**Nutrition App Development Phases**

**Phase 1: Data Collection**

In the first phase of development, our team will conduct data collection in terms of zonal and local distribution of food and eating practices. This will involve active participation of the Ministry of Agriculture, Ministry of Marine Resources and National Women’s Association.

**Phase 2: Food Fortification and System Design**

In this phase, the existing eating habits and practices will be evaluated. Then, the best diet preparation and practices will be prepared. It will fortify the nutrition needed and recipes with active involvement of nutritionists and food technology experts. The Ministry of Health will finally assess validate the nutritional value and clinical feasibility of the system.

**Phase 3: Pilot App Trial**

Prior to official deployment, the impact of the Application will be tested using a blinded randomized controlled trial that will be conducted in different parts of the country. Exposed and unexposed children to the App will be enrolled (following baseline assessment) and strictly followed up for at least six months. All required information helpful for monitoring growth and clinical impact will be collected. The trial will also assess the feasibility, acceptability and challenges of the system.

**Phase 4: Mass App Distribution and implementation research**

At this stage, the system and recipes will be updated with the understanding gained in phase 3. This distribution will be made by the Ministry of Health and key partners. Media campaign will be conducted by the MoH and Ministry of Information. To assess the utilization, acceptability, feasibility and barriers to utilization, implementation research will be conducted by the research team and results will be disseminated to key stakeholders. Accordingly, the system will be continuously improved.

**Phase 5: Customer Usage and System Customization**

After the initial public release, the application has a dietary diary that registers daily intake and its effects on growth, nutrition, taste, likes …etc. The team will regularly, gather data about the customers. The Data Analysts and Machine learning engineers in the team will analyse the feedback on the usage and effects of the recipes. The main tools the team will use are: AI, machine learning and data science. Then, they will notify the nutrition, food technology and medical experts to update and improve the recipes and the ways of food preparation.

**Research Team:**

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| Roles | Team |
| System design and development | Eng. Simon Okbagergis Manna, BSc. Computer Engineering |
| Idetification of nutritional value of local foods and recipe preparartion | Eden Tareke, PhD, Nutrition |
| Nahom Daniel, Medical Doctor |
| Salina Nigusse, BSc, Food Technology |
| Tsinat Berhane, Agriculture |
| Implementation Research | Mulugeta Russom, MSc., PhD Candidate, Pharmacoepidemiology and Pharmacovigilance |
| Nahom Daniel, Medical Doctor |