# Measurement of Import Substitution: An Empirical Study of the Indian Case

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This study purports to measure (i) import substitution for several commodities at different points of time and over time; (ii) relationship between various imports and national income; (iii) average propensity to import for consumer, intermediate and capital goods; (iv) relationship between various imports and gross capital formation; and (v) the effect of industrial production and ropulation on import of consumer, intermediate and capital g ods.

#### Import Substitution at Different Points of Time:

The main interest in this section is to measure import substitution for selected commodities at different points of time and over time. For this, total estimated supplies and percentage of imports to total supplies have been collected for 12 industries. The selection of these industries is due to the easy availability of data. The other informations like volume of import and production are also derived from there. The study periods chosen are (a) 1955-56 and 1974-75; (b) 1955-56 and 1965-66 and (c) 1965-66 and 1974-75.

(a) Import Substitution in 1955-56 and 1974-75:

In order to measure import substitution during the period between 1955-56 and 1974-75, volume of import, production and total estimated supply for twelve industries are

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shown in Appendix 1. From this exhibit, it is clear that raw cotton, sugar mills machinery, textile machinery, iron and steel, aluminium, soda ash, caustic soda, newsprint, paper and paper boards, etc., ammonium sulphate and man made fibre and yarn are the industries showing import substitution. Example of food grains is the only industry showing increase dependence on import and there is not even a single industry showing decline in demand.

## (b) Import Substitution in 1955-56 and 1965-66:

To measure import substitution for the years 1955-56 and 1965-66, the respective import, production and total estimated supplies are shown in Annex 2. From this Annex, it is clear that industries showing import substitution are raw cotton, sugar mill machinery, textile machinery iron and steel, aluminium, soda ash, caustic soda, newsprint, paper and paper boards, etc., and man-made fibre and yarn. Industries showing increase in import dependence are food grains and ammonium sulphate. There is not even a single industry showing decline in demand for this period.

# (c) Import Substitution in 1965-66 and 1974-75:

The import, production and total estimated supply for the years 1965-66 and 1974-75 are already shown in Annexes 1 and 2. According to these Annexes, industries showing import substitution are food grains, sugar mill machinery, textile machinery, aluminium, soda ash, caustic soda, newsprint, paper and paper boards, etc., ammonium sulphate and man-made fibre and yarn. Similarly, the industry showing increase in import dependence is iron and steel. Raw cotton is now the only industry showing decline in demand although the decline is very small.

## (d) Import Substitution overtime:

To conclude for all the periods, the industries showing import substitution are sugar mill machinery, textile machinery, aluminium, soda ash, caustic soda, newsprint, paper boards, etc., and man-made fibre and yarn. In other words, for all the periods, eight industries showed import substitution and the remaining four did not. Almost the same conclusion is arrived at if one considers the equations of Table 1

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Import Substitution Over Time (For 1955-36 to 1974-75)

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	Industries	Equations	R <sup>2</sup>	DW
1.	Food grains in million tonnes	$\log I/A = \log 1.31 - 7.67 \log t$ (2.26) * (.22)	0.2	1.49
2.	Raw cotton in lakh bales of 180 Kgs. each	$\log I/A = \log 3.0564 \log t$ (6.62) * (2.31)*	0.25	1.88
3.	Sugar mill m/c Rs. in lakhs	$\log I/A = \log 4.33 - 2.71 \log t$ (6.79) * (7.08)*	0.83	2.57/
24.	Textile m/c Rs. in lakhs	$\log I/A = \log 4.45 - 1.83 \log t$ (24.24) * (7.53)*	0.85	1.73
5.	Iron and Steel Thousand Tonnes	$\log I/A = \log 3.6537 \log t$ (8.85) * (1.5)	0.1	2.52
6.	Aluminium Thousand Tonnes	$\log I/A = \log 4.86 - 2.01 \log t$ (8.36) * (5.76)*	0.76	2.22
7.	Soda ash Thousand Tonnes	$\log I/A = \log 4.66 - 2.49 \log 1$ (8.73) * (6.92)*	0.85	1.55
8.	Caustic soda Thousand Tonnes	leg I/A = log 4.87 - 3.01 log t $(4.97) * (4.22)*$	0.69	2.19
9.	Newsprint Thousand Tonnes	$\log I/A = \log 4.48 - 1.08 \log t$ (77.92) * (2.27)*	0.24	1.49
10.	Paper & Paper boards et Thousand Tonnes	c. $\log I/A = \log 2.79 - 1.07 \log t$ (8.29) • (5.28)*	0.24	1.49
11.	Ammonium Sulphate Thousand Tonnes	$\log I/A = \log 4.33 - 0.73 \log t$ (9.23) * (2.6)*	0.32	1.45
12.	Man made fibre & yarn Thousand Tonnes	$\log I/A = \log 3.04 - 1.82 \log t$ (6.75) * (3.02)*	0.42	1.7

Source ; 'Records and Statistics' Related Issues.

Note : I = Import

▲ = total Availabilities

Throughout this study, figures in brackets are used to indicate to 0.05 values and the sign (\*) is used to indicate that the result is significant at 5% level of significance. Besides, the value of  $\mathbb{R}^2$  shows the explanatory power of the models. DW (Durbin Watson) statistics is used for testing whether the error term is serially correlated or autocorrelated. Unless stated, it is to be considered that equations are free from the problem of auto-correlation.

For all those industries which do not show clear indication of import substitution, it is clear from Table 1 that not only the values of  $\mathbb{R}^2$  are poor but also the values of t coefficients are low except for food grains where the coefficient is insignificant.

The broad idea of import substitution for the industries as a whole will not be clear from the above. Therefore, in the next section, we try to make this idea clear by classifying the total imports into three broad groups namely the import of consumer goods, intermediate goods and capital goods. Generally, in the process of achieving import substitution of consumer goods, the imports of intermediate and capital goods have tendency to rise but it does not mean negative import substitution. As soon as the process of import substitution of consumer goods is over, the country will shift its emphasis on import substitution of intermediate and capital goods. But the import substitution of these goods takes a long time and sometimes may not also be possible due to international trade benefits. This is what the experience of developing country shows today. Let us analyse this issue in what follows next.

#### Import Substitution and Technological Progress:-

Technological progress plays an important role in import-substitution of any developing country. Technological progress is the prime mover of industrialisation through import substitution. As the country becomes sensitive towards development, the level of education, research, technological development, etc., will tend to rise. With the rise in the level and standard of these activities, a developing country faces a problem of self-sufficiency-that is the pressure for the replacement of imports by domestic production. Therefore, technological progress facilitates import substitution.

In this section, indicators of technological progress, i.e., national income, gross capital formation, industrial production, etc., are used to relate import substitution with technological progress, as there is no standard tool to measure technological progress. In this connection,

the first step is to regress total imports on national income as shown in Table 2. This table shows that with the rise in national income, total imports tend to rise. But if we further classify imports into import of consumer goods, intermediate goods and capital goods and regress them one after another on national income as shown in Table 2, it is clear that the rise in national income tends to raise import more of the intermediate goods than consumer and capital goods.

Table 2

Regression of Import on National Income by type of goods for the Period 1960-61 to 1974-75

Equations	$\bar{\mathbb{R}}^2$	DW
I = 4.35 + 0.47y (1.22) (4.48)*	.80	1,45
$I_0 = 2.31 + .80y$ (1.46) (1.7)	.26	1.90
$I_1 = -1.67 + .29y$ $(.95)  (5.7)^+$	.92	1.47
$I_2 = 3.78 + 0.95y$ $(4.61) = (3.99)^{\circ}$	.94	1.72
	$I = 4.35 + 0.47y$ $(1.22) (4.48)^{\circ}$ $I_0 = 2.31 + .80y$ $(1.46) (1.7)$ $I_1 = -1.67 + .29y$ $(.95) (5.7)^{\circ}$ $I_2 = 3.78 + 0.95y$	$I = 4.35 + 0.47y$ $(1.22) (4.48)^{\circ}$ $I_{0} = 2.31 + .80y$ $(1.46) (1.7)$ $I_{1} = -1.67 + .29y$ $(.95) (5.7)^{\circ}$ $I_{2} = 3.78 + 0.95y$ $.94$

Source: Annex 3 and 4.

Note: I = Import

y - National Income

It is clear from Table 2 that the national income coefficient is not significant for consumer goods at 5% level of significance. The low and insignificant coefficient of national income for consumer goods may be due to the establishment of more of those industries which

produce consumer goods.

Apart from above, an overall idea regarding the direction of import substitution can be had by studying average propensity to import over time. Table 3 shows the average propensity to import for various goods regressed on time.

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Table 3

Regression of the proportion of imports of goods to national income on time for the period 1960-61 to 1974-75

Goods	Equations Equation Eq	$\bar{\mathbb{R}^2}$	DW
Consumer	$I_0 / y = 1.9508t$ $(5.13)^* (1.54)$	.31	1.88
Intermediate	$I_1 / y = 1.74 + .05t$ $(6.48)^* (1.35)$	.15	1.43
Capital	$I_2/y = 2.9414t$ (16.08)* (5.6)*		

Source; Annex 3 and 4.

It is clear from the table that the average propensity to import is highest for intermediate goods than for consumer goods and capital goods. However, the fits are poor and t<sub>0.05</sub> value (figures in brackets) is significant only in the case of capital goods.

Although it is very difficult to have correct picture, yet the overall idea of import substitution can be had by establishing relationship between imports and gross capital formation. Here, the idea is to relate imports with gross capital formation (GCF) to find out whether the increase in gross capital formation would lead to import more of the consumer or intermediate or capital goods. Let us consider the regression results shown in Table 4.

Table 4

Regression of Imports on Gross Capital Formation for the period 1960-61 to 1974-75

1	Equations $R^2$ DW $I = 2.79 + .24 \text{ GCF} \qquad .88 \qquad 1.98$ $(.84)  (5.27)^*$		
Goods	Equations	$\bar{R}^2$	DW
Total imports	1 = 2.75 + .24 GCF	.88	1.98
Consumer	$I_0 = 2.15 + .038 GCF$ (1.31) (1.71)		1.79
Intermediate	$I_1 = -4.41 + .23 \text{ GCF}$ $(3.04) * (3.08)*$	.97	2.11
Capital	$I_2 = 3.43 + .05 GCF$ $(4.47) * (4.74)*$	,83	1.86

Source: Annex 3 and 4.

Table 4 clearly shows that with the rise in gross capital formation, the total imports also rise. It further shows that the rise in gross capital formation results in import more of the intermediate goods than consumer goods and capital goods. However, gross capital formation coefficient is not significant for consumer goods.

The broad idea of import substitution can also be had by studying relationship between imports and industrial production and population. With the rise in industrial production, imports can be expected to decline for those industries which show import substitution. But again, in view of the rise in population, imports may not decline. Therefore, the first idea is to find out whether total imports are rising with the rise in industrial production (IPI) and population (POP.) and then find out whether the increase in industrial production and population leads to import more of the consumer goods or intermediate goods or capital goods. Let us consider the regression results in Table 5.

Regression of Imports on Industrial Production Index and Population for the period 1960-61 to 1974-75

Goods	Equations	$\bar{R}^2$	DW
Total imports	I = 15.2583 IPI + .91 Pop (.08) (2.51)* (0.25)	.95	2.33
Consumer	$I_0 = 57.5649 \text{ IPI}50 \text{ Pop}$ (.77) (2.28)* (2.34)*	.70	2.08
Intermediate	$I_1 = 29.528 \text{ IPI} + .99 \text{ Pop}$ (.27) (1.87) (.45)	.93	2.05
Capital	$I_2 = -18.7902 \text{ IPI} + .49 \text{ Pop}$ (.39) (.33) (.51)	.81	1.63

Source: Annex 3 and 5.

The table clearly shows that the rise in the industrial production and population leads to import less of the consumer goods than intermediate goods and capital goods. Above all, industrial production index and population coefficients are significant only in the case of consumer goods. This broadly shows that there has been some progress in import substitution of consumer goods.

Annex 1
Progress of Import Substitution for 1955-56 and 1974-75

	1955–56 1974–75 <b>T</b> otal					
S. No. Industries	Import	Production	n Total Estim	ated	Production	Estimated supply
<ol> <li>Foodgrains in Million tonnes</li> <li>Raw Cotton in Jakh</li> </ol>	1.2 (1.7) 6.1	70.7 (98.3) 43.5	71.9 (100) 49.6	5.6 (5.2) 0.8	102.9 (94.8) 63.3	108.5 (100) 64.1
bales of 180 Kg. each 3. Sugar mill machinery Rs. in lakhs	(12.3) 398.9 (95.2) 833.5	(87.7) 20.1 (4.8) 389.5	(100) 41.9 (100) 123.3	(1.2) 5.4 (0.2) 1667.3	(98.8) 2699.6 (99.8) 12705.8	(100) 270.5 (100) 1437.3
<ul><li>4. Textile Machinery Rs. in lakhs</li><li>5. Iron and Steel Thousand tonnes</li></ul>	(67.6) 862.6 (39.9)	(32.4) 1299.4 (60.1)	(100) 216.2 (100)	(11.6) 1197.6 (19.6)	(88.4) 4912.4	(100) 611.0 (100)
<ul><li>6. Aluminium     Thousand Tonnes</li><li>7. Soda ash</li></ul>	16.1 (68.5) 71.9	7.4 (31.5) 82.1	23.5 (100) 15.4	1.4 1.1) 3.1	126.6 (98.9) 515.9	12.8 (100) 51.9
Thousand Tonnes  8. Caustic Soda Thousand Tonnes	(46.7) 60.0 (62.5) 80.0	(53.3) 36.0 37.5) 4.0	(100) 96.0 (100) 84.0	(0.6 1.3 (0.3) 141.0	99.4 425.9 (99.7) 64.0	(100) 427.2 (100) 205.0
<ul><li>9. Newsprint</li></ul>	(95.2) 70.0	(4.8) 190.0 (73.1)	(100) 260.0 (100)	(68.8) 16.3 (2.1)	(31.2) 760.7 (97.2)	(100) 777.0 (100)
<ul><li>11. Ammonium Sulplate Thousand Tonnes</li><li>12. Man made fibre &amp;</li></ul>	207.0 (34.1) 6.6		607.0 (100) 31.9	173.6 (12.8) 6.4	1182.4 (87.2) 199.4	135.6 (100) 205.8
yarn Thousand Tonnes	(20.7)	(79.3)	(100)	(3.1)	(96.9)	(100)

Note: 1. Figures in brackets indicate % over total estimated supplies

2. Source: "Records and Statistics." (Related Issues)

Annex 2

Progress of Import Substitution for 1955-56 and 1965-66

		(0)	1955-5	6		1965–66	
S. N	o. Industries	lmport	Production	Estimated	Import	Production	Estimated
			SI	ipply			supply
	1111		mofil		10-7		
	77 1	1	2 50 5	<b>51.0</b>	0.4	#O.#	0.00
1.	Food grains in million tonnes	1.2		71.9	8.4	78.5	86.9
_	cont in Street	(1.7)	1 26.1	(100)	(9.7)	90.3)	(100)
2.	Raw cotton in lack bales	6.1		49.6	7.0	57.3	64.3
	of 180 Kgs. each	(12.3)		(100)	(10.9)	(89.1)	(100)
3.	Sugar mill machinery	398.9		419.0	6.2	769.8	77.6
	Rs. in lakhs	(95.2)	(4.8)	(100)	(0.8)	(99.2)	(100)
4.	Textile machinery	833.5	389.5	123.3	2845.2	4661.8	750.7
	Rs. in lakhs	(67.6)	(32.3)	(100)	(37.9)	(62.1)	(100)
5.	Iron and Steel	862.6	1299.4	216.2	964.5	4511.5	541.6
	Thousand tonnes	(39.9)	(60.1)	(100)	(16.7)	(83.3)	(100)
6.	Aluminium	16.1	7.4	23.5	21.1	61.3	82.4
	Thousand tonnes	(68.5)	(31.5)	(100)	(25.6)	(74.4)	(100)
7.	Soda ash	71.9	82.1	15.4	35,6	331.1	366.7
	Thousand tonnes	(46.7)	(53.3)	(100)	(9.7)	(90.3)	(100)
8.	Caustic Soda	60.0	36.0	96.0	74.2	218.0	292.2
	Thousand tonnes	(62.5)	(37.5)	(100)	(25.4)		(100)
9.	Newsprint	80.0	4.0	84.0	85.0	30.0	115.0
	Thousand tonnes	(95.2)	(4.8)	(100)	(73.9)		(100)
10.	Paper and paper boards,	70.0	190.0	260.0	26.3	557.7	584.0
10.	etc. Thousand tonnes	(26.9	(73.1)	(100)	(4.5)	(95.5)	(100)
11.		207.0	2.7.1		Child Ly		
11.	Ammonium Sulphate Thousand tonnes		400.0	607.0	852.9	420.1	1273.0
10	431445	(34.1)	(65.9)	(100)	(96.7)	(3.3)	(100)
12.	Man made fibre and yarn Thousand tonnes	6.6	25.3	31.9	7.5	118.0	125.5
	THOUSAIR COURS	(20.7)	(79.3)	(100)	(7.5)	(92.5)	(100)

Note: 1. Figures in brackets indicate % over total estimated supplies.

2. Source: "Records and Statistics." (Related Issues).

Annex 3

Patterns of Imports for the period 1960-61 to 1974-75 in thousand million rupees

Year Year		Import of		Total
	Consumer goods	Intermediate goods	Capital goods	Imports
1960-61	2.7	5.2	3,3	11.2
	(24.1)	(46.4)	(29.5)	(100)
1961-62	1.8	5.1	3.5	10.4
	(17.3)	(49.0)	(33.7)	(100)
1962-63	2.1	4.9	3.7	10.8
	(19.4)	(45.4)	(35.2)	(100)
1963-64	2.5	3.5	5.2	11.2
	(22.3)	(31.3)	(46.4)	(100)
1964-65	2.4	3.6	5.8	11.8
	(20.3)	(30.5)	(49.2)	(100)
1965-66	3.9	4.0	6.4	14.3
	(27.2)	(28.0)	(44.8)	(100)
1966-67	7.3	5.4	7.2	19.9
	(36.7)	(27.1)	(36.2)	(100)
1967-68	7.3	6.9	6.7	20.9
	(34.9)	(33.0)	(32.1)	(100)
1968-69	5.2	7.1	6.3	18.6
Liver - H	(28.0	(38.2)	(33.8)	(100)
1969-70	5.1	5.8	5.2	16.1
	(31.7)	(36.1)	(32.2)	(100)
1970-71	4.0	7.2	5.2	16.4
u:	(24.4)	(43.9)	(31.7)	(100)
1971–72	2.9	8.1	7.0	18.0
	(16.1)	(45.0)	(38.8)	(100)
1972-73	2.1	7.6	7.0	16.7
	(12.6)	(45.5)	(41.9)	(100)
1973-74	5.3	10.4	8.4	24.1
	(22.0	(43.2)	(34.8)	(100)
1974-75	9.4	20.8	11.2	41.4
	(22.7)	(50.3)	(27.0)	(100)

Note: 1. Figures in brackets indicate % over total imports.

2. Source : "Statistical Year Book for Asia and Pacific." (Related Issues).

Annex 4

Net National Income and Gross Capital Formation for the period 1960-61 to 1974-75

	Net National Income	Gross Capital Formation	
Year	Rs. in hundred crores	Rs. in thousand million	
1960-61	133	25.2	
1961-62	140.	25.4	
1962–63	148	28.7	
1963-64	185	35.3	
1964-65	200	40.7	
1965-66	206	44.3	
1966-67	239	53.8	
1967-68	281	57-1	
1968-69	286	55.4	
1969-70	316	64.8	
1970-71	344	72.5	
1971-72	368	79.2	
1972-73	404	84.1	
1973-74	507	107.6	
1974-75	593	33.0	
1717 10			

Note: 1: Net National income figures are taken from 'Report on Currency and Finance'.

2. Gross capital formation figures are taken from 'Statistical Year Book for Asia and Pacific'. (Related Issues)

Annex 5

Population and Industrial Production Index for the period 1960-61 to 1974-75

Year	Population in ten million		Industrial Production Index 1970-71 = 100		
1960-61		44		55	In-ting
1961-62		45		60	
1962-63		46		66	1.1
1963-64		48		72	2
1964-65		49		78	
1965-66	4.5	50	5	85	
1966-67		51		84	
1967-68	3	52		84	
1968-69		54		89	
1969-70		54		96	
1970-71		55		100	
1971-72		56		103	
1272-73		57		110	
9973-74		59		112	
1974-75		6 <del>0</del>		114	

Source: "Reports on Currency and Finance." (Related Issues)

## **Bibliography**

- 1. Ali, Ifzal: Domestic Resource Costs: A Note on Evaluation of India's Trade Policies, *Economic and Political Weekly*, Aug. 25, 1979, p. 1425.
- 2. Balassa, B: Exports and Economic Growth: Further Evidence; Journal of Development Economics, June 1978, p. 181-182.
- 3. Bhattacharya Debesh: The Role of Technological Progress in Indian Economic Development, The World Press Pvt. Ltd., Calcutta 1972, p. 208.
- 4. Bruce D. Murray, Industrial Development; A Guide for Accelerating Economic Growth, McGraw Hill Book Co., Inc., 1960, p. 3.
- 5. Chenery B. Hollis, Pattern of Growth, American Economic Review, Sept. 1960.
- 6. Clark, P.G., Planning for Import Substitution, July 1970.
- 7. Cuker, Gyorgy: Strategies for Industrialisation in Developing Countries, C. Hurt & Co., London, 1974, p. 9.
- 8. Desai, Padma: Alternative Measures of Import Substitution, Ed. by Dr. Charan D. Wadhwa, 'Some Problems of India's Economic Policy, 1978.
- 9. Fane G., Consistent Measures of Import Substitution, Oxford Economic Papers, July 1973, p. 251-261.
- Guillaumont, Patrick: More on Consistent Measures of Import Substitution. Oxford Economic Papers, July 1979, p. 324-329.
- 11. Gupta, G.S., Note on Econometric Models, Indian Institute of Management, Ahmedabad, 1979, p. 13.
- 12. Hoelscher, H.E. and Howk, M.C: Industrialisation and Development, San Francisco Press Inc., 1969, p. 300.
- Ishikawa Shigern, Economic Development in Asian Perspective, Kinokuniya Book Store Co. Ltd., Tokyo 1967, p. 358.
- 14. Johnson G. Harry, Economic Policies Toward Less Developed countries, Brookings Institution, 1967, p. 67-68.
- 15. MacBean, A.I. and Balasubramanyam, V.N.: Meeting with the Third World Challenge, Trade Policy Research Centre, London, 1976, p. 173.

### **Book Review**

Aiswarya Lal Pradhanang, Planning in Nepal (Nepalma Yojana), Kathmandu: Curriculum Development Center, Tribhuvan University, 1980, 245 pp; tables, bibliography.

Written in Nepali language, Planning in Nepal is another in a series of textbooks published by curriculum Development Center, Tribhuvan University. As the author explains in his preface, this book inspite of its title Planning in Nepal is designed to provide planning related subjects in Nepal and its theoretical Knowledge. The publishers are highly ambitious about this book to be useful to Bachelor's and Master's students as well as to professional researchers. The publishers also claim that this book has undergone evaluation in its subject matter and language edition by highly acclaimed scholars in the respective fields.

The book has been divided into eight chapters. The first chapter describes in short the geographical condition of Nepal. The second chapter attempts to define planning with reference to struggle against poverty at the national level. The third chapter outlines the characteristics of less developed countries. The fourth chapter includes prerequisite of planning and its preparation. The fifth chapter includes regional planning in a crude form. It is only from the sixth chapter that the author treats the subject according to the title of the book Planning in Nepal. This chapter reviews previous five year plans and the sixth plan of Nepal. The seventh chapter provides some guidelines for the successfuly implementation of planning. The last chapter comes as an appendix under the heading "some important matters" only to increase the volume of the book.

This book has all the earmarks of a publication quickly pulled together without adequate time for reflection and correction. Some examples are: the southern north latitude of Nepal is missing (p. 1.) The second chapter is the weakest part of the book while defining the meaning of planning the author fails to make clear what kind of planning he is alking about. Because of too many sub-headings the reader easily gets confused when he has to jump abruptly from one subject matter to another. In the third chapter the author includes many unsupported statistics of per capita income and puts Russia in the category of China and Arabian countries and Japan in the category of low income countries (p. 56). Under the heading "regional planning"

the author takes refuse of many irrelevant statements and examples such as obliteration of Kathmandu lake by Manjushree with his sword (p. 86), Kalidas Raghubansh (p. 89), and Shivpurana (p. 90). The author makes the gossip treatment of the subject with flowery sentences rather than providing even a short introduction of regional planning in Nepal.

The first five chapters of the book are neither relevent nor add any contribution to the main theme of the book. Moreover, they highly confuse readers due to incoherent and unsystematic treatment of the subject. The sixth chapter, although relevant to the main title of the book, simply reviews the plans of Nepal found already in several other books. The sub-title in p. 114 is also repeated in p. 123, whereas the sixth plan has been treated as a separate chapter, which should have been the sub-heading of chapter (p. 152, see also table of contents).

The writing of a text book or merely a book is not an easy task. In this book the difficulty came out of three things: (1) the contents of the text did not cover a wide spectrum of the subject matter in order to provide foundation for advanced studies of the same subject, (2) the organization of the text did not follow a logical sequence and (3) the use of language did not become straight forward in order to achieve readibility which is so important in effective communication. For the professional reader, the lack of documentation of sources is frustating; for an undergraduate and graduate audience, the lack of sources is inexcusable. The bibliography at the end of the book misleads the readers because of its inaccuracy, inconsistency and incompleteness.

Although this book seems to have been published simply because it is written in Nepali Language, it simply fails to communicate effectively and offers not more than a descriptive economic novel of planning in Nepal. Despite these comments, which one might hope will be considered in a second edition, the author deserves congratulation for his difficult (Bhagirath) attempt to write a text on Nepalese planning in Nepali language.

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