

lines should be explored, especially those related to livestock and small local food surpluses. Oil and rice mills, which constitute about 98% of all cottage industry production value in Nepal, represent only 1% of the production in the Gandaki Zone. Gandaki is a net regional importer of both of these commodities; rice, usually brought in as paddy, requires dehusking, but oil seeds are often milled in the Terai and sold as processed oil in Gandaki. There is probably limited potential for additional rural mills (Rs 20,000 per unit including 7 HP engine) in certain areas, but expansion potential is probably not sufficient to warrant special promotion. Typical problems of existing units are lack of spares and repair capabilities, and need to pay 25-30% to moneylenders.

48. Rural bakeries can be good businesses in areas surrounding towns. Most units invest about Rs 2,-3,000 for earth kilns, tables, tubs, and small metal tins. The average unit bakes 300 loaves a day. Gross sales average Rs 330, raw materials and wages total Rs 196, and commission agents get Rs 45, leaving Rs 59 daily or Rs 1,180 monthly for the entrepreneurs. However, common problems are unreliable workers and commission agents, scarcity of working capital for inputs, competition from modern bakeries, and occasional scarcity of sugar and flour.

49. Problems. Major problems with food processing industries in Gandaki are scarcity of raw materials, lack of spare parts and repair capabilities, high import prices and interest rates for equipment purchase, limited local purchasing power for packaged foods, and overcapacity in certain areas.

50. Prospects and Areas for Focus. The subsector specialist should explore possibilities for very small agro-industry development in dairy products, dried meat, fruit preservation, khansari sugar, honey, and rice and oil mills on a highly selective basis. Once promising product lines are determined, the consultant should recommend number and locations of units, appropriate technology, investment requirements, expected operating results, marketing methods, training needs, and links with agriculture.

### III. Institutional Support for Cottage Industries

51. Nepal has the framework for public and private support to cottage industries. The two major commercial banks, Nepal Bank Ltd. (NBL) and the Rastriya Baniija Bank (RBB), are now responsible for lending to small and cottage industries (SCI), and a credit guarantee scheme is in place. The Department of Cottage and Village Industries (DCVI) is responsible for promotion, technical assistance and training in the sector. DCVI's subsidiary, the Cottage Industries and Handicrafts Emporium Ltd. (Emporium), is to provide marketing assistance, raw material bulk purchase and resale services, and sale of parts and equipment; the Emporium sees its role as secondary and complementary to that of private marketers, which are responsible for the majority of commercial activity in exports, local sales, and raw material supply. The Trade Promotion Center (TPC), an autonomous unit of the Ministry of Commerce and Industry, is the agency responsible for contacts between Nepalese exporters and prospective importers.

52. Although public and private support units exist, the institutions need strengthening, programs and operations need to be improved and redirected, and coordinated schemes involving the various support agents need to be developed. The following paragraphs discuss existing institutional arrangements or credit, marketing and technical assistance to cottage industries. Within the study, specialists will recommend needed programs and institutional responsibilities for their respective subsectors; the Project Director and Chief Consultant will coordinate these proposals into a proposed program for public and private institutions. The overall impact of these programs on the institutions, the setting of priorities, and related issues will be handled during preappraisal and appraisal stages.

#### Credit to Cottage Industries

53. In 1975, responsibility for lending to industries with fixed assets below Rs 200,000 was transferred from NIDC to the two major commercial banks, with a brief interlude during which DCVI made small industry loans. The decision to transfer responsibility for SCI lending to commercial banks seems sound. NIDC's lending to SCIs had been limited and highly concentrated in the Central Region and the Terai; disbursements were less than 50% of commitments; and repayments were alarmingly low. HMG felt that the commercial banks' branch structures <sup>1/</sup> would enable them to increase the geographical reach of SCI lending, and improve disbursements and collections; also HMG felt that commercial bank's experience making small working capital loans to commercial enterprises using simple procedures would be relevant to SCI lending. Also, commercial banks had the resources to lend to SCIs; in 1975, the Rastra (Central) Bank established a requirement that the commercial banks lend 7% of deposits to priority sectors (small scale agriculture, industry and commerce).

54. The experience, policies, and small enterprise lending procedures of the two commercial banks differ markedly. At present, Nepal Bank Ltd. lends 2.5% of deposits to priority sectors, while Rastriya Banijya Bank is lending 9.2% of its deposits to small enterprises and plans to exceed 12% in FY78. NBL lends for 5-10 years for fixed assets and 3-5 years for permanent working capital, while RBB's maximum repayment period is 5 years for fixed capital and one year for working capital, including grace. Interest rates of both banks are 10% for cottage industries and small scale agriculture and 14% for small scale services (vs. normal 11% for fixed capital and 14% for working capital); deposit rates are 13%, making small industry lending a losing venture. Both banks rely heavily upon borrower's collateral and the bank staff's knowledge of the businessmen; RBB requires collateral for loans, but for smaller loans secondary and commercial guarantees are accepted occasionally. NBL's staff usually write short appraisal reports to determine project viability, while RBB's central management feels that projects are too small and uncertain to warrant appraisal reports.

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<sup>1/</sup> Further details on patterns of priority sector lending available in Annual Reports of Credit Guarantee Corporation.

55. In 1975-76, NBL made 670 priority sector loans with an average loan size of Rs 18,000 and total priority sector lending of Rs 12 million. However, only 40 loans, totalling Rs 748,000, were made to small and cottage industries while 137 service sector loans, mainly for trucks absorbed 82% of NBL's priority sector lending. RBB made 1,009 priority sector loans in 1975-76 with loans totalling Rs 11.9 million and averaging Rs 11,800; 295 cottage industries receive loans averaging Rs 5,600 and totalling Rs 2 million, 16.5% of priority sector lending; 245 service sector loans, mainly for trucks, absorbed 71% of RBB's priority sector lending. NBL lent a higher proportion of funds to Hilly Areas than did RBB (35% vs. 13%), RBB lending being more highly concentrated in Kathmandu (46% for RBB vs. 29% for NBL). SCIs which have received loans include: wood processing, rice mills, brick tiles, handlooms, basketry, bakeries, and leather products. 1/

56. Progress of small industry lending has been hampered by: (a) need for training of zonal and branch staff in basic SCI appraisals; (b) insufficient branch staff to do traditional deposit and commercial lending business as well as SCI lending; (c) skepticism, especially by Nepal Bank, regarding SCI's viability and ability to repay; (d) failure in the administration and implementation of credit guarantee scheme; (e) dispersion of population, making subproject identification, appraisal, collections and follow-up difficult, even for commercial banks with branches; (f) lack of coordination, at working level, between staff of DCVI and commercial banks; DCVI staff, now involved mainly in long-term training and registration, could help identify cottage industries and provide technical marketing assistance.

57. Other major problems include that: (a) the security requirement is a major barrier to smallest units; (b) information on the availability of funds from commercial banks is extremely scarce at the village level; the commercial banks do no active promotion, but rather rely on SCI's initiative; (c) since most rural-based cottage and agro-industries receive payment in kind rather than cash for their services, increased production capacity would not necessarily be reflected in capacity to repay loans; (d) RBB has the policy of limiting loans to those firms located up to one day's walking distance (about 8 miles) from the district branches, leaving a large portion of the Gandaki Zone ineligible; while this policy may seem restrictive, it reflects the need to develop supervision, follow-up and technical assistance to small units; coverage could be expanded once effective support for existing and new enterprises within 8 miles of district branches was established.

#### Marketing of Cottage Industry Products

58. Cottage Industries and Handicrafts Sales Emporium. The Emporium is a public limited company functioning as a subsidiary of DCVI. Authorized capital is Rs 5.0 million, paid up capital Rs 1.2 million. The Emporium has a general manager, 20 staff members at headquarters, and 40 assistants located in 16 stores and sales branches. Its major functions are:

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1/ Further details on patterns of priority sector lending available in Annual Reports of Credit Guarantee Corporation.

(a) Marketing assistance, largely through the decentralized purchase and resale of cottage industry products from its 16 stores and branches; in 1976-77, the Emporium purchased Rs 4.6 million and resold the items for Rs 5.2 million. Handlooms and textiles have been the major items (Rs 1.3 million in 1976-77); curios were second with Rs 0.7 million. However, not all of the Emporium sales were of artisan products; more than 80% of all handloom goods come from public sector factories. The management of the Emporium estimates that these public sector sales represent less than 5% of total local sales of cottage industry products. In both curios and handloom products, the Emporium serves as a market of last resort for artisans, since private exporters, when they have orders, are willing to pay more. The Emporium normally pays estimated artisan costs plus 15% profit. In some cases, the Emporium has promoted new products which later were taken over by private merchants and exporters. Merchandizing by the Emporium is weak. Its shops have limited variety, insufficient stock, and poor eye appeal relative to private shops.

(b) Raw Material Purchase and Sale. The Emporium supplied artisans with Rs 1.96 million in raw materials during 1976-77, a sharp drop from Rs 9.9 million in 1976-77. This decline in activity was due largely to difficulties in importing cotton yarn and thread, the major inputs offered by the Emporium. In 1976-77, no cotton was sold, with major imported inputs being: stretch nylon yarn (Rs 53,000); coconut oil and tallow (Rs 15,000); polyethylene granules (Rs 12,000); dyes and chemicals (Rs 18,000); formica (Rs 8,000); and others (Rs 8,000). The Emporium's role as raw material supplier is hampered by external problems, especially India's ban on critical imports to Nepal, especially yarns and thread. Also, the Emporium's mandate for self-sufficiency combined with its meager capital base and limited earnings from 10% markups limit the Emporium's ability to purchase large amounts of raw materials when imported commodities are available and when prices are attractive. In addition, it appears that significant strengthening in the Emporium's purchasing and inventory management methods is required.

(c) Equipment and Tool Sales. The Emporium's sales of equipment and parts totalled Rs 283,184 in 1975-76 and Rs 696,896 in 1976-77. Major items were: sewing machines (300), hosiery machines (150), tool boxes (30) and handloom equipment. The Emporium prices for these items are usually only 5-6% less than private retail prices. Artisans have difficulty importing directly since 40-60% delivery charges prevail. The Emporium coordinates with DCVI's requirements but does not have similar coordination with commercial banks.

59. Trade Promotion Center. The Trade Promotion Center (TPC) is an autonomous unit, financed from the budget of the Ministry of Industry and Commerce. TPC has about 10 professional staff engaged in facilitating contacts between Nepalese exporters and overseas importers by (a) introducing prospective importers to relevant exporters and producers; (b) referring inquiries from abroad to potential Nepalese exporters; (c) assisting entrepreneurs with export procedures; and (d) publishing information on major exports in handicraft industries and other lines. TPC has been quite effective in assisting export contacts for producers and marketers of garments, woolen goods, and handicrafts.

60. Private Exporters. Most marketing is performed by private exporters. There are about 1,000 exporters of woolen, garment, and handicraft products; most are small exporters with annual volumes of less than US\$50,000. Strong export incentives exist for marketers, who are eligible for a 60% export entitlement to import luxury and other items. Problems encountered by private exporters include: (a) difficulty in establishing market contacts, (b) problems competing due to lack of raw materials, diffused production base, and need to airship, (c) problems organizing sufficiently large production volumes to meet exporter's minimum requirements. Manufacturer-exporters face additional difficulties related to undisciplined and relatively high cost labor force, limited access to export incentives, and problems receiving adequate credit to produce to stock.

#### Technical Assistance to Cottage Industries

61. Department of Cottage and Village Industries. DCVI is responsible for promotion, technical assistance, training and licensing of small scale and cottage industries; in addition, DCVI has had an intermittent role in credit to SGI. DCVI has headquarters in Kathmandu, 4 regional offices, and branches in most districts. Regional offices normally are responsible for long-term training and licensing, while District extensionists are to provide individual technical assistance to artisans.

62. The Manager of the Western Regional Office, covered under the study, works with 35 staff members, 13 of whom are technical. Most staff members work in one year training programs in hosiery and knitting, carpentry, textiles and handlooms, electricity, and mechanics. Only about 130 people received training last year from the regional center, and all are trainees for one year. The results of these training courses has been mixed; in carpentry and knitting especially, alumni have had difficulty finding employment which utilizes their skills. Coverage of these training courses is extremely small, and beneficiaries are usually youth rather than craftsmen, who would require short up-grading courses. The trainers are also responsible for providing some individual technical advice and preparing and distributing project profiles and other materials to entrepreneurs. However, in the last year, only 12 individual units received technical assistance from the region. The districts are apparently more involved in this promotional work and provision of schemes. In addition to these stationary training programs, a one-month mobile training course was offered in Magdi last year, training 20 people in handlooms.

#### IV. Arrangements for the Cottage Industry Study

63. Phases. The study will involve two phases: (a) sample surveys of existing cottage industries and public and private support institutions in selected subsectors, and (b) detailed preparation of subsector packages, potential project components and costs, including the required institutional support. Phase I will be conducted by ISC staff allocated full time to execution of the study, with assistance from DCVI field personnel for data

collection. Staffing of Phase II will include 5 expatriate subsector specialists, with experience in cottage industry organization and marketing (see chart on Timing and Stages, Annex 8).

64. TORs. The overall Terms of Reference and methodology for the study were finalized during the October-November Mission to Nepal and individual terms of reference for subsector specialists were developed and agreed. These subsector specialists will enter in Month 5 of the study; we are finalizing a short list of consultants, mainly with practical, private sector experience, is being finalized. This short list, which is divided by subsector and from which the consultants will be selected, will be provided to DCVI and ISC. Copies of the finalized general TORs and specialist's job descriptions are included in Annexes 8 and 9.

65. Contract. During the October-November Mission, the model contract was adapted, to the satisfaction of ISC and DCVI. Substantive changes from the contract were (a) substitution of normal, direct IDA disbursement arrangements for the formation of revolving fund, and (b) leaving tax and duty free arrangements for expatriate consultants open, since this is an unresolved issue on all Nepal projects. DCVI will follow up the tax issue with the Ministry of Finance.

66. Starting Date. Once the contract is signed, the study can begin, since subsector specialists are needed only beginning in the fourth month. DCVI and ISC hope to begin survey work in February 1978. In order to have the expatriate consultants available on time, recruitment should begin when the contract between ISC and DCVI is signed, and HMG should work to resolve the issue of taxation of expatriate consultants.

67. Staffing and Budget. Total costs for the cottage industry study are estimated at Rs 2,539,770 (US\$203,180). Sixty local man-months and 32 expatriate man-months would be allocated to the study with salaries totalling Rs 1,556,750 (US\$124,540). Other expenses, mainly transportation, would total Rs 982,970 (US\$78,640). These estimates are tentative and could be revised according to actual expenditures. Details of Staffing and Budget appear in Annex 8.

## CHARACTERISTICS OF COTTAGE INDUSTRIES

### Definitions

1.01 In Nepal small industries are defined as manufacturing, processing, repair and tourism operations with fixed assets (book value) of less than Rs 200,000. Within the small industry group, cottage industries are those with fewer than 10 employees; although most cottage industries do not use power, they also include small units using diesel or electrical energy e.g. rice and oil mills, tailors, power looms. 1/

1.02 Geographical Distribution. From its 1973 Sample Survey of Cottage and Small Scale Industries, DCVI extrapolated that there are about 377,000 cottage industries in Nepal. Of these, 56% are in the Western Development Region, 26% in the Far Western Development Region, 15% in the Eastern Development Region, and 3% in the Central Development Region. 2/

1.03 Fixed Assets. Fixed asset investments in these industries are small: 90% of the enterprises had fixed assets (book value) of less than Rs 500, 5% with fixed assets valued between Rs 500 and 1,000, 4% between Rs 1,000 and Rs 10,000, and less than 1% had fixed assets valued at Rs 10,000-20,000. These fixed assets are probably undervalued by a factor of 2-3; however, the fixed investments per employee are still extremely low.

1.04 Employment. Almost all surveyed enterprises had fewer than 5 persons engaged: 25% had a single operator and only 8% of the enterprises had 6-9 persons engaged. Of the estimated 1 million people employed in these cottage industries, 59% were males, 41% females. Over 98% of all workers were unpaid, reflecting the predominance of family enterprises and the nonmonetized nature of most cottage industry operations in Nepal. Only about 17,000 workers were wage earners, 85% of which were males. Most blacksmiths, tailors, and shoemakers come from the "untouchable" castes, and these rural artisans are normally paid annual portions of rice for regular services to specific families. Rice mill operators and basketmakers are paid in a similar manner.

1.05 Exports of metal handicrafts accounted for Rs 12.7 million of exports in 1975/76 and about Rs 20.6 million in 1976/77. In carpets, Rs 9.2 million worth were exported in 1975/76, and Rs 27.9 million in 1976/77.

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1/ The Department of Cottage and Village Industries (DCVI) is responsible for Technical assistance to small and cottage industries with fixed assets of less than Rs 200,000.

2/ Western and Central Development Regions are covered under the Cottage Industry Study.

Other major lines and 1976/77 exports were: readymade garments, Rs 4 million; woolen goods, Rs 3.9 million; and Nepali paper, Rs 1.2 million. Handloom cloth was a minor product with Rs 20,000 exported in 1975-76 (see Table 1).

1.06 The major importers were Hong Kong, West Germany and the United States. Hong Kong bought (largely for re-export) 87% of Nepalese paper product exports, 64% of readymade garments exports, 10% of woolen carpet exports, and 21% of handicrafts (see Table 2). Western Germany accounted for 16% of the exports of Nepalese metal handicrafts, 27% of carpets, 26% of bamboo and wooden goods, 28% of Nepal's woolen goods and about 10% of readymade garments. The USA bought 20% of carpet exports, 24% of readymade garments, 18% of metal handicrafts, and 12% of woolen goods.

1.07 Productivity by Subsector. Subsectors which account for 96% of the Rs 259.5 million production value by cottage industries are: (a) fiber products (ropes, baskets, mats), 32.7%; (b) cotton products (handloom, ropes, bags), 30.2%; (c) food processing (rice, oil, biri), 17.9%; and woolen products (rugs, blankets, sweaters, jackets), 15.8%. Subsectors of less importance are metal products (agricultural implements, utensils), 1.6% and wood products, 1.7% (See Table 3).

1.08 Subsectors by Region. In the Western Development Region, the most important subsector in terms of present production is fiber products, which represent 88% of present production, followed by woolen products (5.7%), and metal products (3.3%). Food processing industries have a minor role in the Region, accounting for less than 1% of total SCI production, compared with about 18% in Nepal as a whole. This paucity of food processing reflects low agricultural yields in the Region, which consists mainly of hilly and mountainous areas. The Gandaki Zone, covered by the Cottage Industry Study, is a net importer of both rice and oil, which represent nearly 100% of cottage industry food processing in Nepal (see Table 3, Annex 1).



TOTAL EXPORTS IN PRIORITY SUBSECTORS<sup>2/</sup>

SITC	Product	FY73/74		FY74/75		FY75/76		FY76/77	
		Quantity	Value (Rs 000)	Quantity	Value (Rs 000)	Quantity	Value (Rs 000)	Quantity	Value (Rs 000)
657.5	Woolen carpets	8,154 pcs. +834 Sq. M.	3,752	1,193 pcs. +568 Sq. M.	7,853	4,690 pcs. +12,754 Sq. M.	9,276	47,473 Sq. M.	27,906
896.06	Handicrafts (metal figures, brass, utensils & others)	-	6,868	-	17,508	-	12,743	-	20,559
841.1	Readymade garments	-	1,030	-	1,325	-	1,973	-	4,041
653.21	Woolen goods	-	256	-	6,704	-	2,772	-	3,924
641.91	Nepali Paper	-	121	-	2,899	-	2,266	-	1,202
632.73	Wooden, Bamboo and Cane Goods	-	244	-	230	-	467	-	616
652.13	Handloom Cloth	3,534 yds.	24	5,126 yds. +780 mtr	142	437 M	20	NA	NA
<u>Total, Priority Subsectors</u>			<u>12,295</u>		<u>36,661</u>		<u>29,517</u>		<u>58,248</u>

ANNEX 1  
Table 1

1. Figures are rounded.
2. Source: Trade Promotion Center, Nepal.

**DISTRIBUTION OF NEPAL'S EXPORTS  
IN PRIORITY PRODUCT LINES  
1975-76  
(Rs)**

	Wooden and Bamboo Goods	Nepalese Paper	Handloom Cloth	Woolen Goods	Woolen Carpets	Readymade Garments	Handicrafts
<b>Western Europe</b>							
Germany	120,787	66,126	-	322,326	2,481,720	193,817	2,005,695
Switzerland	32,117	26,572	-	18,790	2,011,988	72,026	276,582
Italy	128,301	27,970	750	20,141	62,195	98,391	305,485
France	1,018	37,236	-	199,307	344,638	106,725	609,650
United Kingdom	9,309	841	-	155,721	57,191	162,975	410,932
Belgium	-	-	-	-	206,675	4,762	338,586
Netherlands	28,698	890	-	4,260	133,306	45,091	154,133
Finland	-	-	-	300	2,930	140	9,138
Denmark	1,435	9,788	-	28,489	230,504	39,299	90,610
Other	16,060	-	8,176	68,646	198,709	121,781	419,464
<b>Total Western Europe</b>	<b>337,725</b>	<b>169,423</b>	<b>8,926</b>	<b>818,180</b>	<b>5,524,181</b>	<b>845,007</b>	<b>4,620,275</b>
<b>North America</b>							
USA	49,240	75,248	-	136,189	1,907,612	464,090	2,281,117
Canada	38,403	250	11,049	4,115	35,882	38,113	78,388
<b>Total North America</b>	<b>87,643</b>	<b>75,498</b>	<b>11,049</b>	<b>140,304</b>	<b>1,943,494</b>	<b>502,203</b>	<b>2,359,505</b>
<b>East Asia</b>							
Japan	22,240	14,753	-	26,309	134,941	126,489	785,835
Hong Kong	953	1,982,723	-	1,507,228	926,076	275,999	2,681,644
Australia	12,797	18,016	-	236,668	220,280	183,779	351,487
Singapore	-	4,644	-	5,414	88,248	-	861,168
Thailand	400	-	-	1,190	10,979	5,330	941,032
Other	1,996	230	-	35,491	86,500	27,265	79,815
<b>Total East Asia</b>	<b>38,386</b>	<b>2,020,366</b>	<b>-</b>	<b>1,811,860</b>	<b>1,467,024</b>	<b>618,862</b>	<b>5,700,981</b>
<b>South Asia</b>	<b>3,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5,267</b>	<b>-</b>	<b>-</b>
<b>South America</b>	<b>300</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>351</b>	<b>45,554</b>
<b>Middle East</b>	<b>-</b>	<b>720</b>	<b>-</b>	<b>370</b>	<b>14,037</b>	<b>717</b>	<b>1,290</b>
<b>Other Countries</b>	<b>127</b>	<b>97</b>	<b>-</b>	<b>870</b>	<b>114,025</b>	<b>5,821</b>	<b>15,753</b>
<b>GRAND TOTAL</b>	<b>467,181</b>	<b>2,266,104</b>	<b>19,975</b>	<b>2,771,584</b>	<b>9,276,203</b>	<b>1,972,861</b>	<b>12,743,358</b>

ANNEX 1  
Table 2

Source: Trade Promotion Center, Nepal Overseas Trade Statistics, 1975-76.

MAJOR INDUSTRY GROUP OF ECONOMICALLY ACTIVE POPULATION  
(1971)

	S E C T O R								
	Agriculture, Forestry & Fishing	Mining & Quarrying	Manufacturing	Electricity, Gas & Water	Construction	Commerce	Transport & Communication	Finance & Business Service	Personal & Community Service
<b> Nepal, Total</b>	4,579,552	36	51,902	1,596	5,016	63,560	9,637	3,466	137,759
<b>Regional Zone, Total</b>	581,701	21	13,582	1,082	2,486	16,026	3,444	1,754	53,740
Bhaktapur District	30,595	-	3,012	56	152	2,697	327	128	5,003
Kathmandu District	60,615	19	4,668	616	1,274	8,513	2,382	1,190	34,561
Lalitpur District	42,990	2	3,287	82	425	2,394	395	335	8,540
<b>Gandaki Zone, Total</b>	470,469	-	3,262	12	238	3,862	284	91	6,485
Gorkha District	77,347	-	295	2	29	238	27	11	1,084
Manang District	3,138	-	179	-	1	57	4	-	66
Lamjung District	61,691	-	297	-	1	205	14	3	414
Kaski District	60,365	-	763	4	134	1,866	102	44	2,226
Parbat District	64,618	-	376	1	220	220	12	4	485
Tanahun District	76,306	-	333	-	9	428	40	5	592
Syangja District	127,004	-	1,019	5	57	828	85	24	1,618

MAJOR OCCUPATION GROUP OF ECONOMICALLY ACTIVE POPULATION  
(1971)

	Prof/Tech Workers	Adminstrtr Workers	Clerical Workers	Sales Workers	Service Workers	Farm/Fish Workers	Prod/Labor Workers
Male	23,309	1,049	44,909	52,908	28,866	3,187,064	96,183
Female	2,008	46	1,831	7,249	5,365	1,392,271	9,466
<b>Regional Zone, Total (Both Sexes)</b>	6,484	561	19,701	15,093	13,378	581,707	36,732
Male	5,662	510	18,793	13,341	10,906	368,764	33,435
Female	822	31	908	1,752	2,672	212,943	3,297
<b>Bhaktapur District</b>	530	15	1,728	2,605	881	30,576	5,625
Kathmandu District	3,982	382	12,460	7,802	9,429	60,643	19,040
Lalitpur District	1,227	110	3,590	2,287	1,941	43,020	6,283
<b>Gandaki Zone, Total (Both Sexes)</b>	1,953	18	2,594	3,478	1,225	470,409	5,026
Male	1,829	17	2,368	2,460	895	265,940	4,099
Female	124	1	206	1,018	330	204,469	927
<b>Gorkha District</b>	331	2	347	234	177	77,343	599
Manang District	2	-	40	57	6	5,138	202
Lamjung District	201	1	124	200	32	61,691	379
Kaski District	458	10	1,091	1,669	397	60,322	1,577
Parbat District	259	-	120	193	57	64,617	474
Tanahun District	190	-	306	407	93	76,305	412
Syangja District	512	5	566	718	463	126,993	1,383

Source: Central Bureau of Statistics, Population Census, 1971.

PRODUCTION AND SALES OF PLYWOOD, CORRUGATED PAPER AND OTHER PAPER DEVELOPMENT FACILITIES IN CENTRAL AND WESTERN DEVELOPMENT REGION (1977)

MARK	Central Development Region			Western Development Region			Preparation			Total		
	Quantity (M³ '000)	Value (M'000)	Subtotal (M'000)	Quantity (M³ '000)	Value (M'000)	Subtotal (M'000)	Quantity (M³ '000)	Value (M'000)	Subtotal (M'000)	Quantity (M³ '000)	Value (M'000)	Subtotal (M'000)
<b>Waxes</b>												
Sheet waxes (poly, blackens)	3,751	255	2,435	187	6,470	3,375	270	3,095	434	3,729	1,164	4,893
Softeners, waxes and alcohols	27,464	277	2,054	14	14,432	316	81	10,043	375	57,502	11,060	68,563
Seals and gloves	4,507	162	6,154	215	30,796	647	8,872	234	81,423	2,315	26,734	699
Balches (umalua case)	6,422	112	3,354	24	2,125	17	1	1,856	13	33,288	164	3,349
Resins	-	-	-	-	2,103	137	1,254	127	15,167	1,023	6,120	777
Other	-	-	-	-	4,235	448	3,117	155	1,254	34	3,276	144
<b>Subtotal</b>	-	-	-	-	4,235	2,414	3,020	474	1,165	4,279	2,020	1,165
<b>Other</b>												
Shades	26,817,134	62,063	42,388	548	1,464	7	48	1,396	8	26,821,344	62,057	23
Bags and sacks	21,164	697	3,870	34	3,987	22	3,350	47	284	53,607	2,042	16,850
Fabric	2,127,521	1,821	2,071,342	1,424	3,615	26	3,657	2	2,158	51,508	631	13,888
Caps	-	-	-	-	17,403	31	1,146	215	25,429	6,050,410	13,351	641,432
<b>Subtotal</b>	-	-	-	-	17,403	31	1,146	215	25,429	2,113	78,452	4,537
<b>Other</b>												
Small paper and other	32,817	44	31,574	35	3,234,075	2,453	2,234,248	2,231	2,345,381	11,873	2,162,147	6,114
Big bathes	500,724	2,857	12,723	24	131,403	104	87,349	237	40,782	1,193,432	1,544	1,557,400
Wine and sleeves	221,713	1,482	474,645	1,252	3,780,420	4,460	874,451	2,204	859,228	2,234	3,024,433	12,238
Bamboo mats	23,121	705	3,903	63	20,964	56	7,110	19	28,449	471,600	1,253	29,143
Paper made of bamboo and cane	102,426	14	1,303	10	109,038	1,093	61,812	705	12,593	6,973	6,975	95,212
Chlorine made of bamboo	23,840	23	1,025	1	339,021	1,305	205,425	1	271,418	239,155	141	43,664
Paper made of bamboo and cane	37,909	231	548	2	2,119,947	20,472	821,420	3,449	1,401,478	3,574	2,051,988	1,237
<b>Subtotal</b>	-	-	-	-	1,534	37,374	44	11,622	1,463	2,333,282	25,123	41,106
<b>Other</b>												
Cases	1,409	474	164	41	6,420	258	1,463	1	1,124	63,409	1,445	55,178
Chairs and benches	3,084	417	740	183	347	24	82	8	141	11,922	779	58
Miscellaneous wooden furniture	4,455	21	374	8	3,379	83	1,316	35	2,771	34,771	1,331	2,726
<b>Subtotal</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Other</b>												
Spades, hoes and mattocks	6,923	62	-	-	24,084	645	2,814	10	24,154	134,023	1,279	10,202
Miscellaneous tools	66	1	-	-	24,321	115	1,251	11	21,401	120,267	511	3,009
Frying pan	11,485	175	10,446	42	203	5	69	4	12,395	189	185	2
Miscellaneous metal vessels	-	-	-	-	74	74	-	-	812	-	-	-
Flour shakers	-	-	-	-	11,183	1,202	643	87	10,288	144,409	5,212	1,213
<b>Subtotal</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Other</b>												
Parthen rice	8,407	15	7,210	12	772	7	19	19	3,182,671	17,244	2,015,424	10,478
Other rice	474,840	3,844	25,891	32	3,654	130	1,404	2	13,452	4,776	2,794,770	4,182
Other	-	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	-	-	-	-	-	-	-

Source: Sample Survey of Cottage Industries.

### HANDLOOM PRODUCTS

2.01 Background. Handloom units provide a low cost means of generating employment and earnings; looms, usually located in weavers' homes, cost Rs 600-800 (US\$50-65). Weaving can provide an incremental source of income to farming families, which constitute over 90% of Nepal's population; earnings per meter average Rs 2, with a maximum daily production of 8 meters. At present, there are about 10,000 handlooms operating full or part time in the Kathmandu Valley where the cotton handloom tradition is concentrated. Gandaki Zone holds only about 600 cotton handloom; in the hilly areas, traditional weaving has been limited to woolen blankets and specialized products, such as Nepalese caps.

2.02 Cloth merchants claim that most Nepalese customers prefer local handloom cloth to milled varieties. However, production is constrained by sporadic availability of imported raw materials, limited production of the small numbers of existing looms (due to demands of farming) and the paucity of skills outside Kathmandu Valley. Present exports are extremely limited (Rs 20,000) in 1975/76) but considerable interest has been demonstrated recently due to quotas placed on Indian handloom exports. Quality and patterns of handloom cloth from the Kathmandu Valley are of export quality, appropriate for men's shirts and women's blouses.

2.03 The Department of Cottage and Village Industries (DCVI) has promoted handloom weaving outside the Kathmandu Valley by providing training and credit, as well as raw material from its subsidiary, the Cottage Industry and Handicraft Emporium (Emporium). Success of these programs has been limited largely to towns, such as Pokhara in the Gandaki Zone, with Kathmandu Valley remaining the main area for significant quantities of high quality cloth.

#### Characteristics

2.04 In Kathmandu Valley, major centers of handloom weaving households exist in Patan, Bhaktapur and surrounding villages. Kirtipur Village has an especially large concentration, with about 2,000 household weaving units making high quality cotton cloth. About 50% of the weavers own their looms and sell cloth either to bicycle-riding collectors or directly in the Kathmandu market. The other 50% work for master weaver/wholesalers, who provide household units with looms, raw materials, and regular orders. For standard checks or stripes, independent weavers normally get Rs 2 per meter, while units working under master weavers would get 50 pisas per meter for the same work. Thus if a weaving family produces 150 meters a month, it would earn Rs 300 if working independently vs. Rs 75 if working under a masterweaver.

2.06 Masterweaver/wholesalers normally handle 20 to 100 looms, each loom providing 60 to 200 meters per month. One large master weaver/ wholesaler in Kirtipur owns 70 household looms. He pays 50 pisas per meter in labor charges, Rs 4-5 per meter for raw material (including dyeing of shanks); wholesale prices are Rs 7, leaving the masterweaver Rs 2 to cover costs of

looms and provide profits. The masterweaver's gross profits average Rs 18,200 a month, which enables him to pay for the 70 looms in 3 months. Masterweaver/wholesalers provide the weavers with regular supplies of dyed cotton thread and orders, with design and color specifications. Retailers often prefer to purchase from master weaver/wholesalers, who have the ability to stock volumes of finished cloth in a variety of colors and patterns. A typical master weaver/wholesaler may have no looms on his premises; most have storerooms for yarn and finished products and a retail shop for local, direct sales.

2.06 Independent weavers or master weavers purchase white yarn from the Cottage Industry and Handicraft Emporium or from private dealers; present prices are Rs 10 per pound, sufficient for 3 to 4 meters of cloth. White shanks are then sent to small dyeing houses, which dye the thread to weavers' specifications. In Kathmandu Valley, most colors are bright pinks, blues, turquoises, purples, greens and reds, although more subdued beiges and tans are also popular.

2.07 There appears to be sufficient dyeing capacity in the Kathmandu Valley although rudimentary methods, small batches and local dyes employed often result in uneven coloring and fading after a few washings. One typical unit in Kirtipur employs 2 family members and 8 paid workers. Men who do the dyeing get paid Rs 12 per day, while women who wash the dyed shanks are paid Rs 5. The unit is located on a hillside, with a small covered area for wooden heating of the dyeing tins. The unit can dye 150 lbs of black shanks per day or 50 lbs of bright colors which require 2 dyeings. Shanks are dyed in boiling cauldrons, washed in cement tubs, and hung in the sun to dry. Proprietors get an average of Rs 300 per day in dyeing charges, out of which Rs 68 must be paid for labor charges and costs of wood and local dyes average Rs 120. Monthly earnings of the owner-operators average Rs 2,500, a high return for fixed investment in building fixtures and equipment of no more than Rs 50,000.

2.08 Patterns in Kathmandu Valley include stripes, checks, and plaids, appropriate for quality men's shirts and women's blouses and dresses. While high quality cloth is available in Kathmandu, quality varies markedly. Part of the problem is that several members of a family may work on a single length of cloth, mixing agricultural and weaving chores. Also, many weavers are women, with family and farming responsibilities making weaving possible only in early morning and evening, with frequent interruptions.

2.09 There are a few "modern" handloom factories in Kathmandu, which have attempted to resolve problems of standardized quality by establishing control facilities and regular working teams. However, the potential for this type of unit is probably limited since per unit production costs for these factories average about 20% more than for household units due to higher overhead's although productivity is higher in factory units; benefits of trained, regular labor force are usually lost, since over half of the trained workers leave to start independent units. Absenteeism is high, many workers having farming and family duties. Other difficulties include problems getting commercial bank credit, competition from household handlooms, and limited production capacity making it difficult to meet prospective exports orders. Actual production levels of the few factory handloom units are about 25% capacity.

2.10 Recently, several Indian merchants have approached Kathmandu master weavers and larger producers with export orders; Indian exporters are anxious to comply with their export contracts but face quotas on Indian handloom exports. Nepalese units provide a short term solution. However, several Nepalese handloom producers/merchants would like to use this opportunity to establish direct and potentially more stable export contacts. One producer-merchant is attempting to establish a handloom producers' association or consortium, to enable large volumes from the combined production of local weavers.

2.11 Handloom System in Gandaki Zone. The handloom tradition in Gandaki is limited to weaving of rough woolen blankets by the Tamang in the north. During the last 10 years DCVI has promoted handloom units, with limited success in rural areas. There are 15-20 units in and around Pokhara Town. The structure of the handloom industry in Pokhara differs markedly from that of Kathmandu Valley. In Kathmandu, most units are located in homes, have one or two looms, with weavers working independently or for a master weaver. In Pokhara, most units consist of an entrepreneur, with no past experience in weaving, who hires 5-100 skilled weavers, and sells cloth directly to local retailers. Recently, DCVI has promoted loom units owned by graduates from DCVI training courses; previously these alumni worked as wage earners. As a result of limited experience and interest by wage-earning weavers in Pokhara, the quality of cloth from this area is significantly lower than cloth from the Kathmandu Valley.

2.12 Over half of the units in Pokhara weave and stitch intricate cloth for Nepali caps. Each weaver makes 12-17 inches per day, depending upon skill and intricacy of design. One yard makes 8 caps, sold at Rs 12 per cap. Wages and raw materials cost about Rs 10 per cap. All units have major problems with availability of colored cotton thread, although larger units have advantages in being able to purchase and stock larger quantities. The official importer is the Cottage Industry Emporium, which is often without stocks. Raw material prices have increased steadily. The Emporium purchases in bulk and charges 10% to cover overheads; the Emporium's purchases are constrained by limited finances, poor inventory planning, and difficulties in purchasing arrangements with India.

2.13 The units which weave the cloth also cut and stitch the caps. A typical small unit would have 10 looms (Rs 450 each), 1 foot pedalled sewing machine (Rs 850) and 1 piece of warping equipment (built for Rs 1,000). The largest unit in Pokhara has 75 looms, 3 sewing machines and employs 150 workers, mainly women. Workers are paid Rs 20-24 per yard, or about rupees daily.

2.14 Sales of caps are seasonal, with over 50% of sales being between November and February during the festival period; therefore, these units have major working capital credit needs to finance stocks of finished products. About 75% of the caps by larger units are sold in Kathmandu, with a larger percentage of smaller units' production being local due to limited market channels. Most small units sell directly to local retailers.

2.15 There are also about 10 handloom units in Pokhara which make cloth for garments. Two units have a few semi-automatic looms in addition to traditional standup handlooms. A typical unit in Pokhara would employ 15 workers and have 7 handlooms, and possibly 1 or 2 semi-automatic looms. Semi-automatic looms cost Rs 3,700 retail, or Rs 1,900 secondhand; handlooms can be purchased for Rs 600, or constructed for Rs 300-400. The handlooms produce an average of 8 meters a day, the semi-automatic looms, 13 meters, with monthly production of a unit averaging 1,500 meters or Rs 13,500. Cloth (mainly solids of maroon, blue and beige) is sold for Rs 8-10 per meter, with raw materials representing about 80% of costs of goods sold. Monthly wages average Rs 200 for spinners, Rs 200 for the handloom workers, and Rs 700 for the master weaver.

2.16 Cloth merchants in Pokhara claim that there is local consumer preference for Nepalese handloom cloth especially for saris and cotton shirting material. Limited total purchasing power dictates these preferences; alternatives to Nepalese handloom cloth (which is sold at Rs 5-15 a meter) are polyester from Korea, Japan and India (Rs 30-36), Indian printed saris (Rs 16-18) vs Nepalese solid saris (Rs 20-45). In spite of strong demand for Nepalese products, merchants in Pokhara sell mainly Indian cotton cloth due to supply constraints in Nepal.

2.17 Sources of credit for handloom units, usually requiring less than Rs 10,000, have included NIDC, DCVI and R.B. Bank, depending upon the date of the unit's initiation. Several units complained of the transition in financial institutions responsible for SSI lending; while a single institution is often willing to roll over loans and provide additional financing for expansion of successful units, the commercial banks now insist that past borrowings from NIDC or DCVI be repaid before additional credit is extended.

2.19 There is only one powerloom unit operating in Gandaki Zone. This unit, in Pokhara, illustrates the difficulties encountered in operating modern small industries outside the Kathmandu Valley and the Terai. The unit has 27 workers; weavers make 30-60 meters a day, earning Rs 15-18, according to productivity and complexity of the design. Power looms cost Rs 5,600 each, including a Rs 1,600 agent commission. The unit has had a series of problems in its 5 years of existence. First, it felt deceived by NIDC, which did not inform the entrepreneur of the agent fee for the powerlooms; the entrepreneur has, therefore, refused to repay the loan. The major problem in operating the unit is sporadic supply of raw materials from the Emporium and uneven quality of yarn when supplies are available. High quality yarn is occasionally available from China through the Emporium for Rs 10.9 per pound, while, at present, the only available yarn is low quality Indian yarn for Rs 14.5 per pound through private merchants. Another continuous problem is the high absenteeism (averaging 30%) with the owner dependent upon the few available skilled operators. Also, due to problems of maintenance, repair and lack of spare parts, actual production is 125 meters per day vs the 300 meters daily production capacity. Four of the eight machines have not operated for the last two months due to lack of spares, which normally require 3 months for delivery. Finally, the unit is plagued by the sporadic availability of electricity. The owner is a typical entrepreneur with no previous experience



in manufacturing, although he was a trader in cloth. He remains a trader and is subsidizing his manufacturing operation with the profits he makes through trade. The owner feels that in contrast to powerlooms there are strong markets and production possibilities for handlooms in the Gandaki Zone.

Problems and Prospects - Handlooms

2.19 Problems. The major problems of the handloom industry are the following:

- (a) Supply of cotton yarn and thread in scarce and sporadic due to India's banning of exports and poor inventory management by the Emporium.
- (b) Many looms in Kathmandu are owned by master weavers who pay one fourth the wages received by independent weavers, and recuperate costs of the looms with profits in less than five months.
- (c) Nepal has with limited direct export contacts for its handloom products with many Indians presently attempting to organize Nepalese production in order to meet their own orders.
- (d) Outside of the Kathmandu Valley there is little tradition in handlooms. The Department of Cottage Industry has attempted to promote handlooms in the districts but due to limited skill, experience and pride in craftsmanship of weavers working for entrepreneurs the quality of handloom products outside of the Kathmandu Valley is noticeably inferior.

2.20 Prospects. Strong prospects exist for Nepalese handloom products in export and local markets:

- (a) The design of cloth (and clothing) is unique and adaptable to various uses; in the Kathmandu Valley, color combinations are good and the stripes and checks produced are suitable for men's shirts, women's blouses and dresses.
- (b) Quotas on Indian handloom products opens opportunities for Nepal.
- (c) A significant local market appears to exist in substituting for both handloom and milled cloth imported from India, Korea and Thailand. Also there is local demand for specialized finished products such as Nepalese caps made of handloom cloth of a very intricate variety.

READYMADE GARMENTS

Background

3.01 Garments, made of handloomed or milled cloth, have expansion potential in both export and local markets. Nepalese and Tibetan blouses, dresses and jackets are unique and casual. Prices (US\$2 for shirts, US\$4 for dresses in Nepalese retail outlets) would allow the normal 300-400% markups for exporters, shipment, importers and retailers. These items could have lasting appeal; however, there is a danger that traditional Nepalese garments could be fad items, popular for 1-3 years. It may be necessary to establish export channels in these lines, while developing new designs. To reach the sophisticated western market, improvements in dyeing, design, and quality control probably would be needed. Nearly Rs 2 million in readymade garments were exported in 1975/76, growing to Rs 4 million in 1976/77; sales have been fairly evenly distributed among Western Europe (43%), East Asia (31%) and North America (26%). More than 20 countries are importers of Nepalese readymade garments but only 7 countries purchased over Rs 100,000 in 1975/76: USA (Rs 464,000), Hong Kong (Rs 276,000), West Germany (Rs 194,000), Australia (Rs 184,000), UK (Rs 163,000), Japan (Rs 126,000), and France (Rs 106,000).

3.02 In Kathmandu Valley there are at least 2,000 family tailoring units working as subcontractors for local retailers and exporters and/or selling directly to local customers. The average unit has 3-5 workers, mostly family members. Most units use hand operated sewing machines, costing Rs 500; more progressive units use foot pedalled machines (Rs 850). In the Gandaki Zone, about 300-400 units engaging 3-8 people each, work in Pokhara, mainly cutting and sewing cloth supplied by local customers; outside Kathmandu, sewing is dominated by the Damai subcaste, from the "untouchables"; in rural areas Damai families usually have little or no land, but rather receive rice in return for meeting clothing needs specific families in the village.

Characteristics

3.03 Kathmandu Valley. Existing exporters and local retailers subcontract production to small tailoring units, often located in homes. Some larger tailoring operations in turn subcontract with smaller household tailors. A typical retailer or small exporter would deal with several tailors in the locale of the shop, providing material, size and design specifications, production schedules and quality control. When export orders are secured, cutting is often done by a "designer" with pieces distributed to subcontractors. With this division of labor, tailors can sew 15-20 shirts a day vs 5-6 if both sewing and cutting are done by the tailoring unit.

3.04 Many household tailoring units in Kathmandu Valley have one or two sewing machines. The majority of the machines are hand-operated, costing Rs 600-900, although a few of the more successful tailors have foot-pedalled machines, costing between Rs 800 and Rs 1,200; none of the small tailors in the area uses electric sewing machines. Occasionally, retailers provide

regular subcontractors with loans for foot-pedalled machines, to increase quality and production capacity. Retailers claim that the stitching done by small tailors is usually good, although careful selection of units and regular and rigid quality control is necessary. Using the foot-pedalled machine, a tailor can cut and sew 6 Nepalese blouses per day vs 4 with the manual machine. This same ratio is maintained for Tibetan dresses, with 8 per day on the foot pedalled machine; Nepalese trousers, 10 per day; Nepalese shirts, 5-6 per day; and Tibetan shirts, 7 per day. Normally, the master tailor will cut enough for a day or two in order to improve yields in cloth and productivity in sewing.

3.05 Retailers of readymade garments find that (a) although some informal cooperation takes place, small tailoring units consider themselves competitors and are reluctant to work together; as a result, volume orders are difficult to meet because of lack of organization of the producers; (b) there are difficulties getting large orders in time; and, (c) the level of skill among the tailors in Kathmandu is uneven.

3.06 Tailoring System in Gandaki Zone. In Pokhara Town, there are several hundred small units with one or more foot or hand operated sewing machines. A relatively modern tailoring unit would have 8 sewing machines (Rs 850 each), 1 embroidery machine (Rs 4,500) and an overlock stitching machine (Rs 1,400), with a total investment in equipment of about Rs 10-15,000, including cutting tools. NIDC, DCVI, and now RB Bank have extended loans to such units. Many units are located in small, rented spaces in the commercial section of Pokhara. Workers receive Rs 300-600 a month. Customers bring cloth to the tailoring unit, paying cutting and stitching charges. Trousers normally cost Rs 30; suits, Rs 120; and shorts, Rs 12. A unit of 10 workers can do a maximum of 10 suits or 50 shirts per day, although these capacity production levels do not reflect actual production since almost all operations cater to single, sporadic orders by local customers.

3.07 Most rural tailors in the Gandaki Zone are from the Damai sub-caste of the untouchable caste. Village groupings in Nepal usually consist of about 500 families, living in dispersed rural areas covering about 2 square miles, with perhaps a small cluster of houses in the village center. In each group 500 families there would be approximately 20-40 Damai families which would have a small hand operated sewing machine costing Rs 500 new, or about Rs 300 secondhand. Damai caste members usually have little or no landholdings and depend upon local orders for shirts, pants, and Nepalese blouses. Very little money is exchanged within these rural economies; rather, the Damais would be responsible for meeting yearly orders from the households in the area, and in return would get portions of rice. For special orders in addition to the normal annual requirements, they would charge small fees. One Damai tailor in Nowdara charges Rs 5 per Nepalese shirt and claims to be able to do 2 shirts a day. At present, he does not have sufficient orders to meet his family's subsistence needs.

3.08 The level of cutting and sewing skills by most of these village tailors would need to be upgraded to achieve export or tourist quality.

However, this caste grouping and built-in specialization could provide a base for developing rural production of export-oriented Nepali shirts and other items. A scheme could consist of the Cottage Industry Emporium's providing raw materials to these tailors. A unit associated with Cottage Industry Emporium could cut the pieces to importers' specifications and place these pieces in plastic bags; village Damai cooperatives or association could send porters to collect the cut pieces. The pieces could be sewn in the villages and returned as finished products to be purchased by the Cottage Industry Emporium for export resale. The lower rates of Rs 5 per shirt compared with Rs 12 per shirt in Pokhara and Kathmandu could compensate for the transportation cost incurred in distributing raw materials and collecting finished products from the villages. This would provide regular employment and increased incomes for the lowest income group in Nepal. It would require that DCVI shift its focus from one year training programs for a limited number of people to promotion, organization and short-term training of people in the villages.

3.09 Problems in Garments. In the case of garments the major problems are that:

- (a) Productivity of Nepalese tailors is estimated to be lower than other LDC exporters, while reject and wage rates are somewhat higher.
- (b) Export procedures and facilities are cumbersome: permits, insurance, and credit are difficult to obtain.
- (c) Although there is a large base of small scale tailors with 3-12 sewing machines, organization of subcontracting is considered difficult because of difficulties in controlling quality and productivity.
- (d) Meeting volume orders has been difficult due to lack of organization of decentralized tasks.

3.10 Prospects. Possibilities for expanded exports and local sales of specialized Nepali garments exist:

- (a) Nepali and Tibetan shirts, blouses and jackets are unique and would make excellent casual wear with minor modifications.
- (b) The prices are low for cotton dresses, shirts and jackets. Cotton dresses or milled cloth are sold for Rs 35; classes of handloom cloth are for Rs 65 retail in Kathmandu. Jackets of quilted cotton are sold for about Rs 100 retail and shirts are sold for Rs 25. These prices would allow the normal 300-400% mark-up at the various intermediary levels and still provide dresses for \$11-15, shirts for \$8, and jackets for \$32 (retail US). The same dresses are made in Tibetan silks, handloom cotton, milled cotton and blends.

## WOOLEN PRODUCTS

### Background

4.01 Nepalese woolen goods can be divided into three product groups; (a) knitted goods, mainly sweaters, caps, mittens, socks, which are hand knitted using Tibetan wool; (b) Nepalese jackets of Tibetan yarn woven into white, gray, plaid, and checked wool, and trimmed in colored woven strips; and (c) carpets of Tibetan or Indian wool, using knotting or weaving techniques; there are two major types of carpets, the Tibetan/Chinese variety and the rougher Nepalese carpets and blankets.

### Characteristics

4.02 Knitted Goods. At least 10 stores in Bodnath and 50 retailers in Kathmandu carry socks, caps, mittens and sweaters. The prices for these items are Rs 25-30 for socks made of Tibetan handspun wool and Rs 15 for socks of Indian milled wool. Caps are sold for Rs 25-30. One knitter can make one cap in five hours and one pair of socks in seven hours. Stitching costs are Rs 5-10 for socks and caps. Producer units get raw material from either the retailer or input suppliers. Normally, producers purchase white wool yarn for Rs 56 per kilo and dark wool for Rs 62 per kilo. Four pairs of socks and six caps can be made from one kilo of yarn, with raw materials costing about Rs 14 per pair of socks and Rs 10 per cap. Retail units purchase socks from producers for about Rs 20, and sell them for Rs 25-30. Caps are purchased by retailers for Rs 15 and sold for Rs 25-30.

4.03 Most of the sweaters sold are of heavy Tibetan wool in natural colors of beige, gray, and dark brown. The retail prices of a sweater made of Tibetan wool is Rs 140, while sweaters of Indian wool sells for Rs 110. Prices paid to the artisans are Rs 90-100 for sweaters if Indian wool, and Rs 125 for the Tibetan hand spun wool. Most retail outlets purchase from 5-10 families, and have organizing capacity for 200-400 sweaters a month from these families. There are fewer people involved in knitting sweaters than in weaving and sewing jackets. Local sales of these items are highly seasonal; since Nepalese seasons differ from seasons in export markets, local and export sales could be complimentary.

4.04 Jackets. Woolen cloth for Tibetan jackets is made on body looms with nine-inch backs. Foot looms are used for the trim, which is sold for Rs 1.25-2.50 per meter of 1" trim. Trims are sold to collectors who resell them to stitching units. Collectors also get white and dark woven woolen pieces of nine-inch widths from the weavers and supply the trim and cloth to the stitching units. Prices per meter of white cloth for Tibetan jackets is Rs 7 and Rs 8 for grey cloth. About five meters of cloth and five meters of trim are needed to make the jacket, with about Rs 34 in wool cloth and Rs 9.5 in trim required in raw material for each average size Tibetan jacket. The weaving of trim and cloth is done mainly by Tibetans, with stitching performed by Nepalese.

4.05 These woolen jackets (of white, gray, striped or plaid/wool) are purchased at Rs 55-65 from the tailors or collectors and sold for Rs 75-95 retail. Sleeveless vests are Rs 35-40 for children and Rs 55 for adults, retail. Shorter woolen jackets for men sell for Rs 75 retail and for ladies, Rs 65. Shirpa waistcoats in wool are Rs 40, and embroidered woolen coats are Rs 130. Woolen coats with lining sell for Rs 120 retail in Kathmandu. Retail shops purchase from as many as 15 different artisan groups, and have organizing capacity to supply 2,000 of such jackets monthly (from 15 producer units).

4.06 Woolen Carpets. In 1976/77, carpets became Nepal's number one export earner, with sales of Rs 27.9 million vs Rs 9.3 million in 1975/76. <sup>1/</sup> The carpet export business is based almost exclusively on production of the Tibetan refugee camps, with sales made through two major exporters, Carpet Trading Company (CTC) and Himalayan Carpet Exporters (HCE). In addition, there are about 10 smaller exporters dealing in carpets, purchasing from decentralized loom units. Carpets of handspun Tibetan yarn contributed 65% of exports, Indian yarn is used in the remaining 35%. In local tourist sales, many small production and retail units exist, with sales divided between carpets of Tibetan wool and Indian.

4.07 CTC was established for the Tibetan camps and functions as a cooperative with profits and export entitlements plowed back to expand assets or purchases, or distributed to the weavers. HCE functions as a private export house. HCE handles units in Pokhara, Kathmandu, Bodnath, and Swayambunath, exporting about 4,000 square meters or 2,500 carpets per year. Most sales are made to 3-4 buyers in West Germany and 2 buyers in the UK. A small amount of selling is done to the U.S. but Europeans are willing to pay more for carpets. In 1970-73, HCE had difficulty finding markets, since Tibetans are not allowed to travel outside of Nepal. The market was gradually enlarged through correspondence.

4.08 Problems incurred by these exporters are similar, major difficulties being: (a) shortage of labor to meet large orders; (b) more demand than supply of handspun yarn with regular supply of Tibetan wool a major problem; (c) difficulty in knowing what color or quality of yarn will be received from the Chinese; (d) problems in meeting orders on time; exporters need 3-4 months for normal sized orders, and must pay producers in advance while importers make payments against shipments.

4.09 About 10 major carpet units operate in the Tibetan camps. Units have from 150 to 350 workers, about half weaving and the remainder spinning, washing, sorting, dyeing and trimming. A center with 200 workers would have about 50 looms, mainly small looms with 2 workers each, and a few large looms, with 5 workers each. Almost all workers are women, although in some units as many as 40% of the workers are small boys. (Tibetan men are usually trekking

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<sup>1/</sup> However, a portion of these export values has been found to be due to over-invoicing by exporters, to exploit the export entitlement scheme.

guides for traders.) Wages are normally based upon production, with weavers paid Rs 275-300 for a 6' x 3' carpet, comparable to about Rs 140 per square meter or Rs 7-10 per day. In camps with poor marketing channels (e.g. Pokhara Red Cross Tibetan Center) the carpet weavers receive Rs 215-225 per carpet of 3' x 6', which takes 2 persons 10-20 days to make. Assuming an average rate of 15 days for 2 workers, daily wage for the weavers would be Rs 7. This is lower than average. Spinners doing 1 kg, usually receive daily wages of Rs 5.

4.10 Raw material supply is a continuous problem for these units. Tibetan raw wool, usually purchased for Rs 22.5/kg through National Trading Limited, is often not available; 6-month lags are common between order and receipt of wool. One square meter requires 12 kilos of raw wool or 6-7 kilos of finished wool yarn or Rs 300 per square meter; 50% of the raw wool is wasted in spinning and sorting. Dyes, imported from Switzerland, cost Rs 60 for quantities sufficient for one square meter. Cotton yarn used for warping costs Rs 100/bundle or Rs 40/sq. m. Production costs, including labor and materials, range from Rs 550 to Rs 575. Wholesale prices are Rs 600-650, while importers are willing to pay about Rs 585/sq. m. The loss to exporters is subsidized through the 60% export entitlement. Carpets are sold to tourists in Nepal for Rs 750/sq. m. Entitlements are used to import dyes and wool which are sold to the centers at cost; surplus dyes are sold to other carpet makers. Export sales are mainly in large carpets, while tourists to Nepal prefer the 6' x 3' size. While the majority of exported carpets is of Tibetan wool, which is stronger and more durable, about half of local trade is in lower grade Indian yarn. Most units export 80% (through export houses) and sell 20% to tourists. Air shipment costs add about 40% to cost of carpets.

4.11 Several units would like to increase production; their problem is limited capital. They need more looms; galvanized pipe for 6 x 3 meter size looms can be made in Nepal for Rs 9-10,000. Wooden looms for smaller carpets cost Rs 7-800 but have a life of only 5-7 years vs 15-20 years for the pipe-looms. Also needed are weaving halls and training.

4.12 In addition to carpets, most units produce small quantities of bags, jackets, blankets and shoulder bags, made out of scraps. All sales of these small items are made locally. Small pieces of carpet are sold for Rs 85, bags for Rs 28 and jackets for Rs 95. Eight bags or purses can be made in about seven days.

4.13 Problems in woolen goods include:

- (a) dependence upon the supply of Tibetan wool which is imported by the National Trading Limited. The National Trading Limited often has difficulty importing these goods due to Chinese lack of interest in bartering as well as poor purchasing practices and inventory management by the National Trading Limited. Quality and coloring of the wool is unreliable.

- (b) high prices of carpets vis-a-vis the Pakistani Persian type or the Chinese competitors; average production costs are Rs 600/sq. m. for a relatively crude, common, loosely woven Nepalese product. There is a narrow market niche for Tibetan carpets due to their unique appearance; however, there is probably limited room for rapid expansion of this industry. High prices are due to import duties on Tibetan wool, the relatively low productivity of the weavers located in the Tibetan refugee camps, the high cost of non-woolen raw materials, especially dyes, and high air freight costs.
- (c) a limited production base, especially among the Nepalese community, for production of knitted, woven or tied woolen goods.

4.11 Prospects. Strong prospects in knitted and woolen garments exist:

- (a) The price of these items is competitive. Sweaters are sold retail in Kathmandu for about \$8, caps for \$2, mittens for \$2, socks for \$2. Jackets are sold for about \$7. These retail prices reflect about a 20% mark-up over production costs. Sweaters produced could be sold retail in department stores in the US for \$50, caps for \$8, mittens for \$5, socks for \$5. The jackets could be sold for \$40, if lined. Therefore, potential exists, especially in sweaters and jackets. Carpets on the other hand have limited growth potential, although the cheaper woven Nepalese carpets, if upgraded in terms of finish, could have a market as utility products.
- (b) The styles of the jackets, sweaters, socks and mittens have market potential in both Europe and the US; minor alterations would be needed in sizing, finish and design. These products would lend themselves to volume sales for men, women and children.
- (c) In both woven and knitted goods these woolen products are attractive as an employment-creating mechanism, since they are highly labor intensive, with the production base easily expanded through short-term training. Also, these products can be made within homes, with organization of raw material supply and collection.

4.12 Areas for focus. The subsector specialist should assess the following areas:

- (a) The need for short-term training e.g. through the Department of Cottage Industries, the Nepalese Women's Club, the Tibetan refugee camps, and/or other private or public institutions;



these training courses could consist of two weeks training in knitting of specific items and designs in accordance with specific export orders. Skill expansion courses, again of two weeks could be held periodically to facilitate product diversification.

- (b) the necessity of providing marketing and design consultancy or in-house marketing/design capacity; for example, someone from New York or Frankfurt could come for one year to organize the producers, assure that quality control mechanisms are established, and provide design, packaging, and shipping advice. This assistance could be provided to the Trade Promotion Center acting as an umbrella for private exporters who commit themselves to developing this sector. Alternatively, the design assistance could be provided to Emporium with assistance to private exporters as well as to the branch offices of Emporium. Possibilities of joint ventures with specific importers in the US and/or Europe could be explored with payments made for know-how in return for regular market channels.
- (c) methods for improving raw material supply, through the National Trading Limited, the Cottage Industry Emporium, or private importers. Public sector importing would probably be necessary given the trade relations between China and Nepal which necessitate barter arrangements instead of transfer of cash payments. It may be necessary within the context of a project to provide training or technical assistance to the National Trading Limited, to upgrade purchasing and inventory control and distribution methods. The subsector specialist in woolen products should determine the number of people to be involved in a possible woolen products scheme, the projected production in years 1, 2, and 3 of the scheme, and the raw material requirements for Tibetan wool.
- (d) small credit requirements at the producer level for looms and sewing machines. The need for working capital by the production units would depend upon the system for supply of raw materials and purchase of finished products which is developed.

FORESTRY BASED INDUSTRIES (BAMBOO, NGALO, CANE,  
WOOD AND NEPALI PAPER PRODUCTS)

Background

5.01 Forestry based cottage industries cover three major lines: (a) baskets, furniture and accessories of bamboo, ngalo, and reeds; (b) wood products and (c) Nepali paper.

5.02 Bamboo and reed products are the major cottage industry of the Gandaki Zone accounting for 88% of cottage industry production value in the Western Region. Several hundred household units and three factories are found in the Kathmandu Valley. While these products are inexpensive and highly functional for local consumers, exports to date have been minimal (Rs 616,000 in 1976/77), and export expansion appears difficult. Nepal faces stiff competition especially from the Philippines, mainland China, and Taiwan. Air transport costs can often double the price of these bulky, low value items. Major exporters have coasts, well-established marketing channels, experience with partial mechanization to cut costs, and a broad line of products. Nepal does have abundant bamboo, ngalo, reed, and wheat chaff in rural areas of Gandaki, a widespread skill base in basket weaving; and attractive, unique designs especially in large baskets, 1/ trays and stools..

5.03 Wood Products and Paper. Rural carpenters service the village needs for doors, windows, benches and ploughs; however, most are unemployed as carpenters and work mainly as day laborers in agriculture; there is probably little expansion potential for local carpentry units; Kathmandu Valley where there is a tradition of wood carving of specialized products there may be some scope for simple wood articles. Nepali paper is a popular export item (Rs 1.2 million in 1976/77).

Characteristics of Fiber Product Units

5.04 The major existing cottage industry in the Gandaki zone is fabrication of products of bamboo, ngalo, and wheat straw. Skills in baskets, stools, and mats are widespread, and most required raw materials are abundant, especially in northern sections of Gandaki. Several local designs, notably "dalos" used for storing grains, "mula" stools, and trays of wheat straw, may have export potential if problems of air transport, market links, and production organization can be resolved. Production of furniture, trays, and various small accessories is common in the Kathmandu Valley; there are three organized factories producing these items and several hundred household units. Only small quantities of baskets, furniture, trays, and other items have been exported, due to poor market organization of dispersed producers strong competition especially from East Asia, and high air freight costs relative to the value of the products.

5.05 Baskets and Stools in the Gandaki Zone. Among the items produced in Gandaki with possible export potential are baskets of ngalo and bamboo. Dalos are made of ngalo sticks with four small wooden logs at the base. Sizes vary but normally the baskets are about 25 inches in height and 18 inches in diameter. Dalos are sold locally for Rs 15-18 but could be sold for 5-10 times this price in western markets, for large plants. One large dalo could be completed in 2-3 days, including the wooden legs. Dalos are produced largely in the north, where bamboo and skills are more abundant. The normal production arrangements for the dalos is to have old people and women make the baskets in their spare time; therefore, the selling price of Rs 10-18 does not reflect normal labor charges. If labor payments were tripled to Rs 10 a day, labor costs would be about Rs 25 per dalo. Cost of raw materials was estimated at Rs 10, including the wooden legs which can be made from local scrap. At this full costing rate the dalos would cost Rs 35, still sufficiently low to allow 300% mark-ups and transport costs between producers and final consumers in western markets.

5.06 The possibility of the Cottage Industry Emporium procuring these dalos from crafts people for e.g. Rs 35-40 was discussed with artisans, who expressed strong interest. If marketing arrangements were made by the Cottage Industry Emporium, villagers could organize the production with limited investment in fixed capital and could have the dalos taken by porters to Pokhara, receiving more than twice the present price. Availability of raw materials would be no constraint for projected expansion of production. However, if an expansion in the raw material base were required, bamboo and reeds could be grown. Ngalos grow quickly, are easy to cut and weave, and are complementary to rice cropping. Ngalos can be planted in the steep parts of rice paddies, serving in windbreak and erosion control for the paddy crop. Bamboo, in contrast, interferes with rice production.

5.07 Bamboo Stools, Gandaki. Several units in Pokhara and surrounding villages, especially in Northern Kaski, make "mula" stools of bamboo, cane and ngalo. Very small investments in tools and working capital are required (Rs 500-2,500). Normally a single artisan or small group make the stools, contracting with others to split the bamboo into short narrow sticks, paying splitters Rs 8-10 a day on a temporary basis. Artisans often contract fields of bamboo to use as needed. Large bamboos of approximately 5 inches in diameter cost Rs 8-9. These bamboos are abundant, growing wild as well as cultivated. Four to five stools can be made with one bamboo. Raw material costs per stool include Rs 2 for bamboo, and Rs 5 for the cane top. Cane is difficult to procure and must be brought from long distances. The selling price of the small stool is Rs 12-18; the owner estimates that his total cost of goods sold are Rs 12-13. Although artisans work throughout the year, most work is concentrated in non-agricultural seasons, totalling three months of full-time work. Stools are taken by porters to Pokhara, 20 at a time. The average portage charge is Rs 1 per kg mile.

5.08 Handicrafts Made of Wheat Straw and Grass, Pokhara. At least 10 units engaging 200 people in Pokhara make trays, baskets, and purses of wheat straw and grass. Each unit works with 10-15 farmers who supply the waste

products used as raw materials. The average production unit would have 10 workers, 5 located in the home and perhaps 5 located in a backroom adjoining a retail outlet; the majority of production is by household units. Workers earn an average of Rs 6 a day. About 2 days are needed per worker to make a piece that costs Rs 10-12. Sales are growing; units feel that local sales could be doubled with no difficulty. Selling prices are Rs 18-25 for baskets, Rs 10-15 for trays, Rs 18-25 for purses. Presently monthly sales average Rs 3,000 per unit of which about 20% is profit.

5.09 Most owner-managers or middlemen go to the field to collect the raw materials. The major source of the raw materials is 15 km east of Pokhara, accessible by motorable road. An arm-sized bundle of wheat straw is sold for Rs 7.5. The grass in season costs Rs 0.5 per bundle in season; Rs 1 per bundle off-season. Fifty trays or bags can be made from a bundle of wheat straw, which means that the cost of raw materials is Rs 0.14 in a tray with a retail cost of Rs 10-15. Therefore, this product represents a very high value added and high percentage of returns to labor. Since it takes 2 days to make 1 piece at Rs 15 per day per tray, it should be possible for workers to earn Rs 7; they actually earn Rs 6. Introduction of inexpensive splitting equipment could improve outputs and earnings.

5.10 Cane, Bamboo and Reed Units in Kathmandu consist of several hundred households units and three factories. Major items produced are furniture (chairs, tables, portable bars, beds, stools); lamp shades; baskets, laundry boxes, trays; racks and shelves. Raw materials utilized are bamboo and ngalo of local origin, and imported cane. Local cane is available; however the quality is low, access is difficult, dimensions are small for furniture uses, and low transportation costs make it cheaper to import the cane from India. Previously, this imported cane came largely from Singapore, but this has been prohibited recently by the Nepalese Government. Costs of bamboo and ngalo (October 1977) are:

<u>Type of Bamboo</u>	<u>Specifications</u>	<u>Price</u>
Bahlu Bans	18" to 20" diameter 20' to 25' length	Rs 50 ea.
Tama Bans	9" diameter 20" length	Rs 10 ea.
Taru Bans	7" diameter 20' length	Rs 8 ea.
Ngolo	2' diameter 10' to 15' length	Rs 30 to Rs 100

5.11 The quality of production is somewhat lower than that in the Philippines or in China and the ex factory prices are higher. This pricing problem is exacerbated by the fact that Nepal must airship most of its exports, when export orders are secured. For sea freight through Calcutta, Nepalese shipments have lowest priority and reliability requires that the goods are shipped air. Costs per kg for air shipment average \$2.50; however, most

freight charges are based on volume rather than weight and cane and bamboo products tend to be bulky and difficult to stock. Examples of products offered and ex factory prices are indicated in the following chart; prices from household units would be about 20% less than those listed below:

<u>Description</u>	<u>Unit Price</u> (November 1977)
Round chair, small, medium, large	Rs 45-75
Coffee table	Rs 125
Oval shaped chair	Rs 125
Rocking chair	Rs 250
Dining chair	Rs 65
Simple stools of 6" to 20" height	Rs 12 to Rs 40
Fancy stool, 18" high	Rs 65
Portable bar with bamboo, ngalo, cane	Rs 200, 225, 250
Side table	Rs 30-45
3-ring chair, small & large	Rs 75 to Rs 90
Cane single bed, double bed	Rs 450, 800
Wastepaper basket (cane) 12"	Rs 20
Magazine rack (bamboo, ngalo, cane)	Rs 15-25
Round lamp shade (sm./med./lg/ bamboo)	Rs 30-Rs 40
Lamp shades, bamboo, cane	Rs 30, 45
Cane tray	Rs 30-45
Cradle of cane	Rs 125
Fruit basket	Rs 12-15

5.12 Competition in the fiber products export market is severe. The products from Taiwan, the Philippines and China are generally less expensive than Nepalese products. Examples of competitors' post shipment wholesale prices (1975) are: \$4.50 per dozen for small baskets from the Philippines, \$18 per dozen for large wastebaskets from China, \$51 per dozen for large straw baskets from the Philippines vs. \$48 per dozen for Nepalese trays of bamboo. In many cases, importers will purchase a small quantity from Nepal to add to their product line but demand for large volume sufficient to justify promotion may be difficult. While China and India can produce in volume with their large labor pools, there is a scarcity of industrial labor in Nepal, and the work must be combined with seasonal agricultural requirements. Road work and tourist trekking provide higher seasonal incomes than the Rs 120-200 earned in basketry. The cost of living is high outside of Kathmandu and Rs 10 a day is often considered insufficient.

5.13 Only small quantities of bamboo, cane and ngalo products have been exported to date, but several inquiries have been registered from the US and Japan. One Japanese importer was interested in purchasing small bamboo sticks from Nepal to be used in construction of screens in Japan for re-export to California. The specifications were rigid and the volume required was too large. Mechanization of certain processes may be necessary to reduce costs, improve quality, and meet volume export requirements.

- 5.14 Local sales by organized factory units have dropped. One unit had sales of Rs 150,000 in 1976, Rs 150,000 in 1975 with top sales 5 years ago at Rs 200,000. Reduction in sales reflects a number of factors: (a) the increased competition by similar units; (b) the mutual difficulty by organized manufacturing units and producing goods at the prices that local informal sector manufacturers can offer; and (c) inability to establish export contacts due to price non-competitiveness and transport and production costs.
- 5.15 Nepali Paper is a popular export item, with products including wrapping paper, stationery, and scrapbooks. The quality of the products from Nepal is lower than that from Japan, however, prices are extremely competitive. In this line as well as in others Nepal has the problems of lack of standardization, limited market contacts, and poor packaging of its production.
- 5.16 Wooden Products may have some export potential, if designs are kept simple; for example, simple ladles (US\$30-40 per dozen) or bowls could be made instead of intricate Buddhist carvings, which have a limited, highly specialized market appeal. This limited export potential is concentrated in Bagmati rather than Gandaki, since Bagmati has skills and better access to wood from the Terai.
- 5.17 Expansion potential for carpentry units catering to local needs is limited, especially in the Gandaki Zone. Rural households use little furniture, and existing simple carpenters can meet local needs for doors, windows, and Nepalese plows; most general carpenters actually work as hired labor on larger farms due to insufficient work in carpentry. Carpenters trained by DCVI often have difficulty finding employment after one year's training. Carpenters could get involved in manufacturing improved tools, but better farming tools are probably much less important in increasing yields than are seeds, fertilizers and improvement of methods. Paddy yields are very low in most of the hilly areas.
- 5.18 There are a few modern carpentry units in and around Pokhara which have electricity and one or two pieces of powered equipment. The most modern unit has one bandsaw and one planing machine received as a grant for Rs 8,000; actual purchasing price would be closer to Rs 25,000. In addition, the RB Bank has lent Rs 9,500 to this carpenter for a shed (Rs 1,500) and Rs 8,000 in working capital. Significant amounts of working capital are needed for wood, sold at Rs 42 per cubic foot. Wood is costly since it must be shipped from the Terai; cutting wood from local forests is prohibited by the Forestry Department to avoid deforestation. Demand for higher quality furniture is limited; more rudimentary units produce lower quality and lower priced furniture, and it would be difficult for mechanized units to compete with heavy, sturdy, high quality goods, given local purchasing power. However, doors and windows are in demand. The most advanced unit makes 20-40 doors a week, selling them at Rs 160 per piece. Its production costs are significantly lower than those of village carpenters. It claims that raw material costs for a door are Rs 107 and that labor charges by village carpenters are Rs 120,

while total costs by this unit are Rs 160. However, the investment of Rs 25,000 would not be justified for a village unit or most units in Pokhara, given the demand situation, the seasonality of production and sales, and the poor availability of electricity.

5.19 Problems. Fiber and wood products in Nepal have several problems which inhibit international competitiveness:

- (a) the prices of Nepalese bamboo, reed, and cane products are high in comparison with those for similar products from the Philippines, China, and other countries of East Asia. Higher costs are caused by (i) the remote and dispersed location of raw materials, mostly grown wild in rural areas (ii) the lack of selective mechanization in cutting and splicing the bamboo, cane and ngalo poles and (iii) the need to air ship these high volume, low value products;
- (b) appearance is cruder than for Philippine or Chinese furniture and basketry, and it is necessary that packable, stackable designs and relatively high value products are developed since air shipment is based on volume rather than weight or value;
- (c) export market penetration has not begun; although some producers have received inquiries from Japan, Scandinavia, and the US, few orders have been placed and most inquiries dealt with intermediate rather than finished products.

5.20 Potential. Although potential would appear to be limited in wood based industries there are several reasons for exploring the possibilities.

- (a) Nepalese baskets and other ornaments are more expensive than those of the Philippines, China, and Taiwan, but some are inexpensive and represent unique designs. Dalos, products of wheat straw, and stools appear promising in price and design.
- (b) Ngalo and bamboo are available in abundance in the Gandaki Zone. Ngalo is flexible and easy to use in weaving, complementary to rice cultivation grown in 18 months vs. 3 years for bamboo.
- (c) Skills in basket making and furniture fabrication are widespread especially in certain sections of the Gandaki Zone. This production base is very large and could be expanded easily through short-term training.

- (d) The objects, especially the dalos, are light and packable, easy for porters to carry. This is a feature to be considered within rural industries since most of the products would have to be carried out of rural areas into market centers on people's backs.
- (e) The Handicraft Sales Emporium could act as collector of selected fiber products; the DCVI could instruct villagers on design, sizing, and quality standards and assist in any upgrading in skill levels. The artisans could arrange for porters to carry the products to a central distribution point.



METAL PRODUCTS

Background

6.01 Brass and Copper Products. Production of brass and copper curios and utensils is concentrated in Patan, where at least 1,000 families are engaged. In Pokhara, there are about 20 families with about 3 workers each making brass and copper utensils. In 1976-77 Nepal exported about Rs 20.6 million worth of brass, copper, and handicraft production mainly curios. Hong Kong imported about 21%, the US 19% and Germany 18%. The East Asian subcontinent purchased 45%. Curios are specialized products with a market niche for traditional Nepalese items; here certain consumers are willing to pay more, appreciating the unique characteristics of Nepalese art objects. Sales by Nepal Traditional Crafts, the largest single exporter, have averaged Rs 1.4 million over the last three years, with 35% to Germany, 35% to U.S., and the remainder of production sold in other areas of Europe and Australia.

6.02 India smuggles brass for Rs 25-50 and copper for Rs 30-65 per kilo, although the official prices for copper are Rs 15 and the official prices for brass are also half of the black market price. Bronze is entirely scrap metal from utensils; however, the supply is diminishing because the dealers who have collected these utensils find that most have been replaced by aluminum. At present, zinc is not available at any price, although previously the National Trading Ltd. was importing it for Rs 20 per kilo.

Characteristics

6.03 Utensils. Brass utensils are sold for Rs 64 per kilo in Pokhara vs. Rs 58-59 per kilo in Patan. Copper goods are sold for Rs 84 per kilo in Pokhara compared to Rs 77 per kilo in Patan. The cost of brass in Pokhara is Rs 50 per kilo, the cost of copper, Rs 65. This includes 1 rupee per kilo in transportation cost by truckers from Kathmandu to Pokhara. The cost of labor is about Rs 7 per kilo in Pokhara compared to Rs 7-8 per kilo in Patan. Therefore, it is clear that the prices in Pokhara reflect scarcity rather than merely the increased cost due to transportation or labor.

6.04 The system in Pokhara involves 14 retailers which provide artisans with raw material and designs. Artisans work in their homes, using simple tools. A large copper and brass retailer in Pokhara would do weekly sales of Rs 12,000-14,000, and get a line of credit from the commercial banks ranging from Rs 50,000-200,000 to finance stocks. Sales are highly seasonal, with the low season from mid-December to January 15, when people are involved in harvesting. December to March is the peak sales period, sales in these months being equal to the sales in the remaining nine months. During this period, farmers have money from harvest; also, weddings and traditional festivals are concentrated in this period. Large copper rice cookers and large brass water jugs are the main items sold by the copper and brass retailers in Pokhara. This is a good example of a local industry based on market demand. Copper and brass items are bulky and heavy, making them difficult to transport. Brass and copper sheets are much more easily transported, giving advantage to local manufacturers.

6.05 There are no rural brass or copper works in the Gandaki Zone; rather, middlemen purchase the brass and copper items from the retail shops and sell them throughout the rural areas. In some cases the traditional middlemen come from the Kathmandu area with copper and brass items, restock in Pokhara where the prices are much higher, and travel the return route selling copper and brass goods. On the return trip from the rural areas, middlemen carry scraps from old utensils. Copper scrap, if it must be melted again, gets Rs 40 per kilo, and if it must be beaten, gets Rs 55 per kilo. Brass scrap, if it can be melted down, gets Rs 20 a kilo and beaten work gets Rs 40 per kilo. Scrap account for 30% of the raw material utilized in the manufacture of copper and brass goods. These brass and copper goods are distributed to the 20 large village groupings within a 40-mile radius of Pokhara. However, this system is being replaced rapidly by distribution of aluminum housewares, which are cheaper and lighter for transport.

6.06 Aluminum Utensils. A new unit in Pokhara demonstrates several of the problems encountered by modern small scale industries in Nepal attempting to substitute for Indian imports. This unit has invested Rs 140,000 of its own money, Rs 100,000 in buildings and Rs 40,000 in machinery. In addition, RBB has loaned the unit Rs 135,000 for working capital, which has not been sufficient. The entrepreneur has had to finance an additional Rs 70,000-80,000 for working capital in finished product stocks in order to hold these until the major sales season. Although the unit has been accumulating 5 months of stock, the owner-manager is optimistic, since the season for major consumption of utensils begins in January.

6.07 The major problems faced by this aluminum utensil industry in Pokhara are the following: (a) transportation costs for aluminum imported from India are based on weight rather than volume, with no transportation advantage to local producers; (b) the small unit is forced to produce the full line of aluminum products since wholesalers in Pokhara want to deal with one selling unit, while Indian manufacturers can specialize in with Indian wholesalers grouping products; (c) Nepal does not have a sufficient number of skilled lathe operators and must contract workers from Calcutta and pay them Rs 550 a month.

6.08 Blacksmiths are members of the Kami subcaste of the untouchable caste. Each village of about 500 families has perhaps 20 blacksmith units, consisting of a family with 1 to 3 members working in blacksmithy. The blacksmiths rarely receive money, but rather get allotments of rice from serviced families in return for production and repair of agricultural tools. Most of the work done by the blacksmiths is in sharpening of the sickles, although they also manufacture sickles, axes, knives, and other basic utensils and tools. When payments are received, the charges per sickles are Rs 8-9, or Rs 12 per kg; axes are made for Rs 14 per kg. The tools that are used in blacksmithy are rudimentary: most units have no blower or anvil; rather their tools are limited to hammers of differing sizes and a large pinzer; with Rs 1,000 units could purchase a blower and avil and better blacksmithy tools. With these tools they would be able to make higher quality products of the existing type as well as making bowls, utensils, and knives of aluminum scrap.

6.09 Blacksmiths can make 4 sickles per day; if they receive Rs 8 per sickle they would get Rs 32. The cost of coal for this is Rs 10; the cost of raw materials is Rs 12. Artisans claim that locally made products are preferred to imports (from China or India) or products made by the Agricultural Input Corporation, since farmers feel that the iron used in the blades is stronger and that they do not need sharpening as often. Most farmers use simple "Nepalese" ploughs, made of wood with a metal edge. Modern or "improved ploughs" with a metal blade are now available which have the advantage of turning the weeds under as fertilizer. However, these modern ploughs cost Rs 95, whereas the traditional Nepalese ploughs are available for Rs 10. It would be difficult for most blacksmiths to repay loans since they receive little cash for their services. If their production could be doubled with improved tools, one method could be that their repayment be made in finished products rather than in cash. These items could be sold to the Cottage Industries Emporium and resold with payments made to the banks. Although the system would be cumbersome, it is perhaps the only workable means of extending credit to artisans operating in an otherwise nonmonetized economy.

6.10 Major problems facing the metal products handicraft industry are:

- (a) dependence upon imported raw materials. Copper and brass are imported from India when available and from other countries when India is unable to supply sufficient quantities. Duties and transport costs must be paid on these imported sheets. Thirty percent of the raw materials used in these products are recycled old utensils and curios, but the supply is diminishing due to replacement by aluminum ware. At present, National Trading Ltd., the official importer of brass and copper sheet, does not have any supply and middlemen and artisans purchase through the black market. Since raw materials constitute at least 60% of costs, high material costs represent a major cost disadvantage for export sales.
- (b) Over 90% of the skilled craftsmen are in Patan, making still a major constraint in expanding production outside of Patan.
- (c) export demand is narrow for statues of Buddhist gods, consumers limited largely to those with appreciation of Buddhist culture and exotic art. While present exports are significant, it may be difficult to expand this market.
- (d) At present, export demand is sporadic with collectors taking the products from the artisans at low prices and warehousing them awaiting large export orders.

### Prospects

6.11 In the area of filigree and brass curios, the advantages are that:

- (a) These products are unique to Nepal; with Nepal's inherent disadvantages in transport, productivity, raw material supply it is important to promote specialized products with little direct competition on a cost basis.
- (b) There is a built-in market for these curios in other Buddhist and Hindu countries with major present importing countries being Japan, Thailand, Singapore, and India; this market could be further exploited.
- (c) Although the number of skilled workers is limited, an advantage exists in the fact that almost all are concentrated in Patan, facilitating collection, placement of orders, and quality control for this dominantly household industry.
- (d) Since it is a highly labor intensive process, there is significant employment and income generating potential for skilled and unskilled workers;

6.12 There appears to be a broader market for brass and copper utensils:

- (a) Nepal has several excellent utensil designs, including water jugs of brass and large rice cookers of copper, as well as bowls, cups, plates, trays of both brass and copper. Product lines with apparent potential are ladels and spatulas of brass or copper which are light and of attractive design. These sets are available for Rs 30 or about \$2.50 in the retail market in Kathmandu and could probably be made available for less than \$10 retail in the United States or Europe.
- (b) These designs and prices are highly competitive with the French competition in culinary ware; the subsector specialist consultant would need to explore competition from various concentrated areas in India, which also specialize in these products and have the advantage of greater access to local raw materials.

### Areas for Focus

6.13 The subsector specialist could concentrate on making recommendations on how to:

- (a) regularize the imports of raw materials through the National Trading company or private exporters;

- (b) establish export links, especially with department stores and importers for culinary ware;
- (c) develop producer associations to allow Patan to produce the necessary volume; and
- (d) provide credit for improved tools and working capital as well as finished stocks to allow the producers to bypass collectors and deal directly with exporters.

FOOD PROCESSING SSIs

Background

7.01 In the Gandaki Zone, agroindustry potential is limited by the fact that oil and rice, the raw materials for over 90% of cottage agroindustries in Nepal, are not available in sufficient quantities; the Gandaki Zone is a net importer of rice, oil, and several other basic foodstuffs. <sup>1/</sup> Most of the oil is transported to the area in liquid form, but much of the rice is brought as paddy from the Terai and small mills are needed locally to do the dehusking. Small quantities of sugar and fruit are grown in a limited number of areas in Bagmati and Gandaki. Small scale livestock and cattle offer several promising possibilities.

7.02 The Gandaki Zone is based on subsistence farming, with heavy concentration in rice. About 30 muris of rice would be needed for a family of 5 if they had no animals; 50 muris would be needed if the family had 1 or 2 cows and small livestock as is common. Yield on the farms in the Hilly areas are extremely low: average yields are 1 to 3 muri per ropani on hilly (mountainous) land, 5 muri per ropani in the flat lands, vs. 13 muris per ropani on experimental farms and progressive farms in the Terai. Nepal is a net exporter of rice; however, the major rice growing areas are in the Terai and many farmers there find it easier and more profitable to export rice to India, rather than to engage in the rough transportation of these goods into the hilly and mountainous areas. The same relationship exists in oilseeds.

7.03 Bakeries can be profitable enterprises in semi-rural areas. About 15 bakeries are located on the outskirts of Pokhara; in addition, a few small kilns can be found in its most rural areas. Most units have an earth kiln of about 7' x 7' x 5', wooden tables, and cement baths with fixed investments of Rs 2,000-3,000. Units make an average of 300 loaves a day, (3 charges of 100 loaves each). Ingredients and costs are: one-half bag (Rs 125); milk (Rs 15 daily); sugar (1 kilo or Rs 6 daily); yeast (Rs 20 daily); and miscellaneous expenses (Rs 10). Expenditures on ghee are Rs 15 daily. At this rate, total costs of production for raw materials are Rs 196. Loaves are sold for Rs 1.15 with daily sales of Rs 345 but the unit gives commission agents 15 pisa per loaf. The unit gets 85 pisa per loaf or Rs 255, out of which the daily expenditure on inputs (Rs 196) must be paid. However, this net income of Rs 59 daily is often not realized since units sell the bread on credit and often have difficulty getting returns from merchants and commission agents.

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<sup>1/</sup> According to a quick survey done in Pokhara, major agricultural commodities brought from other areas (and November prices) were: high grade rice (Rs 3.75 per kg.); wheat (Rs 2.25); boiled rice (Rs 2.65); bitter rice (Rs 3.5); high quality dal (Rs 6); popular dal (Rs 6); maize (Rs 1.85); chilis (Rs 12); onions (Rs 4); and soy beans (Rs 4 per kg).

7.04 Problems of this type of unit include: (a) sugar and flour are not always available and many units can often afford to buy only small quantities; (b) small units have difficulty competing with modern bakeries using mechanical methods; (c) commission agents often abscond with the proceeds, leaving the unit without working capital (d) working capital needs are often underestimated and lack of funds may cripple operations. It is difficult to find workers in the bakery during the agricultural season since people are tending their farms.

7.05 Rice Milling. Small rice mills using diesel engines are located in villages in Gandaki, with about 2 miles walking distance between rice mills. An average unit would pay Rs 15,000-20,000 for equipment, including installation costs and training by an Indian equipment importer. Most rice dehuskers operate with a 7 horsepower engine with diesel fuel. The major problems with these units are: (a) most borrow from local moneylenders paying 25-30%; (b) problems of spare parts and repairs are encountered by most units since they have no repair capabilities or spare supplies. These types of units can demonstrate maximum investment in equipment rather than building, using a straw shack with no walls. Elaborate appraisals of this type of unit are not necessary but simple technical and managerial advice can be useful to small mills. Rice mills are the only cottage industry which has to be registered at present, to avoid local overcapacity.

7.06 Leather Processing and Shoemaking, Pokhara. There are about 20 units in Pokhara which make leather shoes; 2 units import Indian leather and synthetic fibers. Most entrepreneurs and craftsmen are Sarki, the traditional shoemaking class. Footpedalled sewing machine and very simple hand tools are used. There are 2-6 workers employed in the units, including the ownercraftsman. The production capacity is a pair of men's shoes per worker per day, although actual production is less due to limited local purchasing power for modern shoes. The price of the shoes varies from Rs 70 for women's to Rs 90 for men's shoes. Most of the raw material employed is synthetic, for soles and uppers. Indian finished leather is purchased at Rs 3 (Indian) or Rs 4.8 (Nepalese) per sq. ft; Nepalese semi-finished leather of lower quality is available for Rs 7 per sq. ft. Synthetic fibers are available from India or from the Bonswari Shoe and Leather Factory in Kathmandu at Rs 7.5 per sq. ft. The Rs 90 shoe requires 2 sq. ft. of leather or synthetic (Rs 25), fittings (50 pisas), shoelaces (50 pisas), wooden soles (Rs 5), and various other synthetic coverings (Rs 15). Small entrepreneurs often must go to Kanpur, India to purchase Rs 3,000 to 4,000 worth of raw materials not available in Nepal. Paying Rs 300 in transport cost. Traditional shoemaking units use Nepalee leather which is crude, thick and lends itself primarily to sole leather. One buffalo hide of this roughly finished thick leather costs Rs 20.

7.07 The quality of the "modern" shoes is inferior to that of the imported varieties. Soles are thick, the entrepreneur being unable to find thin, modern soles and fittings are crude. Consumers in Pokhara and Kathmandu feel that synthetic soles made by these local units do not adhere

Kathmandu feel that synthetic soles made by these local units do not adhere as tightly as do imported shoes which are made with hydraulic pressing equipment. However, such small units are flourishing in Kathmandu. These small units have the advantage of making shoes to order.

### Problems

7.08 Major problems associated with food processing in the small scale industries in the Gandaki Zone are:

- (a) Raw materials are scarce. The Gandaki Zone is a net importer of rice as well as oilseeds, which are two major small scale food processing industries in Nepal; also, sugar and fruit, while available, are of insufficient supply to justify more than the simplest methods with only one or two units in each line.
- (b) Maintenance and obtaining spare parts are difficult; most rice mills located in remote rural areas with energy provided by petroleum or diesel. Most operators of rice mills have responded to market demand and are not necessarily equipped with basic mechanical skills to do repairs in the case of minor breakdowns.
- (c) The price of importing the necessary equipment for rice and oil mills as well as other processing is high. In the case of an individual importing the equipment, the Indian supplier usually adds 30-80% to the cost for transport, duties and installation charges. This brings the cost of a small rice mill using a seven horsepower engine to about Rs 22,000 for the equipment alone.
- (d) For non-traditional items such as fruit, honey, dried meat, there is an extremely limited purchasing power among local consumers. Canned fruit, for which fruit costs less in the can, would have a market to tourists and a few better off people.
- (e) Small industries find that credit may be available for buildings and equipment, but working capital needs to run a processing industry are often underestimated. Distributors, paid a commission, are often unreliable.
- (f) Production costs are high, especially due to the cost of fuel.
- (g) In some areas of both the Gandaki and Bagmati Zones, there is already overcapacity in rice milling as well as oil milling; therefore, careful studies of regional potential must be conducted to determine specific areas for increased production capacity in traditional and non-traditional lines.



Prospects

7.09 Potential would appear to exist in the following lines: dairy products and dried meats; fruit preservation for jams; khansari sugar; development of beehive and honey industry, utilizing the abundant forest resources; rice mills and oil mills on a highly selective basis. In these areas, the availability of raw materials should be explored, the appropriateness of various technology analyzed, the approximate investment requirements estimated, and marketing methods recommended.

ISC's

Terms of Reference for Study of Cottage Industry in Nepal

1. Scope and Coverage

A study for the preparation of a Cottage Industries Project shall be conducted in Kathmandu, Bhaktapur and Lalitpur districts of the Bagmati Zone; and in the six districts of the Gandaki Zone, with survey and project preparation in the following promising cottage and agro-industry subsectors:

- (a) Woolen goods: blankets, sweaters, jackets, caps, mittens, bags, socks, carpets
- (b) Handloom goods and garments: handloom and milled cloth
- (c) Forestry-based industries: baskets, trays, furniture, ornaments of bamboo, reed, wood products, Nepali paper
- (d) Metal Products: brass and copper utensils and curios
- (e) Food processing industries: rice and oil mills, bakeries, livestock products, sugar, honey

The study will involve two phases:

- (a) Phase I. Sample survey and analysis of (i) existing cottage and agro-industries in the above subsectors and districts, and (ii) existing public and private marketing, raw material and credit support systems for industries in selected subsectors.
- (b) Phase II. Detailed project preparation, project components and costs, selecting village clusters and priority subsectors for concentrated support, formulating and recommending the organization and responsibilities of public and private agencies in marketing, credit, training and technical assistance, and raw material supply.

2. Phase I - Survey. (see Appendix 2 for more details on the questions to be covered in the survey, and Appendix 3 for survey methodology).

- (a) Number and type of enterprises operating (registered/unorganized).
- (b) Type and quantity of products made - annual quantity sold, number of working days industry wise, etc.
- (c) Household income and consumption patterns among small firms, government offices and household residents in the districts.

- (d) Description of cost of production and distribution:
  - (i) fixed cost
  - (ii) variable cost
  - (iii) annual operating expenses
  - (iv) working capital
- (e) Analysis of the total annual income and per unit profit, value added per unit, etc.
- (f) Raw material (e.g., annual demand for various raw materials, annual supply and supply points of various raw materials, demand for and supply of labor-skilled and unskilled).
- (g) Markets/Marketing Channels (e.g., examining the present distribution/sales media, e.g., direct contact, marketing co-operatives, retail shops, procurement by government offices, middlemen etc.; export and local market potential).
- (h) Finance (e.g. demand for financial resources; and current supply of financial resources for the establishment and operation of cottage industries).
- (i) Institutions. Study of the existing private and public institutional support programs and their effectiveness in the promotion of cottage industries.
- (j) Major constraints, if any, facing the cottage industries in selected subsectors.
- (k) Report. I.S.C. shall prepare an interim report covering data and other information gathered concerning nine districts, which should be presented to D.C.V.I. (see Appendix 2).

3. Phase II - Detailed Project Preparation

D.C.V.I./HMG will select the promising villages, neighborhoods, and product lines from subsectors and areas studies under Phase I.

The consultants will then:

- (a) identify the constraints facing these enterprises, e.g., cash, credit, raw materials, market outlets;
- (b) develop proposals for support packages for the most promising subsectors (e.g., marketing, finance, raw material supply, training and technical assistance, infrastructure);

- (c) recommend which private and public agencies, and organization and staffing patterns for the support packages;
- (d) formulate an investment program and its various components that can be funded and implemented. This may include the following (see Appendix 4 for details).
- A. Raw Materials. What raw materials are in demand, how much is locally available and how much needs to be brought from other parts of the country or imported.
- B. Training of Entrepreneur/Artisans. If necessary, formulating a training program for the entrepreneurs, middlemen, and/or extensionists, in rudimentary financial analysis and quality control of production activities. The cost of such a training program (instructor, facilities, etc.) would be estimated.
- C. Training of Extensionists. If Government or private extension workers are to be used, formulate a training program for core personnel who later will work as extension workers in the designated areas.
- D. Marketing. Suggest names and places for public or private procurement, storage, and sales for providing raw materials and marketing of finished products.
- E. If additional facilities are necessary, suggest improvements in facilities of D.C.V.I. head office and field branches, and acquisition of facilities for market agents.
- F. On technical aspects of the industries, determine how the quality of cottage industries products could be improved and suggest improvement of indigenous technology or adoption of appropriate technology would be suitable to potential technical level.
- G. Organization. Suggest possible artisan associations or cooperatives, and subcontracting links between cottage industries and exporters or private internal marketers.
- H. Institutions. Review the division of labor existing between D.C.V.I., Handicrafts Sales Emporium and the commercial banks with regard to cottage and small-scale industries development and suggest alternative approaches which could include expanding existing schemes or relying more on existing export market organizations. They should examine the staffing of D.C.V.I., particularly its regional branch network and its ability to provide technical and administrative support to enterprises in the districts chosen for the project.

I. Credit. Review the credit facilities available to cottage industries and the roles of the commercial bank and D.C.V.I. in this regard. This should involve short-term, medium-term and long-term finance. Loan terms, such as interest rates and legal formalities, which vary by region and purpose of the loan, and maturity periods would be reviewed, and recommendations for improvements would be made. Subproject profiles should be developed for each subsector, and schemes for decreasing administrative costs and risks to commercial banks, and expanding credit coverage of cottage units should be recommended. The consultants should review the quality of a sample of cottage industry appraisal reports and loan recommendation memoranda prepared by D.C.V.I., the commercial banks and Handicrafts Sales Emporium.

4. Final Report

The consultants should prepare a final report (see Appendix 4 for report requirements) covering the districts and subsectors chosen. Reports for each subsector and for overall project proposal should include:

- (a) Project packages for each of the most promising subsectors in these districts, including traditional craft areas and agrobased cottage industries;
- (b) recommendations as to which public or private institutions should implement a project for cottage industry development in the selected districts;
- (c) the credit terms and arrangements that would be most appropriate, considering the financial viability of the lending agencies (such as the commercial banks) on the one hand and the ability of the cottage households to amortize the loan repayments on the other hand;
- (d) the arrangements for raw material supply for all the subsectors in question, including the distribution storage of local and imported inputs;
- (e) the marketing channels that would be utilized for storage and sales of the cottage industries' merchandise;
- (f) recommendations and cost estimates for a training program in cottage industry management and marketing methods, which could be run for entrepreneurs, marketers, and D.C.V.I. staff;
- (g) recommend research and development work to be undertaken in Nepal to enhance the designs and productivity of indigenous technology;