

Capacity Building of Community Hunger Fighters

1st Residential training in Koraput

Objectives

1. To introduce the concept of nutritional status and help the participants to see how it is influenced by food intake.
2. To help the participants understand the concept of balanced diet, the role of key nutrients, analyse the dietary pattern and identify the strengths and limitations of the present diet.
3. To help them understand the food requirement during the critical life cycle period of 0-3 years and adolescence.
4. To discuss food taboos/customs and how they facilitate/hinder eating a balanced diet.
5. To work out a balanced meal pattern for the family for a day during various seasons and to estimate the total food requirement for the whole family through the year.
6. To analyse present agricultural production and identify linkages for nutrition security.
7. To identify all food sources such as forest, through entitlements (food and non food based) and opportunities for augmenting food supply and plan for accessing them.

Participants

Twenty five CHF's from 7 villages of Koraput district, 7 village volunteers who were assisting in LANSAs project and 11 staff members participated in the training programme.

Duration of the Workshop

The training was a three day residential training held from 31th August to 2nd September 2016 at Biju Patnaik Centre for Medicinal Plant, MSSRF campus, Odisha.

Day 1.

I. Introduction

The introduction and objective of the training programme was done by Mr. Akshaya Kumar Panda, Senior Scientist and Dr. Rama Narayanan, resource person of the programme. Mr. Jaganath, LANSAs staff translated what the resource person spoke in Odiya to the participants. The participants introduced themselves with their names and the villages they came from. They were requested to repeat the names of the participants sitting on their right as well as their own name (ie) the first participant mentioned the name of the person to his/her right and then added his/her name. The next person repeated both the names before adding his/her own. This

continued till everyone in the circle had an opportunity to remember and identify the names of the participants in the circle.

In order to help the participants to get to know more about their fellow participants they were divided into groups of four. Each participant was given a picture of a food group and was requested to identify three others who had pictures of similar food group. Within the group of four, they were requested to pair up and get to know about the other person's food preferences. The groups then reassembled and each person introduced the partner to the whole group.

II. Expectations

The participants were then asked to list their expectations from the training. About 10 expectations were listed which could be grouped into the 4 broad themes, given below.

1. Nutritious food and nutritional status
2. Agriculture production and improved techniques
3. Meeting other people and learning from each other
4. Diet of children and taking care of children

It was agreed that expectations on nutritious food, nutritional status and diet of children could be addressed in the training programme. It was highlighted that in spite of vegetable production in Koraput being high, the micronutrient deficiency was high. The reason for this could be explored during the two and a half days. Once the linkage between the nutritional status and their diet is understood, the linkage between diet and agriculture can be easily understood. The third objective of meeting new people and learning from one another had been raised by some of the participants who had earlier participated in MSSRF's previous capacity building exercises. They said that such interaction with others from other villages were very useful.

Mr.Jaganath, explained the need for nutrition through life cycle approach with help of a song. Ms.Sunadei, one of the participants shared her views that a few years earlier women had been shy to leave their houses but now they were confident enough to go to a bank and open an account. Earlier, the women used to take loans, pledging their jewels for agriculture purpose and now they take loans from banks and demand the loan be issued at the right time.

Five participants had already participated in the Community Hunger Fighters programme of MSSRF. They were

1. Ghasa Dolei, Banuaguda
2. Kamala Pujari, Bhejaguda
3. Sania Hantal, Atalguda

4. Bhagabati Majhi, Atalguda

5. Damuru Paroja, Banuaguda

They were requested to share some of their experiences with the group. They said that the CHF program had tried to address the nutrition problem in various ways. Mr. Damuru said that they had been sensitized about the importance of cultivating green leafy vegetables, papaya and cow pea to household nutrition security. They had also gained knowledge about the Package of Practices for cultivating the same in the backyard garden. Mr. Sania added that he had gained knowledge about pest management in paddy, while trying to improve paddy production. Ms. Ghasa sang a song about sharing the knowledge gained in the training with everybody in the village especially with respect to women and children.

III. Understanding the linkage between nutritional status and health

Each participant was asked whether they were doing well at that moment or no. All those who said yes were asked to come to one side and those who said no were asked to go to the other side. All those who said yes were further requested to say whether they had been doing well the previous month. Those who reported to having been sick were required to join the 'no' group. This continued with extension of time line till all the participants had become one group. The following questions were used to generate a discussion:

1. What were the health problems identified? What could be the reasons for the same?
2. How is it that some people remain healthy for longer periods while others fall sick often?
3. What factors determine one's health condition? How can illness be prevented?
4. Is it possible to find out whether one is in good nutritional condition to prevent ill health?

Fifty percent of the participants reported to be perfectly fit at the time of the training programme and the remaining fifty percent said that they were not well. The participants who said that they were not healthy, complained of knee pain, head ache, etc. It was highlighted that these were only symptoms and that the actual problem could be something different. Headache could be due to stress or disruption to a daily routine, lack of sleep etc. Some people were prone to migraine which had to be dealt with differently. With regard to knee pain it could be temporary due to excessive work load requiring bending of knees. In such instances labour saving devices would help to reduce drudgery and physical discomfort. For instance, in Tamil Nadu, women farmers working in field for long hours were provided with boots through SHG. From a

nutritional perspective it could be due to insufficient intake of calcium, resulting in depletion of calcium from the bone as was the case after menopause.

While most of the participants moved into the ‘no’ group with increasing time line two persons said that they did not get sick during the last five years. They attributed it to the fact that they neither drank alcohol nor smoked.

The food consumption pattern was also considered an important pathway to good nutritional status. One person said that he did not get sick after marriage as his wife cooked varieties of food. It was concluded that keeping away from illness was due to good nutritional status, achieved through eating on time, eating a balanced meal, having dietary diversity and leading a healthy life style.

The heights and weights of the participants were measured using Seco weighing machine and stadiometer. Body mass index was calculated using the height and weight of participants and classified according to WHO classification for Asians. Hemoglobin was collected by finger prick method and analysed for haemoglobin levels using colorimeter method. The results are given in Annex 1. The following table shows the summary of nutritional status of the participants.

Table 1. Nutritional status of participants

Nutritional Status	Male	Female	Total
Anthropometry			
<18.5	8	2	10
Normal	17	7	24
Overweight	2	6	8
Total	27	15	42
Hb status			
< 12gm%	-	15	15
< 13gm %	25	-	25
>13gm %	2	-	2

The results showed that ten participants had a BMI value less than 18.5 suggesting in adequate weight for height indicative of under nutrition. Two were obese. All the women participants were found to be anaemic while among men except two, rest were anaemic. In the discussion that followed participants were explained about the implication of the results. They were comforted that they need not be alarmed over the results. The function of blood was to carry oxygen and nutrients to different part of the body. Low haemoglobin levels meant less carrying capacity of the blood of needed oxygen and nutrients to organs resulting in lesser immunity against infections. It was possible to mitigate anaemia through appropriate dietary intake of iron and consumption of iron folic acid tablets, especially in the case of adolescent girls and pregnant

and lactating women. Those who were underweight could put on a few extra kilos more. The focus should be to eat a balanced diet and to reduce physical labour through appropriate labour saving devices.

IV Understanding existing food and nutrient intake

Participants were divided randomly into three groups.

Group 1 was requested to put down all the food items that were consumed every day, number of meals they ate in a day and the timing of the meals

Group 2 was requested to put down all the foods that they ate once or twice a week, the number of meals eaten in a day and the timing of the meals

Group 3 was requested to put down all the foods that are eaten occasionally (once or twice in a month), the number of meals eaten in a day and the timing of the meals. Figures 1, 2 and 3 show the foods that are consumed daily, twice or thrice a week and occasionally. Seasonal foods were also represented.



Fig 1. Foods consumed on daily basis

Table 2. Daily dietary pattern of the participants

No. of group members: 9 CHF's, 3 LANSA staff

6.30 to 7.30 am	Black tea or milk tea from shop (cow's milk or packet milk) Ragi porridge (2 persons) Pakodi (3 persons) /Bread/biscuit (2 persons)
10.00 to 11 am and 2 pm	<i>Ambila</i> (rice powder cooked with tamarind, chilli, salt, ginger, garlic) depending on seasons bamboo shoot, green leafy vegetable, cabbage, radish leaves, moringa leaves, field bean, broad beans may be taken
8 to 10 pm	Rice (sourced from PDS/own farm/shop), ragi, masoor dhal, urad dhal, groundnut, tomatoes, onion, dried chillies, green chillies, ivy gourd, horse gram, bengal gram dhal, ginger, garlic, turmeric, potatoes, brinjal, beans, pumpkin, amaranthus, drumstick leaves, ash gourd (<i>Baoki</i>), rajmah, raw papaya, cluster beans, mint leaves, radish
Seasonal vegetables	<u>Winter</u> : sweet potato, ridge gourd, cabbage, amaranthus, colocasia, ladies finger, bottle gourd, coriander, cauliflower <u>Summer</u> : Elephant yam, mango, bitter gourd, jackfruit <u>Rainy</u> : Tapioca , bhendi, bitter gourd, bamboo shoots

The following emerged during the discussion

- ✓ Soon after getting up in the morning, it is good to activate the digestive system with a glass of water after which tea could be consumed. Tea acts as stimulant and as such is not needed for children. After drinking tea half an hour gap should be given before consuming a meal since tea interferes with iron absorption.
- ✓ Only one person took dhal daily while others consumed it twice or thrice a week. It was usually mixed with vegetables and rice and eaten. Green leafy vegetables being seasonal were consumed everyday during the season.
- ✓ Cooked rice (without polishing) is consumed daily
- ✓ Refined oil was used in daily cooking but in very less quantity. Suggested that they could use oil that was not refined, since refining reduced the nutritive value. They could buy oil that was sold directly after extraction, from local shops.
- ✓ Ragi gruel which formed part of the daily diet was high in dilution and could be made thicker or taken along with other energy rich food such as banana.

- ✓ Fermented foods and sprouted foods were rich in vitamins.

The daily diet was predominantly cereal based. Only two food groups were consumed daily (cereals and vegetables). Dhal was consumed twice or thrice a week.



Fig 2. Foods consumed twice or thrice a week

Group 2 had 11 CHF's and 3 LANSA staff. They made presentations on foods that were consumed twice or thrice a week. These were apple, banana, ladies finger, brinjal, beans, cauliflower, ridge gourd, snake gourd, bottle gourd, pumpkin, leafy vegetables, cabbage, tomato, papaya, carrot, radish, jackfruit. Bitter gourd (avoided on Monday and Thursday), Bamboo shoots, cabbage, radish and colocasia were dried and used all round the year. Egg, fish, dry fish and soya chunks were consumed twice or thrice a week. Lentils were the cheapest of pulses and were bought from the market (Monday, Wednesday and Friday) for consumption. Green gram, horse gram and black gram were also cultivated in lesser quantities. The following were highlighted in the discussion;

- ✓ When compared to dhal, animal sources of protein had a higher bioavailability and it was asked if non vegetarian could be brought into the regular food intake. For vegetarians mushrooms were an excellent source of protein.
- ✓ Consumption of drumstick leaves twice a week was good for blood haemoglobin levels
- ✓ 30 ml of oil a day was recommended since it supported absorption of vitamins.

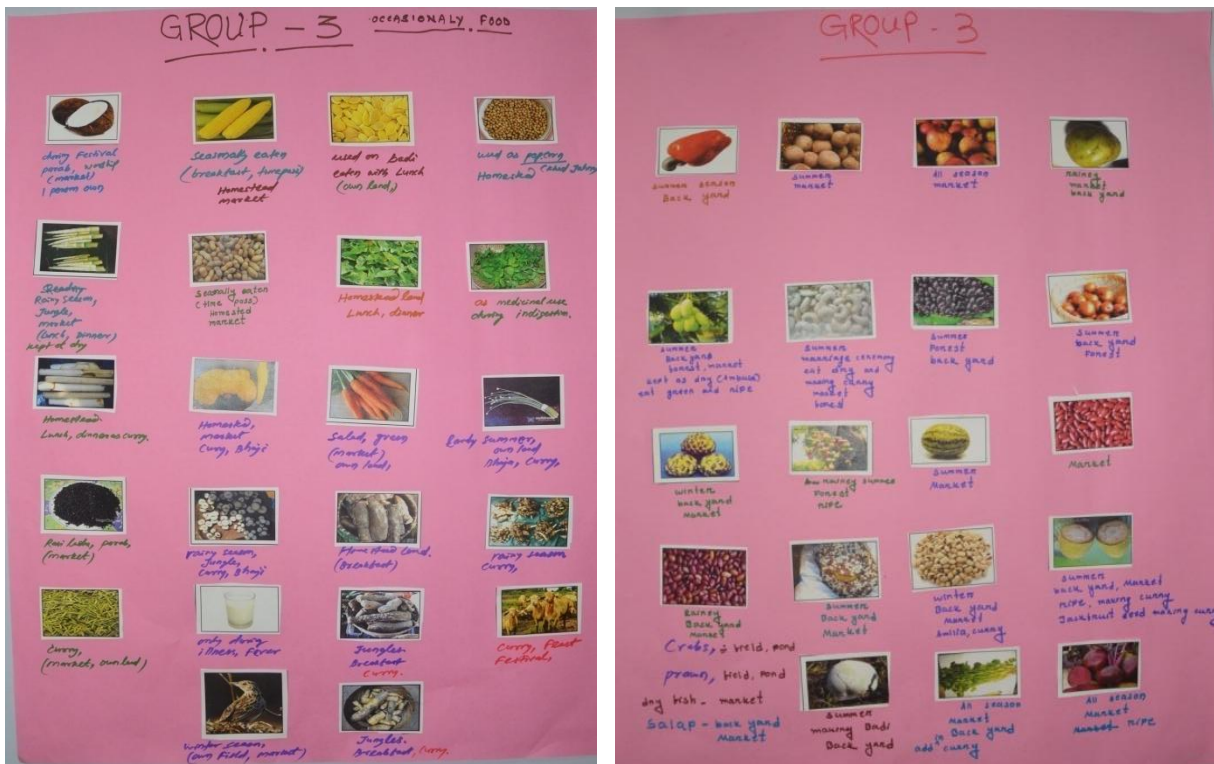


Fig 3. Foods consumed occasionally

Group 3 had 9 CHF's and 2 LANSAs staff. They presented the list of foods consumed occasionally along with an explanation on why it was so. Coconut, corn, pumpkin seeds, bamboo shoots, groundnut, colocasia leaves, mint, plantain stem, dioscoria, carrot, spring onions, sesame seeds, mushroom, tapioca. Milk was consumed only during fever and mutton during festivals. *Gundri* a bird found in the jungles, jamun, wild fruits and mango were collected from forest. Cashew fruit, potato, apple, green mango (dried and used), cashewnut (used only in marriage ceremony), Jamun fruit, ber/jujube/Indian plum (*Ziziphus*) custard apple, fig, water melon, rajmah, soy bean, unripe jack fruit, horse gram, ash gourd, coriander and beetroot. These foods were purchased from market or collected from forest.

The following questions were posed to the group members for their consideration;

- ✓ Can a mango tree be grown in the backyard of every household such that atleast one fruit is available?
- ✓ Can crabs, shrimps and fruits be brought into the current food pattern more often than now?

Day 2.

The next day's session started with a recap of the previous day's deliberations.

V. Food groups, nutrients and cooking practices

Booklet on dietary diversity (Annex 2) was distributed to the participants and the following points were discussed;

1. **Calories:** Required for working in fields and to do household chores. We need energy to do all activities. Energy is obtained from cereals, root vegetables and oils. Examples: rice, ragi, potato, carrot, corn, oil). Cereals provide 4 Kcal/gm and fats provide 9 Kcal/gm. So oil/ghee can be added to the child's food to increase the calorie content without increasing the bulk. Oil provides essential fatty acids. 20 to 30 g oil/day can be included in daily cooking. Two handful of groundnut/sesame/cashew/ almond/day /person will approximately meet oil requirement.
2. **Protein:** - protein rich foods help in body building, example: pulses, nuts, animal foods .
3. **Vitamins and Minerals:** To stay healthy without any disease, vitamins and minerals are essential. They provide immunity to body and prevent diseases. Vegetables and fruits are good sources of vitamins and minerals.
4. **Balanced diet:** During a day, about 4 to 5 food groups have to be added in the diet.

The dinner eaten the previous night was analysed for its nutritive value. The meal had three types of vegetables preparations. The RDA for vegetables was 200 gms. However the dhal was found to be very dilute. Dhal could be substituted with egg or any other animal protein. Raw green chilli was provided with the meal, while it is rich in vitamin C and folates it has to be consumed in small quantities and should not be consumed on an empty stomach. Atleast one fruit could be consumed in a day (ie) ripe papaya or banana or any seasonal fruit.

Sources and functions of vitamins and minerals were explained with the help of power point. One of the participants was an ASHA worker explained that vitamin A drops were provided to

children less than 5 years of age twice a year. It was highlighted that soil health was very important, since the nutrients from the soil were infused into the fruits or vegetables. An example is iodine. Iodine is the raw material needed by the body for producing a hormone. Iodine in the soil was depleted to such an extent that the agricultural produces lacked the nutrient leading to a condition called goitre in some sections of the population. The government has now made iodized salt mandatory for all.

VI. Life cycle period, food requirements and social customs

Participants were randomly divided into two groups and each group was given a role play to enact.

Group 1 was given the following situation: A girl has attained puberty. Show how the family celebrates the occasion, what food do they give the girl, for how long are the rituals held.

The play starts with the girl telling her friend about the onset of her puberty and her friend goes and tells the girl's mother about it. The girl's mother informs her relatives and neighbours and they all join together and make her sit in a separate room. When the girl's father comes back from farm, the girl's mother informs him that their daughter has attained puberty. The father immediately becomes sad and says that this was a busy season and everything will get disturbed. He and his wife go to "*disari*" (local priest) to discuss about what has to be done. *Disari* looks into the horoscope and fixes a date and time for the puberty function and advises about the ritual that has to be done. *Disari* asks them to get a goat of particular colour, for sacrificing it to god during the function also advises the mother to give only rice, milk and jaggery to the girl upto nine days. Only foods that were advised by *disari* were provided to the girl. One day the girl complains that the food was inadequate and wants spicy food with some variety. One of the relative tries to give some extra food which was stopped by the girl's mother saying that *disari* has advised not to give other foods. The father mortgages his land and arranges the puberty function and invites the relatives and neighbours to the function. On the ninth day the girl was taken to the nearby pond before dawn where turmeric was applied by her relatives and she was made to take bath. She was dressed well and then taken to the place where puja was being conducted by the *disari*. The goat was sacrificed before the god and offered to god along with money as offering to *disari*. The girl was made to do her prayers and was taken to the place/mandap where the function was held. The women of the village joined together and sang songs and danced around the girl and celebration went on. At the end of the ceremony the uncle of the girl carried her on his back to the pond along with relatives and friends.

The play was then discussed and the following were the highlights:

- ✓ The question was posed as to why it was important to celebrate a girl's puberty? Did the girl demand that it be celebrated? Participants replied that it was done to get marriage proposals and to celebrate fertility. However rather than being treated with joy, it was shown to have become a burden to the family. In the role play, the father's reaction to the news that his daughter had attained puberty was that it was the rainy season and there was lot of work to be done and this was a nuisance. Further he mortgaged the family land to get money for the function.
- ✓ Due to social pressure families spent a lot of money on puberty rituals. However some castes did not have elaborate ritual or function attached with it showing that this was a socially construction which could be questioned. Further age of marriage has gone up and the ideal age of marriage for women was 21 years.
- ✓ During early days of menstruation, the girls are given rice, jaggery and milk, as advised by the *disari*. They are given less food – to avoid frequent visits to toilet. Food has to be restricted only if the girl feel discomfort. Spicy foods can be avoided. Lack of toilets was a major setback for women affecting their hygiene and health. Rather than restricting food intake so that frequent visits to the toilet were avoided, it would be useful to consider building a toilet.
- ✓ It was also believed that puberty was bad and impure which makes the girl untouchable. This can be broken by doing puja. It was explained to the participants that during menstruation when there is blood loss, the immunity of the girls is likely to be lower making them susceptible to infection. Further girls and women carried out heavy jobs within and outside the homes. Hence practice such as isolation of girls was followed, to give them rest. However today with more understanding about puberty and menstruation there is no need to isolate a person in order to give them rest. This could be done by other people sharing her work and allowing her to remain in the home.
- ✓ While girl's puberty was celebrated boys' puberty was not recognized. One of the indicators of boys' puberty was the growth of moustache. Boys' diet is also very important during puberty. If boys get affected by mumps between the ages of 13 to 18 years, there is a probability for the boy to become sterile. Hence MMR is an important vaccination to provide. Participants were also informed that the surveys conducted by MSSRF showed adolescent boys to be more undernourished than girls.

The situation for the second play was a family consisting of a mother, father, an adolescent boy, an adult son, his pregnant wife and grandparents. They are an agricultural family and small farmers who make both ends meet through cultivating their own land, getting supply from PDS and through wage labour. One day suddenly when they are about to eat dinner guests arrive. Show how they manage to feed the guests. Who compromises on the food? or is there enough food to go around ?

The play started with the daughter in law doing household chores like cleaning the house in the morning, cooking etc. The grandfather of her husband comes home drinking alcohol in the morning itself. The daughter in law and the grandmother argue with him about drinking in the morning itself. The head of family, both mother and father leave to the market to get groceries. They bargain and buy vegetables. They wanted to buy eggs which were not available and so they get chicken. After finishing the purchase, they both go and take alcohol. The woman does not like the taste of alcohol. She asks her husband how he is taking it inspite of its bad taste. They reach home and give the purchased materials to the daughter in law. The family has discussion about the purchased goods. The mother distributes snacks (bada) to everybody that she has purchased from market. She calls her sons and gives them and the adolescent son fights that he want two bada and the elder brother gives his share to him. The daughter in law complains to her husband that she has to do all the household work and nobody helps her. Argument between son and mother happens. The husband supports his wife and tells his mother to help her in some activities as his wife is pregnant.

By that time, two guests arrive at the house. The guests suggest to the elder son that they drink alcohol and the father gives the alcohol that was purchased from the market to the guests. While having drink the grandfather joins them and the guests ask grandfather why he is drinking too much. Meanwhile the husband instructs the women of the household to serve lunch to the guests that was prepared for the family. All the men and the grandmother sit down for lunch. One of the guests discusses with the pregnant woman about the importance of health care and food habits. The grandfather eats less food as he was fully drunk and wanted to retire. The guests ask for more food which was provided to them. The husband leaves some food in his plate for his wife to have. After the guests leave the women sit down to eat. The mother in law gives her vegetables to the daughter in law but she does not take it and mother in law starts arguing that as she is pregnant it is important to consume vegetables.

- ✓ From the play it was clear that the importance of the diet of a pregnant woman was very well understood. Her diet was taken care of even when there was a shortage of food or when guests shared the food.

- ✓ The problem that the pregnant woman highlighted in the play was her workload. She had no rest and was engaged in some work or the other the whole day. Many participants also shared similar experience from their own village. One such example was the death of a baby in the womb since the woman had worked transplanting rice in the field during the later stage of pregnancy. Pregnant women need rest and sharing the workload by family members is of utmost importance.
- ✓ While purchasing food for the family, women were the decision makers as they were involved in cooking. Some participants said it was a collective decision between men and women. Men were also at times involved in purchase of food items but were unreliable since they used part of the money in alcohol consumption. Alcohol consumption becomes a compulsory event while going to market. Sometimes women also consume alcohol. Community members from Atalguda shared that girls have started drinking alcohol.
- ✓ In Banuaguda, the community hunger fighters had taken steps to prevent liquor consumption in their village. One of the community members from the village explained how they achieved it.
- ✓ Women were more knowledgeable about food and if one food was not available they could decide on what food could be used as a substitute in its place. In the play, they showed that since egg was not available they bought chicken and changed the menu.
- ✓ It was not clear from the play as to who had compromised on food. The husband of the pregnant woman gave some of his food to her (leftover food), when the guest asked for more food. The mother in law compromised with the vegetables which the pregnant woman did not eat. It was suggested by the participants that in order to adjust/overcome this situation, fruits and other foods like biscuits can be purchased and stored.
- ✓ Sensitization of the family members should be done on the importance of ante natal period. Pregnant mothers should have additional 300 kcal. As they cannot eat more at a time, meals can be consumed in small intervals of four or five times. The participants felt that eating more will make labour difficult as the size of baby will be big. It was then highlighted that Low birth weight was a major cause of child undernutrition and there should be no restriction on the diet of the pregnant woman. On the other hand pressure should be exerted to enable authorities to provide competent and timely obstetric care to women during delivery.

VII. Entitlements

The afternoon session began with an introduction to various Government schemes and programmes by the Block Development Officer and Agriculture Officer of Boipariguda block.

Block Development Officer (Boipariguda block) Mr. Mataram Leyangi

Changes in traditional and modern agriculture are seen through the extension activity, KVK scientists and various government sponsored programmes. Fertilizers and pesticide applications have resulted in reduction of earthworm population in fields. Emphasis on organic farming should be given. Climate change also has an adverse effect on agriculture as water level has gone down. Village ponds should be used for fish farming and to irrigate vegetable crops which can increase the nutrient consumption by the family.

1. My pond (*Mo Pokhari*)” Govt provides Rs. 75000 to dig a pond in farmers own land. The farmers can grow vegetables on the bunds of ponds.
2. Multipurpose pond (*Bahumukhi Pokhari*): Rs 240,000/- is provided by the Govt. The pond should be in the middle of farms which can be used to pump water and irrigate fields.
3. Women Self Help Groups in villages are provided with Rs. 15,000/- initially for various activities, and subsequently if the progress is good upto Rs 50,000/- is provided.
4. SHGs can work with banks and provide funds to various projects. SHGs have to provide Rs. 2.5 lakhs and bank provides Rs 2 lakhs as loan.
5. Government also funds for constructing dug wells for small land holders.
6. Subsidy for pumpset during summer seasons are provided by the Government
7. National Family Benefit Scheme: If the head of the family expires, the family will be provided Rs. 20,000/-.

Assistant Agriculture Officer (AAO) Mr. Ghyan Ranjan Panigrahi

The following points were explained by AAO:

1. Integrated farming system: Govt provides Rs. 1 lakh and famer has to provide Rs. 58 thousand. The components of IFS: farm pond, vegetables on farm pond bunds, vermin compost unit, cattle, poultry, duck rearing etc. Vegetables in farm pond bunds are supported by ATMA: Agriculture Technology Management Agency
2. Backyard poultry and transplantation of banana tree are also supported by Government
3. BGREI –Bringing Green Revolution to Eastern India: line sowing and System for Rice Intensification (SRI)

4. National Food Security Mission
5. Soil health card scheme
6. Procedure to collect soil samples for soil testing
7. Types of fertilizer that can be used for different crops
8. Government provides 75% subsidy for dug well and 50% subsidy for power tiller
9. Cow dung can be used as compost and to improve health of the soil

Day 3.

VIII. Improving existing consumption pattern

The participants were randomly divided into three groups and were requested to improve their existing diets to make it more balanced. Each group was given one particular season of the year (ie) summer, rainy and winter and was requested to present a day's diet which would be more balanced and an improvement over the existing one. The following table explains the modified food consumption pattern.

Table 3. Modified Consumption Pattern based on season

Time	Group I (Summer Season)	Time	Group II (Rainy Season)	Time	Group III (Winter Season)
Early morning 6 am to 7 am	Tea with milk powder and Biscuit /Boda (wheat flour with jaggery)/ pakudi (besan with onion, green chili)	4 to 5 a	Tea with milk powder, ginger and Biscuit/ Boda (wheat flour with jaggery) / pakudi (besan with onion, green chili)	7 to 8 am	Tea with milk powder Boda (Wheat Flour with Jaggery) /Pakudi (besan with onion, green chili)/bread/roti
Mid morning 10am to 11am	Ragi gruel or <i>Ambila</i> (Rice gruel made with tamarind and spices: to this any pulses, green leaves vegetables like Drumstick leaves/Amaranthus/ Pumpkin Leaves/ Cauliflower leaves/ Radish Leaves/ Bahunia Purpuria, Jack fruit, Tamarind, Ginger, Garlic, Green/Dry chilli), 4. Fry (Ivy gourd, Potatoes, Brinjal)	10 am Brunch (Breakfast +Lunch)	<i>Ambila</i> (Rice gruel made with tamarind and spices: pulses like Lentil/Horse gram/ Cow pea/ Pigeon pea/ green gram) and bamboo shoot/kanda (tubers) with Rice and green vegetables Ragi gruel and dal (masur/mung)	10 am to 12 noon	Rice with dal, leafy vegetable/ <i>Ambila</i> with cauliflower, beans, potato and ragi gruel
Lunch 2pm to 3pm	Ragi gruel / <i>Ambila</i> with Ripe/Green Mango chutney			2 to 4 pm	<i>Ambila</i> , bhaji (taken mostly in field)
Evening 4 pm to 5pm	Cucumber/Water melon	5 pm	Tea with biscuit/pakodi	5 pm	Guava, Ripe Papaya, Custard Apple
Dinner 8pm to 9pm	Rice with Dal, Curry (tomato, onion, potato, cashew)/ Occasionally Non veg curry (prawn/fish)	8 pm	Rice, dal, Vegetable curry (potato, brinjal) /wild Mushroom/ crab/ small fish/Egg	8 pm	Rice, dal, Curry (tomato, onion, potato, cabbage , cauliflower)/ Weekly Nonveg Curry (Dry prawn/fish/Egg/ crab/ chicken/ wild bird (<i>Ghunduri</i>))

Following were the highlights of the discussion:

Summer season

- Meal pattern has not changed but the quality of the meal has changed. The plain rice gruel or *ambila* is enhanced with dhal/veg/green leafy veg.
- Bread can be taken along with cucumber / tomato as sandwich which will improve the nutritive value.
- Bread can also consumed along with tea. A gap of 15 minutes is needed.
- The use of biscuits and bread was suggested to be kept to a minimum since they were made from refined wheat flour and were low in nutritive value. Biscuits should not be treated as food.

Rainy season

- Time gap between lunch and dinner is more. The breakfast is also not sufficient to get adequate energy. During rainy season, the work load is also intensive. So a meal in between lunch and dinner is necessary. They can have *Ambila* at 2 or 3 pm.
- According to the diet plan, four food groups are covered. As they are doing heavy work, a fruit like banana or guava can be added to their diet, which makes it five food groups. The participants had a belief that they will get infected with cold if they eat fruits during rainy season. It was explained that cold is caused by a virus. It is also contagious and if somebody in the family or neighbour has a cold then it spreads easily, if necessary precautions are not taken.

Winter season

- On Mondays and Thursdays, non vegetarian foods and *Ambila* are not consumed. This could be substituted by taking dhal.
- Vegetables were available but they have to be spaced out accordingly. Vegetables have to be washed before cutting in order to retain water soluble nutrients. Vegetables should not be exposed to sunlight for a long time and have to be cut in big sizes to prevent the loss of nutrients while cooking.
- Overall it was suggested that *Ambila* was good for health if dhal and vegetables were added to the rice.

IX. IYCF practices (birth to 3 years)

Participants were divided into five groups. Each group was given a picture depicting a particular period namely first six months, 7th and 8th month, 9 – 11 months, 12 – 24 months and 25 – 36 months along with feeding guidelines (Annex 3). Participants were requested to study the pictures and discuss the feeding recommendations suggested.

- Feeding requirement changes according to age.
- Nutritional status of the child at birth is influenced by mother's age, birth spacing and her nutritional status.
- Exclusive breast feeding is recommended upto 6 months. Breast feeding should be continued for 2 years along with complementary feeding.
- Complementary feeding begins at 7th month. Initially rice kanji can be given and then cereal pulse powdered mixture can be given. Three parts of cereal and one part of pulse should be ground into a powder and can be given.
- The porridge mix given free through ICDS is a complementary food for the young child.
- Initially small quantities can be given and it should be gradually increased. For 8 month child, feeding should be done three times a day.
- Gradually cooked and mashed vegetables like greens, pumpkin, carrot, etc should be introduced.
- This should be increased as the age of the child increases and by 1 year of age the child should be eating all family foods.

The resource person said that she did not have much knowledge about feeding of wild foods and asked the participants as to when they introduced it to children. Participants reported giving wild food only after completion of one year of age. Forest foods like yam is boiled, mashed and given. Whenever the child is hungry, rice is boiled mashed and given.

- School going children have to take morning breakfast, mid day meal, meal after coming back from school and dinner.

Participants wanted to know how they could find out if children were getting adequate nutrients in their diet. Growth monitoring and achievement of milestones were useful in finding out if children were getting adequate quantity and quality of food. Every month the child should gain 500 g of weight. Similarly milestones appropriate to the age were indicators to see if the children were having normal development. These ranged from smiling at mothers at three months of age and crawling, sitting at eight months, walking with support at one year and so on. Vaccination of child should be done according to the schedule given by the government.

X. Adult nutrient consumption

It was found in the diet survey conducted by MSSRF that cereal consumption is higher than the recommended levels. The RDA of other nutrients for those with heavy activity was given as below:

Pulses:	75 to 90 g
Vegetables:	200 g
Green leafy vegetables:	100g
Animal foods:	100g
Fat:	30 ml

Incidence of high BP was more for Odisha than for other states and consumption of salt was also much higher which had to be decreased.

XI. Concluding session

At the end of the residential training participants assessed how far their original expectations had been fulfilled. Out of the four expectations listed out by them during the start of training, three expectations namely nutritious food and nutritional status, meeting other people and learning from each other and diet of children and taking care of children had been addressed. Agriculture production and improved technologies and linking nutrition to agriculture had not been discussed and would be taken up in due course of time.

Further training needs

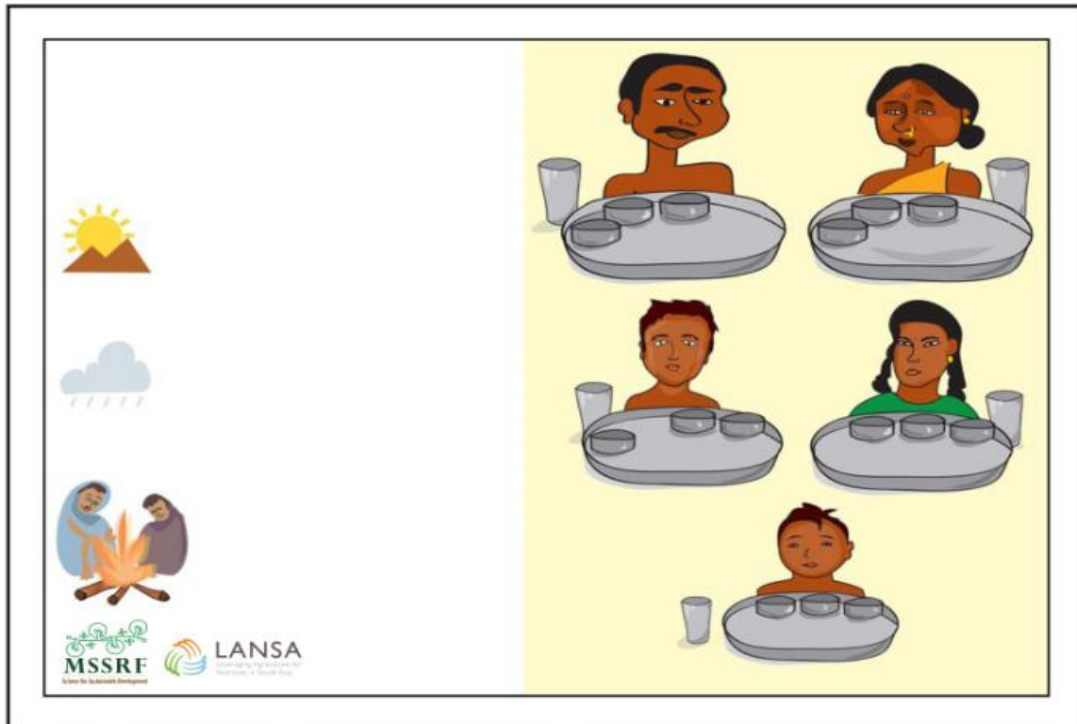
The participants were divided in to village wise groups and were requested to identify their training needs which they considered essential in reaching a balanced diet. The following table gives the list of training needed according to village.

Chikima	<ol style="list-style-type: none">1. Organic compost: Handi Khata2. Mushroom Cultivation3. Backyard Poultry4. Non Formal Education
Rauliguda	<ol style="list-style-type: none">1. Nutri garden2. POP – agriculture crops3. Caring mother and infants4. Compost pit - Biofertilizer5. Commercial Nursery
Maliguda	<ol style="list-style-type: none">1. IPM measures in cereals and pulses2. Awareness on sanitation and personal hygiene3. Compost fertilizer4. POP in vegetables
Atalguda	<ol style="list-style-type: none">1. Vermicompost2. Handi Khata3. IPM of vegetables and pulses4. Agriculture implements5. Entitlements
Banuaguda	<ol style="list-style-type: none">1. Post harvest technology for wild tubers2. Production enhancement in rice, pulse and vegetable
Kurkuti	<ol style="list-style-type: none">1. Culinary practices for millet and pulses2. Post harvest technology3. Production enhancement4. Organic compost
Bhejaguda	<ol style="list-style-type: none">1. Yield enhancement in paddy2. Vegetables cultivation in limited space3. Government entitlements on agriculture and nutrition4. Community mobilization5. Rain water harvesting

BMI and Blood haemoglobin levels of the participants**Annexure 1**

S.No.	Name of the person	Age	Sex	Weight (Kg)	Height (M)	BMI	Level of Hb (gm%)
1	Puspanjali Sahu	25	F	34.6	1.505	15.3	9.6
2	Madhav Paroja	28	M	39	1.592	15.4	10.0
3	Narayan Harijan	27	M	42.3	1.613	16.3	9.0
4	Dambaru Paroja	48	M	46.1	1.671	16.5	10.0
5	Balaram Harijan	45	M	47.8	1.697	16.6	10.0
6	Kamala Paujari	44	F	40	1.529	17.1	8.4
7	Prahallada Nayak	29	M	48.9	1.683	17.3	10.0
8	Gupta Guntha	19	M	47.7	1.638	17.8	10.0
9	Sania Hantal	32	M	48.5	1.636	18.1	9.2
10	Santosh Raj Benia		M	47.6	1.615	18.2	13.0
11	Gupta Prasad Ghadei	35	M	51	1.659	18.5	10.2
12	Mahendra Mali	30	M	50.4	1.645	18.6	11.6
13	Manika Gouda	45	F	40	1.462	18.7	9.0
14	Sunadei Mali	45	F	44.3	1.534	18.8	8.0
15	Nayana Sukri	25	F	44.5	1.527	19.1	7.8
16	Shyam Naria	40	M	48.3	1.59	19.1	9.8
17	Ghasi Takri	30	M	53.9	1.664	19.5	10.8
18	Samaru Murjia	31	M	57.1	1.71	19.5	9.8
19	Dasu Mundagudia	48	F	43.7	1.483	19.9	9.6
20	Nira Nayak	28	M	54.8	1.644	20.3	11.0
21	Manguli Nageswari	36	F	48.7	1.548	20.3	7.8
22	Sadasiba Majhi	29	M	53	1.614	20.3	10.2
23	Jagannath Khara	20	M	50.7	1.575	20.4	12.0
24	Niranjan Khada	48	M	57.3	1.672	20.5	10.0
25	Balaji Mohanty		M	57	1.664	20.6	11.0
26	Max Aurthor Gill		M	60.2	1.708	20.6	11.0
27	Naresh Chandra Patro		M	63.5	1.753	20.7	14.0
28	Ghasamani Dalei	39	F	50.9	1.554	21.1	9.6
29	Jagannath Naik		M	53.6	1.592	21.1	11.0
30	Sahadeb Pujari	42	M	51.4	1.544	21.6	9.6
31	Ananda Pradhani	35	M	55.3	1.576	22.3	12.0
32	Prahallada Pujari	38	M	58.1	1.611	22.4	11.0
33	Budri Mundagudia	40	F	57.3	1.586	22.8	8.6
34	Dinesh Kumar Panda	29	M	62.7	1.654	22.9	11.0
35	Anurakta Beuria	26	F	60.2	1.616	23.1	9.8
36	Janaki Nayak	38	F	52.7	1.507	23.2	8.0
37	Susanta Kumar Mishra	42	M	59.1	1.572	23.9	12.0
38	D.J.Nitya	34	F	60.8	1.576	24.5	10.0
39	Aliza Pradhan	32	F	61.9	1.57	25.1	10.2
40	Surjya Mali	48	F	64.7	1.57	26.2	10.2
41	Akshaya Kumar Panda	42	M	79	1.657	28.8	11.0
42	Rama Narayanan	56	F	77.9	1.592	30.7	10.2

Dietary Diversity



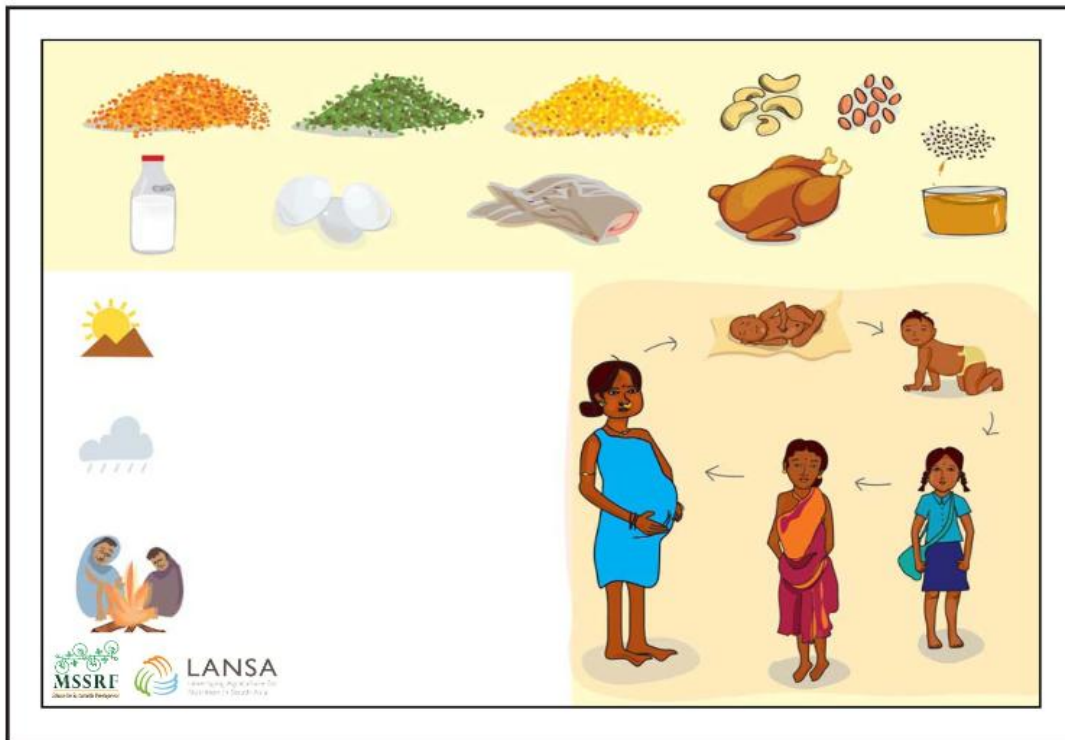
Adapted from Community Hunger Fighters - A People -Centered Programme Focussing Undernutrition, Residential Training Programme Manual developed by M.S.Swaminathan Research Foundation and Global Alliance for Improved Nutrition (gain)

Dietary diversity – calories



Adapted from Community Hunger Fighters - A People -Centered Programme Focussing Undernutrition, Residential Training Programme Manual developed by M.S.Swaminathan Research Foundation and Global Alliance for Improved Nutrition (gain)

Dietary diversity – proteins

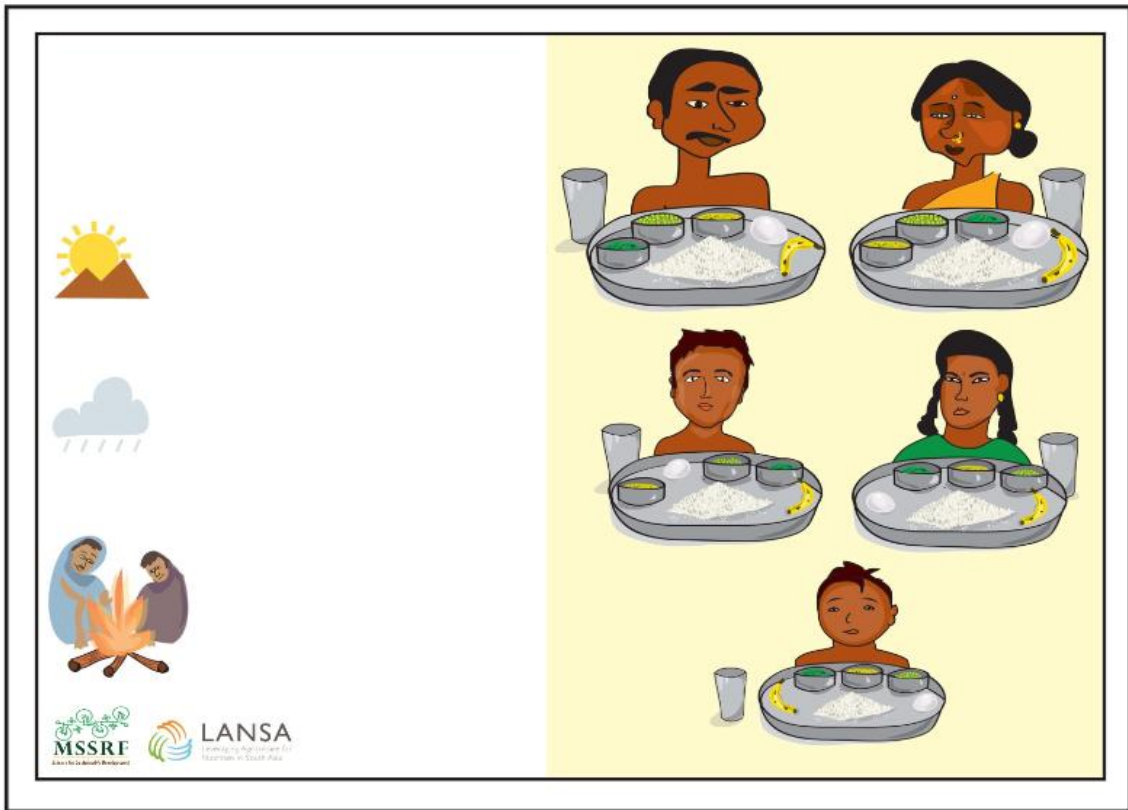


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Dietary diversity – Vitamins and Minerals

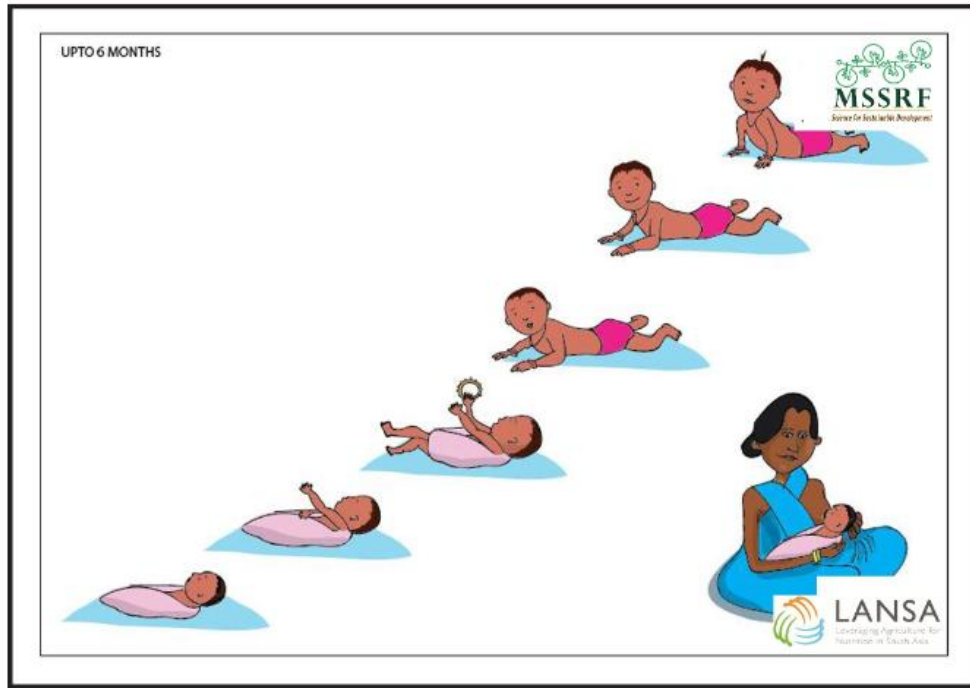


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IYCF – upto 6 months



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IYCF – 7th month



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IYCF – 8th month



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IYCF - 9-11 months



IYCF - 12-24 months



IYCF - 25-36 months

