

Promotion of Local Foods to improve Dietary Diversity in Madhya Pradesh: An Insight in Food and Nutrition Security, Enhanced Resilience (FaNS) project in Madhya Pradesh.

Dr. Archana Sarkar

Advisor, Research, Monitoring and Evaluation, Food and Nutrition Security, Enhanced Resilience (FaNS), giz, Deutsche Gesellschaft für, Internationale Zusammenarbeit (GIZ) GmbH, Delhi.
Email: archana.sarkar@giz.de

1. Background

National Family Health Survey (NFHS-4, 2015-16)¹¹ data recorded 42.8% of children under five years of age being underweight in Madhya Pradesh. The data also shows that 42% of children less than 5 years of age are stunted, and 25.8% are wasted. 52.5% of all women between 15-49 years of age are anaemic. The first 1,000 days of a child's life are critical for ensuring adequate nutrition to enable optimal health, development, and growth. Poor food intake by women, especially during pregnancy and lactation, adolescent girls, and inadequate infant and young child feeding (IYCF) practices contribute to Madhya Pradesh's concerning malnutrition situation.

The tribal population (21.2%) in the state is severely challenged by malnutrition, and 55.9% of tribal children are underweight. As per the Ministry of Tribal Affairs³, the food intake and intake of various nutrients in their diet have decreased in the last decade amongst the tribal population due to depleting forest cover, their dependence on forest for vegetables and fruits has reduced. As per the 2011 census, 44.7% of tribals are engaged in cultivation as their main occupation, with 36.7% engaged as agricultural labourers. This implies that 82% of tribals are dependent on agriculture for a livelihood. Simultaneously, nearly 71.6% of the tribal population faces food insufficiency for two to three months and 5% for six months or more a year.¹⁸

Promoting local foods and nutritionally enhancing them can help in reducing nutritional problems in these communities. Combining the traditional knowledge of food from the indigenous tribes across Madhya Pradesh (Gond, Baiga, Bhil, etc.) with nutritional awareness, local food, and tribal heritage can be conserved. Millets are one such traditional food that has lost importance over the last few decades. By utilizing their local importance and high nutrient and calorific value, sustainable cropping can be promoted. Agricultural practices like shifting cultivation that is followed by the tribes in Madhya Pradesh are suited for agroecological conditions and should be promoted along with the diversification of cropping methods on a large scale (like legume-intercropping). Further, the enforced lockdown due to the Coronavirus pandemic in India in early 2020 has led to a food and nutrition crisis as well. Hence, the pandemic put the focus on 'local available and nutritious foods' and 'community-based initiatives' to address food and nutrition insecurity among women and children.

In this chapter, we present how Food and Nutrition Security, Enhanced Resilience Project (FaNS) project is contributing to promoting food and nutrition security through promotion and the increasing availability of local foods, improving knowledge and practices of women on nutrition, and ultimately aiming to improve dietary diversity of women and children,

2. Global Programme on Food and Nutrition Security and Enhanced Resilience

The GIZ (German Technical Development Cooperation) Food and Nutrition Security, Enhanced Resilience Project (FaNS) is part of the global special initiative 'One World – No Hunger' by the German Federal Ministry for Economic Cooperation and Development (BMZ) and being implemented since 2015 in 10 countries in Sub-Sahara Africa and Asia including India (until mid-2020 12 countries). FaNS India project has been mainly working in two districts of the state of Madhya Pradesh, collaborating with the Department of Women and Child Development (DWCD), Government of Madhya Pradesh, to improve the food and nutrition situation for women of child-bearing age, pregnant and lactating women, and small children (0-2 years of age) from vulnerable communities. In Sheopur district of Madhya Pradesh 52.1 % of children under 5 years are stunted, 28.1% are wasted. In Chhatarpur district 42.7% of children under 5 years are stunted, 18.9% are wasted according to National Family Health Survey, 2015-16.

FaNS project in collaboration with Welthungerhilfe and two local NGO partners Darshna Mahila Kalyan Samiti and Mahatma Gandhi Seva Ashram has provided technical support for improving the services under the Integrated Child Development Services (ICDS) scheme which includes the training of Anganwadi Workers (AWWs) on facilitation of Nutrition Participatory Learning and Action (N-PLA) nutrition education for women on dietary diversity, breastfeeding, complementary feeding practices, and personal hygiene. Since 2016, more than 144,000 women participated in the meetings in the two project districts Sheopur and Chhatarpur facilitated by 3,025 Anganwadi Workers applying participatory and engaging methods such as power walks, role plays, and cooking demonstrations. Complementary to these measures, improved community monitoring and awareness campaigns like street theatres at the district and village level through local NGO partners were promoted. Further, for the capacity building of AWWs, the FaNS project in collaboration with DWCD developed an innovative and interactive 40 hours e-learning training platform called "Anganwadi Shiksha" to improve the counseling skills and knowledge of 100,000 AWWs and their Supervisors in nutrition-relevant topics across Madhya Pradesh.

In co-operation with local NGO partner Parmath the project piloted 20 Community Nutrition Gardens (CNGs) and promoted seed banks in a form of storage and diversification, and they enhance farmers' ability to buffer environmental and economic stress by planting several crop varieties adapted to a range of environmental conditions. At the same time, seed banks facilitate farmers' access to markets and give farmers more choice over what they grow. Seed banks enable rural tribal villages to become less dependent on engineered high-yield varieties and expensive inputs such as fertilizers and pesticides. Traditionally, seed preservation has been women's role, and their knowledge of seeds has been extensive. Therefore, women play a major role in the conservation of diversity at the farm level. It is women who decide on the amount of seed and selections of varieties to be stored and the various ways of storing them. The SHG members were provided guidance and technical know-how of storing the seeds of different vegetables for the next season in both districts. This would help them to save their money spent on purchasing seed.

GIZ FaNS completed its first project phase (2015-2020) and is entering into its second phase with a continued focus on Nutrition Participatory Learning and Action (N-PLA) training for 280,000 women in further districts and scaling-up of a successful piloted community nutrition garden approach with women. Self-Help Groups (12-15 members per garden) will develop up to 500 one hectare sized gardens in four districts of Madhya Pradesh and two new districts in another state. This improves the food availability and also livelihoods. Furthermore, the project will contribute to improved nutrition governance with its political partners.



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3. FaNS activities related to the promotion of local food consumption

GIZ FaNS in collaboration with Welthungerhilfe promotes behaviour change in nutrition and hygiene practices, through active engagement of women in the N-PLA training using action-based participatory tools, e.g. cooking demonstrations, role plays, etc. In alignment with the dietary guidelines of the Food and Agriculture Organization's (2012), which present national nutrition needs in the form of simple dietary advice for the public, the N-PLA training have capacitated the women to diversify their own and family's diet. Anganwadi Workers have been trained by local implementation partners to facilitate N-PLA training with women in a cascade manner. The N-PLA approach comprises 20 trainings with women including two community sessions involving men, district administration and village council, etc. The N-PLA trainings have empowered the community to demand and access food and nutrition entitlements, e.g. under the Integrated Child Development Services scheme and the Targeted Public Distribution System, and to establish homestead nutrition gardens. The concept of diverse food groups and the importance of consuming at least 5 food groups is promoted through participatory games, such as power walk, problem picture cards voting through pebbles, mapping of locally available foods, posters of 10 food groups, seasonal calendar, and role-plays, storytelling, etc.

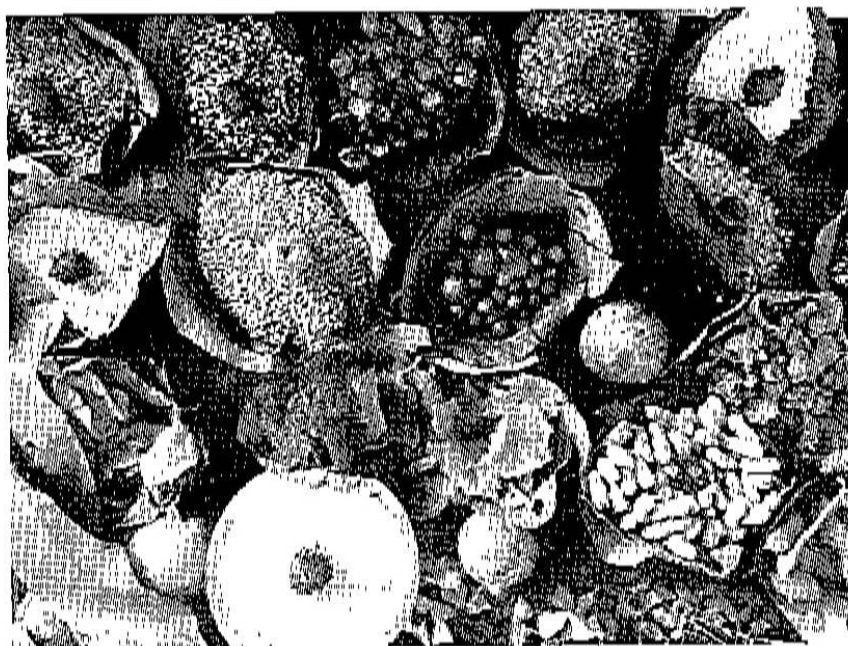
Local food groups are important to ensure the year-round availability of nutrient-rich food for the community. Under this topic, the participants are engaged to develop a seasonal calendar based on the different available food during the year. It is noteworthy to mention that villages are rich in uncultivated food varieties, e.g. from forests. This meeting helps the community to understand the nutritional values and consumption of these food groups such as chia seeds rich in Omega-3. Local foods are categorized into protective foods, body-building foods, and immunity building foods for easy understanding of women to consume diverse food-groups.



The project promotes the training of community members on cooking nutritious recipes of locally available foods as part of nutrition awareness and knowledge-generating activities. Various activities such as participatory preparation of seasonal food calendar, cooking demonstration with locally available food, and community picnic for children under 2 years of age. Promotion of local nutritious foods is a key component of N-PLA training with women as there is a significant tribal population in the Bundelkhand and Chambal division which has a rich biodiversity and food ethnography.



Based on the understanding of the seasonal crops and their availability, a **seasonal food calendar** is developed during a food group meeting. Mapping of all cultivated and uncultivated foods in the village, identifying seasonal availability of fruits and vegetables mainly forest and local produce are done during this meeting in form of a calendar. It proves to be an effective tool in finding nutritious variety throughout the year.



In participatory **cooking demonstrations**, the Anganwadi worker demonstrates different traditional local cuisines in front of the N-PLA participants and explains how daily recipes can be enriched, e.g. with moringa leaves. A focus is also on preparing homemade baby-friendly food to promote complementary feeding among children between 6-23 months. Women bring their locally available food to the N-PLA session.

The Anganwadi Worker discusses with women the nutritional value of the different foods and the role of different nutrients for immunity, growth, and development of children. Both cooking demonstrations and food exhibitions in Anganwadi centres are done by using locally available herbs, vegetables, pulses, and staples which are nutritious and low-cost. This has been quite effective in motivating women to use local foods. Traditionally grown vegetables are e.g. *faang bhaji* (forest herb), *sareta*, *chirangle*, *bathua* (leafy vegetables are wildly grown in forest belt), *tendu fruit* (*Diospyros melanoxylon*), *bael* (marmelos), *ber* (wild fruits), corn (maize) and other millets. The use of super-foods like moringa, Indian gooseberry, and chia seeds are also promoted to be used in various recipes. Women were also trained in food preservation techniques.

Picnic for children under 2 years of age is a unique concept to promote the use of child-friendly local foods and recipes. It is organized by Anganwadi workers as a community event engaging Gram Panchayat (village council) and Community Leaders in an open space. During the picnic, women in groups of two are engaged to make nutritious recipes adopting hygiene practices and feeding the young children with a bowl/spoon. Various community local games like Khichdi game (selecting a different variety of ingredients to make nutritious porridge) is organized to motivate mothers to cook specially for young children. For example, Madhuca (Mahua) porridge is a local and nutritious recipe demonstrated during the picnic.

4. Development of Recipe Booklet and recipe Videos using Local Foods

In cooperation with the DWCD, FaNS project developed ten recipe videos¹ of local cuisines in Madhya Pradesh for three nutrition-relevant life stages: children under six, adolescent girls, pregnant/lactating mothers. Also, videos on the management of malnutrition, diarrhea management, and anaemia were developed.

(Footnotes)

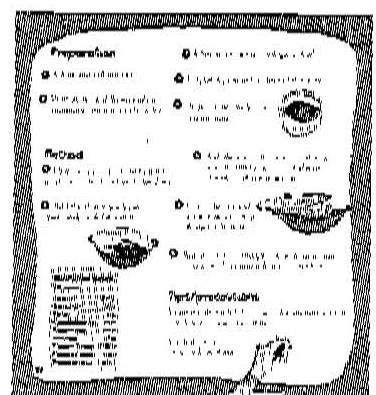
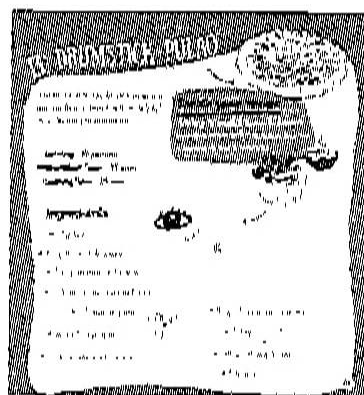
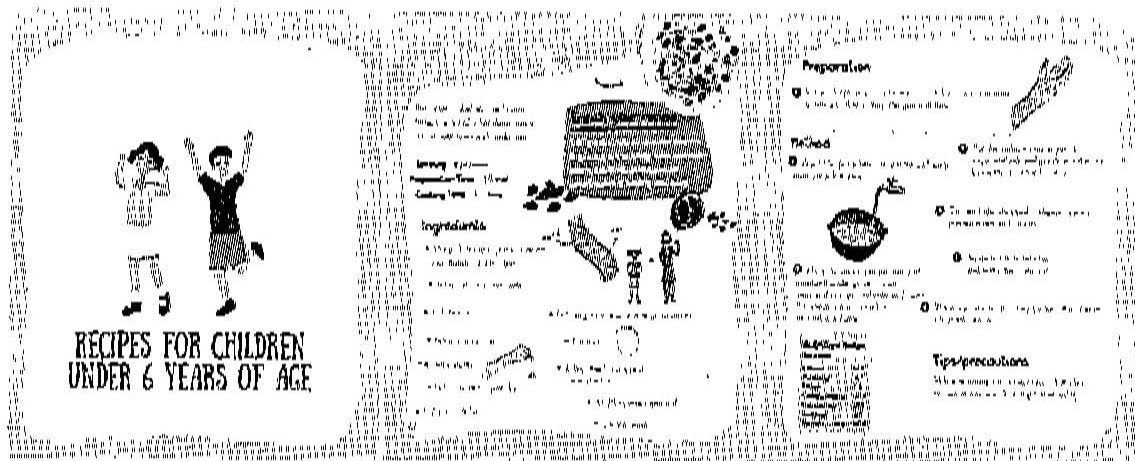
¹ Link to access videos on Nutritionally Enriched Local Recipes:

1. Adolescent Girls – Nutritious recipes: <https://www.youtube.com/watch?v=0cBiB6G3EQY>
2. Anaemia- Causes, Symptoms & Dietary Requirements: <https://www.youtube.com/watch?v=u4LrGLaVqy4>
3. Nutrition for children (6 -12 months): <https://www.youtube.com/watch?v=e6fxDy6dQIY>
4. Nutrition for children (1- 3 years): <https://www.youtube.com/watch?v=CrPOcvbE4cc>
5. Nutrition for children (3- 6 years): <https://www.youtube.com/watch?v=dLb01chiayU>
6. Pregnant Women –Nutritious food recipes: <https://www.youtube.com/watch?v=7HojE1ZQeCU>
7. Lactating Women –Nutritious food recipes: <https://www.youtube.com/watch?v=L0gCVU1bIok>
8. Diarrhoea Management: <https://www.youtube.com/watch?v=P51SrWhSP0A>
9. Nutrition during illness: <https://youtu.be/n18H8oYXFQs>
10. Malnutrition management: <https://youtu.be/l1jt93solGo>

The videos show in the Hindi language how to prepare local recipes with increased nutritional value by adding nutrient-rich ingredients such as moringa leaves. Anganwadi Workers show the videos to women during nutrition trainings. Through this attractive medium, the participants of the training courses learn how to improve daily recipes with locally available ingredients. For example Indori Poha is a

popular breakfast snack in Madhya Pradesh, this can be enriched by adding groundnuts to increase protein, lemon to enhance absorption of iron present in *poha* (beaten rice) and by replacing *sev* topping with coriander leaves, raisins and pomegranate (*anar*) makes it healthy and tasty.

Jointly with the DWCD, FaNS project also developed a local recipe book – similar to the mentioned recipe videos. For this purpose, supervisors from the Anganwadi Workers compiled 30 local recipes for three important phases of life (adolescent girls, pregnant/lactating women, children under six years of age) and improved them nutritionally, for example increasing the iron content of *khichdi* with moringa leaves. A nutritional expert from the project looked through all the recipes and added a nutrient analysis. The recipe book is available both in Hindi and English and was handed out to 3,200 Supervisors in Madhya Pradesh and 3,025 AWW in the two FaNS project districts Sheopur and Chhatarpur in December 2019 so that they could pass on these nutrient-rich recipes to women of reproductive age in cooking demonstrations and nutrition trainings. As the recipes are everyday recipes that are supplemented with a locally available nutrient-rich ingredient, they are easy for the women to implement and low cost as well. For an example- Drumstick Pulao can be made than normal rice by adding drumstick leaves and flowers (locally cultivated) in pulao which extensively increases its iron, Vitamin A and C content. Another such example is *sago khichdi*, commonly consumed by adolescent girls and women during





RECIPES FOR ADOLESCENT GIRLS

10) SAGO KHICHDI WITH AMARANTH CURRY

Sago, a staple food, combined with locally available amaranth provides a nutritious meal for adolescent girls.

Serving: 2 persons
Preparation Time: 45 min
Cooking Time: 15 min

Ingredients

For the sago

- 200 g sago
- 1/2 kg potato
- 100 g of green peas
- 1/2 kg of
- 100 g of green peas
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For the curry

- 200 g of amaranth
- 100 g of green peas
- 100 g of green peas
- 100 g of green peas
- 100 g of green peas
- 100 g of green peas
- 100 g of green peas
- 100 g of green peas
- 100 g of green peas



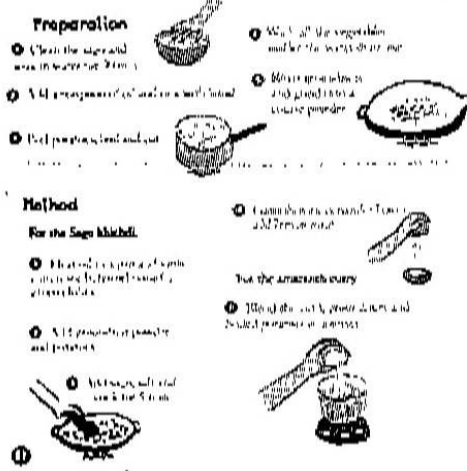
Preparation

1. Clean the sago and wash it twice for 2 times.
2. Add a pinch of salt and a little oil.
3. Boil potato, lentil and sago.
4. Wash all the vegetables and let the water drain out.
5. Boil green peas in a pressure cooker.

Method

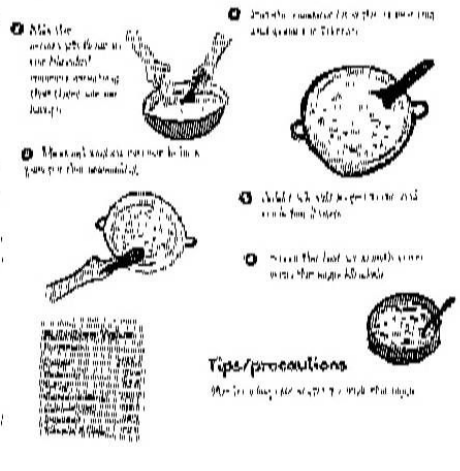
For the Sago khichdi

1. Heat oil in a pan and sauté onions, tomatoes and green chilies.
2. Add green peas, potato and potatoes.
3. Add sago, salt and cook for 15 min.
4. Grind the amaranth and green peas in a blender.
5. Heat oil and sauté onions and boiled green peas in a pan for the masala.
6. Add the masala to the sago khichdi and cook for 5 min.
7. Serve the hot sago khichdi with the amaranth curry.



Method

1. Heat oil in a pan and sauté onions, tomatoes and green chilies.
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3. Add sago, salt and cook for 15 min.
4. Grind the amaranth and green peas in a blender.
5. Heat oil and sauté onions and boiled green peas in a pan for the masala.
6. Add the masala to the sago khichdi and cook for 5 min.
7. Serve the hot sago khichdi with the amaranth curry.



Tips/precautions

Use a pressure cooker for cooking green peas.

fasting. When we eat it with amaranth (easily available locally) curry it provides added protein and calcium.

5. Use of Local Foods through a simple innovative tool- Poshan Matka (Community sharing of diverse food to improve the nutritional status of the vulnerable community):

Coronavirus pandemic in India has led to a food and nutrition crisis as well. Hence, the pandemic put the focus on 'local available and nutritious foods' and 'community-based initiatives' to address food and nutrition insecurity among women and children. During Poshan Maah (National Nutrition Month) celebration in Madhya Pradesh, a unique grain bank called "Poshan Matka" - a simple innovative tool to ensure food and nutritional needs of vulnerable families was initiated by DWCD field functionaries. These community-led initiatives recognize the potential cultural, economic equality, and social values of interventions that promote locally empowered action and social inclusion in "Poshan Abhiyaan".

“Community-based conservation of local foods” and “Jan Andolan” have become an integral part of the Poshan Matka initiative, and more attention is being paid to this approach on the ground by the young people especially the women and adolescent girls (as change agents). With this, the Poshan Matka initiative ensures that traditional knowledge and wisdom of the local community are preserved with the help of the younger generation while also focusing on the nutritional value of this knowledge.



6. Nutri-mix using local ingredients to improve nutrition security during COVID-19

Adequate and regular complementary feeding of infants with home-based foods from 6 months of age along with breastfeeding is crucial for their healthy growth and development. Instant food mixes are vital as a child needs to be fed 5-6 times a day as per WHO recommendations. It is also convenient and helpful for families who cook only once or twice a day. Such instant foods help enable the adequate feeding of infants, particularly in rural India. To provide nutritious food to infants and children during the time of a pandemic is equally critical and challenging. Despite many challenges, FaNs partner Welthungerhilfe with its partners- Mahatma Gandhi Sewa Ashram and Darshna Mahila Kalyan Samiti - brings an easy-to-make instant nutritious food mix. It is prepared from locally available cereals, millets, pulses, nuts and oilseeds which are high in nutrition content.



Nutri-Mix Preparation

7. Impact of Local Foods on Dietary Diversity for Women and Children :

GIZ FaNS conducted various surveys and studies to assess how N-PLA training improves nutrition knowledge and promotes local food consumption that results in improved dietary diversity for women and young children. A Mid-Line Survey conducted in Aug-2018 (N=600) showed that local food promotion and nutrition education through N-PLA has positive effects on the dietary diversity of women and children. Almost two thirds (61 %) of women reported that it is important to consume food from e" 5 food groups in their daily diets. The knowledge level on the number of food groups in a diversified diet was better in Shecopur (69%) compared to Chhatarpur (54%). 93% of frontline workers reported the importance of e" 5 food groups per day by families. Knowledge of early initiation of breastfeeding among women was almost universal with 91%, same for frontline workers (99%). The awareness was

much higher among tribal women in Sheopur (94%) despite almost 50% of them have no education. The prevalence of commonly consumed food groups among women were 99% grains, white roots, and tubers, followed by 77% pulses and 66% other vegetables. Very few women consumed dark green leafy vegetables (18%) and vitamin A-rich fruits and vegetables (13%). The consumption of other fruits was 39%. About 50% of the women consumed milk and milk products, meat, poultry, and fish (5%), and eggs (2%) were very low. The kitchen garden initiatives improved knowledge among women, however, it did not contribute to improving dietary diversity scores among women. Moreover, a knowledge-action gap was also one of the main findings of the Mid-Line Survey as the knowledge of women increased whereas dietary diversity scores did not improve much. This led us to conduct a social behavioural change qualitative study in September 2019 to understand the barriers and facilitators of improved nutrition in the community. The study emphasized the promotion of local foods through homestead gardens, cooking demonstration, nutrition knowledge enhancement and male involvement in nutrition could improve the adoption of good nutritional practices in the community. Another Follow-Up Survey conducted in 2020 showed that MDD-W increased by one food-group in the intervention areas as compared to baselines whereas there was a doubling of women who achieved Maternal Dietary Diversity. However, the challenge on improving dietary diversity of young children still continues as we found that although Minimum Dietary Diversity-Children improved but scores on Minimum Meal Frequency was poor.

Nutritious Plate (Poshan Thali): A Poshan Thali initiative was developed during National Nutrition Month in 2017, FaNS jointly developed with DWCD a Poshan Thali to improve the use of local foods and cuisines for the preparation of a Nutritious Thali.





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NFHS-4 MP Factsheet: http://rchiips.org/nfhs/pdf/NFHS4/MP_FactSheet.pdf

¹ Forest Rights Act, by Samarthan, July 2011: <https://www.undp.org/content/dam/india/docs/DG/recognition-of-community-rights-under-forest-rights-act-in-madhya-pradesh-and-chhattisgarh-challenges-and-way-forward.pdf>