

IMPROVING NUTRITION THROUGH LIVELIHOODS

ANNA-LISA NOACK, PADMA BUGGINENI, APOLENARIUS PURTY,
AND SOMYA SHALINI¹

Introduction

Sustainable livelihoods and nutrition are two concepts that have been extensively explored theoretically and practically in development, and while they are inextricably reinforcing, linkages remain nebulous and require further research and analysis. With nutrition at the helm of the global development agenda, India's national flagship project, the National Rural Livelihoods Mission (NRLM), is committed to strengthening the impact of its program on nutrition. The program is a solid framework for improving the nutrition situation as a result of its scope (it has mobilised over 311 million households into self-help groups), multi-scalar nature, and cross-sectoral focus. This note seeks to offer qualitative evidence, derived from structured observations and semi-structured discussions, on the ways that one of India's States, Bihar, has managed to integrate nutrition into its Rural Livelihoods Program and explore some of the unintended impacts of this program on nutrition. Lessons distilled from this experience will help refine the implementation of the next generation project, which will expand its outreach to 5 million households, and can also offer possible insights for further uptake in livelihood programs across the region. While this note does not claim to cover all the possible linkages, the aim is to highlight some key impact pathways, open a space for discussion and identify key areas for further exploration, particularly given NRLM's ongoing commitment of improving nutrition.

What Does a Livelihoods Program Have in Common with a Nutrition Program?

The core of a sustainable livelihoods program is very similar to that of an integrated nutrition program. Both act at multiple levels (at an individual level and in an effort to shape the enabling environment) and are anchored in the understanding that behaviors are not solely driven by individual choices but also social norms and values, accessible institutions, available and accessible goods and services.

Livelihoods are more than just about income generation just like food security and nutrition is more than simply improving access and intake of calories. It is now widely accepted that neither thematic is anchored within a single discipline and that many sectors can and must play a role in tackling their underlying vulnerabilities and causes. Here food security is conceptualized as an underlying cause of malnutrition; livelihoods are considered to be a determining factor for good health and nutrition, and conversely, nutrition a condition for economic, physical and social well-being. As such, livelihoods programs can help tackle the same underlying causes of malnutrition, if the context is well understood and revisited throughout the program cycle, as the drivers and outcomes can shift.

¹ Anna-Lisa Noack is Nutrition and Food Security Specialist, Investment Center Asia and Pacific Region, Food and Agriculture Organization; Padma Buggineni is Nutritionist, Consultant, World Bank; Apolenarius Purty is State Project Manager, Health and Nutrition, Bihar Rural Livelihoods Promotion Society; and Somya Shalini is Project Manager for Health & Nutrition, Bihar Rural Livelihoods Promotion Society.

Another likeness is that livelihoods development requires a close look at household-level assets, resources and intra-household decision making. As such, the unit of analysis (individuals and households) is close to that which is necessary to understand the nutrition situation (individual level). Similarly, such programs are largely focused on the poor and poorest, and as such, are likely to also target the food insecure and most at risk of not having the means to improve their nutrition situation, even when information is available. This is paramount for the mitigation of potentially negative or exclusionary effects of large-scale productivity and income generation programs.

Combining capacity development or behavior change communication (BCC) with the means to realize recommendations (to, e.g., diversify the diet, prepare appropriate complementary foods, and consume sufficient quantities of nutrients during pregnancy, by way of asset accumulation and improved entitlements) is the key reason that a livelihood program has exceptional scope for improving nutrition.

Nutrition Context of India and Bihar

The past two decades in India have seen significant improvements in household incomes, agricultural productivity and child survival. Child undernutrition rates have been declining and yet, 38.4% of India's children still suffer from stunting, 31 from wasting, 58.4% of children age 6–59 months and 53.1% of women are anemic, and 22.9% women are underweight (NFHS IV, India data).

Bihar, with a population of approximately 104 million, is India's most densely populated state. Approximately 89% of Bihar's population lives in rural areas and is engaged in the agriculture sector. Agriculture in Bihar is much more dominated by small farms with fragmented landholdings than in India as a whole. Nearly 70% of households are landless and nearly landless. In terms of the nutritional status of children, Bihar is lagging behind the national averages as well as trends in all indicators.

In 2011, Bihar had a score of 0.303 on the inequality adjusted Human Development Index, ranking it 16th out of India's 19 largest states.² Bihar has made considerable improvement in the last decade on several human development indicators. While the latest NFHS IV (2015–16) data for Bihar highlight the reduction of IMR (40/1,000) and MMR (167), high levels of malnutrition still prevail in the state. Approximately 50 percent of children aged five and under are stunted and 21 percent of children aged five and under are wasted. More than 44 percent of children aged five and under are reported to be underweight. Seventy-three percent of households in Bihar do not have access to proper sanitation facilities at the household-level. Access to safe drinking water and sanitation is another indicator of the health status of a population. Provision of safe drinking water (calculated in terms of availability of a tubewell, handpump or tap) reduces the occurrence of a number of diseases and, at the same time, ensures effective absorption of food, ultimately leading to improved nutrition.

Nutrition and India's Rural Livelihoods Mission

Since 2011, the Ministry of Rural Development (MoRD) of the Government of India has been managing the National Rural Livelihood Mission (NRLM, also called *Aajeevika*), a flagship rural poverty reduction program based on the development of mostly women self-help groups (SHGs). The NRLM seeks to break the cycle of poverty by improving household access to entitlements such as bank loans, health services and food subsidies, improving agriculture production and household economic livelihoods activities, and strengthening capacities. This mission has been implemented by each state in a different manner but is based on the core principles of institution building, capacity strengthening, and improving access to financial services, following a demand-driven and participatory approach.

Lucrative and stable livelihoods are necessary for access to diverse foods; at the same time, good health and nutrition are a condition for inclusive livelihood

² *Inequality adjusted Human Development Index for Indian States 2011; United Nations Development Program.*

development. Recognizing this link, 11 out of 17 states have piloted a series of activities targeted particularly at women and children who fall into the 1,000-day window of opportunity (from conception to 2 years of age) to break the cycle of malnutrition. Andhra Pradesh (now Andhra Pradesh and Telangana) and Bihar have championed these efforts. Activities range from kitchen gardens, child day-care programs to nutrition centers that provide meals and nutrition education for lactating and pregnant women. Recognizing the successes of State Rural Livelihoods Missions (SRLM) in integrating nutrition in their livelihoods programs, the NRLM is now looking to fully integrate health, nutrition, and sanitation in its operations in 17 states based on the readiness of the state. Given its approach and coverage, the NRLM lends itself as an effective platform for improved nutrition-sensitive livelihoods across India to tackle the underlying causes of the soaring rates of malnutrition.

Nutrition and Bihar's Livelihoods Program

While the JEEViKA project has made significant progress through promoting livelihoods, Bihar still faces a set of development challenges that require sustained, intensive, and long-term support. The emerging priorities of the Government of Bihar (GoB) include social and economic empowerment of women, and improved access to human development services including health, nutrition and sanitation. This study aims to offer some concrete recommendations on how to shape the current livelihoods program in a manner to set the state on track to reporting positive trends on these priorities.

BTDP or *JEEViKA* now has the dual objective of improving livelihoods *and* nutrition with time. These two reinforcing objectives are the result of nearly a decade of World Bank experience in supporting livelihoods development in Bihar. In contrast, the BRLP was not initially designed with the intent to reduce malnutrition, the objective having been to enhance social and economic empowerment of the rural poor in Bihar. This has established a strong foundation as access and preparation of food as well as care practices and labor-burden are very much determined by intra-household decision making. But with the realization that most households were incurring debts due to health expenses, the project

was shaped and reshaped during implementation to first improve the quality of health and nutrition services provided and then introduce a plethora of complementary pilots several years later to instigate changes in behaviors particularly related to Water, Sanitation and Hygiene (WASH). Today, both supply and demand-side interventions are introduced through a convergence approach from the very beginning, starting with social mobilisation (including of the nutritionally vulnerable), identification of community-level nutrition needs and wants, and women's empowerment for intra-household decision making. For the sake of clarity, three main areas have been deciphered as related to nutrition in both projects, as further expanded upon in the current generation project:

- **Convergence with Government entitlements:** improving quality and reach of available agriculture extension, health, and financial services;
- **Nutrition education:** to (i) increase demand for quality entitlements and (ii) improve nutrition-related practices (diet, care, and health/WASH); and
- **Direct livelihoods interventions:** kitchen garden, poultry, dairy cattle rearing, and Food Security (credit) Line/Fund (FSF) to smooth out lean seasons (agriculture production and remittances).

In order to deliver these services at the household level, JEEViKA has established a network of persons that are integral to the process of social mobilization and capacity development. These include:

- **Community Resource Persons (CRPs):** responsible for community mobilization and shaping of Self-help Groups (SGHs), advocating for participation and of paramount importance for effective outreach and participation.
- **Community Mobilizers (CMs):** trained through the project and responsible for health and nutrition-related awareness raising.
- **Village Resource Persons (VRPs):** serve as complementary agriculture extension officers as the Department of Agriculture only has officers positioned down to the district level. These persons are trained and can relay information to and from Department officers, improving coverage of services.

- AHRP (Animal Husbandry Resource Person): same as above but responsible to provide information on cattle rearing, training and supporting to conduct health camps once in a quarter. They are also trained by the project.
- PRP (Poultry Resource Person): responsible to train the SHG women on poultry raising, support to manage poultry mother units including vaccination to the chicks.

The following table breaks down the 3 areas of intervention by key activities at individual and structural levels.

Given that these activities are phased and targeted at different levels, it is important to identify the impact pathways through which these activities are intended to improve nutrition. The strength of a livelihood program lies in the fact that nearly all commonly referred agriculture nutrition pathways are stimulated. The Bihar Livelihoods program, as illustrated below, works through a

Activities to promote nutrition in JEEViKA

Core Pillars/ Livelihood-nutrition Linkages	Activities at Individual Level, Producer-Consumer	At Structural Level, Institutions
Livelihood/agriculture interventions	<ul style="list-style-type: none"> • Kitchen garden (provision of seeds and capacity development) • Food Security Fund • Agriculture productivity and value chain development • Poultry • Dairy • Goat/small ruminant • Small enterprises including incense stick making 	<ul style="list-style-type: none"> • Veterinary services • Agriculture extension—promote diverse/underutilized/nutrient-rich foods • PPP/cooperatives • Market infrastructure and information
Behavior change communication	Training, graphics, videos, messages on: <ul style="list-style-type: none"> • Dietary practices • Health/WASH practices • Care practices 	<ul style="list-style-type: none"> • Construction of latrines • Review and ensure coherence of BCC material/technical content and medium
Access to entitlements/services	Increase awareness of, demand for, and community surveillance of (good quality) government services	Improve quality: <ul style="list-style-type: none"> • Anganwadi/ICDS • PDS • Mid-day meal • Primary health center • Health insurance

series of impact pathways for improved dietary diversity. These are based on the general understanding of the situation in Bihar characterized by insufficient livelihood assets, poorly targeted and low-quality entitlements, and lack of understanding of the benefits of dietary diversity. The same could be mapped out for WASH/health and care practices, which should be further explored in subsequent studies.

Building on this table of impact pathways, the diagram on page 83 was developed to illustrate the complementarity of these activities at different levels, highlighting synergies between livelihood and nutrition interventions. Individual care, health and dietary practices are conditions for good nutrition, shaped by (i) the enabling environment (institutions and entitlements) and (ii) household-level assets, social norms and capabilities.

Impact Pathways in JEEViKA for Improved Dietary Diversity

Impact Pathway	Nutrition-sensitive Livelihood Activities	Outcome
Agriculture production	Kitchen garden Improve agriculture productivity Poultry Dairy Goat/small ruminant	Increased availability of diverse food basket, and access throughout the year at homestead and in local market
Income	Agriculture productivity and market access/value chain development Handicrafts Beekeeping	Improved purchasing power for secure access throughout the year and improve quality of food basket
Women's empowerment	Financial resources/decision making Labor and time	Intra-household distribution and proper consumption as well as care practices
Awareness, skills, and knowledge	BCC through various channels	Improved dietary diversity, complementary feeding, exclusive breastfeeding, sanitation
Market environment	Value chain improvement by linking farmers with markets and improving market infrastructure including processing, storage/handling and food safety	Access to quality, nutrient-rich and safe foods throughout the year
Social protection/entitlements	Food security fund ICDS/Anganwadi Public Distribution System (PDS)	Access to staple foods for poor HH and during lean season



Conversely, individuals can request an improvement in the quality of, e.g., health services available or learn to make better use of the resources available, which usually requires some capacity development and behavior change communication (BCC). BCC is key to any nutrition-sensitive livelihoods program, based on a thorough understanding of people's norms and values, what motivates and hinders them to change their dietary habits, the information to which they are receptive, and the skills needed to act on nutrition messages. For behavior change to really take place, an individual will likely need to hear the message on multiple occasions from different sources and perspectives through varying channels. This model can be realized in Bihar as these messages are reiterated through veterinary services, agriculture extension, community mobilizers, etc.

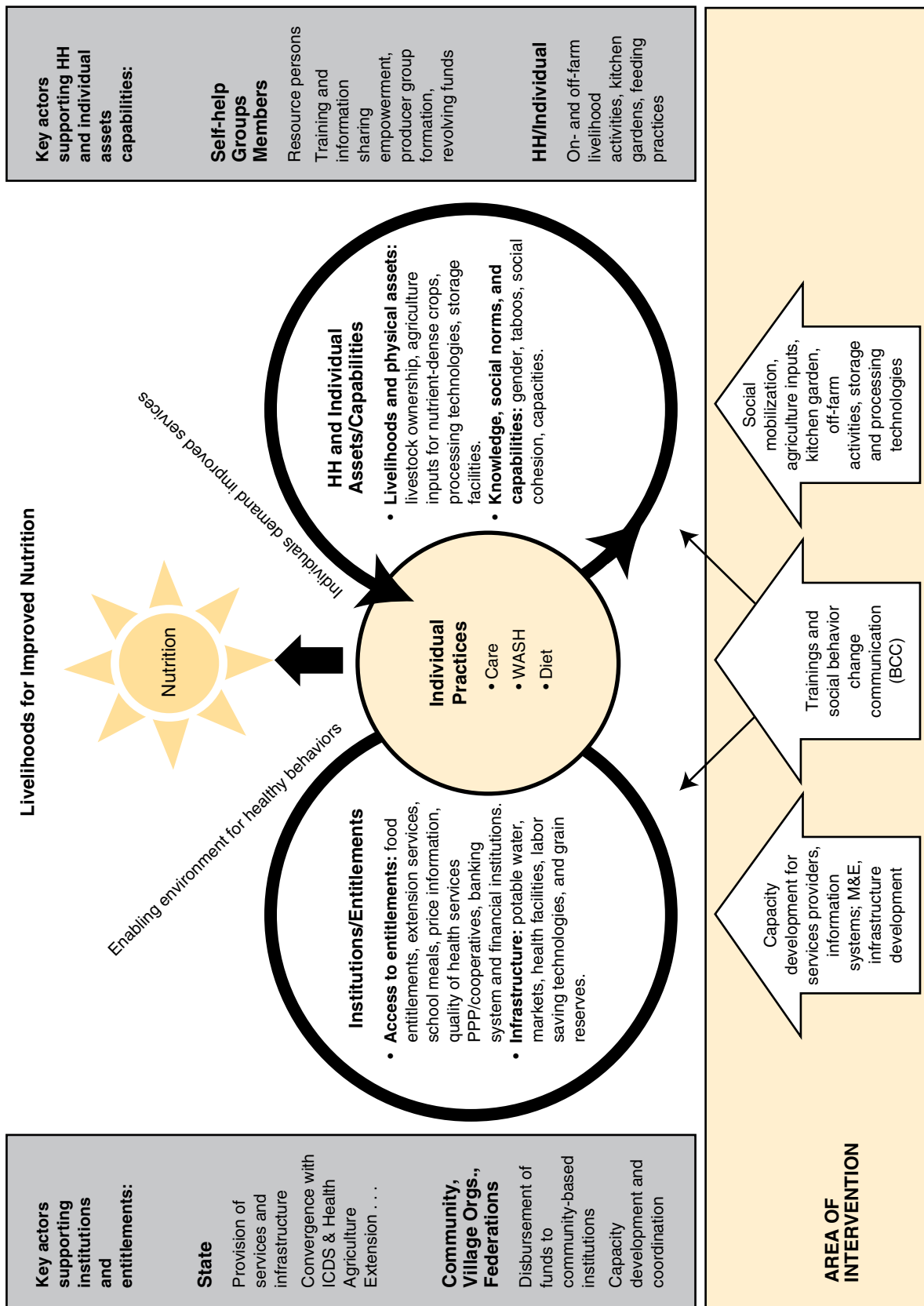
The key supporting actors are identified in the two columns on the sides. A project can help to further strengthen these pillars of livelihood-nutrition linkages by working with these institutions and actors. The

ultimate goal is improved nutrition, addressing specific issues and gaps as identified in the baseline.

This diagram illustrates the need for a set of complementary demand and supply-side support mechanisms, offering individuals a sustainable means to realize the recommended dietary, care, and WASH practices. Given the magnitude and multifaceted nutrition challenge in Bihar, it is important to recognize that no single activity can serve as a panacea. This is a key principle in JEEViKA and a key reason for this study, as visualized on the following page.

Purpose of Study

The current status of malnutrition in Bihar is well known, and elsewhere studies have shown a positive impact of unconditional cash transfers complemented by behavior change communication for improved nutrition. However, little evidence has been generated on the effectiveness of integrated livelihood



This diagram was developed based on the JEEViKA framework

interventions, looking at the complementarity of a series of pathways, for nutrition. Therefore, many assumptions prevail, particularly the direct impact of increased productivity and income for reducing rates of malnutrition. Instead, evidence is needed to identify effective modalities, scale, and links with other programs and activities that could best address the underlying causes of malnutrition.

This rapid assessment was undertaken as part of the Implementation Completion Report of the World Bank-funded Bihar Rural Livelihoods Program (BRLP) during the beginning phases of its successor project—the Bihar Transformative Development Project (BTDP). The **objective** of this rapid qualitative assessment was to take stock of the existing livelihood and nutrition-related interventions introduced in the BRLP (even those that were not intentionally designed with this objective) and see how they are linked and could be further strengthened to meet the common objective of both livelihood improvement and reducing malnutrition. A series of pathways and activities for nutrition have been identified as part of this new

phase of *JEEViKA* (BTDP), building on the institutional framework developed over the past decade. However, this still requires a better understanding of which activities have had (any) major positive ‘spill-over’ effects on improving the nutrition situation, why, and for whom.

Methodology

This study focused primarily on **dietary diversity as an intermediary impact indicator for nutrition**, not discounting the importance of care and health practices, including WASH, or food security for that matter. FAO recommends dietary diversity is one of the proxies of micronutrient adequacy, a key determinant of diet quality. The new Minimum Dietary Diversity Score for Women (MDD-W) indicator is “a dichotomous indicator of whether or not women 15–49 years of age have consumed at least five out of ten defined food groups during the previous day and night. The proportion of women 15–49 years of age who reach this minimum threshold of dietary diversity (i.e., five or more food groups) can be used as a proxy indicator, which is one



important dimension of diet quality.”³ Indicators for women and children dietary diversity (including Minimum Dietary Diversity Score for Women, MDD-W) have been included in the logical framework of the BTDP, and so it is important for the JEEViKA team to identify concrete and effective means for improving the variety on the food plate, tackling constraints faced at household levels.

This report is based on a **participatory qualitative rapid assessment** in Bihar. **Methods** utilized included interviews with technical project managers, World Bank advisors, implementing partners, and semi-structured focus group discussions with project beneficiaries. In order to understand the linkages between livelihoods and nutrition, one focus group discussion was facilitated with Community Resource Persons (CRPs) to triangulate the findings gathered from four focus group discussions which were facilitated in two districts (Gaya and Nalanda). Group discussions were organized with members of SHGs based on asset classification: land, landless, cattle, and poultry ownership. This classification was selected based on previous studies showing the importance of this asset base for several development indicators. Each group was composed of 8–14 participants and often a mix of land/landless as well as castes (Scheduled Castes (SC) or Other Backward Castes (OBC)). These internal differences helped to triangulate some of the assumed impact pathways. In short, the groups were characterized by the following criteria:

- Land owners (1 or more acre) who can presumably cultivate sufficient quantities of food to also keep some for home consumption;
- Own dairy cow or buffalo (landless or with land);
- Landless (or less than 1 acre) who own some small livestock including poultry and goats;
- Landless (do not own any land or productive assets).

Findings from these discussions, including recommendations for the BTDP, are summarized below.

Livelihoods Associated with Dietary Diversity

Interviews and Focus Group discussions highlighted several possible determining factors for improving dietary diversity. These findings were triangulated with District-level Livelihoods Managers as well as Community Resource Persons. Land and livestock ownership, potentially associated with level of caste (Scheduled versus Other Backward), were clearly the most determining factors based on the testimonials of group participants. Those with land seem to be more responsive to (or capable of) taking up livelihood activities designed to improve the nutrition situation (largely through agriculture productivity and income pathways), whereas landless households may require a different package of interventions to improve both off-farm income and access to quality safety nets.

All households upon joining SHGs, regardless of landholdings, seem to have started at a low dietary diversity score of 2–3 food groups per day (according to respondents explaining pre-program conditions in the absence of a rigorous baseline). Those who are landless seem to have experienced little improvement. For those with the most assets, change was reported to have improved from 3 to 5–6 food groups today. This is further broken down by livelihood groups below.

- **Landless:** Due to a lack of land, these women and their households depend on local markets where they regularly purchase seasonably available vegetables and occasionally fruits (most fruits are gathered from neighboring plots). Their husbands have all migrated to cities as wage laborers, leaving the women in the village to rely on infrequent remittances, insufficient to purchase a varied food basket. Fish, meat and eggs are each consumed twice per month. During festivals and when guests visit, meat is also prepared. Milk is purchased irregularly and used by adults only for tea and given pure to children once per day until 2 years of age. The Food

³ <https://www.fantaproject.org/monitoring-and-evaluation/minimum-dietary-diversity-women-indicator-mddw>

Security Fund (FSF) offers an opportunity to access bulk items at a lower market price and as repayment can take place anytime within three months, therefore, this reduces the pressure to repay immediately. Today, households still consume an average of 2–3 food groups per day: rice/potato/wheat-based product and a vegetable accompanied by an occasional bowl of dhal. As such, while change was reported as told through stories of empowerment and improved physical mobility for women, dietary diversity and care practices have not changed much. It appears that an improvement in financial and physical assets (particularly through off-farm opportunities) accompanied by nutrition education could substantially support this group through CRPs and CMs.

- **Landholders cultivating crops:** with the support of FSF, many households purchase rice and pulses from the market and directly harvest 2 types of vegetables for daily consumption from their own fields. These households consume about 3–4 food groups each day, including dhal at every meal. Eggs, meat and fish are consumed twice per month and dairy daily by those who own cattle (yogurt, paneer, ghee). These households seemingly have the means to purchase a balanced food basket, but largely consume what is available on the land rather than seeking other foods to diversify the food plate. Most of their husbands are wage laborers residing in the area. Their dietary diversity seems to have improved but nutrition education

could support households to grow and purchase more nutrient-dense foods.

- **Dairy cow owners (with and without land):** All dairy owners, including the landless, consume milk on a regular basis and have a kitchen garden (which some grow in containers or within the compound), though the landless only grow 2–3 varieties of vegetables at a time. Those with land consume an average of 4–5 food groups per day including rice, pulses, milk, 2 types of vegetables plus meat and eggs 4–5 times per month. The landless households only consume 3–4 food groups per day, mostly rice or wheat, vegetables, dairy and often dhal. All the husbands are wage laborers in the vicinity. Those with dairy and land seem to be faring better and interested in diversifying their off-farm livelihoods activities.
- **Poultry and dairy cow owners (with and without land):** Poultry appears to be one of the most lucrative businesses where an egg can fetch a price of 10–25 rupees at the market, though there is now a risk of flooding the market as the word spreads. This has increased household earnings significantly. Those with land cultivate rice, wheat, pulses, mustard vegetables, and spices. They do not sell the produce immediately but rather check market prices to sell the products when prices are most advantageous. All households also have a kitchen garden though those with land have more variety. The husbands work as agriculture wage laborers in addition to supporting the cultivation of crops on their own land.

These households seem to consume a minimum of 5–6 food groups: grains, pulses, leafy vegetables, another vegetable, milk in addition to eggs at least once per week as well as meat (mostly poultry and other small livestock) once per week. They consume more eggs in the winter, but all members of the family consume eggs regularly, including children, during pregnancy, and lactation. Participants also commonly consume papaya, guava, and banana when they are available in the village. When they go to the market, they purchase apples and pomegranate. Those with landholdings fell on the higher side of the number of food groups consumed but since all had a kitchen garden, all households have access to some vegetables. Many of these households are also engaged in other off-farm activities.

“There was no hope to get even a single rupee, and we could not send our children to school; now everything is happening here because of our small savings. Being part of SHG turned our lives around. We began with saving money and now engaged in incense stick making which is a core livelihood for us. The income earned from our work is spent on giving good food to our children, sending them to a good school and paying their tuition fees,” recounts Babita Devi, SHG leader in Gaya. *“We have realized that self help is the best form of help, and we believe that through Jeevika, we have rediscovered our potential.”*

Noor is a CRP and joined SHG in 2008. She was confined to her house, living in abject poverty with four children. The income earned by her husband was not sufficient to meet the family's needs. It was then she heard about SHG and decided to join but her husband and other relatives didn't allow her. However, she has joined the SHG secretly and started saving a portion of the money given to her to purchase groceries.

Her frequent absence (as she attended weekly meetings) was noticed by the family members and her husband had beaten her for not listening to him and kept her under lock and key. She cried, and fought with the family members but didn't give up the idea of being a SHG member. Finally, her husband had listened to her and allowed her to attend weekly meetings and save regularly.

In her words, "I have taken loan and supported my husband to expand his tailoring shop which gave good income. I repaid the loan and taken higher amount of loan and opened another shop. Now, my son and younger daughter work in the shop. After joining SHG, I have got my two daughters married."

Noor's determination didn't stop with her family. She mobilized her neighbours to join SHGs. She also actively participates in promoting healthy behaviors by mobilizing pregnant women and children to Anganwadi Centers, and informs them to eat varieties of fruits, vegetables, eggs and Chikki (Sweet snack prepared with peanuts and Jaggery). Noor represented Jeevika in many state level meetings including the one on 'Anti Alcoholism' to support the State initiated total prohibition.

Interviews and discussions indicated that with an increase in asset ownership, dietary diversity increased by at least one food group (i.e., land plus livestock ownership seemed to result in the highest dietary diversity score, meeting the threshold of five out of ten food groups). The integration of nutrition education in extension services, convergence with health and child care entitlements, and improvement of loans for nutrient-dense foods (particularly small livestock and cultivation of diverse crops in kitchen gardens) seems to have great potential. As such, nutrition needs to be considered throughout the project. However, these are the key findings of a rapid analysis and require further analysis. A food consumption survey and Knowledge, Attitudes and Practices (KAP) assessment should also be administered to validate these preliminary findings.

However, there are likely many other intermediary factors that should be further explored: (1) One such issue is labor migration. Men from households that own land or livestock seem to stay closer to their home and take up wage-labor during the off-season or on the side as they participate in the cultivation/rearing of foods. (2) There does not seem to be any difference in the number of food groups consumed by caste but religion may play an important role through the gender impact pathway, which also requires exploration. (3) Furthermore, the

quality of government services including targeting of the Food Security Fund, diversity of foods procured and distributed through Anganwadi/child care centers where women receive dry rations, Mid-Day Meal program, and the Public Distribution System (PDS) requires further review. (4) With regards to individual practices and nutrition awareness, landless groups and those with just access to land but no livestock seemed to have the least awareness of the benefits of diverse diets and recommended complementary feeding practices. The list of taboo foods to consume during pregnancy and lactation also seemed to be longest among the landless groups. This lack of awareness is likely because most nutrition messages were imparted through livestock and only minimally through agriculture extension services, building strong links for those receiving these services but likely neglecting those without access. It is clear that all groups require extensive BCC as changes in daily habits and practices take time and often question social values.

One last aspect that should not be overlooked is food (in)security. Most communities appear to have achieved a minimum level of food security either through income earned, on-farm production, or access to the FSF benefits during times of need. JEEViKA seems to have increased household food security according to members and so such an integrated approach should

be maintained to consider both sufficient quantity and quality of foods consumed. However, while a food security lens is essential, the position of the authors is that this is one of the drivers of malnutrition; without understanding availability, access and utilization of diverse healthy foods throughout the year, it is not possible to sustainably improve the nutrition situation in the state.

Conclusions: Leveraging Livelihood-nutrition Linkages

Overall, *JEEViKA* interventions seem to have instigated several powerful (albeit originally unintended) impact pathways for improving dietary diversity and the current BTDP hopes to expand this cadre of entry-points by strengthening on-farm production of diverse foods, off-farm income generating activities, comprehensive behavior change communication, and better convergence with other sectors. This will help build a more comprehensive package of interventions that will likely help tackle bottlenecks of improving both livelihoods and nutrition.

The scope of impact of a livelihoods program is epitomized by the fact that all 10 key recommendations for improving the impact of agriculture programs and investments on nutrition, as recommended by FAO, can be addressed; while the BRLP did not originally intend to work through all of these, the current BTDP seeks to address all of these including:⁴

1. Incorporate explicit nutrition objectives and indicators into the design;
2. Assess the context at the local level, to design appropriate activities to address the types and causes of malnutrition;
3. Target the vulnerable and improve equity;
4. Collaborate and coordinate with other sectors;
5. Maintain or improve the natural resource base;
6. Empower women;
7. Facilitate production diversification and increase production of nutrient-dense crops and small-scale livestock/fisheries;

8. Improve processing, storage and preservation;
9. Expand markets and market access for vulnerable groups, particularly for marketing of nutritious foods; and
10. Incorporate nutrition promotion and education.

As the BTDP will expand its outreach from 150,000 SHGs to 450,000, covering 5 million households, project teams have taken the opportunity to include nutrition considerations from the very beginning of the project. This is in line with a nutrition-sensitive project cycle approach where nutrition should be carefully considered during (i) **design** (assessment of drivers of malnutrition disaggregated by livelihoods group and gender followed by a rigorous baseline) and defined **objectives** (spelling out what nutrition issues will be addressed) (ii) **implementation** (convergence of stakeholders and institutions on the demand and supply side); and (iii) **monitoring and evaluation** (to capture effective causal pathways and assess what has and has not worked).

In closing, from a theoretical perspective, a nutrition-sensitive livelihood program seems to have a high chance of effectively addressing the underlying causes of malnutrition by strengthening a series of impact pathways that encourage individuals to take up long-term sustainable dietary, care and health practices that will support their health, growth, and well-being. However, what is important now is to understand what kinds of packages of interventions can support which cadres of the population. Rigorous logical frameworks including intermediary nutrition indicators need to be included in project implementation, to help draw comparisons and draw lessons. Assessments, including monitoring and evaluation, should help with the constant adaptation of the project from design through final evaluation to pick-up nuances of impact pathways. All ongoing and future livelihood programs could be strengthened through this approach and help build a solid evidence base to improve sustainable and equitable livelihoods development for well-being and good health.

⁴ <http://www.fao.org/3/a-i4922e.pdf>