



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

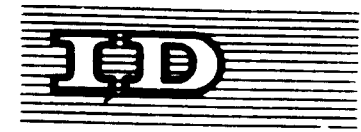
CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org



09257



Distr.
LIMITED

ID/WG.312/5
25 October 1979

ENGLISH

United Nations Industrial Development Organization

Third Session of the Leather and
Leather Products Industry Panel

Vienna, 19-21 November 1979

BRIEFING PAPER NO. 5*

CHINA: Draft Report on Hides, Skins and Leather Industry

Prepared by
the secretariat of UNIDO

NOTE: This paper is based on UNIDO's China Mission Report by
Consultant I. Glass (December 1978) and consultations
thereon with Mr. Max May after his China Mission (April 1979).

* This document has been reproduced without formal editing.

id.79-7829

Table of Contents

	<u>Paragraph No.</u>
INTRODUCTION	1
I. RAW MATERIAL AVAILABILITY	2 - 9
II. AVAILABLE INDUSTRIAL DATA	10 - 13
III. LEATHER UTILIZATION	14
IV. FUTURE DEVELOPMENT	15

Tables

1. Estimated supply of Hides, Skins and Leather, 1977
 2. Leather Goods Production
 3. Production and Consumption of Leather and Hides and Skins, 1961-1977
-

Introduction

1. There is no large-scale livestock production in China. Per capita red meat consumption is exceedingly low. Cattle (incl. buffaloes) are mainly used as beasts of burden - not for meat. Pork accounts for by far the greatest part of red meat consumption supplemented by relatively small amounts of lamb or mutton and goat meat. The estimated population of China is currently around 980 million of which about 78 percent are reportedly located in rural areas. The last official census was taken in 1955-56 and at that time the Chinese mainland population was about 700 million. There has been no official census taken since. Thus the data provided here are preliminary and represent unofficial estimates.

I. RAW MATERIALS AVAILABILITY

2. China's hide production is considered significant in world terms, although very small in relation to its population. It has the largest pigskin production in the world. In 1977, about 20-25 million pieces of pigskin actually moved to domestic tanneries, representing 20 percent or less of potential available supply. On a per capita basis the optimum supply of leather from presently available raw material sources is estimated at about 0.56 ft² annually. This compares with a minimum of 5 ft² in industrialized countries.

3. Table 1 provides a provisional breakdown of raw material supply in China from cattle and buffalo, mules, sheep, rabbit fur, goat and kid, pig and hog, horses and donkeys. The supply from each source of raw material and its availability is briefly mentioned below on the basis of limited available information from our own sources.

Cattle (incl. buffalo)

4. First, cattle are not raised for beef in China. The population of some 26-32 million cattle and buffalo are mainly used as beasts of burden. Thus the quality of the hides are reported to be poor and mainly used as heavy sole leather. About 6 million cattle are slaughtered each year.

Sheep

6. 71 - 85 million heads of sheep are raised in the north and northwest where lamb or mutton have traditionally been part of the Mongol diet. Pelts with the wool represent about 50 percent of total supply. About 28 - 30 million are slaughtered annually.

Goat and kid

6. It is estimated that there are between 60 - 75 million goat and kid population in China. Kid numbers about 30 million and goat about another 30 million. In addition, about 15 million goats and kids are reportedly farmed locally or privately.

Domestic consumption of goat meat is increasing at a rate of about 3 - 4 percent annually.

Slaughter houses in China carry about 40 percent of goats and kid slaughtered. Only about 3 million skins are offered to the export market annually.

Pig and hog

7. China has the largest pigskin production in the world. In 1977, it was estimated that some 20 - 25 million pieces of pigskins actually moved to tanneries, representing 20 percent or less of the potential available supply. Peking slaughter houses produce approximately 900,000 skins per annum according to seasons, half of which are taken off by skinning machine. The weight of pig and hog ranges between 60 - 150 kg.

Weight classes: 40 - 60 kg (10%) - for garments and gloves.
120 - 150 kg (15%) - useful for soles and cases etc. mainly vegetable tanned.
75 - 80 kg (75%) - about 10 - 15% useful for garments, rest shoe uppers.

Pigskins are of different grain patterns depending on the origin of the stock. Thus pre-selection is essential for good quality skin production.

Mule, horse and donkey

8. These animals, about 5 - 7.5 million, have reportedly a higher standing, are clean and well kept as far as the quality of raw hides is concerned. The life span of a horse is 6 years, mule matures to full size in 1½ years, donkeys longer than the horses. About 0.5 to 1 million are slaughtered annually for hides which are mainly used as sole leather.

Price of raw stock*

9. e.g. 1st class kidskin (for export) = 12.34 RNP
Szechuen kidskin (for export) = 9.87 RNP

Conversion rate 1 RNP = Approx. 1 DM or 50

II. AVAILABLE INDUSTRIAL DATA

10. Machinery is mainly locally made of old design, low productivity and low precision. The modernization of the production technology is essential, as it is about 10 - 40 years behind current standards.

a. ---

<u>Productivity</u> = 0.6 pairs/day for footwear. = 10 - 20 ft ² m/h for leather.

This low level of productivity is due to low mechanization and as a result of low work flow. But the workers do a good job under difficult production conditions.

b. ---

<u>Largest tannery</u> = Shanghai (8 tanning units in area). = 500 workers producing 5,000 pigskins/day or 20 ft ² per m/h, average only around 10 ft ² . Type leather = uppers, aniline case and sole leather. Chrome or vegetable tanned

c. ---

<u>Factory No. 1</u> = 900 workers producing 5,000 pairs/day ladies sandals. quality = considered excellent by our source.
--

d. ---

<u>Factory No. 2</u> = 300 workers producing 20,000 pig suede jackets/week and, = 30,000 gloves/week (partly using synthetics made of Polyurethane). Gloves and Garment quality = considered good for export markets

* April 1979

e. Dyestuffs	= +80 percent manufactured locally, limited light fastness
	= +20 percent imported
Liquid dyes	= imported
Fat liquors	= mainly sulphonated turkey red oil, other vegetable oils and some fish oils. some synthetic oils imported to avoid spue on leather. when used in mixture with other oils.
Finishing materials	= local quality poor, imports needed
Finishing machines	= with few exceptions, lack modern spraying and drying equipment

*An estimated 200 - 300 million feet leather are dyed, of which about 10-15% are dyed with high quality dye stuffs, mainly for garments and gloves.

Tanning activity

11. There are no authoritative information on tanning activity in China. But according to available reports, there are between 40 -50 tanneries in China. The main centres are established in Peking, Shanghai and Canton. A rough breakdown of factory establishments is given below:

<u>Place</u>	<u>No. Tanneries</u>
Shanghai	- 8
Peking	- 5
Canton	- 8
Tientsin	- 6
Other	- 13
<hr/>	
TOTAL	40
<hr/>	

Tanning quality

12. Quality of tanning is good, according to our information. Pig garment suede and kid leathers are the best leathers seen in China. Tanning is mostly done by chrome. There is also vegetable tanning for sole and case leather. Split and finished leather are reportedly of poor quality. It is here, in sanning,* splitting, shaving, dyeing and finishing techniques, that China will require increased inputs in the form of machines, chemicals and technical assistance. Value losses are considered to be in the region of 25-40%.

*Pressing out water, to humidity of 50 - 60%, to enable precise shaving.

13. The concept of commercial value in tanning as known in western industrialized countries does not seem to be followed sufficiently in the Chinese leather industry. A value increase of 20 - 40% is feasible with the same number of hides and skins as utilized now plus an increase of about 20% area yield. This would help to increase the per capita leather shoe production and its quality. However, in order to achieve that target, present plants would need to be reorganized, based on modern lay-out and efficient modern machinery and chemicals. Better production flow and modern production controls, including effluent treatment and chrome recovery, would also be essential.

Essential requirements are a modern college to train tannery technicians, and a pilot tannery plant to transfer modern know-how to production level.

A national leather centre would appear to be useful in planning leather production, plant equipment and personnel training, export and import of hides, skins and chemicals. Production and export of finished leather goods such as shoes, bags, etc. can be adequately organized on precise knowledge of the supply of raw hides and skins and the type of leather that can be supplied on time, by the domestic leather industry, for its manufacture.

III. LEATHER UTILIZATION

1977 Estimate of Leather Consumption in China

		million ft ²	Sub total	Percent
<u>Soles</u>	pigs	10		
	cattle(10%)	70		
	mules, horse, donkey	20	100	16.2
<u>Uppers</u>	goats	60		
	cattle	50		
	pig	130	240	39.0
<u>* Linings insoles</u>	pig	20		
	sheep	90		
	goat	50	160	26.0
<u>Lining splits</u>	cattle + pig	15	15	2.4
<u>Garments</u>	pig + goat	15	15	2.4
<u>Leather goods</u>	pig, goat, sheep	25	25	4.1
<u>Techn. Leather Sheep Fur</u>		30	30	4.9
	Sub Total		585	95.1
<u>Wet blue imports</u>		30	30	4.9
	TOTAL		615	100.0

*Linings are also used as uppers of lower grade.

14. Table 2 represents an estimate of leather goods production in China. Table 3 represents FAO's figures on production and consumption of leather and hides and skins for 1961 - 1977. FAO's figures are presented here as a matter of information and no attempt has been made to analyse the differences in the data base. FAO figures relating to footwear are higher compared to the report from our two sources who visited China in December 1978 and April 1979. It is not to be excluded that the figures of the two sources, are even lower in reality. While the aggregated leather production from all major sources is very similar.

IV. FUTURE DEVELOPMENT

15. It is considered likely that in the next 10 years Chinese domestic demand for shoe uppers will increase by about 5% annually or by 31 million ft², i.e. 310 million ft² = 15.3 million pieces of 20 ft² Chinese hides in 10 years. The lack of indigenous hides will cause imports of wet blues and even finished leather. Therefore, it would seem necessary to increase the efforts already started to raise cattle on special farms for meat, milk and hides. That would appear to be a 8 - 10 years task at best. The other immediate and reliable alternative is the machine skinning of pigs to increase available pig skins from 23 to 65 million skins, of which about 60% or 310 million ft² could go into shoe uppers and 205 million ft² for other export items. Modern pig skinning machine leads to a clean, high grade skin of only 1 - 8% fat content, leaving a 7 - 14% higher "meat value". The latter is also important to meet the short protein and fat supply for human consumption in China.

Table 1

CHINA: Estimated Supply of Hides, Skins and Leather, 1977

Unit = Millions

Source	Livestock Nos. High - Low	Est. Total Slaughter High - Low	Est. Raw Material Supply (Pcs = sq. ft)	Est. Per Capita Supply- Leather	Remarks
Cattle (incl Buffalo)	32 - 26	6 - 4	6 - 120		Average area = 20-22 ft ² *
Sheep	85 - 71	30 - 28	24 - 120		Utilization approx. 20% fur - 80% leather
Goat and Kid	75 - 60	33 - 29	30 - 120		
Pig and Hog	160 - 139	110 - 98	23 - 184		
Rabbit (fur) + angora wool	n.a.	n.a.	n.a.		used for apparels and lining and rheuma textiles (under wear)
Mule					
Horse	7.5 - 5.0	1 - 0.5	1 - 20		Hide used mainly for sole leather
Donkey					
			84 - 564	o.c ft ²	

Source: UNIDO's China Mission Report by Consultant I. Glass (Dec. 1978) and consultations thereon with Mr. Max May after his China Mission (April 1979).

Figures represent estimated projections based on samplings in several major leather producing provinces.

*cf. average area of over 40 ft² in OECD countries and 35 ft² in Latin America.

n.a. = not available

Table 2

CHINA: Leather Goods Production

PRODUCT	ANNUAL EST. PRODUCTION	TYPE	REMARKS
1. Leather shoes	70-120 million/pairs	sole made of rubber, leather or plastic	2 ft ² leather per pair (excluding boots)
2. Sheep furlined boots	600,000 pairs	sheep furlined	for Armed Forces
3. Leather garments	750,000 pieces of jackets	30 - 45 ft ² leather per jacket	of which:- 150,000 made of sheep fur for Armed Forces
4. Rubber canvas + plastic shoes	1,000 to 1,500 million pairs	including large amount of cotton uppers with rubber or plastic soles	- cotton uppers widely used material - synthetic material imported from Japan
5. Gloves	1-2 million/pairs	Nappa leather and PU-Synthetic as "Fony" (Japan) and cotton.	- for export/ good quality
6. Other leather goods	n.a.	including bags (all sizes), purses, belts, moroquinerie	- poor quality - poor styling

Source: UNIDO's China Mission Report by Consultant Mr. I. Glass (December 1978) and consultations thereon with Mr. Max May after his China Mission (April 1979).
 Figures represent estimated projections based on samplings in several major leather producing provinces.

n.a. = not available

*PU = Polyurethane

Table 3

CHINA - PRODUCTION AND CONSUMPTION OF LEATHER AND H/S. 1961-1977

Production	Average	1971	1972	1973	1974	1975	1976p	1977e	Unit
	1961-65	1966-70							
1. Heavy leather	30.4	32.9	34.4	34.5	35.3	36.8	36.6	---	'000tons
2. Leather uppered footwear	161.7	173.8	182.9	183.0	187.7	195.2	194.7	---	mn pairs
3. Light leather from cattlehides & pigskins	323.5	347.6	365.8	366.1	375.4	390.5	389.4	---	mn ft ²
4. Light leather from sheep & goatskins	127.8	124.5	132.7	157.2	165.2	163.1	160.4	---	mn ft ²
Consumption - H/S									
cattle and/or buffalo	244.0	255.2	269.0	269.2	276.0	295.0	297.1	310.6	'000tons

Source: COMECON, FAO, CCP/HS 78/2 (August 1978). National and Industrial Statistics
 p = provisional
 e = estimate

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

C-209



80.06.23