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མཉམ་སྲུང་འགྲུལ་དང་ཚོང་འབྲེལ་རྒྱུ་བ་ཡར་དྲག་ལས་འགྲུལ།
Ministry of Agriculture and Livestock
Building Resilient Commercial Smallholder Project
Pelrithang: Sarpang



Report on Establishment of Nutrition Model Garden (NMG) for Demonstration

Date: July to August 2025



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1. Introduction

The Nutrition Model Garden (NMG) initiative was implemented as part of the Building Resilient Commercial Smallholder Agriculture (BRECSA) Project, which seeks to catalyze a 30% increase in resilient commercial agricultural production and improve nutrition security in four target Dzongkhags by 2030.

Although the original target was to establish 25 NMGs across Sarpang, Tsirang, Trongsa, and Zhemgang, seasonal constraints prevented implementation in Tsirang and Sarpang during this cycle. Consequently, this reporting phase covers eight established NMGs in Trongsa and Zhemgang. Activities in the remaining districts are scheduled to begin in September 2025.

The first pilot garden in Nubi Gewog (Trongsa) served as a reference model, refining approaches later applied across other gewogs. This report presents gewog-wise implementation, beneficiaries, key activities, challenges, findings, and recommendations.

2. Objectives

The NMG development activities were designed to:

- Enhance household food and nutrition security through diversified agricultural production.
- Promote sustainable and organic farming practices.
- Improve dietary diversity by producing nutrient-rich crops.
- Build farmer capacity in waste management, composting, and organic inputs.
- Reduce dependency on chemical fertilizers and pesticides.
- Demonstrate integrated farming (vegetables, poultry, dairy, bio-inputs) for replication.

3. Implementation Approach

Implementation followed a theory and practice model combining short awareness sessions with hands-on training. Common approaches across gewogs included:

1. Bed Preparation: Horizontal beds (1m wide, 2ft spacing) to reduce erosion.
2. Nursery Management: Poly tunnels (1m × 2–5m) for seedling protection.

3. Diverse Crop Cultivation: Spinach, broccoli, cauliflower, carrots, radish, beans, tomatoes, and coriander.
4. Dairy Waste Utilization: Converting cow dung/urine into liquid fertilizers and natural pesticides (standard recipe: 1kg dung + 1L urine + 150g fruit + 10L water, diluted 1:10).
5. Heap Composting: Layering agriculture, livestock, and forestry residues.
6. Natural Pesticides: Garlic, chili, cow urine, dung, and oil mixtures.
7. Poultry Support: Layer birds and housing for nutrition and income.

4. Gewog-wise Implementation

4.1 Trongsa Dzongkhag

4.1.1 Nubi Gewog (Initial site)

- Beneficiaries: Women-headed household, inclusion of 3 People living with Disabilities (PWD) members.
- Activities: Dairy waste management, bed preparation, nursery with poly tunnel, heap composting, natural pesticides, poultry support (5 layers).
- Vegetables grown: Spinach, radish, beans, cabbage, broccoli, cauliflower.

4.1.2 Langthil Gewog (Baling chiwog)

- Beneficiary: Woman-headed, with 2 PWD members.
- Activities: Raised beds, crop planning, site selection for kitchen gardens.
- Support: Seeds, mushroom spawn, 5 indigenous chickens, cow shed CGI.

4.1.3 Drakteng Gewog (Kuengarabten)

- Beneficiary: Woman farmer.
- Activities: Nutrition awareness, climate change awareness, mushroom cultivation, orchard and nursery management, biochar production, poultry housing.
- Vegetables grown: 8 types including carrot, spinach, tomato, coriander.

4.2 Zhemgang Dzongkhag

4.2.1 Nangkor Gewog (Goling chiwog)

- Beneficiary: Woman farmer, 25 participants engaged.

- Activities: Heap composting, biochar, water management, poly tunnels, pest management.
- Support: Fencing materials, syntax tank, poultry house mesh, water pipes, seeds
- Challenges: Topography, reluctance on poultry, heavy downpours.

4.2.2 Bjoka Gewog (Barihung village)

- Beneficiary: Youth farmer with 1 cow & 15 poultry.
- Activities: Dairy management, diversified crops (9 varieties), nursery, composting, natural inputs.
- Vegetables grown: Spinach, tomato, peas, cabbage, broccoli, carrots.

4.2.3 Goshing Gewog (Lamtang chiwog)

- Beneficiary: Male farmer with existing greenhouse.
- Activities: Extension of garden (10 decimals), horizontal beds, seed sowing, composting, poultry management (planned).

4.2.4 Bardo Gewog (Langling village)

- Beneficiary: Male lead farmer.
- Activities: Small garden intensification, nursery tunnels, liquid fertilizer, poultry support (3 layers).

4.2.5 Trong Gewog (Berti village)

- Beneficiary: Woman-headed household with piggery & poultry.
- Activities: Vegetable diversification, bed preparation, nursery, composting, natural pesticides.

5. Challenges

Despite the successful establishment of NMGs across Trongsa and Zhemgang, several challenges emerged during the implementation phase. These challenges reflect both contextual constraints and operational limitations, which need to be addressed to sustain impact and future scale up. The following key challenges were observed:

- Seasonal timing: Delay prevented activity in Tsirang & Sarpang.
- Topography: Some guidelines difficult to apply in sloping terrains.
- Beneficiary preferences: Reluctance to rear poultry in some cases.

- Weather extremes: Heavy rain disrupted soil preparation.
- Follow-up difficulties: Remote sites limited frequent monitoring.
- Input supply: Timely sourcing of seeds, poultry, and materials posed challenges.

6. Results and Findings

In the face of identified challenges, the NMGs initiative has nonetheless demonstrated significant progress in strengthening farmer capacity, promoting sustainable practices, and improving nutrition outcomes. The key results and findings are summarized below:

- 8 functional NMGs were established in Trongsa and Zhemgang.
- Farmers' skills improved in composting, nursery management, liquid fertilizer preparation, and crop diversification.
- Waste recycling practices (cow dung/urine use, composting) successfully adopted.
- Integrated farming (vegetables + poultry + dairy) was demonstrated
- Mushroom cultivation introduced as income diversification.
- Nutrition awareness (dietary diversity, protein, iodine, breastfeeding) is well received.
- Community interest, that is non-beneficiaries expressed willingness to replicate. This interest provides strong motivation for scaling up nutrition gardens at the household level.

8. Recommendations

To ensure long-term adoption, scaling, and sustainability of the NMGs approach, the following recommendations are put forward:

1. Regular follow-up visits by extension staff and SJs.
2. Farmer Self-Help Groups for peer learning and joint marketing.
3. Advanced training on seed saving, value addition, and integrated farming.
4. Input provision mechanism for quality seeds, poultry, piglets, and construction materials.
5. Systematic documentation of success stories for wider dissemination.

6. Seasonal planning for scaling in Tsirang & Sarpang
7. Strengthen partnerships with gewog administrations and sector heads.
8. Monitoring tools to track crop yield, diet improvement, and income impacts.

8. Conclusion

The Nutrition Model Garden initiative has successfully established eight demonstration sites across Trongsa and Zhemgang Dzongkhags. While implementation faced challenges related to seasonality, topography, and input supply, the initiative has nonetheless made substantial progress in enhancing the capacity of smallholder farmers, promoting organic and sustainable practices, and improving nutrition-sensitive agriculture outcomes.

The established model gardens now serve as practical community learning sites, showcasing integrated farming systems that link food production, waste management, poultry rearing, and nutrition awareness. These demonstration sites not only strengthen local food and nutrition security but also encourage wider adoption of environmentally sustainable practices.

With the lessons learned from this phase, the project is well-positioned to scale up remaining 17 Nutrition Model Gardens in Tsirang and Sarpang and to transition towards promotion of nutrition garden for household-level adoption. This scaling will reinforce BRECSA's goal of fostering resilient, climate-smart, and nutrition-sensitive agricultural systems that contribute to improved livelihoods, dietary diversity, and community resilience in Bhutan.

9. Annexure

1. Beneficiary list
2. Photographs from the field

Annex. 1**- Beneficiary Details**

Name	Age	CID	Village	Chiwog/Gewog	Household members	Remarks
Trongsa						
1.Chenzom	65/F	11704002451	Dorji Gonpa	Bagochen,Nubi	3	Women headed
2. Langanmo	43/F	11703000720	Baling		6	Women headed with 2 PWD members
3. Kinzang Mo	42/F	11701000482	Kuengarabten	Dragteng		
Zhemgang						
1.Tshering Tshomo	36/F	12004002341	Wandra	Goling	5	
2. Lhakpa Dorji	27/M	11202001351	Barihung	Trong	5	Youth & lead farmer
3. Rinchen Dorji	48/M	12003000848	Goshingbi	Goshing,Lamtang		
4. Passang Dorji	48/M	12001000528	Langling	Bardo	4	Lead and interested farmer
5. Pema Choden	38/F	11302000704	Berti	Trong	6	Woman-headed, interested farmer, progressive farmer

Annex 2

- Photographs from the field

Trongsa



Figure 1- Nubi gewog, Trongsa



Figure 2: Langthel Gewog, Trongsa



Figure 3: Dragteng Gewog, Trongsa

Zhemgang



Figure 4: Nangkor Gewog, Zhemgang



Figure 5: Bjoka Gewog, Zhemgang



Figure 6: Goshing Gewog, Zhemgang



Figure 7: Bardo Gewog, Zhemgang



Figure 8: Trong Gewog, Zhemgang

Thank you