FEASIBILITY STUDY REPORT ON THE ESTABLISHMENT OF AN INTEGRATED TEXTILE MILL IN THE KINGDOM OF NEPAL

NOVEMBER, 1986

JAPAN INTERNATIONAL COOPERATION AGENCY

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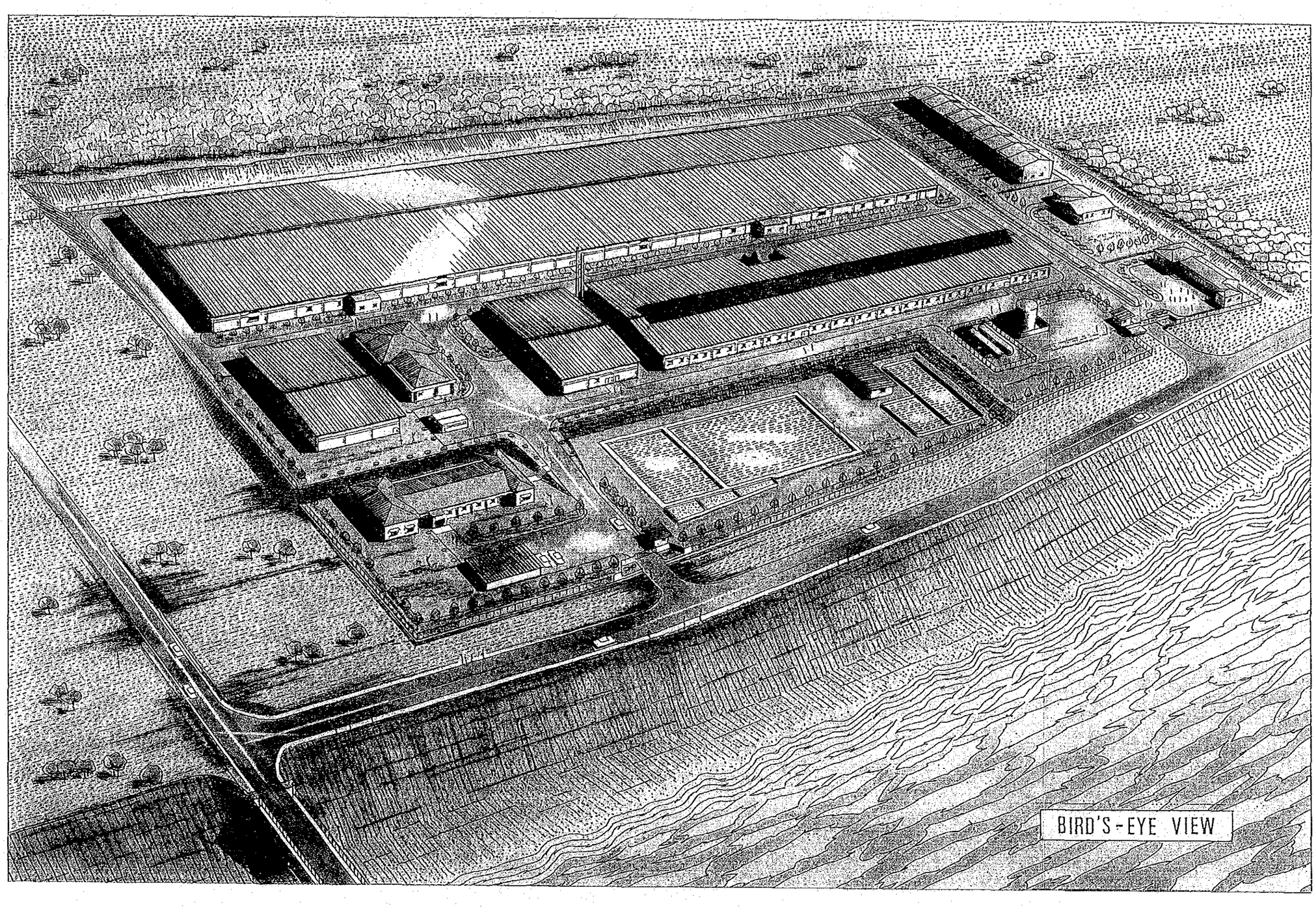

BIRD'S-EYE VIEW

PREFACE

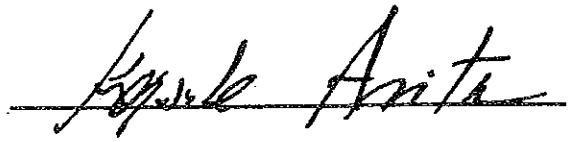
In response to the request of the Government of the Kingdom of Nepal, the Government of Japan has decided to conduct a feasibility study on the Project for establishing An Integrated Textile Mill in the Kingdom of Nepal and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to the Kingdom of Nepal a survey team headed by Mr. Ikuo Arita (Toyobo Engineering Co., Ltd.) from February 26 to March 27 1986.

The team had discussions with the officials concerned of the Government of Nepal and conducted a field survey in the project-related areas, including Nepalgunj and Dang area. After the team returned to Japan, further studies were made and the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of the Government of the Kingdom of Nepal for their close cooperation extended to the team.

November 1986



Keisuke Arita

President

JAPAN INTERNATIONAL COOPERATION AGENCY

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ABBREVIATIONS

Unit

NRs, RP	Nepalese rupee	ha	Hectare
US$	American dollar	D, d	Denier
¥	Japanese yen	's, Ne	English yarn count
Lm	Linear meter	V	Volt
in, "	Inch	KV	Kilovolt
ℓ	Litre	KVA	Kilovolt-ampere
t, MT	(Metric) ton	W	Watt
lb, LB	Pound	KW	Kilowatt
gr	Grain	KWH	Kilowatt-hour
kcal	Kilocalorie	MW	Megawatt
pH	Potential of hydrogen	MVA	Megavolt-ampere
h, hr	Hour	Hz	Hertz
min	Minute		

General

f. o. b., FOB	Free on board	JIS	Japanese industrial standards
c. i. f., CIF	Cost, insurance & freight	BS	British standards
c & f	Cost & freight	ASTM	American standards of testing materials
GDP	Gross domestic products	ESS	Polyester staple fibre
SLM	Strict low middling	PVA	Polyvinyl alcbhol
IRR	Internal rate of return	RC	Reinforced concrete

HMG/N	His Majesty's Government of Nepal
MOI	Ministry of Industry
MOF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOFSC	Ministry of Forestry and Soil Conservation
DOI	Department of Industry
DOA	Department of Agriculture
NPC	National Planning Commission
NIDC	Nepal Industrial Development Corporation
NEA	Nepal Electricity Authority
SEC	Securities Exchange Centre
CDB	Cotton Development Board
NBS	Nepal Bureau of Standards
ISC	Industrial Services Centre

DCVI	Department of Cottage and Village Industries
CIHE	Cottage Industries Handicraft Emporium
NCCN	National Construction Company of Nepal
WSSC	Water Supply and Sewerage Corporation
HTI	Hetauda Textile Industries
UNDP	United Nations Development Program
FAO	Food and Agricultural Organization
ADB	Asian Development Bank
IDA	International Development Association
OPEC	Organization of Petroleum Exporting Countries

Chapter 1. BACKGROUND OF THE PROJECT

1. Background of the Project

1-1 Present Situation of and Policy on the Economic Developments and Industrialization in Nepal

1-1-1 Structure of Nepal Economy from Viewpoint of Major Economic Indicators

Out of the total polulation of Nepal 15,022,839 as at 1981, the population working in economical activities is 10,517,888. (Population of Nepal is 16.5 million as at 1985)

Table 1 Population of Economic Activities (Over 10 years of age) 10,517,888

Working population	6,850,886
Non-working population	3,667,002
Non-workable population	3,425,529
House wives	2,266,914
Students	812,118
Aged people	275,610
Invalids of chronic disease	22,745
Disabled people	18,836
Schizophreniac	14,552
Accommodated in asylum	2,858
Annuitants	11,896
Perfectly unemployed population	241,473
Job hunters	110,860
Unknown	130,613

Cited from: Statistical Pocket Book, Nepal

From the above data, numbers of actually unemployed will be calculated as follows:

$$\frac{241,473}{6,850,886+241,437} = 3.4\%$$

Breakdown of the working population is as follows:

Table 2 Working Population

Agriculture	6,244,289	91.1%
Mining and stonequarrying industries	971	—
Manufacturing	33,029	0.5%
Electricity, gas and water supply	3,013	—
Construction	2,022	-
Commerce	109,446	1.6%
Transport, communication and storage	7,424	0.1%
Finance and real estate	9,850	0.2%
Community & social service	313,570	4.6%
Others	127,272	1.9%
Total	6,850,886	100%

Cited from: Statistical Pocket Book, Nepal (NPC, 1984)

From the above, it is clear that 91% of the total working population is engaged in the agriculture. On the other hand, shares by industries in the gross domestic products are as indicated below:

Table 3 Shares by Industries in GDP (1982/83)

Agriculture	17,741 million Rupees	54.4%
Mining and quarrying	68 million Rupees	0.2%
Manufacturing	1,368 million Rupees	4.2%
Electricity, gas and water	133 million Rupees	0.4%
Construction	2,247 million Rupees	6.9%
Trade,restaurant and hotel	1,202 million Rupees	3.7%
Transport, communication and storage	2,414 million Rupees	7.4%
Finance & real estate	2,645 million Rupees	8.1%
Community and social service	2,749 million Rupees	8.4%
Indirect taxes	2,052 million Rupees	6.3%
Total GDP	32,619 million Rupees	100%

Cited from: Economic Survey 1984-85 (MOF 1985)

On the other hand, transition of shares by industries in the GDP has been observed as follows:

Table 4 Shares of GDP by Industries Calculated by the Respective Year (%)

	1977/78	1978/79	1979/80	1980/81	1981/82
Agriculture	58.87	60.16	57.90	56.80	55.48
Mining & Quarrying	0.13	0.15	0.18	0.21	0.22
Manufacturing	4.02	3.82	4.01	3.84	3.93
Electricity, gas and water	0.21	0.22	0.26	0.24	0.30
Construction	6.78	7.02	6.72	7.23	8.38
Trade,restaurant and hotel	3.58	3.26	3.81	3.49	3.54
Transport, communication and storage	5.54	5.62	6.60	6.92	6.58
Finance & real estate	7.77	7.26	7.85	7.61	7.77
Community & social service	6.47	6.03	6.40	6.92	7.18
Indirect taxes	6.63	6.46	6.27	6.74	6.62
Total of nominal GDP	100	100	100	100	100

Cited from: Statistical Pocket Book, Nepal (NPC, 1984)

As it is clear from the above, also in the GDP, the majority is dependent on the agriculture. Further, share of exports in the major products is observed as follws:

Table 5 Amounts of Exports of Major Products (1983/84)

Foods and live stock	584.1 million Rupees	34.3%
Tobacco and beverage	5.3 million Rupees	0.3%
Crude materials & inedibles	372.7 million Rupees	21.9%
Mineral fuels & lubricants	3.3 million Rupees	0.2%
Oils and fats	67.6 million Rupees	4.0%
Chemicals and drugs	6.3 million Rupees	0.4%
Manufactures goods classified by materials	581.6 million Rupees	34.1%
Machinery and transport equipments	24.4 million Rupees	1.4%
Miscellaenous manufactured articles	57.7 million Rupees	3.4%
Commodity & transactions not classified	0.8 million Rupees	0 %
Total amount of exports	1,703.8 million Rupees	100

Cited from: Economic Survey, 1984/85 (MOF 1985)

As indicated in the above, share of the agricultural products in exports is more than 50%. (Before 1981/82 period, the share of agriculture had amounted to more than 70%) Since Nepal economy is dependent on prosperous condition of her agriculture, activation of her economy requires developments of manufacturing and other industries based on economic growth of her agriculture. However, in these years her economy has been in structural depression under minus growth trend of her agriculture.

Table 6 Transition of International Trade Balance (Unit: Million Rupees)

	1974/75	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
Exports, FOB	884.8	1,152.7	1,612.7	1,496.0	1,135.8	1,709.9	2,160.0
Imports, CIF	2,067.2	3,569.3	4,442.9	4,948.0	6,332.8	6,533.5	7,470.0
Trade balance	−1,182.4	−2,416.6	−2,830.2	−3,452.0	−5,197.0	−4,823.6	−5,310.0
Invisible trade	280.8	873.2	1,117.0	1,378.0	1,634.9	1,439.8	1,733.8
Transfers	204.3	357.3	484.2	477.1	549.7	616.7	648.0
Grant aid	282.8	761.7	860.8	1,157.0	1,315.0	1,583.5	1,470.0
Indian excise refund	111.6	82.3	90.5	71.3	59.1	106.0	132.0
Payments	−34.0	−13.1	−18.2	−23.7	−33.1	−35.4	−40.0
Transfers	564.7	1,188.2	1,417.3	1,681.7	1,890.7	2,270.8	2,210.0
Current account balance	−336.9	−355.2	−295.9	−392.3	−1,671.4	−1,113.0	−1,366.2
Foreign loan	86.7	577.3	633.8	774.1	924.4	1,203.5	1,782.1
Miscellaneous capital	−168.7	−195.7	−143.8	119.7	72.0	−216.9	−260.0
Increase/decrease of foreign currency	−418.9	26.4	194.1	501.5	−675.0	−126.4	155.9

Cited from: Economic Survey 1984/85 (MOF 1985), Statistical Pocket Book,Nepal (NPC 1984), and The Seventh Plan 1985—1990 (NPC, June 1985)

Foreign trade balance of Nepal has been aggravated due to low growth of agricultural production with majority of export represented by primary and their processed items. Deficit of this foreign trade has been covered by tourism revenue, grant aids and loans, however, the international trade balance had turned into red figures in 1982-84 period.

Transition of the real growth ratio of Nepal economy is indicated below:

Table 7 GDP and Growth Ratio (Unit: Million Rupees)

	1974/75 (Year of reference)	1980/81	1981/82	1982/83	1983/84	1984/85
Nominal GDP	16,571	27,307	30,265	33,621	38,184	41,738
Agriculture	11,550	15,679	16,975	17,942	—	—
Other industries than agriculture	5,021	11,628	13,290	15,679	—	—
Growth ratio	—	16.9%	10.8%	11.1%	13.6%	9.31%
Agriculture	—	14.6%	8.3%	3.9%	—	—
Other industries than agriculture	—	20.3%	14.3%	20.2%	—	—
Real GDP	16,571	20,158	20,926	20,642	22,172	22,800
Agriculture	11,550	12,066	12,492	12,175	13,240	13,466
Other industries than agriculture	5,021	8,092	8,434	8,467	8,932	9,334
Growth ratio	—	8.3%	3.8%	−1.4%	7.4%	2.8%
Agriculture	—	10.4%	3.5%	−2.5%	8.7%	1.7%
Other industries than agriculture	—	5.5%	4.2%	0.4%	5.5%	4.5%
GDP deflater	—	7.9%	6.8%	12.6%	5.7%	6.3%

Based on: Economic Survey 1984—85 (MDF 1985)

From the above, it is observed that the agricultural production had dropped in 1982/83 period due to unseasonable weather and drought. Moreover, the GDP deflater, meaning difference between the nominal and real values, indicates a total increase in the commodity price. As an another index showing an inflational trend, the consumers price index is shown below:

Table 8 Consumers Price Index

	Consumers prioe index	Inflational ratio		Consumers prioe index	Inflational ratio
1972/73	100.0	0	1981/82	222.4	10.4
1974/75	138.0	—	1982/83	254.0	14.2
1979/80	177.6	9.8	1983/84	269.8	6.2
1980/81	201.4	13.4	1984/85*	288.7	7.0

*: Estimated values

Based on: Economic Survey 1984—85 (MDF 1985)

Hike of price since 1979 has influenced level of the price very much, where price of grains has also been raised in 1982-83 period due to depressed business in the agriculture. For a 4 -year period from 1979/80 to 1982/83, a 2 -figures inflation had been present, of which cause was various price hike ratios of 11.0% in 1981/82 and 16.0% in 1982/83 for foods and beverages, where major causes for the hike were 12.4% in 1981/82 and 33.3% in 1982/83 of the rice, as well as 22.8% in 1981/82 and 14.6% in 1982/83 of the spice. For other articles than the food, price hike of fuels and city water has shown a 2 -figures rise since 1980/81 period[1].

1-1-2 Present Situation of and Policy on Economic Development and Industrialization.

1) Agriculture:

As hitherto has been seen, the agriculture keeps a large share in the working population. GDP and revenue from exports, which could be said to be in a position taking leadership of Nepal economy. Reflecting this situation, in the 6 th 5 -year plan the 1 st priority has been given to the policy of agricultural exploitation in order to cope with the foods shortage problem and economic depression. So far, all available measures such as arranging infrastructure, maintaining farm lands, financing for investments into agriculture and increment in outlays of exploitation funds for establishment of input supply system have been adopted, however, growth of the agricultural production has only been extended not more than the extent to off-set the increase in population, and increase/decrease in the agricultural production has been still dependent on prevailing condition of the monsoon.

Bellow, targets and results in the 6 th 5 -year plan for major products and indices.

Table 9 Agricultural Industry in the 6th 5-year Plan

	6th Plan		Production indices		
	Targets	Results	1978/80 (year of reference)	1984/85	Increase ratio
Agricultural production	3.0%	5.9%	—	—	—
Grains	(2.8)	(6.2)	85.30	112.90	32.36
Cash crop	(3.9)	(4.3)	107.81	149.69	38.85
Irrigational facilities	233,482 ha	60% 140,191 ha			
Supply of improved seeds	25,725MT	84.7% 21,804MT			
Supply of chemical fertilizer	215,402MT	79.8% 172,056MT			
Grant of agricultural credit	NRsl,744.1	99.8% NRsl,740.8			
Afforestation	42,872 ha	87.2% 37,480 ha			

Cited from: The Seventh Plan 1985—1990 (NPC, June 1985), and Economic Survey 1984—85 (MOF, 1985)

From transition of the agricultural production during years of the 6 th 5 -year plan, a

large grain production drop (−10.2%) was observed in 1982/83 period due to unseasonable weather and drought, however, this was recovered in 1983/84 (20.2%), which throughout the period, has produced a rise of 6.2%, surpassing the target of 2.8% . Also in respect of the cash crops, the result was 4.3% increase as against the target of 3.9%. However, various investments into the agriculture has shown a result of remarkable undercut of the target. While irrigated area attained 60% of the target amounting a total of 338, 600 hectares, this figure represents only about 15% of the total farm land area approx. 2.300,000 hectares[2].

Table 10 Rice Production and Farm Land Area Units: Hectare ,000 metric ton

	1974/75	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
Cultivated land area for unhulled rice	1,239,853	1,254,240	1,275,520	1,296,530	1,264,840	1,334,200	1,376,860
Increment ratio	—	1.2%	1.7%	1.6%	−2.5%	5.5%	3.2%
Output of unhulled rice	2,452	2,060	2,464	2,560	1,833	2,757	2,709
Increment ratio	—	−19.0%	19.6%	3.9%	−39.7%	50.4%	−1.8%
Output of consumable rice	1,288	1,059	1,273	1,324	938	1,475	1,448
Increment ratio	—	−21.6%	20.2%	4.0%	−41.2%	57.2%	−1.9%
Amount of domestic consumption	889	963	989	1,096	1,124	1,173	1,260
Increment ratio	—	8.3%	2.7%	10.8%	2.6%	4.3%	7.4%
Overs & shorts	399	96	284	228	−186	302	188

Cited from: Economic Survey, 1984—85 (MDF, 1985)

Problems in and Policy of Agriculture:

A problem involved in agricultural structure of Nepal is the limited cultivatable area of land due to topographical restrictions. Out of her total area of 141, 058㎢, area of the cultivatable land is said to be only about 16.5% or 2, 300, 000 hectares[3], even which is said to have already been totally cultivated[4].

However, owing to population pressure on supporting land area due to influx of people from hilly and mountainous area to Terai region, reclamation and cultivation of lands unfit for the farm land, destruction of production environment due to unlimited trespass into forests and fields and resultant undermining and productivity deterioration of the existing agricultural foundation are taking place[5].

Output of the malt rice has repeated drastic up/down trends since 1980 being affected by conditions of the monsoon, however, on the other hand, consumption volume of the rice has been securely increasing domestically by the volume being required by the increased population (Table-10). Under current condition where increment in output is not expectable due to inability of enlarging farm land area and improvement in productivity, prospect for self-sufficiency of foods can not be said but being not bright.

While coversion into cultivation area of pastures and forests due to population increment in hilly region, as well as cutting of forest resources in Terai region due to population concentration there are giving rise to structural problems such as repeated occurrences of floods, environmental destruction and stagnant agricultural production due to deteriora-

tion in fertility of the land, maintaining the forest resources should be indispensable for securing firewoods which occupies* 83.6% of the total energy demand of Nepal (a fact that share of forest area and farm land in the total area was 31.8% and 14.1% respectively to a survey conducted prior to 1981 had been changed into 29% and 22% respectively according to the statistics made in 1983[6] would probably suggest a result of cultivated forest areas). How to cope with the problem that supply of the firewood has been remarkably decreasing due to unrestricted cutting of forest resources calls for suitable countermeasures including afforestation project.

* Out of the Nepalese total energy requirement, 83.6% is dependent on firewoods, 9.1% on agricultural wastes, 1.6% on wastes from domestic animals and 5.7% on chargeable energy sources. Of the chargeable energy resources, 3.6% is represented by oil products, 1.5% by coal and 0.6% by electricity.

Under these conditions, activating the agriculture was shown as the top policy adopted in the 7 th 5 -year plan.

Namely, in order to achieve 3 major purposes for the 7 th plan of

- Acceleration of production increment
- Increment in employment opportunity in production concerns
- Fulfillment of nation's minimum and fundamental needs, their realization should not be possible without development of the agriculture, the plan states.

If foods and materials can be supplied abundantly and at cheap prices as a result of increased output of agricultural production, wages and material costs in the manufacturing industry can be maintained at a low level to result in not only strengthening competitive power in international trade, but by also increasing purchasing power of farmers, range of domestic markets, which so far have been limited, can be expanded. If the manufacturing industry develops, competitive power in exports will be improved and resultantly exports of agro-industrial products, which are basic items for the export, will be expanded. Furthermore, as we shall touch on in the Item 3), the plan took up the problem of maintenance and development of the forest resources as its preferrential policy, and other various program such as conversion of fuel source into oil and bio-gas, as well as maintenance and development of existing forest resource while improving productivity for firewoods and timbers, are adopted in the plan.

2) Manufacturing Industry

Share of the manufacturing industry in the GDP is 4.2% as at 1982/83 (Table- 3). Further, as seen in the Table- 4 , its share has been in a range of more or less 4 % since latter half of 1970s where any remarkable growth has not been observed. However, growth of the manufacturing industry has shown a 2 -figures increase since 1981/82 period as against 10% of the target growth ratio in the 6 th plan, where the mean growth

ratio through the initial 4 years was observed to be 10.9%, and is estimated to attain an achievement ratio of 10.3% throughout total period of the 6 th plan.

Table 11 Growth Ratio of Production in Manufacturing Industry

1980/81	1981/82	1982/83	1983/84	Mean value for 4 years	1984/85 (Estimated)	Growth ratio in 6th plan
0.4	11.5	18.4	13.2	10.9	10.4	10.3

Cited from: The Seventh Plan 1985—1990 (NPC, June 1985)

On the other hand, growth ratios of major artiles in the manufacturing industry are indicated below:

Table 12 Production of Principal Industries

Products	Unit	1974/75	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85 First 9 Months
1. Jute goods	M.T.	12,265	14,777	16,264	15,502	19,619	21,323	14,509
2. Sugar	M.T.	11,926	14,158	12,020	20,764	22,357	17,496	11,048
3. Cigarettes	100th. pcs	30,013	16,424	18,113	28,345	32,090	37,407	30,358
4. Matches	th. gross	649	699	626	760	858	1,121	923
5. Liquor*	th. liter	224	698	788	477	334	358	322
6. Soap	M.T.	891	1,174	2,631	3,050	5,100	5,594	5,351
7. Shoes	pairs	70,044	70,299	81,845	61,450	88,148	72,697	53,509
8. Leather	th. pcs	623	1,857	1,802	1,637	2,800	3,709	3,107
9. Agricultural tools	M.T.	300	207	86	153	368	481	288
10. Tea	M.T.	254	387	535	625	714	827	699
11. Stainless steel utensils	M.T.	156	760	470	468	374	439	319
12. Bricks & tiles**	th. pcs	25,575	33,791	25,642	20,884	30,689	29,760	20,207
13. Beer	th. liter	688	1,310	1,459	1,276	1,992	3,125	1,643
14. Cotton textiles	th. M	4,200	3,489	5,317	6,862	7,966	10,240	7,889
15. Cement	M.T.	26,933	29,163	32,326	30,378	36,959	39,225	22,870
16. Biscuits	M.T.	601	1,912	1,675	2,267	2,279	3,638	3,206
17. Plywood	th. sq. ft.	607	3,051	4,149	4,647	3,867	4,116	1,952
18. Synthetic textiles	th. M	1,128	2,190	2,329	2,677	3,023	3,591	3,042

Preliminary for 1984/85
* Production of distillery only
** Factory production
Source: Economic Survey 1984—85 (MOF, 1985)

Table 13 Growth Rate (%) of Principal Industries

Products	1974/75 —79/80	1980/81	1981/82	1982/83	1983/84	1984/85 First 9 Months
1. Jute goods	3.8	10.1	−4.7	26.6	8.7	−3.7
2. Sugar	3.5	−15.1	72.7	7.7	−21.7	−36.8
3. Cigarettes	−11.4	10.3	56.5	13.2	16.6	12.3
4. Matches	1.5	−10.4	21.4	12.9	30.7	11.9
5. Liquor	25.5	12.9	−39.5	30.0	7.2	17.1
6. Soap	5.7	124.1	15.9	67.2	9.7	26.4
7. Shoes	0.1	16.4	−24.9	43.4	−17.5	−1.3
8. Leather	24.4	−3.0	−9.2	71.0	32.5	5.0
9. Agricultural tools	−7.2	−58.5	77.9	140.3	30.7	2.5
10. Tea	8.8	38.2	16.8	14.2	15.8	18.9
11. Stainless steel utensils	37.3	−38.2	−0.4	−20.1	17.4	0.3
12. Bricks & tiles	5.7	−24.1	−18.6	46.9	−3.0	−6.9
13. Beer	13.7	11.4	−12.5	56.1	56.9	−24.9
14. Cotton textiles	−3.6	52.4	29.1	16.1	28.5	4.4
15. Cement	1.6	10.8	−6.0	21.7	6.1	−21.4
16. Biscuits	26.0	−12.4	35.3	0.5	59.6	42.9
17. Plywood	38.1	36.0	12.0	−16.8	6.4	23.2
18. Synthetic textiles	14.2	6.3	14.9	12.9	18.8	14.3

18Preliminary for 1984/85
Source: Economic Survey 1984—85 (MOF, 1985)

Table 14 Growth Rate (indicators) of Principal industries

Products	Weight	1978/79	1979/80	1980/81	1981/82	1982/83
1. Jute goods	21.51	126.54	120.48	132.60	126.39	154.57
2. Sugar	16.39	228.07	118.72	100.79	174.11	187.46
3. Cigarettes	14.23	68.92	54.72	60.35	94.44	106.92
4. Matches	2.12	111.56	107.70	96.46	117.10	132.20
5. Liquor	2.10	203.12	311.61	351.79	212.95	149.11
6. Soap	1.20	125.81	131.76	295.29	342.31	572.39
7. Shoes	3.44	79.63	100.36	116.85	87.73	125.85
8. Leather	5.44	211.88	298.07	289.25	262.76	449.44
9. Agricultural tools	0.68	59.67	69.00	28.67	51.00	122.67
10. Tea	1.37	128.35	152.36	210.63	246.06	281.10
11. Stainless steel utensils	3.68	188.46	478.18	301.28	300.00	239.74
12. Bricks & tiles	4.49	48.50	132.13	100.26	81.66	120.00
13. Beer	1.82	171.66	190.41	212.06	185.47	289.53
14. Cotton textiles	8.80	57.83	83.08	126.60	163.38	189.67
15. Cement	7.36	78.04	108.27	120.02	112.79	137.23
16. Biscuits	2.14	338.94	318.14	278.70	377.20	379.20
17. Plywood	0.34	298.02	502.64	683.53	765.57	379.90
18. Synthetic textiles	2.89	157.36	194.15	206.47	237.32	268.00
Total	100.00	134.86	142.53	143.12	159.55	188.88

Source: Statistical Pocket Book, Nepal (NPC, 1984)

The above industral indices indicate a considerable growth since 1981/82 period, which in 1983/84 period attained a growth of 215. 72 as against 100 of 1974/75 period[8]. As a supporting background of this industrial growth, it is said that there was a good atmosphere for an industrial investment, because the 6 th Plan laid emphasis on the absorption of excess labour forces arisen from increased population and on the concentration of production of daily consumer's goods and fundamental construction materials with a view to seek the creation of employment chance and the development of GDP through the industrialization in the era of a depressed economic evolution. The policy also aimed at mobilization of financial power of private entrepreneurs making them fully utilize the infrastructure so far well arranged. Furthermore, characteristics of the Industrial Policy published in 1974 and revised in 1981 were now inclusion of incentive measures to introduce foreign capitals into Nepal.

According to the new Industrial Policy (1981), industries are classified as follows:
(Manufacturing Industry)

- Manufacture of Daily Necessities:
  Foods, textiles, shoes, soap, matches, paper, pen and pencil, ink, stationery, cotton ginning, cotton spinning and pharmaceuticals
- Other Manufactures:

(Energy Industry)

Lines of business to utilize resources of water, solar heat, coal, oil and natural gas as

energies.

(Agro-industry)

Cattle raising, poultry farming, fish farming, beekeeping, sericulture, dairy farming and other lines of business designated by HMG.

(Mining and Mineral Working Industry)

(Tourism Industry)

(Service Industry)

Public transport, facilities construction, refrigeration facilities, warehouses, iron workshops, printing, consultants, hospitals and photographs.

(Leisure Industry)

Theaters, movies and circuses

(Assembly Industry)

Businesses to assemble the finished products

Further, the manufacturing industry is defined as follows:

	Investments in facilities	Total fixed assets
Cottage Industries	less than NRs 200,000	Less than NRs 500,000 (Local) 〃 NRs 800,000 (Urban)
Small Industries	More than NRs 200,000	Less than NRs 2,000,000
Medium industries	- do -	More than NRs 2,000,000 and less than NRs 10,000,000
Large Industries	- do -	Those exceeding NRs 10,000,000

According to the "Statistics of Manufacturing Industries in 1976/77 Period"(issued by Nepali Central Statistical Bureau), those enterprises classified as the medium and large-size industries are 3,528 companies, of which total fixed capital amounts to approximately NRs 0.95 billions, the total output value approx. NRs 3.94 billions and the total numbers of workers 132,821. Furthermore, according to the "Domestic Manufacturing Industy Sampling Survey in 1972/73 Period"(issued by Nepali Cetral Statistical Bureau), there has been the cottage industry of 376,632 cases registered, of which total numbers of employees were 1,040,510[10]. According to the subsequent statistics, the cottage and small enterprises of 5,079 cases were registered in 1974/75 and 1979/80—1984/85 periods[11], whereas the medium and large-size enterprises of 4,884 were registered in 1982/83 period (estimated), and their distributions among development areas were in the order of 2,527 companies in the Central development Region, 992 in the Eastern development Region, 888 in the Western Development Region, 300 in the Mid-Western Development Region and 177 in the Far-Western Development Region. Moreover, the total numbers of employees were 88,616 (comprising of 46,418 in the Central, 30,239 in the Eastern, 5,132 in the Western, 3,900 in the Mid-Western and

2, 927 in the Far-Western Development Region[02].

In order to activate investments into these private sector industries, a financing target of NRs 502. 8 million by NIDC was established in the 6th plan, of which NRs 284. 3 million (56. 6% of the target amount) is estimated to be disbursed. Further, under the Cottage and Small Industries Project (CSI) supported by the assistance plan of IDA, a fund amounting to NRs 46. 4 million as a total of financing by all banks concerned has been financed for cottage and small industries by 1984/85 period[03].

Furthermore, in order to facilitate establishments of manufacturing businesses, industrial districts (ID) are provided, where not only required spaces and utility services are available, but also facility of construction materials and operational raw materials procurements are available. Presently, a total of 10 ID is provided in the total area of Nepal, for which a fund of NRs 408 million has been invested. 11, 191 workers have been employed in a total 202 factories and other 45 factories are now under construction. 68 factories have commenced their operations during executional period of the 6 th plan[04].

In addition to some 30 existing state-run factories constructed under the National Economy Dvelopment Project, the Hetauda cement factory among those under construction progress during period of the 6 th plan has been completed of its construction in the 7 th plan period and commenced its trial operation. Additional construction work for the Himal cement factory has been delayed, whereas construction of the Butwal cotton spinning factory has just been commenced. On the other hand, construction work of the Bhirikuti paper mill has been carried over to the 7 th plan period, while constrution work of the Chisapani paper mill, to which financing by ADB has been scheduled will start in 1986/87 period. Construction of the Lumbini sugar mill has been just commenced, however, construction works of the Ganesh Himal lead and zinc mill and Kharidhunga magnesite mill have been delayed[05]. While production condition at existing major state-run factories has been depressed, those excluding some are expected to be productive in 1983/84 period, where productions at factories at Birganj sugar, Janakpur cigarette factory, Hetauda textile, and Himal cement and Agricultural Tools were observed to have increased more than the previous year, however, production outputs at factories at Bansbari leather & shoes, Harshiddhi bricks and tiles, and Bhaktapur bricks and Agricultural Tools were observed to have increased more than the previous year, however, production outputs at factories at Bansbari for shoes, Harshiddhi for brocks and tiles, and Bhaktapur for bricks and Agro-Lime have decreased below results in the previous year[06]. Generally speaking, business results at these state-run factories are not prosperous, where most of them have been in red figures, and retrieval of dividents from these factories has been minimal. Of all state-run

factories going into red figures, 70% is said to be commercial enterprises. The profit ratio of capital for the 1982/83 period is observed to have further dropped from the previous year (0.8%), of which mean value for 6 year is approximately 1%. Through deterioration of business results of the commercial enterprises, their total accumulative deficit amounted to NRs 1.05 billions which is equal to 50% of total investment by the government[17]. Cause of the low profitability is poor assets and sales amout and financial condition throughout the past 12 years has been in a low profitability status without any structural change. In order to cope with this situation, policies in the 6 th plan such as introduction of independency in managements, higher specialization of managements, review of target plans of key industries by the Rastriya Panchayat, governmental guidance for making managements profitable by raising prices for public utilities and mass-produced products, as well as for flexible pricing policy (adjustment of selling prices) according to structures of selling markets, control by establishment of annual targets and budget control have been adopted, however, failed to produce enough results [18].

To have these governmental enterprises recovered, such concrete measure as avoidance of direct governmental interference into these enterprises and resultantly allowing independency to managements, as well as establising business results evaluation standards for each enterprise and introducing a reward and punishment system into the enterprises have been suggested to be taken in the 7 th plan.

As measure to develop industries, the new Industrial Policy (1981) provides various kinds of preferential measures (to be stated under separate item) to induce funds from foreign countries, while on the other hand, as social systems there are various supporting organs such as Industrial Promotion Bureau (IPB), Industrial Services Center (ISC) as the servicing organ of various informations and Nepal Industrial Development Corporation (NIDC) as the financing organ are provided.

However, private capital in Nepal tends positively to take such businesses as construction, hotel, commerce and trade where capital payback is possible in a short period and private investment into manufacturing industry is low-toned. Acccording to questionnaire survey made by Instructor Pradhan of the Tribhuvan University on managers and government officials, internal factors causing delayed industrialization of Nepal include the following listed in the order of their importance:

1. Shortage and unstable supply of electricity
2. Shortage of repair workshop
3. Insufficiency in registration as well as of import and financing systems of facilities
4. Instability of industrial policy
5. Tendency of private sector investments to select businesses of earlier profit return
6. Insufficient endeavour of industrial enterprisers

7. Preference by most countries of financial assistance to the public sectors
8. Impossibility of earning higher profit in a manufacturings.
9. No improvement realized in the new Industrial Policy as compared with the old Industrial Policy
10. Higher local tax to be levied on domestic sale of products
11. Some state-run enterprises were established because of non-availability of private investor in that category.[19].

Further, when seen from viewpoint of the international enviroment, existrence of Indian products, which keep a far superior marketability to Nepalese for their prices, quality and supplying capability, is hampering development of Nepal manufacturing industry. Under the present situation where illegal traffic of goods and fund can not be checked at the open border between Nepal and India, enforcement of a powerful protective international trade is infeasible and influx of Indian products is unavoidable. Another bottle neck for Nepali industrialization is difficulty of expansion of the Nepali products into Indian markets as the result of an import restriction policy taken by the Indian goverment, as well as of insufficient competitive power of the Nepali products[20].

With the background as above, the following policies have been adopted in the 7 th plan,

- To promote those industries using materials produced in Nepal and countributing to GDP.
- To effect appropriate facilities operation (facilities working ratio during period of the 6 th plan was an annual average of 66.5%).
- To encourage industries replacing importations, as well as industries producing consumer goods and industrial materials.
- To shift state-run industries gradually to private sectors.

And their practical programme hae been developed as follows:

(Public Sectors)

a) Construction completion and commencement of commercial production:
Bhrikuti Paper Mills, Hetauda Cement Industry, Nepal Metal Company and Nepal Orind Magnesite Industry

b) Construction completion and commencement of trial operation:
Lumbini Sugar Mills, Nepalgunj Paper Industry and Butwal Spinning Mill

c) New construction:
Udayapur Cement Industry and integrated textile factory

d) Preparation of the plan to shift real estate of the Industrial Estates to privte enterprises.

e) Loan and investment of NRs 700 millions by NIDC

f) Reinforcement of constitutions ISC, NBS and SEC

g) Cotton development project for realization of self-supply of cotton

(Private Sectors)

Promotion in construction of 123 enterprises:

28 enterprises in foods industry, 35 in textile and apparel, 10 in housing and construction, 2 in medical and hygenic, 10 in stationery and 15 in engineering and 23 in industries wishing to deal in export trade.

As actual targets, 6 % GDP growth ratio, NRs 6.98 billion industrial production achievement and a total employment of 95,255 workers are shown.

On the other hand, in respect of the small-scale industries field, various assistances have been provided, where by dint of the Industrial Enterprises Act (1981), 13,360 cottage industries have already been registered under the Cottage and Small-scales Industries Development Programme, employment opportunities have been given to 13,678 people and 27,140 workers have been given chances for professional training. The cottage industry, requiring no enormous amount of fund, higher technology, nor modern management theory, should be suitable enough for capability of investors of smaller amount of funds. Also, because of its labour intensive nature, the cottage industry increase employment opportunities and is proven to be competitive in international trade and can be a resource through which foreign currency will be earned. Also, in the 7 th plan, targets have been set to ensure gradual settlement of unemployed and under-employment condition in rural and urban areas through a stable development of the cottage industry, to improve in productivity and quality of products for exports and to increase production output level to such an extent to satisfy domestic demand and to replace importations[21].

3) Economic Infrastructure

a) Electricity

Nepal's hydroelectric power generation project said to have an enormous power generation potential has been promoted through the 6 th and 7 th 5-year plans. Constructions of power generation plants of Kulek hani II (32MW), Marsyangdi (66MW), Andhi River (5.1MW), as well as of 16 small-sized power generation plants (3.529MW) have been in process whereby it is estimated that a total of 106,629 MW additional power generating capability will be added during period of the 7th plan. Furthermore, for the study of projects of large-scale hydroelectric power generating stations, now Karnali (Chisapani), Karnali Ghumti (upper Chisapani) and Mahakali (Pancheshwar) projects are receiving surveys and additinally, the overall development master plan for the Koshi River has been finished of its survey, and as the result, feasibility study for the Arun III and a survey under the Sapta Gandaki project are to

be carried out during period of the 7 th plan[22].

For construction project of power transmission lines, the 7 th plan includes extension planning of the 33KV power transmission line for 583Km and of the 132KV trunk transmission line for 728Km[23]. Of the 132KV trunk transmission line, the line linking Hetauda-Janakpur-Biratnagar has already been extended up to Janakpur and is expected to go through to Biratnagar by around May, 1986. Furthermore, the power transmission line construction project between Butwal and Nepalgunj is progressing remaining only a short distance to the Shivpur substation, where although the Shivpur substation has already been completed, Lamahi and Kohalpur substations are now still under construction.

By during 1984/85 period, total power generating capability of all concerned facilities is estimated to amount to 171.74MW, which is broken down into 129.31MW by hydroelectric power generation, 37.88MW by diesel power generation and 4.55MW by thermal (steam) power generation. On the other hand, the total demand for the electricity was observed to be 255.5 millions KWH in the 1983/84 period, which was a 8 % increment against the previous year[24]. However, since a power generation capability of 170MW is equal to approximately 1,360 millions KWH, there should be a room for the power generation capability even after deduction of 35.7% power loss observed in the 1983/84 period.

Table 15 Transition of Demand and Supply of Electricity

Unit: 1,000 KWH

	1979/80	980/81	1981/82	1982/83	1983/84
Demand (including electricity sold*)	166,445	168,286	190,217	236,796	255,507
Power loss	67,329	66,422	84,991	110,164	127,427
Electricity purchased*	12,272	15,044	17,647	18,056	15,337
Generated electricity	216,306	215,902	252,378	322,918	357,285
Total of purchased and sold electricity	233,774	234,708	275,208	346,960	382,934

Cited from: Economic Survey 1984—85 (MOF,1985)
*: By power swapping with India

b) Tele-communication

During period of the 6 th palan, it is estimated that post offices are to be erected at 471 locations and 13,900 new telephone lines represeting 59.3% of the target in the period are to be installed. Further, in the period, increment in the micro-wave circuit network and installation of the communication satellite have been carried out as scheduled. In the 7 th plan, tele-communication policies of reinforcement in the long-distance call telephone trunk line system and establishment of telephone subscribers dialling system, expansion of local telephone exchange system and installations of telephone booths in public places, extension of the long-distance calling service to local areas through the latest tele-communicational system and increasing communication ability

through the satellite are included[23].

c) Irrigation and Afforestation[24]

While it was planned in the 6 th plan that a total irrigated area of 198, 481 hectares realized by the 5 th plan period would be doubled to 431, 963 hectares, however, the result was that a new irrigated area of 140, 191 hectares represennting 60% of the target in the plan was added, and only a total of 338, 671 hectares equivalent to 13% of the total farm land had been irrigated. In the 7 th plan, the following policies are adopted in order to place an emphasis on utilization of surface and underground water for irrigation and effecting irrigation works at hilly regions for increasing agricultural productivity by revising erratic farming method relying on monsoon rain fall, and an irrigation target of 235, 493 is aimed at:

- Effective use of water resources for irrigation in hilly region
- Promotion of medium and small-sized irrigation projects of low costs in hilly and Terai regions.
- Making existing irrigation facilities capable of irrigating all the time by good maintenance and improvements of them.

On the other hand, for wood and forest developments project, of the target afforestation of 42, 872 hectares in the 6 th plan, only 37, 400 hectares had been afforested again.

As was already stated under the Item 1 — 1 — 2 , 1), wood and forest resources in Nepal has been kept deteriorated for years and are now posing a serious problems. That is, because of the deterioration, problems of land corrosion, floods, landslides, short supply of wood products and drop in agricultural productivity have took place, which are giving rise to an adverse impact against general natural and social environments. Unless a nationwide scale campaign of afforestation should be effected, the wood and forest regions in Nepal would be deprived of all trees in there in 20 to 25 years and after all the whole area of the nation being involved in process of changing into a desert land. In order to prevent devastation of the wood and forest regions from expanding more than the present level, an yearly afforestation for an estimated tree-cutting area of 100, 000 hectares should be carried out every year. Important is the fact that the afforested area provided during past 2 times of 5 -year plans is found to be only 47, 000 hectares. Consequently, the top priority need in the 7 th plan is declared to be afforestation for 175, 000 hectares area and at the same time, maintenance of the existing wood and forest resources through the scientific control method.

With the aforesaid background situation, measures in the 7 th plan call for mobilization and participation of people in a large-scale afforestation and forest

maintenance projects in order to provide daily need of firewoods for people, to maintain ecological balance and to obtain as much economical gain as possible from the wood and forest resources, giving the top priority to maintenance programs of natural resources and soil by providing water reservoirs in villages, residentaial areas in hilly regions and farm land areas, as well as adoption of more restrictive control over use of the wood and forest areas for constructional or developmental purposes by allowing only the minimum such area for such purpose to such an extent of the ecological balance not being lost through imposition of prior approval from the Ministry of Forest and Soil Conservation for such use.

d) Roads, Bridges and Means of Transportation

In the 6 th plan, target for road construction was set at a total of 1, 950Km, of which 89. 3% or 1, 742Km would be completed in the period. (The completion was 1, 516Km up till 4 th year)

As the result, the total length of the road, which had been only 624Km in the lst year (1956) of the 1st 5-year plan, was extended to 5, 836Km in 1985(?).

Table 16 Transition of Road Construction

1956 – The year of start of the 1st plan	Total length – 624 Km
1962 – The year of start of the 2nd plan	Total length – 1,193 Km
1965 – The year of start of the 3rd plan	Total length – 2,049 Km
1970 – The year of start of the 4th plan	Total length – 2,504 Km
1975 – The year of start of the 5th plan	Total length – 3,173 Km
1981 – The year of start of the 6th plan	Total length – 5,021 Km
1982 – The 2nd year of the 6th plan	Total length – 5,270 Km

Cited from: Statistical Pocket Book, Nepal 1984 (NPC)

Of bridge construction, 9 plans out of 15 in the period will be completed and 154 suspension bridges will be constructed out of the target of 300. Purpose of the 7 th plan is to construct such roads as to assist in national economy growth, to promote balance in local economies to realize economical integration and to develop local transportations, where a high priority in the policy has been given to complete unfinished parts of the Mahendra Highway and the South-North Through Highway, which have been under construction as the top priority projects of the nation, as soon as possible. Further, priorities will be given to connecting roads linking among highways already completed or under construction thus contributing to economical utilization of these highways, to construction of such roads as to promote efficiency in international trades and transportations and further to construction of roads at mountain-foot and for ass traffic, bridges and suspension bridges as transportation means at hilly region and remote regions which will be connected to the trunk national transportation system. Actual targets in the policy include extension of the road by 1, 981km (432km asphalt-paved road, 734km macadam road and 815km earthen road), construction of 21 bridges available to automobiles and construction of 373 suspension

bridges by the local Panchayat[28].

Railway has been only provided for 42km from Jaynagar in India to Janakpur in Nepal. Since its start of operation in 1935, the railway has been gradually moving into poorer conditions due to aged conditions of facilities, shortage in maintenance and repairing services and problems arising from different width of rails in two countries, which has been carrying approximately a million passengers and 20,000 tons cargo annually since end of 1970s. On the other hand, in respect of Nepal's topographical condition, the ropeway plays an important role in the transportation service, which has been provided for a distance of 42km from Hetauda to Kathmandu valley through Bhimphedi. In the period of 1983/84, some 11,000 tons cargo had been carried by the ropeway[29]. In the period of the 6 th plan, no development project for these means of transportation was provided, but only maintenance and improvements of existing facilities had been made, while in the 7 th plan, an emphasis is given to expansion of substituting means of transportation, like plans for the ropeway network expansion, strengthening of the railway system and execution of FS survey, implementation of the waterway development policy for which the preliminary investigation has already been finished, expansion of the trolley bus service and the strengthening of container transport facility[30].

In the period from 1980/81 to 1983/84, 6,234 automobiles had been registered, which were broken down into 961 buses, 1,489 trucks and 3,784 jeeps and passenger cars[31]. In Nepal which is an inland country, the air transportation plays an important role in her trading activities with foreign countries, fulfilling indispensadle performances in promotion of tourism business as well as in traffic linking with hilly and remote regions. Presently, there are 41 airports in addition to the Tribhuvan International Airport at Kathmandu, of which 9 airports are provided with landing and take-off facilities for Avro aircrafts, 27 for Twin Otter aircrafts and 5 for Pirata porter aircrafts. From the 6 th plan, construction of the terminal building at the Tribhuvan International Aiaport and the new Nepalgunj Airport have been underway, and priorities are also given to these projects in the 7 th plan, and additionally, measures to change those small-sized airports for take-off and landing of Piratas porter type aircrafts into airports available by Twin Otter type aircrafts, to make 2 airports in the Terai plain as permanent bases for shuttele air services and to increase flights sending tourist passengers to Himalayan region are adopted in the plan[32].

e) School Education[33]

In the 6 th plan, the target for education was to give primary school education (1 - 5 years) to 75% of the age group of 6 -10 years, against which 76.1% had been

achieved by the 4 th year and would attain to 78% throughout the total period of the plan. Further, in respect of lower secondary school (6 - 7 years) and secondary school educations, as against targets of giving these educations to 40% and 30% of the age group of 11-12 years and 13-15 years respectively, each 35% and 24% have been achieved. Numbers of students in schools and teachers as at September, 1984 are as follows:

Table 17 Numbers of Students and Teachers as at September, 1984

	No. of students in schools	Increase ratio against previous year	No. of ordinary teachers	Increase ratio against previous year	No. of trained teachers	Increase ratio against previous year
Primary school (1-5 years)	1,748,000	7.5%				
Lower secndary school(6-7 years)	238,000	8.2%	63,543	17.6%	22,471	13.2%
Secndary school (8-10 years)	216,000	7.7%				

Cited from: Economic Survey 1984—85 (MOF, 1985)

Table 18 Actual Conditions of Primary and Secondary Schools in Nepal

		1979	1980	1981	1982
Primary schools	No. of schools	9,886	10,130	10,628	10,912
	No. of students	1,012,530	1,067,912	1,388,001	1,474,698
	No. of teachers	26,384	27,805	29,134	32,259
Lower secondary schools	No. of schools	3,061	3,501	2,786	2,964
	No. of students	342,929	391,427	169,564	198,723
	No. of teachers	10,536	11,693	12,245	10,820
Secondary schools	No. of schools	644	785	918	1,031
	No. of students	106,109	121,007	144,331	170,404
	No. of teachers	4,265	4,683	4,909	5,634

Cited from: Statistical Pocket Book, Nepal 1984 (NPC)

On the other hand, some 277,000 people are thought to have been brought up to be able to read and write by adult education (planned target was for 900, 000 people). The literate ratio is estimated to be 28.9% as against target of 32.4% of the total population. Since start of the 6 th plan, the primary school education was extended from 3 years course to 5 years with free education and text books have been distributed free of charge to pupils in 1 - 3 grades. In the 7 th plan, it is expected that 87% of the age group of 6 -10 years could be given their primary school education, for which purpose, 1,000 primary school and 12, 838 teachers are thought additionally to be required, totalling 12, 704 primary schools and 62, 143 teachers in all. Furthermore,

in several Panchayats, they are said to initiate their plans of introducing compulsory education systems independently. The major purpose in the 7 th plan in respect of the educational sector is a sharp growth of literate ratio through primary and adult educations, where it is scheduled that some 750, 000 people are to receive professional training for adults and another 750, 000 people are to receive education under the illiteracy extermination projects of local Panchayats, and the literate ratio is expected to reach 38. 9% in the plan period.

f) Health

As a part of the community health service development project, the targe of constructing 467 health posts in the 6 th plan was achieved, which amounted to a total numbers of 744 of them. (*) In the first 9 months in the 1984/85 period, numbers of health centres provided reached to 26 and hospitals to 80 with 3 additions newly constructed, of which numbers of beds available were increased by 15% as against corresponding period in 1983/84 period, totaling 3, 522 beds[34]. Records of manpower engaged in the medical services are as shown below:

Table 19 Numbers of Doctors and Nurses

	1982/83	1983/84	1984/85 (after 9 months)	Increase ratio as against previous yessr
Doctors	505	573	602	5.1%
Nurses	—	1,986	2,109	6.2%

Cited from: Economic Survey 1984—85(MOF, 1985), and Statistical pocket Book, Nepal 1984 (NPC)

Health service is one of the fundamental requirements of the nation and the 7 th plan period falls on the final execution period of the "Perspective Health Plan" and its objectives are geared to the call of "Health for all by the year 2, 000." During the Seventh Plan period, health services will be improved to bring down population growing rate to 1. 9 per cent and infant mortality rate to 9. 83% and the average life expectancy is to be extended to 55. 4 years. Furthermore, the 7 th plan envisages the establishment of 1300-1400 sub-health posts at Panchayat level and to strengthen fundermental health care systems in 37 regions in total Nepal in order to improve medical services for local people through integrated community health services programme. For improvements in the health service system, the plan sets targets of establishing hospital facilities in 25 areas currently with no hospital, and the existing hospitals are to be expanded thus enabling to accommodate additional 985 beds[35].

* According to "The Seventh Plan 1985-1990", numbers of health posts to be constructed are shown as 211.

4) Structure of Foreign Trade:

Transition of Nepal foreign trade is shown below:

Table 20 Transition of Foreign Trade Balance* Unit: million NRs

	1974/75	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85 Jul-Mar.
Export FOB value	889.6	1,150.5	1,608.5	1,491.5	1,132.0	1,703.9	1,961.0
Growth ratio	—	5.3%	39.8%	−7.3%	−24.1%	50.5%	**55.9%
Exports to india	746.7	520.9	992.3	994.4	843.3	1,160.7	1,239.3
Growth ratio	—	−6.9%	90.5%	0.2%	−15.2%	37.6%	41.5%
Exports to other countriess	142.9	629.6	616.2	497.1	288.7	543.2	721.7
Growth ratio	—	34.5%	−2.1%	−19.3%	−41.9%	88.2%	89.2%
Import CIF value	1,814.6	3,480.1	4,428.2	4,930.3	6,313.9	6,514.3	5,793.0
Growth ratio	—	13.9%	27.2%	11.3%	28.1%	3.2%	22.0%
Imports from india	1,475.7	1,786.4	2,179.2	2,280.9	2,499.6	3,058.0	3,125.2
Growth ratio	—	3.9%	22.0%	4.7%	9.6%	22.3%	45.4%
Imports from other countries	338.9	1,693.7	2,249.0	2,649.4	3,814.3	3,456.3	2,667.8
Growth ratio	—	38.0%	32.8%	17.8%	44.0%	−9.4%	2.7%
Balance of trade	−925.0	−2,329.6	−2,819.7	−3,438.8	−5,181.9	−4,810.4	−3,832.0
Against india	−729.0	−1,265.5	−1,186.9	−1,286.5	−1,656.3	−1,897.3	−1,885.9
Against other countries	−196.0	−1,064.1	−1,632.8	−2,152.3	−3,525.6	−2,913.1	−1,946.1

Cited from: Economic Survey 1984—85 (MOF, 1985)
* Figures are somewhat changed from those trade balance figures shown in Table-6.
** Percentage against those in 1983/84 period (9 months)

While total export amount of Nepal increased by NRs 550 millions in 5 years since 1979/80, representing an increase of 48.1%, the results on 1980/81 and 1981/82 periods decreased by far and resulted in a minus growth ratio, which was caused by decrease in agricultural production. Further, as the result of the diversification policy taken in her foreign trades, share of exports to India in the total exports has dropped from 83.9% in 1974/75 period to 68.1% in 1983/84 period.

Similarly, the share of import from India dropped from 81.3% in 1974/75 period to 46.9% in 1983/84 period. Though trade amounts have been increasing year by year, the absolute dependency could be said to have decreased. The total amount of imports has kept increasing in the past 5 years to 187.2%, by NRs 3.0 billion in value, the reason being Nepal's dependency on imports for almost all needs except foods as the result of her industries being still in developing stages. Major items imported in 1984/85 period consisted of petroleum products, transportation machinery, oil and fat, chemicals, pharmaceuticals, raw materials for manufacturing, construction materials and other products. On the other hand, export items were agricultural products, live animals, fundamental raw materials, semi-finished products and finished products, out of which grains and live animals shared 34.4% of the total. In the 1983/84 period, export items to India comprised of rice, mustard plant oil, linen seed oil, butter oil, dried ginger, raw jute and jute products, which shared 96.5%. For exports to the third countries other than India, items such as raw jute and jute products, which shared much in 1974/75 period, decreased their volume and ready-made suits, woolen carpets and leather produts have been taking position of major export items since 1983 instead of the above[30].

Despite a large amount of red figures in foreign trade, trend of the international trade balance recorded a black-ink balance for 7 years up to 1981/82 having been supported by service income, revenue from tourism business and inflow of capital. As the result, foreign currency asset accumulated to NRs 722 millions during a period from 1979/80 to 1981/82[00]. However, the international trade balance turned into a large amount of deficit in 1982/83 and 1983/84 periods due to depression in export business and a large increase in imports and the balance recorded excess imports over exports of NRs 675 millions and NRs 126 millions respectively for periods. (Refer to Table- 6)
Transition of the foreign currency reserve is as follows
(excluding gold, SDR and IMF gold tranche):

Table 21 Amounts of Foreign Currency Reserve

July, 1980	NRs 2,639.8 million	
July, 1981	NRs 2,750.3 million	
July, 1982	NRs 3,735.6 million	
July, 1983	NRs 3,061.3 million	Decrease by 18% as against corresponding period of the previous year
July, 1984	NRs 3,013.5 million	Increase by 14.2% as against 1980
April, 1985	NRs 2,760.3 million	Decrease by 13.4% as against corresponding period in the previous year

(Out of the above:
NRs 2,094.2 as convertible foreign currency and NRs 666.1 as inconvertible foreign currency)
Cited from: Economic Survey 1985—86 (MOF, 1985)

Table 22 Foreign Currency Reserve Unit: Million US$

1980	1981	1982	1983	1984
189.2	208.3	205.6	139.7	82.0

Cited from: Handbook of Foreign Economic Aid (1986 by International Development Journal Co.)

In order to increase the foreign currency reserve and to build up importing capability through increase in exports and decrease in imports and thus improving the deficit in the international trade balance, the currency in Nepal was devaluated by 11.7% in November, 1985., and the 7 th plan envisages to treat preferably of industries to promote export and replacing importations, as well as to curb imports of items other than those of absolute needs.

5) Government Finance and Foreign Aid:
Total annual expenditure of the national budget has been increasing year by year showing annual growth rations of 18.1% for 5 years from 1974/75 to 1979/80 and 21.0% for the period of 1979/80 to 1983/84. The total annual expenditure for the 1984/85 period was NRs 9.80920 billions, a 3.8% increase as against previous year, of which regular expenditure and development expenditure were NRs 3.07920 billions and

NRs 6.73 billions respectively.

On the other hand, revenue sources were comprised of NRs 4.1901 billions from tax revenues, NRs 1.61670 billions from donation by foreign coutries, NRs 2.5997 from foreign loan and NRs 1.4027 billions anticipated for borrowing domestically.

Table 23 Transition of National Financial Budget

Unit: Million NRs

	1974/75	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85*
Total annual expenditure	1,513.7	3,470.7	4,092.3	5,361.3	6,979.2	7,437.3	9,809.2
Regular expenditure	546.5	162.1	1,361.2	1,634.4	1,997.1	2,273.5	3,079.2
Development expenditure	967.2	2,308.6	2,731.1	3,726.9	4,982.1	5,163.8	6,730.0
Total receipts	1,291.2	2,685.6	3,288.1	3,672.8	3,931.7	4,285.9	5,806.8
Annual revenue	1,008.4	1,880.0	2,419.2	2,679.5	2,841.6	3,409.3	4,190.1
Donation from foreign countries	282.8	805.6	868.9	993.3	1,090.1	876.6	1,616.7
Surplus/deficit	−222.5	−785.1	−804.2	−1,688.5	−3,047.5	−3,151.4	−4,002.4
Loan from foreign countries & reimbursement	104.0	534.9	693.3	729.9	985.8	1,670.9	2,599.7
Domestic loan	100.0	180.0	250.0	500.0	1,000.0	1,576.8	1,402.7
Balance in cash	18.5	70.2	−139.1	458.6	1,061.7	−96.3	0

Cited from Economic Survey 1984—85 (MOF, 1985)

* Estimate

Amout of the development expenditure increased by 19% on an annual average from 1974/75 to 1979/80 and by 22.3% from 1979/80 to 1983/84 period. Factors increasing the development expenditure were increment of public sector's role in development activities, need of investment into production sector corresponding to sharply increasing population and sharply increasing demand for the economical and social infrastructures. On the other hand, the revenue increased by 13.3% on an annual average from 1974/75 to 1979/80 and by 16.0% from 1979/80 to 1983/84 period. Of the total annual revenue, 80-85% is shared by the tax revennue. Share of the tax in GNP was 5.1% in 1974/75 period, which however, increased to 6.5% and 7.2% in 1979/80 and 1982/83 periods respectively and would be 7.7% for 1983/84 period. Throughout past 5 years, amount of excise and sales taxes on goods and services and corporate and income taxes have been observed to be on an increasing trend, however, amount of import duties has not shown any constant upward trend due to changes in import and export policies. All the national budget for the past 5 years have shown red figures (excluding loans from foreign countries).

Especially, in fiscal years 1981/82 and 1982/83 when development projects were implemented in full scale, the development expenditure recorded an excess of 30% over that of previous year, with which financial status of the government had deteriorated in a short period. Amount of the financial expenditure in fiscal 1981/82 amounted to NRs 5.3613 billions, or 31% increase against that of the previous year, while growth of revenue was only by 11.7%, or minus 210% against the previous fiscal year. In fiscal 1982/83, the total expenditure was NRs 6.9792 billions which was more than of the previous year by 30%, while increase in revenue was only by 7 %, and resultantly,

amount of red figures increased remarkably (the red figure was 180.5% as against the previous year).

Major portion share of the budget deficit was met by loan from foreign countries, domestic borrowing and cash reserve. Since revenue increased by 20% in fiscal 1983/84 and total amount of expenditure increased only by 6.6%, financial red figure increased only by 3.4%[87].

Loans from banks increased largely to cover the gap between revenue and outlay, where credits for the government extended by 63.6% in one year period from July, 1981 to July, 1982 and further increased to 80.0% in subsequent one year from April, 1982 to April, 1983[88]. In order to improve a high dependency of the budget on loans from banks, in the proposed budget for fiscal 1984/85, loans amounting NRs 500 millions out of the total scheduled loan NRs 1.4027 billions by the government, NRs 500 millions is scheduled to be made from other financial sources than banks.

Role played by aid from foreign countries is increasing their importance in re-shuffling the tight financial condition and promotion of the development projects, where committed foregn aid value, which was NRs 1.9116 billions in fiscal 1979/80, was extended to NRs 3.0996 billions in fiscal 1983/84, which showed an average annual increase of 12.8%. However, utilization of foregn aid was actually realized only for 62.2% of the total commitment in 5 years from 1979/80 to 1983/84. Of recent years, the gap between the commitment and disbursement is getting narrow, and foreign aid use was found to be 70.1%, 70.2% and 82.5% in fiscal years 1979/80, 1982/83 and 1983/84 respectively. Further, as indicated below, share of loan has been more than grant recently in grant loan ratio.

Table 24 Amount of Aid Commitment and Utilization

Unit: Million NRs

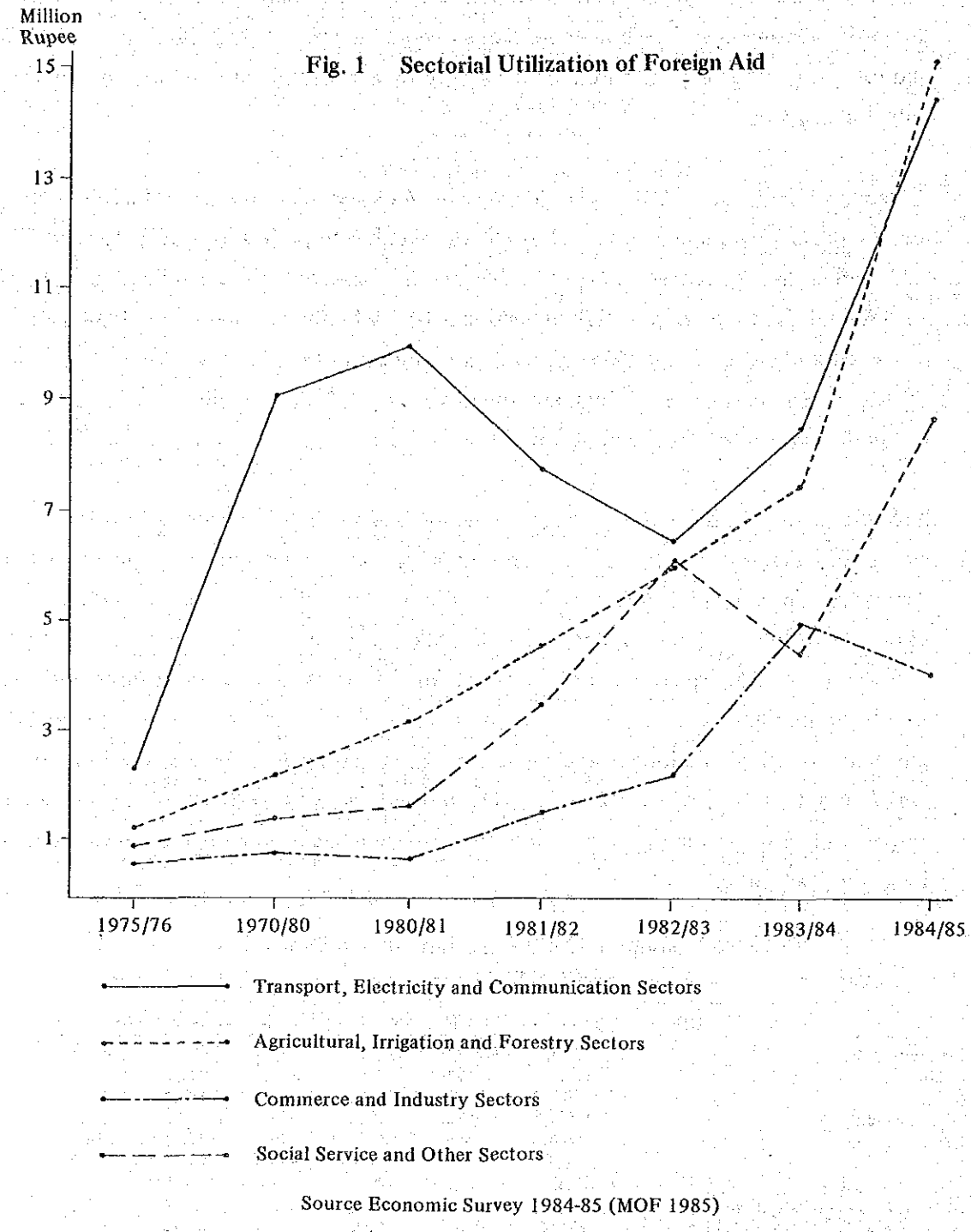
	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85*
Commitment	1,911.6	4,012.6	2,886.1	2,959.2	3,099.6	5,393.2
Grant	1,102.4	2,265.6	1,316.7	1,330.7	921.2	2,967.3
Loan	809.2	1,747.0	1,569.4	1,628.5	2,178.4	2,425.9
Disbursement	1,340.5	1,562.2	1,723.2	2,075.9	2,547.5	4,216.4
Grant	805.6	868.9	993.3	1,090.1	876.6	1,616.7
Loan	534.9	693.3	729.9	985.8	1,670.9	2,599.7
Acceptance ratio	70.1%	38.9%	59.8%	70.2%	82.2%	—
Grant ratio in total aid commitment	57.7%	56.5%	45.6%	45.0%	29.7%	55.0%
Grant ratio in total aid disbursement	60.1%	55.6%	57.6%	52.5%	34.4%	38.3%

Cited from: Economic Survey 1984—85 (MOF, 1985)

* Commitment was result in July 1984-March,. 1985 period,and disbursement is an estimated value.

Sectorial utilization of foreign aid is shown below:

Fig. 1 Sectorial Utilization of Foreign Aid



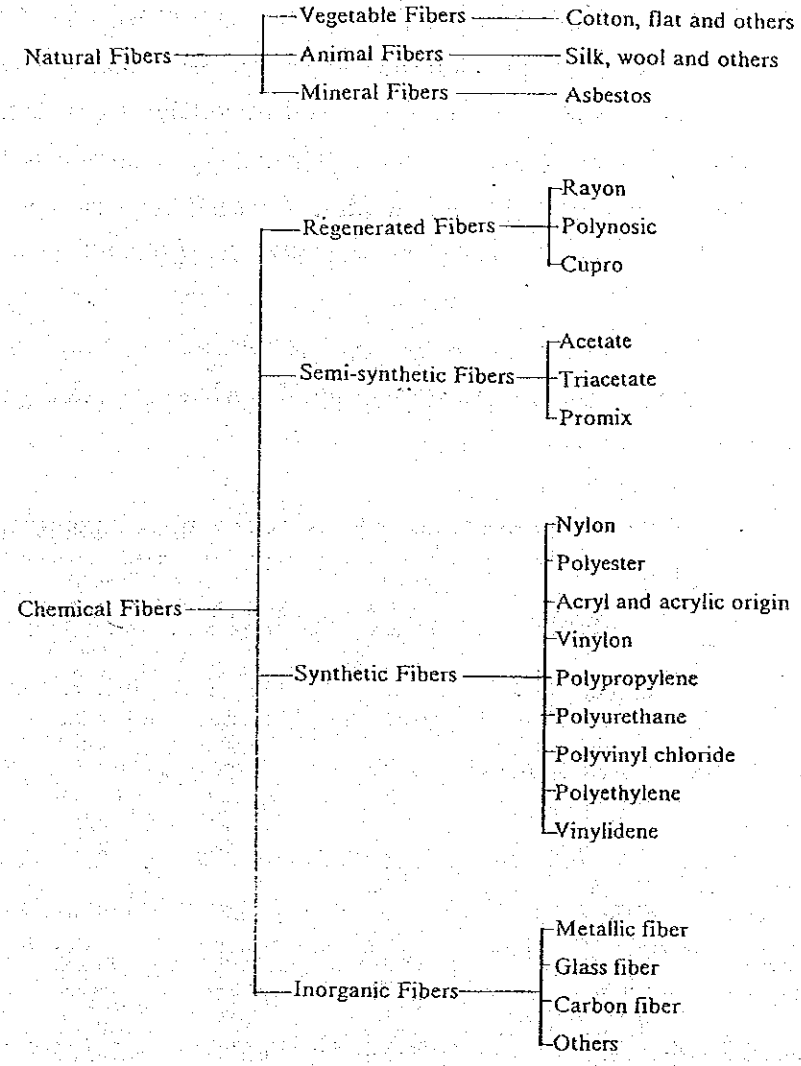
Source Economic Survey 1984-85 (MOF 1985)

Net outstanding debt was NRs 1.8073 billions in 1979/80, however, this amount increased to NRs 6.30211 billions in 1983/84. Debt repayment ratio was 1.3% in 1974/75, which once increased to 2.0% in 1979/80 and as much as 8.4% in 1982/83, however, decreased to 7.5% in 1983/84 and was expected further to decrease to 6.0% in 1984/85. The decline in debt repayment ratio, however, is because of substantial increase in the expected export volume[9].

1-2 Present Situation of and Policy on Fibre and Textile in Nepal

1-2-1 Supply and Demand of Fibre and Textile:

Fibers can classified into the following:



Of the above, majority of what is produced and consumed in Nepal is the cotton belonging to the natural fibers, while synthetic fibers such as nylon and polyester are imported partially as yarns for their production materials and additionally polyester textiles are mainly imported and consumed for clothing purpose. Under this Item, we shall mainly dwell on current status of textiles including cotton and synthetic textile (especially of polyester).

1) Present Situation and Future Plan of Demand and Supply of Fibre and Textile:

Although no exact data is available as to textile demand in Nepal, following are shown as the guideline of MOI:

Annual Demand in 1985:

Cotton textile	224,300,000m	(86%)
Synthetic textile	36,500,000m	(14%)
Total	260,800,000 meters	

On the other hand, in households survey conducted by ISC on 2,157 households (0.3% of total households) in selected 18 districts in regions of mountains, hills, Terai and Kathmandu valley, textile consumption volume is estimated to be as follows:
Textile consumption (in 1981/82): 247,000,000m, consisting of cotton textile: 212,000,000m (86%) and chemical and synthetic textile: 35,000,000m (14%), which, when divided by 15,442,000 population then, means 16 meters annual consumption per capita of nation[10]. Furthermore, to the view taken by CIHE, annual consumption per capita of the nation is estimated to be as follows, on an assumption that an individual will consume 3 clothing portions of saree or dhoti (worn measure 5 meters):

15m × approx. 16,000,000 people……240,000,000 meters.

Self-sufficient volume for the above in Nepal is said to be 29,000,000-30,000,000 meters (approx. 12%). Numbers of installed looms and their operating conditions in 1981/82 are indicated below:

Table 25 Capacity of Installed Looms and Actual Volume of Production

		Materials	No. of looms	Capacity 1,000m	Actual production 1981/82 1,000m	Capacity utilization ratio %
Power loom	Factories*	Cotton	767	17,600	6,600	37.5
		Synthetic fiber	159	6,400	2,700	42.2
	Small & medium	Cotton	282	3,800	1,400	28.6
	sized enterprises	Synthetic fiber	80	800	100	12.5
	Cottage industry	Cotton	270	1,100	(1,400)	(28.6)
	Sub-total	Cotton	1,319	22,500	8,000	35.6
		Synthetic fiber	239	7,200	2,800	38.9
Hand loom	Throw shuttle	Cotton	53,500			
	Fly shuttle	*Cotton*	*15,000*	*30,800*	*18,100*	*58.8*
	Semi-auto	Cotton	470			
	Sub-total	Cotton	68,970	30,800	18,100	58.8
	Total	Cotton	70,289	53,300	26,100	49.0
		Synthetic fiber	239	7,200	2,800	38.9
Total of Cotton & Synthetic fiber			70,528	60,500	28,900	47.8

Cited from: Study Report on Textile Development Plan in Nepal (ISC, July, 1984) and Cotton Development Project Data of ADB.
* More than 100 looms and dedicated finishing lines are held by 4 factories of Hetauda Textile Industries, Balaju Textile, Ganapati Cotton Mill and Ashok Textile.

From the above, it is clear how inefficiently these facilities are used. While the power looms group has 2-shift capacity, the actual operation is on 1-shift base, with which the working ratio was brought down to less than 50%. On the other hand, power looms

installed in local areas are not operated due to power failure and 70% of the hand looms are out of operation and the rest is operated only in farmer's slack season, all of which are causing above inefficient operating condition[41]. At current stage, the following is the situation for self-supply of textiles in Nepal:

Production by Hetauda Textile Industry 11,000,000m

(Only one factory of integrated textile production in Nepal, using self-produced material yarns)

Production by loom using imported material yarns 24,000,000m

Total Domestic Production 35,000,000m

Then, approximately 210,000,000 meters, which falls short of the need, are covered by imports from countries with the majority of India. However, the above production volume by the Hetauda Textile Industry is at its full production capacity, which at the present moment stands more or less 6,000,000 meters, and therefore, the actual self-supply is approximately 30,000,000 meters. When future textile demand is estimated on the basis of 240,000,000 meters, total textile demand in 1981, as well as of 15,022,000 population with 16m consumption per capita and with a population increase ratio 2.66% applied, the following will be forecasted:

1981	240,000,000 meters	15,022,000 people	Annually 16m per capita
1986	274,064,000 meters	17,129,000 people	Annually 16m per capita
1991	312,512,000 meters	19,532,000 people	Annually 16m per capita
1996	356,352,000 meters	22,272,000 people	Annually 16m per capita

On the other hand, there is another data: [42]

1985/86	216,700,000 meters	16,836,000 people	12.87m annually per capita
1990/91	263,700,000 meters	19,153,000 people	13.77m annually per capita
1995/96	321,300,000 meters	21,800,000 people	14.74m annual per capita
1990/2000	453,900,000 meters	29,190,000 people	15.55m annually per capita

At any rate, even when domestic production of textiles is increased by a rate of more or less 3 % in future, the self-supply ratio can barely be maintained at the current level and it would be more and more dependent on imports in future.

On the other hand, as for cotton yarn, polyester spun, filament and textured yarn, requirements are 3,500 tons of cotton yarn and 1,090 tons of synthetic yarn[43]. These can not be but imported for all of their requirements as there is no spinning factory provided in Nepal (all produced in the Hetauda Factory are now consumed by themselves). Consequently, this situation is causing looms to be out of operation because of difficulty in acquiring material yarns. While this situation is considered not to change in the foreseeable future, when possibility of self-supply is assessed based on facilities including those factories now under construction, it will be:

Cotton Yarn: Hetauda Textile Industries 250 MT[44]

Butwal Spinning (under construction) 1,655 MT

Pokhara Spinning (under planning)1, 910 MT
Total 3, 815 MT

Synthetic & Blended Yarns:
Butwal Spinning1, 090 MT
Pokhara Spinning 420 MT
Total 1, 510 MT

If the Nepalguji Textile Mill which is now separately under planning is also added (250 MT selling yarn), then self-supply of material yarns can be attained unless existing installed capacity of looms are changed.

Due to following reason, textle products produced in Nepal have had a hard fight with imported products from India and other countries in respect of their prices, quality and designs, which is at the same time hampering development of Nepali textile industry.

a) Technical and Economical Problem:
Problems of low working ratio due to electric power supply shortage to Eastern and Western reigion and insufficiency in repairs and maintenance workshop, insufficient importation of synthetic yarn as a result of foreign currency shortage and irregular supplies of material yarns to smaller and medium sized weavers, as well as of shortage in human resources.

b) High production cost as the result of importation of materials, machinery and labour from India.

c) Lack of sizing facilities, as well as problems involved in quality as the result of having no alternative but to use double twisted yarn to avoid yarn breakage.

However, during our activities of market research and interviews with weavers and converters, it was felt that also in respect of cotton fabric product on which a low rate of import duty is applied, they were tiding the above handicaps over by diversification of products and making their products competitive against imports from India. When it comes to synthetic fabric products on which a high rate of import duty is applicable, domestic products are considered to have enough competitive power against imports in respect of their prices.

As governmental policies to narrow down the gap between demand and supply of textiles as much as possible, the following has been adopted:

a) To improve utilization of the existing facilities.

b) To operate at the optimum working ratio by creating new facilities.

c) To promote participation by private sectors domestic and abroad.

The aim of the policy is to assist activities of private enterpreneurs in the textile industry which is a strategic and capital intensive industry for Nepal. In the 7 th plan, 35 textile

and apparel manufacturing industries are included in those 123 industries which should be recommended for establishments in th private sector.

Table 26 Private Sector Industries to be Promoted under Priority in the 7th Plan (Textiles and Apparels)

Kinds of industries	No. of establ-ishment	Investment amounts NRs mill.	Production facilities
Integrated textile mill	2	1,000.0	Cloth 30,000,000 m & yarn 1,600MT
Textile industry	3	75.0	Cloth 6,750,000 m
Decentralised power looms	1	78.85	Cloth 750,000m (1/2 by cottage industries)
Spinning mill	4	880.3	Yarn 11,200 MT
Cloth processing	4	56.0	Cloth processing 23,000,000 m
Yarn sizing	5	20.0	Yarn sizing 22,000MT
Terry towel	4	10.4	Towel 600,000 m
Tapestry	3	12.0	Cloth 3,000,000m
Wool processing(blanket)	2	2.0	Wool yarn 22,153 woolen yarn
Acrylic yarn	1	25.0	Yarn 300 MT
Leather shoes	4	23.2	Shoes 600,000 pairs
Canvas shoes	1	15.9	Shoes 1,000,000 pairs
Cotton mats	1	2.0	350,000 meters
Tbtal	35	2,200.25	

Cited from: MDI data

One of the 3 major targets of the 7th 5-year plan is to suffice the minimum fundamental needs of the nation. Clothing has designated as a part of this aim and guideline of the plan states that textile products, with which the clothing is made up, should be self-supplied to the extent of 50% by the 8th plan and be completely self-supplied by the year 2000. As hitherto seen, numerous defficulties are expected before these goals are attained, the understanding that the textile industry is one of the Nepal's key industries should be unmistakable and the nation's efficient endeavours for its development are expected.

National Cotton as materials for textiles is now consumed only by the Hetauda Textile Industry, however, at the present moment, volume of the cotton Nepal itself can afford to supply is approximately 600 MT annually against the company's annual requirement of 2, 000-2, 300MT at its full operation level and the shortcoming amount of 1, 400MT has been imported from countries such as India.

Result and plan of the cotton development project in Middle Western region taken informations by CDB are as follows:

Table 27 Cotton Development Project in Middle Western Region

	Planting area in Khumber		Planting area of Ext. Div		Crop of lint cotton	
	Target ha	Achivement ha	Target ha	Achivement ha	Target MT	Achivement MT
1981/82	300	300	100	101	120	120
1982/83	410	410	400	321	350	350
1983/84	500	500	800	875	444	444
1984/85	500	400	1,600	1,586	424	424
1985/86	100	100	3,000	1,700	630	—
1986/87	150	—	5,000	—	2,572	—
1987/88	200	—	8,000	—	4,100	—
1988/89	200	—	10,000	—	5,100	—
1989/90	200	—	12,000	—	6,100	—

Cited from: CDB data

As against supply plan of the above lint cotton, consumption plan is estimated to be as follows:

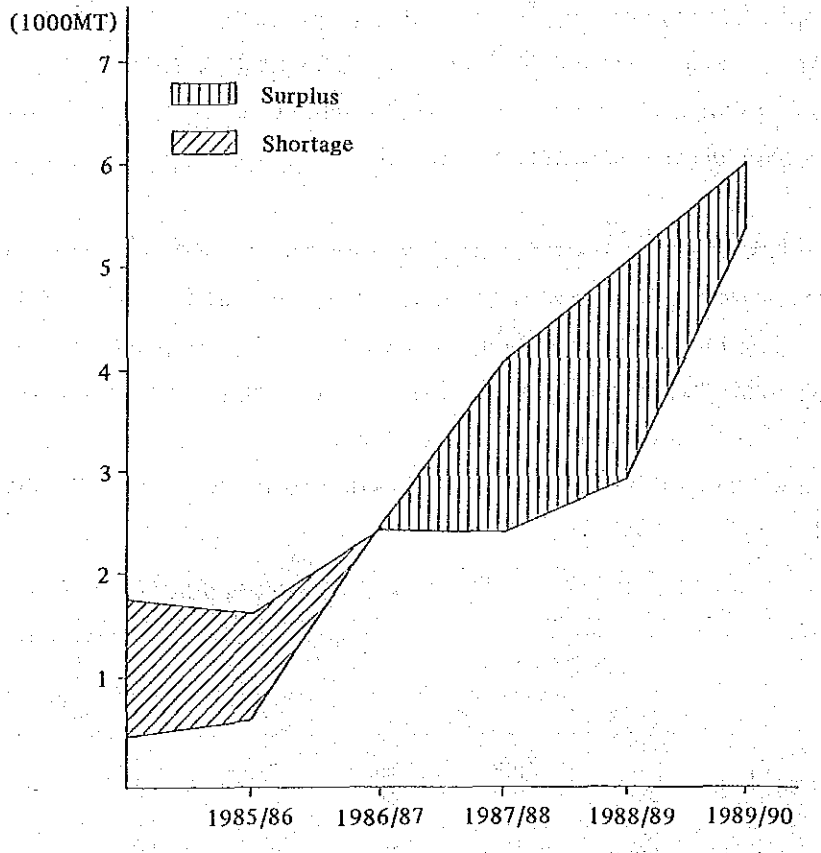
Table 28 Consumption Plan of Lint Cotton Unit: MT

	Hetauda factory	Butwal factory	Nepalgunj factory	Pokhara factory	Total
1986	1,640				1,640
1987	2,400				2,400
1988	2,400				2,400
1989	2,400	540			2,940
1990	2,400	1,620	1,400		5,420
1991	2,400	1,800	4,200		8,400
1992	2,400	1,800	4,200	800	9,200
1993	2,400	1,800	4,200	2,420	10,820

Cited from: Cotton Development Project Data of ADB, and Nepal Industrial Sector Study Report No. 3 (ADB, 1986)

Graphic presentation of the demand/supply balance of cotton as aforesaid will be as follows:

Fig. 2 Demand/supply Balance of Lint Cotton



Source Made from Data of Cotton Development Project (ADB) and Sector Study Report No.3 (ADB 1986)

In the above, gradient of the cotton supply line looks like too sharp, however, if the cotton development project should progress as scheduled, but the construction project of textile factories should delay in its achievement, it is probable that supply of the cotton may be glutted. If so, whatever promotive measures for cotton consumption should be seeked as such situation will deteriorate financial condition at cotton raising farmers. As the"Nepal Cotton Development Project", development of cotton raising is receiving financial back-up of the Asian Development Bank. Purpose of the project is said to be a total investment of 19.3 million dollars mainly by bank loans for input for farms, expansion of planting areas, construction of facilities for ginning, storing and marketing facilities and improvement of seeds.

2) Trend of Consumption of Fibre and Textile:

The following was deduced inductively by ISC from their results of households survey as statistical values of consumption patterns of textile products:

Table 29 Consumption Trend of Textiles by Category of Products

	Annual consumptin 1,000m	%	Ration by material (%) Cotton	Synth-tic yarn	Blended yarn	Total	Ration by processed type (%) Before bleach-ing	Bleached	Dyed	Prin-ted	Dyed yarn	Total
Shirting	81,991	33.2	79.9	11.4	8.7	100.0	—	22.2	43.2	13.1	21.5	100.
Saree/Dhoti	114,869	46.5	91.3	4.9	3.8	100.0	21.6	14.4	21.2	40.1	2.7	100.0
Suiting	26,214	10.6	71.7	20.4	7.9	100.0	—	20.6	58.7	—	20.7	100.0
Tapestry	12,181	4.9	98.6	1.0	0.4	100.0	3.6	9.1	27.6	26.5	33.2	100.0
Gamchha	1,576	0.6	100.0	—	—	100.0	—	—	—	—	—	—
Towel	2,140	0.9	99.6	0.4	—	100.0	—	—	—	—	—	—
Topi & others	8,077	3.3	87.8	7.3	4.9	100.0	—	—	—	—	—	—
Total	247,048	100.0	85.8	8.5	5.7	100.0						

Table 30 Consumption Trend by Textile Material

	Shirting	Saree/ Dhoti	Suiting	Tapestry	Gamchha	Towel	Topi & others	Total
Cotton	30.9	49.5	8.9	5.7	0.7	1.0	3.3	100.0
Synthetic yarn	44.2	26.9	25.5	0.6	—	0.0	2.8	100.0
Blended yarn	51.1	30.9	14.8	0.3	—	—	2.9	100.0

Cited from: Study Report on Textile Development Plan in Nepal (ISC, Jul., 1984)

It was already stated that 86% of the total fiber consumption was cotton materials and the rest was synthetic fiber materials. The 14% includes partially acrylic and woolen materials.

Further, more than 90% of the total consumption is used for making shirts, suiting, and traditional clothing.

While cheap products of cotton materials are imported from India in a large quantity,

synthetic fiber cloth, on which a high rate of import duty is levied, is expensive at its retail price. Therefore, cotton materials are used dominantly, however, of recent years, demand for polyester fiber, which possesses merits of easy care and durability, has been increasing (It was reported that its durability was especially suitable for working clothing, which was in high demand in hilly and Terai regions, too). For this demand, volume of supply is currently approx. 11,000,000 meters from domestic production and the rest is dependent on imports. For both products of domestic production and imports, marketability (in both Nepal and India) has been apt to be in favour of those woven with 100% polyester or others with a higher blending rate of polyester, however, of recent years, fabrics blended and weaved with cotton material are on a increasing trend. As for trend of fashion, Nepal is not an exceptional case in respect of her younger generation being fond of European modes and casual sytles. For this reason, while not yet its supply system is ready, latent demands for knit wears and jersey are emerging.However, in circles of government offices and public corporations, the traditional clothing still keeps a substantial popularity, and it is said that women, once after they are married, would return to wearing the traditional clothing such as saree, of which tendency is seen especially at their social gatherings. Furthermore, a tendency that regardless of what material is used, those products having superiority in their quality, pattern and price are selling has emerged[9].

3) Review of Existing Textile Industries:

Numbers of looms occupying majority of Nepal's textile facilities are as indicated in the Table-27, however, according to the Industrial Profile compiled by the Department of Industry, numbers of textile factories categorized as small, medium and large industries as at 1983/84 amounts to 18. Their distributions are 3 in the Eastern development region, 11 in the Central development region, 3 in the Western development region and 1 in the Mid-Western development region.

Of the 18 factories, except for each one for silk fabric, nylon socks, wool spinning, and spinning of acryl, wool, polyester, nylon and silk, remaining 14 factories are using cotton and synthetic fiber (polyester) for their materials. Of these 14 factories, the integrated factory is only H. T. I and others are all weavers. 2 companies are operating with dyeing and finishing facilities and another 6 companies are with simple yarn dyeing facilities. Of 13 factories, 6 are manufacturing union cloths including polyester filament in addition to cotton fabrics and 7 are specialized weavers of cotton fabrics. Consequently, 6 factories are importing synthetic yarns for their materials all from third countries. Shares of cotton yarn supply are almost 50% from domestic production and 50% from imports from India. Additionally, silk yarn is imported from India, while tops of wool and acryl are imported from India and third countries. As use of their production, synthetic

fabrics 100% and blended fabrics are used for materials of shirts, suiting, saree and dhoti, and cotton fabrics are mainly used for materials of shirts and traditional cloths.

In respect of enterprise sizes, 5 belong to large industry, 3 to medium size and 10 to small industry, and as for company from, 15 are private companies and 3 are public limited.

Of the 18 companies, 7 are employing Indians as managerial and engineering staffs. Further, those textile factories under planning and construction as at 1983/84 period are 10, which are distributed as 1 in the Eastern development region, 3 in Central, 3 in Western, 1 in Mid-Western and 2 in Far-Western development region. They are further broken down as follows:

Names	Development areas	Sizes of companies	Kinds of products	Production facilities]
1. Shakti Kapada Dyeing & Finishing Industries	Eastern	Small	Woven fabrics dyeing and processing	450,000 m
2. Balkumari kapada Udyog(Pvt) Ltd.	Katmandu	Small	Cotton fabrics	100,000 m
3. Annapurna Textile Ltd.	Central	Large	Synthetic fablics	Suiting 1,000,000 m & Shirting 1,200,000 m Sarry 500,000 m
4. Oriental Textile Ltd.	Western	Large	Cootton & synthetic yarns	Cotton yarn 1,680MT Synthetic yarn 420MT
5. Eastern Textile Ltd.	Central	Large	synthetic	250,000 m fabrics
6. Ruru Textile & General Industries (Pvt) Ltd.	Western	Small	Cotton fablics	240,000 m
7. Butwal Dhago Udyog Ltd.	Western	Large	Blended cotton & synthetic yarn	2,745MT
8. Siddha Kapada Udyog (Pvt) Ltd.	Far-Western	Small	Cotton fabrics	194,000 m
9. Himansu Hosiery Industry Ltd.	Mid-Western	Medium	Cctton, nylon and hosiery	vests,under-wears and swimmears
10. Jayashri Hosiery Industry	Far-Western	Medium	Cctton, nylon and hosiery	vests,under-wears and swimmears

Cited from: Industrial Statistics (Dept. of Industries)

While Nepal is in a favoured environment in obtaining raw materials for wool and silk textile industries, facilities and viability conditions for these textiles could be said further delayed than those for cotton textile. Knitted wears are also suitable for climates in hilly and mountainous regions and ideal for materials of underwears, however, since production facilities for this type of wear are almost none, the industry is to be brought up from now on. Growth of garment industry in Nepal is spectacular:

Table 31 Export Results of Ready Made Garments

	1974/75	1980/81	1981/82	1982/83	1983/84	1984/85 July-March
Amount of export (Million NRs)	1.3	13.0	13.8	10.0	20.5	291.8
Growth ratio (%)	—	1000	6.2	−27.5	205	4421
Share on total exports(%)	0.8	2.2	3.0	3.5	4.2	43.3

Cited from: Economic Survey 1984—85 (MOF, 1985)

An amazing growth rate amounting nearly to 50% of the total export amount is seen in 1984/85 period, where especially in respect of export of blouses, Nepal ranked 3rd position following India and Hong Kong. This was because export quota to U. S. A was not established at that time. However, recently, the quota was established on the following 4 items:

330 Rompers and children's jump-suits
340 Men's shirts
341 Lady's blouses and shirts
342 Skirts

However, on cotton knit wears and synthetic fabric wears, no quota has been yet established. When checkig actual condition of garment industry in Nepal, it is observed that 90% of the material cloths are imported from India. Moreover, some garment companies are operating with already depreciated India-made manual sewing machines brought in from India and their sewing cost is cheaper. While wages earned by sewing workers are higher than those working in other textile industries, since almost all skilled and non-skilled workers are Indians, this situation is not contriburting much to creating employment chance for Nepali people. Thus, one of characteristics of Nepal's garment industry is that only Indian entrepreneurs and workers are enjoying current prosperity of her garment industry. In order the garment industry to be the driving power for progress of Nepalese textile industries, Nepal should supply the suitable fabrics for sewing by herself. Moreover, under the current condition of increasing restricions over exports of cotton fabric products to U. S. A., using material should be gradually changed to polyester and blends with cotton, for which purpose, investments and technologies for new sewing equipments will required.

1−3 National and Regional Development Plans and The Project

1−3−1 Situation of and Policy on Regional Development Plan

For the purpose of promoting integration of national economy by eliminating regional imbalance and making efficient use of unique material and human resources in each local area, the regional development plan is also adopted in the 7 th 5 -year plan as the important policy, where development projects for agriculture, forestry and tourism are to be carried out on preferential basis for production promotion in remote and under-developed regions and also priority is given to construction of water supply system and expansion of medical

facilities, primary and professional educations, as well as local transportation systems for fulfillment of the nation's minimum and fundamental needs. Not only rectification of imbalance in the line of east and west, but also economic integration of North and South, namely Terai, hill and mountain are taken into consideration as the important development strategies. That is to say as a part of the overall regional development strategies, there are development area strategies having 5 development axes:

1. Koshi development axis (Eastern) Biratnagar-Hedangna
2. Kathmandu development axis (Central) Kathmandu-Barbise/Dhunche
3. Gandaki development axis (Western) Bhairahawa-Jomosom
4. Karnali development axis (Middle Western) Nepalganji-Jumla
5. Karnali development axis (Far Western) Dhangarhi-Dadeldhura

Growth centers are provided at both ends and intermediate points of each axis, which are to act as the marketing centers to connect local population to employment in cities, to promote development of consumption markets and to realize rapid urbanization at the development growth centers through progress of industrialization and creation of markets. Moreover, these important development growth centers are to be linked each other by construction of roads along the axes.

There are remarkable differences observed among industrialized conditions of local areas.

Table 32 Number of Industries by Development Region

	1965/66	1972/73	1977/78	1982/83
Eastern region	277	507	745	992
Central region	690	1,391	1,787	2,527
Western region	195	382	665	888
Mid-Western region	53	142	180	300
Far-Western region	42	84	151	177
Total	1,257	2,434	3,528	4,884

Table 33 Number of Workers in Industries by Development Region

	1965/66	1972/73	1977/78	1982/83
Eastern region	7,050	15,538	15,561	30,239
Central region	5,474	24,881	22,134	46,418
Western region	1,045	4,672	7,864	5,132
Mid-Western region	578	1,897	3,186	3,900
Far-Western region	250	650	1,375	2,927
Total	14,397	47,638	50,120	88,616

Cited from: Statistical Pocket Book, Nepal 1984

On the other hand, in respect of industrial share taken by Southern and Northern axes, of 3,528 industrial installations in 1977/78 period, 71.5% of them were in Terai region and inner Terai region, and in Terai region and Kathmandu valley, they occupied 63.7% and 17.2% respectively. Moreover, of districts ranking 1 to 10 positions by amounts invested in manufacturing industries, 7 district are in Terai region, and of 28 districts devoid of

industrial facilities, 16 districts are in hilly and 12 are in mountainous region[17]. Distribution of large industries among cities is as follows:

Kathmandu	Kathmandu valley	37.5%
Biratnagar	Eastern Terai	35.0
Birganj	Eastern Terai	10.0
Nepalgunj	Western Terai	7.5
Hetauda	Inner Terai	5.0
Janakpur	Eastern Terai	2.5
Bhairahawa	Central Terai	2.5
	Total:	100.0

Cited from: Nepal Dimensions of Development, 1984

62.5% of large-sized manufacturing industries is unevenly distributed in slender Terai region, of which 47.5% is concentratedly in Eastern Terai area. All of the rest are in Kathmandu valley, which means that there is no large industries in hill and mountain. It is clear from the above Table that 70% of total large industries is occupied by 2 cities of Katmandu and Biratnagar and 90% of the total are found in a triangle linking Kathmandu-Birganj-Biratnagar.

Thus, imbalance found on a line of East and West, as well as North and South is especially striking in their levels of industrialization. In order to achieve regionally well-balanced industrial re-organization, the Industrial Enterprises Act (1982) provides enterprises to be established in under-developed areas with facilities of income tax exemption for 3 years, excise duty exemption for 5 years and concession of 2% lower rate interest. Further, establishment of industrial estates aimed at reduction of cost burden by facilitating infrastructure and buildings in order to induce small and medium industries to the under-developed and impoverished areas. However, existing industtial districts are all concentrated in the developed areas.

As one of regional development plans for Dang Deokhuri district in which this project is envisaged, there is the Rapti Integrated Development Project, which covers 5 districts of Pyuthan, Rolpa, Rukum, Salyan and Dang Deokhuri with the total invested amount of 26 million dollers including loans from UNICEF, ADB and World Bank in addition to grant aid of U. S. A. Its purpose is to fulfill people's fundamental needs, to improve in their living standard and to improve local transportation systems and includes plans of road constructions, electrification, irrigation, water supply and technical training for cottage industries. The project started in 1980 for 5 years term initially but was later extended to 7 years term.

1-3-2 Present Situation of and Policy on Manpower Development Plan

While several 5-year plans in the past have all given the top priority to policy of human

resources exploitation, the results achieved have been always far below targets and shortage of the skilled manpower has been and is acting adversely in development plans. In order to improve human resources both in quantity and quality, the 7 th plan provides the following measures in consideration of the above mentioned current situation:

- To make sure of numbers of registered personnel according to demand for technical manpower.
- To provide educational organs with required facility to increase numbers of students and to improve quality level of the education.
- To make the most of overseas scholarship systems in order to secure manpower of high level talents.
- To implement training programme for manpower of low and middle levels.
- To mobilize technical manpower in local areas.
- To improve procedures of appointments, promotions and facilities for technical manpower.

Furthermore, the 7 th plan classifies technical manpower into 5 categories (engineering, health and hygiene, farming, forestry and scientific technologies) in order to promote the manpower building-up project and each of the category are divided into high, medium and low levels.

Demand/supply balance status of manpower during period of the 7 th plan is estimated as follows: ㈜

	Demand	Supply	Excess or shorts
Engineering	7,880	4,801	−3,079
Health & Hygene	3,520	2,450	−1,070
Farming	7,140	4,008	−3,132
Forestry	673	946	+ 273
Scientific technologies	1,645	1,267	− 378
Total	20,858	13,472	−7,386

On the other hand, recent condition of specialized manpower classified by grade and age groups in total manpower (estimated to be 35,000 workers) engaged in the public industry sector is as follows (for those with 6 th grade and up). This finding is on the basis of the survey of 48 public enterprises and carried out by Dr. B. Dhungaga and D. Adhikari in 1982.

Table 34 Professional Workforce in Public Sector

Technical	Total	Technical	Total	Addmistrative	Total
Agricultural Research Officer	5	Legal Officer	5	Personnel Officer	326
Agricultural Officer	27	Chemist	43	Procurement Officer	69
Agronomist	5	Dairy Technologist	18	Sales Officer	127
Quality Control Expert	5	Dairy Engineer	—	Transport Officer	39
Food Technologist	3	Veterinary Surgeon	—	Acoounts Officer	428
Computor Programmer	13	Cement Technologist	2	Internal Auditor	15
Industrial Engineer	3	Plant Superintendent	2	Stores Management	42
Agricultural Engineer	1	Surveyor	1	Administration Officer	812
Mechanical Supervisor	18	Mining Engineer	4	Public Relations Officer	13
Sugar Production Technologist	8	Textile Engineer	46	Office Secretary	15
Brewery Technologist	1	Timber/Logging Officer	2	Security Officer	10
General Management	4	Statistician	7	Planning Offioer	49
Librarians	3	Radio Sound Engineer	21	Total:	1,963
Mechanical Engineer	96	Film Editors/Producers	23		
Maintenance Engineer	139	Cameraman	4		
Civil Engineer	67	Audio Officers	2		
Electrical Engineer	81	Sound Officers	2		
Chemical Engineer	5	Flying Crew	101		
		Medical Doctors	6		
		Tobacco Specialist	—		
		Jute Grader	—		
		Total:	779		

Cited from: "Labour Force Growth, Employment and Manpower Development in the Industrial (Industrial Promotion Journal, 1983, ISC)

Table 35 Distinction by Age Groups of the above

	Technical Age Groups						Administrative Age Groups					
Grade	Total	20-30	30-40	40-50	50-60	60 +	Total	20-30	30-40	40-50	50-60	60 +
11	2		1	1			13		2	4	7	
10	29		15	13	1		67		21	33	12	1
9	105		82	23			179		95	67	16	1
8	118	18	71	28	1		199	2	88	94	15	
7	348	62	236	45	5		724	76	423	191	34	
6	177	22	103	46	6		781	148	531	89	12	1
Total	779	102	508	156	13		1,963	226	1,160	478	96	3

1-3-3 Relevant Laws, Regulations and Incentives:

Nepali government promulgated the "New Industrial Policy" in March, 1981 which was a largeley amended version of the old industrial policy published in 1974. What this policy aimed at was to encourage investments into industries to increase growth of GDP, where all industries except defence industry were to be made open for private enterprises and direct investments by the government were to be limited either to large scale industries or to investment suitable for the public sector. Further, under the policy, influx of overseas capitals were positively encouraged and approvals were granted on establishments of 100% foreign capital enterprises and joint ventures. In addition, the policy aims at increasing employment chances, achieving self-supply system of indispensable consumer goods, solving regional imbalance of economies, expanding industrial products in quantitative and qualitative scales and improving foreign trade balance through increasing exports and replacing imports by domestic production. Incentives and tax holidays have been approved for new extablishments and activities of enterprises. According to this policy, the "Industrial Enterprises Act" and the "Foreign Investment and Technology Act" were enacted in the same year, whereby the status was arranged suitably also in legal respect. This "Industrial Enterprises Act" was

partially revised in October, 1985.

Now, those incentives and facilities given to the industry, which relate to this project are briefly stated below:

a) Income Tax:

Imposition of the income tax is exempted for 5 years for those manufacturing industries yielding added value* of 20-50%. For those yielding more than 50%, the tax exemption period is extended by one year for every addition of 10% on top of the 50%. Furthermore, another 2 years tax exemption period is allowed to manufacturers of indispensable consumer goods**. Moreover, to enterprises to be established in underdeveloped areas, another tax exemption period of 3 years is allowed.

Further, the Act revised in 1985 provides an addition of 2 years tax exemption period to be given to industries using materials produced domestically (however, in this case, the eligible enterprises should be those approved by the government). Consequently, when the added value produced by this project amounts to 20-50%, the project will be tax-exempted for its income for 9 year period.

* The added value is defined to be the ratio of domestic operating costs deducting after such non-domestic operating costs as imported cost of raw materials, consultant fees, salaries for foreigners and depreciation cost of imported assets against total annual operation cost.

** In the manufactures of the indispensable consumer goods include also those of spinning and textile manufactures in addition to foods etc.

b) Import Duty:

On importing machinery, tools, spare parts, raw materials, sizing materials, dyeing chemicals and vehicles to be used in this project, a 1 % rate duty is levied, and on importing polyester cut fibers, a 11% rate import duty is applicable.

c) Excise Duty:

This kind of duty is not levied on importing raw materials, sizing materials, dyeing chemicals. For the products, the cotton fabric products are free from the tax, however, synthetic fiber products are taxable. As for blended and union fablics of cotton and synthetic fibers, the following tax rates are applicable according to ratio of the synthetic fiber used:

— Shirting:

Up to 92cm width: NRs 4.10/m plus NRs 4.00/kg

For every 10cm width over the above: NRs 0.47/m

— Suiting:

Up to 148cm width: NRs 12.80/m plus NRs 5.00/kg

For every 10cm width over the above: NRs 0.90/m

— Waste Fiber:
Tax-free

Since small, medium and large-sized enterprises are exampted for tax imposition for 3 years from their commencements of operations and those enterprises to be established in under-developed regions are given 5 -year tax exemption period, the above excise duty is construed to be applicable to them from 4 th year of their commencements of operations.

d) Sale Tax:
This tax is not imposed on importing machinery, raw materials, sizing material, dyeing chemicals and spare parts. The item to be applicable of this tax relating to this project is the blended cloth, on which it is to be imposed at a rate of 20% (10% mark-up).

e) Interest on Loan from Banking Facilities:
For those enterprises to be established in under-developed regions, a discount by 2 % of interest on loans from governmental banking organs is applicable. In addition to the above, the Industrial Enterprises Act provides the following regulations:

— No industrial facilities are allowed for establishment at the boundaries of Nepal:
Except for cottage industries and industrial estate of HMG, no industrial facilities are allowed to be established within a 8 km radius from the boundaries:

— For manpower required in an enterprise, Nepali must be employed:
Only when the employment is indispensable in operation and special technique required is not available in Nepali nationals, a foreigner can be employed for 7 years and additionally for 5 years provided a prior approval is given by the Labour Department.

— There may be a case where HMG establishes a public company jointly with overseas or domestic investors.
Also, in such a case, the preferential measures are applicable to such a company.

— For depreciation, either the accelerating balance method or the straight line method can be used according to the required depreciation period by the applicable asset category.
Furthermore, pre-investment and pre-operational expenses can be appropriated for expenditures during 10 years from commencement of operation.

As laws concerning manufacturing industries, there are additionally the "Nepal Company Act" and "Nepal Factory and Factory Workers Act". The Nepal Company Act was enacted in 1964 and amended partially for 4 times subsequently. The Act is composed of 13 Chapters and provides for prospectus of promotion, articles of incorporation, treatments of shares and bonds, general meeting of shareholders, board of directors, accounting regulations, audit and arrangement, in addition to provisions

for the public companies owned by the government and foreign companies. The Nepal Factory and Factory Workers Act provides for construction and establishment of a factory, safety and hygiene, working hours, welfares and wages of workers, etc.

Bibliography:

Notes marked in the text:

(1) "Economic Survey 1985-86" (MOF, 1985)

(2) "The Seventh Plan 1985-1990" (NPC, june, 1985)

(3) "Political and Economic Status of Nepal" (Monthly issued "Overseas Markets", Sep., 1984)

(4) "Economic Development Plan of Nepal" (Asia Trend, 1983)

(5) Same as above

(6) "Report on Survey of Infrastructure in Nepal" (International Development Center, Mar., 1981)
"South-east Asia Handbook", 1985 issue, (South-east Asia Investigation Commitee)

(7) "Economic Survey 1985-86"

(8) Same as above

(9) Same as above

(10) "Economic Development Plan of Nepal"

(11) "Economic Survey 1985-86"

(12) "Statistical Pocket Book, Nepal 1984"

(13) "The Seventh Plan 1985-1990"

(14) "Economic Survey 1985-86"

(15) "The Seventh Plan 1985-1990"

(16) "Economic Survey 1985-86"

(17) Same as above

(18) Same as above

(19) "Industrialization in Nepal" (R. S. Pradhan Oct., 1984)

(20) "Economic Development Plan of Nepal"

(21) "The Seventh Plan 1985-1990"

(22) "The Seventh Plan 1985-1990" and "Economic Survey 1985-86"

(23) "The Seventh Plan 1985-1990"

(24) "Economic Survey 1985-86"

(25) "The Seventh Plan 1985-1990"

(26) Same as above

(27) "Economic Survey 1985-86"

(28) "The Seventh Plan 1985-1990"

(29) "Economic Survey 1985-86" and "Report on Survey of Infrastructure in Nepal"

(30) "The Seventh Plan 1985-1990"

(31) "Economic Survey 1985-86"

(32) "Economic Survey 1985-86", "The Seventh Plan 1985-1990" and "South-east Asia Handbook"

(33) "The Seventh Plan 1985-1990"

(34) "Economic Survey 1985-86"

(35) "The Seventh Plan 1985-1990"
(36) "Economic Survey 1985-86"
(37) Same as above
(38) "Economic Development Plan of Nepal"
(39) "Economic Survey 1985-86"
(40) "Study Repot on Textile Development Plan in Nepal" (ISC, Jul., 1984)
(41) Same as above
(42) "Project Proposal of Integrated Textile Mill"
(43) Cotton Development Project Data issued by ADB
(44) "Study Report on Textile Development Plan in Nepal"
(45) By interview survey
(46) "Industrial Profile 1983/1984" (MOI)
(47) "Industrial Promotion Journal" (ISC, Nov., 1983)
(48) "The Seventh Plan 1985-1990"