

- (2) The form of the survey card to be used will be decided among Department of Agriculture, JADP and Tokyo (JICA) and JADP will have them printed.
- (3) The Department will procure reliable maps and Tokyo will be also provided with them.
- (4) As for expenditure for conducting survey, Department of Agriculture, JADP and Japanese short-term-experts will bear the expenditure on their own part respectively (lodging and daily allowance, transport costs, etc.). In case such as helicopter hire, etc.

III. Methodology of survey for making plan for Hill Agriculture Development in the Janakpur Zone

1. The outline of the survey method to be adopted will be as follows:

- (1) It is understood that cultivated lands are distributed at valleys in hill and bottom of ravines along rivers forming intensive crop farm spots.
- (2) Those farm spots will be classified into a number of categories in accordance with the altitude and geographic conditions which confine cropping and its pattern and with potenciality.
- (3) By picking up some typical intensive farm spots that represent each classified category, spot-study and analysis on their nature and sociological conditions as well as real-present farming stage will be conducted.
- (4) Basing on the result obtained from the above-mentioned survey, the first phase development-cum-improvement programmes which include such as minor irrigation, land consolidation and improvement of the farm management and full utilization of slope area including prevention of soil erosion will be identified and its range of application will also be examined.
- (5) Following the first phase programmes, the second phase comprehensive hill development programmes which include major projects such as road, major irrigation and land reclamation will be identified and the necessary conditions conducive to achieving the programme will be examined.
- (6) Under these programmes (may collectively be called as a Master Plan), both on-going and proposed extension works as a means to an end should be clearly identified in priority base.

IV. Hill area Agriculture Development Plan

(1) Outline of the method to forming development plan

Over all outline of the method to forming development plan will roughly be as follows:

<u>Steps of study</u>	<u>Indicator</u>
(1) Grapsing the outline of the Hill area	a. Natural condition (geographic, meteorological, soil and river) b. Socio-economic condition (land utilization, industry, agricultural infrastrucatur, etc. and its present situation and future policy) c. Grapsing special characteristic of the hill area
x   x   x   x   x   x   x	
(2) Classification and catagorization by grapsing present farm pattern	(1) Grapsing present farms and its classification (a) Indicators for classification:- Altitude, geography, type of farms, kind of crops, availability of water, marketing conditions (b) Working mode, use of statistics, use of extension network (2) Identifying farm categories

- |   |   |
|---|---|
| (3) Study and analysis of the typical farming area that represent each category | (1) Study on outline of the farming area<br>(2) Study on particular farms (fact finding in management, technical aspect, technical level, unfavourable factors, possibility of enlarging farm scale)<br>(3) Measures to improvement |
|---|---|

x x x x x x x

- |                                 |   |
|---------------------------------|---|
| (4) Approach to the development | (1) Readjustment of the categories according to the above analysis<br>(2) Grasping the problems of each category and counter-measures to them<br>(3) Setting the direction of the development<br>(a) Uplifting the self-sufficiency (cropping, use of fertilizer, improvement of infrastructure such as irrigation)<br>(b) Uplifting the self-sufficiency and merchandise (marketing condition) |
|---------------------------------|---|

x x x x x x x

- |  |  |
|--|--|
| (5) Development plan for each categorized area (1st phase Development) | Plan will be subjected to the selected areas representing each category<br><br>(1) Working plan for infrastructure (small irrigation, land consolidation, road, land reclamation, forestation) |
|--|--|

(2) Working plan for extension activities  
cropping system, variety, supply of  
inputs, guidance to farming)

(3) Evaluation of the plan

x x x x x x x

(6) Extensive development  
plan (2nd phase of  
development)

Over all area development with large  
scale infrastructural work will be the  
subject:

(1) Working plan for infrastructure  
(road, irrigation, land reclamation)

(2) Work plan for extension

Institutional arrangement, modes of  
required funds and its investment

(3) Readjustment of 1st phase plan

(4) Estimation on costings for develop-  
ment projects, means of funding,  
identification of the problems to  
achieve the project, economic feasi-  
bility

(7) Work schedule of  
extension programme  
and its priority

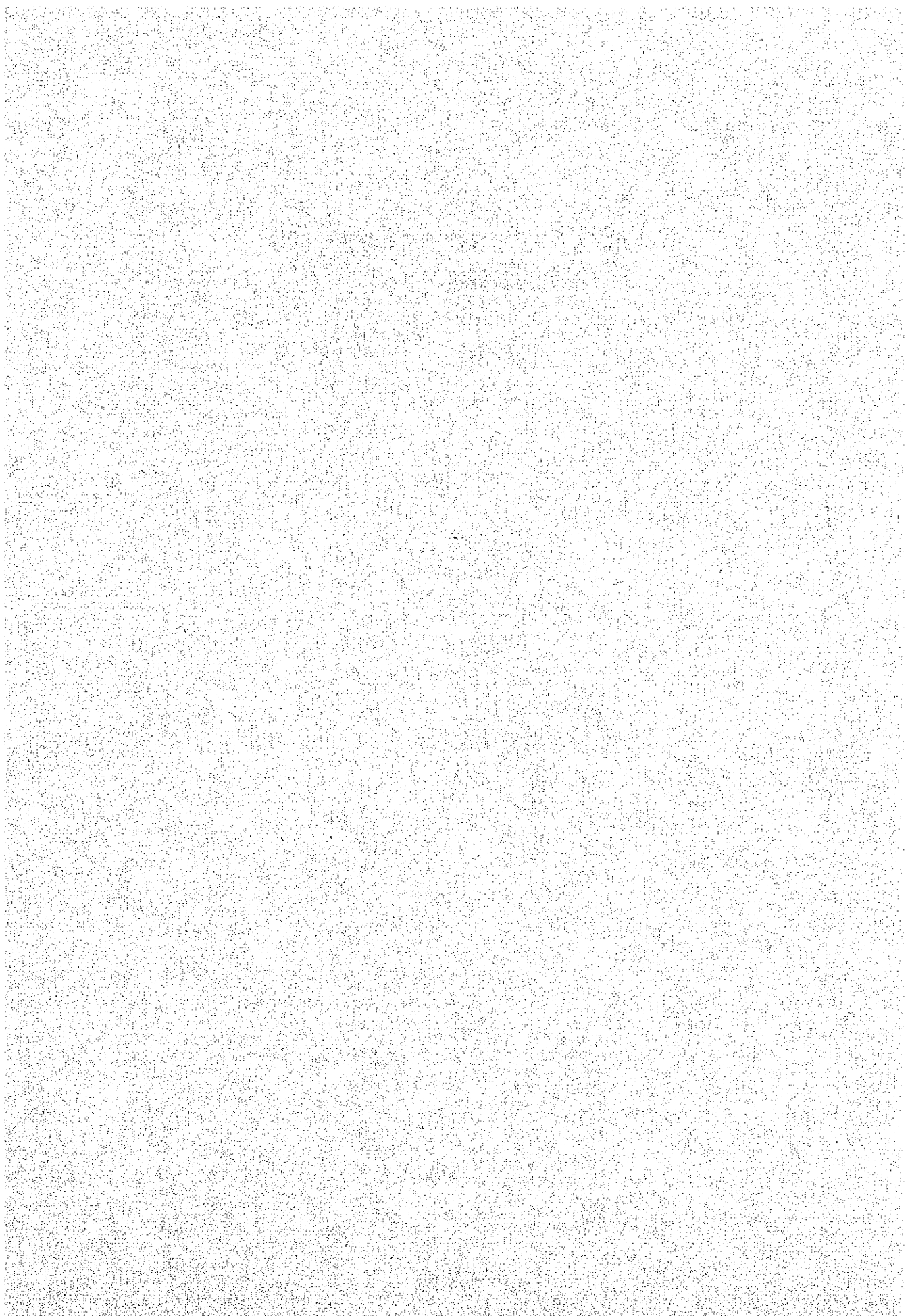
(1) Priority among the on-going and  
scheduled programmes

(2) Operation schedule

(3) Identification of unsolved problems

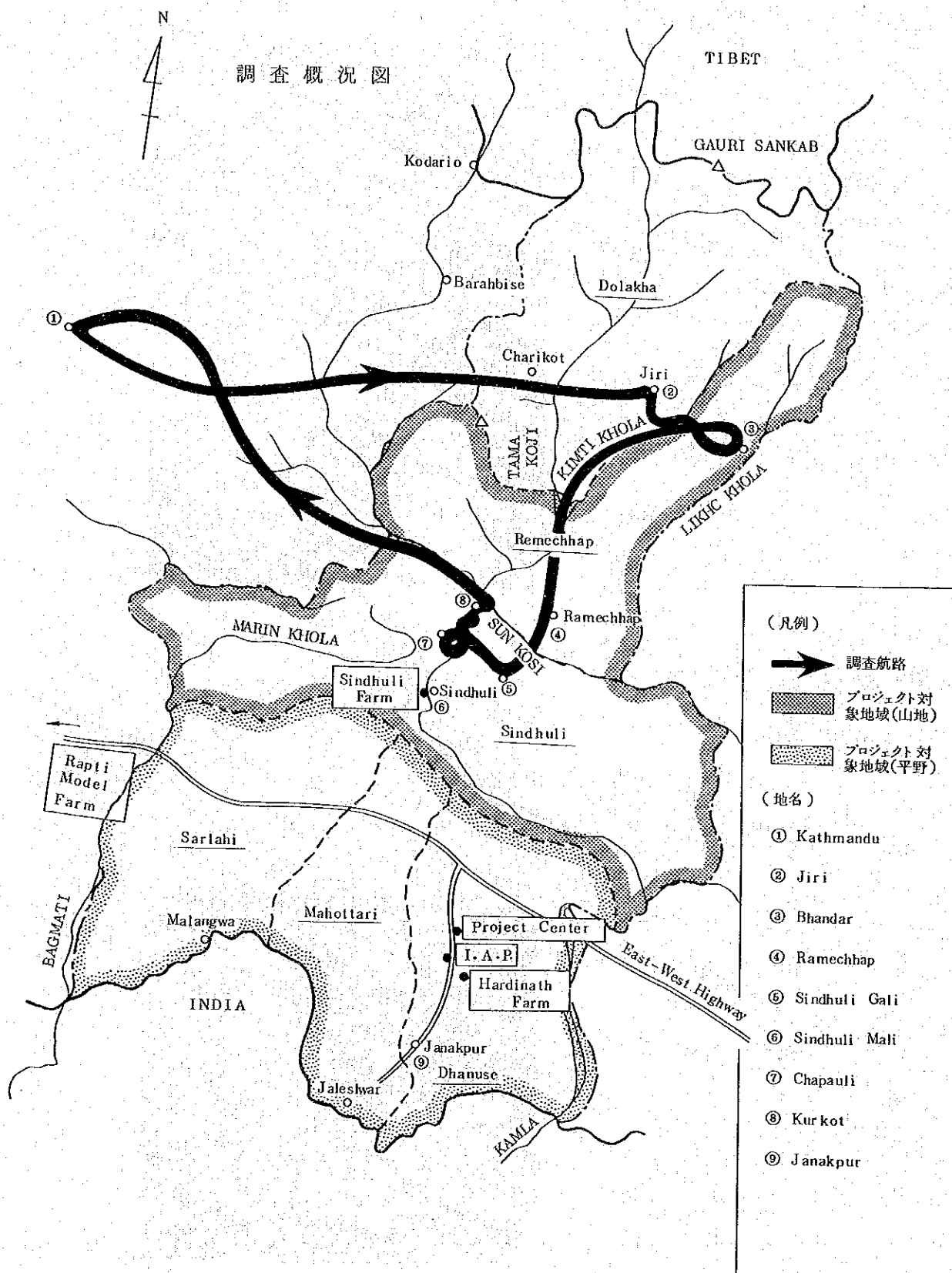


2. ヘリコプター利用による調査概況  
(4月14日実施)

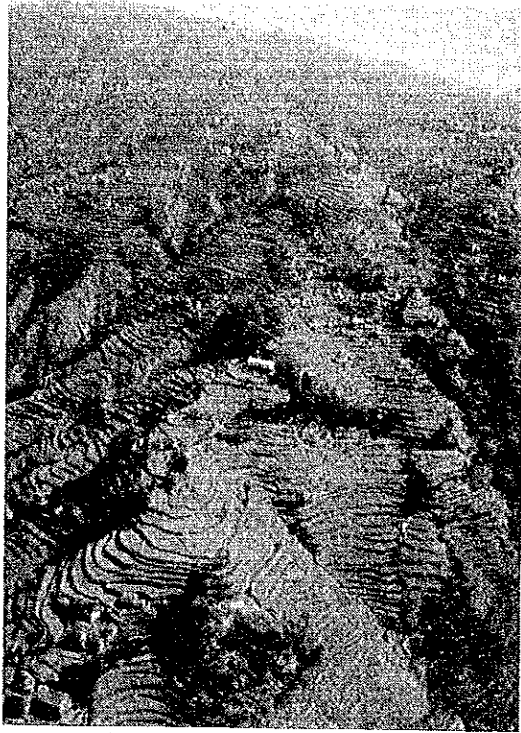




調査概況図



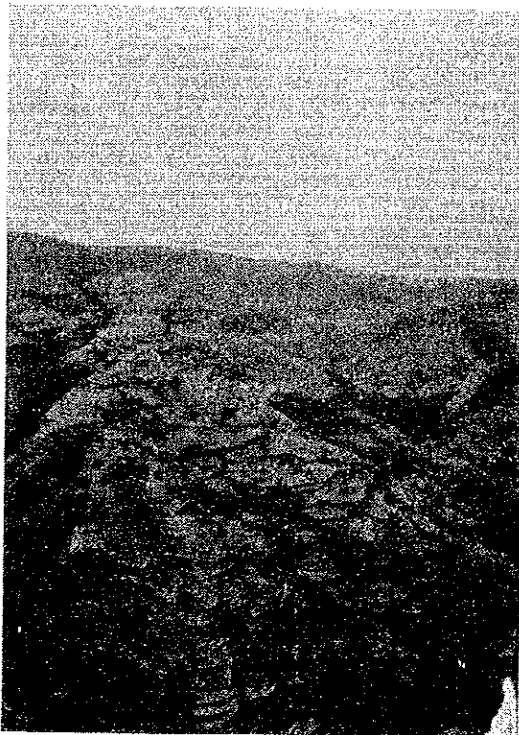




山地の概観

(標高 1,600m前後)

右下角に水田が見える。

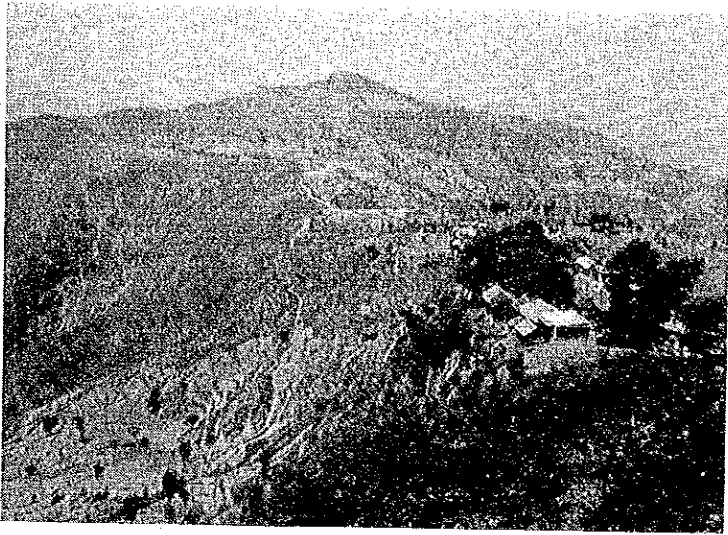


Dhabedanda

(標高 2,500m前後)

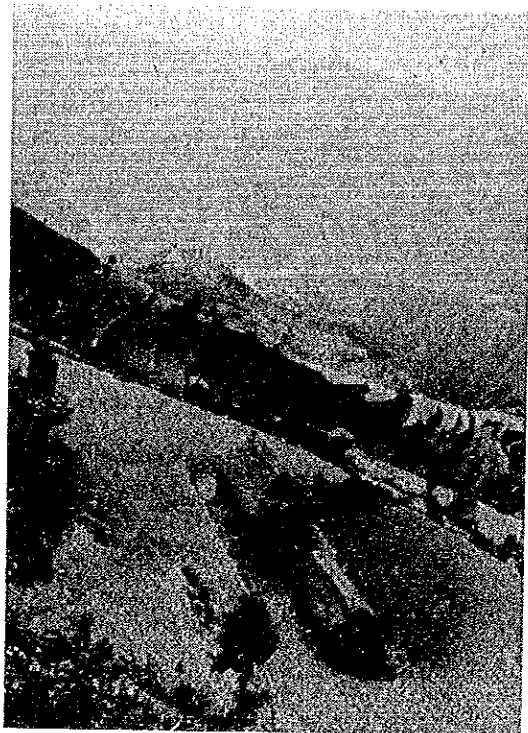
馬鈴薯、畜産等の地帯。





Ramechhap

(標高 1,500m前後)



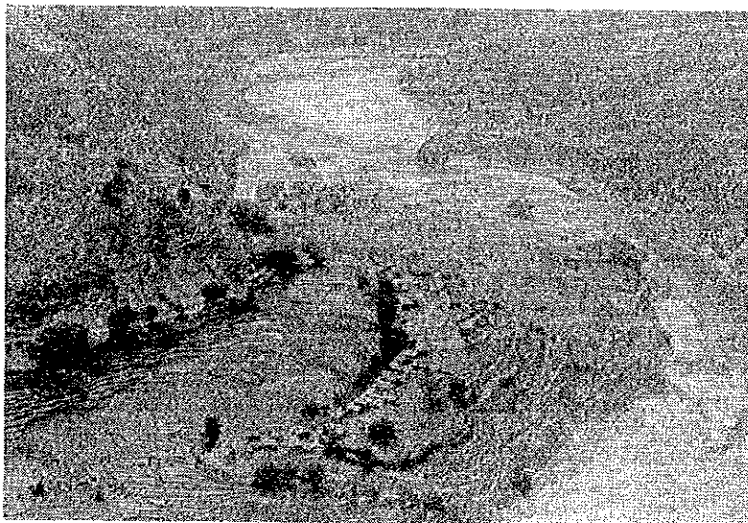




山地の農民

( Ramechhap にて )

市場からの帰り道。



Kurkot

( 標高 450m前後 )

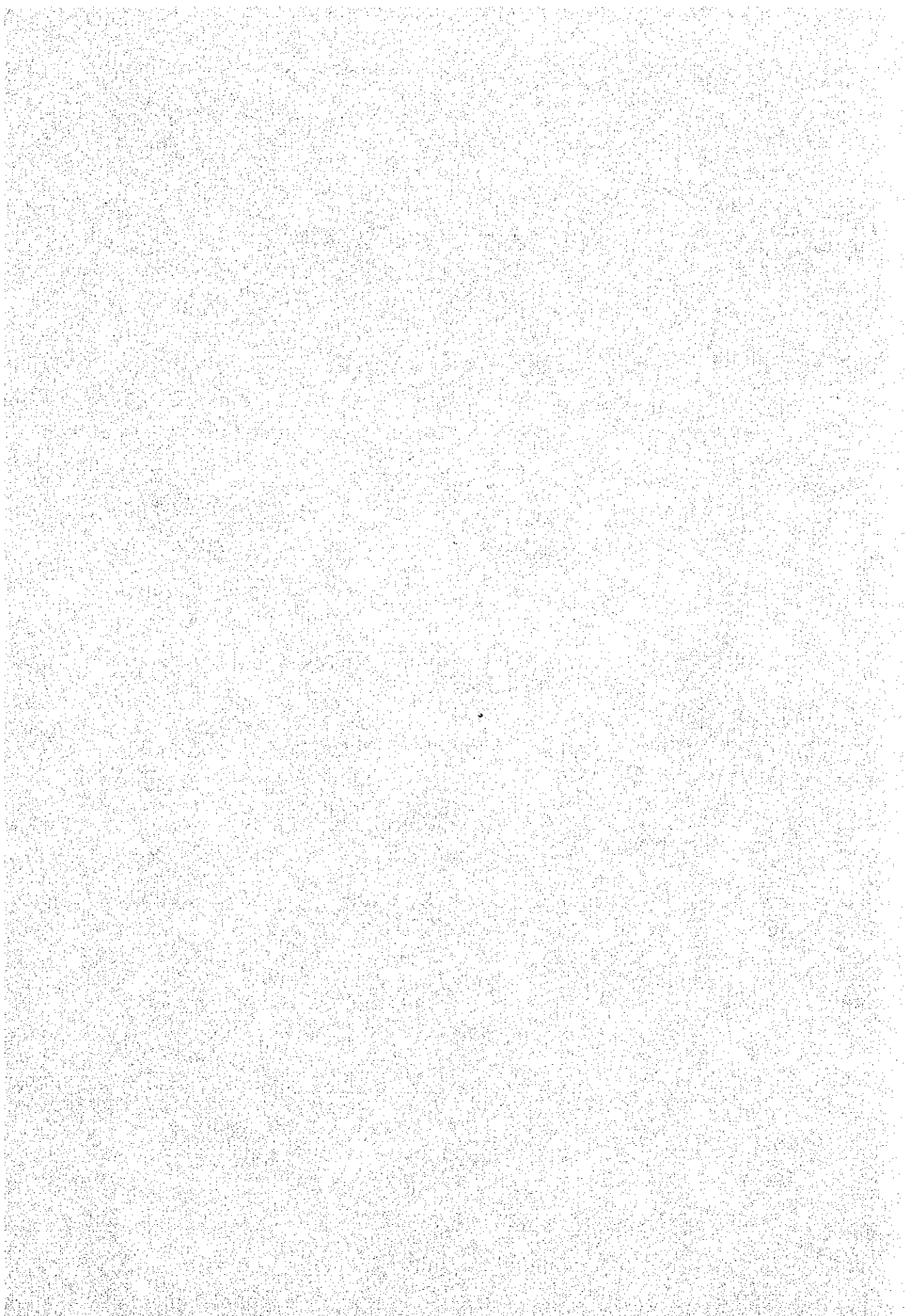
右端中央のスノーシー  
川にかかる巾橋はラメチ  
ップに続く。

水の張っている田は早期  
稲作田。





### 3. ネパールの度量衡



# ネパールの度量衡

島田輝男 編

ネパール政府は度量衡の近代化のためにメートル法を採用しているが、それは一部の都市に普及しているにすぎず、農村では在来度量衡が使われている。また、在来度量衡は地域によって異り、同一名称でも、メートル法換算で、その単位が異なる場合がある。

ここでは、容量、面積、尺度、重量のもっとも一般的な単位について、その基本単位、換算表を示した。

尚、この度量衡表作成に当って、下記の資料を使用した。

1. EAPD, Agricultural Statistics of Nepal, 1972
2. 栗田 匡一      ネパール農業調査報告 昭和38年 OTCA
3. 姉齒 尚      Conversion Tables of Local Measurement for Practical Use  
in Nepal (Tentative)
4. 編者の使用している換算表

## I. 容量 (Volume)

### 1. 基本単位 (Basic Unit)

#### In Hill area

1	Chakanehi	=	
1	Shauthai	=	2 Chakanehi
1	Mana	=	4 Chauthai
1	Pathi	=	8 Mana
1	Muri	=	20 Pathi

#### In Western Tarai area

1	Sai	=	
1	Mani	=	16 Sai
1	Gum	=	16 Mani

〔注〕 ジャナカプール県地方では、計量単位として、容量を使うのは Hill area か、Hill area 出身者であって、Tarai area の人々は、一般には容量計量を使用しない。液体物も重量単位を使って計量していた。

## 2. 換算表 (Conversion Table)

	Chakauchi	Chauthai	Mana	Pathi	Muri	Pint	Gallon	Litre	Mani
Chakauchi	1	0.5	0.125	0.01562	0.00078	0.125	0.01562	0.071030	0.00390
Chauthai	2	1	0.25	0.03125	0.00156	0.25	0.03124	0.14206	0.007813
Mana	8	4	1	0.125	0.00625	1	0.125	0.56824	0.03125
Pathi	256	32	8	1	0.05	8	1	4.54596	0.25
Muri	5,120	640	160	20	1	160	20	90.9192	5
Pint	8	4	1	0.125	0.00625	1	0.125	0.56824	0.03125
Gallon	256	32	8	1	0.05	8	1	4.54596	0.25
Litre	56,31374	7.03921	1.75980	0.21997	0.01099	1.75980	0.21997	1	0.05499
Sai	64	8	2	0.25	0.0125	2	0.25	1.13652	0.0625
Mani	1,024	128	32	4	0.2	32	4	18.18432	1
Gum	16,384	2,048	512	64	3.2	512	64	290.9491	16

## II. 面積 (Area)

### 1. 基本單位 (Basic Unit)

#### In Hill area

1 Dam	=	
1 Paisa	=	4 Dam
1 Anna	=	4 Paisa
1 Matto Muri	=	4 Anna = 37 ft x 37 ft
1 Ropani	=	4 Matto Muri = 74 ft x 74 ft
1 Khet Muri	=	100 Matto Muri = 25 Ropani
1 Hectare	≐	19 Ropani 2 Matto Muri 2 Anna 1 Paisa
	≐	20 Ropani

#### In Tarai area

1 Dhur	=	= 1 Lagi x 1 Lagi
1 Kattha	=	20 Dhur
1 Bigha	=	20 Kattha = 270 ft x 270 ft
1 Hectare	≐	1 Bigha 9 Kattha 11 Dhur
	≐	1.5 Bigha

[注] (1) ジャナカプール県では、公式にはシンドウリ郡のマハバーラッド山脈の南側からタライにかけて Bigha 単位が使用され、同山脈の北側から奥地にかけて Ropani 単位が使われていることになっている。

(2) 山間地では、Bigha 又は Ropani 単位を使わず、在来の Halow 単位を使うことが多い。特に畑面積は Halow で示すのが一般的である。

(3) Halow の面積は、2頭一組の去勢牛で一日にすき起す面積で、具体的には極めて漠然としている。今後代表地点での実測が必要である。参考までに栗田匡一氏等の調査結果をあげると、1 Halow の面積は 1,600 m<sup>2</sup> 前後である。

## 2. 換算表 (Conversion Table)

	Matto muri	Ropani	Khet muri	Dhur	Kattha	Bigha	Feet <sup>2</sup>	Acre	Hectare
Matto muri	1	0.25	0.01	7.51166	0.37558	0.01877	1,369	0.03142	0.01271
Ropani	4	1	0.04	30.0466	1.50233	0.07511	5,476	0.12571	0.05087
Khet muri	100	25	1	751.116	37.5583	1.87791	136,900	3.14279	1.27180
Dhur	0.13322	0.03328	0.00133	1	0.05	0.0025	182.25	0.00418	0.00169
Kattha	2.6625	0.66563	0.02663	20	1	0.05	3,645	0.08367	0.03386
Bigha	53.25	13.3125	0.5325	400	20	1	72,900	1.67355	0.67724
Feet <sup>2</sup>	0.00073	0.00018	0.000007	0.00548	0.00027	0.000014	1	0.22957	0.09340
Acre	31.8188	7.9547	0.31818	239.012	11.9506	0.59753	43,560	1	0.40685
Hectare	78.6287	19.6257	0.78625	590.61	29.5305	1.47654	107,639	2.47106	1

## Ⅲ. 尺 度 (Length)

### 1. 基本単位 (Basic Unit)

- 1 Bitta = = 大人の手を開いた時の親指の先から小指の先までの長さ
- 1 Hath = 2 Bitta = 大人の肘から手(中指)の先までの長さ
- 1 Gaj = 2 Hath
- 1 Lagi = 9 Hath
- 1 Kosh = 3,520 Gaj

[注] (1) 尺度は一般に Foot 単位が普及していて、多くの村人は Foot 単位を理解する。

## 2. 換算表 (Conversion Table)

	Bitta	Hath	Gaj	Lagi	Kosh	Inch	Foot	Mile	Metre
Bitta	1	0.5	0.25	0.05555	0.00007	9	0.75	0.00014	0.2286
Hath	2	1	0.5	0.11111	0.00014	18	1.5	0.00028	0.4572
Gaj	4	2	1	0.22222	0.00028	36	3	0.00057	0.924
Lagi	18	9	4.5	1	0.00127	162	13.5	0.00255	4.1148
Kosh	1,4080	7,040	3,520	782.222	1	126,720	10,560	2	3,218.68
Inch	0.11111	0.05555	0.02777	0.00617	0.000008	1	0.08333	0.00002	0.0254
Foot	1.33333	0.06666	0.03333	0.00741	0.00009	12	1	0.00019	0.3048
Mile	7,040	3,520	1760	391.111	0.5	63,360	5,280	1	1,609.34
Metre	4.37445	2.18722	1.09361	0.24302	0.00031	39.3701	3.28084	0.00062	1

## IV. 重量 (Weight)

### 1. 基本单位 (Basic Unit)

#### Pakka Seer (Hill and Tarai)

1 Lal

1 Anna = 6 Lal

1 Tola = 16 Anna

1 Chhatak = 5 Tola = 1 Kanuma\*1

1 Pau = 4 Chhatak

1 Seer = 4 Pau

1 Paseri\*1 = 5 Seer

1 Maund = 40 Seer or 8 Paseri

100 kg ≐ 2 Maund 27 Seer 3 Chhatak

Kachha Seer (Hill and Tarai)\*2

		<u>In Janakpur Tarai</u>		<u>In Janakpur Hill</u>
1	Lal	=		
1	Anna	=	6 Lal	= 6 Lal
1	Tola	=	16 Anna	= 16 Anna
1	Chhatak	=	5 Tola = 1 Kanuma*1	= 5 Tola
1	Pau	=	4 Chhatak	= 4 Chhatak
1	Seer	=	4 Pau	= 4 Pau
1	Paseri*1	=	6 Seer	x
1	Maund	=	48 Seer or 8 Paseri	= 40 Seer

Dharni (Hill and Kathmandu)

1	Bodi	=	
1	Athpol	=	2 Bodi
1	Bisauli	=	2 Athpol
1	Dharni	=	2 Bisauli = 3 Seer Hill (Kachha) = 12 Pau

[注] (1) Pakka Seer (Pakka Maund とも云う) は全国共通単位であるが, Kachha See (Kachha Maund とも云う) には地域性があり, 同一単位名称でも所により, Pakka Seer への換算値が全く異なる。従って調査等では Seer, Maund 単位については, その毎に Pakka か Kachha かを確認する必要がある。また Kachha の場合は Pakka への換算値を調べる必要がある。

(2) 地域によっては, Seer, Dharni 以外の単位も使われている。

(3) \* 1 印は, 東部タライで使用されている。

\* 2 印は, その一部のみ記録したにすぎない。

2. Seer 単位から Gramme への換算

(Conversion of Seer Unit to Gramme Unit)

		Pakka Seer	Kaccha Seer	
			<u>Janakpur Tarai</u>	<u>Janakpur Hill</u>
1	Lal	0.121 g	0.081 g	0.103 g
1	Anna	0.729 g	0.486 g	0.623 g
1	Tola	11.664 g	7.776 g	9.972 g
1	Chhatak	58.319 g	38.879 g	49.862 g
1	Pau	233.28 g	155.517 g	199.4 g
1	Seer	933.1 g	622.067 g	797.8 g
1	Paseri	4.666 kg	3.732 kg	x
1	Maund	37.324 kg	29.859 kg	31.912 kg





		Pakka Seer						Kachha Seer (Hil)				Dharni			Gramme
		Tola	Chhatak	Pau	Seer	Pasari	Maund	Tola	Chhatak	Pau	Seer	Athpol	Bisauli	Dharni	
Pakka Seer	Tola	1	0.2	0.05	0.0125	0.0025	0.0003	1.1696	0.2339	0.0585	0.0146	0.0195	0.097	0.0049	11.664
	Chhatak	5	1	0.25	0.0625	0.0125	0.0016	5.8481	1.1696	0.2924	0.0731	0.0975	0.0487	0.0244	58.319
	Pau	20	4	1	0.25	0.05	0.0063	23.3925	4.6785	1.1696	0.2924	0.3899	0.1949	0.0975	233.28
	Seer	80	16	4	1	0.2	0.025	93.57	18.714	4.6785	1.1696	1.5595	0.7798	0.3899	933.1
	Pasari	400	80	20	5	1	0.125	467.85	93.57	23.3925	5.8481	7.7975	3.8988	1.9494	4,665.5
	Maund	3,200	640	160	40	8	1	3,742.8	748.56	187.14	46.785	62.38	31.19	15.595	37,324
Kachha Seer	Tola	0.8550	0.1710	0.0428	0.0107	0.0021	0.0003	1	0.2	0.05	0.0125	0.0167	0.0083	0.0042	9.9725
	Chhatak	4.2752	0.8550	0.2138	0.0534	0.01062	0.0013	5	1	0.25	0.0625	0.0833	0.0417	0.0208	49.863
	Pau	17.101	3.4202	0.8550	0.2138	0.0425	0.0053	20	4	1	0.25	0.3333	0.1667	0.0833	199.45
	Seer	68.404	13.681	3.4202	0.8550	0.1696	0.0214	80	16	4	1	1.3332	0.6667	0.3333	797.8
Dharni	Athpol	51.30	10.250	2.565	0.6412	0.1283	0.0160	60	12	3	0.75	1	0.5	0.25	598
	Bisauli	102.6	20.519	5.130	1.2825	0.2566	0.0320	120	24	6	1.5	2	1	0.5	1,196
	Dharni	205.19	41.039	10.260	2.5649	0.5132	0.0641	240	48	12	3	4	2	1	2,392





JICA