RAPID APPRAISAL ON NUTRITION HOUSE-HOLD FOOD SECURITY AMONG TRIBALS OF APTDF.

V. NAGENDRA KUMAR

O. S. V. D. PRASAD

S. MOHAN

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INTRODUCTION

The advent of poverty as an explicit variable into development projects, planning exrcises and public welfare policies generated a plethora of litierature bringing into light the differences in concept, strategies of interventions and instruments of impl-e mentation. Broadly, especially in respect of rural development, the strategic instruments aim at (1) maximisation of House Hold food consumption. (2) maximisation of per capita productivity or income, (3) maximisation of Employment and (4) minimisation of income in-equalities. But, often the aspects of sustainability and chageas on the texture of preferences and nutritional standards are forgotten or at the best given secondary importance.

It is transparent that the quantitative measures employed in gauging development do not give importance to culture and

Contd..2.

environment. Inadequate emphasis on culture, nutrition and sustaninability which are important structural facets lead to complex consequences in the case of development projects, especially meant for tribals. Most of the studies, which investigated this aspect, have shown that changes in farm managment, production technology cannot always inprove the food consumption status and imcreased productivity per se does not bring in higher nutritional standards among targetted families. Devault (1989) and Anawlae (1984) thus caution that agricultural projects designed with above stated aims are not nutritionally neutral. In the case of tribal development projects which are to be implemented in areas with distinct ecolcgical, production, cultural and demographic conditions, the risk of neglecting existing food security and production system is high and may jeopardise, the very objective of development.

The above s cenario warrants not only careful planning for house-hold food security

Contd..3.

but also demands a surveillance mechanism to monitor the changes in food culture and consequential nutritional and health standards. However inview of the abnormal costs in conducting such monitoring studies through customary anthropometric and nutritional surveys there is a tendency to relegate the studies to ~~test~~ low priority. An attempt is made in this study to test the feasibility of evolving a monitoring mechanism by integrating Rural Rapid appraisal method (Robert Chamber) with traditional survey approach to provide key signals of change in household food security system. The idea for such an endeavour has emanated ~~form~~ from the work-shop sponsored by IFAD, held at Kathmmandu, in Feb., 92, dealing with Diet, culture and the Envioroment traditional food patterns on socio-economic transitions; challenges to investment projects and social action. The exercise is carried in the three ITDA areas during April, 92 where Andhra Pradesh Tribal Development projects (APTDP) assisted by International Fund for Agricultural Development, Rome (IFAD) is being implemented since 1991.

Contd..4.

The APTDP aims at providing food security to 63,371 families of tribals who are subsisting on "podu" (short cycle shifting) cultivation in 16 watersheds in the ITDA areas of Seethampeta, Parvathipuram, Paderu and Rampachodavarm located in the districts of Srikakulam, Vizianagaram, Visakhapatnam and East Godavari respectively. The project aims at self sustained holistic development by integrating interventions for the food security and eco-security through natural resources as well as human resource development programmes in a symbiotic manner. The natural resource development component covering various programmes like soil conservation, small scale irrigation, horticulture plantation, inter-cropping in horticulture and arable crop development, through strengthening of credit and marketing institutions and provision of extension and training services is expected to bridge the supply and demand gap in both food production and consumption facilitating better food security along with adequate nutrition standards. Aside, in the long run, these programmes are expected to improve the income levels and consequentially standards of living. The approach of implementation being peoples participation, the element of sustainability of change is expected to be ensured.

Contd.5.

STUDY AREA:

The study area is confined to watershed areas of APTDP in 3 districts namely, 1) Srikakulam 2) Visakhapatnam and 3) East Godavari, since these three areas reflect the ethnic and cultural diversity of the project areas.

HOUSE FOOD SECURITY:

For the purpose of the study household food security (HFS), surveillance mechanism is expected to focus on the aspects of availability, accessibility, acceptability (culturally), adaptability (nutritionally) and amendability (sustainability).

STUDY DESIGN:

As a first step the available literature and information dealing with applied nutritional aspects specific to the study area, obtained through surveys during the last decade, is collected to delineate the possible and available quantitative parameters of change. However, it was found that most of such Surveys/ studies due to methodological and coverage reasons are not compatable with the objective of current study.

Contd..6.

As a second step one ITDA namely Paderu is chosen for eliciting information on household food security through customary Survey method adopting oral enquiry approach. The ITDA spreads over 11 Mandals out of which 4 Mandals . . viz, Paderu, Chintapally, G.K.Veedhi, and Munchingput Mandals are selected purposively. The Survey being carried out in summer season is supplentary in nature to the similar surveyes in the same area conducted by Tribal Cultural Research and Training Institure during the rainy and winter seasins of 1990, to reflect the cultural and nutritional nuances of tribals living in watershed areas of Visakhapatnam district. In all, 10 villages in different watershed areas were covered in this study, The list of village along with house-holds and its distance form Mandal Headquaters are given in appendix.

Rural Rapid Appraisal method as a third step is followed for eliciting information on changes in consumption patten, covering the following aspects, in ITDAs of Rampachodavarm and Seethampeta.

Contd..7.

1) To identify key linkages between food intake and important aspects of diet pattern.

2) To explore the dietary changes within the dynamics of food system.

The RRA method was carried out in 6 villages in East Godavari district spread over 3 watershed areas and 4 villages in 3 watershed areas of Srikakulam district. Initial group discussions followed by selective key informant approach was followed in these villages.

The traditional food chart of the tribals contains the following items:-

1) Cereals like coarse grains, millets, Sorghum(Jowar) and Ragi.

2) Traditional pulses such as Redgram.

3) Leafy vegetables of forest plant leaves available for most of the years.

4) Tubers which grow widely in the forest areas.

5) Fish from ponds and meat from game-hunting.

Contd..8.

However, due to various interventions namely gegulatory, technological, welfare, marketing substantive changes both in terms of quanitity and quality are expected to take place which have direct bearing on household food security. From the survey data current dietary and nutritional status are analysed.

DIETARY INTAKE:- The intake of green leafy vegetables is surplus in rainy season. The availability of roots & tubers for these groups is surplus in rainy season and marginal (2.60%) in summer season. Except in winter season the intake of oil is very less. This is due to availability of more fish in winter season and also occurrence of number of tribal festivals in this season including Sankranti. The nutrient deficiencies that arise due to non-consumptions of green leafy begetables, roots & tubers are compensated by cereals, pulses and vegetables in winter season. In summer season, major deficiency is observed in the intake of fruits. Excepting mango and jack, no other fruits are available during the season. The average dietary intake of tribals in three major seasons of a years is presented in table 1.

Contd..9.

The analysis reveals the following:

1. Consistently in all the three seasons flesh foods and fruits intake is found to be in deficit with highest deviations form R.D.A.

2. Green leafy vegetable intake is very low in winter season, and also in summer season, although it is found marginally surplus in rainy season. Iron intake is higher than R.D.A. in rainy and winter seasons.

3. Vitamin 'A' intake is consistantly within the recommended zone in all the three seasons. Similar is the case with reference to Thiamine.

NUTRIENT INTAKE:- The analysis of Nutrient intake is carried out in the customary fashion by converting the quantities of various food items consumed into the associated standard values of nutrients. The season specific average values of nutrients intake is presented in Table-2.

2. From the table it can be observed that the intake of Iron is surplus throughout the year. Similar is the case with respect to Vit. 'A' and Thiamine. The intake of proteins is surplus in rainy season, where as it is deficit in winter season. The same phenomenon is observed for Calcium also. This is due to availability of fish, green leafy vegetables particularly in rainy season. Roots & tubers also

Contd..10.

add proteins in their diet in rainy season. Oil and fat intake is surplus only in winter season. Cereals, pulses and vegetables intake is found to be significantly deficit in rainy season only.

RRA Exercise:- The RRA exercise indicated the following changes.

A.Cereal Consumption:

1. Increase in production of rice in the area due to implementation of certain poverty alleviation programmes, construction of checkdams etc, and consquently change in cropping pattern and use of high yielding varieties of seeds, fertilizers and pesticides which are supplied by ITDAs lead increased consumption of Rice.
2. Rice supply through public distribution system (DR DEPOTS) at low prices i.e. on subsidised rates improved cereal consumption.
3. Even though the consumption of rice increased, preference for Ragi which is the traditional food in the morning, in the afternoon and also in lean seasons, remained the same.

Contd..11.

4. Production of ragi and other sister millets/cereals decreased due to decrease in area of operation. It is due to induction of social forestry schemes like cashew plantation and coffee plantation in podu area. Reduced production of ragi increased the dependecy on rice supplied through D.R. Depots.

5. The dietary intake in cereals increased in quanitity although there was a chanage in the composition of items resulting in seasonal distrubance in nutitional intake status, but protein calorie malnutrition is not found among tribals of the study area.

B Consumption of Konda Kandulu, the traditional pulse.

1. The avaialability decreased due to technology and extention interventions displacing traditional pulses of konda kandulu by high yielding varieties like LRG 30, in a limited area.

2. Purchasing of dalls from the market or DR Depots.

Contd..12.

C Vegetables: & Leafy Vegetables:

1. The consumption of traditional leafy vegetables like palleru, mulagaku etc. Which are available in homesteads and forests decreased due to depletion of forests. Their dependence on exotic vegetables like tomato, Potato, brinjal, Sanke-guard etc., which are brought through technological interventions increased. However, the traditional vegetable like pumpkin and french beans are still grown in the backyards.

D Fruits:-

1. The consumption of fruits is decreasing, due to increased market facilities. In earlier days they used to eat mangoes, jack fruits and citrus fruits. Now-a-days they sell it in the market. Due to such sales they are looking to the mango kernels also which they eat by powdering in lean seasons.

E Roots & Tubers:- The availability of roots and tubers decreased due to extinction of forest areas. The roots & tubers gives energy.

Contd..13.

F Meat:- The eating a game meat is also decreased due to extinction of forest and introduction of forest regulation Acts etc.

G. Milk & Milk Products:- Milk was not a traditional food item among the tribals. But now sporadic changes are observed because of influence of non-tribals. Consumption of tea has become a regular habit in certain households.

H. Toddy:- Cases of addiction to arrack are increasing, displacing some times supplementing consumption of Tatikallu, Bethakallu, Jeelugu Kallu etc. The addiction of arrack is ascribable to Government policy for supply of Govt. arrack at cheaper rates. The availability of caryota urens (Jeelugukallu) decreased due to indiscriminate tapping.

I M.F.P:- Despite availability of MFP in sufficient quanitities, tribals are not going for the collection of MFP because it is time taking activity and also involves foraging farther places and the rates

Contd..14.

for certain . items like Nux.-Vomica seeds, Myrobalams are not remunerative. However, the tribals are still collecting only certain items like Gum, honey, tamarind etc. for which they get good remuneration.

The synthesis of quantitative and qualitative results indicate that an integrated surveillance mechanism to monitor the changes in H.F.S. is feasible with customary Quin-Quinneal surveys to elicit qualitative information dovetailed by a qualitative information through Rapid Rural Appraisal approach conducted in every season in key villages.

Conclusions:- The exercise taken up here is exploratory in nature. Inspite of various methodogloical and time limitations the exercise indicate the following:-

1. Interventions of new technologies perturb the House hold food systems though not in a catastrophic way.

Contd..15.

2. Tribals are optimising their utility functions by carefully allocating their available resources, which include their labour service, to suit the technological and regulatory interventions.

3. Development has broughtalong with it evils of arrack drinking and selective commercial out look.

APPENDIX

VISAKHAPATNAM DISTRICT

Sl. No.	Name of the Water shed	Nane of the Village	No. of House Holds
1.	Molakapalem	Modapalli	35
		Pulabanda	30
		Vantla Mamidi	45
2.	Sujanakota	Kinchayiputtu	40
		Sujana kota	45
		Vanabha singi	35
		Sujanapeta	60
3.	Gudem	G.K.Veedhi	40
		Poojari pakalu	34
		G.Patha Veedhi	30

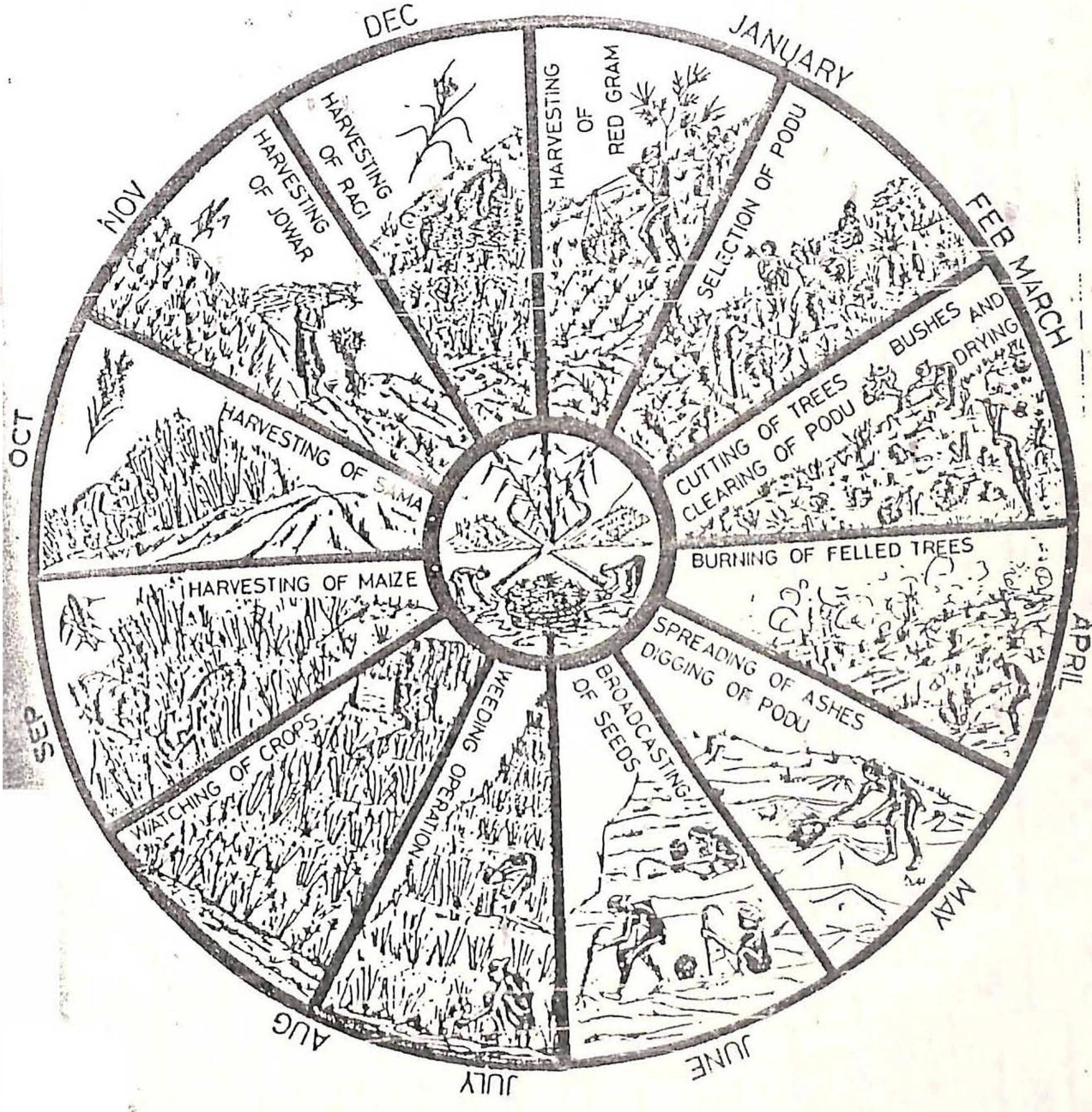
EAST GODAVARI DISTRICT

1.	Palem	Thatiwada	50
		Palem	40
2.	Devarapalli	Devarapalli	60
3.	Kutrawada	Ketchalawada	35
		Boduluru	45
		Kuduru	30

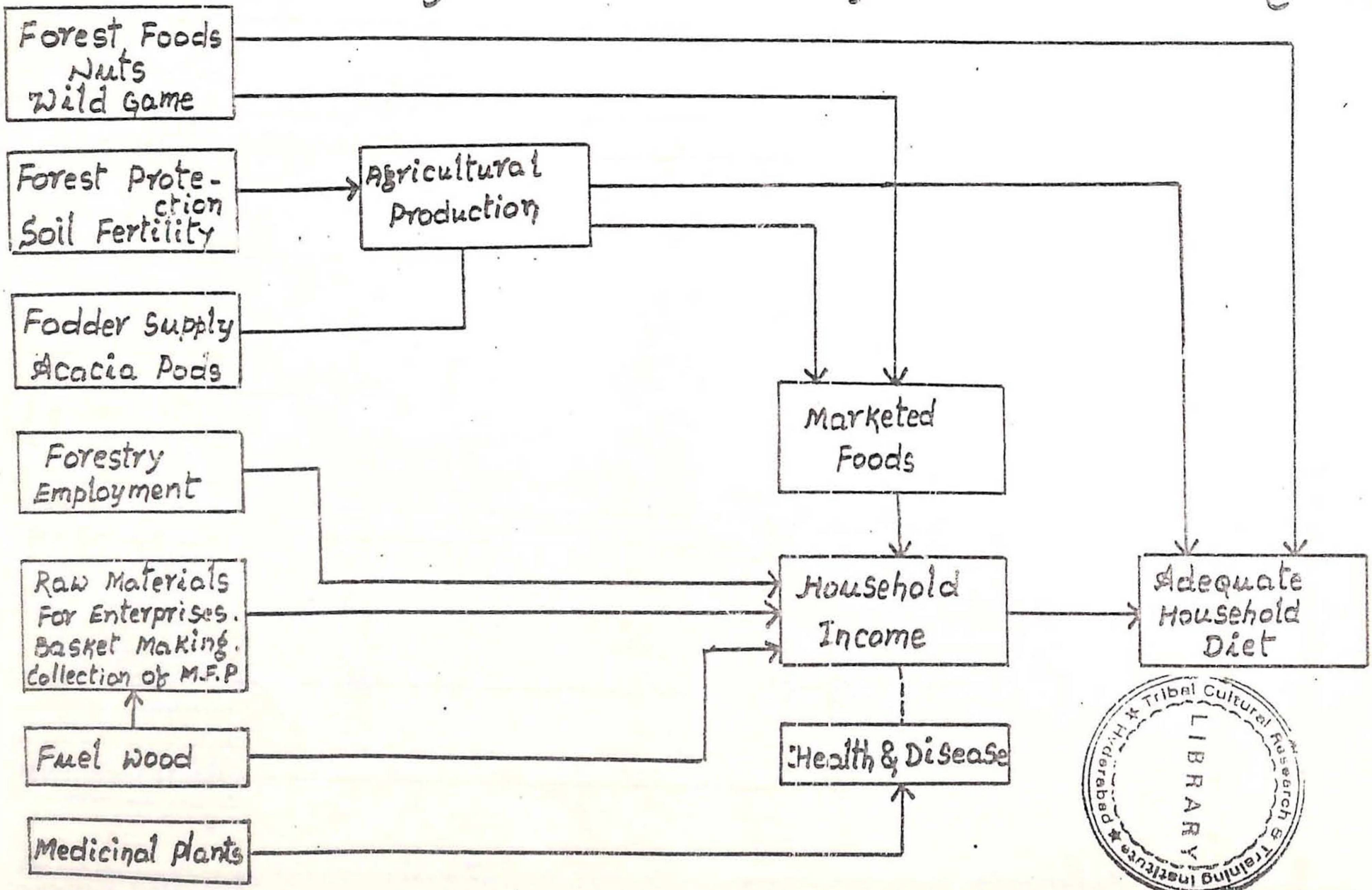
SRIKAKULAM DISTRICT

1.	Danjubai	Ghattigumda	44
2.	Kusimi	Kusimi	45
3.	Kusimiguda	Dabara	33
4.		Mittameedhiguda	9

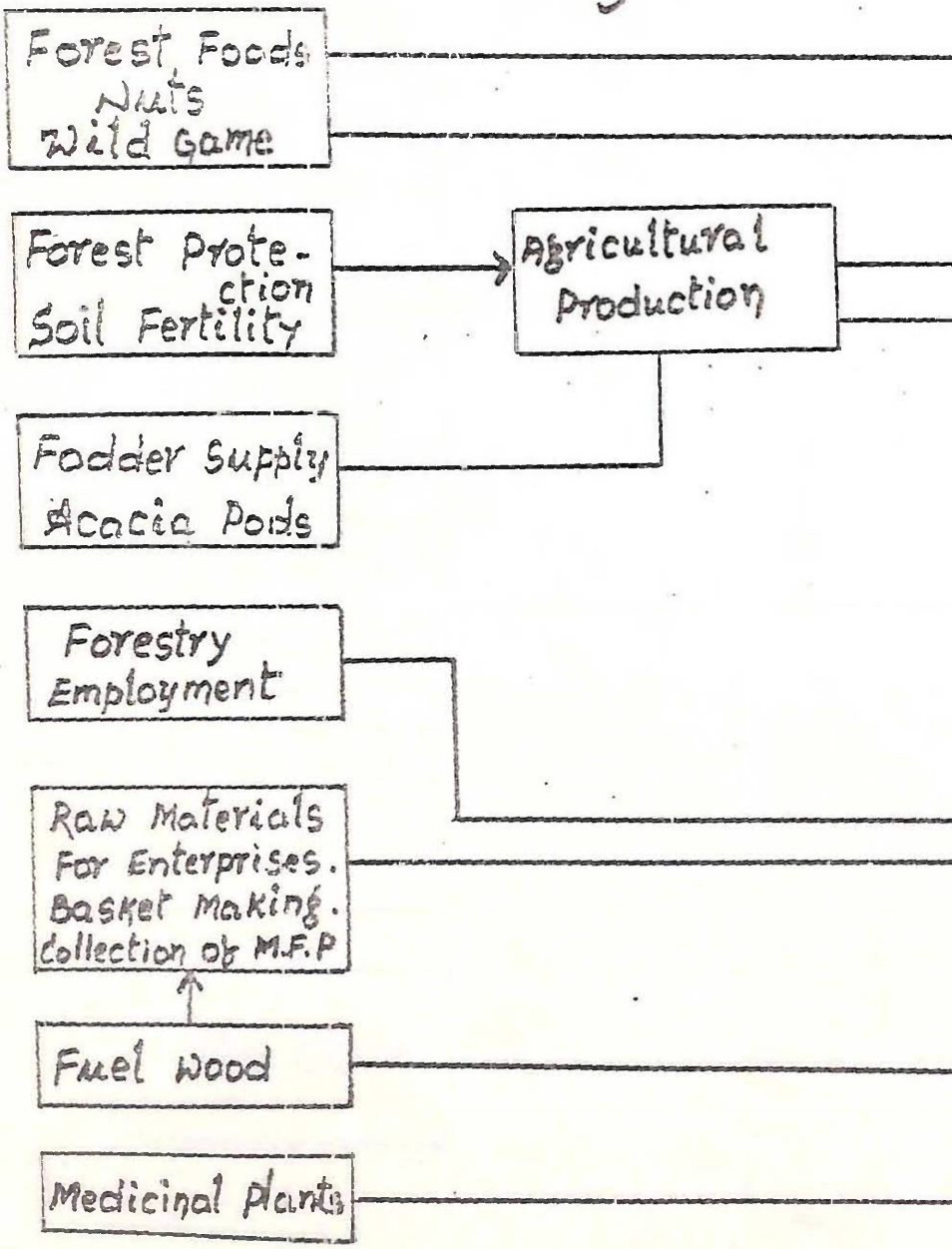
CYCLE OF SHIFTING CULTIVATION



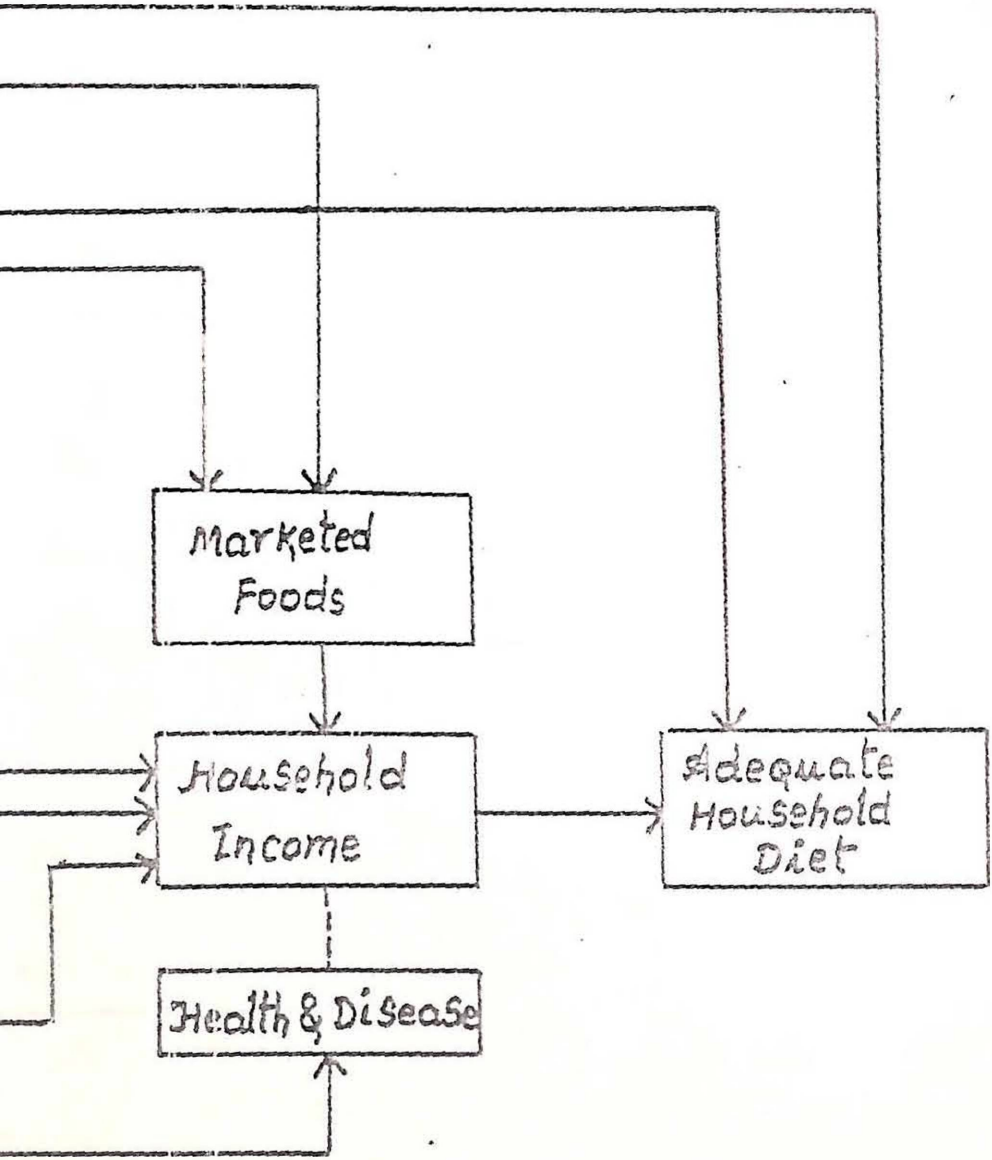
Forestry, Food Security, And Nutrition



Forestry, Food

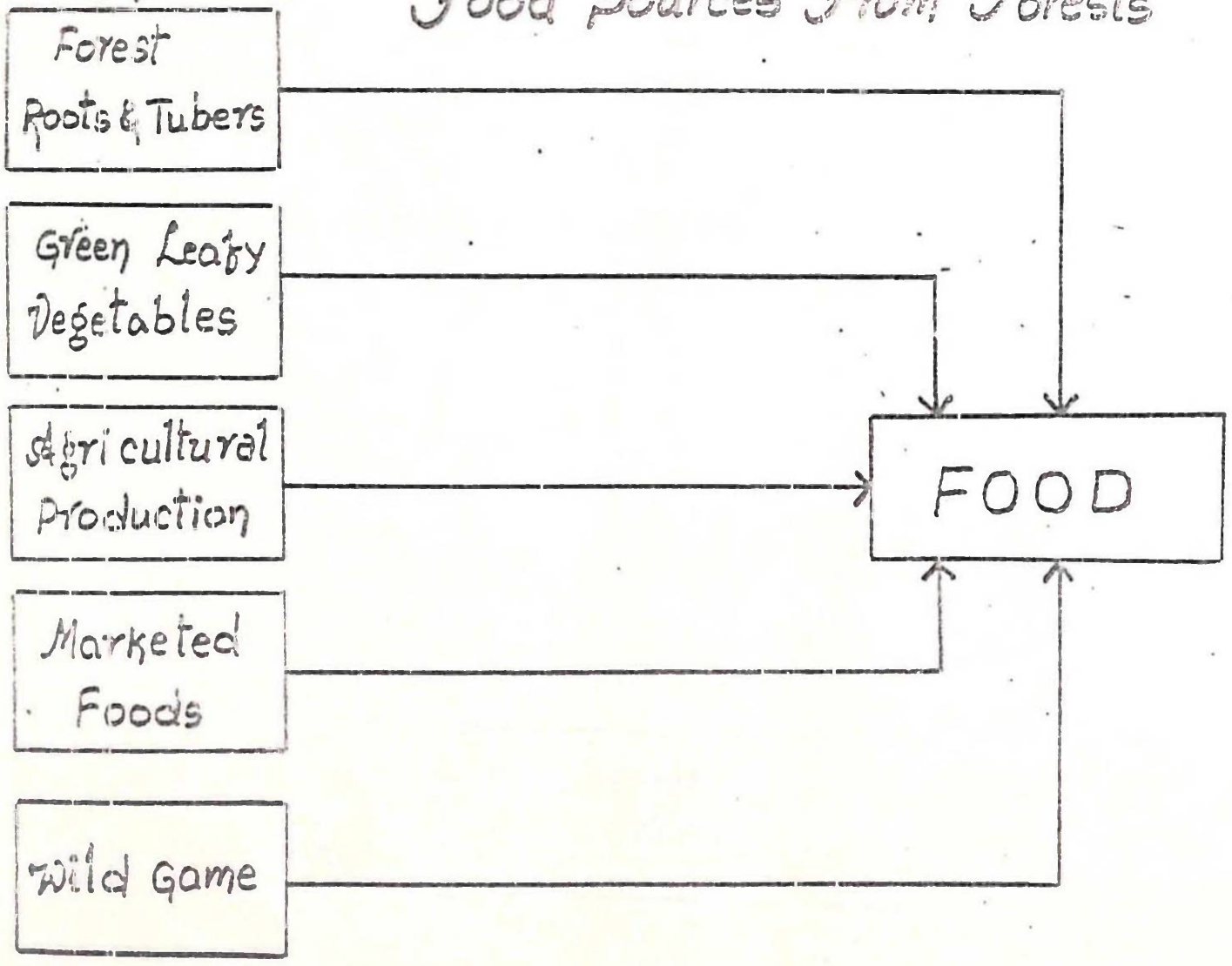


Security, And Nutrition

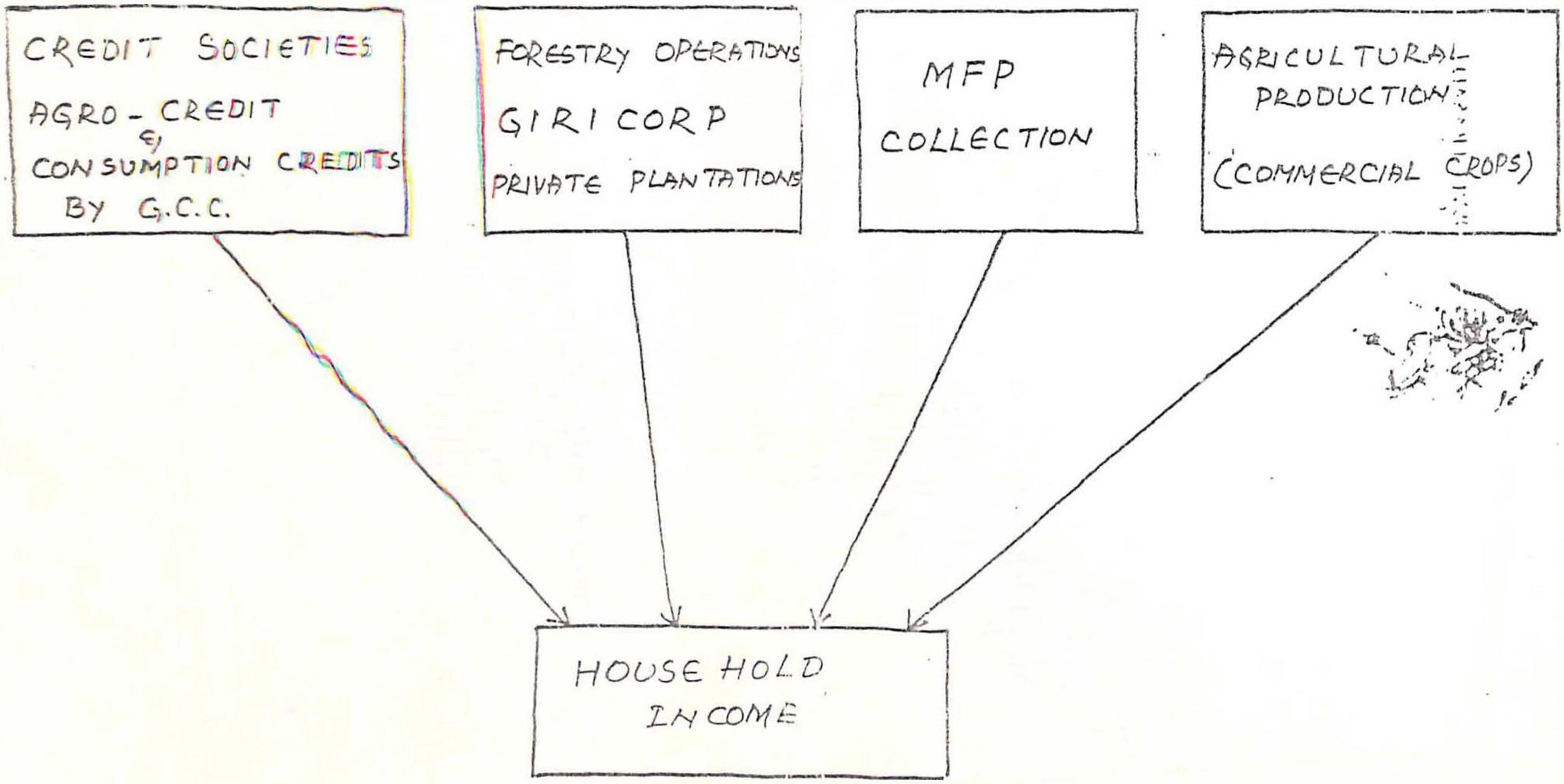


Food Sources

Food Sources From Forests



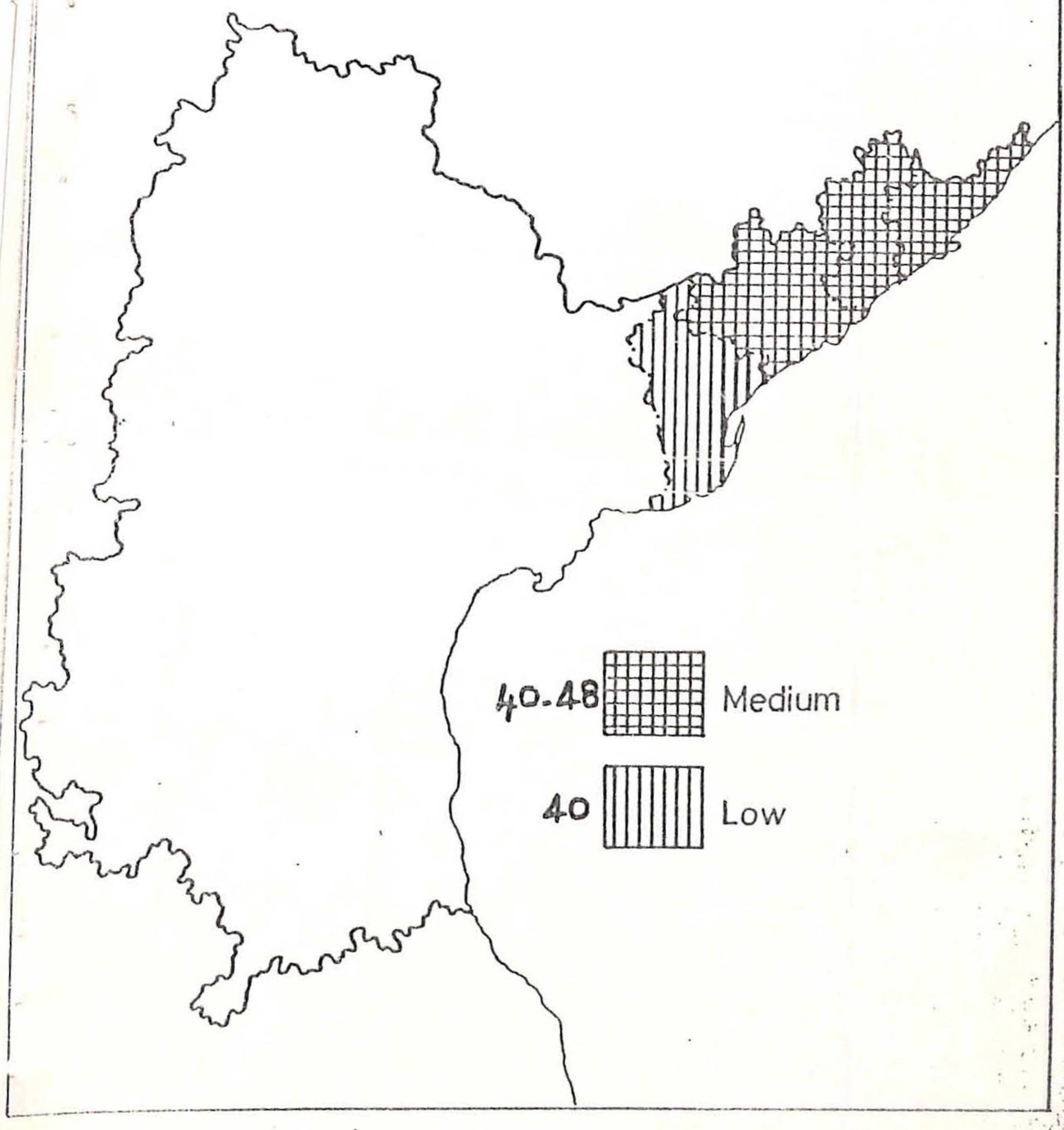
FACTORS INFLUENCING THE ECONOMY



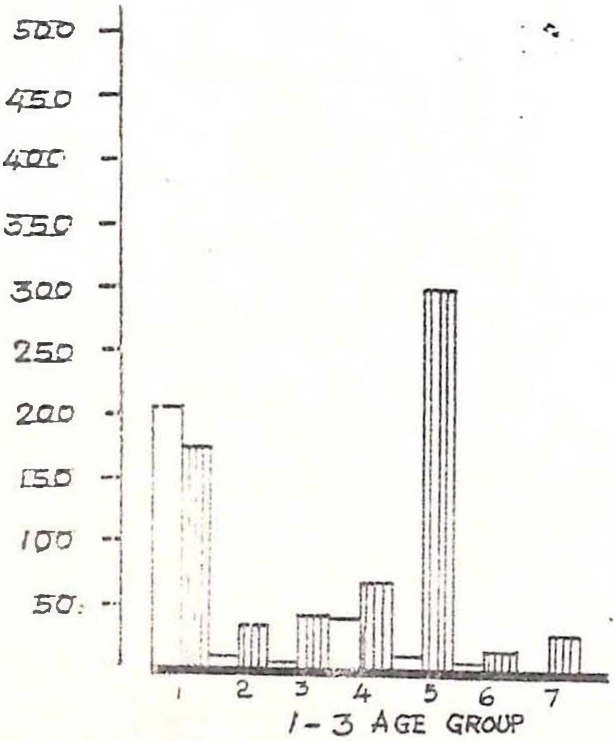
Andhra Pradesh

PREVALENCE OF MALNOURISHMENT

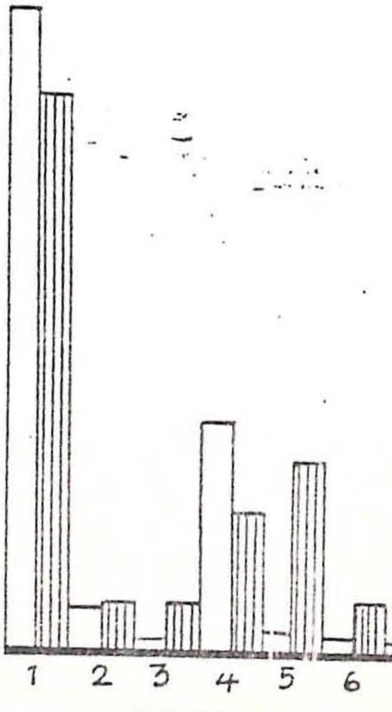
I.F.A.D. DISTRICTS



AVERAGE INTAKE OF FOOD STUFF
PERDAY



1-3 AGE GROUP

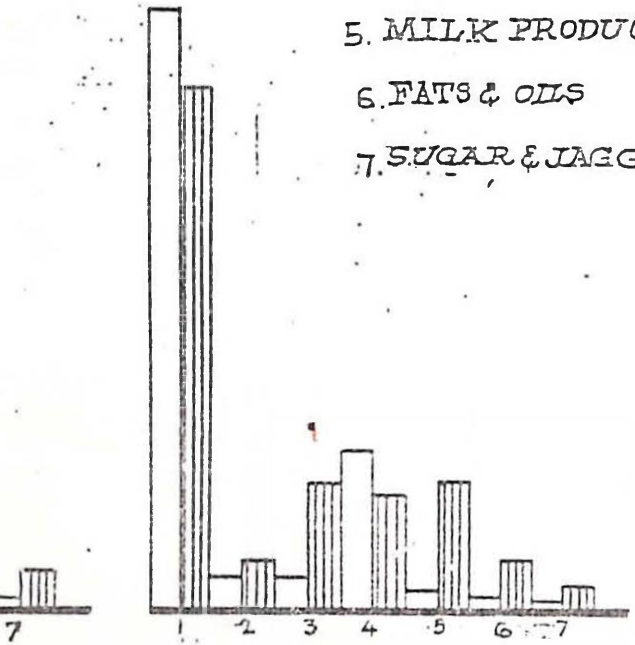


ADULT MALE
SEDENTERY

(MILLS)

RDA

1. CEREALS
2. PULSES
3. GLV
4. VEGETABLES
5. MILK PRODUCTS
6. FATS & OILS
7. SUGAR & JAGGERY



ADULT FEMALE
SEDENTERY

SOURCE N.I.N

AVERAGE INTAKE OF NUTRIENTS BY SEASONS IN ADULT MALES

Average in Take of Nutrients per Day
in Tribal Areas of N.P.

200 400 600 800 1000 1200

1-3 AGE GROUP

CALORIES

PROTEINS 23.1

CALCIUM

IRON

VIT A

THIAMINE

RIBOFLAVIN

ADULT MALE
SEDENTERY

CALORIES

PROTEINS

CALCIUM

IRON

VIT A

THIAMINE 1.24/1.20

RIBOFLAVIN 0.80/1.40

ADULT FEMALE
SEDENTERY

CALORIES

PROTEINS

CALCIUM

IRON

VIT A

THIAMINE 1.10/1.10

RIBOFLAVIN 0.73/1.30

R.D.A.

1 CM = 100

SOURCE NIN

TABLE -1

FOOD INTAKE OF THE TRIBALS OF NORTH COASTAL DISTRICTS OF ANDHRA PRADESH.

S.No	Study/Food intake in gms.	Particulars.	Cereals	Pulses	Green leafy Veg.	Other Veg	Roots & Tubers.	Fruits.	Meat & Fish.	Milk & Curds.	Sugar & Jaggery.	Oil.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1.	Anuradha rao and K. Chittemma Rao. Maredumilli. 1982.	Intake PCU:	490	13	0	23	13	—	—	1	9	—
		(N=50 Households)	(130)	(30)	(0)	(46)	(26)	—	—	0	(30)	--
2.	P.Prabhamma, P.Geervani and K.Chittemma Rao. "Profile of Tribal families in G.Dist." 1983.	Intake PCU:	572	9	6	51	19	3	13	27	9	6
		(N=150 Households)	(124)	(23)	(15)	(100)	(38)	—	—	(18)	(30)	(15)
3.	Suseela Subha Rani Ch. and G.Sarojini. Bhadragiri Vijaya. Dist.1984.	a. Pregnant Women	440	6	1	18	18	—	—	—	—	1
		(N = 37)	(110)	(11)	(3)	(24)	(24)	—	—	—	—	(1)
		b. Lactating	460	2	2	7	26	—	—	—	—	1
		Women (N = 45)	(102)	(3)	(2)	(10)	(35)	—	—	—	—	(1)
4.	Rajyalakshmi .P and P. Geervani. Tribal Food Habits. 1987.	Intake women	470	26	48	113	23	—	19	—	—	—
		15-45 years	(90)	(56)	(48)	(282)	(46)	—	(64)	—	—	—
		(N=170 Households)										
5.	WHO, F.A.O & T.I		385	76	85	85	80	42	34	—	—	55
	RDA PCU		460	40	40	60	50	—	—	150	30	40
	RDA Adult women(Moderate)		440	40	100	40	50	—	—	150	30	25
	RDA Pregnant women(Moderate)		445	55	100	40	50	—	—	200	30	20
	RDA Lactating women(Moderate)		470	70	100	40	50	—	—	300	30	30

Figures in parentheses indicate % of RDA

NUTRIENT INTAKE OF TRIBALS OF NORTH COASTAL DISTRICTS OF ANDHRA PRADESH.

S.No	Study/Food intake in gms.	Particulars.	Calories Kcals	Protiens g	B.Carotene g	Thiamine mg	Ribiflavin(mg)	Vit - C mg	Calcium mg	Iron mg
1.	Anuradha rao and K. Chittemma Rao. Maredumilli. ITDA R.C.VARAM. 1982.	Intake PCU: (N=50 Households)	1636 (68)	42 (76)	120 (4)	1.7 (142)	0.54 (39)	11 (28)	90 (20)	18 (75)
2.	P.Pushpamma. P.Geervani and K.Chittemma Rao. "Profile of Tribal families in S.Dist." 1982.	Intake PCU: (N=150 Households)	2206 (92)	54 (98)	344 (11)	0.82 (68)	0.78 (56)	211 (528)	418 (93)	25 (104)
3.	Sujatha Subha Rani Ch. and S.Sarojini. Bhadrachiri Vijaya. Dist.1984.	a. Pregnant Women (N = 57)	1596 (64)	34 (63)	119 (10)	0.8 (57)	0.7 (51)	6.9 (14)	250 (25)	20 (66)
		b. Lactating Women (N = 45)	1600 (55)	35 (54)	250 (22)	1.1 (73)	0.7 (44)	7.2 (9)	428 (43)	23 (77)
4.	Rajyalakshmi .P and P. Geeravani. Tribal Food habits. 1987.	Intake women 15-45 years (N=170 Households)	1729 (179)	46 (103)	620 (21)	1.4 (122)	0.8 (64)	20 (50)	620 (138)	45 (139)
5.	WHO, F.A.O & T.I		2611	54	3459	1.7	1.6	11	113	35
	RDA PCU		2400	55	3000	1.2	1.4	40	400-500	24
	RDA Adult women(Moderate)		2200	45	3000	1.1	1.3	40	400-500	32
	RDA Pregnant Women(Moderate)		2200+ 300	59	3000	1.3	1.5	40	1000	40
	RDA Lactating women (Moderate)		2200+ 550	70	4600	1.4	1.6	80	1000	32

Figures in parenthesis indicate % of RDA

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TRIBAL WELFARE DEPARTMENT

TRIBAL SURVEY - HOUSEHOLD SCHEDULE

State | District | Mandal | Village | Hamlet:

Family No. | Name of the Head of the Family | Tribe | Sub-Tribe(if any) | Type of House

Household members and their Demographic particulars

Sl.No	Name of the Member	Relation to the Head	Sex	Date of Birth	Age (Years)	Martial Status	Literacy	Physiological Status	Major Occupation	Covered for Diet (Yes/No)	Covered for clinical (Yes/No)
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											

Land Holdings (in acres) Total | Wet | Dry | Podu | Land leased out

Area under different crops(during last 1 year)

Area under different crops(during last 1 year)

Name of the crop	Paddy	Wheat	Jowar	Other Millets	Nuts & oil seeds	Pulses	Others
Area in Acres							
Total yield (q)							
Rate/Quintal							

Applicable to women (above 15 years) and children below 3 years
** Record information such as cause of death, reasons for absence, number of days(in a month) gainfully employed, family planning practices.

LIVESTOCK OF DIFFERENT TYPES

Live stock	Milch Cows	Buffaloes	Bullocks	Calves & Non-milch cows Buffaloes	Sheep	Goats	Poultry	Pigs	Others
Number									
Value of Total yield(Rs)									

COLLECTION OF FOREST PRODUCE DURING LAST ONE YEAR

Type of Material	
Total quantity(q)	
Value/Quintal(Rs)	

Total Family Income/ Annum:	Total family expenditure /Annum:	Loan taken if any :

PARTICULARS OF ASSISTANCE RECEIVED UNDER ITDP DURING LAST ONE YEAR

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HYDERABAD

TRIBAL SURVEY INDIVIDUAL DIETARY INTAKE (ORAL QUESTIONNAIRE)

Sl.No State District Village Hamlet Date

Name
Age in years
Sex
Serial number of individual

Physiological status:
NPNL/Lact/Preg/BF+S/S
Height(cm)
Weight(kg)

Arm circumference(cm)
Fat fold at triceps(mm)
Clinical signs(Code No)
Usual frequency of meals per day:

Type of Preparation	Food Stuffs	Raw amount (g)	Total cooked Qty	Individual's Intake (cooked quantity)
Left over of previous day				
Breakfast				

Type of preparation	Food Stuff	Raw amount	Total cooked Quantity	Name of the individual							
											Left over
Lunch				1.	2.	3.	4.	5	6	7.	
Tea and snacks											
Dinner											

* of the preparation

TRIBAL SURVEY - NUTRITION ASSESSMENT SCHEDULE*

State: District Taluk Mandal

F.No. Sl.No. Village: Date:

e of the Subject: SEX : M / F Dt.of birth

e of the father/guardian: Occupation: Age-Years-Months

ilicological status: BF/BF+S/Not BF Prg/Lact/NPNL/Not applicable

Duration in months

thropometry:
Height (cm):
eight (kg):

Arm circumference(cm)
fat fold at triceps(mm)

NICAL EXAMINATION:

r:	Sparse:	01	Teeth:	Caries	24
	Discoloured	02		Mottled Enamel	25
	Moon face	04		Goitre	26
	Oedema	05		Tuberculosis	27
	Emaciation	06		Filariasis	28
	Marasmus	07		Leprosy	29
	Conj.xerosis	08		Others(Specify)	30
	Bitot's spot	09			
	Night blindness	10	HISTORY OF MORBIDITY:		
	Angular stomatitis	11		* Diarrehoea	31
	Red and Raw	14		* Dysentery	32
	Papillae Atrophi	15		** Measles	33
e:	Papillae Hypertrophic	16		** Whooping cough	34
	Pellagra	17		** Typhoid	35
	Phrynoderma	18		** Upper Respiratory infection	37
	Koilonychia	19			37
	Epiphyspal Enlargement	20		** Malaria	36
	Beading of ribs	21		** Lower Respiratory infection	38
	Knockness : Bow legs	22			
	Frontal Parietal Bossing	23			

ing last 1 week ** During last 1 month

TRIBAL SURVEY - NUTRITION ASSESSMENT SCHEDULE*

State: District Taluk Mandal

F.No. Sl.No. Village: Date:

e of the Subject: SEX : M / F Dt.of birth

e of the father/guardian: Occupation: Age-Years-Months

Micological status: BF/BF+S/Not BF Prg/Lact/NPNL/Not applicable

Duration in months

thropometry:
Height (cm):
eight (kg):

Arm circumference(cm)
fat fold at triceps(mm)

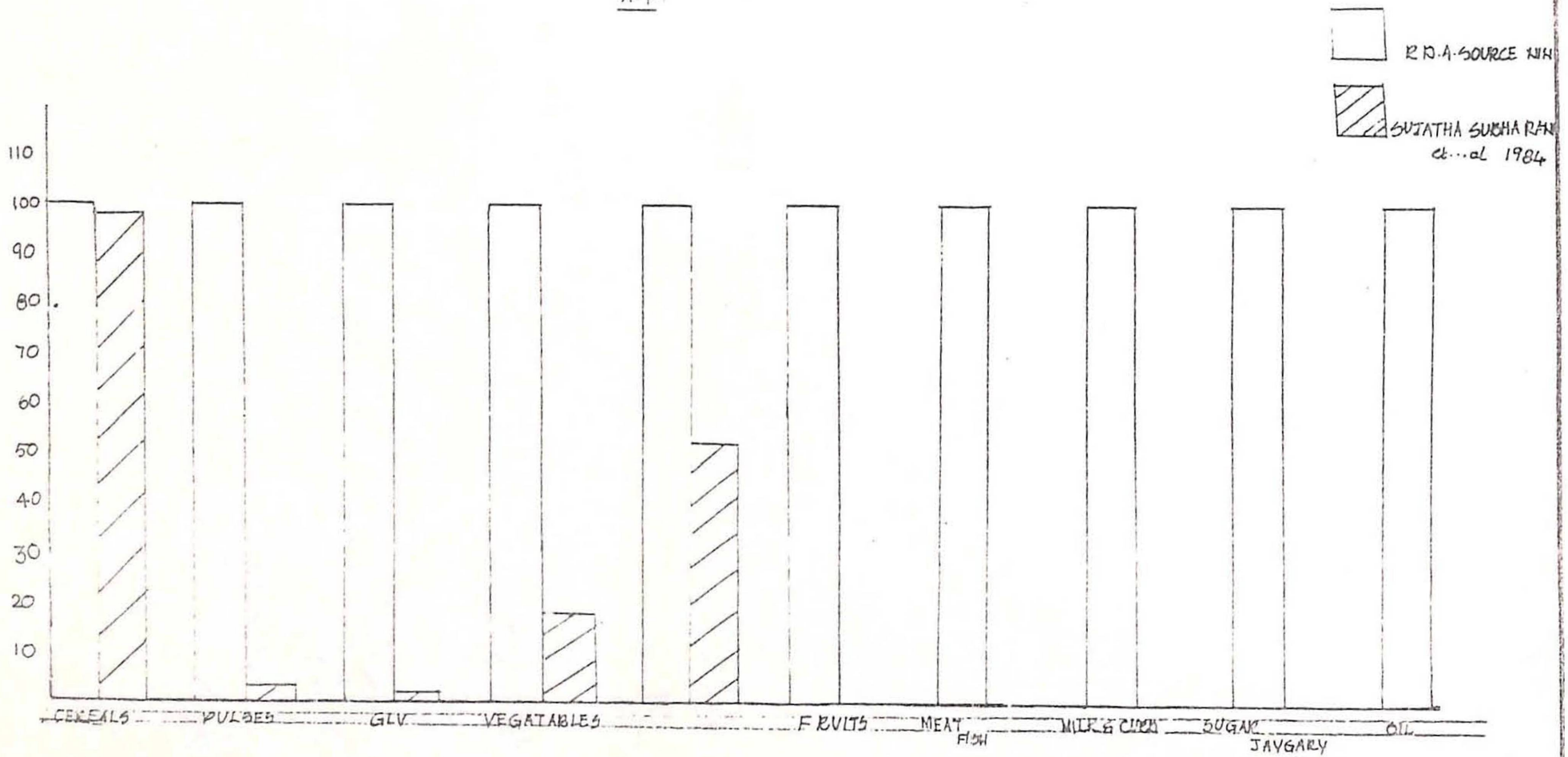
SICAL EXAMINATION:

r:	Sparse:	01	Teeth:	Caries	24
	Discoloured	02		Mottled Enamel	25
	Moon face	04		Goitre	26
	Oedema	05		Tuberculosis	27
	Emaciation	06		Filariasis	28
	Marasmus	07		Leprosy	29
	Conj.xerosis	08		Others(Specify)	30
	Bitot's spot	09			
	Night blindness	10	HISTORY OF MORBIDITY:		
	Angular stomatitis	11		* Diarrehoea	31
	Red and Raw	14		* Dysentery	32
	Papillae Atrophi	15		** Measles	33
e:	Papillae Hypertrophic	16		** Whooping cough	34
	Pellagra	17		** Typhoid	35
	Phrynoderma	18		** Upper Respiratory infection	37
	Koilonychia	19			37
	Epiphyspal Enlargement	20		** Malaria	36
	Beading of ribs	21		** Lower Respiratory infection	38
	Knockness : Bow legs	22			
	Frontal Parietal Bossing	23			

ing last 1 week

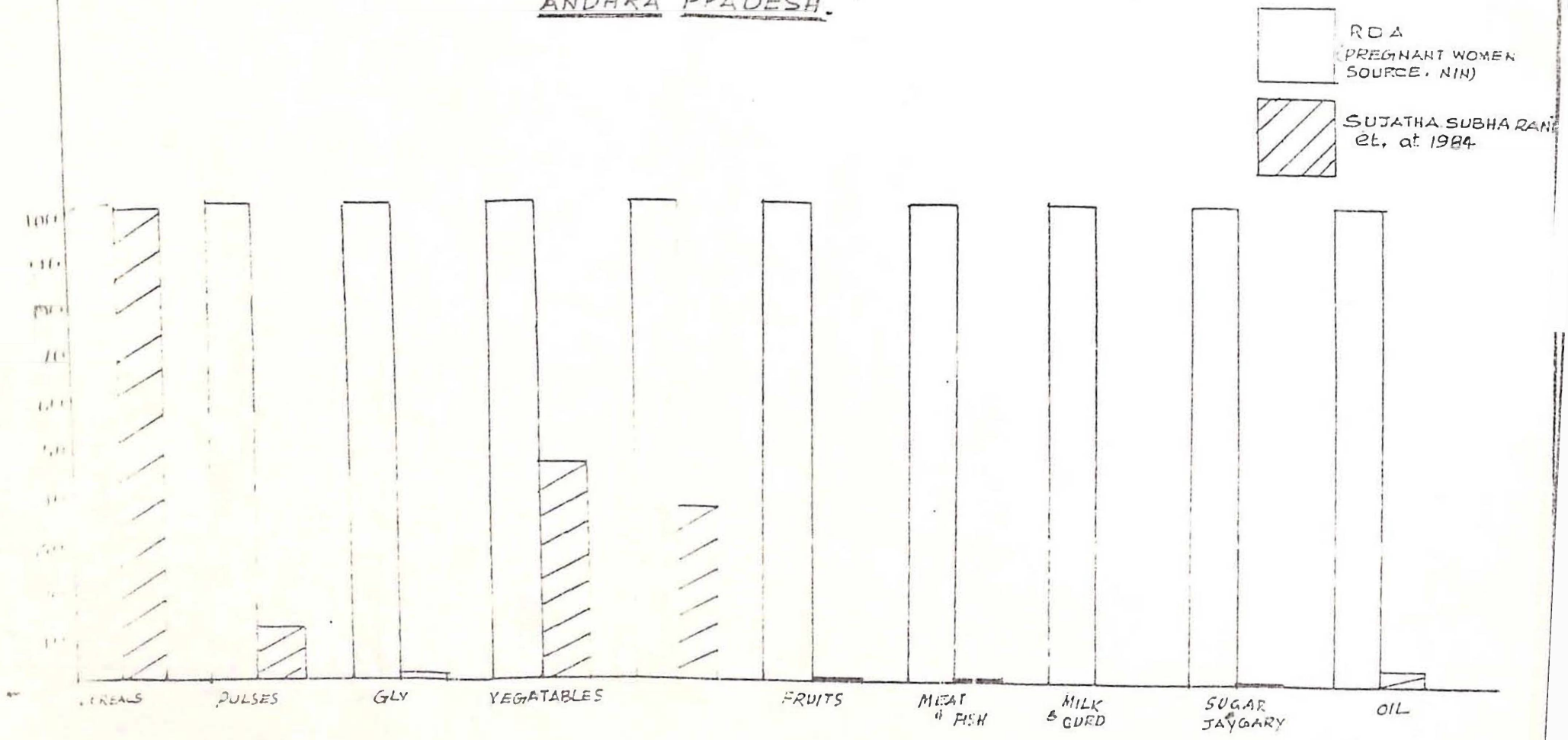
** During last 1 month

PERCENTAGE INTAKE AMONG TRIBALS OF NORTH COASTAL DISTRICTS A.P

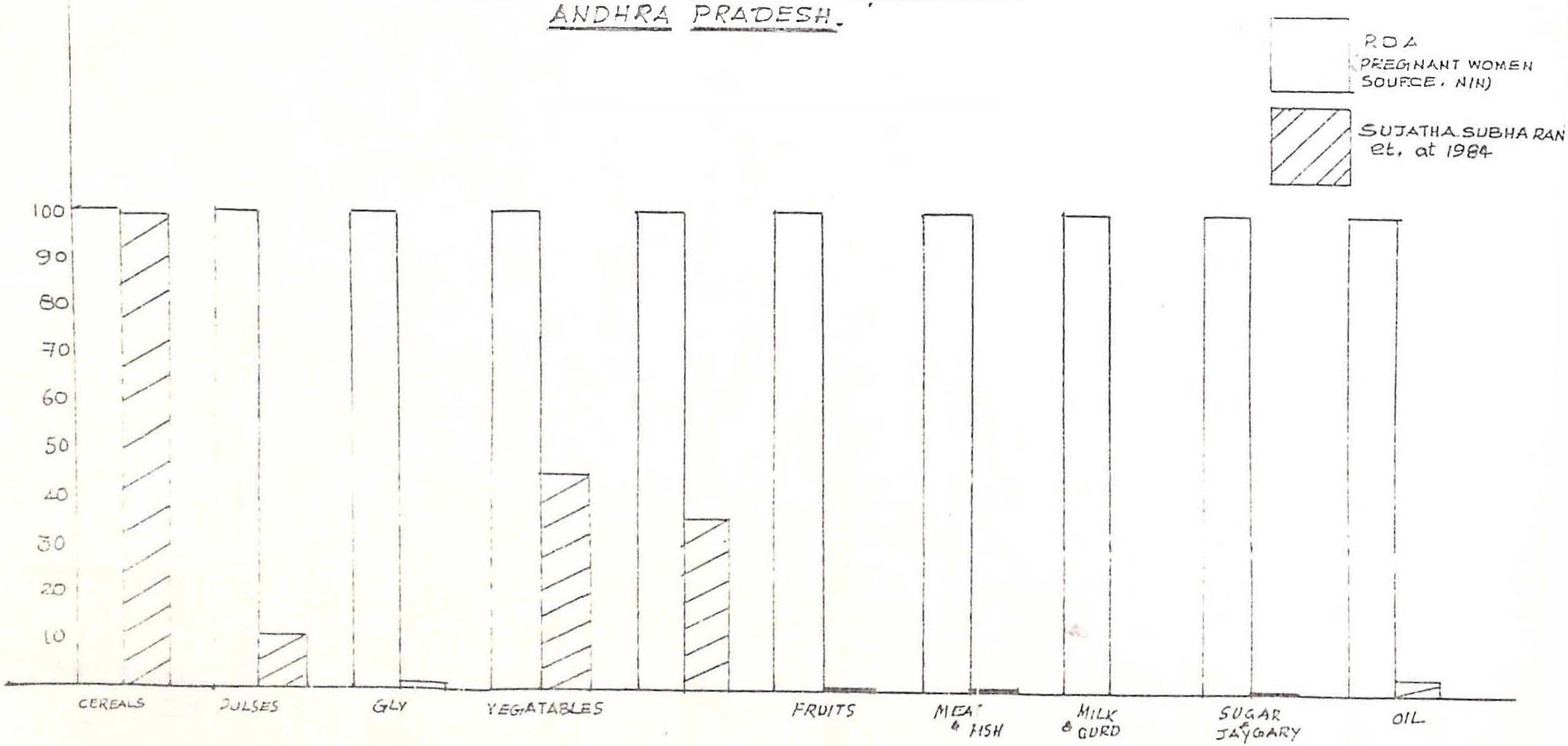


PERCENTAGE NUTRIENT INTAKE AMONG TRIBALS OF NORTH COASTAL DISTRICTS A.P.

PERCENTAGE FOOD INTAKE AMONG TRIBAL PREGNANT WOMEN OF NORTH COASTAL DISTRICTS, ANDHRA PRADESH.

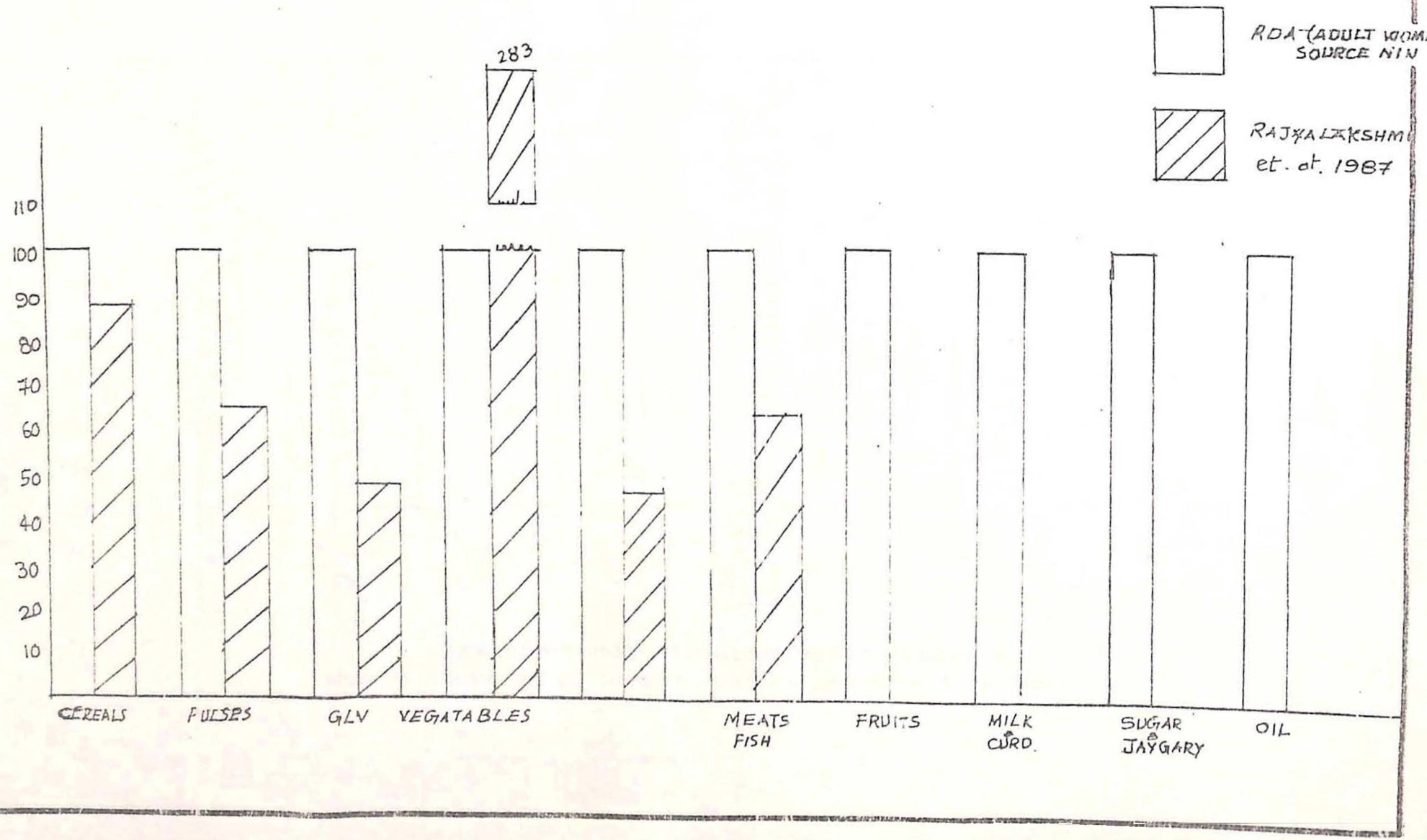


PERCENTAGE FOOD INTAKE AMONG TRIBAL PREGNANT WOMEN OF NORTH COASTAL DISTRICTS, ANDHRA PRADESH.



PERCENTAGE-OF FOOD INTAKE AMONG THE TRIBALS
OF NORTH COASTAL DISTRICTS, A.P.

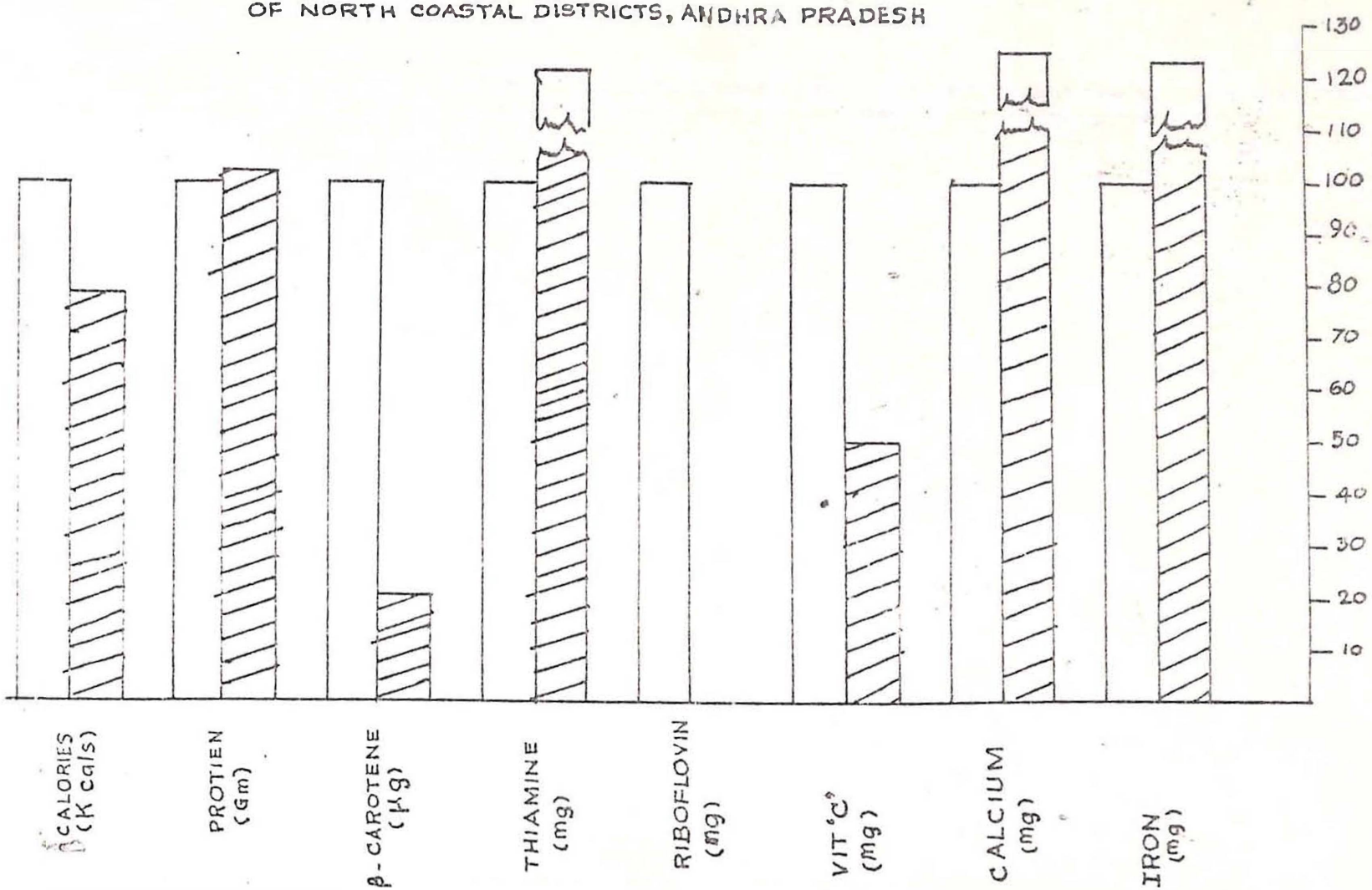
PERCENTAGE FOOD INTAKE AMONG TRIBAL ADULT WOMEN OF NORTH COASTAL DISTRICTS ANDHRA PRADESH



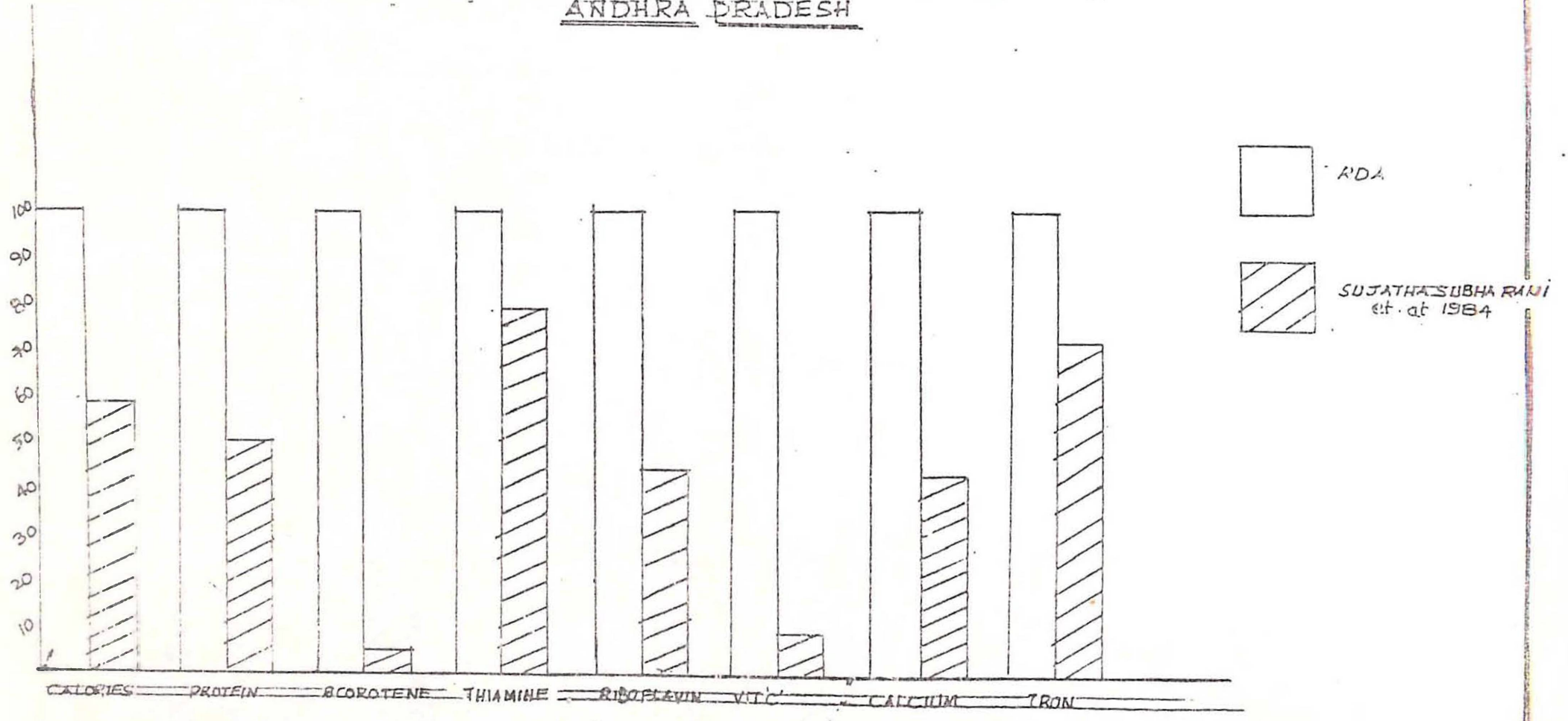
RDA

RAJYA LAXMI et al; 1987

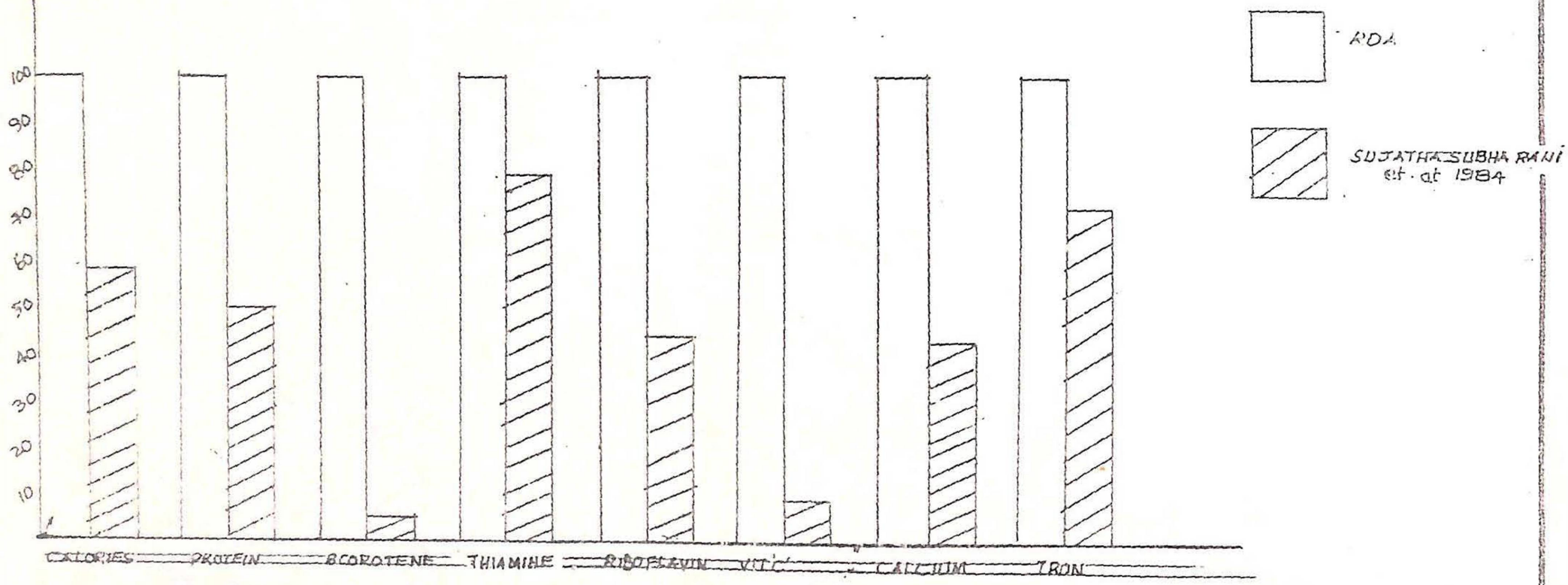
PERCENTAGE NUTRIENT INTAKE AMONG TRIBAL ADULT WOMEN OF NORTH COASTAL DISTRICTS, ANDHRA PRADESH



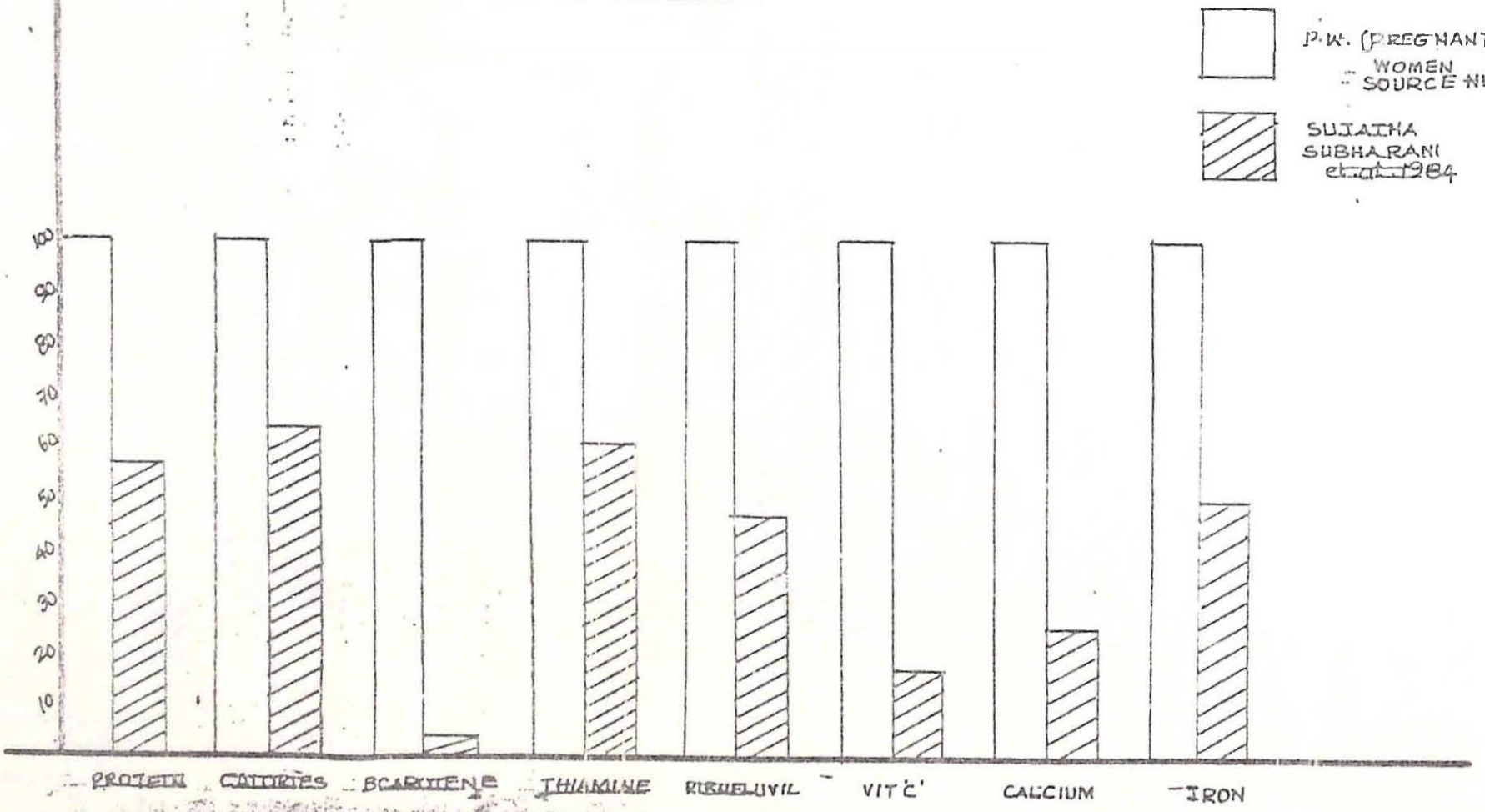
PERCENTAGE NUTRIENT INTAKE AMONG TRIBAL LACTATING WOMEN OF NORTH COASTAL DISTRICTS ANDHRA PRADESH



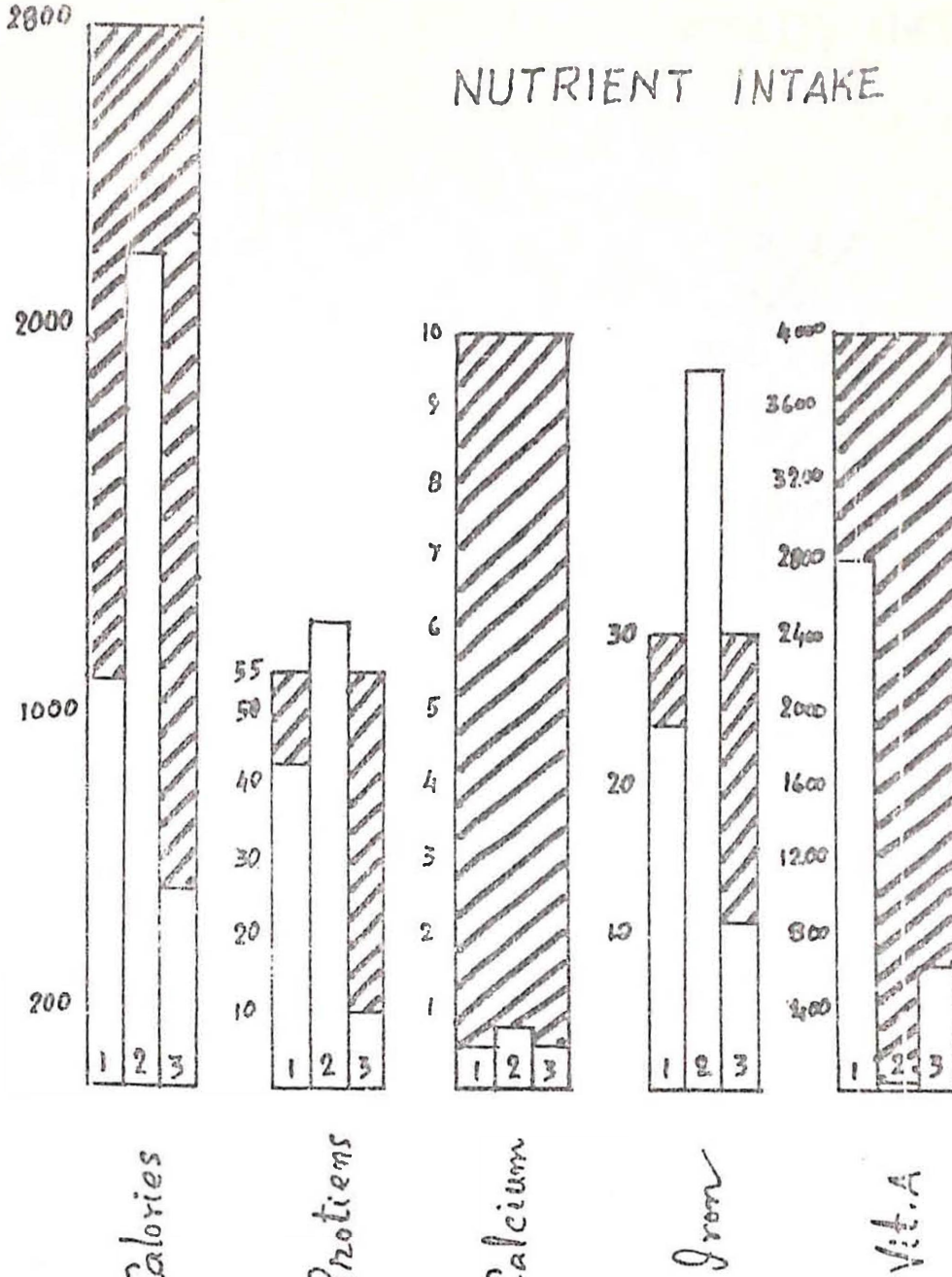
PERCENTAGE NUTRIENT INTAKE AMONG TRIBAL LACTATING WOMEN OF NORTH COASTAL DISTRICTS ANDHRA PRADESH



PERCENTAGE NUTRIENT INTAKE AMONG TRIBAL PREGNANT WOMEN OF NORTH COASTAL DISTRICTS ANDHRA PRADESH



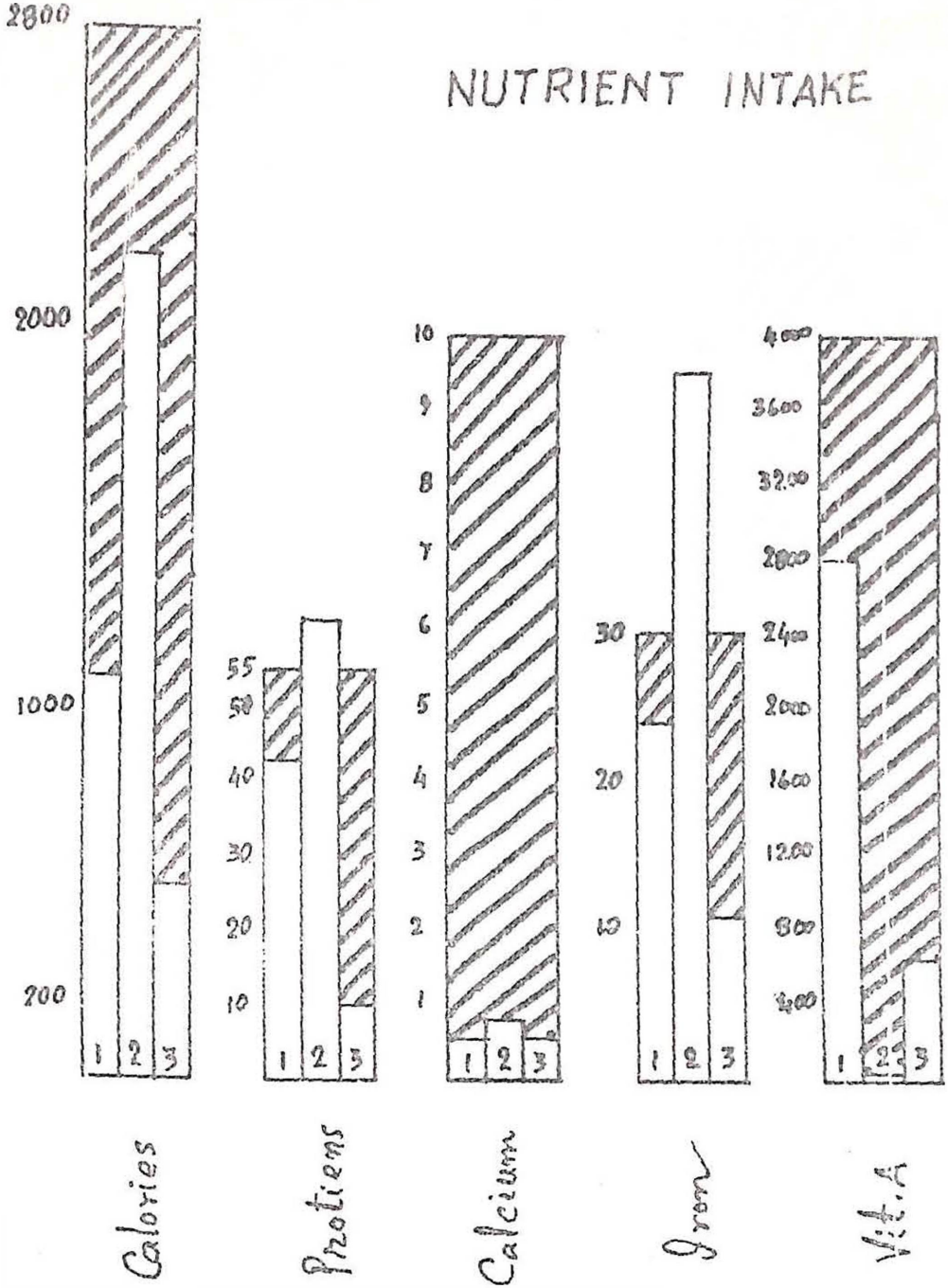
NUTRIENT INTAKE

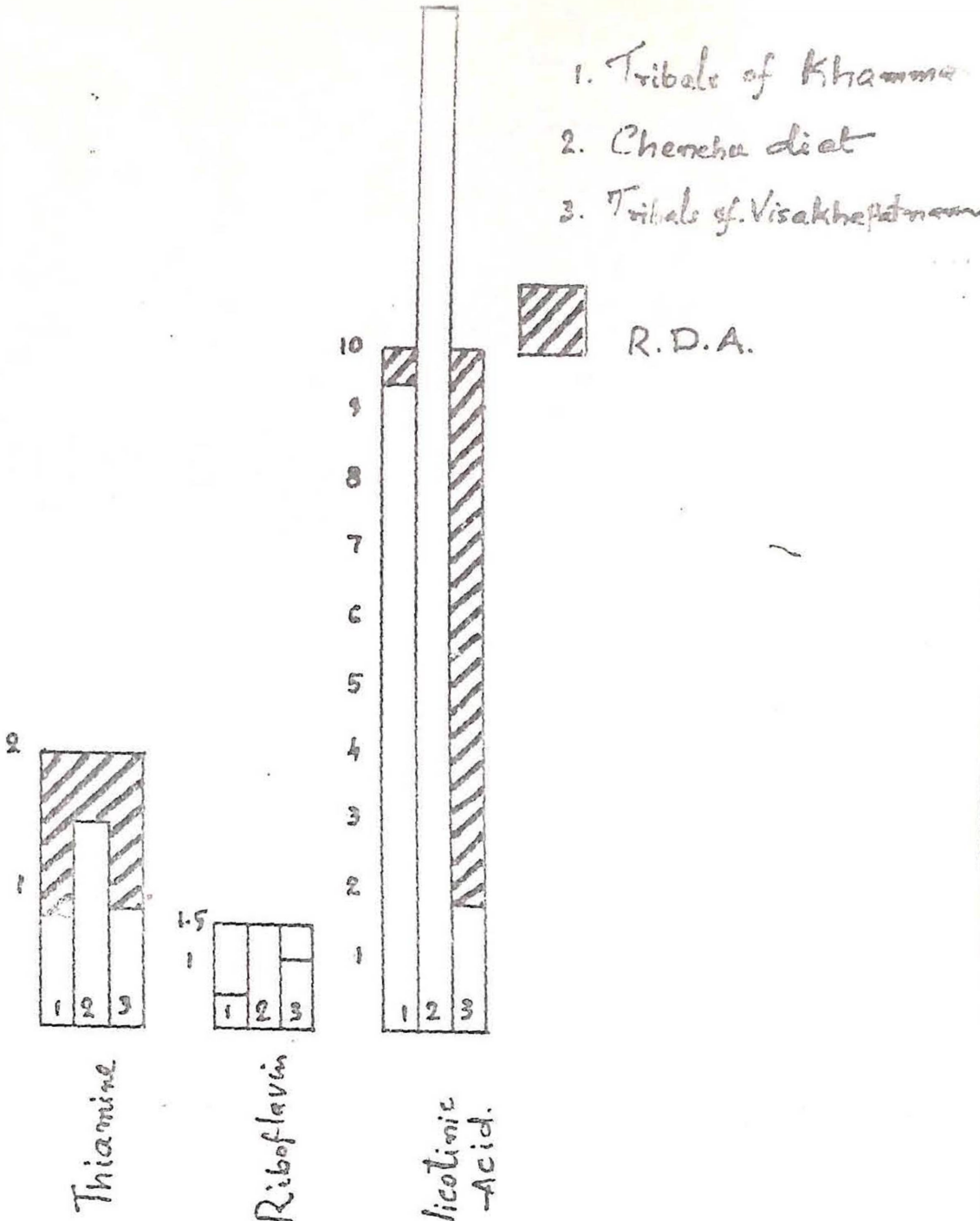


1. Tribals of Khamma
2. Chenchu diet
3. Tribals of Visakhapatnam

R.D.A.

NUTRIENT INTAKE

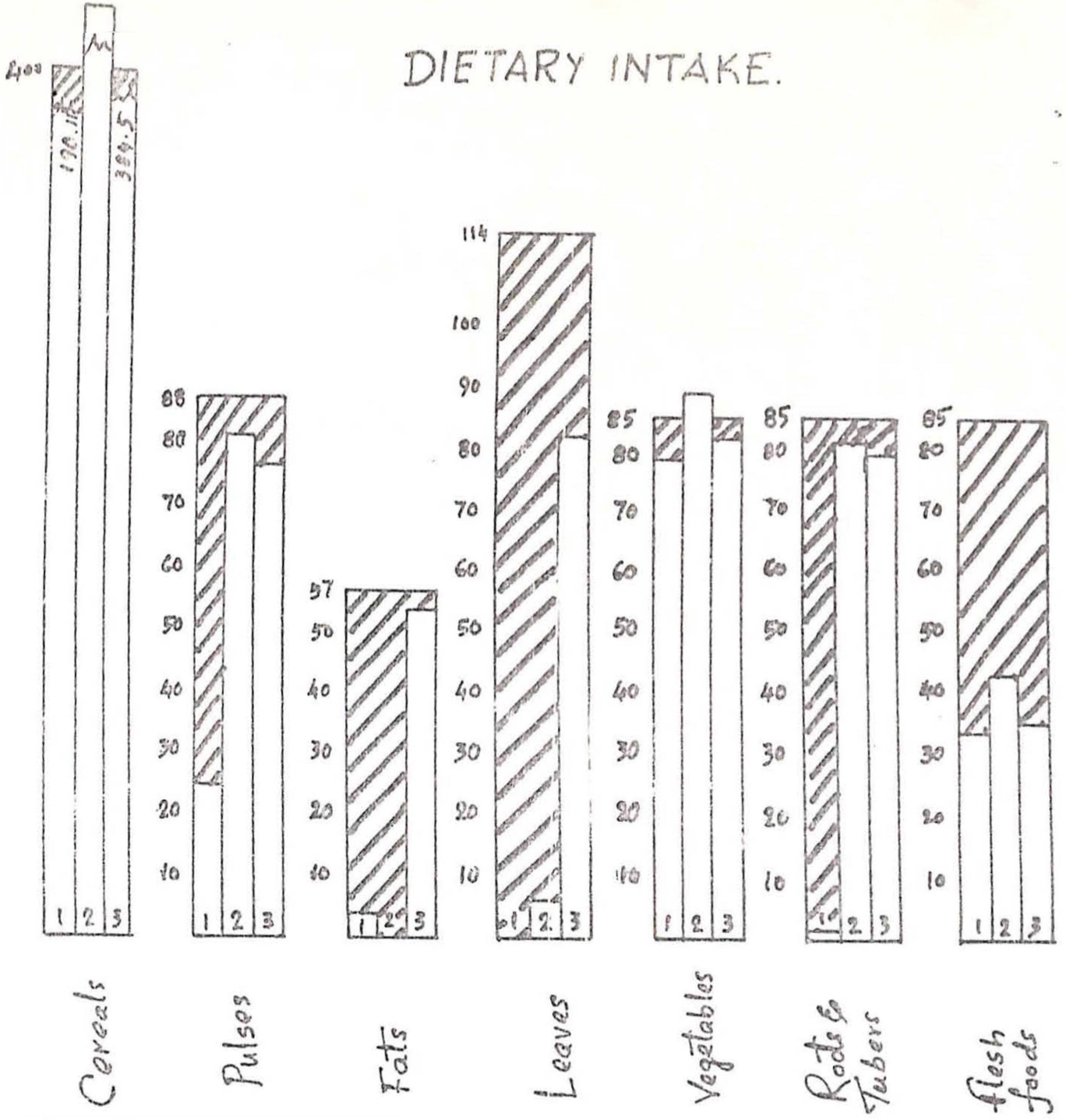



1. Tribals of Khamma
2. Chenchu diet
3. Tribals of Visakhapatnam
R.D.A.
Thiamine
Riboflavin
Nicotinic Acid.
1
2
3
1.5
1
2
3
10
9
8
7
6
5
4
3
2
1
1
2
3

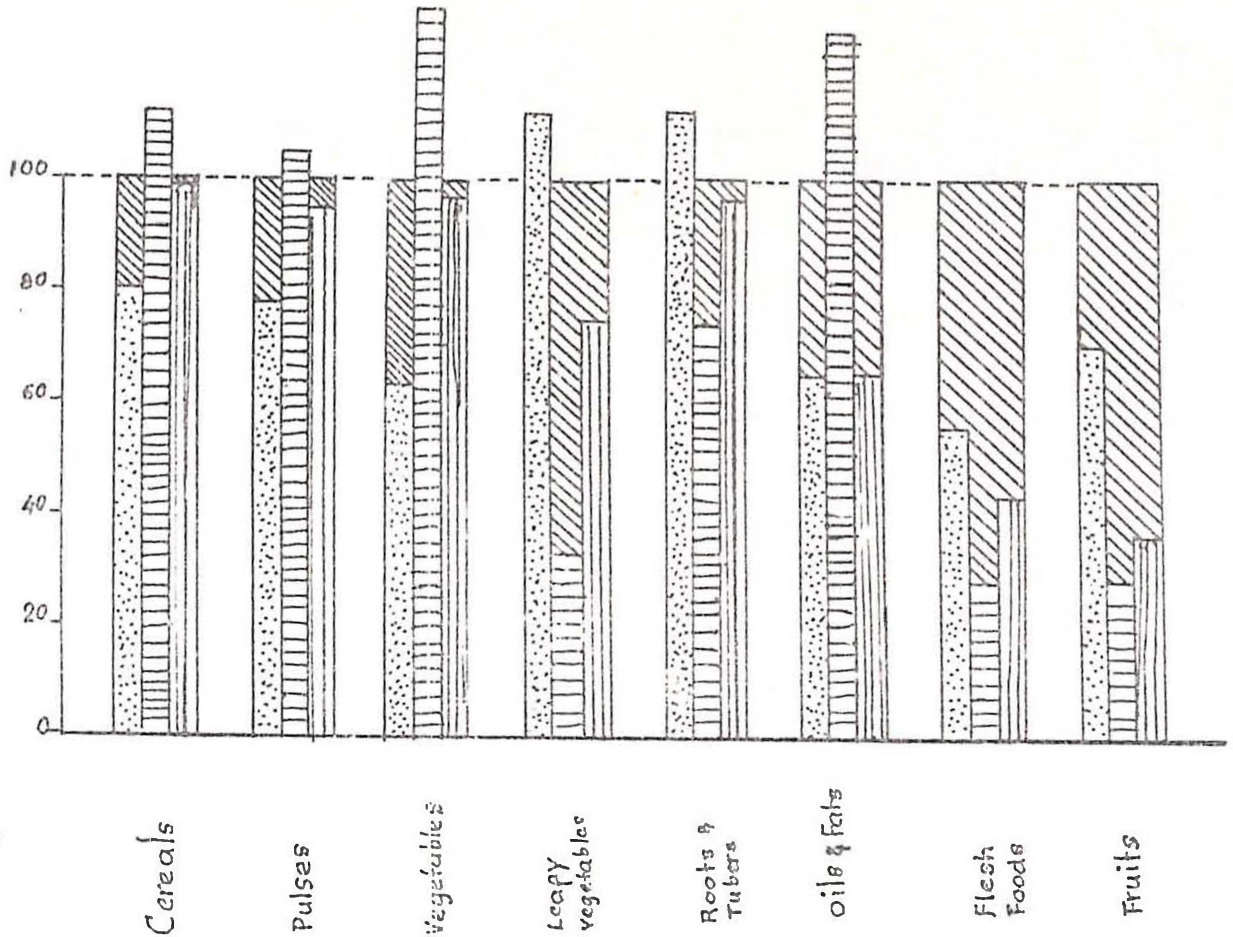
DIETARY INTAKE.

1. Tribals of Khammam
2. Chenchu diet
3. Tribals of Visakhapatnam

R.D.A.



Percentage of Dietary Intake among Tribals of Visakhapatnam

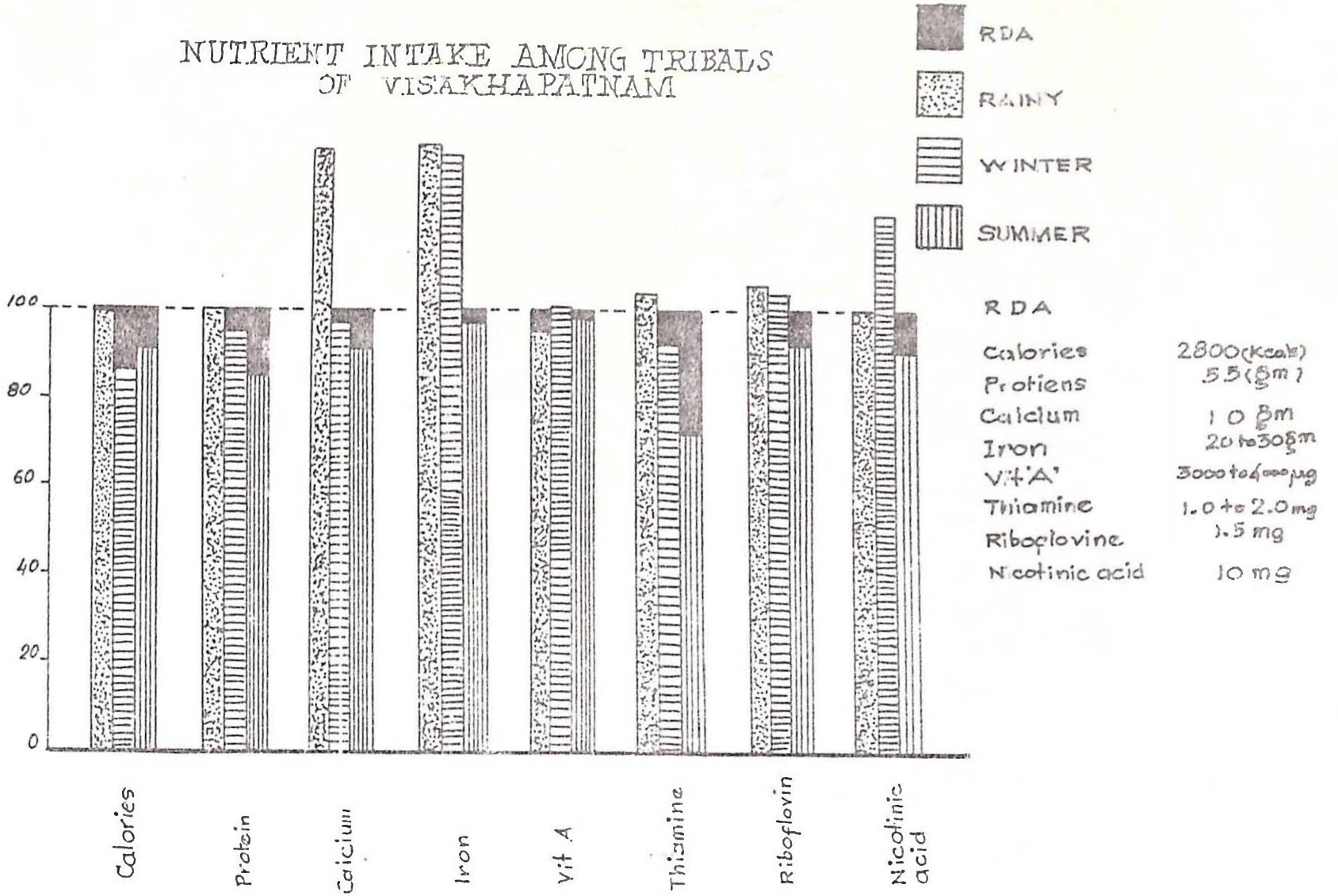


RDA (Foods in grms)

Cereals	400
Pulses	85
Vegetables	85
Green leafy vegetables	114
Roots & Tubers	85
oils & Fats	57
Flesh Foods	85
Fruits	85

RDA
Rainy
Winter
Summer

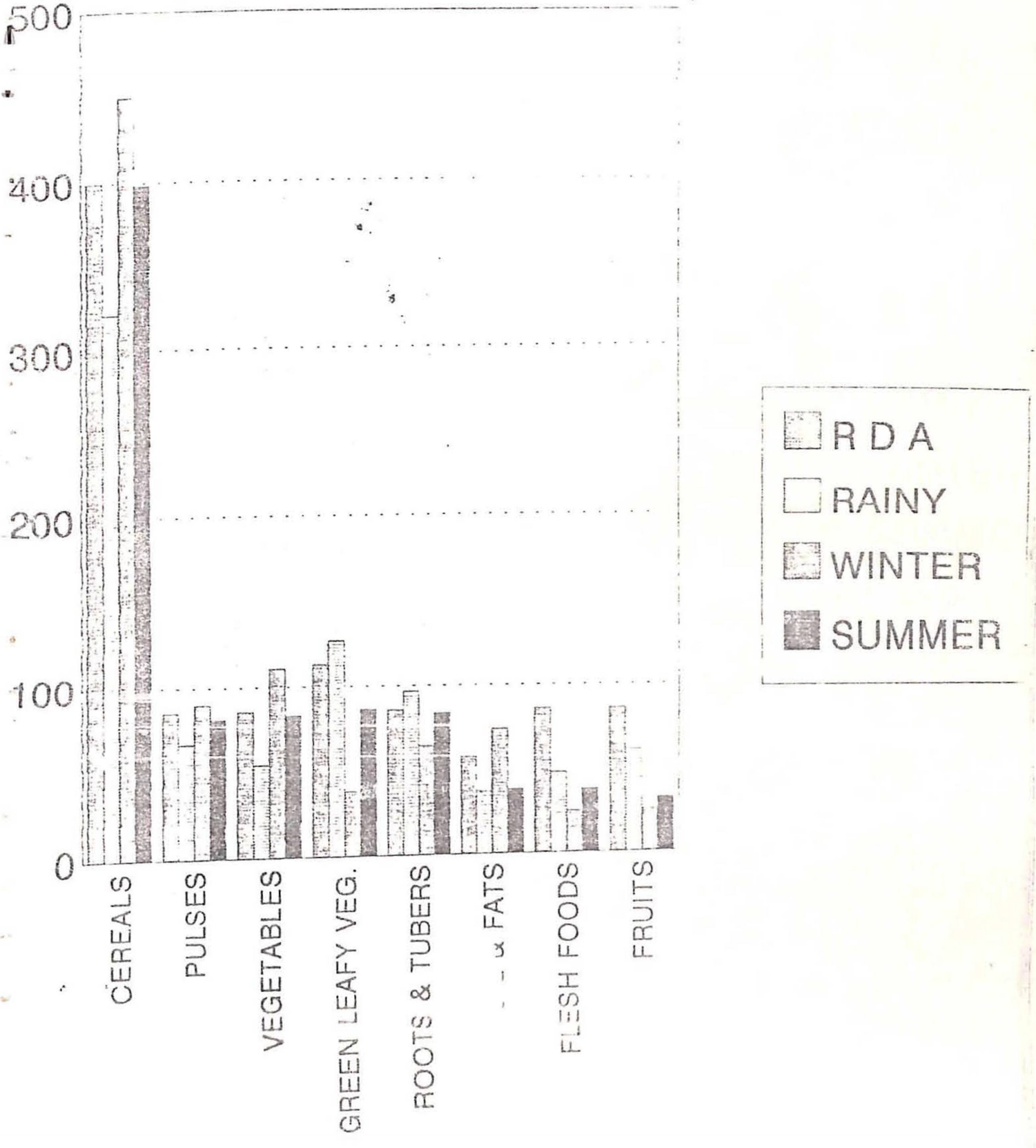
NUTRIENT INTAKE AMONG TRIBALS OF VISAKHAPATNAM



RDA	
Calories	2800(Kcals)
Protiens	55(gm)
Calcium	10 gm
Iron	20 to 30 gm
Vit 'A'	3000 to 4000 µg
Thiamine	1.0 to 2.0 mg
Riboflovine	1.5 mg
Nicotinic acid	10 mg

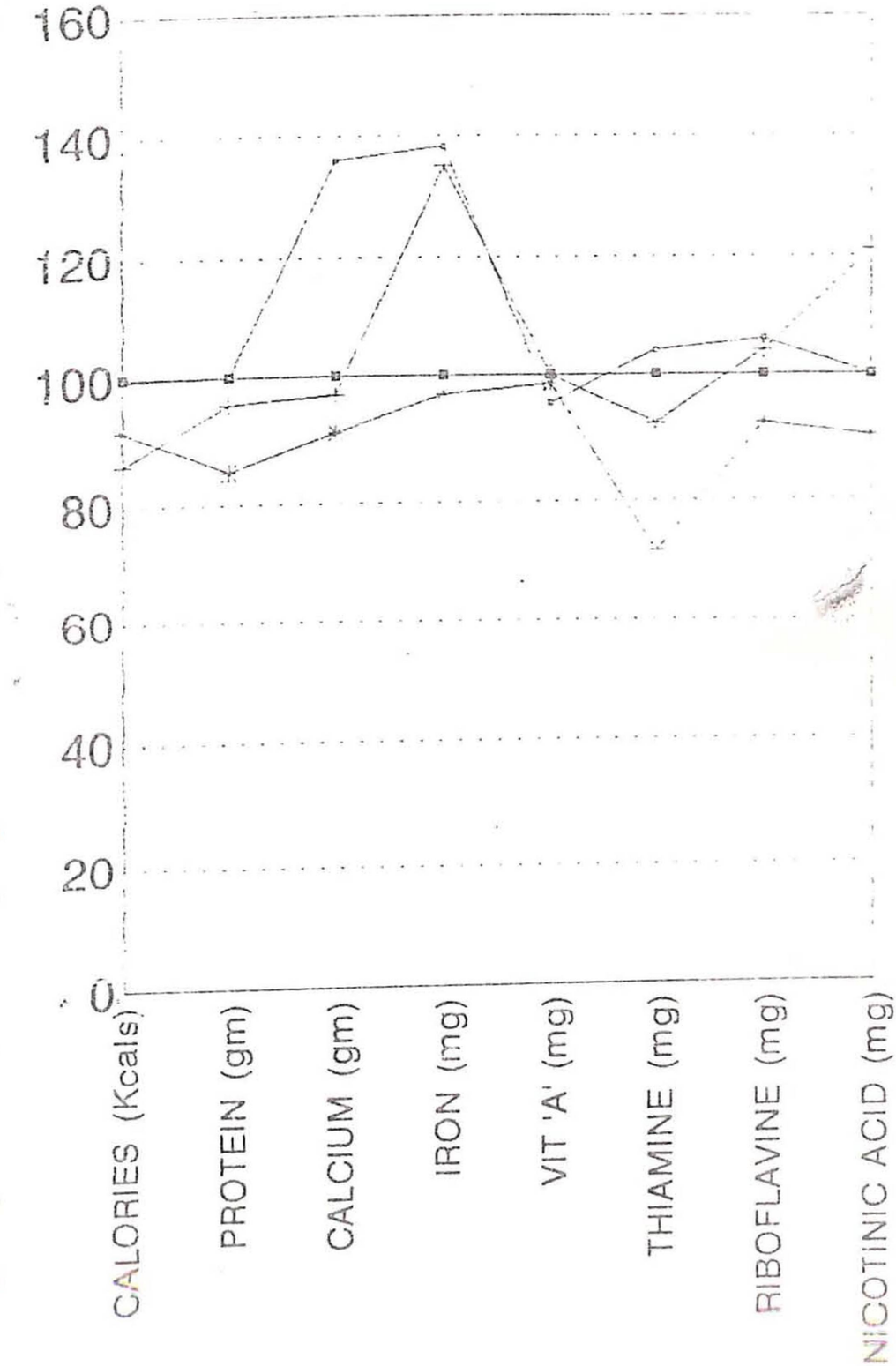
TARY INTAKE AMONG TRIBALS OF VISAKHAPATNAM DISTRICT

PER CU / PER DAY (in grams)



NUTRIENT INTAKE AMONG TRIBALS OF VISAKHAPATNAM DISTRICT

PER CU / PER DAY



ntake is percentage of RDA which is taken as 100%

TABLE -II

DIETARY INTAKE AMONG TRIBALS OF VISAKHAPATNAM DISTRICT

PER CU / PER DAY

(In gms)

FOODS	R D A	RAINY			WINTER			SUMMER		
		ACTUAL INTAKE	% DEFICIT	% SURPLUS	ACTUAL INTAKE	% DEFICIT	% SURPLUS	ACTUAL INTAKE	% DEFICIT	% SURPLUS
CEREALS	400	320.85 (80.21)	19.79	--	449.20 (112.30)	--	12.20	398.21 (99.55)	0.45	--
PULSES &	85	66.54 (78.26)	21.72	--	89.52 (105.32)	--	5.32	80.70 (94.94)	5.06	--
VEGETABLES	85	53.94 (63.46)	36.54	--	111.96 (131.72)	--	31.72	82.49 (97.05)	2.95	--
GREEN LEAF VEGETABLES	114	127.99 (112.27)	--	12.27	38.03 (33.36)	68.76	--	85.85 (75.31)	24.69	--
ROOTS & TUBERS	85	96.42 (113.44	--	13.44	63.69 (74.93)	25.07	--	82.79 (97.40)	2.60	--
OIL & FATS	57	36 57 (64.16)	35.84	--	72.66 (127.82)	--	27.82	37.45 (65.70)	34.30	--
LEGUMEFOODS	85	47.06 (55.36)	44.64	--	24.50 (28.82)	71.18	--	37.00 (43.53)	56.47	--
NUTS	85	59.74 (70.28)	29.72	--	24.60 (28.94)	71.06	--	30.89 (36.34)	63.66	--

(Figures in parenthesis denotes percentage intake of foods)

TABLE -III

NUTRIENT INTAKE AMONG OF VISAKHAPATNAM DISTRICT

PER CU / PER DAY

NUTRIENTS	R D A	RAINY			WINTER			SUMMER		
		ACTUAL INTAKE	% DEFICIT	% SURPLUS	ACTUAL INTAKE	% DEFICIT	% SURPLUS	ACTUAL INTAKE	% DEFICIT	% SURPLUS
CALORIES (Kcals)	2600	2790.66 (99.67)	0.33	--	2417.1 (88.33)	13.67	--	2585.65 (91.64)	8.36	--
PROTEIN (gm)	55	55.01 (100.02)	--	0.02	52.58 (95.60)	4.40	--	46.76 (85.02)	14.98	--
CALCIUM (gm)	1.0	1.36 (136.00)	--	36.00	0.92 (97.00)	3.00	--	(0.91) (91.00)	9.00	--
IRON (mg)	20 TO 30	34.53 (138.16)	--	72.65 TO 15.10	33.95 (135.80)	--	69.75 TO 13.17	24.35 (97.40)	18.83	21.75
VIT 'A' (ug)	3000 TO 4000	3339.09 (95.40)	16.52	11.30	3519.23 (100.55)	12.02	17.30	3459.27 (98.54)	13.52	15.31
THIAMINE (mg)	1.0 TO 2.0	1.56 (104.00)	22.00	56.00	1.38 (92.00)	31.00	38.00	1.08 (72.00)	46.00	8.00
RIBOFLAVINE (mg)	1.5	1.60 (106.67)	--	6.67	1.56 (104.00)	--	4.00	1.38 (92.00)	8.00	--
NICOTINIC ACID (mg)	10	10.07 (100.70)	--	0.70	12.19 (121.90)	--	21.90	9.05 (90.50)	9.50	--

(Figures in parenthesis denotes percentage intake of Nutrients)

Phytogenic Sources of Food.

FOODS AVAILABLE IN TSP AREA

Sl. No.	Local Name	Common Name	Botanical Name	Srikakulam	Visakhapatnam	East Godavari	Vizianagaram
1	2	3	4	5	6	7	8
I	ROOTS AND TUBERS						
1	Nara Theega	-	-	*	*	*	*
2	Belika Theega	-	-	*	-	-	-
3	Noolu Teegalu	-	-	*	*	*	*
4	Arika Teegalu	-	Dioscorea oppositifolia	*	*	*	*
5	Dhula kanda	Bitter yam	Amorphophallus campanulatus	*	-	-	*
6	Doldumpa	-	-	*	*	*	*
7	Sare kanda	Sweet yam	Amorphophallus campanulatus	*	*	*	*
8	Pendalam	Khamealu	Dioscorea alata	*	*	*	*
9	Chedu Dumpa	-	Discorea bulbiferra	*	*	*	*
10	Karra pendalam	Tapioca	Manihot esculenta	*	*	*	*
11	Chilagada Dumpa	Sweet potato	Spomoea batatas	*	*	*	*
12	Puli Dumpa	-	Dioscorea hispida	*	*	*	*
13	Pandimululu	-	Discorea pentaphylla	*	-	-	-
14	Theega gedda	-	-	*	*	*	*
15	Chedu gedda	Wild yam	Discorea versicolor	*	*	*	*
16	Pindi Dumpa	-	-	*	*	*	*
17	Theega Dumpa	-	-	*	*	-	*
18	Pandiga Dumpa	-	-	*	-	-	-
19	Yam Dumpa	Yam elephant	Amorphophallus Campanulatus	-	-	-	-
20	Tamara Dumpa	Lotus Root	Nelumbium nelumbo	*	*	*	*
21	Chama Dumpa	Colocasia	Colocasia antiquorem	*	*	*	*
22	Vulli	Onion	Allium cepa	*	*	*	*
23	Alu	Potato	Solanum tuberosum	*	*	*	*
II.	GREEN LEAFY VEGETABLES						
1	Palleru	Nerringi	Tribulus terrestris	*	*	*	*
2	Janapa	Sun hemp leaves	Crotalaria juncea	*	*	*	*
3	Boodanam	-	-	*	*	*	*
4	Mulagaku	Drumstick leaves	Moringa oleifera	*	*	*	*
5	Gudim	-	-	*	-	-	-
6	Chilleru	-	-	*	-	-	-
7	Gongura	Spinarch	Hibiscus cannabinus	*	*	*	*
8	Thota kura	Amaranth	Amaranthus gangeticus	*	*	*	*
9	Veduru chigullu	Bamboo shoots	Bambusa arundinacea	*	*	*	*
10	Gummadi	Pumpkin leaves	Cucurbita maxima	*	*	*	*
11	Bottlegourd	Bottlegourd	Lagenaria vulgaris	*	*	*	*
12	Cauli flower	Cauliflower	Brassica oleracea	*	*	*	-
13	Chamakura	Colocasia leaves	Colocasia antiquorum	*	*	*	*
14	Dodikura	-	-	*	*	*	*
15	Goddikura	-	-	*	*	*	*
16	Ponnaganti kura	Ponnaganni	Alternanthera sessilis	*	*	*	*
17	Cabbages	Cabbagbe	Brassica oleracea	*	*	*	*
18	Chinta Chiguru	Tamarind leaves	Tamarindus indicus				

* Indicates availability.

1	2	3	4	5	6	7	8
III.	V E G E T A B L E S						
1	Pollakayi						
	Snake Gourd	Snake Gourd	Trichosanthes anguina	*	*	*	*
2	Gummadi	Pumpkin	Cucurbita maxima	*	*	*	*
3	Pachi Arati	Green plantain	musa sapientum	*	*	*	*
4	Vankaya	Brinjal	Solanum melongena	*	*	*	*
5	Benda	Ladies finger	Abelmosches esculentus	*	*	*	*
6	Tomato	Tomato	Lycoperisicum esculentum	*	*	*	*
7	Dosakaya	Cucumber	Cucumis sativus	*	*	*	*
8	Soya beans	Soya beans	Phaseolus vulgaries	*	-	-	-
9	Green chilles	Chilles	Capsicum annuum	*	*	*	*
10	Mulaga kaya	Drumstick	Moringa oleifera	*	*	*	*
11	French Beans	French beeans	Phascolus vulgaries	*	*	*	*
12	Pandirimeda pandlu (wild Tomato)	Tomato	Lycopersicum esculentum	*	*	*	*
13	Anapakaya	Bottle Gourd	Lagenaria vulgaris	*	*	*	*
IV.	S E E D S						
1	Veduru Biyyam	Bamboo seeds	Bambusa arundinacea	*	*	*	-
2	Mamidi Tenka	Mango seeds	Mangifera indica	*	*	*	*
3	Addapikkalu	Adda seeds	Bauhinia vahlii	*	*	*	*
4	Jeedi pikkalu	Cashew nut	Anacardium occidentale	*	*	*	*
5	Chinta pikkalu	Tamarind	Tamarindus indica	*	*	*	*
6	Teeka kayalu	-	-	*	*	*	*
7	Mushrooms (Putta kokkulu, Guggilam kokkulu, Veredu kokkulu, Geddi kokkulu)	Mushrooms	Agaricus Species	*	*	*	*
8	Gottipikkalu	-	-	-	*	*	*
9	Colaba seeds			-	-	-	*
V.	C E R E A L S						
1	Gantelu	Bajra	Pennisetum typhoideum	*	*	*	*
2	Korra	Italian millet	Setaria italica	*	*	*	*
3	Jonna	Jewar	Sorghum vulgare	*	*	*	*
4	Alu / Arika	Varagu	Paspalum scrobiculatum	*	*	*	*
5	Oodu (Uppulu)	Samay millet	Echinochloa frumentacea	*	*	-	*
6	Tydalu / chollu	Finger millet	Eleusine coracana	*	*	*	*
7	Biyyam	Rice	Oryza sativa	*	*	*	*
8	Sama	Samai little millet	Panicum miliare	*	*	*	*
9	Mokka Jonna	Maize	Zea mays	*	*	*	*

1	2	3	4	5	6	7	8
VI.	PULSES						
1	Minumulu	Black gram	Phaseolus mungo	*	*	*	*
2	Pesalu	Green gram	Phaseolus aureus	*	*	*	*
3	Bobbarlu	Cow pea	Vigna catzang	*	*	*	*
4	Chikkudu	Field Bean	Dolichos lablab	*	*	*	*
5	Juluvulu	-	Vigna Species	*	*	*	*
6	Tulavalu	Horsegram	Dolichos biflorus	*	*	*	*
7	Kandi	Red gram	Cajanus cajan	*	*	*	*
8	Dukka Chikkudu or Dukka pikka	-	Mucuna -pruriens	*	*	*	*
9	Tam-Tamal	French Bean	Phaseolus vulgaris	-	*	*	-
VII.	NUTS AND OIL SEEDS						
1	Jeedi pikkalu	Cashew nut	Anacardium occidentale	*	*	*	*
2	Veru senaga	Ground nut	Arachis hypogea	*	*	*	*
3	Amudalu	Castor	Ricinus communis	*	*	*	*
4	Olusulu	Niger	Guizotia abyssinica	-	*	*	-
5	Avaalu	Mustard	Brassica nigra	*	*	*	*
6	Kobbari	Coconut	Cocos nucifera	*	*	*	*
VIII.	FRUITS						
1	Panasa	Jack fruit	Artocrapus intergrifolia	*	*	*	*
2	Jama	Guava	Psidium guajava	*	*	*	*
3	Bathai, Nimma	Citrus fruits	Citrus Species	-	*	*	-
4	Mamidi	Mango	Mangifera indica	*	*	*	*
5	Anaasa	Pine Apple	Ananas squamosa	*	-	-	-
6	Jeedi Mamidi kayalu	Cashew fruit	Anacardium occidentale	*	*	*	*
7	Banana (Arate)	Banana	Musa Species	*	*	*	*
8	Ramaphal	Bullocks Heart	Annona reticulata	*	-	-	-
9	Neredu	-	Syzygium cumini	*	*	*	*
IX.	BEVERAGES						
1	Tati kallu	Palmyra	Borassus flabellifer	*	*	*	*
2	Jeelugu Kallu	Caryota	Caryota urens	*	*	*	*
3	Ippa Sara	Mohwa	Bassia longifolia	*	*	*	*