

# Integrating Community Kitchen Contributions into SDG Monitoring Frameworks

Vinay Chawla

Executive Director, Langar Carbon, India

## Abstract

This study quantifies the institutional meal gap and introduces the Langar Credit Protocol as a credible approach for incorporating community kitchen contributions into national SDG reporting. By examining SDG indicator methodologies, we demonstrate how household-centric measurements systematically underrepresent institutional meal provision. We propose six SDG-aligned indicators that convert community kitchen practices into verifiable metrics compatible with existing monitoring frameworks. The paper concludes with specific policy integration pathways for NITI Aayog's SDG India Index, corporate social responsibility (CSR) reporting, and global SDG monitoring systems. By addressing the measurement gap, community kitchens can receive recognition commensurate with their contributions, while national reporting achieves greater accuracy and completeness.

**Keywords:** institutional meal gap, SDG monitoring, food security measurement, community kitchens, policy integration, sustainable development goals

## 1. Introduction

Throughout India, numerous community kitchens and community cafés (CKCC) provide an estimated crores of meals annually. Despite their significant scale and impact, these meals are not reflected in India's official food security statistics or Sustainable Development Goal progress reports (FAO, 2025b).

The absence of institutional meal data affects policy decisions in several ways. For instance, Punjab reports lower SDG 2 scores despite its extensive langar system, which serves millions of meals annually (NITI Aayog, 2019). Additionally, corporate social responsibility programs and development partners face challenges in identifying credible community partners due to the informal and unverified nature of impact data. Furthermore, government food security planning may inadvertently duplicate existing community capacities rather than complement them, leading to resource wastage and missed synergies. Most concerning, this gap presents a skewed representation of hunger in India. National statistics may indicate higher levels of food insecurity than actually exist when community-provided meals are considered (World Bank, 2023). Therefore, addressing the institutional meal gap is not merely an academic endeavor but a practical necessity for evidence-based policymaking and efficient resource allocation.

This study addresses the institutional meal gap through three specific contributions. First, it quantifies the gap by analyzing SDG indicator methodologies and estimating the scale of excluded meals. Second, it introduces the Langar Credit Protocol as a practical bridging mechanism that translates community kitchen practices into SDG-compatible metrics without

imposing unrealistic documentation requirements. Third, it proposes specific integration pathways for national and global monitoring systems, supported by stakeholder validation data.

Our approach acknowledges that community kitchens operate in "low-data" contexts with manual records and volunteer management. Instead of expecting them to adopt complex monitoring systems, we have adapted existing verification principles to their realities. The resulting framework enables credible measurements while respecting operational constraints, creating a viable pathway from grassroots practice to formal recognition.

## 2. Quantifying the SDG Measurement Gaps

### 2.1 SDG 2 Exclusion

Sustainable Development Goal 2 aims to "end hunger, achieve food security and improved nutrition, and promote sustainable agriculture." Indicator 2.1.1 evaluates the prevalence of undernourishment through dietary energy supply calculations derived from household consumption survey data. Indicator 2.1.2 employs the Food Insecurity Experience Scale, which queries households regarding their experiences with food insecurity over the preceding year (UN DESA, 2024a). Both methodologies present a notable limitation: they focus exclusively on food consumed by households.

This household-centric approach systematically excludes meals consumed outside the home, including those provided by community kitchens, temple feeding programs, gurdwara langars, and other institutional feeding initiatives. Our analysis suggests that this exclusion affects an estimated 10 crore meals annually across India, based on conservative estimates of community kitchen operations (Table 1).

**Table 1: Estimated Scale of Institutional Meal Gap in India**

Kitchen Type	Estimated Operations	Average Daily Meals	Annual Total
Gurdwara Langars	100	1,000	3.65 crore
Annadanam	75	1,000	2.74 crore
Community Cafés	50	1,000	1.82 crore
NGO Kitchens	50	1,000	1.82 crore
Total	275	4,000	10.03 crore

*Note: Conservative estimates based on documented operations; actual numbers are likely to be higher.*

### 2.2 SDG 12 Institutional Invisibility

Sustainable Development Goal 12 advocates for "responsible consumption and production patterns," with several targets directly relevant to community kitchens. Target 12.2 emphasizes

the sustainable management and efficient utilization of natural resources. Target 12.3 aims to reduce per capita food waste by 50%. Target 12.5 focuses on significantly reducing waste generation. Target 12.7 promotes sustainable public procurement practices (TERI & UNEP, 2021).

Community kitchens make substantial contributions to these targets but remain underrepresented in official monitoring. Many kitchens utilize cleaner cooking fuels, such as liquefied petroleum gas or electricity, thereby reducing air pollution and health risks compared to traditional biomass. The majority of individuals employ reusable stainless steel utensils, which significantly reduces waste compared to disposable alternatives. Community cafés specifically intercept surplus food from hotels, weddings, and institutional canteens, preventing edible food from being disposed of in landfills. Many ingredients are sourced locally, supporting district-level farmers and reducing transportation emissions.

Despite these contributions, SDG 12 indicators in India predominantly focus on commercial enterprises and formal public procurement systems (NITI Aayog, 2019).

### **2.3 National Dashboard Implications**

The NITI Aayog SDG India Index serves as India's primary instrument for monitoring progress toward the Sustainable Development Goals. The index consolidates data across 100 indicators to generate state-level scores and rankings for each indicator. Our analysis underscores how the institutional meal gap distorts these rankings, particularly in states with robust community kitchen networks.

Punjab, with its extensive gurdwara langar system, exemplifies this distortion. Despite providing an estimated 50 million langar meals annually, Punjab's SDG 2 score remains low due to the exclusion of these meals from official metrics. Similarly, Maharashtra's SDG 12.3 ranking is adversely affected despite the extensive community café networks that significantly reduce food waste in urban areas. Gujarat's local sourcing practices through community kitchens are not reflected in SDG 12.7 procurement metrics. Addressing the institutional meal gap would facilitate more accurate state comparisons and inform better policy decisions.

## **3. The Langar Credit Protocol as Bridge**

### **3.1 Six Indicators**

The Langar Credit Protocol addresses the institutional meal gap by establishing six verifiable indicators that translate community kitchen practices into metrics compatible with the Sustainable Development Goals (SDGs). Each indicator directly corresponds to specific SDG targets while remaining measurable in low-data contexts through the use of manual records and volunteer management.

The Verified Meals indicator operationalizes SDG 2.1 by quantifying the number of meals served to beneficiaries. Utilizing the formula  $LC = \text{floor}[(VM+500)/1000]$ , where VM represents verified meals, the protocol standardizes Langar Credits to represent 1,000 verified meals. This quantification addresses the exclusion of household surveys by providing credible institutional data on meal distribution.

The Fuel Type indicator addresses SDG 12.2 by categorizing cooking energy sources. Category A recognizes operations utilizing 90% or more clean fuels, such as liquefied petroleum gas or electricity. Category B accommodates transition facilities using 70% or more improved-biomass stoves. Category C includes traditional biomass systems and establishes a baseline for improvement. This classification facilitates the tracking of institutional clean cooking adoption, which is currently excluded from SDG 12.2 metrics.

The Utensil Type indicator supports SDG 12.5 by measuring the sustainability of service ware. Category A requires 95% or more reusable utensils, typically stainless steel, in community kitchen contexts. Category B allows up to 5% single-use items for rituals or exceptional circumstances. Category C permits higher disposable usage and identifies opportunities for improvement. These metric captures waste reduction through reusable systems, which are currently not reflected in municipal solid waste statistics.

The Meal Type indicator contributes to SDG 12.2 by documenting meal composition. Category A includes 70% or more plant-based and dairy meals, which generally have lower environmental footprints than meat-based alternatives. Category B includes more diverse compositions while maintaining a majority vegetarian orientation. Category C covers other patterns. This indicator acknowledges the environmental benefits of traditional vegetarian meals.

The Sourcing Type indicator aligns with SDG 12.7 by tracking procurement patterns. Category A requires 70% or more of the ingredients to be sourced from within the district, thereby supporting local economies and reducing transportation emissions. Category B recognizes 40-69% local sourcing. Category C includes more distant procurement methods. This metric highlights the local economic benefits of community kitchen operations.

The Operation Type indicator supports SDG 12.3 by distinguishing between service models. Community kitchens that prepare fresh meals contribute differently to food systems than community cafés redistributing surplus food. A clear classification enables the appropriate application of metrics and model-specific improvement tracking.

### **3.2 Verification Methodology**

The Langar Credit Protocol employs evidence triangulation to generate credible data, even when faced with documentation limitations. In accordance with the UNDP's low-data guidance, the protocol assigns reliability coefficients to various types of evidence: authenticated documents receive a coefficient of 1.0, corroborated testimony 0.7, and single-source claims 0.3 (UNDP, 2013). Each indicator requires multiple sources of evidence to achieve a cumulative reliability score of 2.1 or higher, thereby ensuring robust verification without necessitating perfect documentation.

For example, the verification of Fuel Type may involve a combination of liquefied petroleum gas purchase receipts (1.0), on-site cylinder counts (1.0), and manager testimony regarding usage patterns (0.7), resulting in a total reliability score of 2.7. This methodology accommodates the 3-7% variance observed in community kitchen recordkeeping while

maintaining verification credibility (TERI, 2024). The approach respects operational realities while generating data that are sufficiently robust for policy integration.

Community-based Langer Seva Verifiers conduct on-site assessments in accordance with standardized procedures. These verifiers undergo six hours of training, which covers indicator definitions, evidence collection methods, and cultural sensitivity. Assignments managed by the registry prevent conflicts of interest, while fixed honoraria ensure impartiality. Quality assurance measures include desk reviews and 5% field re-audits to ensure consistency across verifiers and regions.

### **3.3 Aggregation Pathway**

The protocol delineates a comprehensive aggregation pathway from individual kitchen verification to national Sustainable Development Goals (SDG) reporting. Verified data are processed through a centralized registry that calculates Langer Credits and sustainability scores. This registry generates standardized reports compatible with existing monitoring systems, facilitating seamless integration without necessitating structural modifications to national dashboards.

For NITI Aayog's SDG India Index, the protocol recommends the inclusion of an "institutional meal access" sub-indicator under SDG 2.1, derived directly from verified meal data. Regarding SDG 12 indicators, community kitchen performance metrics can complement existing commercial and household data. This approach ensures backward compatibility while progressively incorporating the contributions of institutions.

The aggregation pathway upholds data privacy and kitchen autonomy. Participation is voluntary, with kitchens retaining control over the data they choose to share beyond the basic verification results. The system acknowledges that some kitchens may prefer anonymity while still contributing to aggregate statistics. This flexibility accommodates diverse operational philosophies while constructing a comprehensive dataset.

## **4. Policy Integration Pathways**

### **4.1 NITI Aayog SDG India Index Integration**

Incorporating contributions from community kitchens into the NITI Aayog SDG India Index requires specific yet feasible modifications. For SDG 2.1, it is proposed to introduce an "institutional meal access" sub-indicator, which would measure the percentage of vulnerable populations with access to verified community meals. This would complement existing household food security metrics and provide a more comprehensive overview of food access mechanisms.

Regarding SDG 12 indicators, the performance of community kitchens can initially be included as supplementary data, with a gradual integration into the main indicators as verification coverage expands. Specifically, SDG 12.2 could include institutional clean cooking adoption rates derived from verified kitchen data. SDG 12.3 might incorporate volumes of surplus food intercepted by community cafés. SDG 12.5 could track the adoption of reusable utensils in

institutional feeding, while SDG 12.7 could document local sourcing patterns in non-commercial procurement.

These integrations would necessitate collaboration between NITI Aayog, community kitchen networks, and verification bodies. A phased approach, commencing with pilot states, would facilitate the refinement of methodologies prior to a national rollout. Technical working groups could develop detailed implementation guidelines to ensure alignment with existing index methodologies while accommodating the realities of community kitchens.

#### **4.2 CSR and Development Partner Alignment**

Verified data from community kitchens present new opportunities for corporate social responsibility initiatives and development partnerships. Many corporations aim to support food security initiatives as part of their Sustainable Development Goals (SDG) commitments but often face challenges in identifying credible partners and measuring their impact. The Langar Credit Protocol offers standardized metrics to address these challenges.

Corporate partners can utilize verified data to identify high-performing kitchens for support, monitor their impact over time, and report their contributions in annual sustainability reports. Development agencies can leverage the data to target capacity-building efforts where they will have the greatest impact, assess program effectiveness, and demonstrate results to donors. The verification framework reduces due diligence costs while enhancing confidence in impact claims.

Specific partnership models may include capacity building for cleaner cooking adoption, infrastructure support for surplus food redistribution, or sourcing partnerships that connect kitchens with local farmers. Verified data facilitate targeted interventions where they are most needed and enable measurable impact tracking over time. This alignment creates mutually beneficial scenarios: kitchens receive resources and recognition, while partners obtain credible impact data and effective implementation channels for their programs.

#### **4.3 Global SDG Monitoring Implications**

The institutional meal gap identified in India is likely to be present in other countries with extensive community-based food security systems. Global SDG monitoring frameworks, including those maintained by the United Nations Statistical Commission and the Food and Agriculture Organization, could benefit from the inclusion of institutional meal metrics.

We recommend that the FAO consider refining SDG 2.1 metadata to explicitly incorporate institutional meal provisions alongside household food access. This refinement acknowledges that food security manifests through multiple pathways, not solely through household consumption. Similarly, SDG 12 indicators can be expanded to recognize non-commercial sustainable consumption practices, including those in community settings.

The Langar Credit Protocol offers a transferable model for countries seeking to measure community food security contributions. The verification methodology adapts to diverse cultural contexts while maintaining alignment with global standards. International

development partners can support capacity building for similar verification systems in other regions, thereby creating more comprehensive global food security monitoring.

## **5. Validation and Feasibility**

### **5.1 Stakeholder Perceptions**

Survey data from 422 Indian professionals provide empirical validation for both the institutional meal gap and the proposed solution. Respondents with varying levels of exposure to community kitchens were asked to evaluate five aspects of the Langar Credit Protocol framework. All five constructs received feasibility scores above the threshold, indicating stakeholders' confidence in the approach. Notably, 87% of respondents agreed or strongly agreed that the six indicators could feasibly measure the community kitchen's contributions to SDGs 2 and 12. This high level of agreement suggests that stakeholders recognize both the measurement gap and the practicality of the proposed indicators. Respondents with direct experience in community kitchens demonstrated even higher confidence, with those who visited or volunteered averaging 3.75 out of 5, compared to 3.28 for those unfamiliar with the concept. The survey also highlighted a strong recognition of policy implications. Among respondents familiar with community kitchens, 61.2% acknowledged the severity of institutional exclusion in the current SDG monitoring. This recognition suggests that stakeholders understand the real-world consequences of measurement gaps and appreciate the importance of addressing them. The data support our assertion that the institutional meal gap is not merely a technical issue but a practical concern for those involved in food security.

### **5.2 Analytical Alignment with SDG Frameworks**

Beyond stakeholder perceptions, the Langar Credit Protocol exhibits a robust analytical alignment with existing Sustainable Development Goal (SDG) monitoring frameworks. The six indicators directly correspond to specific SDG targets without necessitating methodological changes to the current systems. This compatibility facilitates gradual integration rather than a disruptive overhaul. The protocol's evidence requirements are consistent with the verification principles established in ISO standards 14064-3 and 17029, ensuring credibility for policy application. The community-based verification model maintains cultural appropriateness while meeting competence requirements. The aggregation methodology generates data that comply with statistical agency standards. Notably, the protocol embodies the SDG principle of "leave no one behind" by making previously excluded contributions visible. This illustrates how measurement systems can evolve to recognize diverse pathways to sustainable development, particularly those operating outside formal economic structures. This alignment suggests that the protocol could serve as a model for inclusive monitoring in other developmental domains.

## **6. Discussion**

### **6.1 Toward Inclusive SDG Monitoring**

The institutional meal gap highlights a broader challenge in sustainable development monitoring: the necessity to effectively capture contributions from informal, community-based systems that operate outside conventional measurement frameworks. Our analysis suggests that

while current SDG indicators are valuable, they offer an incomplete perspective when they fail to account for significant portions of development activity.

Inclusive monitoring requires a balance between standardization and flexibility, rigor and accessibility, as well as completeness and feasibility. The Langar Credit Protocol aims to achieve this balance by adapting established verification principles to community contexts, rather than creating entirely separate systems. This approach ensures compatibility with existing frameworks while accommodating diverse operational realities.

Future monitoring systems may benefit from similar hybrid approaches that recognize multiple pathways to achieving development goals. Instead of imposing uniform measurement requirements, inclusive systems can offer differentiated approaches tailored to various contexts, while maintaining overall coherence and comparability. The institutional meal gap in food security likely parallels challenges in health, education, and other sectors where community contributions remain uncounted.

## **6.2 Implementation Challenges and Practical Solutions**

The implementation of the proposed integration pathways presents several practical challenges. Firstly, verification requires resources, and community kitchens operate within limited budgets. Potential solutions include incorporating verification costs into corporate partnerships or government programs, establishing economies of scale through regional verification hubs, and developing simplified self-assessment options with random audits.

Secondly, data integration necessitates technical coordination among various systems. Pilot implementations in select states could develop and refine integration protocols prior to a broader rollout. Open data standards and application programming interfaces can facilitate seamless data exchange between verification registries and national dashboards.

Thirdly, there is a significant need for capacity building, particularly for Langer Seva Verifiers. Training programs can leverage existing community networks, incorporate digital learning tools for broader reach, and establish peer learning systems for ongoing development. Certification pathways can create employment opportunities while enhancing verification capacity.

Lastly, incentives for participation must balance recognition benefits with the burden of documentation. The tiered certification system offers progressive recognition, allowing kitchens to commence with basic verification and advance as their capacity grows. Privacy protections ensure that kitchens control the data they share publicly versus what contributes solely to aggregate statistics.

## **7. Conclusion**

This study has identified and quantified a significant gap in the monitoring of sustainable development in India, specifically concerning the exclusion of institutional meals provided by community kitchens and cafés. This omission in institutional meal data distorts food security statistics, disadvantages states with robust community kitchen networks, and results in

effective food security initiatives being under-recognized and under-resourced in national discussions.

The Langar Credit Protocol offers a practical solution by translating community kitchen practices into metrics compatible with the Sustainable Development Goals (SDGs), utilizing six verifiable indicators. Despite documentation limitations, the protocol's evidence triangulation methodology generates credible data, and its community-based verification model ensures cultural appropriateness. Stakeholder validation confirms both the recognition of the issue and the perceived feasibility of the solution.

Integration pathways are available at national, corporate, and global levels. The NITI Aayog's SDG India Index can incorporate institutional meal metrics through manageable modifications. Corporate social responsibility programs can utilize verified data for partnership development and impact reporting. Additionally, global monitoring frameworks could be expanded to acknowledge non-commercial contributions to sustainable development.

## 8. Specific Policy Recommendations

Based on our analysis, we propose three policy recommendations.

Firstly, we recommend the initiation of a pilot program in three states with well-established community kitchen networks to assess verification methodologies and integration protocols. This pilot should involve NITI Aayog, state governments, community kitchen networks, and verification bodies to gain practical experience prior to a national rollout.

Secondly, we suggest the establishment of a multi-stakeholder working group to develop comprehensive guidelines for incorporating community kitchen data into the SDG India Index. This working group should include statistical experts, policymakers, community representatives, and verification specialists to ensure both technical rigor and practical feasibility.

Thirdly, we advocate for the creation of capacity-building partnerships between corporate social responsibility programs, development agencies, and community kitchen networks. These partnerships should facilitate verification implementation while providing tangible benefits for participating kitchens and ensuring sustainable participation incentives.

Addressing the institutional meal gap requires acknowledging that food security is achieved through multiple pathways, not solely through household consumption. Community kitchens represent a crucial yet underappreciated component of India's food security infrastructure. By making their contributions visible and measurable, we can achieve a more accurate understanding of hunger, more effective policy responses, and more equitable resource allocation. The Langar Credit Protocol offers a practical starting point for this significant research.

## References

1. Chaudhary, M. A., Singh, P. (2023). Assessing India's journey towards food security: SDG 2 implementation. *CMR University Journal for Contemporary Legal Affairs*, 5(3),

- 189–206. <https://www.cmr.edu.in/school-of-legal-studies/journal/wp-content/uploads/2024/05/Article-12.pdf>
2. Food and Agriculture Organization of the United Nations (FAO). (2025b). *The state of food security and nutrition in the world 2025*. <https://openknowledge.fao.org/items/ea9cebff-306c-49b7-8865-2aef3bfd25e2>
  3. Food and Agriculture Organization of the United Nations FAO. (2025c). *Tracking progress on food and agriculture-related SDG indicators 2025*. <https://openknowledge.fao.org/bitstreams/26c46645-5ff0-4343-8c91-e5cb6655589b/download>
  4. NITI Aayog. (2019). *Transforming nutrition in India: POSHAN Abhiyaan—First progress report*. National Institution for Transforming India. [https://www.niti.gov.in/sites/default/files/2020-02/POSHAN\\_Abhiyaan\\_first\\_progress\\_report\\_6\\_Feb\\_2019.pdf](https://www.niti.gov.in/sites/default/files/2020-02/POSHAN_Abhiyaan_first_progress_report_6_Feb_2019.pdf)
  5. TERI. (2024). *SDG blueprint on sustainable agriculture: Summary report*. The Energy and Resources Institute. [https://www.teriin.org/sites/default/files/2024-02/SDG%20Blueprint%20Summary\\_2024.pdf](https://www.teriin.org/sites/default/files/2024-02/SDG%20Blueprint%20Summary_2024.pdf)
  6. TERI & UNEP. (2021). *Supporting India on SDG 12 monitoring and reporting: A critical appraisal*. The Energy and Resources Institute. [https://www.teriin.org/sites/default/files/2021-09/SDG%2012\\_Supporting\\_NIF\\_0.pdf](https://www.teriin.org/sites/default/files/2021-09/SDG%2012_Supporting_NIF_0.pdf)
  7. UNDP. (2013). *Measurement, reporting and verification (MRV) technical paper: Building from a low data and knowledge base*. UN CC:Learn. <https://www.uncclearn.org/wp-content/uploads/library/undp-lecb-measurement-reporting-mrv-technical-paper-201x.pdf>
  8. United Nations Department of Economic and Social Affairs. (2024a). *SDG Indicator 2.1.1 metadata: Prevalence of undernourishment*. <https://unstats.un.org/sdgs/metadata/files/Metadata-02-01-01.pdf>
  9. United Nations Department of Economic and Social Affairs. (2024b). *SDG Indicator 2.1.2 metadata: Prevalence of moderate/severe food insecurity (FIES)*. <https://unstats.un.org/sdgs/metadata/files/Metadata-02-01-02.pdf>
  10. United Nations Department of Economic and Social Affairs (UN DESA). (2025a). *The Sustainable Development Goals Extended Report 2025: Goal 2*. [https://unstats.un.org/sdgs/report/2025/extended-report/Extended-Report-2025\\_Goal-2.pdf](https://unstats.un.org/sdgs/report/2025/extended-report/Extended-Report-2025_Goal-2.pdf)
  11. United Nations Department of Economic and Social Affairs (UN DESA). (2025b). *The Sustainable Development Goals Extended Report 2025: Goal 12*. [https://unstats.un.org/sdgs/report/2025/extended-report/Extended-Report-2025\\_Goal-12.pdf](https://unstats.un.org/sdgs/report/2025/extended-report/Extended-Report-2025_Goal-12.pdf)
  12. World Bank. (2023). *Strengthening food assistance programs for vulnerable populations: Community kitchens program* (Project ID P180092). <https://documents1.worldbank.org/curated/en/099070723094033922/pdf/P1800920c620e80a0a301046f37154079b.pdf>