



# No One Shall Be Left Behind Initiative

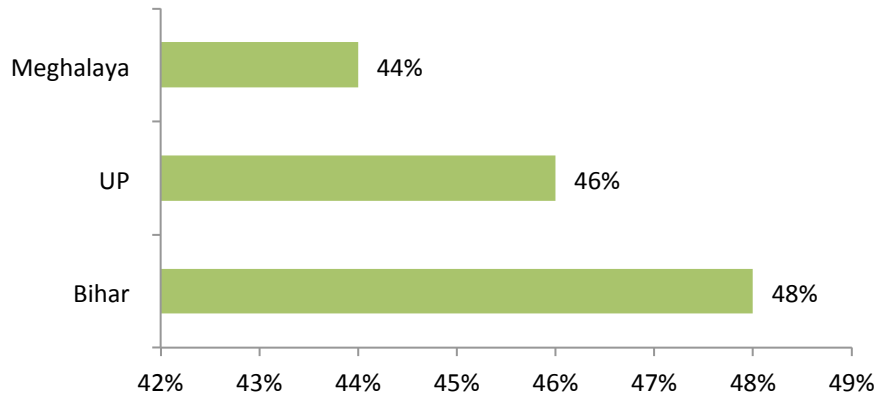
**“Promotion of local and indigenous foods  
with a focus on dietary diversity”**

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NESFAS, Shillong, Meghalaya



# CURRENT SCENARIO OF MEGHALAYA

## Stunting among children: 3<sup>rd</sup> highest in India

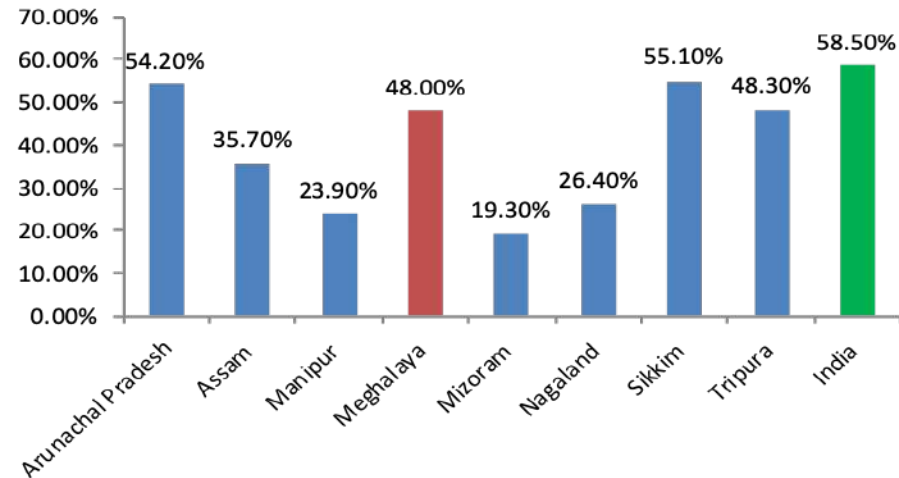


## Children under 5 years:

Underweight- 28.9%

Wasting- 15.3%

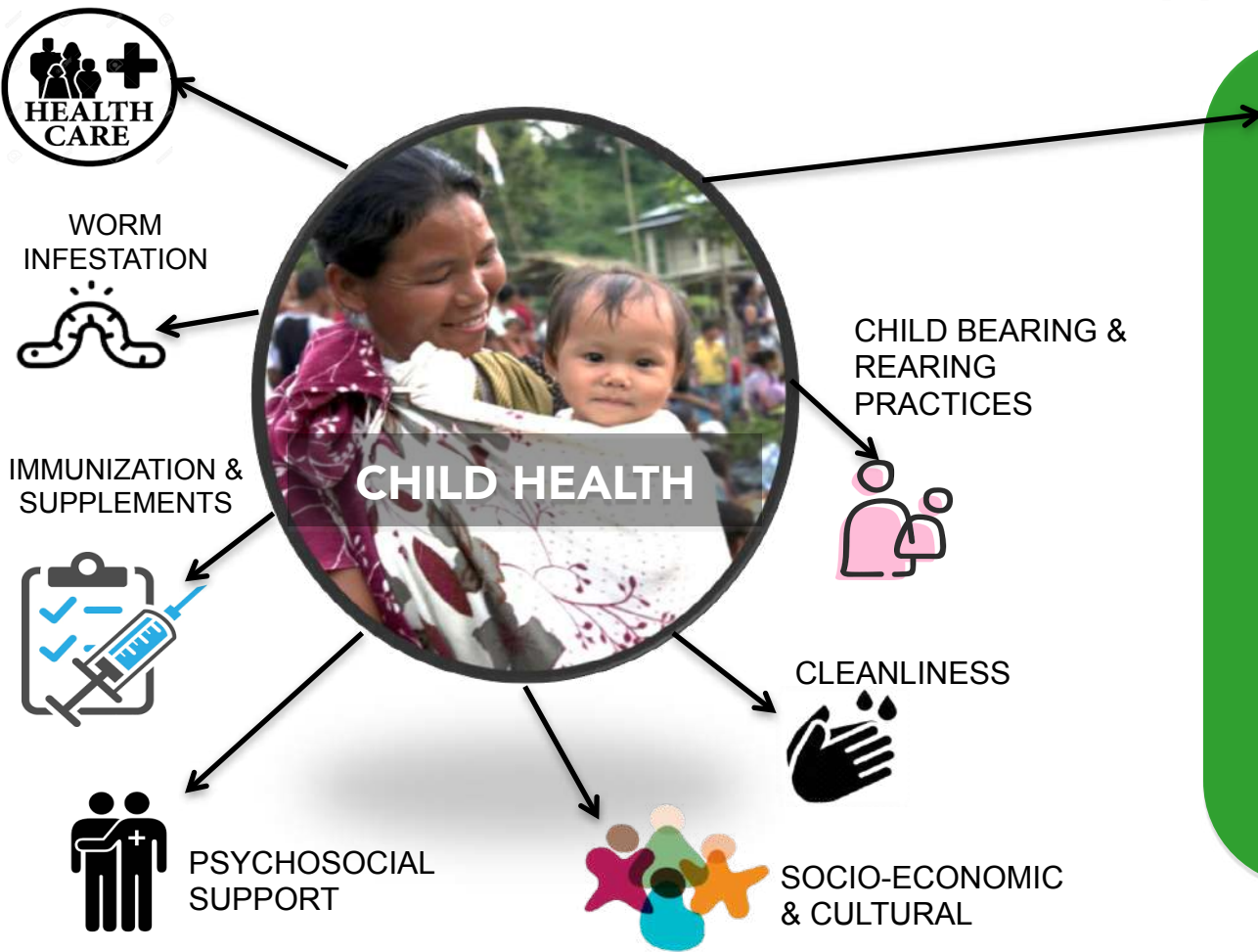
## Anaemia among children 6 to 59 months



## Anaemic Women (15-49 years)

56.2%

# Health for all needs a holistic approach around food



**FOOD**

Food is the connecting rod of any indigenous community, to their land, culture, language & well being

Food-based nutrition is the backbone of the “health for all”

Food based on clean local produce must therefore be the foundation of all other supporting initiatives

# AGROBIODIVERSITY: INTRASPECIFIC DIVERSITY

**Hidden diversity within species level-  
intraspecific diversity of the local varieties.**

- Different varieties of the same crop, contain different level of nutrients
- Sometimes the difference can be significant

*Example:*

Rice varieties vary in protein (5,6 to 14,6 g) per 100 grams

So 200 gram consumption per day can result either in 25% or 65% or RDA



# INTRASPECIFIC DIVERSITY: OVERLOOKED ASPECT

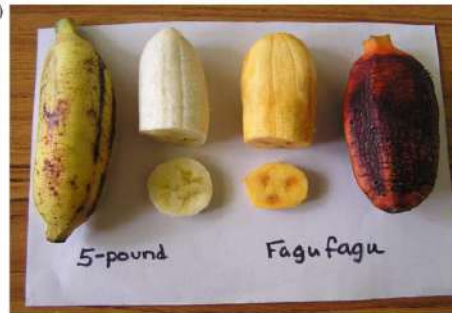
## Banana or a banana?

Banana varieties showed great differences in carotenoid content ranging

- **FROM 58 mg b-carotene/100 g** in the whitefleshed banana (Cavendish subgroup)
- **TO 5945 mg b-carotene/100 g** in the yellow/orange fleshed banana.



(a)



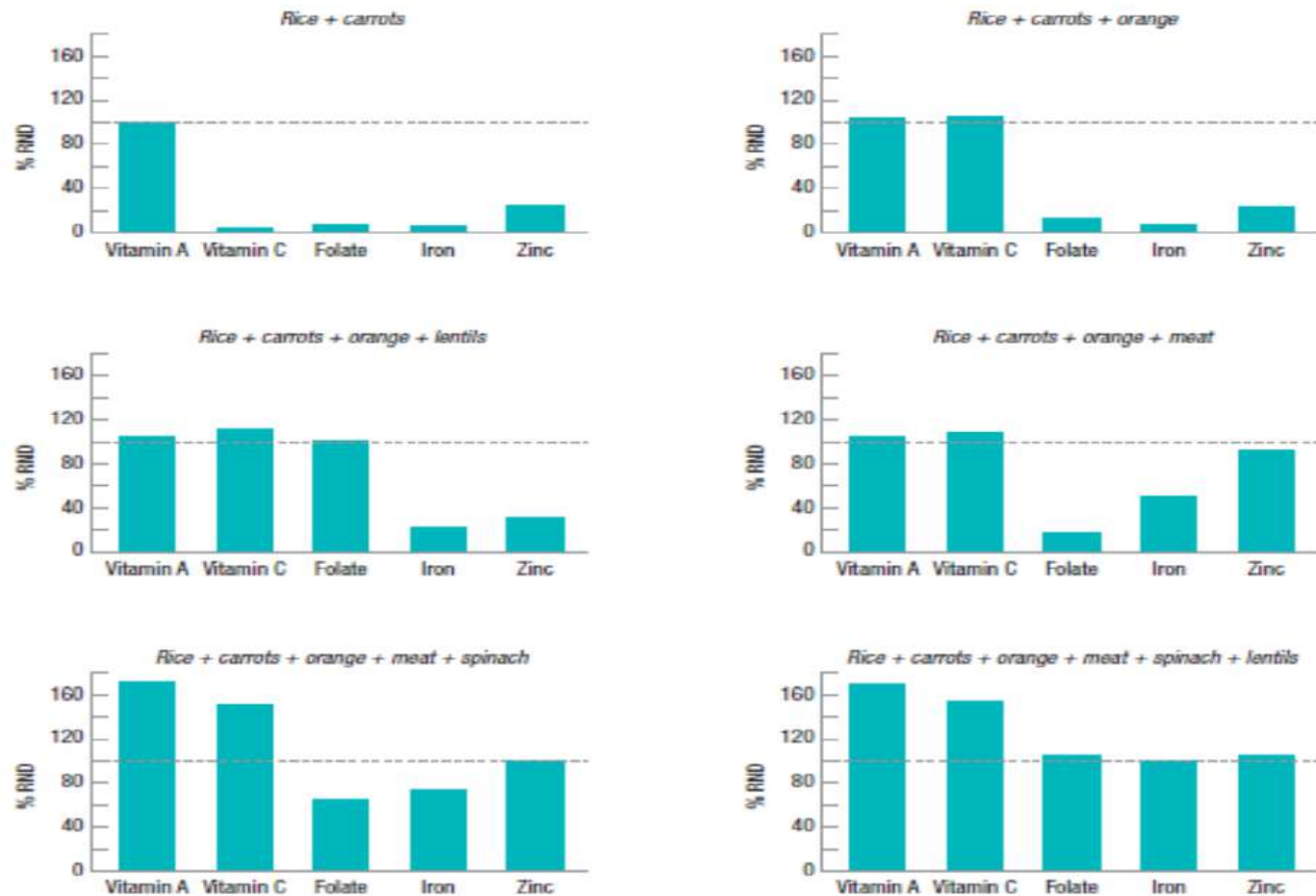
(b)



***Bananas are an ideal food for all people including children because of their sweetness, texture, portion size, familiarity, availability, convenience, versatility, and cost.***

Englberger, L., Darnton-Hill, I., Coyne, T., Fitzgerald, M. H., & Marks, G. C. (2003). Carotenoid-rich bananas: a potential food source for alleviating vitamin A deficiency. *Food and nutrition bulletin*, 24(4), 303-318.

FIGURE 2.2 – Recommended nutrient density of a white rice diet improves with each addition of another type of food



Source: (15). RND – Recommended nutrient density

# Nutritional gap: Communities don't consume required amount of food groups

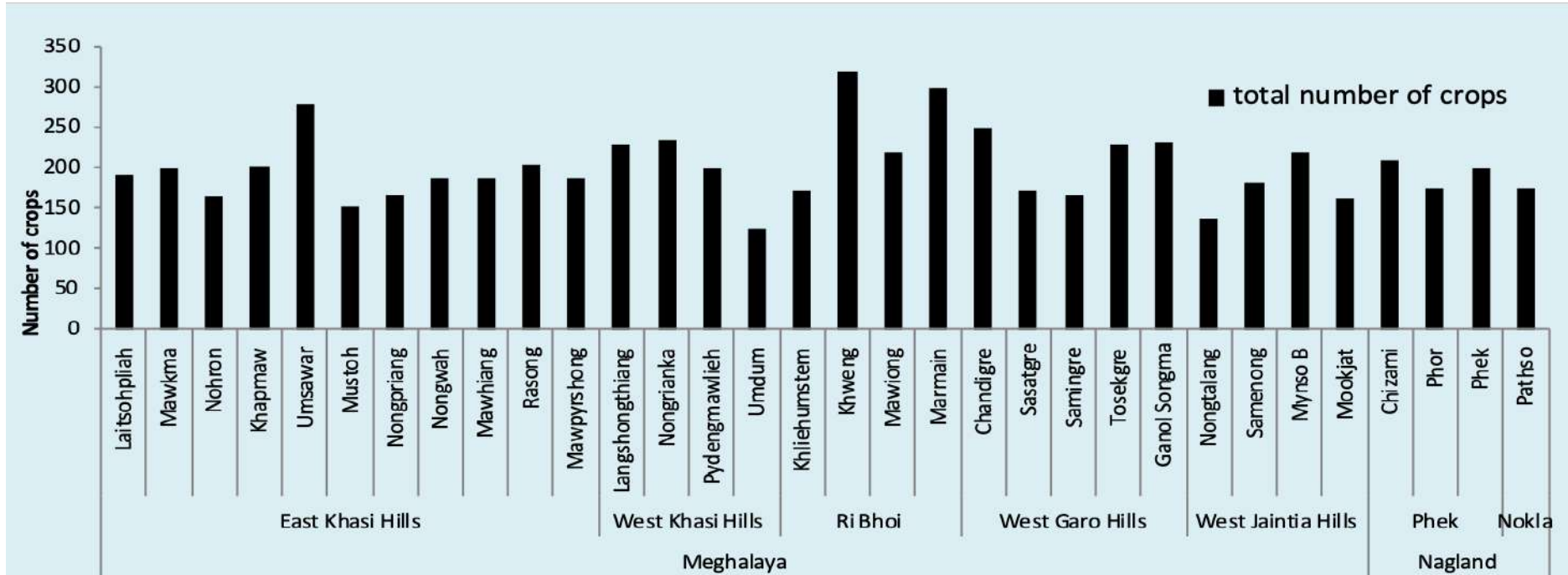
- According to the FAO Guideline on Diet Diversity Score (DDS), an adequate diet is a diet that contains at least 5 Food Groups in a day
- NESFAS Study of 32 communities showed that on an average, households were consuming only 3-4 food groups in a day



# Communities Have Local Solutions with Agrobiodiversity

The villages have a high diversity of crops and wild edibles in their own villages, enough to easily bridge the missing food groups in the diets

Average number of plant foods from the 32 villages is 202





# Availability of missing food groups within the community

- Numbers in the table represent the types of plant food available

State	District	Starchy staples	Leafy vegetables	Other vegetables	Other fruits	Vitamin A rich	pulses	Nuts and seeds	Mushrooms	total
Meghalaya	East Khasi Hills	23	30	46	56	11	4	5	18	193
	West Khasi Hills	42	24	33	64	8	7	3	16	197
	Ri Bhoi	51	38	69	51	9	6	7	21	252
	West Jaintia Hills	21	34	33	47	9	7	4	21	175
	West Garo Hills	55	29	45	62	7	3	2	7	210
Nagaland	Phek	21	39	38	50	8	7	8	23	194
	Noklak	12	35	31	67	8	4	10	7	174

# SOURCES OF FOODS IN THE COMMUNITY

- Forest (foraging)
- Shifting cultivation
- Kitchen garden or home garden.
- Orchards (fruit cultivation)
- Paddy field.
- Bun (terrace farming)
- Water bodies (streams, ponds)
- Market
- Seed exchange to secure food and add crop diversity.



# INTEGRATED ACTIVITIES WITH ICDS AND SCHOOLS

- Cooking demonstration.
- School garden to supplement mid-day meal.
- Food festivals on mid-day meal.
- Mei-Ramew café /local café (Mother earth café )- To increase consumption of local food.



# INTEGRATED ACTIVITIES WITH ICDS AND SCHOOLS

- Seasonal calendars to help cooks prepare menu.
- ABD Walk (Agro biodiversity Walk)
- WASH Campaign



# PROMOTION AND AWARENESS OF UNDERUTILIZED SPECIES



CHASONGSAONI CHA • BAENGIPA



## GOMINDA

SCIENTIFIC NAME *Cucurbita maxima*  
ENGLISH NAME **PUMPKIN**



### Health benefits of Pumpkin:

- Anti-diabetic
- Anti-oxidant
- Anti-microbial
- Anti-carcinogenic
- Anti-inflammatory
- Solidifies blood
- Prevents high blood pressure
- Prevents kidney stone formation

### β-CAROTENE

149 µg  
per 100g

### POTASSIUM

253 mg  
per 100g

### CALCIUM

23.06 mg  
per 100g



CHASONGSAONI CHA • BAENGIPA



CHA • RONGIPA CHA • ANI

VS

JATANGNI CHA • RONGBEWAL

## BEEF CHOPS

SCIENTIFIC NAME  
*Bos taurus*  
LOCAL NAME  
MATCHU BE • EN



4.64  
mg

**CALCIUM**  
(per 100 g)

200  
mg

19.82  
g

**PROTEIN**  
(per 100 g)

19.97  
g

## RICE BEAN

SCIENTIFIC NAME  
*Vigna umbellata*  
LOCAL NAME  
BI • LIK



SOURCE: IFCT 2017

- By providing evidence of nutritional value of agricultural biodiversity.
- Health benefits of nutrients.

# COMMON FOODS VS NEGLECTED & UNDERUTILISED FOODS

Food

Value

Food Composition(Per 100gms)

Value

Food



2.95 mg

**IRON**

14.6 mg



149  $\mu$ g

**$\beta$   
CAROTENE**

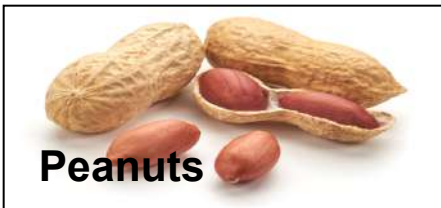
9980  $\mu$ g



7.94 mg  
2.81 mg

**PROTEIN &  
FIBRE**

10.96 mg  
11.49 mg



23.65 mg

**PROTEIN**

23.9 mg  
336 mg



# COMMON FOODS VS NEGLECTED & UNDERUTILISED FOODS

Food

Value

Food Composition(Per 100gms)

Value

Food

**Almond**



2549 g

**CALORIES  
(Kcal)**

2724.86 g



**Indian chestnut**

**Mustard leaf**



192 µg

**VITAMIN K**

324 µg



**Chameleon plant**

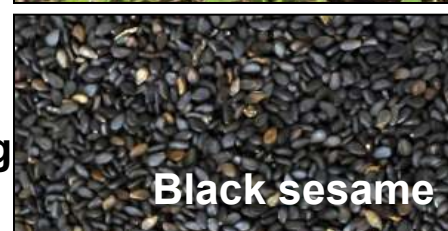
**Milk**



118 mg

**CALCIUM**

1664 mg



**Black sesame**

**Broccoli**



2.82 g

2.6 g

**PROTEIN &  
FIBRE**

3.94 g

4.53 g



**Taro stem**

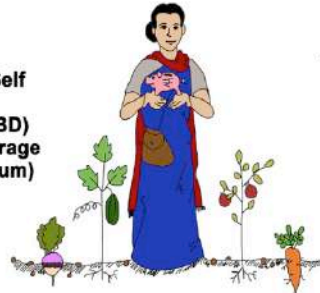
# Benefits of HOME GARDEN



Home garden:  
Integration of animals  
& food plants



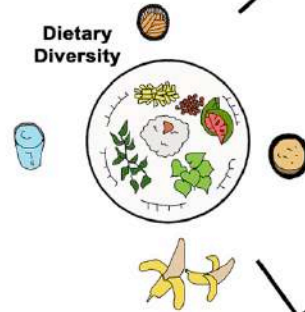
Agrobiodiversity: Resilience to climate stress



Opportunity Cost: Self  
consumption of  
Agrobiodiversity (ABD)  
leads to savings (average  
of Rs 73,000 per annum)



Income from Market (aver-  
age of Rs. 20,000 per  
annum): Sale of  
Agrobiodiversity (ABD)



Dietary  
Diversity

Health outcome:  
Reduced illness leads to  
savings (average of  
Rs. 5000 per annum)



Physical well being:  
Healthy mind & body



# NESFAS EMERGING SCHOOL GARDENS



# NESFAS EMERGING KITCHEN GARDENS





# Mitela



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