

Table 1: Development Indicators of the Countries of the HKH Region

Descriptions	Population in Millions 1992	Area Th. Sq. km. 1992	People in Ab. Poverty % 1992	Adult Literacy % 1992	Infant Mort. (per 1000 births) 1992	GNP per Capita US \$ 1992	HDI Index 1992	Industrialisation Ratio % 1992	Urbanisation Ratio % 1992	Pop. Without Access to	
										Health % 1992	Water % 1992
Afghanistan	21.5	652.2	47	29			0.21			46	71
- HKH only	14.5	390.5									
Bhutan	1.5	46.5		38	129	180	0.15	36	6	33	73
- HKH only	1.5	46.5									
Bangladesh	114.4	144.0	81	35	91	220	0.31	26	18	42	
- HKH only	1.2	13.2									
China	1162.2	9581.0	9	73	31	470	0.65	34	27	10	18
- HKH only	19.9	1647.7									
India	883.6	3287.3	40	48	79	310	0.38	44	28		
- HKH only	37.3	482.9									
Myanmar	43.7	677.0	35	81	72	230	0.41	17	25	52	69
- HKH only	5.9	280.9									
Nepal	19.1	147.2	65	26	99	170	0.29	28	12		62
- HKH only	19.1	147.2									
Pakistan	119.3	796.0	29	35	95	420	0.39	45	33	11	55
- HKH only	23.2	404.2									
Regional Average	2365.3	15331.2	26	59	56	384	0.51	37	26	9	14
Regional Total											
HKH Average	122.6	3413.0									
HKH Total											

- Source :
1. Statistical Abstract - INDIA (1984), Central Statistical Organisation, Ministry of Planning, GOI, India (1985)
 2. Basic Statistics of North Eastern Region, North Eastern Council, GOI, Shillong (Statistical Abstract - INDIA (1984)
 3. Statistical Hand Book of Bhutan (1985), Statistics Division, Planning Commission, Thimpu (1985)
 4. Statistical Yearbook of Bhutan (1987), Central Statistical Office, Planning Commission, Thimpu (1987)
 5. China: A Statistics Survey in 1985, State Statistical Bureau, China (1985)
 6. Demographic Trends in China from 1950 to 1982, Hill Kenneth, World Bank Discussion Papers, The World Bank (1988)
 7. Population Estimates by Province, District and Sub-district: Afghanistan, UNIDATA (1991)
 8. Statistical Yearbook of Bangladesh - 1992, Bangladesh Bureau of Statistics, Ministry of Planning, Dhaka (1993)
 9. Pakistan Statistical Yearbook - 1992 & 93, Federal Bureau of Statistics, Govt. of Pakistan (1993)
 10. Statistical Yearbook of Nepal - 1991, Central Bureau of Statistics, National Planning Commission, Kathmandu (1993)
 11. Statistical Yearbook - 1991, Central Statistical Organisation, Yangon, Myanmar (1992)
 12. Sharma, P. (comp.), Population and Employment Division, ICIMOD (1993)
 13. Human Development Report, 1993 and 1994, UNDP

Table 2: Energy Consumption Pattern in the Countries of the HKH Region, 1992

Energy Forms	Units	Afghanistan	Bhutan	Bangladesh	China	India	Myanmar	Nepal	Pakistan	Total
Hard Coal	'000 MT	8	18	338	1090809	240405	34	92	4222	1335926
Coke	'000 MT	0	0	0	78999	10800	10	0	737	90546
Lignite	'000 MT	0	0	0	0	16560	39	0	0	16599
Fuelwood	'000 M3	19852	1842	7900	611295	549347	22358	15569	17065	1245229
Ag. & Animal Residue	'000MT	1985	92	29033	339820	376303	360	2425	10784	760800
LPG	'000 MT	0	4	8	3508	2760	4	6	151	6441
Motor Gasolene	'000 MT	82	3	106	25753	3762	121	19	1131	30977
Kerosene	'000 MT	10	5	424	4322	9597	11	97	607	15073
Jet Fuel	'000 MT	83		24		1100	19	19	431	1676
Diesel	'000 MT	125	15	1042	35290	24430	272	147	5026	66347
Fuel Oil	'000 MT	2	0	444	34545	10050	115	10	3298	48464
Natural Gas	TJ	73732	0	195306	614720	455760	37950	0	467310	1778419
Electricity	Million kWh	834	185	9554	758920	329340	2674	926	51972	1154405
- Thermal	"	225	7	8758	621470	251285	1395	61	30965	914166
- Hydro	"	478	1620	796	132470	69848	1279	870	20582	227943
- Nuclear	"					6784			425	7173
- Geothermal	"					32				32
Import	"	131	3		4980	1500		80		6694
Export	"		1445			73		85		1803
Final Energy Consumption Pattern										
Units : '000 GJ										
Biomass Fuels		257282	22712	458240	11433882	11168770	266129	212709	335536	24155259
Petroleum Products		13606	1261	94502	4801950	2392089	25007	13719	489803	7831938
Natural Gas		7373	0	195306	614720	455760	37950	0	467310	1778419
Coal		202	454	8518	29858357	6680286	1859	2318	128504	36680497
Electricity - Renewables		2192	641	2866	494820	280998	4604	3114	75625	864960
Total		280655	25068	759431	47203729	20977902	335550	231860	1496779	71310974
Traditional Energies		257282	22712	458240	11433882	11168770	266129	212709	335536	24155259
Commercial Energies		23373	2356	301192	35769847	9809133	69421	19151	1161243	47155715
Units : 'MJ per Capita										
Biomass Fuels		11945	15141	4006	9838	12640	6090	11160	2813	9204
Petroleum Products		632	841	826	4132	2707	572	720	4106	1817
Natural Gas		342	0	1707	529	516	868	0	3917	985
Coal		9	302	74	25691	7560	43	122	1077	4360
Electricity - Renewables		102	427	25	426	318	105	163	634	275
Total		13031	16712	6638	40616	23741	7678	12165	12546	16641
Traditional Energies		11945	15141	4006	9838	12640	6090	11160	2813	9204
Commercial Energies		1085	1571	2633	30778	11101	1589	1005	9734	7437
Unit: % of total										
Biomass Fuels		91.7%	90.6%	60.3%	24.2%	53.2%	79.3%	91.7%	22.4%	33.9%
Petroleum Products		4.8%	5.0%	12.4%	10.2%	11.4%	7.5%	5.0%	32.7%	11.0%
Natural Gas		2.6%	0.0%	25.7%	1.3%	2.2%	11.3%	0.0%	31.2%	2.5%
Coal		0.1%	1.8%	1.1%	63.3%	31.8%	0.6%	1.0%	8.6%	51.4%
Electricity - Renewables		0.8%	2.6%	0.4%	1.0%	1.3%	1.4%	1.3%	5.1%	1.2%
Total		100%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Traditional Energies		91.7%	90.6%	60.3%	24.2%	53.2%	79.3%	91.7%	22.4%	33.9%
Commercial Energies		8.3%	9.4%	39.7%	75.8%	46.8%	20.7%	8.3%	77.6%	66.1%

Note : 1/ includes hydro, nuclear, and geothermal

Source : 1. Energy Statistics Year book 1990, 1991, 1992, United Nations (1994)
2. Energy Indicators of Developing Member Countries of ADB, ADB, Manila (1992)

Table 3: Energy Resource Base in the Countries of the HKH Region

Energy Forms	Unit	Afghanistan	Bhutan	Bangladesh	China	India	Myanmar	Nepal	Pakistan	Total
Coal	000 MT	112000		1054000	265400000	131254000	5000		28590	418853590
Oil	000 MT			4983	3264000	810000	7000		28826	4114809
Natural Gas	Mil. M3	100000		380000	1127000	730000	265000	5	728000	3310005
Uranium	MW					10000			10000	20000
Peat	000 MT			138000	4687000	10571167			0	15396187
Geothermal	Mwh								30000	0
Hydro	MW		2000	1400	335000	150000	20000	83000	2642	639400
Wind	MW					20823		15		23480
Wave	Mwh									0
Biomass	000 MT	15882	1382	34583	767726	767726	16011	13323	22729	1632460
Solar	MW	130400	28800	28800	1912200	1912200	127953	26649	158200	3052202
Note: a/- sufficient for 10000 MW development										
Coal	Mil. GJ	2822	0	26561	7217280	3307601	126	0	720	10555110
Oil	Mil. GJ	0	0	229	150144	37280	322	0	1326	189281
Natural Gas	Mil. GJ	3600	0	12960	40572	26280	9540	0	26208	119160
Uranium	Mil. GJ	0	0	0	0	158	0	0	158	315
Peat	Mil. GJ	0	0	2484	84366	190281	0	0	0	277131
Geothermal	Mil. GJ	0	0	0	0	0	0	0	0	0
Hydro	Mil. GJ	0	315	22	5282	2365	315	1309	473	10082
Wind	Mil. GJ	0	0	0	0	328	0	0	42	370
Wave	Mil. GJ	0	0	0	0	0	0	0	0	0
Biomass	Mil. GJ	233	20	506	11247	11148	235	195	333	23916
Average insolation	Mil. GJ	2056	148	454	30152	10369	2018	420	2510	48127
Total	Mil. GJ	8711	484	43217	753943	3585788	12555	1925	31770	11223493
		0%	0%	0%	67%	32%	0%	0%	0%	100%
Renewable	Mil. GJ	2289	484	983	46681	24209	2567	1924	3358	82495
		3%	1%	1%	57%	29%	3%	2%	4%	100%
Non-renewable	Mil. GJ	6422	0	42234	7492362	3561579	9988	0	28412	11140998
		0%	0%	0%	67%	32%	0%	0%	0%	100%
Average										
Yearly Supply Potential MJ/Capita		112232 1.0	322545 2.8	15972 0.1	169100 1.5	108013 0.9	63324 0.5	100964 0.9	32910 0.3	115633 1.0
Renewable		106269 1.2	322545 3.7	8589 0.1	40166 0.5	27398 0.3	58752 0.7	100964 1.2	28147 0.3	86604 1.0
Non-renewable #/		5964 0.2	0 0.0	7384 0.3	128934 4.4	80615 2.8	4571 0.2	0 0.0	4763 0.2	29029 1.0
Energy Density GJ/sq.km.		3707 0.3	10294 0.8	12689 1.0	20555 107	29027 203	4088 0.3	13648 1.1	4932 0.4	12368 1.0
Renewable		3510 0.5	10294 1.5	6823 1.0	4882 0.7	7363 1.1	3792 0.6	13648 2.0	4219 0.6	6816 1.0
Non-renewable #/		197 0.0	0 0.0	5866 1.1	15673 2.8	21664 3.9	295 0.1	0 0.0	714 0.1	5551 1.0

Note: #/- Non-renewables being consumed within 50 years

Source: 1. Energy Statistics Year Book 1990, 1991, 1992, United Nations (1994)
2. Energy Indicators of Developing Member Countries of ADB, ADB, Manila (1992)

Table 4a: Per Capita Final Energy Consumption in the Domestic Sector of the HKH Region

Description	Fuel-wood	Agric. Residue	Animal Dung	Biogas	Total Bio-mass	Kerosene	Electricity	Coal	LPG	Total Commercial	Total
Natural Unit per Capita	kg	kg	kg	MJ		lit	kWh	kg	kg		
Nepal	450	164	105	0		8	12	0	0		
- Mountain	657	75	121	0		2	5	0	0		
- Hills	527	172	7	0		6	11	0	0		
- Terai	354	174	178	0		10	14	0	0		
India											
- Jammu & Kashmir	392	33	248	0		26	136	0	0		
- Himachal	874	198	59	0		8	106	0	0		
- Uttarakhand (U.P.)	577	87	0	0		6	19	0	0		
- Sikkim	447	52	0	0		12	7	0	0		
- North-eastern States	547	181	0	0		13	38	0	0		
- West Bengal	527	172	7	0		6	11	0	0		
Bhutan	1848	0	0	0		6	9	0	0		
China											
- Ningnan County	358	402	0	44		3	16	15	0		
Pakistan											
- Swat District	719	20	12	0		6	62	0	19		

- Source:
1. Energy, Environment and Sustainable Development in the Himalayas, ed. Monga, P. and Ramana, P.V., Indus Publishing Company, New Delhi (1992)
 2. Himalayan Energy Systems, ed. Dhar, T.N. and Sharma, P.N., Gyanodaya Prakashan, Nainital, India (1987)
 3. A Case Study in Energy Planning and Management in Mountain Districts, Thimphu, Bhutan, MIT Series No. 1, ICIMOD, Kathmandu (1991)
 4. A Case Study in Energy Planning and Management in a Mountain County, Ningnan China, MIT Series No. 2, ICIMOD, Kathmandu (1991)
 5. A Case Study in Energy Planning and Management in Mountain Districts, Almora District, India, MIT Series No. 3, ICIMOD, Kathmandu (1991)
 6. A Case Study in Energy Planning and Management in Mountain Districts: Kulu, Himachal Pradesh, India, MIT Series No. 4, ICIMOD, Kathmandu (1991)
 7. A Case Study in Energy Planning and Management in Mountain Districts: Dhading District, Nepal, MIT Series No. 5, ICIMOD, Kathmandu (1991)
 8. A Case Study in Energy Planning and Management in Mountain Districts: Swat District, Pakistan, MIT Series No. 6, ICIMOD, Kathmandu (1991)
 9. Energy Sector Synopsis Report, Water & Energy Commission Secretariat, Kathmandu (1995).
 10. Perspective Energy Plan for Nepal, NPC/UNDP National Execution Project, Kathmandu (1995).

Table 4b: Per Capita Final Energy Consumption in the Domestic Sector of HKH Region

Descriptions Unit : MJ per Capita	Fuelwood	Agric. Residue	Animal Dung	Biogas	Total Biomass	Kerosene	Electricity	Coal	LPG	Total Commercial	Total
Nepal	7522	2071	1140	0	10733	286	43	0	0	329	11062
- Mountain	681	19%	10%	0%	97%	3%	0%	0%	0%	3%	100%
- Hills	10979	947	1317	0	13242	58	17	0	0	75	13317
- Terai	8803	2167	81	0	11050	217	38	0	0	255	11305
	78%	19%	1%	0%	98%	2%	0%	0%	0%	2%	100%
	5912	2191	1941	0	10044	380	52	0	0	432	10476
	56%	21%	19%	0%	96%	4%	0%	0%	0%	4%	100%
India	6542	412	2703	0	9657	957	490	0	0	1446	11103
- Jammu & Kashmir	56%	4%	24%	0%	87%	9%	4%	0%	0%	13%	100%
- Himachal	14591	2501	646	0	17737	288	382	0	0	670	18407
- Uttarakhnad (U. P.)	79%	14%	4%	0%	96%	2%	2%	0%	0%	4%	100%
- Sikkim	9635	1096	0	0	10731	228	70	0	0	298	11029
	87%	10%	0%	0%	97%	2%	1%	0%	0%	3%	100%
	7457	651	0	0	8109	420	26	0	0	446	8555
	87%	8%	0%	0%	95%	5%	0%	0%	0%	5%	100%
- North-eastern States	9131	2282	0	0	11413	456	137	0	0	593	12006
	76%	19%	0%	0%	95%	4%	1%	0%	0%	5%	100%
- West Bengal	8803	2167	81	0	11050	217	38	0	0	255	11305
	78%	19%	1%	0%	98%	2%	0%	0%	0%	2%	100%
Bhutan	30662	0	0	0	30662	227	33	0	0	259	31121
	99%	0%	0%	0%	99%	1%	0%	0%	0%	1%	100%
China	5979	5071	0	44	11094	117	58	376	0	551	11645
- Ningnan County	51%	44%	0%	0%	95%	1%	1%	3%	0%	5%	100%
Pakistan	12001	254	131	0	12386	218	223	0	563	1004	13389
- Swat District	90%	2%	1%	0%	93%	2%	2%	0%	4%	7%	100%

Source: Table 4a

Table 5: Per Capita Useful Energy Consumption in Lekhgaun Village of the HKH Region, 1990

Descriptions	Population Nos.	Altitude Mtrs. (msl)	Human Labour MJ	Animal Labour MJ	Fuelwood MJ	Agric. Residue MJ	Animal Dung MJ	Total Trad. MJ	Electricity MJ	Diesel MJ	Kerosene MJ	Motive Appl. MJ	Chemical Fert. MJ	Total Comm. MJ	MJ	TOTAL %
Lekhgaun	3855	1176														
Domestic					1502.7	36.8		0.0						0.0	1539.6	
- Cooking					1902.7			1539.6						0.0	1902.7	
- Heating								0.0						2.3	2.3	
- Lighting								0.0						2.3	3444.6	65%
Total			0.0	0.0	3405.4	36.8	0.0	3442.3	0.0	0.0		2.3	0.0	2.3	3444.6	65%
			0%	0%	99%	1%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
Farm Activities																
- Ploughing			136.4	303.8				440.2						0.0	440.2	
- Weed/Planting			74.4					74.4						0.0	74.4	
- Irrigation			31.4					31.4						0.0	31.4	
- Harvesting			62.0	164.7				99.4						0.0	99.4	
- Threshing			13.2					226.7						0.0	226.7	
- Others			416.9	885.3	0.0	0.0	341.5	354.9	0.0	0.0			14.5	14.5	369.4	23%
Total			34%	71%	0%	0%	28%	1643.8	0%	0%	0%	0%	1%	1%	1241.5	23%
					0%	0%		132%	0%	0%	0%	0%	0%	0%	100%	
Commercial Sector																
- Cooking					17.7			17.7						0.0	17.7	
- Heating								0.0						0.0	0.0	
- Lighting								0.0						0.1	0.1	
Total			0.0	0.0	17.7	0.0	0.0	17.7	0.0	0.0	0.1	0.0	0.0	0.1	17.8	0%
			0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
Village Industry																
- Weav./Mat making			38.9					38.9						0.0	38.9	
- Agro-processing			11.4					11.4				15.6		15.6	27.0	
- Black Smithy			3.9		54.5			58.4						0.0	58.4	
- Alcohol Brewing								0.0						0.0	0.0	
Total			54.2	0.0	54.5	0.0	0.0	108.7	0.0	0.0	0.0	15.6	0.0	15.6	124.3	2%
			44%	0%	44%	0%	0%	87%	0%	0%	0%	13%	0%	13%	100%	
Transportation																
- within Village			411.4					411.4						0.0	411.4	
- Farm Activities			249.5					249.5						0.0	249.5	
- Fodder Collection			48.5					48.5						0.0	48.5	
- Agro-processing			21.0					21.0						0.0	21.0	
- Drinking Water			57.3					57.3						0.0	57.3	
- Others			35.0					35.0						0.0	35.0	
- To & From Village			95.7					95.7						0.0	95.7	
Total			507.1	0.0	0.0	0.0	0.0	507.1	0.0	0.0	0.0	0.0	0.0	0.0	507.1	2%
			100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	10%
TOTAL			978.2	885.3	3477.7	36.8	341.6	5719.7	0.0	0.0	2.4	15.6	14.5	32.5	5335.3	100%
			18%	17%	65%	1%	6%	107%	0%	0%	0%	0%	0%	1%	100%	

Source: Rijal, K., Technology Assessment, Planning and Modelling of Rural/Decentralised Energy Systems in Nepal, Ph. D. Dissertation, IIT, Delhi (1991)

Table 6: Per Capita Useful Energy Consumption in Marpha Village of the HKH Region, 1990

Descriptions	Popula- tion Nos.	Altitude Mtrs. (m=sl)	Human Labour MJ	Animal Labour MJ	Fuelwood MJ	Agric. Residue MJ	Animal Dung MJ	Total Tradit. MJ	Electricity MJ	Diesel MJ	Kerosene MJ	Motive Appl. MJ	Chemical Fertilizer MJ	Total Comm. MJ	MJ	TOTAL %
Marpha	1212	2660						0.0								
Domestic					2267.3			2267.3						0.0	2267.3	
- Cooking					14669.1			14669.1						0.0	14669.1	
- Heating								0.0	23.1					23.1	23.1	
- Lighting								16936.5	23.1	0.0			0.0	23.1	16959.6	
Total			0.0	0.0	16936.5	0.0	0.0	16936.5	23.1	0.0	0.0	0.0	0.0	23.1	16959.6	79%
Farm Activities																
- Ploughing			60.2	101.5			296.2	161.7						0.0	161.7	
- Weed/Planting			71.0	68.5			296.2	139.4						0.0	139.4	
- Irrigation			40.4				35%	40.4						0.0	40.4	
- Harvesting			52.8					52.8						0.0	52.8	
- Threshing			47.0	5.0				52.0						0.0	52.0	
- Others			12.4	38.8				347.4					56.1	56.1	403.5	
Total			283.8	213.7	0.0	0.0	0.0	793.7	0.0	0.0	0.0	0.0	56.1	56.1	849.8	4%
			33%	25%	0%	0%	0%	93%	0%	0%	0%	0%	7%	7%	100%	
Commercial Sector																
- Cooking					379.1			379.1	4.3					4.3	383.4	
- Heating					217.0			217.0	21.3					21.3	238.3	
- Lighting								0.0	0.5					0.5	0.5	
Total			0.0	0.0	596.1	0.0	0.0	596.1	26.1	0.0	0.0	0.0	0.0	26.1	622.2	3%
			0%	0%	96%	0%	0%	96%	4%	0%	0%	0%	0%	4%	100%	
Village Industry																
- Wear/Mat making			42.9					42.9						0.0	42.9	
- Agro-processing			17.3					17.3	18.2			11.6		29.7	47.0	
- Black Smithy					104.8			110.6						0.0	110.6	
- Alcohol Brewing			20.6		493.4			514.0	10.7					10.7	524.8	
Total			85.6	0.0	598.2	0.0	0.0	684.8	28.9	0.0	0.0	11.6	0.0	40.4	725.2	3%
			12%	0%	82%	0%	0%	94%	4%	0%	0%	2%	0%	6%	100%	
Transportation																
- within Village			335.8	37.1				372.9						0.0	372.9	
- Farm Activities			245.9					245.9						0.0	245.9	
- Fodder Collection			28.1	26.4				54.5						0.0	54.5	
- Agro-processing			8.3					8.3						0.0	8.3	
- Drinking Water								28.1						0.0	28.1	
- Others			25.6	10.7				36.3						0.0	36.3	
- To & from Village			552.0	1450.5				2002.5						0.0	2002.5	9%
Total			887.8	1487.6	0.0	0.0	0.0	2375.4	0.0	0.0	0.0	0.0	0.0	0.0	2375.4	11%
			37%	63%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
TOTAL			1258.3	1701.3	18130.8	0.0	296.2	21386.6	78.1	0.0	0.0	11.6	56.1	145.7	21532.3	100%

Source : Rijal, K., Technology Assessment, Planning and Modelling of Rural/Decentralised Energy Systems in Nepal, Ph. D. Dissertation, IIT, Delhi (1991)

Table 7: Final Energy Consumption Pattern in the Rural and Urban Residential Sectors of Nepal

Type of Fuel	Rural Areas		Urban Areas	
	MJ/Capita	Percent	MJ/Capita	Percent
Fuelwood	10688	71%	7800	82%
Agric. Residue	2596	17%	260	3%
Animal Dung	1373	9%	540	6%
Total Traditional	14657	98%	8600	90%
Kerosene	290	2%	485	5%
LPG	0	0%	123	1%
Electricity	25	0%	292	3%
Coal/Coke	0	0%	10	0%
Total Commercial	315	2%	910	10%
TOTAL	14972	100%	9510	100%

Source: Energy Sector Synopsis Report, Supporting Doc. 1, PEP, WECS, 1995.

Figure 1: Human Development in the Countries of the Region

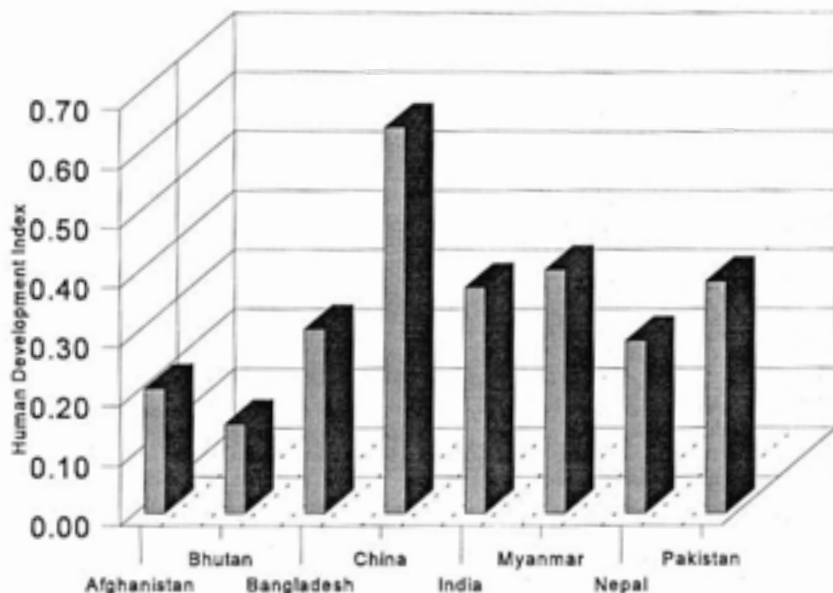


Figure 2: Adult Illiteracy in the Countries of the HKH Region (%)

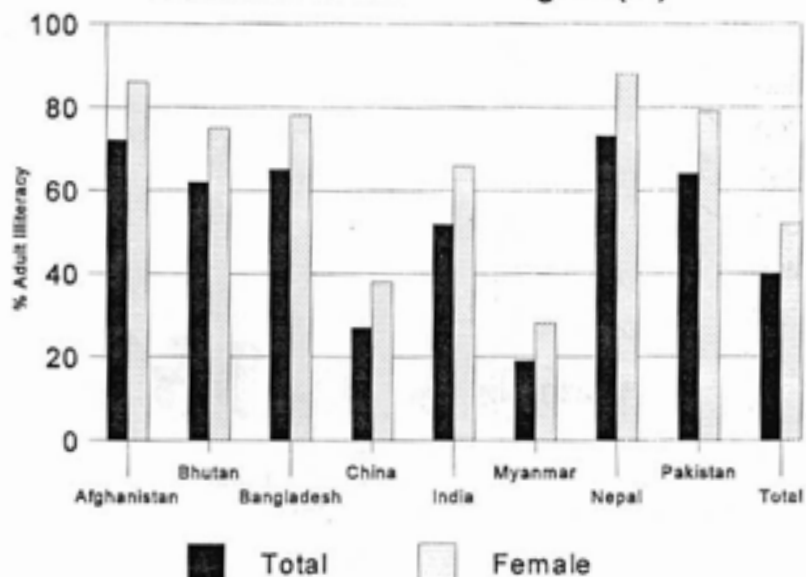


Figure 3: Infant Mortality Rate in the Countries of the HKH Region

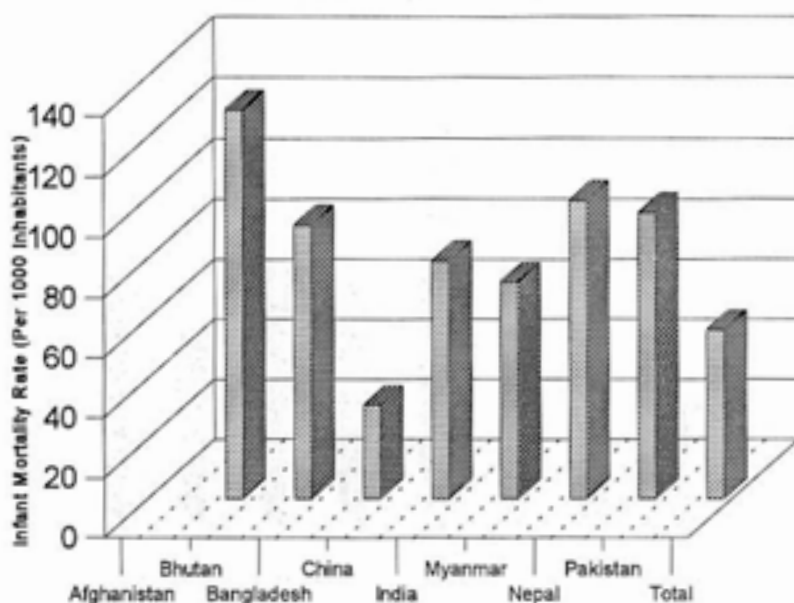


Figure 4: Population Density in the Countries of the HKH Region

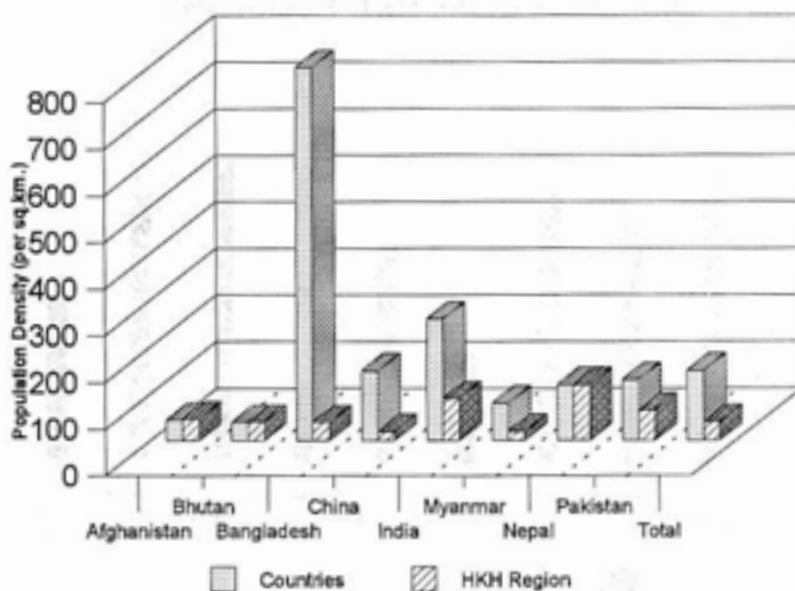


Figure 5: People in Absolute Poverty in the Countries of the HKH Region

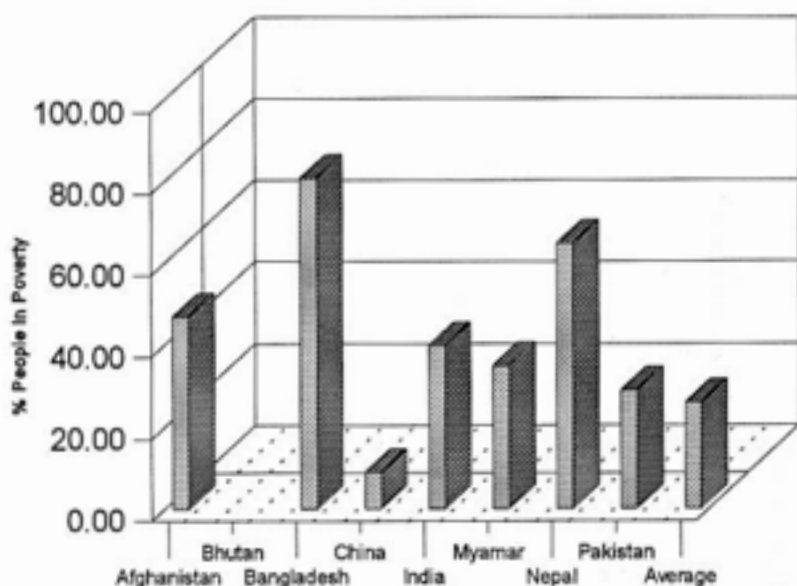
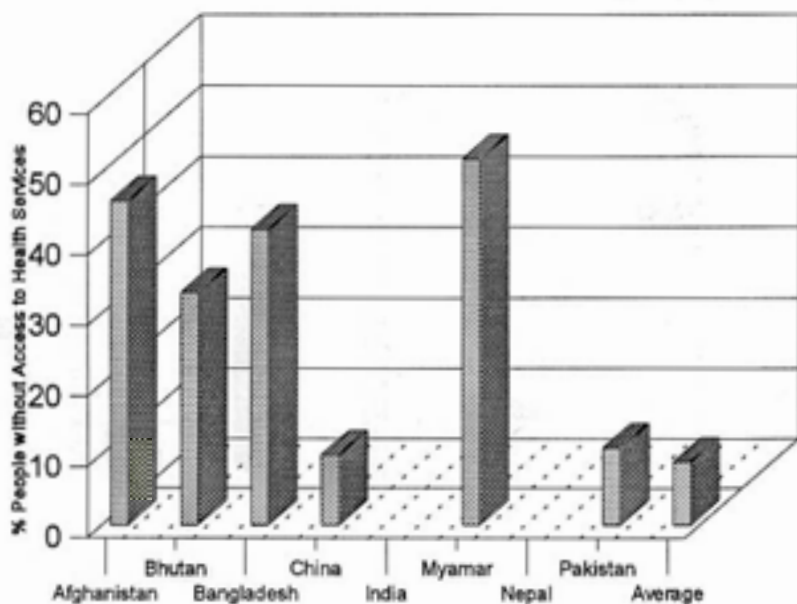
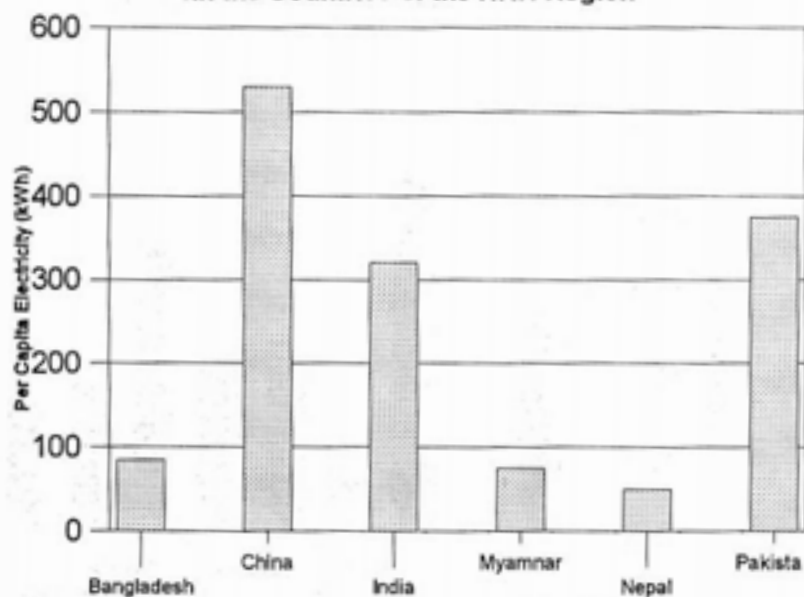


Figure 6: People without Access to Health Services in the Countries of the HKH Region (%)



**Figure 7: Per Capita Electricity Production
in the Countries of the HKH Region**



**Figure 8: Commercial Energy Intensity
in the Countries of the HKH Region**

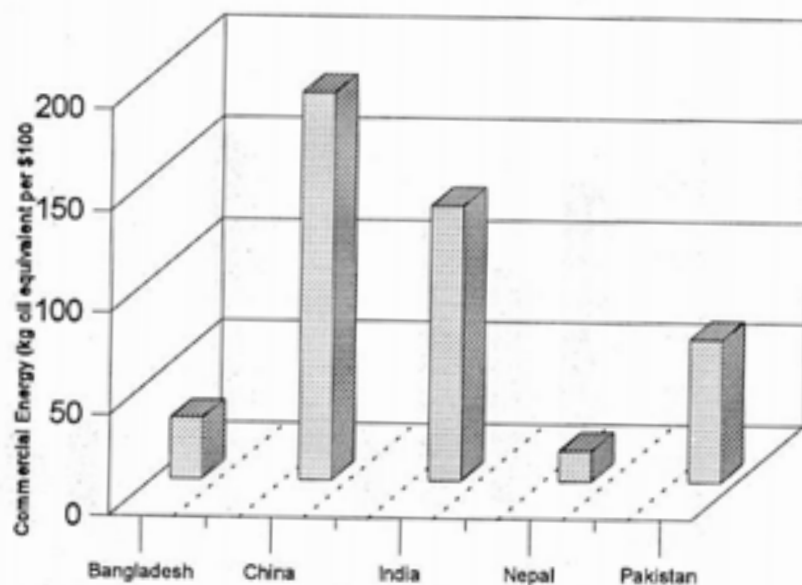


Figure 9
Relationship between Urbanisation and
Commercial Energy Consumption

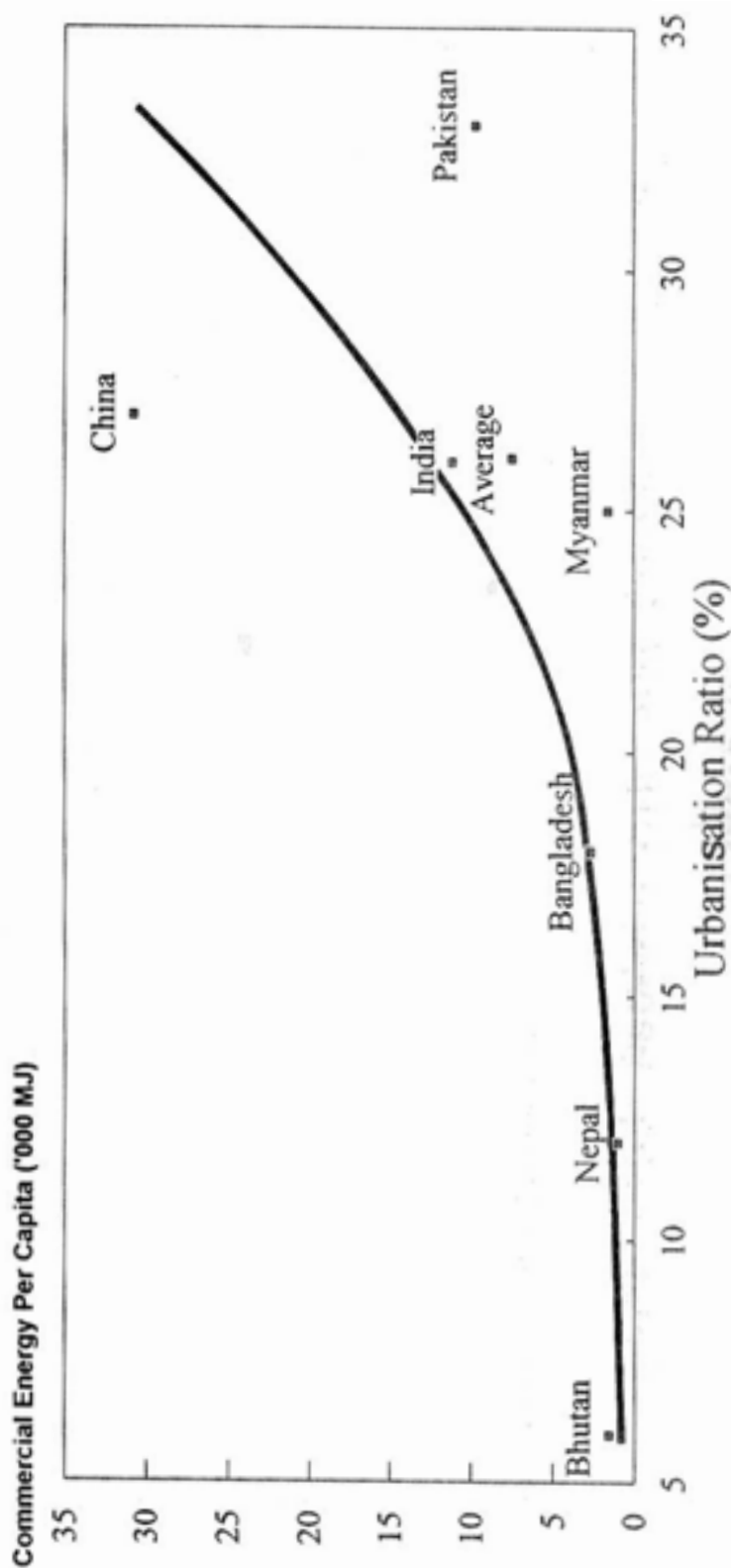


Figure 10

Relationship between GNP and Commercial Energy

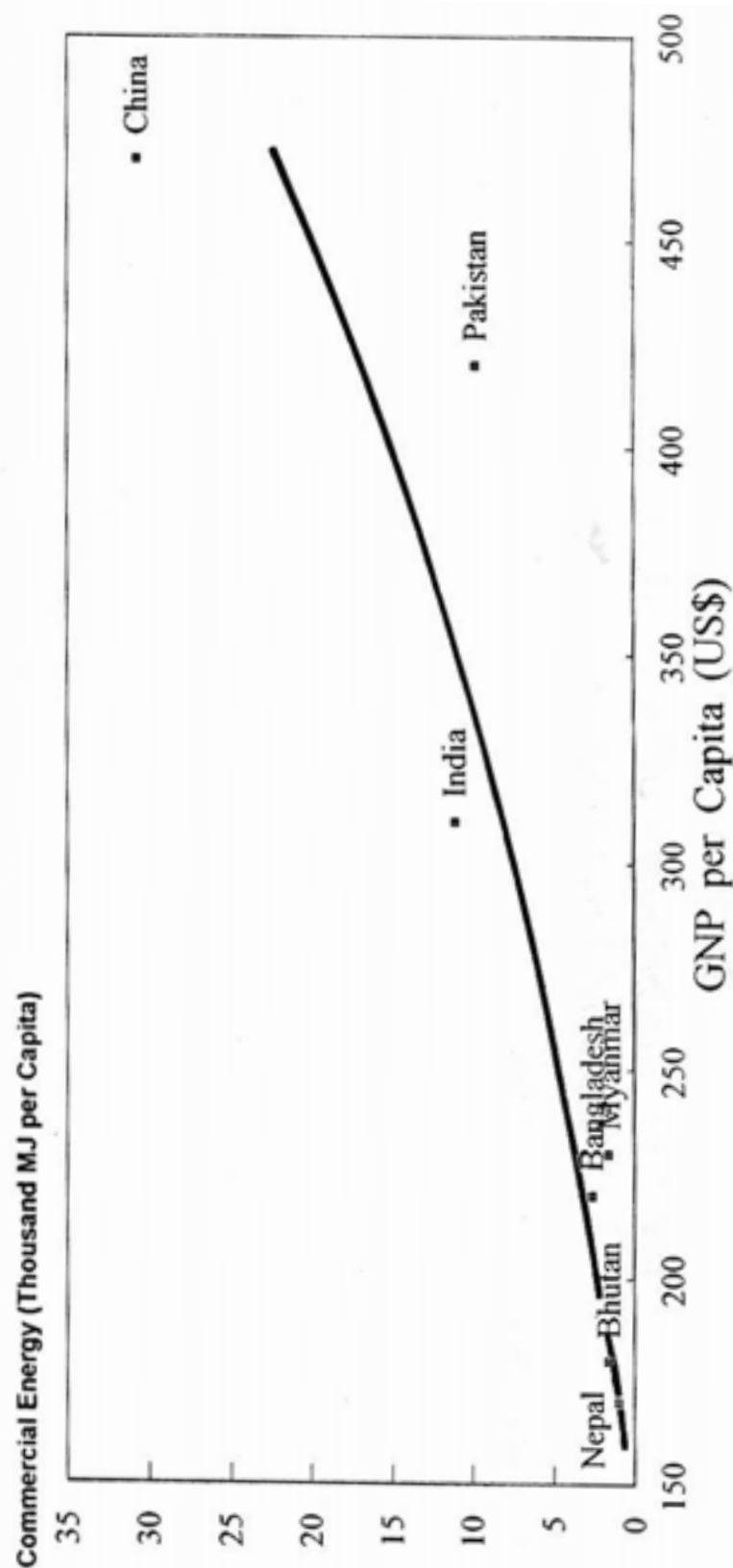


FIGURE 11

ENERGY RESOURCES AND TECHNOLOGY TRANSITIONS

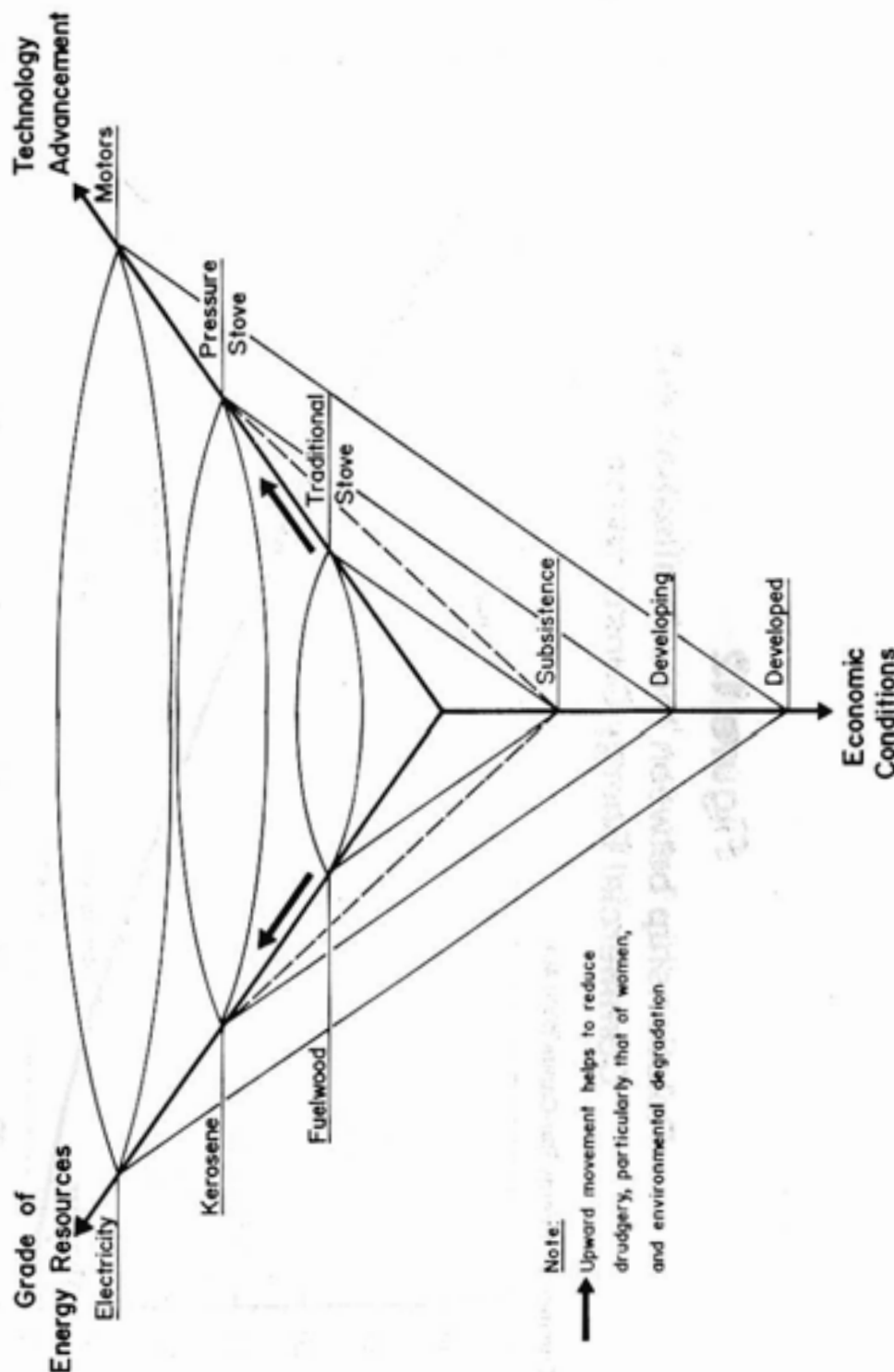


Figure 12
Relationship between Industrialisation and
Commercial Energy Consumption

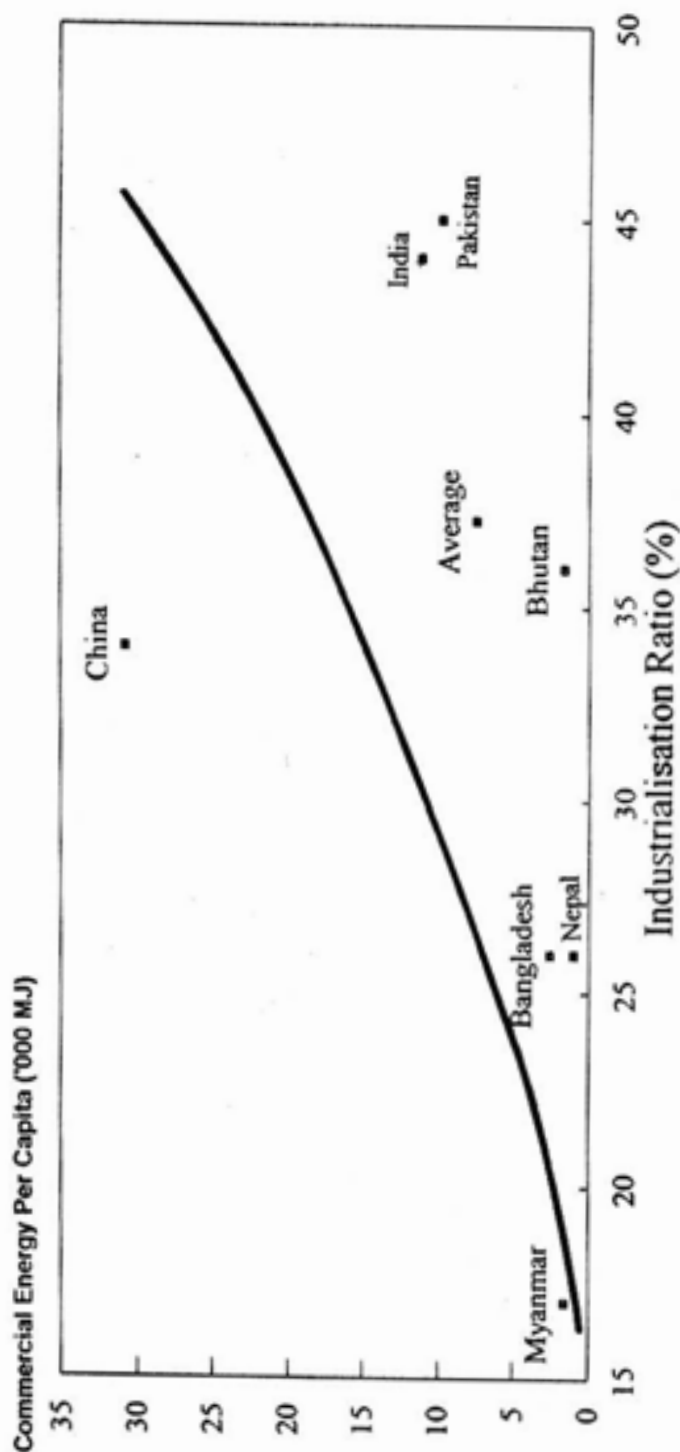


Figure 13

HUMAN DEVELOPMENT INDICATORS IN THE COUNTRIES OF THE HKH REGION

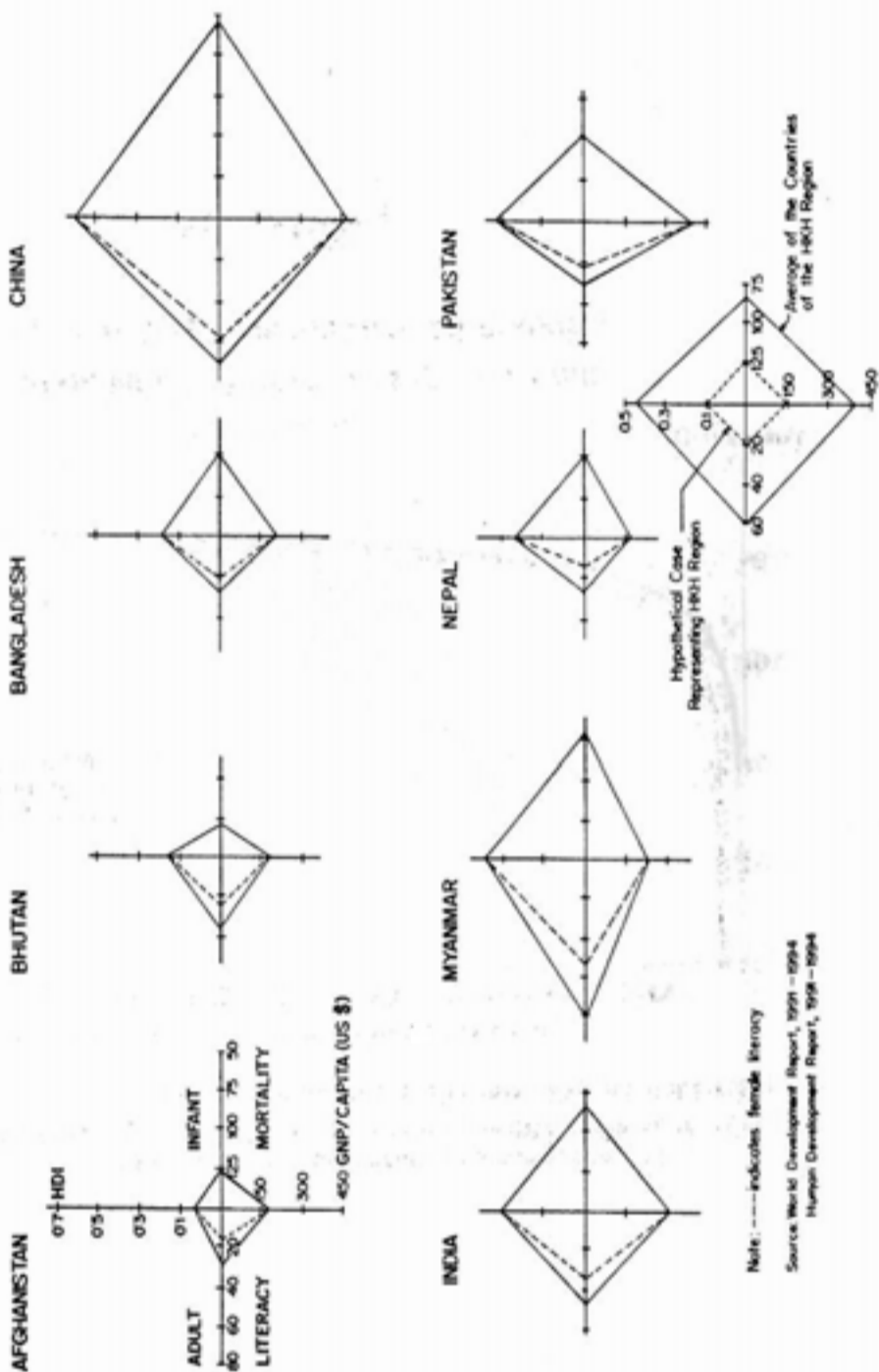
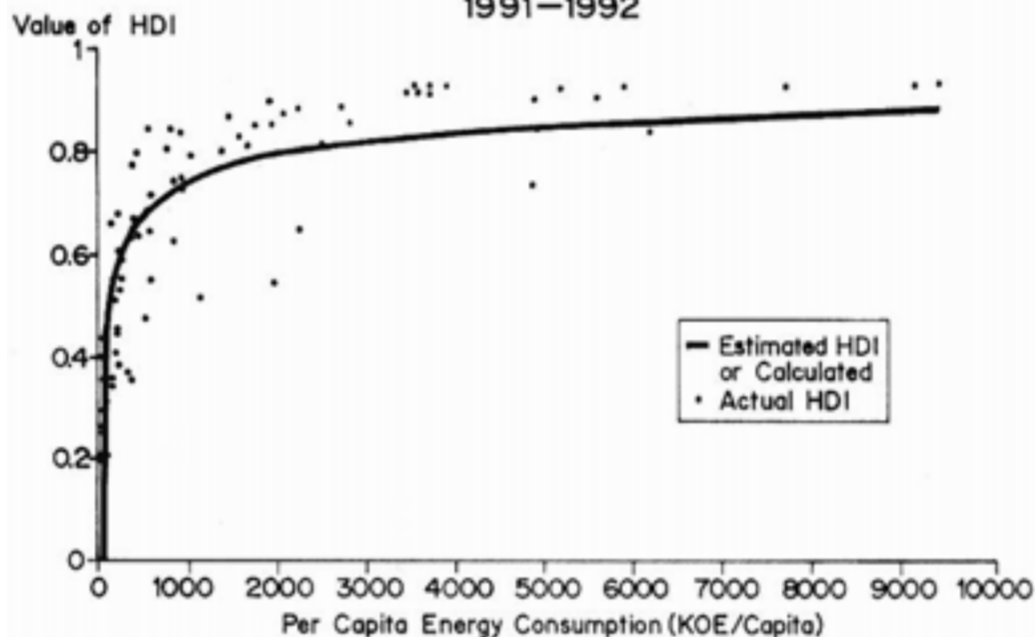


Figure 14

Estimated Relationship Between HDI and Per Capita Energy Consumption 1991-1992

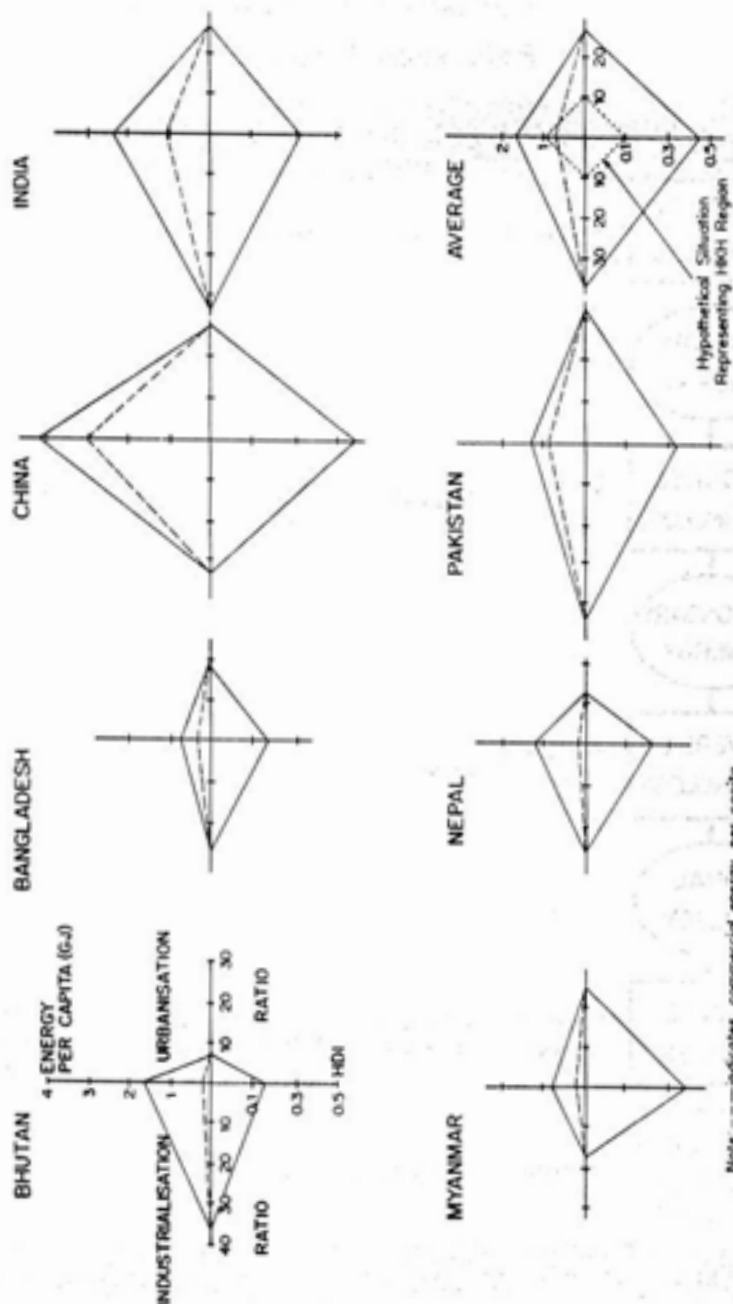


Note: Data for 100 developed and developing countries

Source: Philips, R., Goldemberg, J. and Johansson, T.B., Energy as an Instrument for Socioeconomic Development, UNDP (1995)

Figure 15

ENERGY CONSUMPTION PATTERN AND SOCIOECONOMIC VARIABLES



Note: --- indicates commercial energy per capita
 Source: World Development Report, 1991-1994
 Human Development Report, 1991-1994
 Energy Statistics Year Book, 1990-1994

FIGURE 16
 Conceptual Framework for
 Reference Energy System

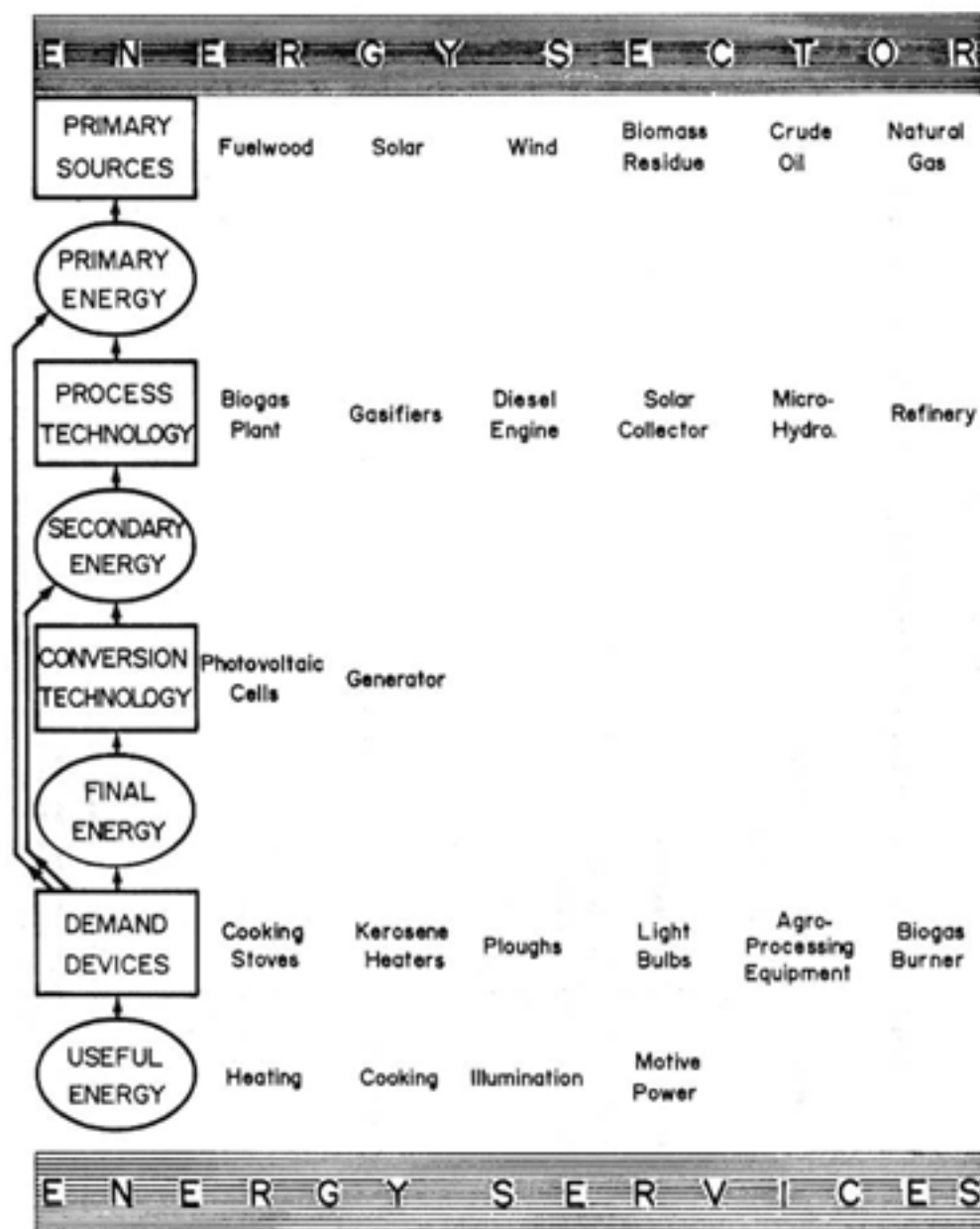
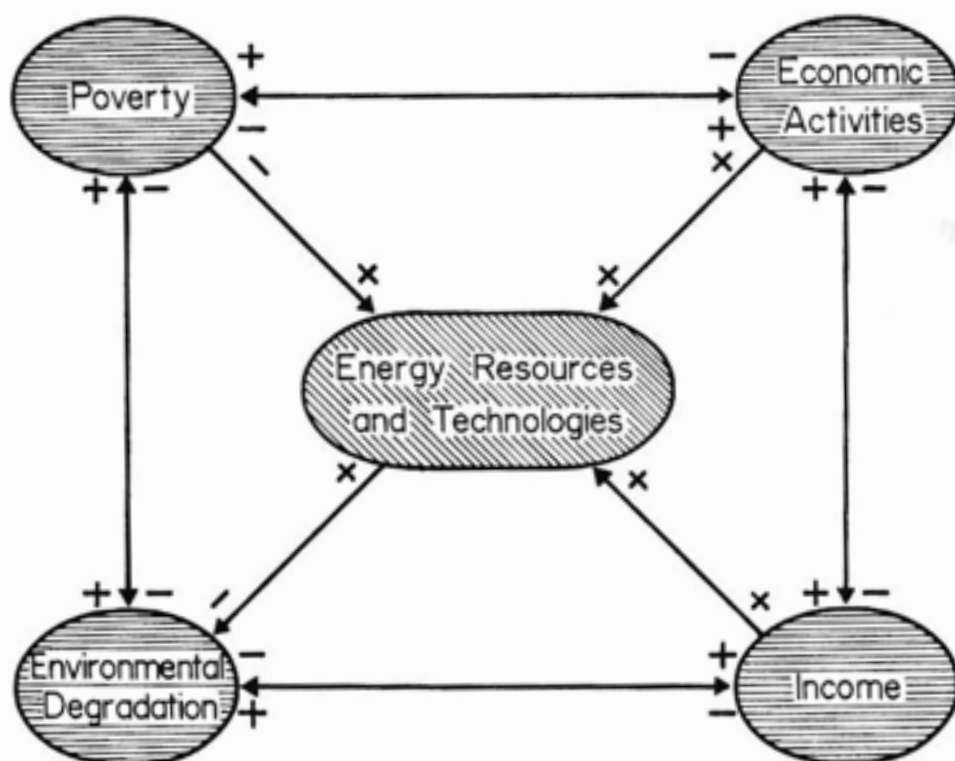


FIGURE 17

Poverty, Environmental Degradation
and
Energy Resource and Technology Linkages



+ Indicates increase
- Indicates decrease

