

Unit: Upper part: %, Lower part: persons

Governorate	Population less than 10 Years	Population 10 years and over									
		Unable to Work	Student	Income Recipient	Unemployed	Seeking Work for First Time	Employed	Not Stated	Labour Force	Sub Total	Total
Sana'a	34.8 285013	1.9 15455	3.3 26762	32.8 28953	0.6 4775	0.4 3587	25.9 212454	0.2 2007	220816	53993	819006
Ta'iz	36.9 323676	2.2 19641	4.2 35888	37.7 331359	1.2 10341	1.0 8620	30.7 145694	0.2 1557	458246	554100	877776
Hodeidah	39.0 61992	1.7 2692	2.3 3732	32.2 217064	1.1 7649	0.8 5151	27.3 183807	0.2 1357	196607	611097	673089
Ibb	36.7 289721	1.8 13871	2.0 15517	38.0 300269	0.9 7498	0.9 6205	19.7 155330	0.1 1109	169033	499799	789520
Dhamar	34.7 157558	2.2 1042	1.4 8183	36.4 164889	0.5 2493	0.6 2646	23.7 107385	0.1 592	112524	296330	453888
Hajjah	35.1 138768	2.1 8133	1.6 6154	33.8 133592	0.5 2153	0.8 3238	25.4 100181	0.7 2607	105572	256055	394823
Sa'adah	34.6 54851	2.4 3822	1.0 1505	22.8 36071	0.2 395	0.3 432	38.6 61166	0.1 168	61993	103559	158410
Mahweet	35.7 62659	3.1 5470	1.0 1780	28.2 49521	0.4 650	0.7 1198	30.7 53917	0.2 314	55765	112850	175509
Beidah	39.0 61992	1.7 2642	2.3 3732	37.7 60009	0.9 1453	0.5 768	17.8 28270	0.1 213	30491	97137	159129
Ma'arib	36.5 14282	1.4 555	1.7 681	30.1 11772	1.3 490	0.7 264	24.0 9362	4.3 1679	10116	24803	39085
Total Yemen	1620697	91545	2.5 115322	34.7 1573499	0.8 37897	0.7 32109	23.3 1057566	0.3 11603	1127572	219538	4540235

(CPO : Statistical Year Book 1982)

And 88% of these employed people (approximately 1,000,000/1,120,000) are male labours, and the female employment rate is quite low. In addition to this, the low technical level and the shortage of engineers are serious problems.

It is important for the modernization in the YAR to improve the labour's life by the increase of wage, and to improve the productivity by promoting the labours' volition and quality of skill.

Labour Population of Each Employment

Unit: Upper part: %, Lower part: persons

Governorate	Empl. Status	Employer	Self Employed	Employee	Unpaid Family Worker	Unpaid Apprentice	Not Stated	Total
Sana'a		4.3 9558	42.8 94509	30.5 67410	20.7 45768	0.1 256	1.5 3315	100 220816
Ta'iz		6.6 10938	39.3 64637	42.6 70107	9.3 15412	0.3 487	1.9 3074	100 164655
Hodeidah		4.6 9035	33.0 64801	48.0 94381	12.50 25037	0.1 214	1.6 3139	100 196607
Ibb		6.2 10524	41.6 70904	36.4 61587	13.6 23056	0.2 406	1.5 2556	100 169033
Dhamar		3.8 4263	46.2 51993	26.9 30260	21.0 23626	0.72 256	1.9 2126	100 112529
Hajjah		5.4 5752	44.6 47054	26.4 27820	22.3 23580	0.3 250	1.1 1116	100 105210
Sa'adah		1.9 1206	36.5 22647	10.0 6213	50.9 31567	0.1 66	0.4 300	100 61993
Mahweet		3.7 2085	32.1 17968	25.7 14426	37.2 20832	0.2 120	0.6 334	100 15765
Zeida		4.6 1406	49.4 15071	29.7 9065	14.5 4452	0.0 12	1.6 485	100 30491
Ma'arib		5.7 576	43.6 4408	20.9 2111	23.6 2385	0.0 1	6.3 635	100 10116
Total Yemen		5.6 55343	40.3 453992	34.0 383380	19.1 215709	0.2 2068	1.5 17080	100 127572

(CPO : Statistical Year Book 1982)

# Labour Population of Each Function

Unit: Upper part: %, Lower part: persons

Occupation Governorate	Professionals and Technician	Administrative	Clerical Workers	Sales Workers	Service Workers	Agriculture Fishing and Hunting Workers	Production processes and Labour	Not Stated	Total
Sana'a	3.2 7070	1.20 2598	2.4 5356	3.90 8568	7.00 15414	68.1 150342	12.6 27905	1.6 3563	100 220816
Ta'iz	7.2 11853	.50 860	1.3 2060	6.50 10701	5.50 9083	58.1 95605	19.60 32198	1.4 2295	100 164655
Hodeidah	3.8 7564	.4 746	1.20 2366	7.90 15501	4.00 7815	62.4 122744	18.3 36018	2. 3853	100 196607
Ibb	4.5 7642	.30 466	.50 901	3.80 6447	4.30 7271	75.60 127784	9.6 16151	1.4 2391	100 169033
Dhamar	3.1 3535	.30 305	.40 484	2.80 3116	6.60 7435	77.4 87118	7.6 8592	1.7 1943	100 112524
Hajjah	4.0 4249	.30 314	.60 595	4.10 4315	3.10 3264	19.2 83573	7.6 8033	1.2 1229	100 105572
Sa'adah	1.2 719	.20 116	.40 258	2.20 1368	.90 565	90.10 55841	4.60 2859	0.4 267	100 61993
Mahweet	2.6 1459	.30 169	.30 148	2.20 1215	3.70 2037	86.70 4835	3.9 2158	0.4 244	100 55765
Beidah	3.6 1104	.30 99	.50 146	4.60 1405	3.20 966	69.6 21208	16.3 4978	2.0 585	100 30491
Ma'arib	3.4 348	.90 96	.70 70	3.80 382	4.60 466	70.10 7092	11.4 1154	5.0 508	100 10116
Total Yemen	4.0 45543	.50 5749	1.1 12380	4.7 53018	4.8 54316	70.9 799642	12.4 140046	1.5 16878	100 1127572

(CPO : Statistical Year Book 1982)

## (2) Unemployment

As already mentioned, those of the population receiving remittances from foreign countries attributes to more than 150,000. Unemployment is 0.8% and the number of the people seeking jobs is 0.7%. The unemployment rate is 6% and it is the allowable value as a developing country.

## (3) Wages

The wage level of the YAR indicates a income growth over the period of the 1st Five-Year Plan. Although there is no official data related to the wage per capita in each category, the table below indicates a change in wage and income per capita. According to this, wage and income are increasing, and the standard of living is improving along with the cost at living.

The change in the sum of wage (1975 - 1981)

Unit: YR

Year	Wages at Current Prices (million rials)	Index (1975/76=100)
1975/76	1,026	100.0
1976/77	1,284	124.8
1977/78	1,938	188.3
1978/79	2,620	254.6
1979/80	3,094	307.0
1980/81	3,284	319.1

(CPO: The Second Five-Year Plan, 1982 - 86)

# Income per Capita (1972 - 1981)

(Unit: YR)

Year	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	1981*
Population on January 1st (Unit: thousand)	5,488	5,648	5,814	5,986	6,163	6,346	6,536	6,732	6,934	7,144	7,264
Current Prices Level											
National Income (Unit: million)	1,969	2,496	3,108	4,241	5,595	7,348	9,358	11,664	13,788	14,213	14,551
Income per Capita	359	442	535	708	908	1,158	1,432	1,733	1,988	1,990	2,003
75/76 Price Level											
National Income (Unit: million)	3,606	4,167	4,353	4,989	5,595	5,874	6,392	6,857	7,307	7,376	7,454
Income per Capita	657	738	749	833	908	926	978	1,108	1,054	1,032	1,026

(CPO : Statistical Year Book 1982)

(4) Training System

The general education system and the number of students have previously been mentioned in [1-1-(2), Page A-31]. Refer to [2-2 of "DATA FOR CONSTRUCTION SITUATION" (Page A-92)], on training systems of engineers.

(5) Relation to the Labour Ordinance

Employment and employment conditions are provided in the Republican Decree No.5 of 1970 in Relation to the Labour Ordinance.

The supervisory organization is Labour and Welfare Department of each governorates.

## 2-5 Data of Each Section

### (1) Production of Each Section

As shown in 2-1 (GDP), the main component of the YAR economy is agriculture (more than 30% of GNP), followed by commerce (15%), industry (8.3%) and construction industry (6.4%).

As for the yield, refer to 2-1.

### Agricultural Yield

(Unit: 1000t, 1000 ha, t/ha)

	1981			1982		
	Production (1)	Area (2)	Yield (3)	Production (1)	Area (2)	Yield (3)
<u>Cereals</u>	812	849	0.96	670	836	0.91
Sorghum and millet	635	697	0.91	581	689	0.84
Wheat	70	66	1.09	67	61	1.05
Barley	54	52	1.04	53	50	1.06
Maize	53	34	1.50	59	36	1.60
Legumes	80	74	1.08	75	70	1.08
Potatoes	138	11.5	12.00	150	12.1	12.30
Vegetables	291	29.4	9.9	305	30.5	10.00
Fruits	80.7	14.5	5.57	84.6	15.0	5.6
Coffee	3.6	7.7	0.45	3.3	7.7	0.44
Grape	64.3	12.5	5.14	67.9	13.1	5.18
Cotton	5.0	5.3	0.94	6.5	7.4	0.87
Tobacco	6.3	6.1	1.03	6.7	6.4	1.04
Sesame	5.2	9.9	0.52	5.5	10.1	0.54
Alfalfa	4.5	3.8	11.80	4.9	4.0	12.3

- 1 - Thousand tons
- 2 - Thousand Hectars
- 3 - Ton per hectar

(Source: CPO  
11th Annual Report 1982 Central Bank of Yemen)

# Production of Industry

## Output of Major Industrial Products, 1978 - 1982 (1/2)

	Unit	1978	1979	1980	1981	Prov 1982
<u>Extractive industries</u>						
Salt	1,000 tons	58	73	154	64	70
Quarried stone	1,000 cu.m	19	78	76	567	529
Gypsum	1,000 tons	-	-	-	384	451
<u>Food, beverage, &amp; tobacco industries</u>						
Biscuits & Confectionaries	1,000 tons	15	19	20	22	26
Ghee & edible oils	1,000 tons	4.6	6.3	13.2	14.4	16.6
Soft drinks	1,000 boxes	4,817	10,503	12,410	12,325	13,693
Mineral water	1,000 cu.m	-	14	27	34	60
Vimto drink	1,000 cartons	-	-	23	62	83
Ice	1,000 tons	-	11	11	13	20
Milk and iced product	1,000 cu.m	-	0.6	2.1	4.6	3.6
Ice cream	1,000 cartons	-	314	368	37.7	44.8
Cigarettes	1,000 cartons	10	12	17	24	21
<u>Spinning, weaving and leather industries</u>						
Spinning & Weaving	1,000 sq.y	2,094	4,747	5,140	3,428	6,989
Clothes	1,000 pieces	-	-	-	298	1,782
Tanning	1,000 skins	306	393	299	-	-
<u>Metalic industries</u>						
Household utensils	tons	585	703	708	1,634	1,851
Barrels	1,000	17	42	115	101.6	106.8
Tins	1,000	-	431	459	207	143
Doors & Windows	1,000 sq.m	-	6	6	4.9	4.6
Metalic scrubbers	tons	26	30	29	72	91

Output of Major Industrial Products, 1978 - 1982 (2/2)

	Unit	1978	1979	1980	1981	Prov 1982
<u>Wood industries</u>						
Industrial limbs	pieces	95	64	277	600	765
<u>Nonmetallic industries</u>						
Cement	1,000 tons	66	68	81	85	224
Red bricks	1,000	-	-	4,800	150	1,266
Cement bricks	1,000	-	-	1,290		
Tiles	1,000	-	-	-	4,479	6,749
Cement blocks, tiles, ex.	1,000 cu.m	-	12	22	31	32
<u>Chemical industry</u>						
Plastic footwear	1,000 pairs	30	185	339	299	344
Sponges	tons	1,500	1,908	1,667	1,750	1,931
Household utensils	1,000 pieces	1,068	-	1,884	635	1,522
Buckets	100 dozen	32	248	319	907	3,332
Water tubes	1,000 meter	1,440	640	960	1,125	1,782
Plastic sheets	tons	300	316	364	529	1,044
Beverage boxes	1,000 boxes	300	316	277	20	320
Plastic tubes	1,000 ton	1.3	2.4	3.2	3.3	2.2
Polyethylene bags	tons	-	171	213	-	-
Cardboard	1,000 tons	0.9	1.0	1.0	-	2.0
Paint	1,000 m <sup>3</sup>	1.4	1.8	2.2	2.7	3.1
Soap and detergent	1,000 tons	-	-	0.9	2.0	3.7
Perfumes	1,000 ounces	360	438	563	314	448
Oxygen gas	1,000 cyl.	-	1.0	4.4	4.7	9.6
Carbon dioxide	tons	180	735	755	491	368
<u>Other chemical industry</u>						
Fountain pens	1,000 pens	4,000	2,400	100	-	-
Paper tissues	tons	-	74	72	-	47

(11th Annual Report 1982 Central Bank of Yemen)

The number of authorized constructions and  
construction areas

	1981		1982	
	Number of licences issued	Area in 000 square meters	Number of licences issued	Area in 000 square meters
*Main cities	4418	1196	5147	1167
Sana'a	2362	753	3478	911

\* Sana'a, Hodeidah,  
Ta'iz and Ibb

(Source: Central Planning Organization  
11th Annual Report 1982 Central Bank of Yemen)

(2) Labour population of each section

As for labour population percentage of each section, the agricultural section (73.6%) is overwhelmingly high, and the percentage is in accordance to each section's yield.

But productivity of agriculture is lower than that of industry or commerce.

According to recent statistics, labour population percentage of agriculture is under 70%, which shows an outflow of population from agriculture to other sections.

Labour Population and its Percentage of Each Section.

Unit: Upper part: persons, Lower parts: %

Gover- norate	Economic Sector	Agricul- ture	Mining	Manufac- turing	Elec- tricity	Construc- tion	Trade	Trans- port	Finance	Social Services	Not Stated	Total
Sana'a		154067 69.8	23 0.01	5275 2.4	435 0.2	11597 5.3	11868 5.4	4105 1.6	647 0.3	27998 12.7	4801 2.2	220816 100
Ta'iz		103602 62.9	206 0.1	2748 2.9	332 0.2	15785 9.6	14534 8.8	6029 3.7	483 0.3	14282 8.7	4618 2.8	164655 100
Hodeidah		127090 64.6	317 0.2	12334 6.3	500 0.3	7219 3.8	19996 10.8	8526 4.3	611 0.3	12722 6.5	7292 3.7	196607 100
Ibb		133942 79.2	10 .01	3806 1.6	119 0.07	7548 4.5	8008 4.7	2358 1.4	105 0.06	10000 .9	4137 2.4	169033 100
Dhamar		59785 79.8	5 0.0	1905 1.7	17 0.01	4220 3.8	3773 3.4	900 0.8	37 0.03	9045 8.0	2837 2.5	112524 100
Hajjah		86722 82.1	11 0.01	3694 3.5	28 0.02	1656 1.6	5445 5.2	1115 1.1	49 .04	5260 5.1	5362 1.4	105572 100
Sa'adah		56278 90.8	0 0.0	1017 1.6	16 .02	925 1.5	1758 2.8	451 0.7	17 0.02	1190 0.9	341 0.6	61993 100
Mahweet		49533 88.8	1 0.0	535 1.0	11 0.02	853 .5	1479 2.7	251 0.5	6 .01	2791 5.0	305 0.5	55765 100
Beidah		21957 72.01	3 .01	1207 3.95	50 0.2	2256 7.4	1691 5.5	1712 2.3	19 0.1	1735 5.7	867 2.8	30491 100
Ma'arib		7364 72.8	0 0.0	363 3.6	3 0.02	401 4.0	427 4.2	262 2.6	2 0.01	652 6.4	642 6.3	10116 100
Total		830340 73.6	576 0.1	33920 3.0	1511 0.1	52460 4.7	68979 6.1	24709 2.2	1976 0.2	85775 7.6	27326 2.4	1127572 100

(CPO : Statistical Year Book 1982)

### (3) Investment

The capital investment for the First Five-Year Plan was proposed to be 15,971,000,000 YR; however, only 72.4% of it, (11,558,000,000 YR) was actually implemented this figure accounts for 39% of GDP. As for the investment, the private investment was bigger than the public one, especially the investment for housing and construction section (including road construction) was far bigger than the plan. The investment for the service section including manufacturing, commerce and infrastructure was implemented to the level of satisfaction, while only half of the planned investment was actually implemented for agriculture. As a whole, the amount and distribution of the investment was successfully implemented, in many sections, but there was still problem of productivity in the First Five-Year Plan.

It is reasonable that the Government of a developing country invest the capital mainly on the section of infrastructure, so that it is important for the improvement of productivity to develop and modernize agriculture and commerce with the development of the infrastructure.

As shown in the section of Labour Force, the skillful workers and engineers are necessary for this purpose.

Amount of Investment and Distribution (Implementation)

Unit: Million YR

Economic Activities	Implemented Investments in the First Five-Year Plan					Imple-mented Distribu-tion	Planned Distribu-tion
	76/77	77/78	78/79	79/80	80/81	Total	
Agriculture	65.7	164.3	224.9	198.1	213.0	866.0	14.3
Mining and Manufacturing	118.6	246.9	315.5	114.1	245.0	1,040.1	13.6
Electricity and Water	92.0	83.0	114.0	188.0	386.0	863.0	8.6
Construction	42.3	134.1	143.8	261.5	269.0	850.7	2.9
Transport and Communication	200.3	555.2	713.6	852.0	733.0	3,054.1	30.8
Housing Ownership	587.0	675.0	733.0	661.0	628.0	3,824.0	13.1
Other Sectors	118.1	331.5	42.2	406.3	322.0	1,600.1	16.8
Total to be Distributed	1,224.0	2,190.0	2,667	2,681	2,796	11,558	100.0
Between the Public and Cooperative Mixed Sectors	381.0	1,069.7	1,321.4	1,198.4	1,404.0	5,374.5	46.5
Private Sector	843.0	1,120.3	1,345.6	1,482.6	1,392.0	6,183.5	53.5
Ratio of Gross Fixed Capital Formation to GDP(%)	23.6	39.0	44.6	42.4	42.7	39.0	

(CPO : the Second Five-Year Plan 1982 - 86)

As illustrated in the below table, 88.4% of the capital investment depends on remittances from foreign countries and the rest of investment depends on the aid and loan from foreign countries. Because domestic economy mainly depends upon remittances from the emigrant workers in foreign countries, the amount of domestic saving has reduced during First Five-Year Plan due to this decline and the reduced amount accounts for 19.2% of GDP. The problems the government has to solve is to increase the amount of saving and invest the capital from the domestic source.

The source of investment (1976 - 1981)

Unit: million YR

Source	Amount (in million rials)	Percentage of Total
Remittances from Yemeni Workers Abroad	17,839	88.4
Net Capital Transfers from Abroad	642	3.2
Net Loans from Abroad	1,709	8.4
Total	20,190	100.0

(CPO : The Second Five-Year Plan  
1982 - 1986)

## 2-6 Economic Development Plan and Policy

### (1) Summary of the Second Five-Year Plan

General target and strategy of main developments for the above plan are as follows:-

#### ① General Target:

- a. Increase the national income and GDP.
- b. Improvement of educational standard and reduction of illiteracy.
- c. Balance promotion on general regional development.
- d. Urgent agriculture growth and fundamental development of the rural areas; hygienically, culturally, socially and economically.
- e. Improve economical control and management of public and semi-public institutions.
- f. Modernizing the system of rural government administration and improvement of public services.
- g. Rationalization of expenditure consumed publicly and privately, enlargement of capital invested.

#### ② Strategy of main developments:

- a. Complete utilization of available persons and commodities.
- b. To strengthen the education, health and social service.
- c. Development of the agricultural activities.
- d. Construction of dams and better utilization of water.
- e. Promotion on research and expansion in activities in economic development.
- f. To expand the production of cereals and promote agricultural industry.
- g. Increasing productivity and control on annual expenditures.
- h. Encouragement in savings and careful spending.
- i. To strengthen the distribution to rural areas from profits received from developments.

- j. Development of mineral resources.
- k. Establishment of a self-supporting and system.

(2) Growth plan of GDP in the Second Five-year Plan

Growth plan of GDP during the period of the Second Five-year plan is attaining the goal that would be 12,949,000,000 YR in the first year (1982) and will be 18,162,000,000 YR (1986) and, is expected to increase growth by about 1.4 times. The annual average growth rate for the year is set up to 7%.

Industries for agriculture, forestry and fisheries are the most important in contributing to the GDP in each economic group.

The annual growth rate achieved in these groups is 4.8%, influenced by the achievement of the previous First Five-year plan resulting in 1% actually as against 5.5% of the rate of target on growth.

Average annual growth rate on GDP by industry  
(according to the market price in 1981)

(Unit: million YR)

	1981	1986	Annual average growth rate(%)	Change in structure	
				1981	1986
Agriculture, Forestry and Fisheries	3,690	4,540	4.2	28.5	25.0
Mining and Quarries	156	275	12.0	1.2	1.5
Manufacturing	770	1,470	13.5	6.0	8.1
Electricity and Water	89	272	25.0	0.7	1.5
Construction	1,139	1,420	4.5	8.8	7.8
Wholesale and Retail Trade	2,124	2,852	6.0	16.4	15.7
Catering	139	200	7.5	1.1	1.1
Transportation and Communications	483	648	6.0	3.7	3.6
Financial Institutions	1,013	1,495	8.1	7.8	8.3
Real Estate and Business Service	552	760	6.5	4.3	4.2
Private and Social Services	135	199	8.1	1.0	1.1
Sub Total	10,290	14,131	6.0	79.5	77.9
Minus Imported Services	-889	-1,348	8.7	6.9	7.5
Total of Business Sector	9,401	12,783	6.3	72.6	70.5
Government Services	1,907	2,945	9.1	14.7	16.2
Non-Profit Private Organizations	24	36	8.5	0.2	0.2
Customs Duties	1,617	2,398	8.2	12.5	13.2
GDP	12,949	18,162	7.0	100.0	100.0

(CPO : Second Five-Year Plan 1982 - 1986)

(3) Forecast of international balance of payments  
in the Second Five-Year Plan

Trade balance of each year tends to be in the red. Accumulative deficit of trade through the period is 39,762,000,000 YR. Income and expenditure of trade and services would be forecasted to be and in the red 41,054,700,000 YR financial resources to offset the deficit depends mostly upon remittance from labourers of overseas and loan from foreign countries.

Forecast of international balance of payments of the  
Second Five-Year Plan  
(According to the market price in 1981)

(Unit: million YR)

Item	1982	1983	1984	1985	1986	Total of years
<u>Balance of Current Account-Trade Balance</u>						
Export	075	100	150	200	250	775
(-) Import	7,947	8,027	8,108	8,190	8,265	40,537
Total trade balance	-7,872	-7,927	-7,958	-7,990	-8,015	-39,762
<u>Income and Expenditures of Services</u>						
Export	1,215	1,370	1,545	1,735	1,950	7,815
(-) Import	1,786	1,804	1,822	1,840	1,858	9,110
Total of income expenditures of services	571	436	277	105	092	-1,295
Income and Expenditure of Trade and services	-8,443	-8,361	-8,235	-8,095	-7,923	-41,057
<u>Remittance and The Elements of Profit</u>						
Personal remittance	4,450	4,475	4,500	4,525	4,550	22,500
Public cash remittance	850	850	1,000	1,100	1,200	5,000
Public commodities transfer	075	075	100	125	125	500
Profit from investment	500	450	400	350	300	2,000
Total	5,875	5,850	6,000	6,100	6,175	30,000
(-) Personal remittance	850	825	800	775	750	4,000
Profit from investment (payment)	070	075	080	085	090	400
Total	920	900	880	860	840	4,400
Income and expenditure of remittance and the elements of profit	4,955	4,950	5,120	5,240	5,335	25,600
Income & Expenditure of current account	-3,488	-3,411	-3,115	-2,855	-2,588	-15,457
<u>Capital Account</u>						
Capital transfer (Receipt)	050	075	100	125	150	500
Withdrawals from loan	2,700	2,700	2,700	2,700	2,700	13,500
Direct private investment	250	250	300	350	350	1,500
Income and expenditure of capital account	3,000	3,025	3,100	3,175	3,200	15,500
Fluctuation of the stock	488	386	015	320	612	043

(4) Financial plan in the Second Five-Year Plan

Total amount of capital in the Second Five-Year Plan is 29,294,200,000 YR and out of this value 47.2% of the total would have been appropriated by the general national savings. The balance of 52.9% would depend on capital transfer from abroad (1.7% 540,000 YR), loans from foreign countries (46.1% 13,500,000,000 YR) and foreign direct private investment 5.1% 1,500,000,000 YR).

Financial resources to invest in the Second Five-Year Plan

(Unit: million YR)

Item	1982	1983	1984	1985	1986	Total	%
<u>Financial Resources of General Capital</u>							
Withdrawals out of GDP	-2,839	-2,650	-2,393	-2,105	-1,778	-11,765	-40.2
Remittance from abroad elements of profit	4,955	4,950	5,140	5,240	5,335	25,600	87.4
General national savings	2,116	2,300	2,727	3,135	3,557	13,835	47.2
Capital transfer from abroad	50	75	100	125	150	500	1.7
Withdrawals from foreign loan	2,700	2,700	2,700	2,700	2,700	13,500	46.1
Foreign direct private loan	250	250	300	350	350	1,500	5.1
Total	5,116	5,325	5,827	6,310	6,757	29,335	100.1
Withdrawals from the reserves	488	386	15	-320	-612	-43	-0.1
Financial resources of general Government	5,604	5,711	5,842	5,990	6,145	29,292	100.0
Private						18,543	66.0
						9,557	34.0
Amount of Gross Investment	5,604	5,711	5,842	5,990	6,145	29,292	100.0

(CPO : Second Five-Year Plan 1982 - 1986)

Structure of financial resources to invest

Financial Resources	Amount (Million YR)	%
General National Savings	13,835	47.2
Capital Transfer from abroad	500	1.7
Loans from abroad	13,500	46.1
Foreign Direct Private Investment	1,500	5.1
Withdrawals from the Reserves	-43	-0.1
Total	29,292	100.0

(CPO: Second Five-Year Plan 1982 - 1986)

## DATA FOR CONSTRUCTION SITUATION



## CHAPTER 1

### 1-1 Meteorological Condition

#### (1) Climate Range and Climate Zone

Although this country's climate classification is found in the torrid zone, its regions actually contain a wider range of climatic characteristics, as previously mentioned in [1-2-(2), Page A-36]. The districts on the Red Sea in the west are hot and dry; the Central Highlands districts are warm and have sufficient precipitation; and the Eastern Mountainous district neighboring Saudi Arabia in the east, have desert climate.

#### (2) Temperature

Monthly Average Temperature during the Year in the Major Cities (1980 - 1982)  
(Unit: Celsius, °C)

City Month	Ma'arib			Mocha			Hodeidah			Ta'iz			Sana'a		
	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.
January	-	-	18.1	26.9	28.5	22.3	27.6	27.9	25.5	19.6	20.1	19.4	15.4	17.2	15.1
February	-	-	24.8	27.5	28.9	29.1	27.2	28.0	27.7	20.9	23.9	25.5	17.5	19.8	17.3
March	-	-	24.3	28.9	30.6	28.4	29.1	30.0	28.0	22.8	24.7	2.5	18.6	19.8	16.1
April	-	-	32.0	28.8	33.3	30.3	29.5	32.3	29.4	22.9	26.1	22.1	19.6	22.8	18.5
May	-	-	33.1	32.6	34.5	33.0	31.8	33.7	32.0	25.8	29.5	26.2	21.6	24.5	20.0
June	-	-	35.2	32.8	35.0	33.6	33.1	39.0	31.5	25.3	29.5	26.0	22.7	23.6	22.0
July	-	-	35.8	33.1	36.2	33.8	34.2	37.0	33.1	24.2	27.9	26.2	22.2	25.1	22.4
August	-	-	-	32.4	35.9	33.5	32.4	36.3	33.0	26.5	29.5	25.0	21.8	23.6	22.0
September	-	-	33.5	33.2	35.5	34.0	31.2	34.3	33.1	20.3	27.8	24.0	18.9	21.6	19.0
October	-	-	29.7	24.4	33.6	32.2	31.0	33.9	30.2	18.8	26.8	21.3	16.5	19.3	17.5
November	-	-	23.5	24.6	31.3	30.3	23.2	29.6	27.5	18.1	29.6	21.0	15.1	17.2	16.0
December	-	-	20.4	27.5	28.3	28.9	25.4	27.2	-	26.8	20.6	16.4	13.9	14.5	14.4

(CPO: Statistical Year Book 1982)

### (3) Humidity

#### Monthly Relative Humidity during the Year in the Major Cities (1980 - 1982)

(Unit : %)

City Month	Ma'arib			Mocha			Hodeidah			Ta'iz			Sana'a		
	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.	1980 Avg.	1981 Avg.	1982 Avg.
January	-	-	45	64	83	62	69	78	72	62	72	71	42	47	53
February	-	-	44	63	86	72	69	77	69	53	72	56	42	51	54
March	-	-	52	63	83	68	69	80	74	50	84	56	45	77	64
April	-	-	23	61	83	61	68	77	77	51	77	60	42	65	59
May	-	-	21	-	80	62	65	74	67	41	69	54	35	64	43
June	-	-	06.7	70	79	65	67	78	64	48	63	51	37	51	30
July	-	-	09.1	64	79	66	59	70	64	55	73	53	52	57	43
August	-	-	-	57	76	68	63	68	63	62	59	61	61	63	51
September	-	-	12	61	78	65	68	71	63	56	67	57	39	50	44
October	-	-	21	60	75	57	59	72	64	26	58	56	46	40	53
November	-	-	32	76	71	65	66	76	68	56	69	66	44	54	61
December	-	-	42	63	73	67	62	76	-	65	70	67	15	50	56

(CPO: Statistical Year Book 1982)

### (4) Precipitation

#### Monthly Average Precipitation during the Year in the Major Cities (1980 - 1982)

(Unit : mm)

City Month	Ma'arib			Mocha			Hodeidah			Ta'iz			Sana'a		
	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982
January	-	-	0	0.9	0	0	2.5	0	0	6.4	0	08.7	0	0.3	5.6
February	-	-	0	0.2	0	0	0	0	0	0	0	0.9	14.1	0	18.9
March	-	-	0	0.8	0	2.8	0	0	0	0	97.2	37.1	36.3	65.9	48.7
April	-	-	0	0	0	0	0	0	0	-	39.4	10.3	42.4	0	34.9
May	-	-	0	0	0	0	0	0	0	97.5	1.5	13.4	0	0	86.7
June	-	-	0	0	0	0	0	0	0	-	30.1	19.8	0	0	0
July	-	-	0	0	0	0	0	0	0	0	18.8	12.0	0	20.8	0
August	-	-	0	0	0	0	0	0	0	103.0	30.7	114.2	0	79.8	17.7
September	-	-	0	2.2	0	0	0	0	0	86.1	52.1	89.7	0	0	0
October	-	-	0	0	0	0	0	0	0	7.0	0	0	5.8	0	51.1
November	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0
December	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0

(CPO: Statistical Year Book 1982)

## (5) Wind Velocity

Monthly Maximum Wind Velocity during the year in the Major Cities (1980 - 1982)

(Unit : Knot)

City Month	Ma'arib			Mocha			Hodeidah			Ta'iz			Sana'a		
	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982
January	-	-	06	55	48	35	28	32	26	24	28	15	22	20	16
February	-	-	10	54	48	27	30	28	30	18	18	22	26	22	26
March	-	-	16	52	32	30	30	26	34	24	20	18	28	20	35
April	-	-	10	45	25	26	30	24	30	24	25	22	20	20	22
May	-	-	10	40	30	24	24	22	24	45	20	22	24	20	18
June	-	-	12	24	?	14	18	20	22	50	24	35	20	20	22
July	-	-	12	18	24	14	26	22	32	34	25	12	32	28	18
August	-	-	-	20	18	-	28	20	22	30	40	10	22	32	28
September	-	-	14	35	20	28	20	24	30	23	24	25	20	20	22
October	-	-	10	38	38	24	30	32	22	22	20	22	21	16	22
November	-	-	16	45	30	25	26	24	24	20	22	26	20	18	20
December	-	-	16	45	30	30	30	24	-	18	20	25	18	20	18

(CPO: Statistical Year Book 1982)

## 1-2 Geographical Features - Geology

### (1)-1) Geographical Features

The YAR is geographically divided into the following five zones, as fully explained in A-1-2-(1):

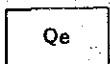
- Zone I Coastal Plain district (Tihama)
- Zone II Western Piedmont district
- Zone III Central Highland district
- Zone IV Eastern Mountain
- Zone V Southern Plateau - Desert District

### (1)-2) Geology

Geological structure, being complex, mainly consists of metamorphic rock formation from the Cambrian period, made of mica, gneiss,

silica, marble, etc. Inside of this formation penetrate massive granite and basalt's dyke. There also exist rock floor in the Jarssic period, sandstone in the Cretaceous period, and massive rock in the Tertiary period made of volcanic tufa, fasalt and andesite. The most recent surface soil in the Recent Epoch is an alluvial soil formation, found in the centre of the land and "Tihama", the Coastal Plain district.

# Geological Distribution Plan



Eolian sand



Alluvium & related  
surficial deposits



Aden Volcanic  
Series



Laccoliths include  
intrusive rocks of  
Late Cretaceous age



Granite



Medj-zir Series



Trap Series overlies  
Medj-zir S.



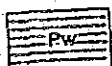
Tawilah Group



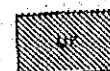
Amran Group



Kchlan Series



Wajid Sandstone



Precambrian rocks  
undivided

(2) Area

Total area of the land: approximately 195,000 km<sup>2</sup>

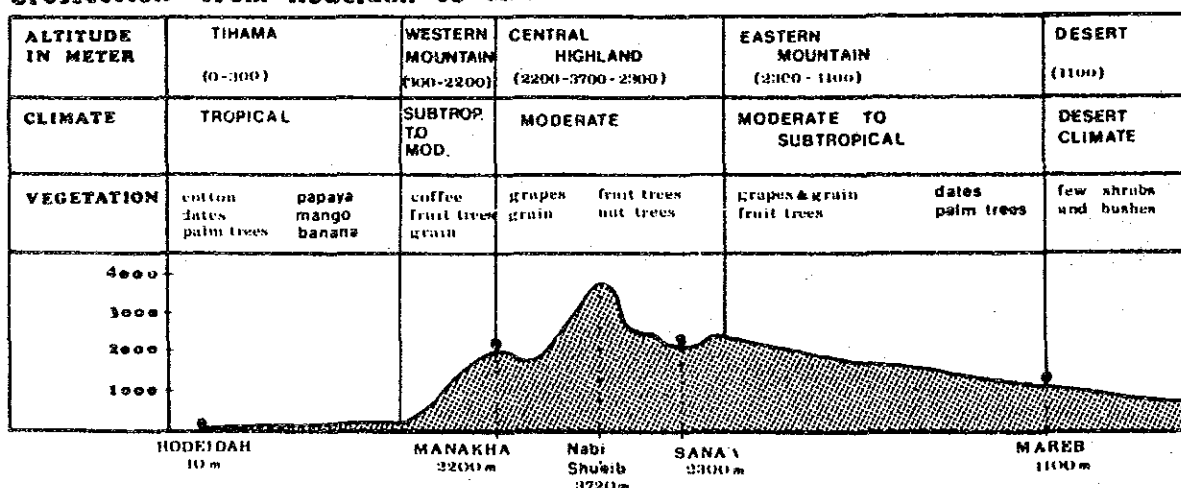
(3) Location - latitude and longitude

The YAR is located at the south-west edge of the Arabian Peninsula, from lat. 12°40'N. to 17°26'N. and long. 42°30'E. to 46°31'E. The north and east side of the land are adjacent to Saudi Arabia, and the south side, to the Yemen Democratic People's Republic (South Yemen). The west side faces the Red Sea. Incidentally, as for the borderline situation between Saudi Arabia, only the south-east part has been established (1934) by mutual agreement, however, the north-east part borderline has yet not been demarcated.

(4) Difference of Altitude

As clearly seen in the following east-west cross section drawing, from Hodeidah on the Red Sea to Ma'arib in the east, the difference of altitude of the YAR's land is very large. This great difference in altitude and diversified geographical features further account to the above-mentioned five different climatic zones. The highest peak of the YAR is Mt. Nabi Shu'ayb in the Central Highland district (3,720m).

**Crosssection From Hodeidah to Mareb**



## (5) Rivers

Although no rivers exist in the YAR, during the rainy seasons, numerous flood waters called Wadi are found throughout the country. Typically are those which flow from the east towards the Tihama in west slope of the Western Piedmont district. They are called Wadi Harahdi, Wadi Mawr, Wadi Surdua, Wadi Siham, Wadi Rima, Wadi Zabid, Wadi Rasiyan and Wadi Mawaza, etc.

## 1-3 Disasters

Since the Middle Ages, the YAR's basic social structure has been of tribal origin. To this date, little change has been made in this framework, and practically no official records have been discovered to speak of historical events such as natural disasters. However, in the Moslem Koran 34:14-15, the breaking of the Ma'arib dam was mentioned of being constructed in either B.C. 800 - A.D. 395 or during B.C. 500 - A.D. 280, was destroyed by flood in about A.D. 570.

In more recent records and still fresh in the memory of the people was the disaster by earthquake in Dec. 13, 1982 (estimated seismographic degree 5). In this earthquake it was difficult to investigate the actual damages incurred, and consequently, still a subject of discussion regarding preventive methods, etc., of which are to be solved hopefully in the near future.

## CHAPTER 2: CONDITIONS RELATED TO CONSTRUCTION WORKS

### 2-1 Statistics on Construction Activity

#### (1) Statistics about Construction Works

The Construction Industry attributes to about 8% of the YAR's GDP (Gross Domestic Product), which was YR 469 million in the 1980-81 total. Average growth rate was about 10%. Even though it hasn't achieved the target of the First Five-Year Development Plan, it has shown a steady growth. Only the actual number of construction works are known mainly in the city area.

Number of Permitted Construction Works and Areas in Five Major Cities  
(1977 - 1982)

City Year	Total		Dhamar		Ibb		Hodeidah		Ta'iz		Sana'a	
	Number	Total Floor Space (m <sup>2</sup> )	Number	Total Floor Space (m <sup>2</sup> )	Number	Total Floor Space (m <sup>2</sup> )	Number	Total Floor Space (m <sup>2</sup> )	Number	Total Floor Space (m <sup>2</sup> )	Number	Total Floor Space (m <sup>2</sup> )
1977	4147	1247695	-	-	216	39704	400	125046	1118	97764	2423	784994
1978	5185	1598480	-	-	262	80619	401	164597	1660	359294	2862	993970
1979	4450	1488004	-	-	350	91668	387	248604	1541	318329	2172	829403
1980	4335	1416928	373	109943	370	154391	340	312570	1578	269594	1674	570230
1981	4418	1196108	233	73071	360	75050	307	108341	1156	188858	2362	752808
1982	5147	1167397	256	68088	312	30977	150	42659	951	114262	3478	911411

(CPO : Statistical Year Book 1982)

(2) Trends in Construction Cost

(2)-1) Total Amount of Construction Investment

Construction Investment amount in the Second Five-Year Plan  
(projected sum, 1980 - 1986) : in 1-million Rial

← Second Five-Year Plan →

Year	1981	1982	1983	1984	1985	1986	1982 - 1986 Total
Total amount	3,256	3,354	3,454	3,558 (esti- mated amount)	3,664 (esti- mated amount)	3,765 (esti- mated amount)	17,795
Growth rate (%)	-	3.01	2.98	3.01	2.98	2.76	

(CPO : The Second Five-Year Plan, Jan 1982 - 1986)

(2)-2) Construction Cost per Unit Area

Independent House 2,300 - 2,500 YR/m<sup>2</sup>  
(RC structure, mortar finish)

Independent House 3,000 YR/m<sup>2</sup>  
(Exterior wall: Stone)

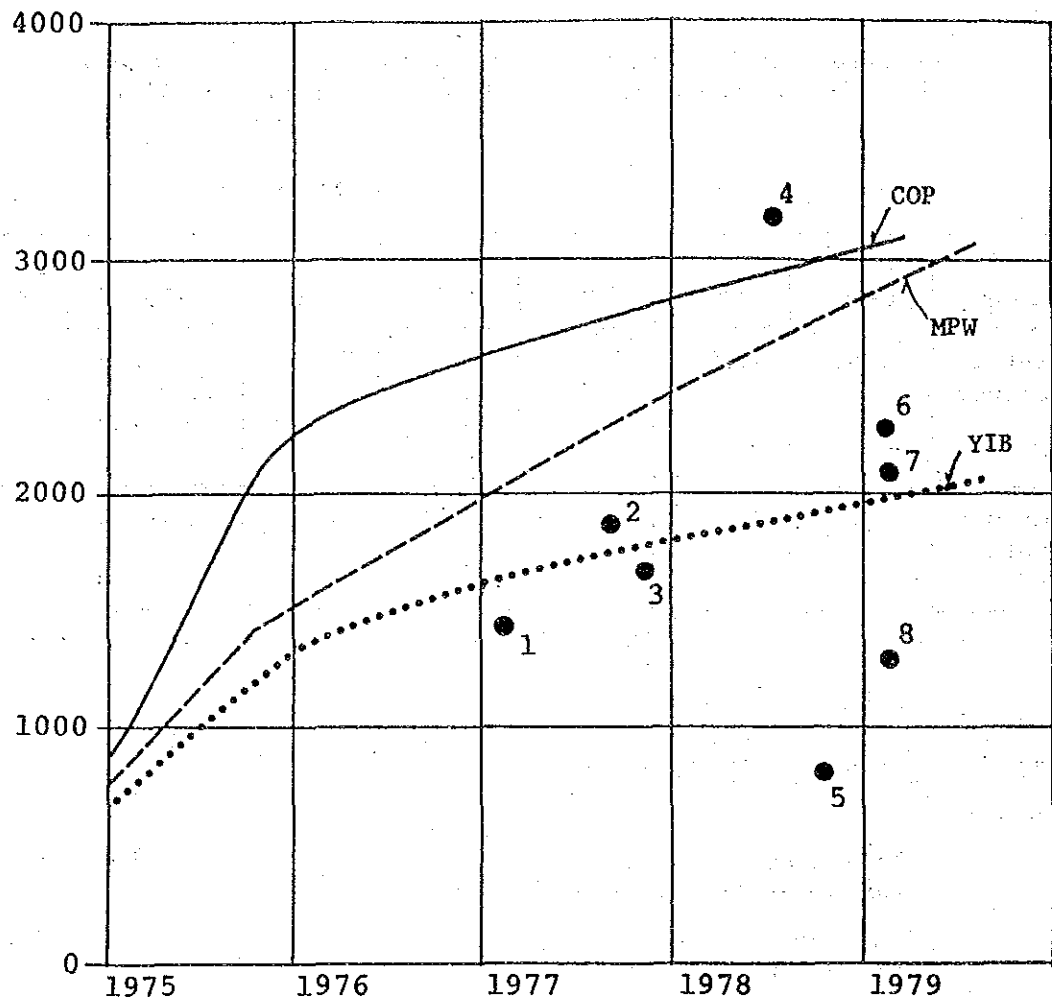
Office, Bank (RC structure) 2,200 YR/m<sup>2</sup>

(Received from Chinese Yemen Construction Company)

The above quoted construction cost was calculated in respect to locally produced construction materials. Recently it has been the trend particularly with the commercial building sector to incorporate more modern equipment and import a greater percentage of its building materials. Thus, with an increase in construction demands and annual rise in labour and supplies, the overall cost of construction is constantly getting higher.

# Trends in Construction Cost per unit Area (1975 - 1979)

(Unit : YR/m<sup>2</sup>)



["Analysis and escalation of cost of building materials and labour in Yemen" (PIU/MOE)]

(3) Construction Labour

(3)-1) Labour Force Related to the Construction Sector

1 Number of Construction Workers in Each Governorate

Governorate	Construction Labour Force	Total Labour Force
Sana'a	11597 5.3%	220816 100%
Ta'iz	15785 9.6	164655 100
Hodiedah	7219 3.8	196607 100
Ibb	7438 4.5	169033 100
Dhamar	34220 3.8	112524 100
Hajjah	1656 1.6	105572 100
Sa'adah	925 1.5	61993 100
Mahweet	843 .5	55765 100
Beidah	2256 7.4	30491 100
Ma'arib	401 4.0	10116 100
Total	52460 4.7%	1127572 100%

(CPO : Statistical Year Book 1982)

## 2 Estimated Demand of Construction Workers

← Second Five-Year Plan →						
	1981	1982	1983	1984	1985	1986
Number of employment	72,000	73,150	74,320	75,510	76,720	77,960

(CPO: The Second Five-Year Plan 1982 - 1986)

### (3)-2) Description of Work and Wage

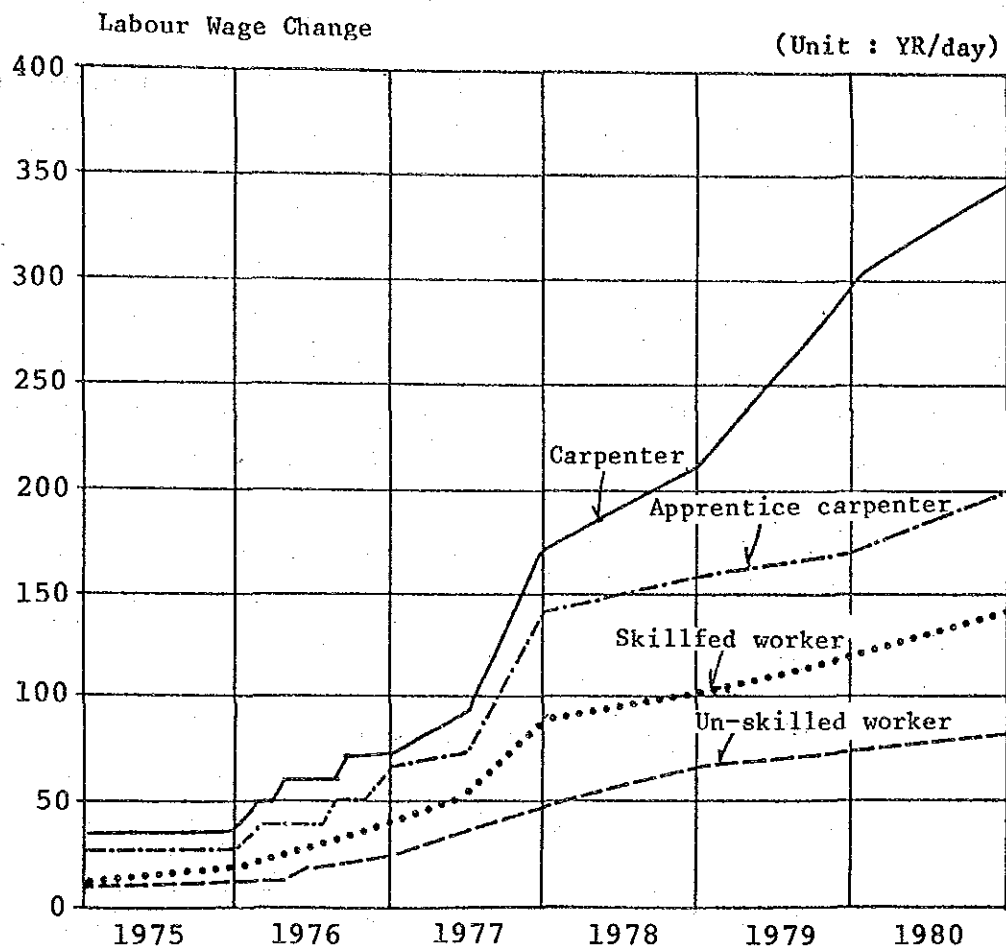
#### 1 Construction Labour Wage

Unit: YR/day

Labour Classification	SAEED (Socal Construction Workers)	CSCEC (Chinese South Yemen Construction Company)	Korean Construction Company A in the YAR (Koreans)
Engineer	-	-	530
General Foreman	-	-	200
Foreman	-	-	190
Unskilled labourer	80 - 100	77	160
Carpenter	150 - 200	91	170
Iron Worker	"	-	180
Construction Assistant	-	-	175
Stone Mason	"	91	175
Mechanic	-	-	190
Heavy Machine Operator	200 - 250	100	190
Welder	-	-	180
Electrician	150 - 200	91	180
Plumber	"	100	180
Duct worker	-	-	190
Driver	100	100	180

(Received in February 1984 from each company)

## 2 Trends in Labour Wage (1975 - 1980) in YR per day



["Analysis and escalation of cost of building materials and labour in Yemen" (PIU/MOE)]

### (3)-3 Labour Union

Freedom of organizing labour unions is guaranteed by the Labour Union Law. However, only a group of more than fifty persons in the same type of work is permitted labour union by the Labour Law; therefore, the number of the labour unions and their respective activities are very limited. However, the Labour Department of the governorate's government inspects the employer to observe the labour conditions of the workers are employed.

(3)-4 Employment Procedure

Generally, workers are employed individually, however at times, they are employed through the Labour Department allocated in each Governorate.

(3)-5 Insurance System

Mareb Insurance Co. and Yemen Insurance Co. are the two local insurance companies that handle the insurances in the YAR.

In case of workers' accident insurance, employers are obliged to pay the premium which is more than 2.5% of the employees' annual income.

(4) Demand Situation of Major Construction Materials

(4)-1 Production of Major Construction Materials (1972 - 1982)

Materials	Unit	1979	1980	1981	1982
Cement	ton	68,000	81,000	85,300	224,000
Brick	thousand unit	-	4,800	150	1,260
Concrete block	thousand unit	-	1,290	1,916	3,599
Ceramic tile	thousand unit	-	-	4,479	6,749
Polyester vinyl chloride sheet	ton	316	364	529	1,044
Polyester vinyl chloride pipe	ton	2,364	3,161	3,319	2,192
Door, window frame	M <sup>2</sup>	6,000	6,000	4,958	4,578

(CPO: Statistical Year Book 1982)

#### (4)-2) Demand and Supply of Major Construction Materials

As seen in the preceding table (4)-1) production of construction materials show a steady growth; however, there is a very limited selection of these domestic construction materials.

On the other hand, as for the investment results toward the construction industry in the First Five-Year Plan enforced during 1976/77 - 1980/81, the actual total investment amount was YR 850 million, which accounts for only 18.5% of the target, estimated total investment amount of YR 4.58 billion. Furthermore, according the prospect of the Second Five-Year Plan, it expects YR 869.6 million production achievements in 1986, compared to YR 200.5 million in 1981.

Furthermore, the above-mentioned plan establishes the ratio of domestic vs. imported materials to 3:1; therefore, it is expected that production demand of domestic construction materials will have a proportionate growth with the rise in construction demand.

#### (4)-3) Trends in Wholesale Prices

##### Wholesale Price of Construction Materials in Five Major Cities (1981, 82)

(Unit: YR)

Materials	City and Year	Unit	Dhamar		Ibb		Hodeidah		Ta'iz		Sana'a	
			1981	1982	1981	1982	1981	1982	1981	1982	1981	1982
Iron-bar $\phi$ 12 m/m		ton	2725	2196	2750	2112	2500	1942	2554	2008	2750	2162
Zinc pipe		"	3875	3646	3825	3975	3658	3600	3375	3766	3983	3542
Plywood 3 x 4 x 8		number	85	90	85	86	85	84	87	85	85	85
Plate glass (11 m/m)		"	15	13	14	13	12	10	12	12	12	10
Plate glass (32 m/m)		"	15	21	15	24	15	22	15	21	15	24
Timber (1 x 10 x 13)		"	85	101	85	113	80	82	87	114	85	85
Tile		100	250	202	225	207	213	200	213	203	217	209
Concrete block		100	400	400	450	425	388	400	450	450	391	400
Brick 24 cm x 10 cm		100	500	400	-	375	450	450	454	400	451	400
Brick (domestic production)		100	-	130	-	-	-	-	-	-	110	120
Water pipe 1/2 inch		number	35	31	35	31	32	30	32	30	35	30
Sewer pipe 4 inch		number	285	260	288	263	283	250	290	260	280	267
Stool		number	200	200	200	200	198	193	199	208	200	204

(CPO : Statistical Year Book 1982)

As for the price increase rate, the consumer price index set at 1975/76=100 is shown as follows. (Central Bank of Yemen Annual Report 1982)

1980 ..... 206  
1981 ..... 216  
1982 ..... 222

#### (4)-4) Distribution Route

##### 1 Imported Materials

At present, the YAR has four ports with shipping & receiving facilities: Hodeidah, Sarif, Kasseib, and Mocha. The Port of Hodeidah is the principal port because it has the best facilities, the largest volume and it offers the best handling capabilities.

#### Cargo Handling Volume of Each Port (1982)

(Unit : ton)

Year-Month	Statistics		Sarif		Mocha		Kasseib		Hodeidah	
	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export
1982	2670888	99069	368957	49388	332122	-	532125	-	1437684	49681
January	232564	4031	61234	-	27360	-	48107	-	95863	4031
February	160141	3579	-	-	39470	-	40600	-	80071	3579
March	209998	3406	43659	-	18545	-	30036	-	117758	3406
April	223486	4182	43627	-	15004	-	21125	-	143730	4182
May	289390	15998	64928	11663	36423	-	46984	-	141055	4335
June	236022	16857	25550	12325	43926	-	40972	-	125574	4532
July	202253	3700	26450	-	16980	-	45933	-	112890	3700
August	271620	17422	24800	12700	31806	-	66042	-	148972	4722
September	220113	3395	26467	-	31554	-	44005	-	118087	3395
October	269146	5292	26787	-	32990	-	54007	-	155362	5292
November	206666	16512	25455	12700	29002	-	49555	-	102654	3812
December	149489	4695	-	-	9062	-	44759	-	95668	4695

(CPO : Statistical Year Book 1982)

## 2 Domestic Materials

Due to the urban centralized population and the level of urbanization, the three cities, Sana'a, Taiz and Hodeidah are the major producers of the construction materials. Inland transportation relies solely upon the existing vehicles, with no other system available.

## 3 Distribution Route

All imported materials are handled by the local wholesale/retail agents. Domestic materials are sold directly from the factory or through the ordinary route; factory — wholesaler — retail store. However, aggregates and rocks for construction use is available directly through producers at materials distribution centres.

## 2-2 Education and Training

### (1) Technical Education

The basic educational system in the YAR is the 6·3·3 system as formerly mentioned in [1-1-(2), Page A-31]. There are two commercial high schools and six technical high schools included in the senior high school educational system in addition to the ordinary high schools. At present Sana'a University, which does not have any technology-related department, is the only university existing. Refer to the preceding table as to the term and number of students.

### (2) Technical Skill Training

The present classification for education and training relating to construction is roughly as follows:

- a. Acquirement of elementary skill through an apprentice system

b. Acquirement of technical skill at each public or private technical institution after the completion of preparatory school or secondary school

c. Education training and technical skill acquirement at technical high school

(3) Educational Societies or Professional Organization (Academy) etc.

At present there is no educational society or professional organization such as a local architects' association establishing and maintaining regulated standards for ethical practicing. There is neither an opportunity for such related areas and workers are generally employed by the various civil offices and private companies as construction engineers.

2-3 Administration on Construction

(1) Regulation for Construction

At the present time, there are no laws providing fundamental regulations concerning city planning and construction such as a City Planning Law, Construction Standards Law and Building Code which exist in Japan. Therefore, "International Code" is applied (in many cases, foreign existing laws such as Egyptian, British or German laws, etc. are common), according to the contents and characteristics of the project, irrespective of the YAR's local or foreign assisted projects.

However, every development and redevelopment construction activity is under the supervision and the control of the Central Planning Organization (CPO). Each department concerned with the related ministry and office, such as Ministry of Municipalities and Housing, or the Ministry of Public Works, assist the CPO according to the nature of the projects involved. Final permission for development, redevelopment and construction

works are issued by Ministry of Municipalities and Housing, whether the works may be the Central Government's or governorate's.

(Perceived from Ministry of Municipalities and Housing)

(2) Regulation of Construction Engineer

At the present time, there exist no licencing system authorized by the government; therefore, there doesn't exist such an "Architect Law" as there is in Japan. As for engagement of foreigners in the YAR with regard to qualification regulation, engagement and employment conditions within the country are stipulated by Republican Decree No. 5 of 1970 in Relation to the Labor Ordinance. Acquirement of above-mentioned work permission is under the control of governorate's Labor and Welfare Department.

As for business regulations, employees' working conditions are stipulated by the above Decree No. 5, and obligation of taxation is provided by Republican Decree No. 11 of 1972; Regarding the Imposition of a Tax on Commercial and Industrial Profits and Republican Decree No. 14 of 1972 Regarding Custom Law; and these regulations are under the control of Ministry of Finance Customs Department.

(3) Regulations of Construction

The Construction industry is subject to the regulations set by the Ministry of Economics and Industry relating to business conditions based on Law No. 18 of 1975 Regarding Promotion and Organization of Investment in the YAR, as well as above-mentioned laws in 2).

(4) Regulations on Business Activities through the Medium of Construction

The above-mentioned laws are the major ones with regard to the fundamental laws regulating aforesaid business activities by foreigners in the YAR. However, in the case of the project granted by foreign countries, it is common that special arrangements, exempting domestic laws to the project is applied.

(5) Regulations on Environmental Preservation

At the present time, there exist no environmental preservation law. However, there is an association for the preservation of historic, religious and other traditional findings of priceless value found in each jurisdictions impose laws against the destruction.

(6) Registration of Buildings

There exist no legal regulations concerning the registration of buildings.

(7) Regulations on the Real Estate Business

There is no real law on the Real Estate Trade, however, incomes received through these transactions are liable for taxation, based on Republican Decree No. 11 of 1972 Regarding the imposition of a Tax on Commercial and Industrial Profits.

(8) Regulations on Real Estate

There is no property tax like that of Japan. Instead, wealth tax called "Zakat" is assigned based on Islam. This tax contains no fixed rate and is more so a kind of charity act or benefaction, rather than imposed tax.

Incomes coming from renting real estate are liable for taxation based on Command Council Resolution No. 26 of 1974 Regarding Income Tax Law.

2-4 Organizations for Maintaining Public Facilities

(1) Organization for Public Maintenance

There is no Public Works Department or City Corporation Dept. and generally, each civil department office handles its own facility's maintenance and repair work. In the case of the YAR, there does exist a semi-official nation-wide cooperative assistance organization called CYDA (Confederation of Yemeni Development Associations) whose function is to assist the governmental development project in improving the urban, suburban and some of the remoted districts areas. About 150 cooperative associations are organized all over the nation under the control of CYDA, and perform construction, maintenance and repair works of facilities related to education and sanitation, including the secondary roads and water supply/drainage network.

(2) Budget and Construction Volume of CYDA

(2)-1) Budget

Estimated total investment amount in the Second Five-Year Plan was 455 million YR.

Out of this amount, 63 million YR were allocated to the three General Workshops.

(2)-2 Construction Volume

The First Five-Year Plan (1976/77 - 1980/81) Achievements

a. Construction of roads	810 million Y.R.
b. Water supply and drainage facilities	number 1,300 (155 million Y.R.)
c. Education facilities	4,800 classes (245 million Y.R.)
d. Health facilities	number 110 (222 million Y.R.)

(3) Design and Execution System

Similar to that of Japan and many other foreign countries the design and supervision of health and related facilities is carried out by the Ministry of Health's Building Construction and Maintenance Department, however the actual construction is sub-contracted to a local or foreign private construction firms.

(4) Organizations in Local Areas

Although each governorate has a strong political control power in the YAR, it is common that the maintenance and repair works for the public facilities are to be financed by the governorate's budget.

(5) Financial System

The financial framework is based on the Five-Year Plan and the annual budget is made up by the total number of projects. Tender and contract systems are the same as those of other foreign countries.

## 2-5 Construction Work System

### (1) Construction Design Organization

As previously mentioned, a practicing architects office or registered architects association has not been established yet. The design works for facilities in private sector is done by private construction companies/organizations while the design for public ones are undertaken by either the Department of Building or Planning Section in the relevant authorities.

### (2) Execution System

In a "Yemen Arab Republic, The Construction Industry, A Survey and Identification Report" by UNIDO issued in July 1981., 55 contractors from all over the nation were listed by the investigation of Ministry of Public Works in November 1980. However, more than 1.39 million of the working population, about 16% of the total population go abroad to work; accordingly, the nation is seriously lacking in skilled workers, and heavily relies upon the foreign enterprises' advancement for large-scale construction works.

### (3) Costruction Labor

Previously stated in [2-1-(3), Page A-86].

## 2-6 Contract related to Construction Works

### (1) Ordering Method

The ordering systems in the Private Sector is similar to that of Japan and those of most other foreign countries. In Public Sector, a Central Planning Organization is responsible for all planning, draft and

budget allocation for public projects. And as executive organizations, the Ministry of Municipalities and Housing, the Ministry of Public Works, Ministry of Electricity, Water Supply and Sewerage and Minister of Health etc. participate in the projects.

In the case of large-scaled projects, a system of pre-qualification review is introduced for the selection of contractor and its condition. The review is usually carried out by the relevant authorities and design consultant involved.

## (2) Contract Method

Since most of the large-scaled projects are financed by loans secured from the international financial agency, it is common to make use of international stipulations such as FIDIC.

## (3) Estimation Method

An accumulative method are usually applied for calculating the cost of the materials labour required.

## (4) Standard Construction Period

Standard construction period is various in each circumstances. Overall capability of local contractors is limited particularly in large-scaled projects and the major portion of the work is relied on foreign contractors. With regard to delay of completion, in case work are executed based on FIDIC, it is common practice that a guarantee for the construction period be imposed.

## 2-7 Construction Materials

### (1) Production System of Major Materials

Since the local level of producing construction materials is still at a point of being technologically undeveloped and unsystemized, a high quality level of domestic materials can not be expected. The local material that can be expected on parts with foreign products are cement, stone materials and certain wooden products.

Also in regard to production system of secondary goods, most of them are produced in small 'home-style' industry-scale factories, there are only seven assembly plants for metals, wooden fixtures, FRP Bath tubs, etc. in Sana'a City, which make use of foreign-made processing parts. However, the scale of these plants is also small, the average number of employees are usually around 50 persons.

### (2) Distribution System of Construction Materials

The trade and transportation routes of major construction materials have previously been discussed in [2-1-(4), Page A-88]. The local material producers also act as retail dealers for domestic materials. Foreign products can be bought from the agents, construction material stores and hardware stores.

Inventory volumes, regardless of being domestic or imported, secondary goods are deficient and unreliable in quantity. Only stone materials, concrete aggregate, etc. can always meet the demand.

The government had few official data referring to classified imported materials, and therefore the following table has be supplemented to further explain the recent situation.

Total Import Amount of Imported Goods (1979 - 1982)

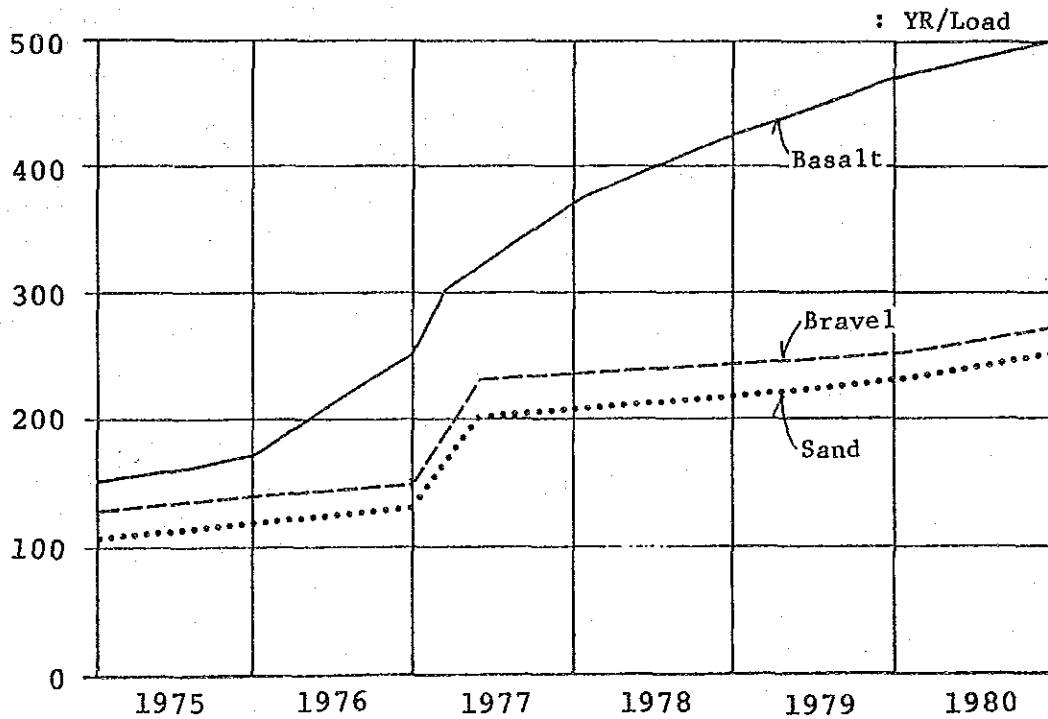
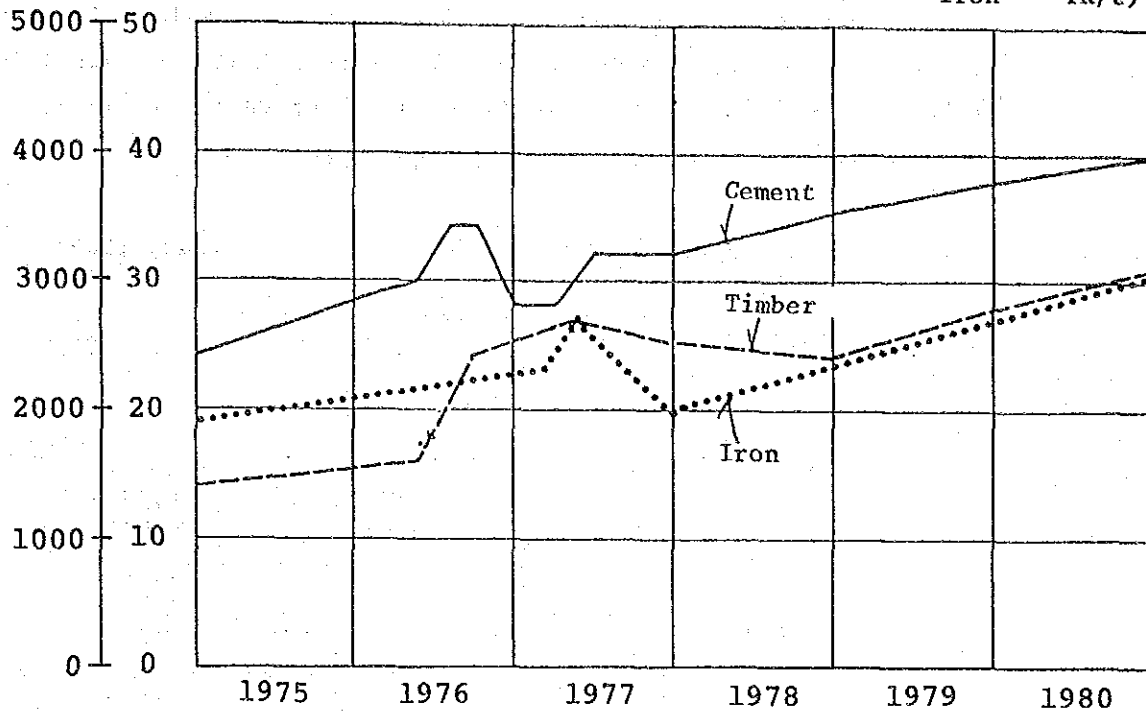
(Unit : 1000 YR)

	1979/80	1980	1981	1982
Iron•steel	315,359	521,137	306,940	56,132
Metal products	298,942	309,390	317,658	39,026
Timber, cord	307,288	400,419	382,237	111,906
Goods made of plastic	94,746	82,157	60,104	39,628
Sanitation•lighting appliances	17,513	16,925	9,762	3,373
Furniture	65,501	74,597	47,436	17,982

(Central Bank of Yemen: Financial Statical Bulletin July - September 1983)

# Change in Price of Construction Materials (1975 - 1980)

(Unit : Timber - YR/m<sup>3</sup>  
Iron - YR/t)



[ "Analysis and escalation of cost of building materials and labour in Yemen " (PIU/MOE) ]

### (3) Cost of Construction Materials

As for the cost of construction materials we display the unit cost table based on market investigation in Sana'a City conducted in February 1984. Refer also to "Construction materials wholesale price in five large cities" mentioned in [2-1-(4)-1], Page A-89].

Table of Construction Materials Price in Sana'a City (February 1984)

Article	Kind	Local Company A	Local Company B	Local Company C	Our Investigation	Remarks
<b>I Construction materials</b>						
1. Cement	OPC	YR32/bag	38	-	-	Ex warehouse 50 kg/bag
2. Aggregate	0.5 - 3 cm	70/m <sup>3</sup>	40	-	62 - 72	YR1300/truck
3. Sand		160/m <sup>3</sup>	70	-	62 - 72	Thamar Sand Produced in Dhamar Calcium is included.
4. Ferro-concrete	o6 - 8 mm o10 - 18 mm	2,400/m 2,000/m	2,400/m 2,100/m	- -	- -	Ex warehouse Ex warehouse
5. Stone	White "HABASHI" Red	1,800/8ton truck - -	309/m <sup>3</sup> 382/m <sup>3</sup> 345/m <sup>3</sup>	- - -	1,500/8ton truck 2,500/8ton truck 2,500	Ex site Stone materials for foundation
6. Stone block	25x25x25 cm	-	12/pc	-	25 - 40/pc	abt. 12 pcs/m <sup>2</sup>
7. Concrete block	20x20x40 cm 15x20x40 10x20x40	8/pc - -	5.3/pc 4.8/pc 4/pc	5.75/pc 5.0/pc 3.5/pc	- 4/pc -	8x10x20 cm YR1/pc
8. Porous concrete block	20x20x40 15x20x40 10x20x40	6/pc 5/pc 4/pc	4.2/pc 3.8/pc 3.5/pc	4.5/pc 3.75/pc 2.75/pc	4.5/pc 3.5/pc -	
9. Brick	26x13x8 cm 30x20x15 cm	2.5/pc 3/pc	- -	- -	- -	Ex factory
10. Porous brick block		-	3.8/pc	-	-	
11. Concrete not get hardened Concrete	Cement 200 kg/m <sup>3</sup> 250 300 350 400	- - - - -	- 480/m <sup>3</sup>	370/m <sup>3</sup> 410 450 500 550	- - - - -	
12. Timber	Plywood (12 mm) Others	105/pc 2,500/m <sup>3</sup>	115/m <sup>3</sup> 2,400 - 3,500/m <sup>3</sup>	- -	- -	Red wood
13. Terrazzo tile	20x20x2 cm 25x25x2.5 30x30x2.5	45 - 55/m <sup>3</sup>	100/m <sup>3</sup>	- - -	2/pc 3/pc 7/pc	
14. Ceramic tile		80/m <sup>3</sup>	-	-	-	
15. Glass	Float glass (6 mm thick) Colored glass (wire included) Bronze pane	65 - 70/m <sup>2</sup> - -	- - -	75/m <sup>2</sup> - -	100/m <sup>2</sup> 250/m <sup>2</sup>	
16. Wooden door	1x2m (lauan with metal fittings)	-	-	-	600 - 900/pc	

Article	Kind	Local Company A	Local Company B	Local Company C	Our Investigation	Remarks
17. Steel door	85x160 cm 110x190 cm	-	-	-	250/pc 450/pc	
18. Aluminium sash	120x120 cm (Colored, glass included)	-	-	-	750/pc	Frame made in West Germany Metal fittings made in China
Arabian style stool	71x100	-	350/pc	-	600/pc 110 - 130 pc	Local manufacturing Made in Taiwan
20. Wash stand		-	-	-	120/pc	Made in Taiwan
21. Shower pan	Enamel	-	-	-	150/pc	
22. Marble	40x40x2 cm	-	-	-	250/m <sup>2</sup>	Made in China
23. Office Chair		-	-	-	300/pc	Made in China
24. Zinc pipe	Middle 1 1/2" 6m Middle 1" 6m Middle 2" 6m Middle 4" 6m	-	26/pc 55 110 240	-	25/pc 45 60 90	
25. PVC Pipe	Middle 1 1/2"	-	2/m	-	2/m	
26. Pig iron pipe	Middle 2" Middle 4"	-	75/m 110/m	-	-	

## 2-8 Maintenance and Control of Construction

### (1) Maintenance and Control Method

A general maintenance and control system for the YAR has been already mentioned in preceding clause [2-4-(1), Page A-95]. In case of buildings constructed by free credits from foreign countries as with the project in question, it is common that the contractors hand over "Maintenance Manual", "Operation Manual", etc., which show how to maintain and control the facilities and the equipment in-house, to the department in charge of the control of the credited nation's government.

### (2) Depreciation Period

The concept of real estate depreciation is not realistically appreciated, and generally structures are used until inhabitation becomes intolerable.

### (3) Durability Period

Referring to the previously point, it is hard to define clearly, how long the durability period actual is. However, buildings made of domestic kiln-burned bricks have lasted for some 50 - 100 years. In case of stone-made buildings, some found have been for more than 200 years.

### (4) Situation of Damage Insurance

Traditionally, the Islamic code, in the form of punishment and reparation, covers accidents normally handled by insurance companies. In the case at foreign based corporations and enterprises, performing business activities in the YAR as with the project in question, employers are obliged to use workers' accident insurance, based on labor laws, commercial laws, financial laws, etc. (for example, Republican Decree No. 5 for 1970 in relation to the Labor Ordinance)

## 2-9 Social Customs Regarding Construction Object or Construction Works

With regard to matters which should be avoided from the standpoint of social customs and religion, foreigners should pay attention to the facts that the YAR belongs to Islamic world, and that most of the people are Muslims, and that observance of the Koran and Islamic laws is the national policy in this Islamic state society. The targets of the Second Five-Year Plan, also, advocates the promotion of social and economic developments based on the recognition that Arabian and Islamic society's tradition and cultural inheritances are of great importance.

Among social customs regarding construction works, there exist a number of construction ceremonies, such as ceremony of starting-work, ceremony of putting up the ridgepole, ceremony of completion etc. in which sheep are offered to Allah and people recite the Koran in general.

## 2-10 Major Construction Works in Recent Years

Almost all the major construction works in recent years were executed in Sana'a City and its vicinity. Representative works among them are shown as follows:

Yemen Aviation Company Head Office Building	1980 (Domestic, Baruneo Co.)
Yemen Central Bank	1982 (ROK Seiyu Development Co.)
Sana'a Sheraton Hotel	1982 (French contractor)
Expansion work to Sana'a University	1983 (Kuwait, Kumorafi Co.)
Kuwait Hospital	1983 (ROK Seiyu Development Co.)
Republic Hospital	Under construction (domestic contractor)

In addition to these works are the Construction Sixth Berth of Hodiedah Port (1981, Mitsubishi Shoji Co. Rinkai Construction Co.) and Amran Cement Factory (1982 Ishikawajima-Harima Heavy Industry Co.) are named as recent construction examples in which Japanese enterprises undertaken.

Foreign enterprises, which participate in large-scale public construction works centralizing in infrastructure, are as follows:

Chinese Public Roads and Bridges Construction Company  
Chinese Construction Work Company  
Sanwan Enterprise (Republic of Korea)  
Hundai Construction Co. ( " )  
Ansalde-Inbianti (Italy)





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