	- Rather wet, wet to very wet - Low and high upland - Flat to steep slope	- The climate of Indonesia is highly diverse - Most of country enjoys a moist tropical climate
3. Horticultural Research Institution 3.1 Assessment Institute for Agricultural Technology	(1997)	1 (Gedong Johor)	1 (Lembang)	1 (Karang Ploso)	1 (Aengsinoto)	- Center for Horticultural Crops Research & Dev. (Jakarta) - Fruit Research Institute (Sobal, West Sumatra)
4. Seedling Production / Propagation 4.1 Horticulture BBI Farms (ha) 4.2 BBI (no.) 4.3 BBU (no.) 4.4 BBP (no.) 4.5 BPSB (no.) 4.6 Nursery (no.)	(1997) (1997) (1997) (1997) (1997)	10.0 1 (Kota Gadung)	29.0 1 (Pasar Banteng)	18.0 1 (Pajjantrek)	9.2 1 (Bonto-Bonto)	- Indonesia Total (27) - Indonesia Total (1,450)
5. Farm Management 5.1 Total Farm Households * National Weight (%) 5.2 Horticulture Farm Households * National Weight (%) 5.3 Average Land Size (ha) 5.4 Farming Method	(1993) (1993) (1993)	1,117,740 (5.20) 239,089 (4.74) 0.96	3,519,170 (16.38) 845,939 (16.77) 0.48	4,245,362 (19.76) 816,200 (16.18) 0.48	934,512 (4.35) 199,883 (3.95) 1.10	- Indonesia Total : 21,482,000 - Indonesia Total : 5,014,000
6. Extension 6.1 BPP (Rural Agricultural Extension Center) 6.2 BIPP (Rural Agricultural Information and Extension Center) 6.3 PPS (no.) 6.4 PPL (no.) 6.5 No. of Farm Households per PPS 6.6 No. of Farm Households per PPL	(1997) (1997) (1997) (1997) (1997)	96 11 96 1,669 11,643 670	236 20 190 3,408 18,522 1,033	244 29 226 3,191 18,785 1,300	120 21 136 1,966 6,871 475	- Indonesia Total : 1,884 - Indonesia Total : 243 - Indonesia Total : 2,155 - Indonesia Total : 31,255 - Indonesia Average : 9,968 - Indonesia Average : 687
7. Farmers' Organizations & KUD 7.1 No. of Desa where Kelompok Tani is established * National Weight (%) 7.2 KUD * National Weight (%)	(1993) (1995)	1,216 (3.90) 594 (6.45)	4,286 (13.76) 757 (8.25)	6,063 (19.46) 752 (8.77)	584 (1.87) 536 (5.83)	- Indonesia Total : 31,156 (100.00) - Indonesia Total : 9,200 (100.00)
8. Infrastructure 8.1 Major Seaport 8.2 Major Airport	(1997) (1997)	- Belawan - Tg. Balai Aceh - Polonia (Medan)	- Tg. Priok * - Soekarno-Hatta Int. Airport	- Tg. Perak - Juanda (Surabaya)	- Makassar (Ujung Pandang) - Pare-Pare - (Ujung Pandang)	* Located in DKI Jakarta
9. Market / Trading 9.1 Major Trading Centers 9.2 Fruit Supply & Demand Situation	(1997) (1997)	- Medan	- Bandung (& Jakarta*)	- Surabaya	- Ujung Pandang	- Jakarta
10. Agro-Industry & Post-harvest Processing Factories 10.1 Fruit Juice	(1997)	4	6	10	31 **	** including horse industry

Note : For abbreviations, refer to the "Abbreviations and Glossary" in the Text
Source : JICA Study Team

付表 6-2 北スマトラ州の対象果樹別開発基本計画

Major Development Menus (Components)	Target Fruits				
	Durian	Mangosteen	Marquisa	Rambutan	Salak
1. Land Resources					
1.1 Intensified land use	⊙	⊙	⊙	⊙	⊙
1.2 Preparation of cadastral map	⊙	⊙	⊙	⊙	⊙
2. Social Acceptability					
2.1 Confirmation of farmers' participation	⊙	⊙	⊙	⊙	⊙
3. Planting Materials					
3.1 Strengthening of the Institutes Concerned	⊙	⊙	◇	⊙	⊙
3.2 Upgrading and modernization of propagation of high quality seedlings	⊙	⊙	◇	⊙	⊙
3.3 Improvement of certification system	⊙	⊙	△	⊙	⊙
3.4 Development of well-managed commercial nurseries	⊙	⊙	△	○	⊙
3.5 Strengthening of farm input selection	◇	◇	○	○	⊙
4. Farming System and Technology					
4.1 Structural improvement of traditional cultivation system	◇	◇	○	○	◇
4.2 Shift of the prevailing farming practice to the market-oriented one	⊙	⊙	○	○	⊙
4.3 Leveling-up of farmers' knowledge and capabilities on farming practices	⊙	⊙	○	○	⊙
5. Post-harvest Handling					
5.1 Higher value-added production of fruits	⊙	⊙	○	⊙	⊙
5.2 Dissemination of the post-harvest handling technologies	⊙	⊙	○	○	⊙
6. Extension System					
6.1 Overcoming of the limited personnel and lack of facilities for dissemination of know-how and technologies	⊙	⊙	⊙	⊙	⊙
7. Infrastructure and Facilities					
7.1 Reinforcement of inadequate infrastructure and limited facilities	◇	◇	⊙	◇	◇
8. Investment and Credit					
8.1 Introduction of long-term credit system	⊙	⊙	△	⊙	○
8.2 Enhancement of the supporting services by public sector	⊙	⊙	⊙	⊙	⊙
9. Marketing					
9.1 Structural reformation of the marketing system	◇	◇	○	○	◇
9.2 Grouping of the fruit growers	⊙	⊙	⊙	⊙	⊙
9.3 Promotion of institutional linkages between producers and middlemen	◇	◇	○	○	◇
9.4 Increase of women participation in fruit cultivation, post-harvest handling and marketing	○	○	△	△	○
9.5 Establishment of reliable and timely market information system	○	○	○	○	○
9.6 Arrangements of the policy issues relating to export promotion programs, licensing or deregulation in trade etc.	△	△	○	⊙	△
9.7 Accommodation to globalization and intensification of international competitiveness in world trade (GATT, WTO, etc.)	△	△	○	◇	△

Remarks : ⊙ = Highly required
 ○ = Required to expand to some extent
 ◇ = Required to start newly
 △ = Better to be considered

Source : JICA Study Team

付表 6-3 北スマトラ州果樹園開発候補地区

No.	Target Fruits	Location			
		Districts	Area (ha)	Sub-Districts	Area (ha)
1.	Durian	- Dairi	300	<ul style="list-style-type: none"> • Siempat Nempu • Silima Punga-Punnga • Siempat Nempu Hilir • Tiga Lingga 	<ul style="list-style-type: none"> 50 100 100 50
		- Tapanuli Tengah	750	<ul style="list-style-type: none"> • Sorkam • Lumut • Sibabangun 	<ul style="list-style-type: none"> 250 250 250
		- Tapanuli Utara	500	<ul style="list-style-type: none"> • Garoga • Pahae Julu • Pahae Jae 	<ul style="list-style-type: none"> 300 100 100
2.	Mangosteen	- Tapanuli Selatan	800	• Batang Natal	800
		- Tapanuli Utara	500	• Garoga	500
3.	Marquisa	- Karo	1,000	• Simpang Empat	1,000
4.	Rambutan	- Langkat	500	• Binjai	500
5.	Salak	- Tapanuli Selatan	1,500	<ul style="list-style-type: none"> • Siais • Padang Sidempuan Barat • Padang Sidempuan Timur 	<ul style="list-style-type: none"> 800 500 200
Total		6 Districts (8 Potential Areas)	5,850	-	5,850

Source : JICA Study Team and Diperta Propinsi Sumatera Utara.

付表 6-4 西ジャワ州の対象果樹別開発基本計画

Major Development Menus (Components)	Target Fruits					
	Avocado	Duku	Durian	Mango	Mangosteen	Salak
1. Land Resources						
1.1 Intensified land use	⊙	⊙	⊙	⊙	⊙	⊙
1.2 Preparation of cadastral map	⊙	⊙	⊙	⊙	⊙	⊙
2. Social Acceptability						
2.1 Confirmation of farmers' participation	⊙	⊙	⊙	⊙	⊙	⊙
3. Planting Materials						
3.1 Strengthening of the Institutes Concerned	⊙	⊙	○	⊙	⊙	⊙
3.2 Upgrading and modernization of propagation of high quality seedlings	⊙	⊙	○	⊙	⊙	⊙
3.3 Improvement of certification system	⊙	⊙	⊙	⊙	⊙	⊙
3.4 Development of well-managed commercial nurseries	○	○	○	○	○	○
3.5 Strengthening of farm input selection	○	○	○	○	○	○
4. Farming System and Technology						
4.1 Structural improvement of traditional cultivation system	⊙	⊙	⊙	⊙	⊙	⊙
4.2 Shift of the prevailing farming practice to the market-oriented one	⊙	⊙	⊙	⊙	⊙	⊙
4.3 Leveling-up of farmers' knowledge and capabilities on farming practices	⊙	⊙	⊙	⊙	⊙	⊙
5. Post-harvest Handling						
5.1 Higher value-added production of fruits	◇	◇	◇	◇	◇	◇
5.2 Dissemination of the post-harvest handling technologies	⊙	⊙	⊙	⊙	⊙	⊙
6. Extension System						
6.1 Overcoming of the limited personnel and lack of facilities for dissemination of know-how and technologies	⊙	⊙	⊙	⊙	⊙	⊙
7. Infrastructure and Facilities						
7.1 Reinforcement of inadequate infrastructure and limited facilities	◇	◇	◇	◇	◇	◇
8. Investment and Credit						
8.1 Introduction of long-term credit system	◇	◇	⊙	⊙	⊙	◇
8.2 Enhancement of the supporting services by public sector	⊙	⊙	⊙	⊙	⊙	⊙
9. Marketing						
9.1 Structural reformation of the marketing system	○	○	○	○	○	○
9.2 Grouping of the fruit growers	⊙	⊙	⊙	⊙	⊙	⊙
9.3 Promotion of institutional linkages between producers and middlemen	⊙	⊙	⊙	⊙	⊙	⊙
9.4 Increase of women participation in fruit cultivation, post-harvest handling and marketing	△	○	○	△	○	○
9.5 Establishment of reliable and timely market information system	○	○	○	○	○	○
9.6 Arrangements of the policy issues relating to export promotion programs, licensing or deregulation in trade, etc.	△	△	△	△	△	△
9.7 Accommodation to globalization and intensification of international competitiveness in world trade (GATT, WTO, etc.)	△	△	△	△	△	△

Remarks: ⊙ = Highly required
 ○ = Required to expand to some extent
 ◇ = Required to start newly
 △ = Better to be considered

Source: JICA Study Team

付表 6-5 西ジャワ州果樹園開発候補地区

No.	Target Fruits	Location			
		Districts	Area (ha)	Sub-Districts	Area (ha)
1.	Avocado	- Bandung	500	• Cicalengka	500
2.	Duku	- Ciamis	500	• Sukadana	500
3.	Durian	- Bogor	500	• Cigudeg	500
4.	Mango	- Sumedang	1,000	• Tomo • Ujungjaya	530 470
5.	Mangosteen	- Purwakarta	500	• Wanayasa	500
6.	Salak	- Tasikmalaya	1,000	• Cibureum • Kawalu • Manonjaya	500 200 300
	Total	6 Districts (6 Potential Areas)	4,000	-	4,000

Source : JICA Study Team and Diperta Propinsi Jawa Barat.

付表 6-6 東ジャワ州の対象果樹別開発基本計画

Major Development Menus (Components)	Target Fruits					
	Avocado	Banana	Duku	Durian	Mango	Salak
1. Land Resources						
1.1 Intensified land use	◎	◎	◎	◎	◎	◎
1.2 Preparation of cadastral map	◎	◎	◎	◎	◎	◎
2. Social Acceptability						
2.1 Confirmation of farmers' participation	◎	◎	◎	◎	◎	◎
3. Planting Materials						
3.1 Strengthening of the Institutes Concerned	○	◇	○	○	◇	◇
3.2 Upgrading and modernization of propagation of high quality seedlings	○	◇	○	○	◇	◇
3.3 Improvement of certification system	◎	◎	◎	◎	◎	◎
3.4 Development of well-managed commercial nurseries	○	◇	○	○	◇	◇
3.5 Strengthening of farm input selection	○	○	○	○	○	○
4. Farming System and Technology						
4.1 Structural improvement of traditional cultivation system	◇	◇	◎	◎	◇	◇
4.2 Shift of the prevailing farming practice to the market-oriented one	○	○	◎	◎	○	○
4.3 Leveling-up of farmers' knowledge and capabilities on farming practices	◎	◎	◎	◎	◎	◎
5. Post-harvest Handling						
5.1 Higher value-added production of fruits	◎	◎	◎	◎	◎	◎
5.2 Dissemination of the post-harvest handling technologies	◎	◎	◎	◎	◎	◎
6. Extension System						
6.1 Overcoming of the limited personnel and lack of facilities for dissemination of know-how and technologies	◎	◎	◎	◎	◎	◎
7. Infrastructure and Facilities						
7.1 Reinforcement of inadequate infrastructure and limited facilities	◇	◇	◇	◇	◇	◇
8. Investment and Credit						
8.1 Introduction of long-term credit system	◇	△	◇	◎	◎	◇
8.2 Enhancement of the supporting services by public sector	◎	◎	◎	◎	◎	◎
9. Marketing						
9.1 Structural reformation of the marketing system	○	○	○	○	○	○
9.2 Grouping of the fruit growers	◎	◎	◎	◎	◎	◎
9.3 Promotion of institutional linkages between producers and middlemen	◎	◎	◎	◎	◎	◎
9.4 Increase of women participation in fruit cultivation, post-harvest handling and marketing	△	△	○	○	△	○
9.5 Establishment of reliable and timely market information system	○	○	○	○	○	○
9.6 Arrangements of the policy issues relating to export promotion programs, licensing or deregulation in trade, etc.	△	△	△	△	◎	△
9.7 Accommodation to globalization and intensification of international competitiveness in world trade (GATT, WTO, etc.)	△	△	△	△	◇	△

Remarks : ◎ = Highly required
 ○ = Required to expand to some extent
 ◇ = Required to start newly
 △ = Better to be considered

Source : JICA Study Team

付表 6-7 東ジャワ州果樹園開発候補地区

No.	Target Fruits	Location			
		Districts	Area (ha)	Sub-Districts	Area (ha)
1.	Avocado	- Lumajang	1,000	<ul style="list-style-type: none"> • Klakah • Ranuyoso • Randuagung • Kudungjajang 	200 600 100 100
2.	Banana	- Jombang	500	<ul style="list-style-type: none"> • Kesamben • Sumobito • Diwek • Tembelang 	150 100 100 150
		- Lumajang	500	<ul style="list-style-type: none"> • Yosowilangun • Tekung • Kunir • Senduro 	100 150 100 150
3.	Duku	- Tulungagung	1,000	<ul style="list-style-type: none"> • Ngantru • Kedungwaru 	600 400
4.	Durian	- Jombang	1,150	<ul style="list-style-type: none"> • Wonosalam • Bareng 	1,000 150
		- Trenggalek	1,000	<ul style="list-style-type: none"> • Bendungan 	1,000
5.	Mango	- Pasuruan	750	<ul style="list-style-type: none"> • Grati • Nguling 	375 375
6.	Salak	- Malang	1,700	<ul style="list-style-type: none"> • Gondanglegi • Bululawang • Tajinan 	700 600 400
Total		6 Districts (8 Potential Areas)	7,600	-	7,600

Source : JICA Study Team and Diperta Propinsi Jawa Timur.

付表 6-8 南スラウェシ州の対象果樹別開発基本計画

Major Development Menus (Components)	Target Fruits				
	Avocado	Mango	Mangosteen	Marquisa	Rambutan
1. Land Resources					
1.1 Intensified land use	⊙	⊙	⊙	⊙	⊙
1.2 Preparation of cadastral map	⊙	⊙	⊙	⊙	⊙
2. Social Acceptability					
2.1 Confirmation of farmers' participation	⊙	⊙	⊙	⊙	⊙
3. Planting Materials					
3.1 Strengthening of the Institutes Concerned	⊙	⊙	⊙	◇	⊙
3.2 Upgrading and modernization of propagation of high quality seedlings	⊙	⊙	⊙	◇	⊙
3.3 Improvement of certification system	⊙	⊙	⊙	△	⊙
3.4 Development of well-managed commercial nurseries	⊙	⊙	⊙	△	⊙
3.5 Strengthening of farm input selection	⊙	⊙	⊙	○	⊙
4. Farming System and Technology					
4.1 Structural improvement of traditional cultivation system	◇	⊙	◇	◇	⊙
4.2 Shift of the prevailing farming practice to the market-oriented one	△	◇	△	○	△
4.3 Leveling-up of farmers' knowledge and capabilities on farming practices	⊙	⊙	⊙	⊙	⊙
5. Post-harvest Handling					
5.1 Higher value-added production of fruits	⊙	⊙	⊙	⊙	⊙
5.2 Dissemination of the post-harvest handling technologies	⊙	⊙	⊙	⊙	⊙
6. Extension System					
6.1 Overcoming of the limited personnel and lack of facilities for dissemination of know-how and technologies	⊙	⊙	⊙	⊙	⊙
7. Infrastructure and Facilities					
7.1 Reinforcement of inadequate infrastructure and limited facilities	◇	◇	◇	⊙	◇
8. Investment and Credit					
8.1 Introduction of long-term credit system	⊙	⊙	⊙	⊙	⊙
8.2 Enhancement of the supporting services by public sector	⊙	⊙	⊙	⊙	⊙
9. Marketing					
9.1 Structural reformation of the marketing system	△	△	△	○	△
9.2 Grouping of the fruit growers	⊙	⊙	⊙	⊙	⊙
9.3 Promotion of institutional linkages between producers and middlemen	⊙	⊙	⊙	⊙	⊙
9.4 Increase of women participation in fruit cultivation, post-harvest handling and marketing	△	△	○	△	△
9.5 Establishment of reliable and timely market information system	○	○	○	○	○
9.6 Arrangements of the policy issues relating to export promotion programs, licensing or deregulation in trade, etc.	△	○	△	○	△
9.7 Accommodation to globalization and intensification of international competitiveness in world trade (GATT, WTO, etc.)	△	△	△	△	△

Remarks : ⊙ = Highly required
 ○ = Required to expand to some extent
 ◇ = Required to start newly
 △ = Better to be considered

Source : JICA Study Team

付表 6-9 南スラウェシ州果樹園開発候補地区

No.	Target Fruits	Location			
		Districts	Area (ha)	Sub-Districts	Area (ha)
1.	Avocado	2 Districts	1,000		
		- Gowa	500	• Tinggi Moncong • Parangloe • Tompobulu	200 150 150
		- Soppeng	500	• Marioriwawo • Marioriwawa	250 250
2.	Mango	5 Districts	2,500		
		- Sidenreng Rappang	500	• Panca Rijang	500
		- Majene	500	• Sendana	500
		- Bone	500	• Patinpeng	500
		- Maros	500	• Tanratili	500
		- Wajo	500	• Pammana/ S. Paru	500
3.	Mangosteen	2 Districts	1,000		
		- Tana Toraja	500	• Mengkendek	500
		- Polewali Mamasa	500	• Mambi	500
4.	Marquisa (Passion Fruit)	2 Districts	4,000		
		- Gowa	1,000	• Tompobulu	1,000
		- Tana Toraja	3,000	• Saluputti • Rindingallo	2,000 1,000
5.	Rambutan	4 Districts	4,050		
		- Mamuju	2,350	• Kalukku • Budong-Budong	1,000 1,350
		- Enrekang	500	• Meiwa	500
		- Pinrang	500	• Patampanua • Duampanua	300 200
		- Barru	700	• Tanete Rilau • Tanete Riaja	200 500
		Total	13 Districts * (15 Potential Areas)	12,550	-

Note : * Two potential sites are proposed in Kabupaten Gowa and Kabupaten Tana Toraja.
Source : JICA Study Team and Diperta Propinsi Sulawesi Selatan.

付表 6-10 果樹園開発候補地区の優先化選定基準 (1/3)

Key Assessment Factors and Evaluation Indicators	Scoring Standard	Weight Ratio
<p>(1) Natural Conditions</p> <p>(1) - 1 Agro-climatic suitability</p> <p>(1) - 2 Physiography</p> <p>(1) - 3 Soils</p> <p>(1) - 4 Land availability and development potentials</p> <p>(1) - 5 Present land use condition and land preparation</p> <p>(1) - 6 Available farmland for fruit orchard development</p> <p>(1) - 7 Availability of water resources</p>	<p>Conformity with agro-ecological requirements</p> <p>3 Highly suitable</p> <p>2 Suitable</p> <p>1 Suitable with water supply</p> <p>Topographic condition</p> <p>3 Plain & undulating</p> <p>2 Rolling</p> <p>1 Swamps, mountainous & hilly</p> <p>Soil conditions</p> <p>3 Alluvial, laterite & andosol</p> <p>2 Association of all types of soils (points 3 and 1)</p> <p>1 Peat soil, podzolic, grumusol, lithosol, regosol & mediterranean</p> <p>Total farmland comprising wet land, dry field, shifting cultivation, grass land, temporary fallow land and estates</p> <p>3 More than 20,000 ha</p> <p>2 1,000 ha to 20,000 ha</p> <p>1 Less than 1,000 ha</p> <p>Land development requirement</p> <p>3 Land dev.work not required (presently cropped area)</p> <p>2 Land clearing required (temporary fallow land)</p> <p>1 Land development required (presently not used as farmland)</p> <p>Average size of farmland per farm household</p> <p>3 More than 2 ha</p> <p>2 1 to 2 ha</p> <p>1 Less than 1 ha</p> <p>Type of possible water sources</p> <p>3 Sufficient water sources and good distribution of precipitation</p> <p>2 Perennial water sources exploitable by gravity</p> <p>1 Perennial water sources exploitable by pumping-up or seasonal water sources exploitable with storage facilities</p> <p>0 Water source not needed (enough with rainfalls)</p>	<p>0.20</p>
<p>(2) Seedling Production</p> <p>(2) - 1 Availability of recommended variety</p> <p>(2) - 2 Reliability of recommended mother plant variety</p> <p>(2) - 3 Seedling quality</p>	<p>No. of recommended varieties</p> <p>3 3 and more varieties</p> <p>2 2 varieties</p> <p>1 1 variety</p> <p>0 None</p> <p>Maintenance condition of the mother plants</p> <p>3 Maintained at BBI/BBU and seed growers' fields</p> <p>2 Maintained by BBI, but care taken by farmers</p> <p>1 Not maintained by BBI</p> <p>No. of seedling per hectare</p> <p>3 Less than 100</p> <p>2 100 to 400</p> <p>1 More than 400</p>	<p>0.05</p>

付表 6-10 果樹園開発候補地区の優先化選定基準 (2/3)

Key Assessment Factors and Evaluation Indicators	Scoring Standard	Weight Ratio
<p>(3) Institutional Capability</p> <p>(3) - 1 Extension service system</p> <p>(3) - 2 Service capacity of extension workers</p> <p>(3) - 3 Possibility of organizing fruit growers</p>	<p>Establishment status of extension service system (No. of horticulture farm households per BPP)</p> <p>3 Very good (below 1,000) 2 Good (1,000 to 4,000) 1 Not Good (More than 4,000) 0 None (Zero)</p> <p>No. of PPLs assigned for food crops production per BPP</p> <p>3 10 PPLs and more 2 5 to 9 PPLs 1 1 to 4 PPLs</p> <p>No. of Kelompok Tani in District</p> <p>3 More than 1,000 2 400 to 1,000 1 Less than 400</p>	<p>0.10</p>
<p>(4) Development Needs</p> <p>(4) - 1 Alleviation of poverty</p> <p>(4) - 2 Opportunity of employment generation</p> <p>(4) - 3 Contribution to reduction of the regional disparities</p> <p>(4) - 4 Enhancement of agro-industry</p> <p>(4) - 5 Environmentally friendly development</p>	<p>Proportion of the less developed villages to the District total</p> <p>3 Above 25% 2 10% to 25% 1 Below 10%</p> <p>Possibility of job creation through orchard development (hired labor requirement per hectare)</p> <p>3 More than 140 M/D 2 90 to 140 M/D 1 Less than 90 M/D</p> <p>Proportion of the beneficiary horticulture farm-households to the District total</p> <p>3 Above 50% 2 10% to 50% 1 Below 10%</p> <p>Possibility of agro-processing development</p> <p>3 Processing required (marquisa) 2 Processing possible (banana, durian, mango & salak) 1 Processing not required (avocado, duku, mangosteen & rambutan)</p> <p>Positive Impact (+) and no negative impact (±)</p> <p>3 Above 90 2 80 to 90 1 Below 80 (For details, refer to Tables J-4-2 to J-4-5 of Appendix J)</p>	<p>0.18</p>
<p>(5) Social Acceptability</p> <p>(5) - 1 Farmers' intention to promote orchard development</p> <p>(5) - 2 Farmers' familiarity with fruit growing</p> <p>(5) - 3 Contribution to improvement of the gender issue</p>	<p>Farmers' willingness to grow fruit trees or expand fruit cultivation</p> <p>3 Very high 2 High 1 Not so high</p> <p>No. of productive target fruit trees per horticulture farm-household</p> <p>3 More than 5 2 1 to 5 1 Less than 1</p> <p>Women's contribution to the household financial management</p> <p>3 More than 40% 2 20% to 40% 1 Less than 20%</p>	<p>0.15</p>

付表 6-10 果樹園開発候補地区の優先化選定基準 (3/3)

Key Assessment Factors and Evaluation Indicators	Scoring Standard	Weight Ratio
<p>(6) Crop Marketability</p> <p>(6) - 1 Transportation and quality conservation</p> <p>(6) - 2 Local market size</p> <p>(6) - 3 Accessibility to regional markets</p> <p>(6) - 4 Supply and demand situation</p> <p>(6) - 5 Relationship between production and price</p>	<p>Damages and losses during transportation</p> <p>3 Ordinary packaging needed to transport crops</p> <p>2 Specific package and night transportation required to avoid physical damages and losses</p> <p>1 Temperature-controlled vehicle and special package needed to keep the quality of crops</p> <p>Proportion of urban population to the District total</p> <p>3 Above 25%</p> <p>2 10% to 25%</p> <p>1 Below 10%</p> <p>Existence of municipality (Kotamadya) with population of more than 100,000</p> <p>3 Within 100 km by road or ship</p> <p>2 100 to 200 km</p> <p>1 More than 200 km</p> <p>Future demand in 2010 vis-a-vis present supply</p> <p>3 Deficit</p> <p>2 Even or balanced</p> <p>1 Surplus</p> <p>Trends of relationships between yearly production and price</p> <p>3 Significantly positive trend</p> <p>2 Positive trend</p> <p>1 Negative trend</p>	0.17
<p>(7) Crop Profitability</p> <p>(7) - 1 Crop budget analysis indicated by Net Production Value for the first 11 years</p> <p>(7) - 2 Initial working capital requirement indicated by the duration needed to settle the accumulated deficit</p> <p>(7) - 3 Average net income from target fruit production for 11 years</p>	<p>Net production value per ha at discount rate of 10%</p> <p>3 Above Rp. 30,000</p> <p>2 Rp. 10,000 to Rp. 30,000</p> <p>1 Below Rp. 10,000</p> <p>No. of deficit years at the initial stage</p> <p>3 Less than 3 years</p> <p>2 3 to 6 years</p> <p>1 More than 6 years</p> <p>Annual average net income during 11 years</p> <p>3 Below Rp. 5,000</p> <p>2 Rp. 5,000 to Rp. 25,000</p> <p>1 Above Rp. 25,000</p>	0.15
	Weight Total	1.00

Source : JICA Study Team

付表-6-16 果樹園開発事業の優先化評価結果

Project Code Development Districts	Accumulated Scores	Weighted Points	Priority Ranking (Weighted Points)		Proposed Implementation			
			Each Province	Study Area	Phase I*	Phase II**	Phase III	
1. North Sumatra								
<i>(1) Durian</i>								
NS(DR)-1 Dairi	59	9.12	4	15		○		
NS(DR)-2 Tapanuli Tengah	65	10.13	3	5	○			
NS(DR)-3 Tapanuli Utara	59	9.12	5	16		○		
<i>(2) Mangosteen</i>								
NS(MN)-1 Tapanuli Selatan	51	7.95	8	31			○	
NS(MN)-2 Tapanuli Utara	52	8.15	7	30			○	
<i>(3) Marquisa</i>								
NS(MA)-1 Karo	65	10.48	2	2	○			
<i>(4) Rambutan</i>								
NS(RB)-1 Langkat	69	10.93	1	1	○			
<i>(5) Salak</i>								
NS(SK)-1 Tapanuli Selatan	55	8.81	6	22		○		
2. West Java								
<i>(1) Avocado</i>								
WJ(AV)-1 Bandung	51	7.75	5	34			○	
<i>(2) Duku</i>								
WJ(DK)-1 Ciamis	49	7.60	6	36			○	
<i>(3) Durian</i>								
WJ(DR)-1 Bogor	63	9.50	2	11	○			
<i>(4) Mango</i>								
WJ(MO)-1 Sumedang	62	9.59	1	9	○			
<i>(5) Mangosteen</i>								
WJ(MN)-1 Purwakarta	57	9.01	4	19		○		
<i>(6) Salak</i>								
WJ(SK)-1 Tasikmalaya	58	9.21	3	12	○			
3. East Java								
<i>(1) Avocado</i>								
EJ(AV)-1 Lumajang	58	9.17	6	13		○*		
<i>(2) Banana</i>								
EJ(BA)-1 Jombang	66	10.40	1	3	○			
EJ(BA)-2 Lumajang	65	10.18	2	4	○			
<i>(3) Duku</i>								
EJ(DK)-1 Tulungagung	60	9.67	5	8		○*		
<i>(4) Durian</i>								
EJ(DR)-1 Jombang	62	9.72	4	7	○			
EJ(DR)-2 Trenggalek	56	8.89	8	21		○		
<i>(5) Mango</i>								
EJ(MO)-1 Pasuruan	58	9.03	7	18		○		
<i>(6) Salak</i>								
EJ(SK)-1 Malang	63	10.09	3	6	○			
4. South Sulawesi								
<i>(1) Avocado</i>								
SS(AV)-1 Gowa	50	7.59	15	37			○	
SS(AV)-2 Soppeng	51	7.86	12	32			○	
<i>(2) Mango</i>								
SS(MO)-1 Sidreng Rappang	51	7.72	14	35			○	
SS(MO)-2 Majene	55	8.44	7	25			○	
SS(MO)-3 Bone	55	8.18	11	29			○	
SS(MO)-4 Maros	57	8.76	5	23		○		
SS(MO)-5 Wajo	59	9.11	3	17		○		
<i>(3) Mangosteen</i>								
SS(MN)-1 Tana Toraja	51	7.78	13	33			○	
SS(MN)-2 Polewali Mamasa	54	8.19	10	28			○	
<i>(4) Marquisa</i>								
SS(MA)-1 Gowa	57	8.97	4	20		○		
SS(MA)-2 Tana Toraja	54	8.41	9	27			○	
<i>(5) Rambutan</i>								
SS(RB)-1 Mainuju	63	9.52	1	10	○			
SS(RB)-2 Enrekang	54	8.42	8	26			○	
SS(RB)-3 Pinrang	58	8.61	6	24		○		
SS(RB)-4 Barru	60	9.16	2	14	○			
Total ODPs :					37	12	12	13

Notes : * The first priority ODPs proposed to be implemented in Phase I (Short-term Action Plan period) will be developed in stages even in Phase II and Phase III by expanding their schemes.

** The secondary group of ODPs will be implemented in Phase II (medium-term period) and also expanded in Phase III.

○* This ODP for Avocado, Duku or Mangosteen Production was firstly ranked as first priority group, but its implementation was postponed in Phase II in view of their present difficulties in procuring a good deal of high quality seedlings.

Source : JICA Study Team

付表 6-17 開発候補地区および事業別の果樹園開発シナリオ(1/2)

Project Code/ Development Districts	Phase I Up to 2003 (Repelita VII)	Phase II 2004 - 2008 (Repelita VIII)	Phase III 2009 - 2018 (Repelita IX & X)
1 North Sumatrra			
<i>(1) Durian</i>			
NS(DR)-1 Dairi	-	A-II	A-II / A-III(E&P)
NS(DR)-2 Tapanuli Tengah	A-II	A-II / A-III(E)	A-II / A-III(E&P)
NS(DR)-3 Tapanuli Utara	-	A-II	A-II / A-III(E&P)
<i>(2) Mangosteen</i>			
NS(MN)-1 Tapanuli Selatan	-	-	A-I
NS(MN)-2 Tapanuli Utara	-	-	A-I
<i>(3) Marquisa</i>			
NS(MA)-1 Karo	A-III(P)	A-III(P&E)	A-III(P&E)
<i>(4) Rambutan</i>			
NS(RB)-1 Langkat	A-II	A-II / A-III(E)	A-III(E&P)
<i>(5) Salak</i>			
NS(SK)-1 Tapanuli Selatan	-	A-II	A-II / A-III(E&P)
2. West Java			
<i>(1) Avocado</i>			
WJ(AV)-1 Bandung	-	-	A-II
<i>(2) Duku</i>			
WJ(DK)-1 Ciamis	-	-	A-I / A-II
<i>(3) Durian</i>			
WJ(DR)-1 Bogor	A-I / A-II	A-II	A-II
<i>(4) Mango</i>			
WJ(MO)-1 Sumedang	A-II	A-II / A-III(E&P)	A-III(E&P)
<i>(5) Mangosteen</i>			
WJ(MN)-1 Purwakarta	-	A-I / A-II	A-II / A-III(E)
<i>(6) Salak</i>			
WJ(SK)-1 Tasikmalaya	A-II	A-II	A-II
3. East Java			
<i>(1) Avocado</i>			
EJ(AV)-1 Lumajang	-	A-I / A-II	A-II
<i>(2) Banana</i>			
EJ(BA)-1 Jombang	A-III(P)	A-III(P&E)	A-III(P&E)
EJ(BA)-2 Lumajang	A-II	A-II	A-III(P&E)
<i>(3) Duku</i>			
EJ(DK)-1 Tulungagung	-	A-I	A-I / A-II
<i>(4) Durian</i>			
EJ(DR)-1 Jombang	A-I	A-I / A-II	A-II
EJ(DR)-2 Trenggalek	-	A-I	A-I / A-II
<i>(5) Mango</i>			
EJ(MO)-1 Pasuruan	-	A-II / A-III(E)	A-III(E&P)
<i>(6) Salak</i>			
EJ(SK)-1 Malang	A-I / A-II	A-II	A-III(E&P)

付表 6-17 開発候補地区および事業別の果樹園開発シナリオ(2/2)

Project Code/ Development Districts	Phase I Up to 2003 (Repelita VII)	Phase II 2004 - 2008 (Repelita VIII)	Phase III 2009 - 2018 (Repelita IX & X)
4. South Sulawesi			
<i>(1) Avocado</i>			
SS(AV)-1 Gowa	-	-	A-I / A-II
SS(AV)-2 Soppeng	-	-	A-I / A-II
<i>(2) Mango</i>			
SS(MO)-1 Sidenreng Rappang	-	-	A-I / A-II
SS(MO)-2 Majene	-	-	A-I / A-II
SS(MO)-3 Bone	-	-	A-II
SS(MO)-4 Maros	-	A-I / A-II	A-II
SS(MO)-5 Wajo	-	A-I / A-II	A-II
<i>(3) Mangosteen</i>			
SS(MN)-1 Tana Toraja	-	-	A-I / A-II
SS(MN)-2 Polewali Mamasa	-	-	A-I / A-II
<i>(4) Marquisa</i>			
SS(MA)-1 Gowa	-	A-I / A-II	A-II / A-III(P&E)
SS(MA)-2 Tana Toraja	-	-	A-I / A-II
<i>(5) Rambutan</i>			
SS(RB)-1 Mamuju	A-I / A-II	A-II / A-III(E)	A-III(E&P)
SS(RB)-2 Enrekang	-	-	A-I / A-II
SS(RB)-3 Pintang	-	A-I / A-II	A-III(E&P)
SS(RB)-4 Barru	A-I / A-II	A-II	A-III(E&P)

Notes : A-I (Alternative I) = Local market based development
 A-II (Alternative II) = Regional & Urban Oriented Development
 A-III (Alternative III) = Export & Agro-industry Driven Development
 • A-III(E) = Alternative mainly aiming at "Export" promotion
 • A-III(P) = Alternative primarily aiming at "Processing" development

Source: JICA Study Team

付表 7-1 プログラム一覧

Code No.	Description	Primary Objectives
I. Programs at Central Level		
NP-1	Formation of Institutional Linkage for Horticulture Agribusiness Development	- To establish a closer linkage connecting the MOA and other relevant ministries and agencies as well as private sector focusing upon promotion of downstream activities of horticulture agribusiness development
NP-2	Strengthening of Intra-ministerial Coordination System for Orchard Development	- To extend the ongoing efforts to upgrade coordination activities among DGFCH and other Directorate Generals including Agencies under MOA as well as Directorates within DGFCH in respect to technical and administrative aspects
NP-3	Rationalization of Supporting Services for Credit Facilities and Marketing Promotion	- To strengthen financial and marketing mechanism for the benefit of small and holding fruit growers
NP-4	Strengthening of Research and Development Activities for Introduction and Breeding of High Quality New Fruit Varieties	- To upgrade the institutional and technical capacities for introduction and development of new varieties as the basic material to support horticulture agribusiness development
NP-5	Strengthening of New Technology Adaptability Trial Operation System	- To strengthen the new technology assessment system for tropical fruits
NP-6	Rationalization of Fruit Seedling Inspection System	- To rationalize the seed certification and control service system with a view to guarantee the variety and quality of fruit seedlings
NP-7	Strengthening of Plant Quarantine System	- To continue and extend the ongoing strengthening efforts of the plant quarantine system in Indonesia
II. Programs at Provincial Level		
PP-1	Strengthening of Project Planning Capacity at Provincial Level	- To upgrade capability and skills of Provincial Government staff on horticulture agribusiness development planning
PP-2	Strengthening of Management Capability Building of Provincial staff	- To provide Provincial Government staff with management training programs to improve their monitoring and management capacity
PP-3	Improvement of High Quality Seedling Propagation and Distribution System	- To set up large scale foundation blocks to maintain mother plants of the target fruits, and multiplication blocks of scions to maintain and multiply the recommended varieties and species as material supply sources to private nurseries
PP-4	Institutional and Technical Capability Building of Private Nurseries	- To organize private seed growers into cooperatives and to upgrade the propagation capacity of quality fruit seedlings in private nurseries
PP-5	Enhancement of Extension Staff's Knowledge on Horticulture Agribusiness Development	- To provide a series of training opportunities to subject matter specialists (PPS) and food crop extension workers (PPL)
PP-6	Upgrading of Market Information System	- To enhance contents of the existing services and to extend service areas
PP-7	Institutional Development for Association of Fruit Growers' Groups	- To generate the better bargaining power to fresh fruit markets and processing industry
III. Programs at District Level		
DP-1	Establishment of Orchard as Core of Target Fruit Growing Area	- To establish a core of high profitable horticulture agribusiness development areas
DP-2	Introduction and Practice of Market-oriented Quality Fruit Growing Techniques	- To train participatory farmers to produce and market quality fruits with provision of a series of training programs covering farm management, post-harvest handling & marketing aspects
DP-3	Establishment of On-farm Level Extension Service System	- To establish new on-farm level extension service system taking into account the limitation of PPLs.
DP-4	Development of Post-harvest Handling System	- To introduce post-harvest handling practices as a prerequisite of fruit growers' groups to market their products with consumers' preferable quality
DP-5	Improvement of Access Facilities to Markets	- To link newly developed fruit growing areas with local markets for ensuring timely delivery of planting materials and carrying out of harvested fruits under all-weathered condition
DP-6	Improvement of Local Market Facilities	- To reduce handling losses in local markets of fresh fruit collection, storage and distribution system is improved in capacity and function of facilities
DP-7	Institutional Strengthening of Small Landholding Fruit Growers	- To assure the better bargaining position through recognition of the brand name of fruits in the market

Source: JICA Study Team

付表 7-2 フェーズ別の果樹園開発面積

Province	District	Target Fruit	Target Area (ha)			
			Phase I	Phase II	Phase III	Total
North Sumatra	Dairi	Durian		300		300
	Tapanuli Tengah	Durian	500			500
	Tapanuli Utara	Durian		500		500
	Tapanuli Utara	Mangosteen			500	500
	Tapanuli Selatan	Mangosteen			500	500
	Karo	Marquisa	500			500
	Langkat	Rambutan	500			500
	Tapanuli Selatan	Salak		500		500
Total			1,500	1,300	1,000	3,800
Province	District	Target Fruit	Target Area (ha)			
			Phase I	Phase II	Phase III	Total
West Java	Bandung	Avocado			500	500
	Ciamis	Duku			500	500
	Bogor	Durian	500			500
	Sumedang	Mango	500			500
	Purwakarta	Mangosteen		500		500
	Tasikmalaya	Salak	500			500
	Sub-total			1,500	500	1,000
Province	District	Target Fruit	Target Area (ha)			
			Phase I	Phase II	Phase III	Total
East Java	Lumajang	Avocado		500		500
	Jombang	Banana	500			500
	Lumajang	Banana	500			500
	Tulungagung	Duku		500		500
	Jombang	Durian	500			500
	Trenggalek	Durian		500		500
	Pasuruan	Mango		500		500
	Malang	Salak	500			500
Total			2,000	2,000	0	4,000
Province	District	Target Fruit	Target Area (ha)			
			Phase I	Phase II	Phase III	Total
South Sulawesi	Gowa	Avocado			500	500
	Soppeng	Avocado			500	500
	Sidenreng Rappang	Mango			500	500
	Majene	Mango			500	500
	Bone	Mango			500	500
	Maros	Mango		500		500
	Wajo	Mango		500		500
	Tana Toraja	Mangosteen			500	500
	Polewali Mamasa	Mangosteen			500	500
	Gowa	Marquisa		500		500
	Tana Toraja	Marquisa			500	500
	Mamuju	Rambutan	500			500
	Enrekang	Rambutan			500	500
	Pinrang	Rambutan		500		500
	Barro	Rambutan	500			500
Total			1,000	2,000	4,500	7,500
Grand Total			6,000	5,800	6,500	18,300

Source: JICA Study Team

付表 7-3 県別の実施事業一覧

Project Code	District	Target Fruit	Land Preparation	Watering Facilities	Drainage System	Road Facilities	Animal Protection Fence	Post-harvest Facilities
NORTH SUMATRA								
NS(DR)-1	Dairi	Durian	0	0	-	0	-	0
NS(DR)-2	Tapanuli Tengah	Durian	0	-	0	0	-	0
NS(DR)-3	Tapanuli Utara	Durian	0	0	-	0	-	0
NS(MN)-1	Tapanuli Selatan	Mangosteen	0	0	-	0	-	0
NS(MN)-2	Tapanuli Utara	Mangosteen	0	0	-	0	-	0
NS(MA)-1	Karo	Marquisa	0	0	-	0	-	0
NS(RB)-1	Langkat	Rambutan	0	0	0	0	-	0
NS(SK)-1	Tapanuli Selatan	Salak	0	0	-	0	-	0
WEST JAVA								
WJ(AV)-1	Bandung	Avocado	0	0	-	0	-	0
WJ(DK)-1	Ciamis	Duku	0	0	-	0	-	0
WJ(DR)-1	Bogor	Durian	0	0	-	0	-	0
WJ(MO)-1	Sumedang	Mango	0	0	-	0	-	0
WJ(MN)-1	Purwakarta	Mangosteen	0	0	-	0	-	0
WJ(SK)-1	Tasikmalaya	Salak	0	0	-	0	-	0
EAST JAVA								
EJ(AV)-1	Lumajang	Avocado	0	0	-	0	-	0
EJ(BA)-1	Jombang	Banana	-	0	-	0	-	0
EJ(BA)-2	Lumajang	Banana	-	0	-	0	-	0
EJ(DK)-1	Tulungagung	Duku	-	0	-	0	-	0
EJ(DR)-1	Jombang	Durian	0	0	-	0	-	0
EJ(DR)-2	Trenggalek	Durian	0	0	-	0	-	0
EJ(MO)-1	Pasuruan	Mango	-	0	-	0	-	0
EJ(SK)-1	Malang	Salak	-	0	-	0	-	0
SOUTH SULAWESI								
SS(AV)-1	Gowa	Avocado	0	0	-	0	-	0
SS(AV)-2	Soppeng	Avocado	0	0	-	0	0	0
SS(MO)-1	Sidenreng Rappang	Mango	0	0	-	0	-	0
SS(MO)-2	Majene	Mango	0	0	-	0	-	0
SS(MO)-3	Bone	Mango	0	0	-	0	-	0
SS(MO)-4	Maros	Mango	0	0	-	0	-	0
SS(MO)-5	Wajo	Mango	0	0	-	0	-	0
SS(MN)-1	Tana Toraja	Mangosteen	0	0	-	0	-	0
SS(MN)-2	Polewali Mamasa	Mangosteen	0	0	-	0	0	0
SS(MA)-1	Gowa	Marquisa	0	0	-	0	-	0
SS(MA)-2	Tana Toraja	Marquisa	0	-	-	0	-	0
SS(RB)-1	Mamuju	Rambutan	0	0	0	0	-	0
SS(RB)-2	Enrekang	Rambutan	0	0	-	0	0	0
SS(RB)-3	Pinrang	Rambutan	0	0	-	0	-	0
SS(RB)-4	Barru	Rambutan	0	0	-	0	0	0

Source: JICA Study Team

付表 7-4 事業費

Unit : thousand US\$

Code No.	Description	Cost															
		Phase - I			Phase - II			Phase - III			Total	Activity	Total				
		Preparation	Construction	Activity	Total	Preparation	Activity	Operation	Total	Preparation				Construction	Activity		
		3,478	7,729	1,194	12,401	0	2,328	2,328	0	0	0	0	0	0	0	3,749	3,749
NP-1	Formation of Institutional Linkage for Horticulture Agribusiness Development	0	0	556	556	0	1,083	1,083	0	0	0	0	0	0	0	1,744	1,744
NP-2	Strengthening of Inter-ministerial Coordination System for Orchard Development	0	0	556	556	0	1,083	1,083	0	0	0	0	0	0	0	1,744	1,744
NP-3	Rationalization of Supporting Services for Credit Facilities and Marketing Promotion	1,667	0	0	1,667	0	0	0	0	0	0	0	0	0	0	0	0
NP-4	Strengthening of Research and Development Activities for Introduction and Breeding of High Quality New Fruit Varieties	444	3,556	56	4,056	0	108	108	0	0	0	0	0	0	0	174	174
NP-5	Strengthening of New Technology Adaptability Trial Operation System	444	284	28	757	0	54	54	0	0	0	0	0	0	0	87	87
NP-6	Rationalization of Fruit Seedling Inspection System	33	333	0	367	0	0	0	0	0	0	0	0	0	0	0	0
NP-7	Strengthening of Plant Quarantine System	889	3,556	0	4,444	0	0	0	0	0	0	0	0	0	0	0	0
	Programs at Provincial Level	956	1,778	548	3,281	0	1,095	1,095	0	0	0	0	0	0	0	1,660	1,660
PP-1	Strengthening of Project Planning Capacity at Provincial Level	0	0	167	167	0	325	325	0	0	0	0	0	0	0	523	523
PP-2	Strengthening of Management Capability Building of Provincial staff	0	0	167	167	0	325	325	0	0	0	0	0	0	0	523	523
PP-3	Improvement of High Quality Seedling Propagation and Distribution System	178	1,778	0	1,956	0	0	0	0	0	0	0	0	0	0	0	0
PP-4	Institutional and Technical Capability Building of Private Nurseries	444	0	13	458	0	0	0	0	0	0	0	0	0	0	0	0
PP-5	Enhancement of Extension Staff's Knowledge on Horticulture Agribusiness Development	0	0	86	86	0	139	139	0	0	0	0	0	0	0	223	223
PP-6	Upgrading of Market Information System	333	0	0	333	0	0	0	0	0	0	0	0	0	0	0	0
PP-7	Institutional Development for Association of Fruit Growers' Groups	0	0	115	115	0	217	217	0	0	0	0	0	0	0	391	391
	Programs at District Level	3,445	14,135	2,630	20,210	3,677	18,639	4,542	26,858	5,291	34,630	7,712	47,633				
DP-1	Establishment of Orchard as Core of Target Fruit Growing Area	2,831	11,648	767	15,246	3,477	18,102	1,444	23,023	5,030	33,633	2,607	41,270				
DP-2	Introduction and Practice of Market-oriented Quality Fruit Growing Techniques	0	0	250	250	0	471	471	0	0	0	0	850				
DP-3	Establishment of On-farm Level Extension Service System	0	0	1,537	1,537	0	2,476	2,476	0	0	0	0	3,987				
DP-4	Development of Post-harvest Handling System	35	354	0	389	54	537	0	590	100	997	0	1,097				
DP-5	Improvement of Access Facilities to Markets	133	0	0	133	147	0	0	147	161	0	0	161				
DP-6	Improvement of Local Market Facilities	444	2,133	0	2,578	0	7	7	0	0	0	0	8				
DP-7	Institutional Strengthening of Smallholding Fruit Growers	0	0	77	77	0	144	144	0	0	0	0	261				
	Grand Total	7,878	23,641	4,373	35,892	3,677	18,639	7,874	30,190	5,291	34,630	13,121	53,042				

Source: JICA Study Team

付表 7-5 果樹園の実施・運営で見込まれる雇用創出

(1) North Sumatra Province			(Unit : man-days)			
Project Code No.	District	Target Fruit	Labor Requirements			Total Average
			Phase I	Phase II	Phase III	
1. NS(DR)-1	Dairi *	Durian	-	91,590	1,026,000	1,117,590
2. NS(DR)-2	Tapanuli Tengah	Durian	152,500	610,000	2,200,000	2,962,500
3. NS(DR)-3	Tapanuli Utara	Durian	-	152,650	1,522,500	1,675,150
4. NS(MN)-1	Tapanuli Utara	Mangosteen	-	-	875,000	875,000
5. NS(MN)-2	Tapanuli Selatan	Mangosteen	-	-	875,000	875,000
6. NS(MA)-1	Karo	Marquisa	556,600	1,006,600	900,000	2,463,200
7. NS(RB)-1	Langkat	Rambutan	108,450	212,000	1,000,000	1,320,450
8. NS(SK)-1	Tapanuli Selatan	Salak	-	543,000	1,830,000	2,373,000
Total	-	-	817,550	2,615,840	10,228,500	13,661,890
Average Per-day Labor Requirements			448	1,433	2,802	1,871

(2) West Java Province			(Unit : man-days)			
Project Code No.	District	Target Fruit	Labor Requirements			Total Average
			Phase I	Phase II	Phase III	
1. WJ(AV)-1	Bandung	Avocado	-	-	907,650	907,650
2. WJ(DK)-1	Ciamis	Duku	-	-	620,000	620,000
3. WJ(DR)-1	Bogor	Durian	152,650	610,000	2,200,000	2,962,650
4. WJ(MO)-1	Sumedang	Mango	125,000	645,000	2,250,000	3,020,000
5. WJ(MN)-1	Purwakarta	Mangosteen	-	132,500	2,655,000	2,787,500
6. WJ(SK)-1	Tasikmalaya	Salak	543,000	830,000	2,000,000	3,373,000
Total	-	-	820,650	2,217,500	10,632,650	13,670,800
Average Per-day Labor Requirements			450	1,215	2,913	1,873

(3) East Java Province			(Unit : man-days)			
Project Code No.	District	Target Fruit	Labor Requirements			Total Average
			Phase I	Phase II	Phase III	
1. EJ(AV)-1	Lumajang	Avocado	-	152,650	2,217,500	2,370,150
2. EJ(BA)-1	Jombang	Banana	1,334,500	1,272,250	2,625,750	5,232,500
3. EJ(BA)-2	Lumajang	Banana	1,334,500	1,272,250	2,625,750	5,232,500
4. EJ(DK)-1	Tulungagung	Duku	-	125,000	1,770,000	1,895,000
5. EJ(DR)-1	Jombang	Durian	152,650	610,000	2,200,000	2,962,650
6. EJ(DR)-2	Trenggalek	Durian	-	152,650	1,710,000	1,862,650
7. EJ(MO)-1	Pasuruan	Mango	-	125,000	1,770,000	1,895,000
8. EJ(SK)-1	Malang	Salak	543,000	830,000	2,000,000	3,373,000
Total	-	-	3,364,650	4,539,800	16,919,000	24,823,450
Average Per-day Labor Requirements			1,844	2,488	4,635	3,400

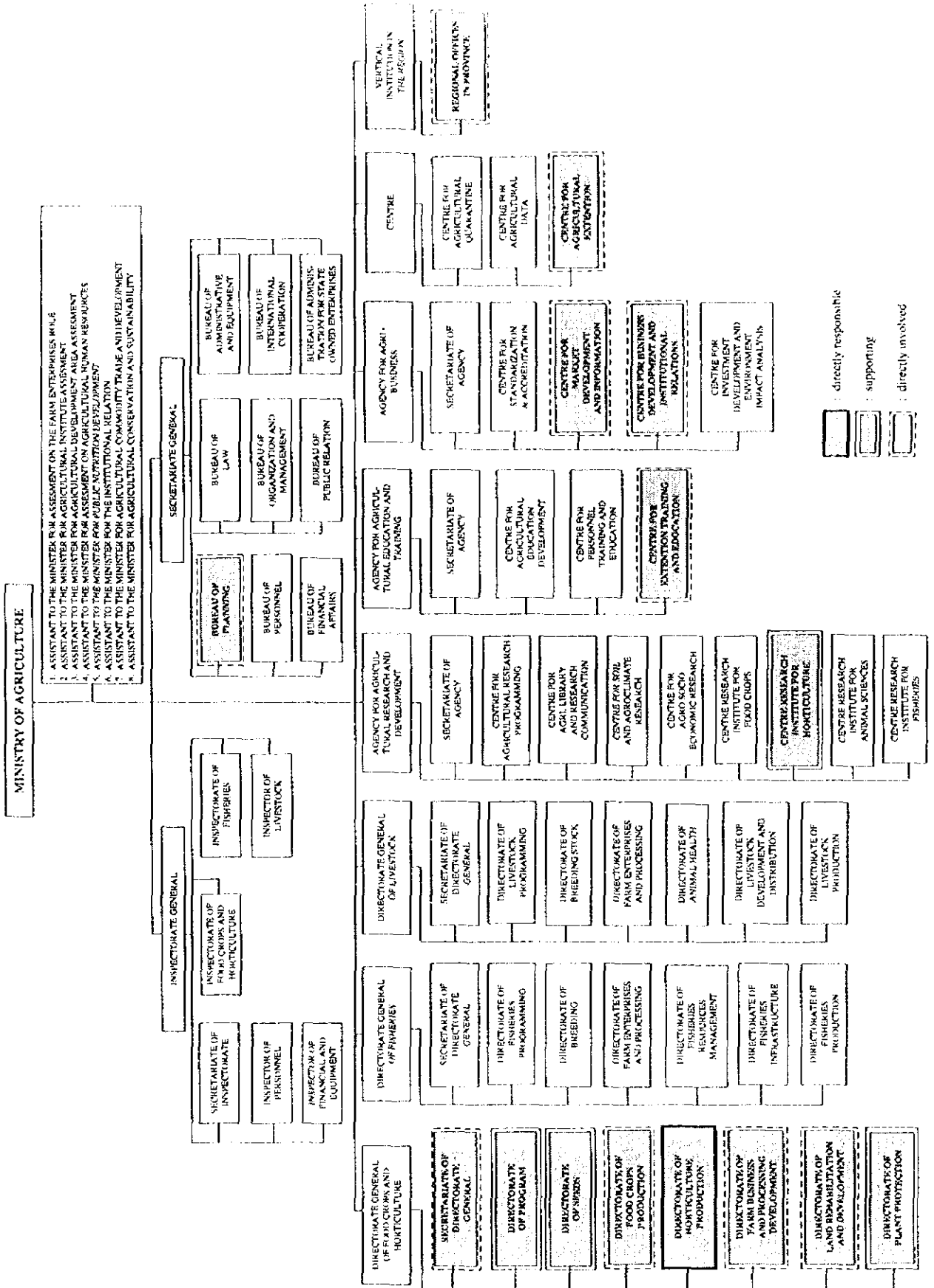
(4) South Sulawesi Province			(Unit : man-days)			
Project Code No.	District	Target Fruit	Labor Requirements			Total Average
			Phase I	Phase II	Phase III	
1. SS(AV)-1	Gowa	Avocado	-	-	907,650	907,650
2. SS(AV)-2	Soppeng	Avocado	-	-	907,650	907,650
3. SS(MO)-1	Sidereng Rappang	Mango	-	-	770,000	770,000
4. SS(MO)-2	Majene	Mango	-	-	770,000	770,000
5. SS(MO)-3	Bone	Mango	-	-	770,000	770,000
6. SS(MO)-4	Maros	Mango	-	125,000	1,745,000	1,870,000
7. SS(MO)-5	Wajo	Mango	-	125,000	1,745,000	1,870,000
8. SS(MN)-1	Tana Toraja	Mangosteen	-	-	875,000	875,000
9. SS(MN)-2	Polewali Mamasa	Mangosteen	-	-	875,000	875,000
10. SS(MA)-1	Gowa	Marquisa	-	556,600	67,875,000	68,431,600
11. SS(MA)-2	Tana Toraja	Marquisa	-	-	1,006,600	1,006,600
12. SS(RB)-1	Mamuju	Rambutan	108,450	212,000	1,000,000	1,320,450
13. SS(RB)-2	Enrekang	Rambutan	-	-	320,450	320,450
14. SS(RB)-3	Pinrang	Rambutan	-	108,450	712,000	820,450
15. SS(RB)-4	Barro	Rambutan	108,450	212,000	1,000,000	1,320,450
Total	-	-	216,900	1,339,050	81,279,350	82,835,300
Average Per-day Labor Requirements			119	734	22,268	11,347

Grand Total			5,219,750	10,712,190	119,059,500	134,991,440
Average Per-day Labor Requirements			2,860	5,870	32,619	18,492

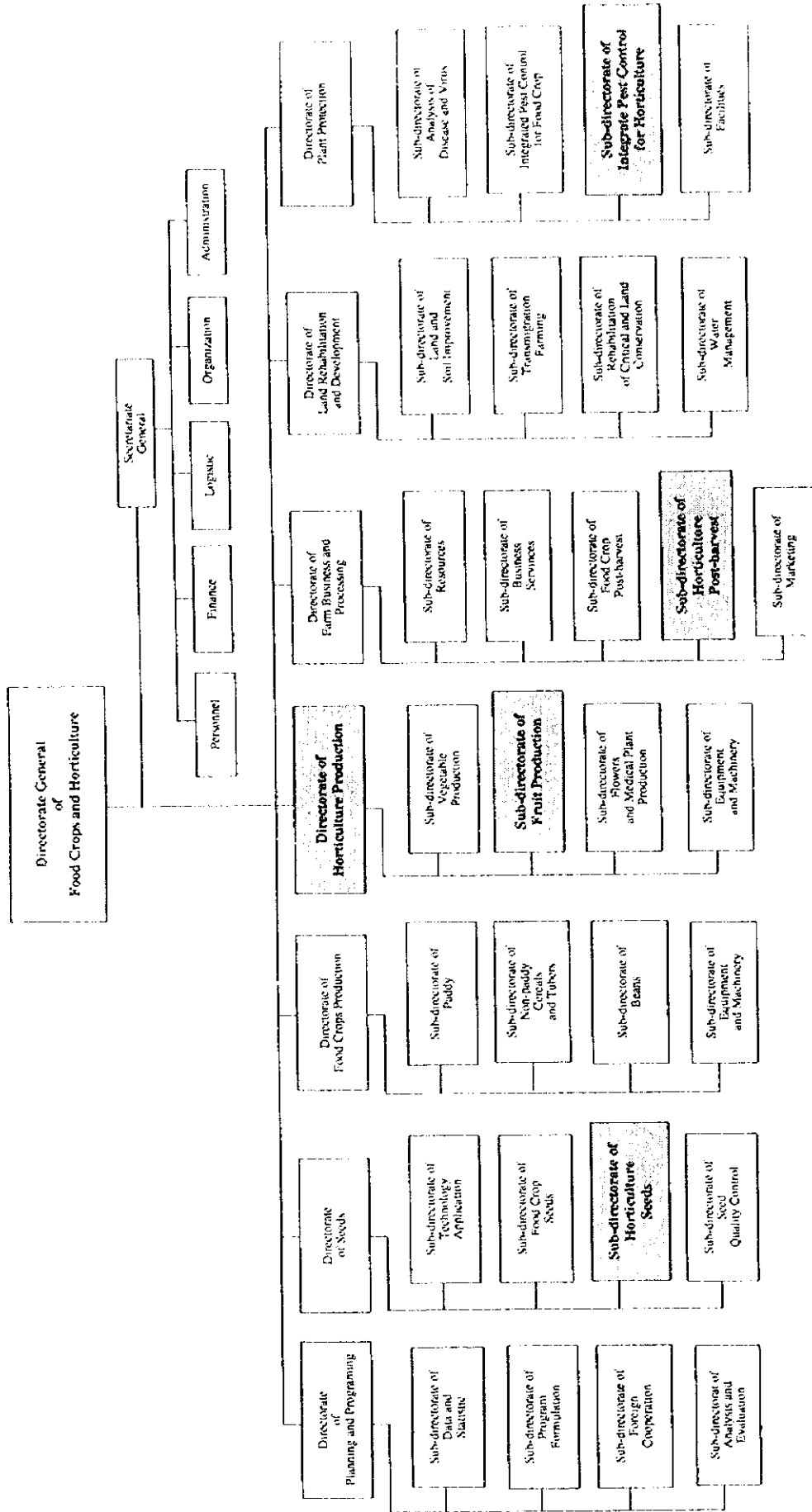
Note : * The development scale is set at 500 ha for each development site, except 300 ha in Dairi (North Sumatra).
 Source : Tables B-4-14 (1/9) to B-4-14 (9/9) in Appendix B : Annual Labor Requirements by Farming Practice.

付図

付図 2-1 農業省組織図

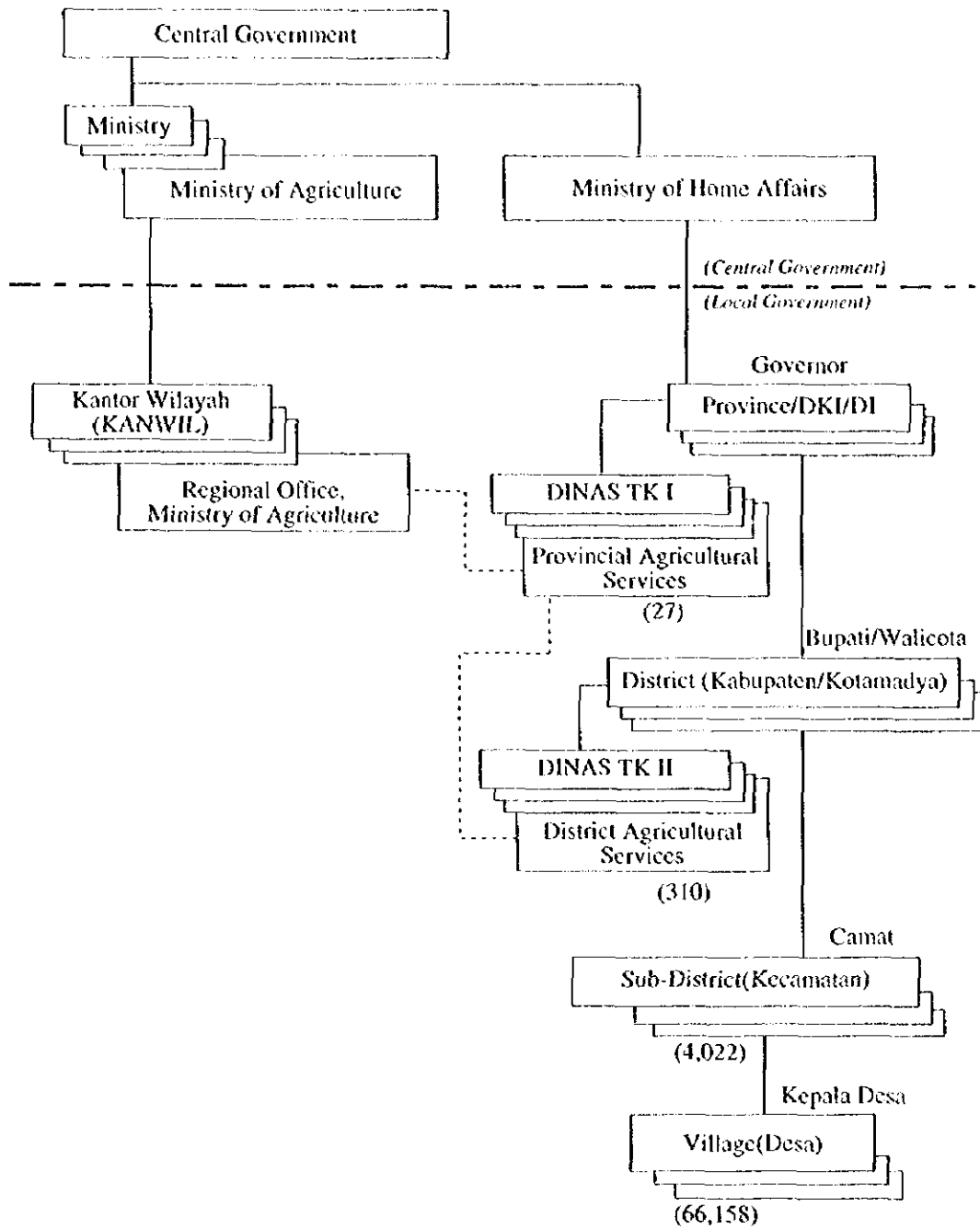


付図 2-2 農業省・食用作物園芸総局の組織図



Source: DG/FC, MOA 1998

付図 2-3 インドネシアの行政構造図



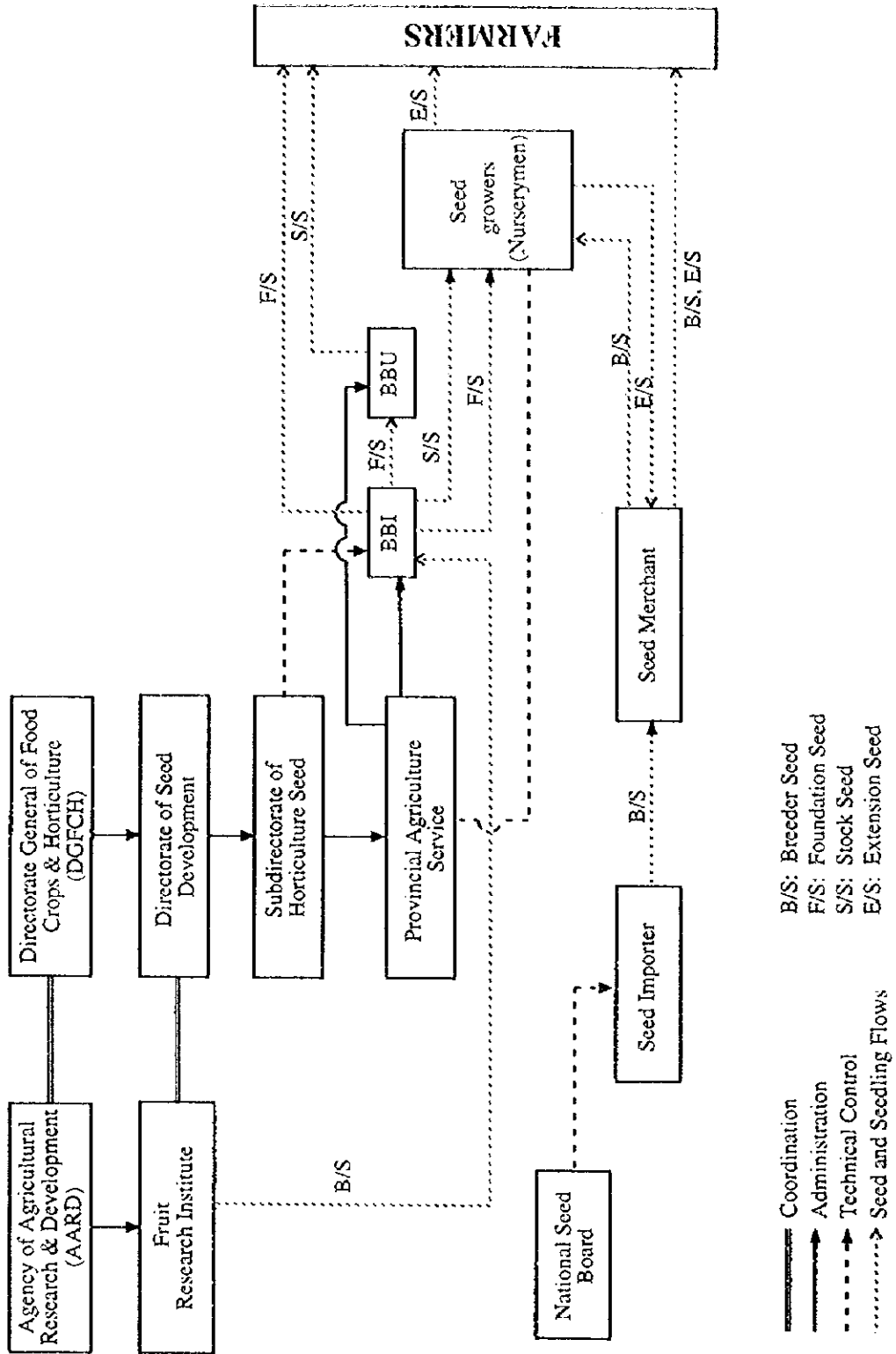
————— Command

..... Coordination

*() is the total number of institutions in the country.

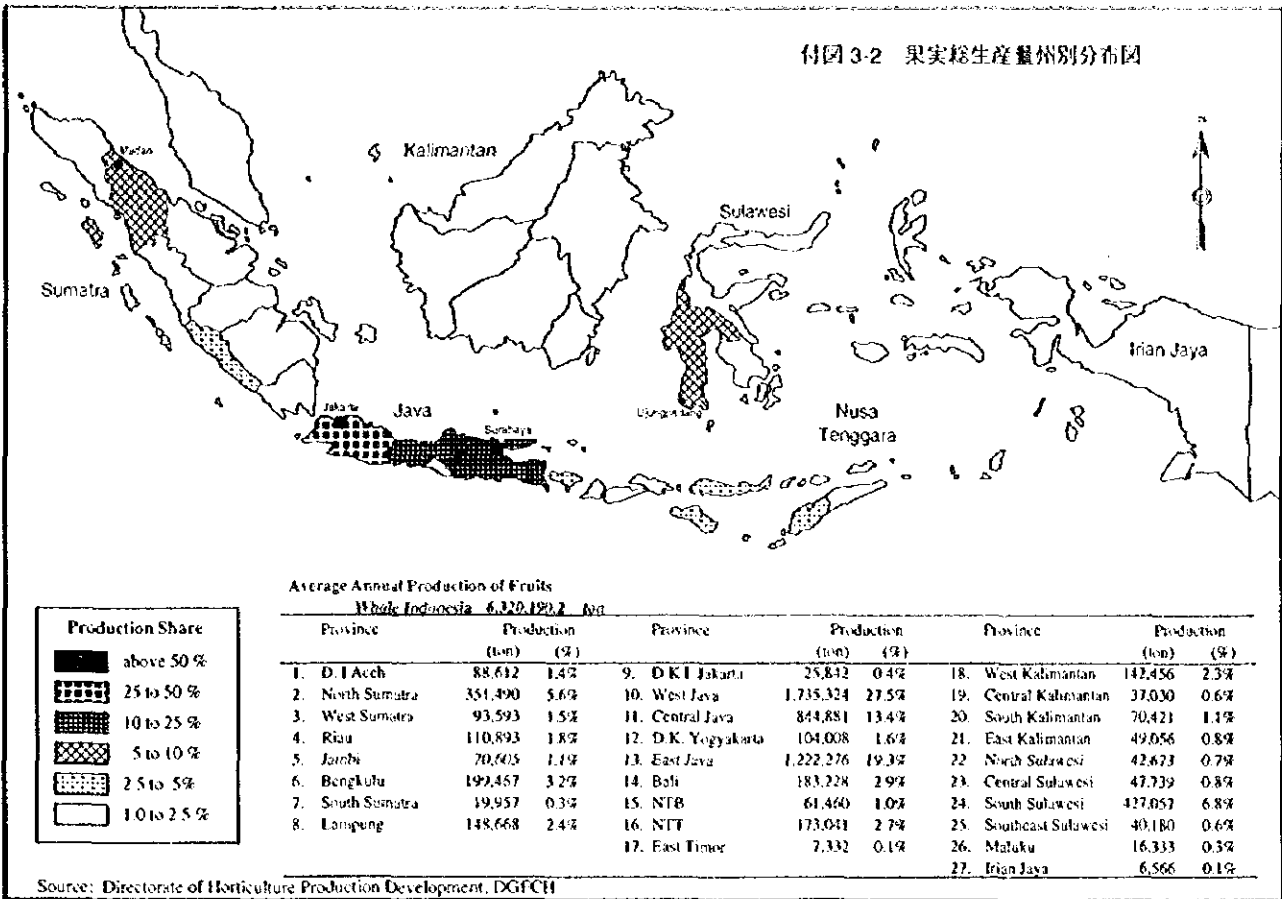
Source: DGF/CH, MOA

付図 3-1 種苗生産及び流通に関する組織図

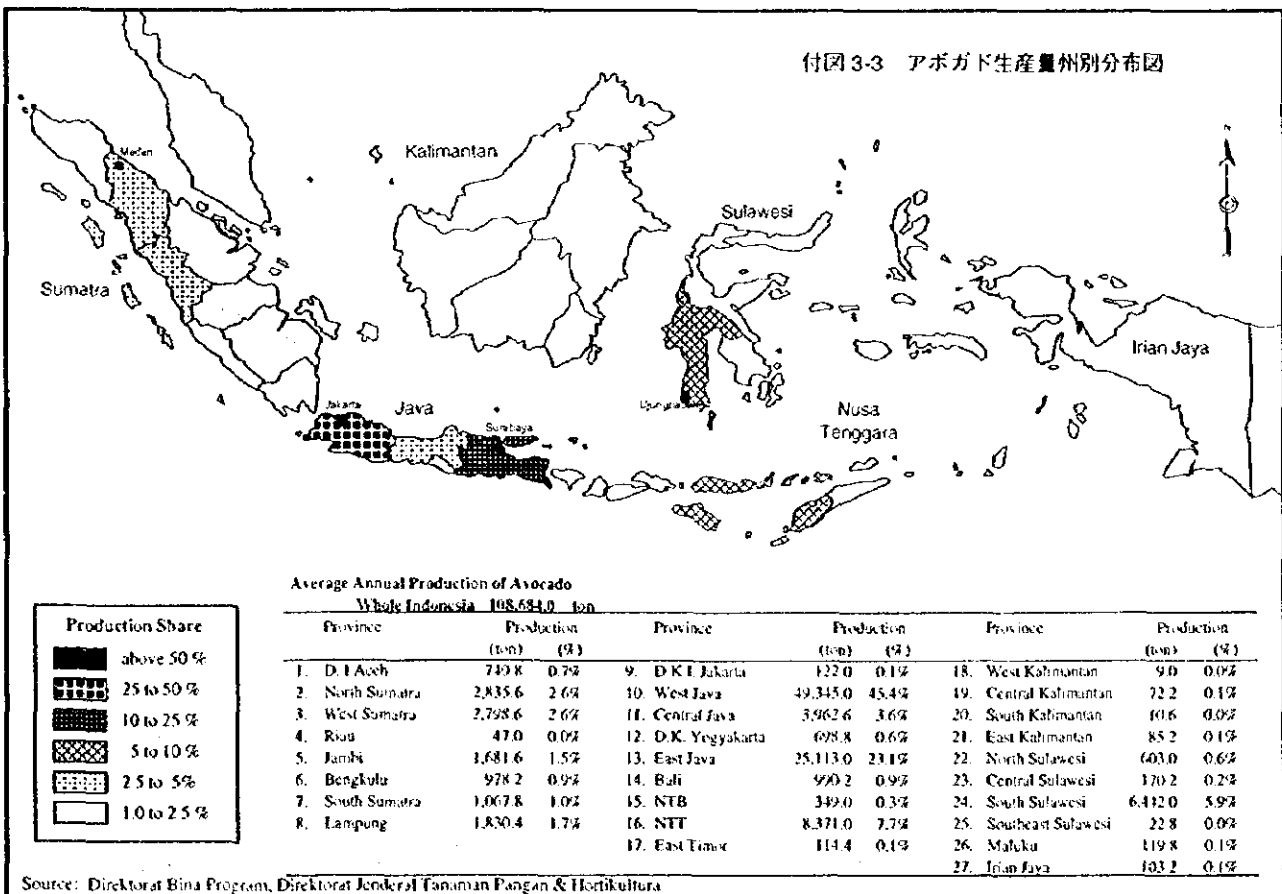


Source : DGFCH

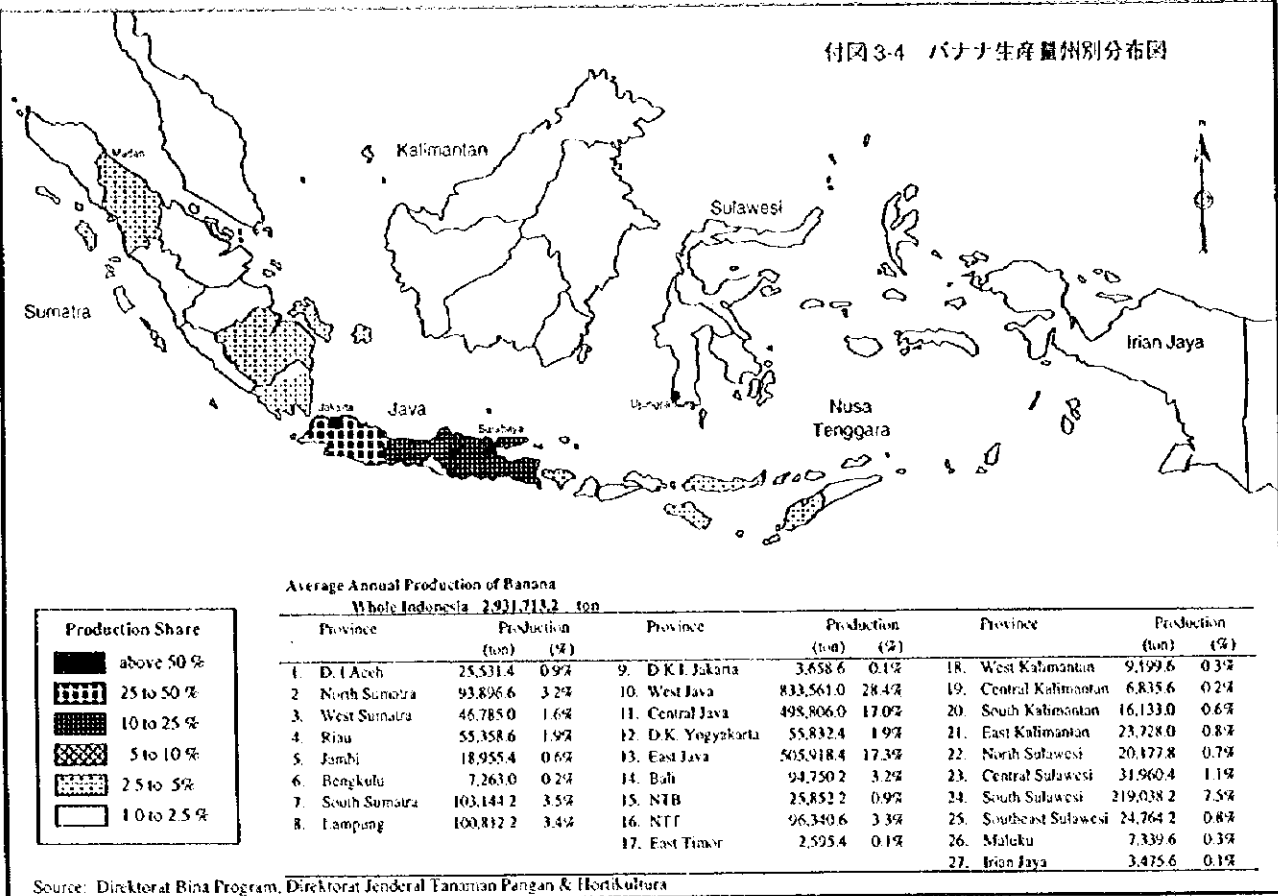
付図 3-2 果実総生産量州別分布図



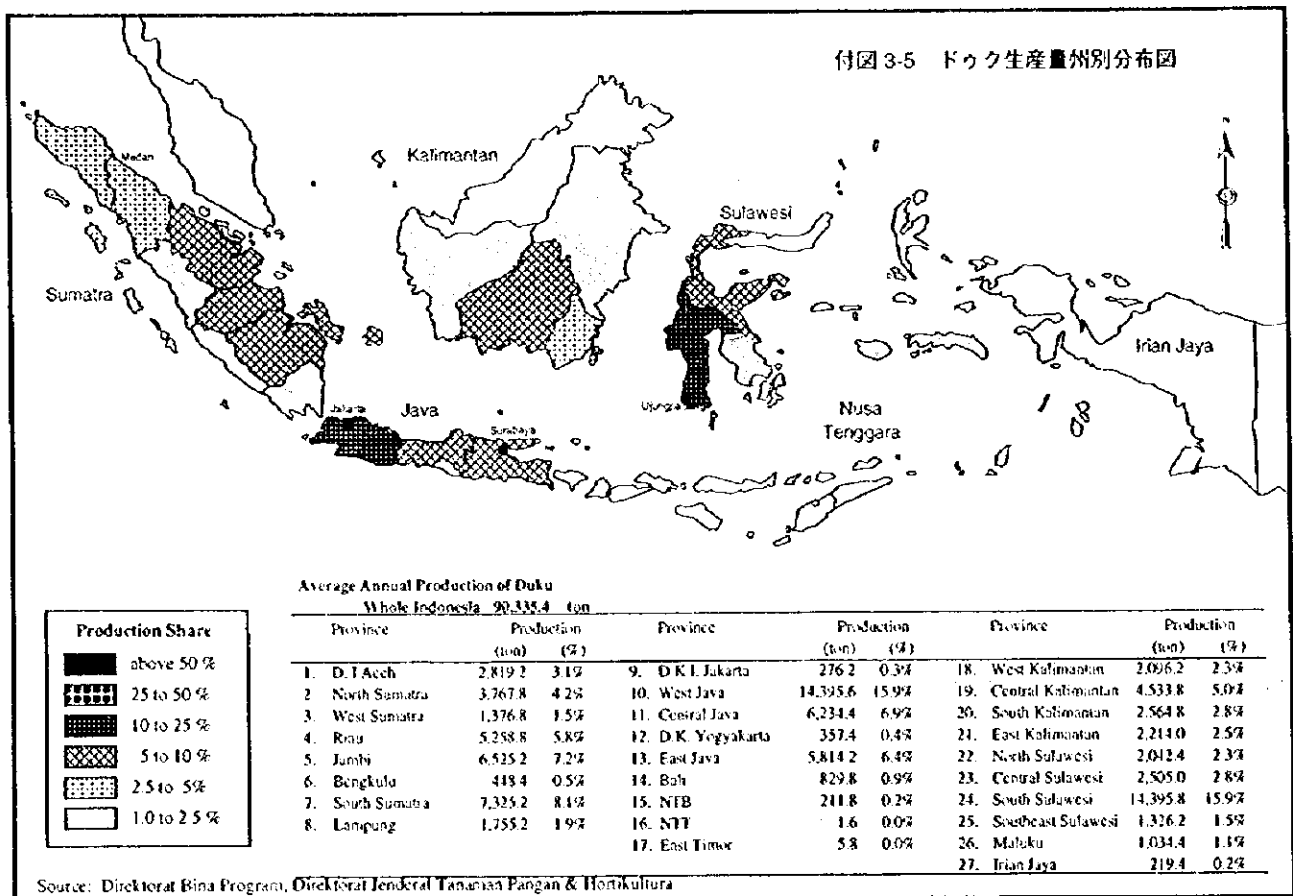
付図 3-3 アボガド生産量州別分布図



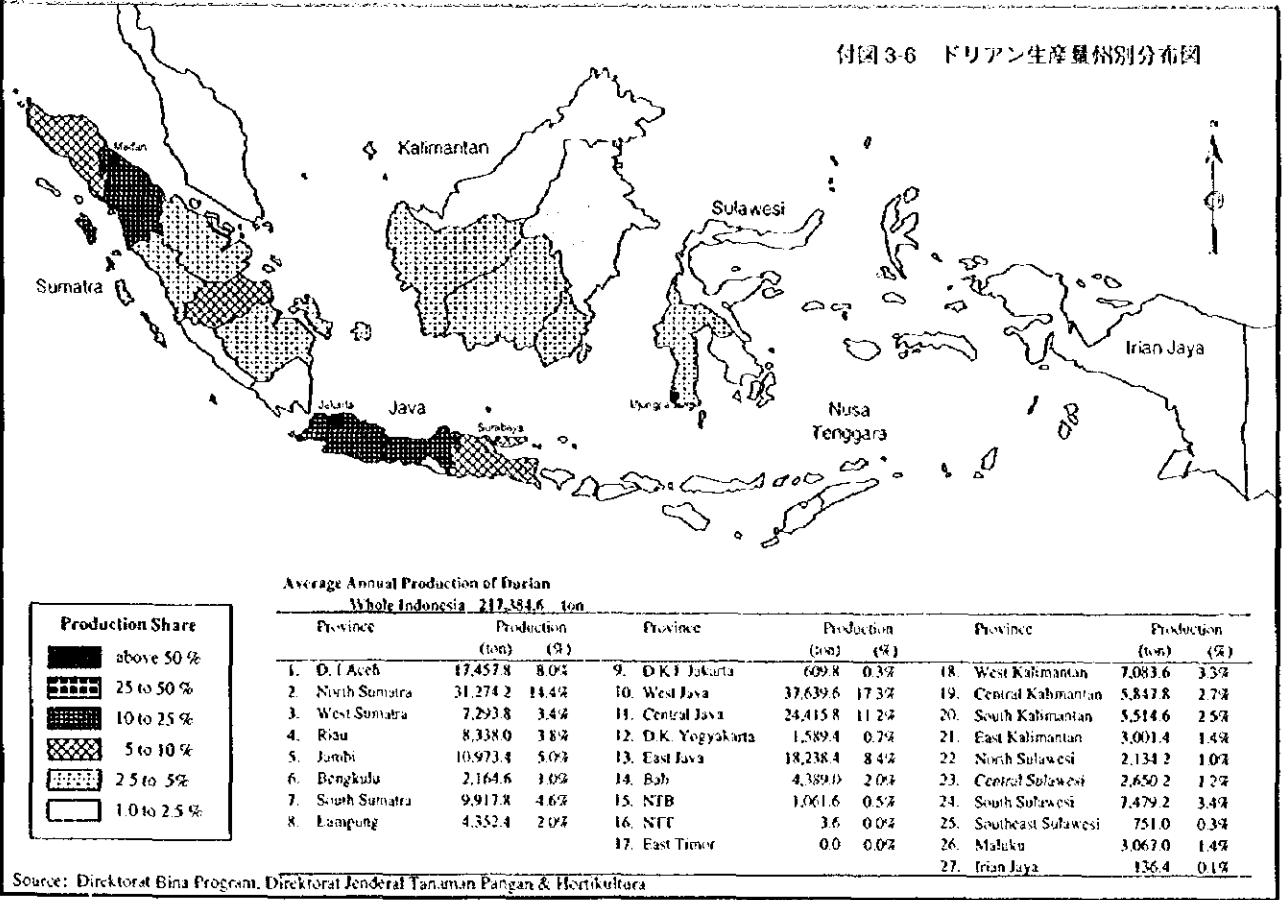
付図 3-4 バナナ生産量州別分布図



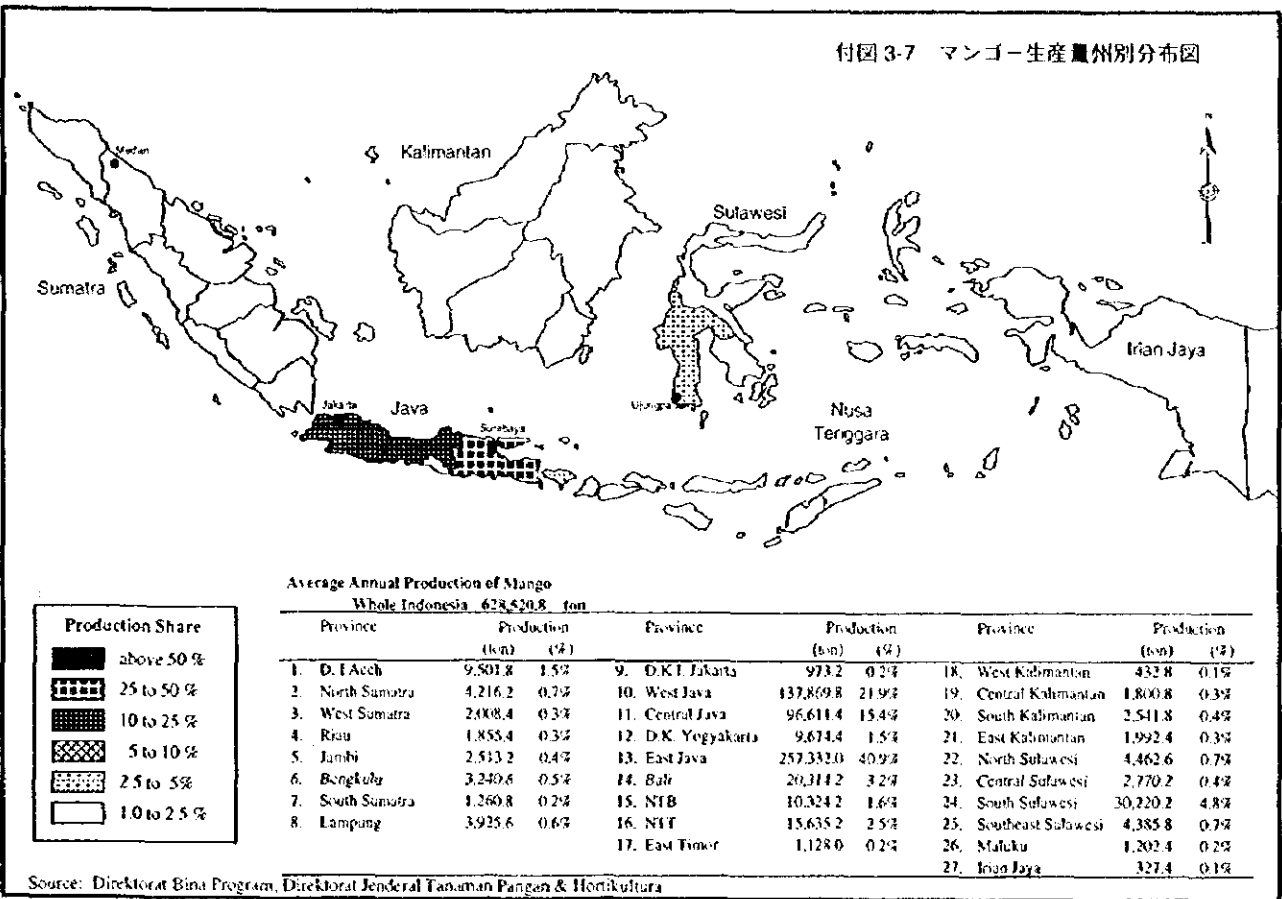
付図 3-5 ドック生産量州別分布図



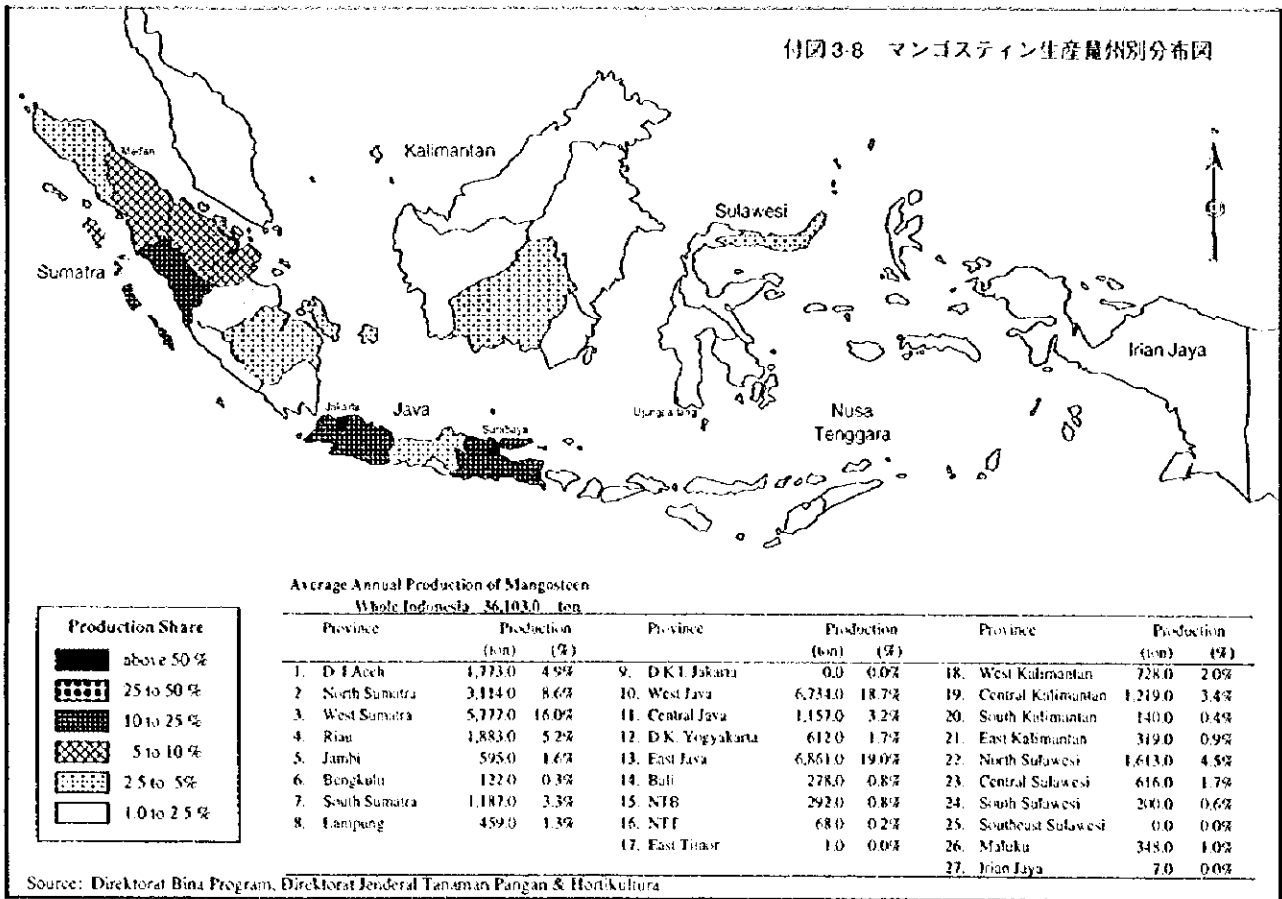
付図 3-6 ドリアン生産量州別分布図



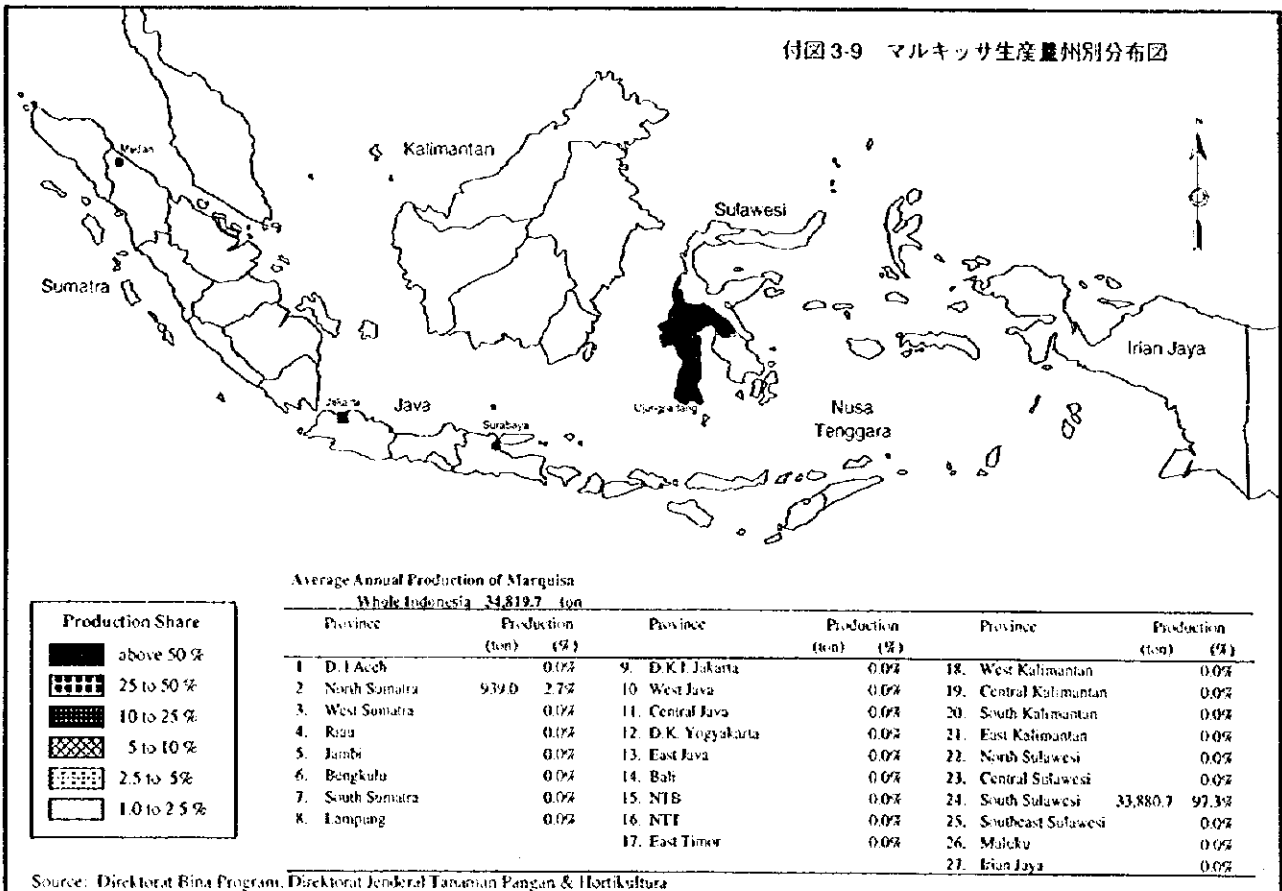
付図 3-7 マンゴー生産量州別分布図



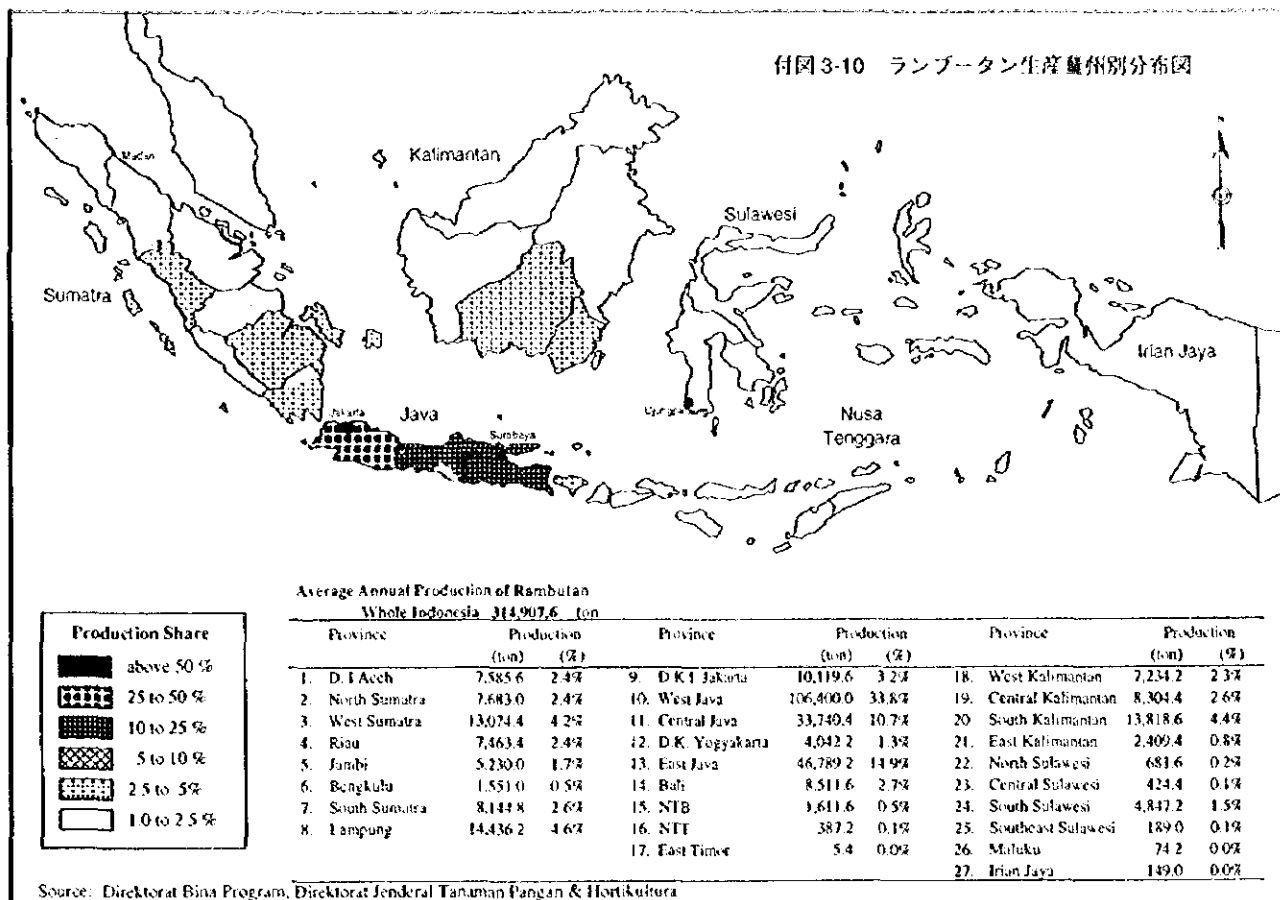
付図3-8 マンゴスティン生産量州別分布図



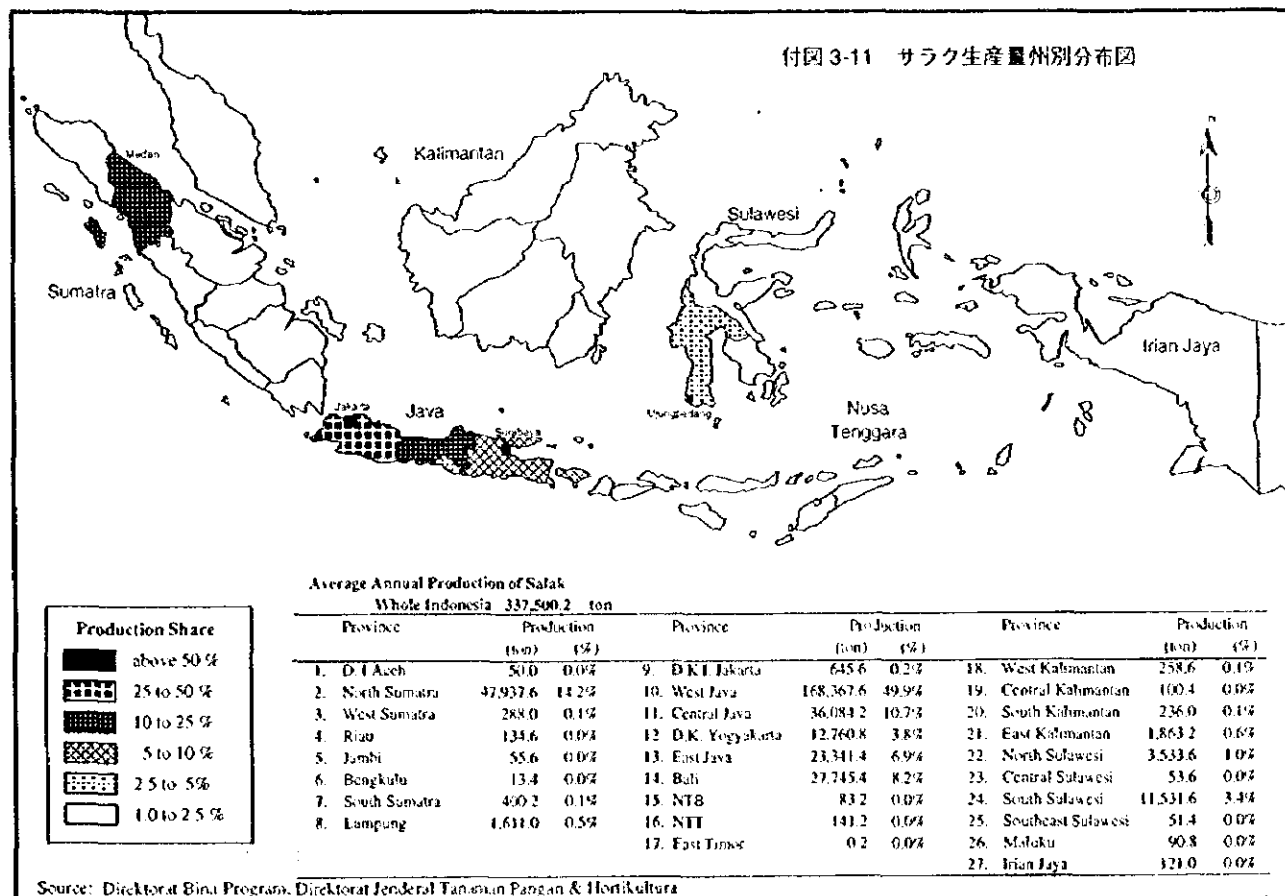
付図3-9 マルクキッサ生産量州別分布図



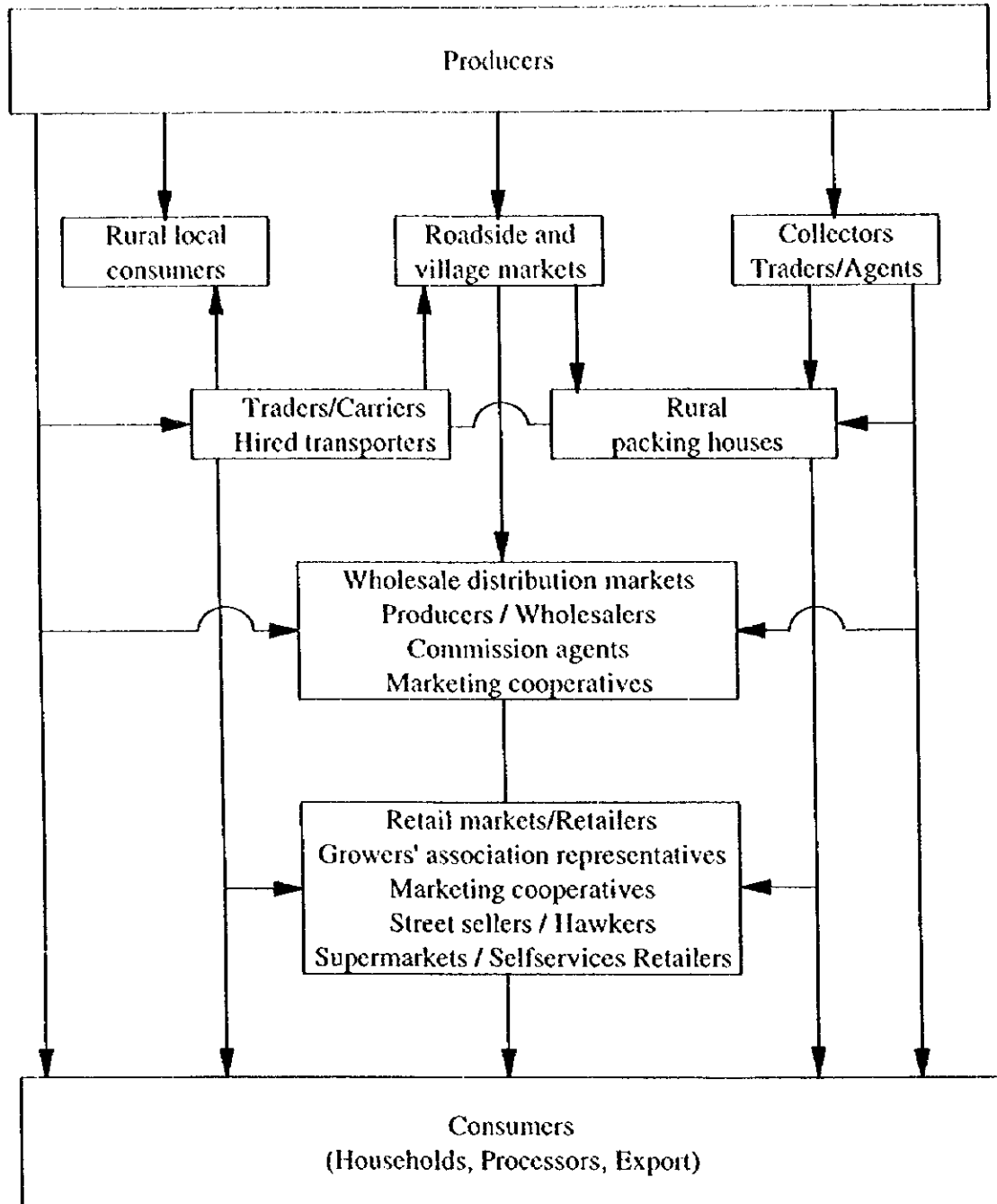
付図 3-10 ランブータン生産量州別分布図



付図 3-11 サラク生産量州別分布図



付図 3-12 果実の一般的流通経路図



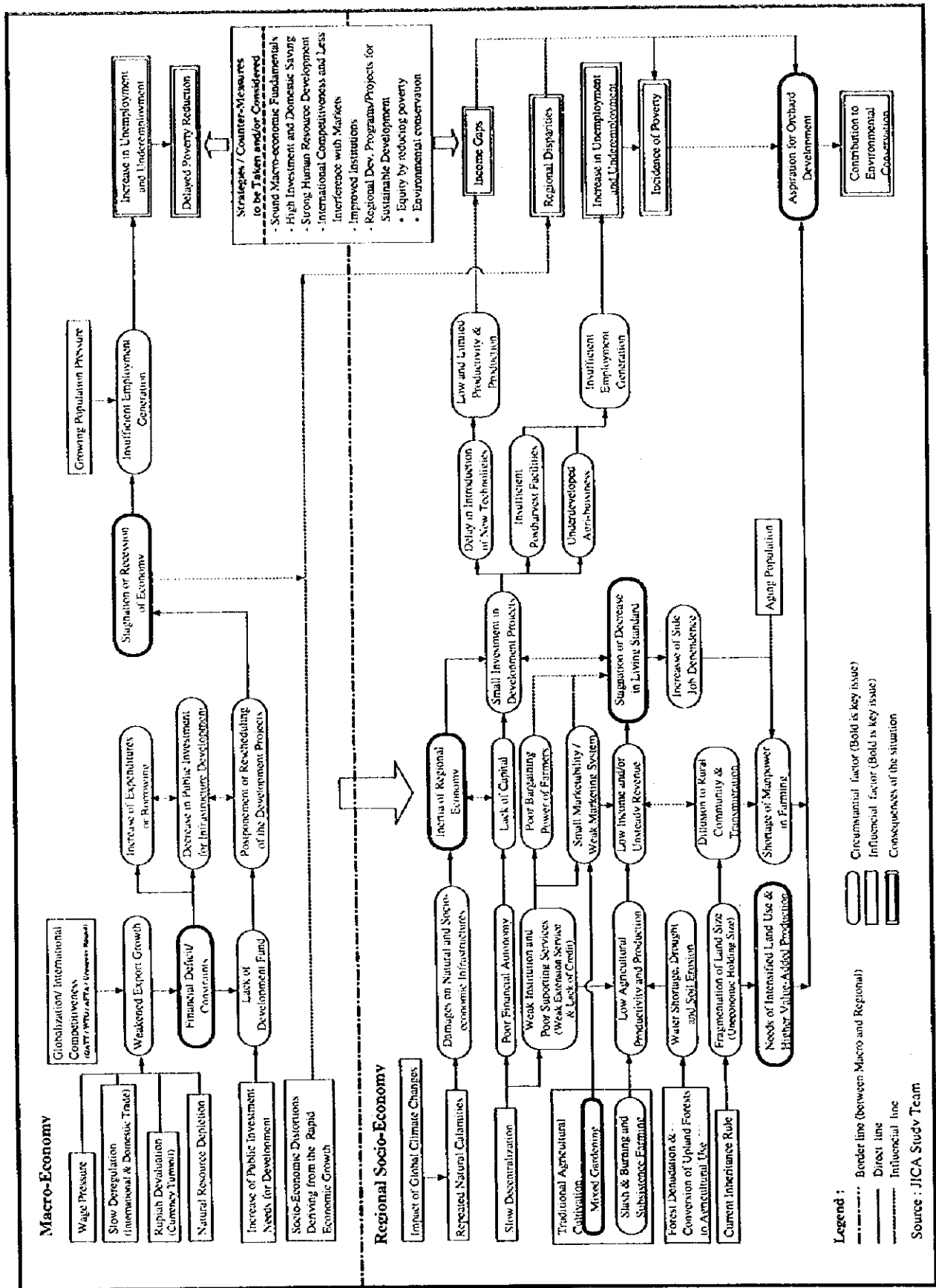
Source : JICA Study Team

付図 4-1 調査地域における対象果実収穫時期

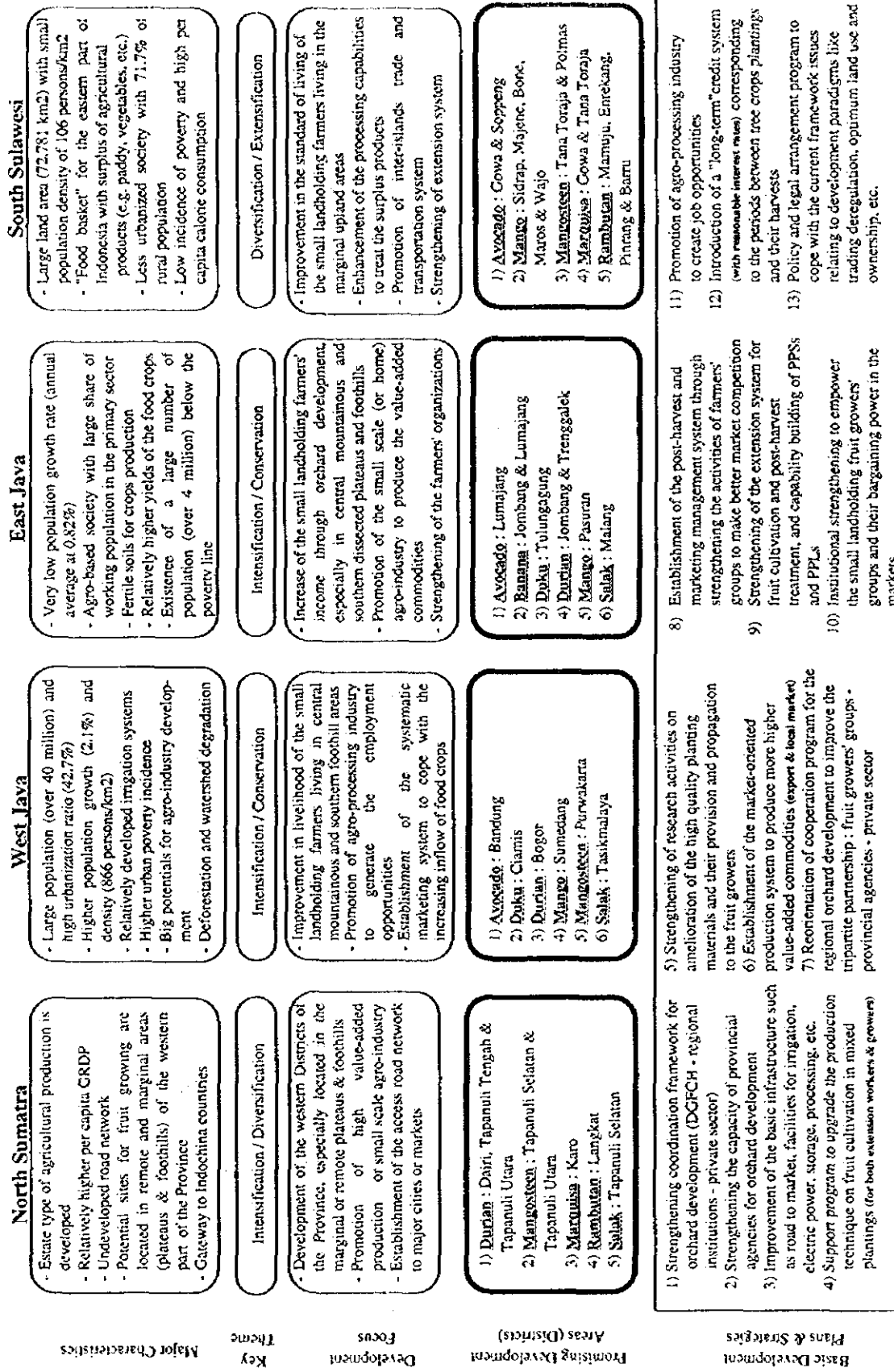
Province	Fruit	M O N T H											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
North Sumatra	Durian						■	■	■				
	Marquisa	■	■	■									
	Mango				▨	▨							
	Avocado						▨	▨	▨				
	Lanzon									▨	▨	▨	
	Mangosteen												▨
	Salak		▨	▨	▨								
	Rambutan						▨	▨	▨				
	Banana	▨	▨	▨	▨								
West Java	Durian	■	■										■
	Mango									▨	▨	▨	
	Avocado	▨											▨
	Lanzon		▨	▨									
	Mangosteen												
	Salak	▨									▨	▨	▨
	Rambutan	▨	▨										▨
	Banana	▨	▨	▨	▨							▨	▨
East Java	Durian	■	■										
	Mango								▨	▨	▨	▨	
	Avocado		▨	▨									
	Lanzon		▨	▨	▨								
	Mangosteen												
	Salak	▨										▨	▨
	Rambutan	▨	▨	▨									
	Banana	▨	▨	▨	▨							▨	▨
South Sulawesi	Marquisa	■	■										■
	Mango	▨								▨	▨	▨	
	Avocado	▨	▨										▨
	Lanzon		▨	▨									
	Mangosteen												
	Salak	▨	▨	▨									
	Rambutan	▨	▨	▨									
	Banana	▨	▨	▨	▨							▨	▨

Source : JICA Study Team

付図 5-1 調査対象地域ならびに果樹栽培振興に係る問題構造



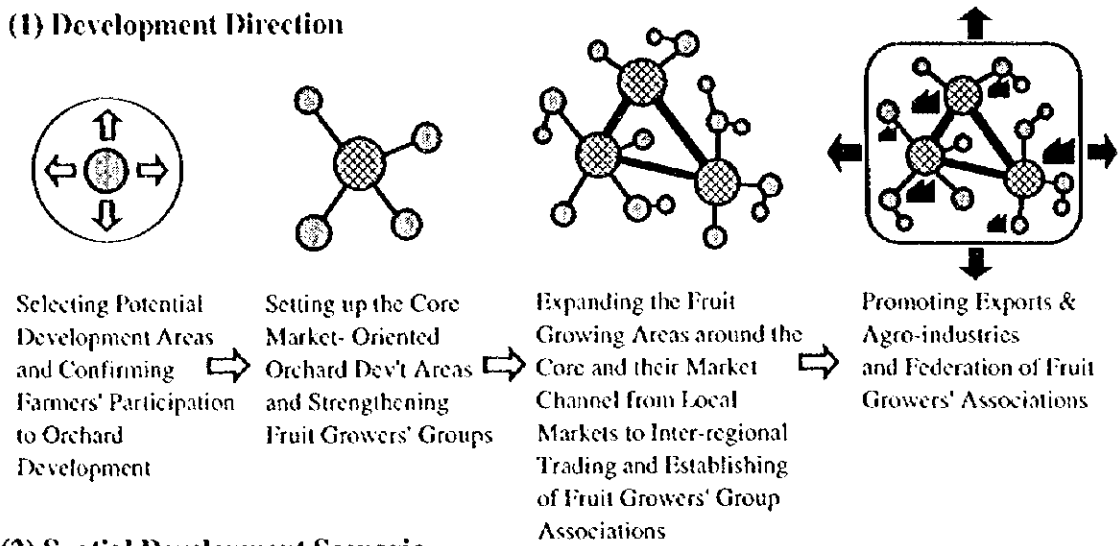
付図 6-1 調査地域における州別果樹園開発の概念図



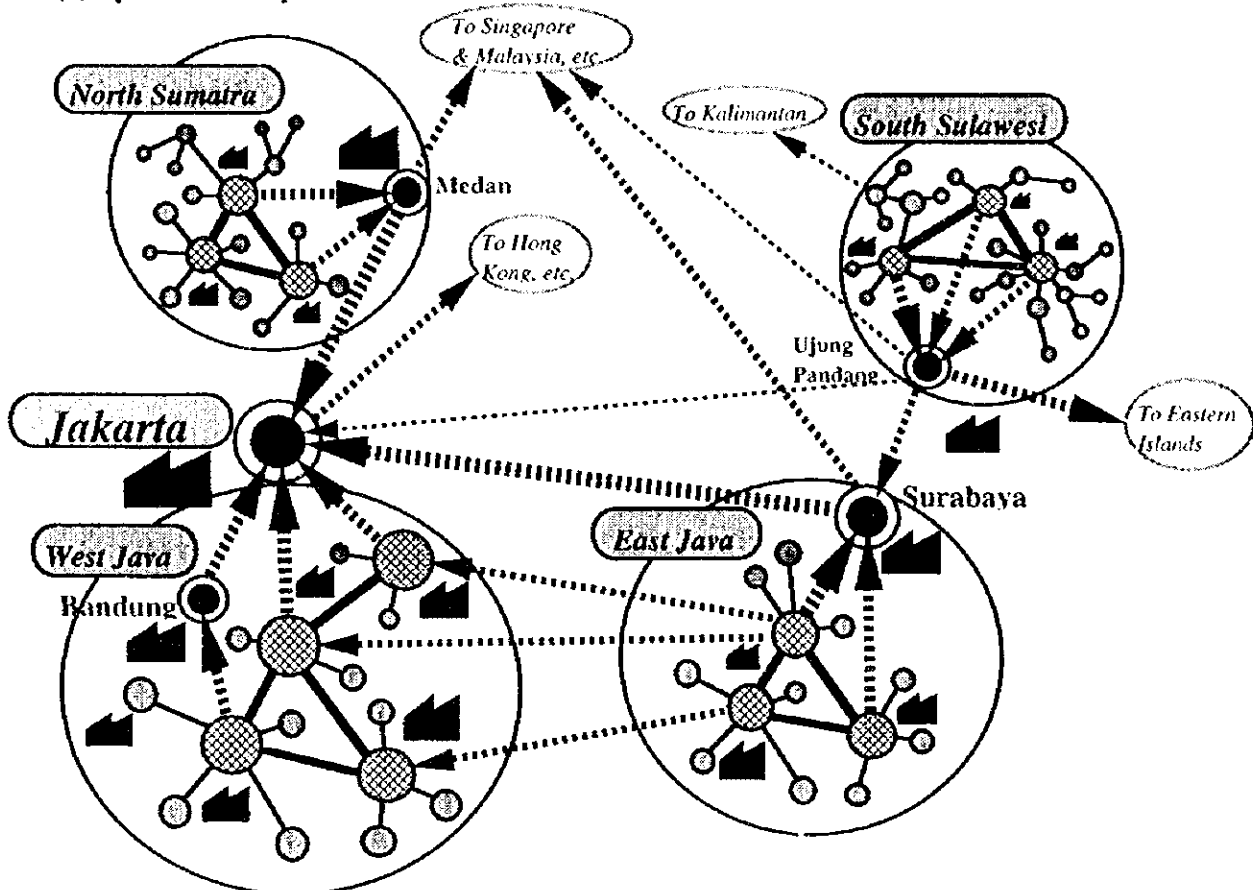
Source: JICA Study Team

付図 6-2 果樹園開発シナリオの概念

(1) Development Direction



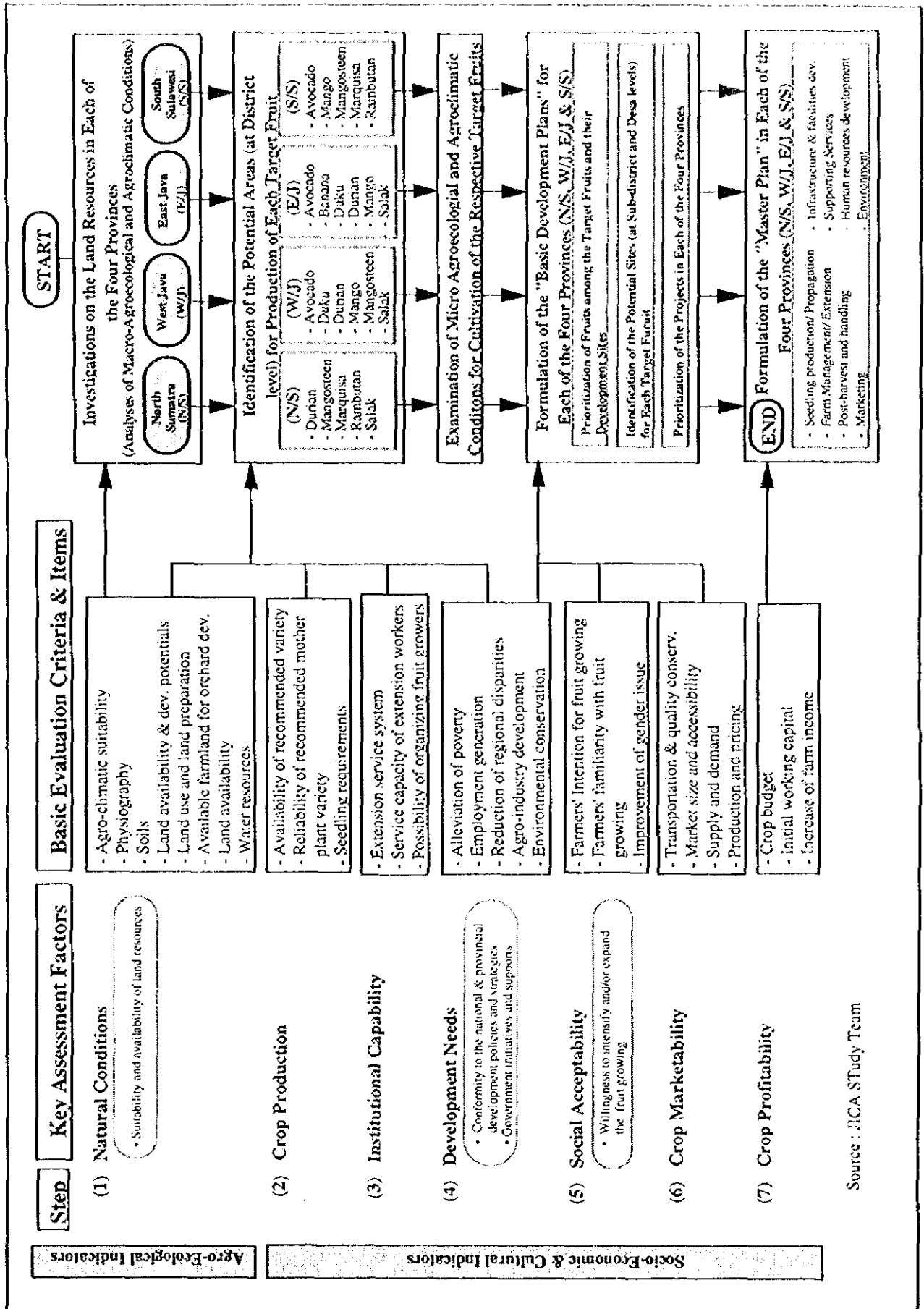
(2) Spatial Development Scenario



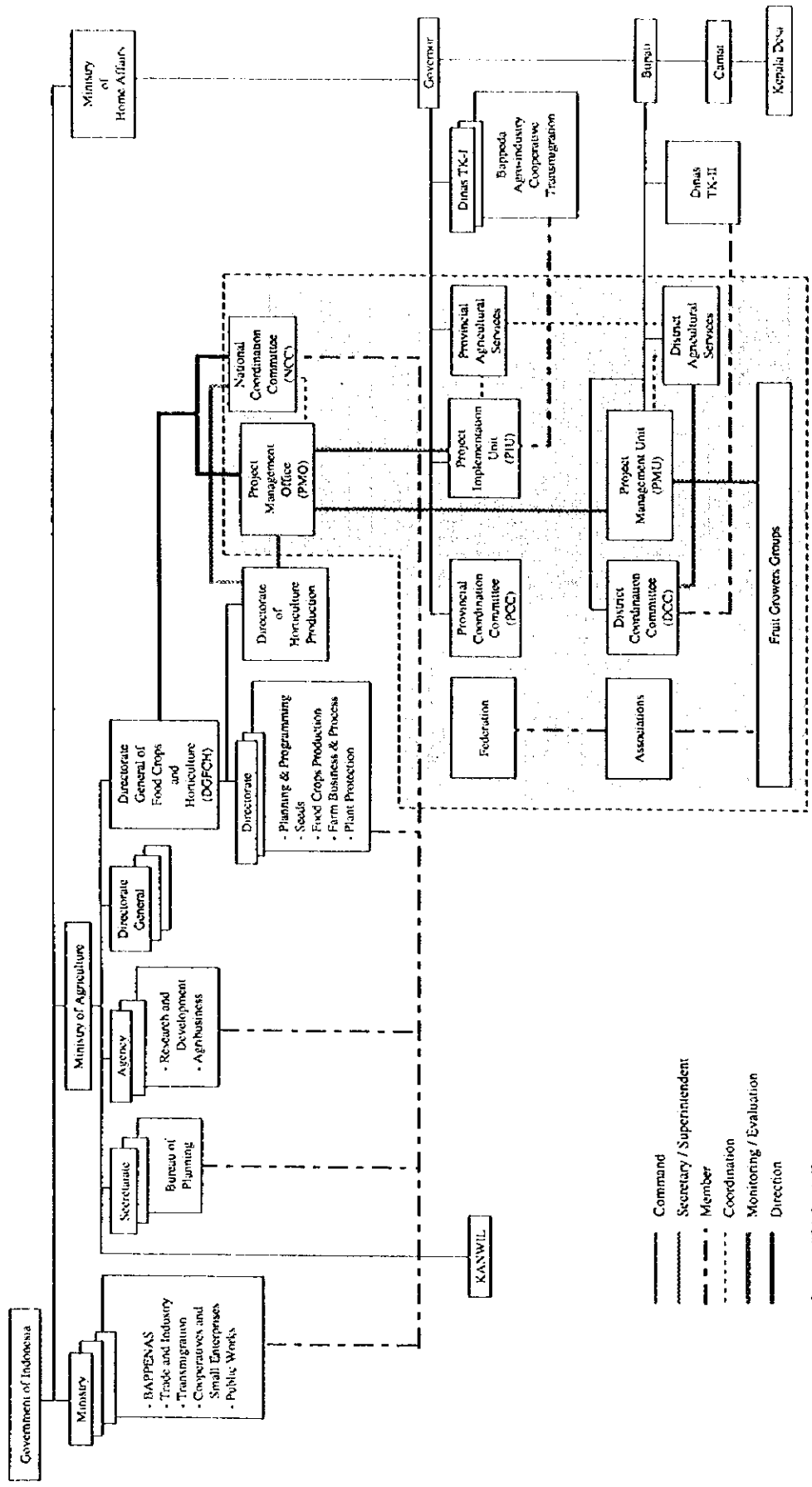
Legend :

Local & Provincial Market	Processing & Agro-Industry
Mega-Cities/ Mega-Markets	Flow of Products or Cooperation (Vice Versa)
Orchards run by the Fruit Growers' Groups & Associations	Inter-Regional Trades or Exports
	Inter-Islands and/or Exports

付図 6-3 果実生産の可能性と基本計画実施に関わる評価の流れ



付図 7-1 事業実施組織



付図 7-2 事業実施計画

Code No.	Description	Phase-I					Phase-II					Phase-III					
		Up to 2003 (Repelita VII)	'04	'05	'06	'07	2004 to 2008 (Repelita VIII)	'09	'10	'11	'12	2009 to 2013 (Repelita IX)	'14	'15	'16	'17	'18
Programs at Central Level																	
NP-1	Formation of Institutional Linkage for Horticulture Agribusiness Development																
NP-2	Strengthening of Inter-ministerial Coordination System for Orchard Development																
NP-3	Rationalization of Supporting Services for Credit Facilities and Marketing Promotion																
NP-4	Strengthening of Research and Development Activities for Introduction and Breeding of High Quality New Fruit Varieties																
NP-5	Strengthening of New Technology Adaptability Trial Operation System																
NP-6	Rationalization of Fruit Seedling Inspection System																
NP-7	Strengthening of Plant Quarantine System																
Programs at Provincial Level																	
PP-1	Strengthening of Project Planning Capacity at Provincial Level																
PP-2	Strengthening of Management Capacity Building of Provincial Staff																
PP-3	Improvement of High Quality Seedling Propagation and Distribution System																
PP-4	Institutional and Technical Capacity Building of Private Nurseries																
PP-5	Enhancement of Extension Staff's Knowledge on Horticulture Agribusiness Development																
PP-6	Upgrading of Market Information System																
PP-7	Institutional Development for Association of Fruit Growers' Group																
Programs at District Level																	
DP-1	Establishment of Orchard as Core of Target Fruit Growing Area																
DP-2	Introduction and Practice of Market-oriented Quality Fruit Growing Techniques																
DP-3	Establishment of On-farm Level Extension Service System																
DP-4	Development of Post-harvest Handling System																
DP-5	Improvement of Access Facilities to Markets																
DP-6	Improvement of Local Market Facilities																
DP-7	Institutional Strengthening of Smallholding Fruit Growers																

Note: : Feasibility Study & Detailed Design or Preparation of Program
 : Provision of Facilities and Equipment
 : Project Activity
Source: JICA Study Team