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# Endline Assessment of the Fortification of Nutrimix in Selected Panchayats of Wayanad, Kerala

Assessment of a Pilot Project of the Government of Kerala and the  
World Food Programme

Review Report  
2020



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## Acknowledgments

This successful execution of the study on the 'Assessment of the fortification of *Nutrimix* in selected panchayats of Wayanad, Kerala' would not have been possible without the help and support of many. Although it is impossible to acknowledge every one of them, we express our gratitude to all. At the outset, we thank all the children who provided blood samples and anthropometric information for the study, and their caregivers. Anganwadi workers, and Kudumbashri workers who participated in the study by sparing their valuable time and providing the required information are thankfully acknowledged. Undoubtedly, the commitment of the Government of Kerala (GoK) towards improving the nutritional status of children has been one of the highest. GoK in collaboration with the World Food Programme (WFP) implemented a pilot project of fortification of *nutrimix* distributed through the Integrated Child Development Scheme (ICDS) to children aged 6-36 months in the Wayanad district of Kerala.

We would like to thank the Department of Women and Child Development (WCD), GoK, and WFP for designating the Department of Community Medicine of Government Medical College Kozhikode (GMCK) to undertake the study. This decision to generate scientific evidence helpful for policymaking is commendable.

We take this opportunity to express our warmest thanks to Smt. K. K. Shailaja Teacher, Honorable Minister for Health, Social Justice and Women and Child Development, GoK. We are grateful to Dr. Biju Prabhakar, Secretary, WCD of Kerala; Dr. K. M. Abraham, former Chief Secretary; Mr. A. Shajahan, former Secretary WCD of Kerala; Ms. Mini Antony, former Secretary WCD, for their overall commitment and guidance. Ms. T. V. Anupama, Director, WCD; Ms. Shivanya, Joint Director, WCD; Ms. Sheeba George, former Director, WCD; Mr. Jithendran, former Director, WCD, who deserves a profound gratitude for their constant support, cooperation, and encouragement. We are also thankful to Mr. Harikishor, ED, Kudumbashri for all support.

The enthusiasm for the study, that was evident during discussions and meeting with the officials of WCD, GoK at all levels, has been a source of inspiration for us. We are grateful to all those officials who gave their valuable inputs and contributed to the shaping of the report. We express our heartfelt thanks to all the staff of the WCD, Kerala for their co-operation.

We are thankful to the District Programme Officer, ICDS, Wayanad, and the Child Development Project Officers (CDPOs), Manathavady block of Wayanad for their active support. We are grateful to the District Medical Officers, Wayanad for arranging the interview of project staff at Wayanad as well as for extending all other support from their department. Dr. Tojo P Joy, Medical Officer, and all staff of Porunannor Primary Health Center for extending all support to this study deserves special thanks.

The smooth execution of this project would not have been feasible without the constant support and inspiration from Mr. Bishow Parajuli, Country Director, Mr. Eric Kenefick, Deputy Country Director, Dr. Hameed Nuru, former Country Director, and Mr. Jan Delbaere, former Deputy Country Director of WFP India. We wish to thank them for their cooperation and support during the entire period of the study.

Our special thanks to Dr. Rajendran V, Principal GMCK, and Dr. Prathap Somanath, former Principal in Charge GMCK, for all support extended.

We would like to put on record, the timely and excellent technical support provided by Dr. Abhay, Ms. Pradnya Paithankar, and Dr. Divya Tiwari of WFP in terms of designing the research methodology, developing the survey instruments, training the field staff, processing data, and drafting the reports. The study could not have been completed without their contribution, support, and inputs in the stipulated time.

We are thankful to Dr. Shariqua Yunus Khan of WFP for her valuable inputs. We are grateful to Mr. Rafi P of WFP for his inputs, constant support, and for sharing valuable information about the field area. We would like to thank Mr. Sree Kumar Nair of WFP for conducting the monitoring visit of the data collection activity of the study.

The support and contributions of Dr. Sathi PP, Nodal officer Medical Research Unit GMCK; Research Scientists, Dr. Dhansooraj D and Dr. Shammy S towards the analysis of laboratory samples is gratefully acknowledged. Special thanks to Mr. Arun, HDS, IMCH.

Dr. Binsu, Dr. Parvathy, Dr. Arathy, Dr. Akhila, Dr. Reshma, Dr. Sathar, Dr. Ageesh, Dr. Biran, Dr. Alan, Dr. Aparna, and Dr. Anju, Junior residents in Community Medicine were actively involved in different stages of the project. Their untiring effort which was crucial in the conduct of this survey are thankfully acknowledged.

We are obliged to all the anganwadi workers of Manathawady block who played an instrumental role in the data collection activity, without their valuable information, insights, and cooperation this study would not have been completed.

We are thankful to the Kudumbashri workers at Nutrimix production units who provided valuable inputs for the study.

Finally, the sincerity and hard work of the research project staff were crucial in the smooth execution of the study. We thank them wholeheartedly.

Dr. Jayakrishnan Thavody

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<b>Table of Contents</b>	<b>Acknowledgments</b> .....	<b>iii</b>
<b>Executive Summary</b> .....		<b>7</b>
Assessment Context		7
Methodology		8
Key Findings		9
Conclusion		12
Recommendations		13
<b>1. Introduction</b> .....		<b>14</b>
1.1. Background		14
1.2. Assessment Methodology and Limitations		17
1.2.1. Assessment Design:		17
1.2.2. Sampling Technique		18
1.2.3. Tools and Data		20
a) Caregivers		20
b) Children		20
c) Anganwadi Workers		21
d) Kudumbshree Workers		22
1.2.4. Recruitment, Composition, and Training of Field Staff		22
1.2.5. Data Collection		22
1.2.6. Quality Assurance of Data		23
1.2.7. Ethical Considerations		23
1.2.8. Data Analysis		24
Quantitative data		24
Qualitative data		24
1.2.9. Limitations of the assessment		24
<b>2. Assessment Findings and Interpretation</b> .....		<b>26</b>
2.1. Distribution of Caregivers and Children		26
2.1.1. Socio-economic and demographic characteristics of caregivers		26
2.1.2. Demographic characteristics of index children		29
2.1.3. Bio-medical profile of children		29
2.1.4. Anthropometric profile of index children		35
2.1.5. The immunisation status of index children		36
2.1.6. Morbidity profile of children		36
2.1.7. Eating practices in households		37
2.1.8. Reproductive history of mother		38
2.1.9. Awareness among caregivers		38
2.1.10. Breastfeeding practice		40
2.1.11. Liquids or foods that index child had yesterday during the day or at night		40

2.1.12.	IFA and de-worming status of children	40
2.1.13.	Services received from anganwadi centers during pregnancy and breast-feeding phase	41
2.1.14.	Nutrimix	41
	Receiving nutrimix from AWCs	41
	Consumption of nutrimix	41
	Cooking and Eating Practices of nutrimix	42
	Intra-Household Distribution of nutrimix	42
	Hygienic Practices	43
	Storage of nutrimix	43
2.1.15.	The impact of flood	43
2.2.	Anganwadi Workers	44
2.2.1.	Distribution of AWWs	45
2.2.2.	Profile of AWWs	45
2.2.3.	Institutional Training of AWWs	45
2.2.4.	Working days and hours of AWCs	46
2.2.5.	Visits of health workers and others in AWC	46
2.2.6.	Services provided to children between 6-36 months	46
2.2.7.	Supplementary Nutrition	46
2.2.8.	Interventions for malnourished children	50
2.2.9.	Assessment of AWC infrastructure - based on observation by the research team	50
2.2.10.	Availability and utilization of medicines at anganwadi centres	51
2.2.11.	Knowledge Level of AWW for IYCF and nutrition	51
2.2.12.	Awareness and knowledge level of AWW for safe preparation of complementary food, responsive feeding, feeding during illness, and recovery from illness phase	51
2.3.	Kudumbashree workers	54
2.3.1.	Background characteristics of Kudumbashree workers	54
2.3.2.	Working on the production unit & Preparation of Nutrimix	54
2.3.3.	Perceptions of the Kudumbashree workers regarding fortification and Nutrimix	56
<b>3.</b>	<b>Conclusions and Recommendations .....</b>	<b>57</b>
3.1.	Conclusions	57
3.2	Recommendations	58
<b>Annexures .....</b>	<b>.....</b>	<b>59</b>
	Annexure 1: Tables	59
	Annexure 2 – Cut-off values of micronutrients	85
	Annexure 3 – IEC Material – Flyer for caregivers of children	86
	Annexure 4 - Infant weight and length measurement	90
	Annexure 5 - Overview of blood taking procedures	92
<b>List of Acronyms.....</b>	<b>.....</b>	<b>93</b>

## Executive Summary

### Assessment context

Considering the prevalence of micronutrient deficiencies and the identified culture-specific gaps in the intake of most of the micronutrients amongst the children in the state of Kerala, the United Nations World Food Programme (WFP) in collaboration with the Government of Kerala (GoK) implemented a pilot project on fortification of Take Home Rations (THR) distributed (THR) in the brand name 'Amrutham nutrimix' through Integrated Child Development Services (ICDS) scheme<sup>1</sup> to children aged 6-36 months in Wayanad district. The duration of the pilot project was from January 2017 to December 2018. The nutrimix was fortified with 11 nutrients - Iron, Calcium, Vitamin A, Zinc, Thiamine, Riboflavin, Niacin, Vitamin B6, Vitamin C, Folic acid, and Vitamin B12. Micronutrient fortification intervention was initially implemented in three selected panchayats - Panamaram, Vellamunda, and Thirunelli of Mananthavadi community block in Wayanad. Later, Thondernad panchayat from the same district was also included in the pilot project.

During the pilot project, WFP supported the GoK to provide fortified THR to young children through the ICDS. WFP support included setting up a demonstration unit in an existing nutrimix production site in Mananthavady; conducting a gap analysis-cum-scoping study; development of quality control protocols to ensure delivery of safe and nutritious nutrimix to the beneficiaries; development of Information, Education and Communication (IEC) materials and conducting folk media campaigns around feeding practices of children (aged 6-36 months); creation of a pool of master trainers and technical assistance and support towards scaling-up fortification.

The primary goal of the fortification project was to demonstrate the feasibility of establishing an operational model for the fortification of nutrimix provided under the ICDS and hand-over of the model to the state government for sustained impact on the nutritional status of children (aged 6 to 36 months) and scale-up to other parts in the State.

While the project had an in-built system of monitoring the implementation of fortification activities, an independent assessment was designed to examine the performance of the project. The government of Kerala recommended Government Medical College Kozhikode (GMCK) to evaluate the intervention

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<sup>1</sup>ICDS is a government programme in India which provides food, preschool education, primary healthcare, immunization, health check-up and referral services to children under 6 years of age and their mothers. ICDS services are provided through Anganwadi centres. Anganwadi workers are the mainstay of the anganwadi services delivery system.

## Methodology

### The specific objectives of this assessment were

1. To assess the nutritional status of children in the age group of 18 months to 24 months attending Anganwadis in Manathavady Thaluq of Wayanad district in Kerala.
2. To assess the serum levels of selected micronutrients among the above children
3. To understand various socio-cultural practices like cooking and feeding patterns in the households in the study area where the Nutrimix take-home rations are supplied through anganwadis
4. To assess the impact of the GoK-WFP Nutrimix fortification project through nutritional status assessment of the above children after the intervention period.

The key parameters examined in this assessment are the nutritional status of children under study; morbidity patterns among the target age group; knowledge on appropriate complementary feeding and nutrition among the Anganwadi Workers (AWWs) and parents/caregivers of children (six months to three years); acceptability of fortified nutrimix distributed under ICDS to the targeted children and their caregivers; intra-household consumption pattern of fortified nutrimix; cooking and eating practices concerning the fortified nutrimix; other aspects of operational feasibility of fortified nutrimix (including quality control protocols) distributed under ICDS. The assessment also aimed to provide recommendations (if any) on improvising the design and activities of the project and to provide recommendations and suggestions on further replication/scale-up of the model.

For this assessment, a quasi-experimental pre-post study design using a mixed-method approach was employed. Panamaram, Vellamunda, and Thirunelli panchayats were included in the intervention area and, Thavinjal and Edavaka panchayats in the same block were chosen as the control areas. A baseline assessment of the micronutrient levels among the target group of children in the study areas was conducted initially. Thereafter, the fortified THR was supplied to all the beneficiary children in the three intervention panchayats, while the beneficiary children in the two control panchayats continued to receive the regular non-fortified THR. The children from the intervention area who had received the fortified THR for a minimum of one year, as well as the children of the same age group from the control area who were receiving the non-fortified THR, were assessed for the selected nutrients and other nutritional parameters during the endline phase. This allowed a comparison between four groups - the intervention and control groups at baseline and the same groups at endline.

In addition to the micronutrient levels, the assessment also assessed several other parameters of the beneficiary children including morbidity profile, immunization status, pregnancy-related complications, breastfeeding, diet,

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