



NUTRITION *in* CITY ECOSYSTEMS

January 2025

CITY OVERVIEW on food and nutrition



BANGLADESH

Dinajpur Municipality



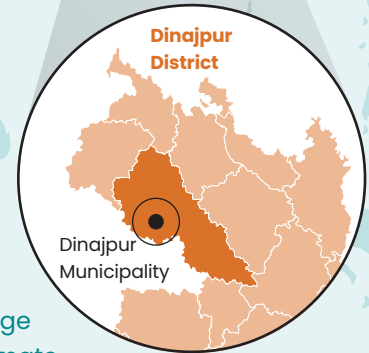
Basic facts

Dinajpur

Location

Dinajpur City is located in **north-western Bangladesh**. It is the administrative headquarters of the Dinajpur Municipality. On the east bank of the Punarbhaba River, this city is surrounded by **fertile agricultural land** contributing much to its economy. The region features **flat alluvial plains** that are ideal for a variety of agricultural activities.¹

Dinajpur has a **subtropical climate**; it experiences hot summers, mild winters, and a monsoon season. The yearly average rainfall is roughly **2,340 mm**, with most of it falling between June and September. Average high temperatures peak in August at an average of **27.9°C**. Average lows are normally in January, at an average temperature of **17.3°C**. The climate of Dinajpur is fitting for crops such as rice, wheat, maize, and sugarcane due to its suitable climate and **fertile soil**. The area is also famous for cultivating qualitative mango and lychee, which play a significant role in fruit production in Bangladesh.¹



Demographics

- **Population** – Dinajpur District:^{*}
3,392,251 people
→ Males: 50.1%
→ Females: 49.9%
- **Density**: 985 people/km²
(*appreciably denser in urban areas*)

- **Population** – Dinajpur Municipality:^{*}
212,275 people
→ Males: 51%
→ Females: 49%
- **Density**: 9,300 people/km²
- **Average household size**: 4.5 people

* 2022 census

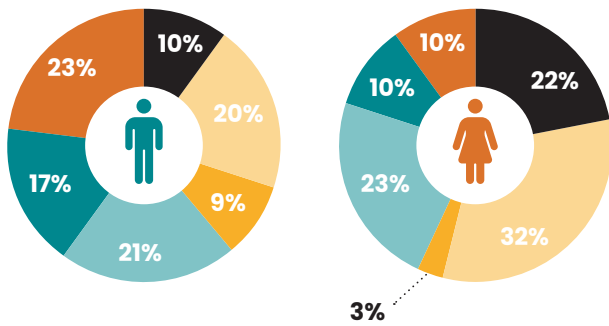
On average, a household in Dinajpur consists of about **4.5 members**, with **males heading** about **90%** of these households. This is against the backdrop of Bangladesh being placed **99th** out of 146 countries in the 2024 global **Gender Inequality Index**, pointing to continuous national challenges in advancing towards gender parity. This represents a significant drop from its previous rank of 59th in 2023, largely driven by a decline in economic gender parity – particularly in equal income distribution and women's representation in senior leadership roles.

The **Bengali** ethnic group predominantly inhabits Dinajpur, though indigenous people, including the **Santal** and **Oraon**, live there as well. **Bengali** is the mother tongue with regional dialects. **English** is used widely in official, educational, and some business circles.^{2,3,4}

In religious composition, about **79%** of the population is **Muslim**. **Hindus** make up about **19%**, while the rest **2%** consists of **Buddhists**, **Christians**, and followers of **indigenous religions**. This diversity adds to the richness of culture in Dinajpur.^{2,3}

Household head education³

- No school
- Primary school – not completed
- Primary school – completed
- Secondary school – not completed
- Secondary school – completed
- Tertiary education



Living conditions

Agriculture in Dinajpur is the backbone of the economy and accounts for employment by approximately 70% of the population. Among these agricultural workers, about 78% own **less than 12 acres of farmland**, while about 24% have **2 acres or less**.

Despite efforts to improve economic conditions, poverty remains a significant challenge, with approximately 42% of the district’s population living **below the poverty line**.^{5, 6, 7}

There is a lack of access to basic services such as clean water and sanitation. Only about 34% of households have access to safely managed **drinking water sources**. The main source of drinking water is **boreholes**, utilized by around 98% of households. Unfortunately, the risk of arsenic contamination in groundwater poses serious health concerns. On the other hand, 74% of households have access to **sanitation facilities**, such as sanitary toilets with water seals.^{5, 7, 8}



General health statistics

Health status

In Dinajpur, the average **life expectancy** stands at around **72.6** years for **women** and **70.6** years for **men**, figures that closely mirror the national averages.

Across the nation, health insurance coverage is still strikingly low, with fewer than **10%** of the population having any form of **insurance**. Consequently, out-of-pocket health expenditures make up around **67%** of **total health spending** in the country, representing a deep well of inequity and a financial burden on poor households.^{9,10}

Healthcare infrastructure is underdeveloped in Dinajpur, with only about **8 hospital beds** per 10,000 people – just a little below the national average. The number of **health workers** is about **5** per 10,000 people, far below the recommended minimum by the World Health Organization of 23 healthcare workers per 10,000 people. This shortage has an impact on quality and accessibility in health services.^{9,10,11}

Access to health services is not uniform across Dinajpur. It is estimated that around **65%** of the households have access to either **public or private health facilities within a 5 km radius**. Those living in rural outskirts and peri-urban areas, however, are disadvantaged by poor roads and lack means for transportation. Of the total **968 km** of **roads** in Dinajpur, only **222 km** are **paved**. During the monsoon season, flooding renders the roads impassable, further reducing access to health facilities and emergency services.^{9,12}

While national initiatives like the **Shasthyo Surokhsha Karmasuchi (SSK)** are designed to provide health coverage for the poor, it is estimated that only about **5%** of **Dinajpur residents** are covered under such schemes. This low coverage underlines considerable barriers in access to basic health services, increasing the burden of health among the vulnerable populations of Dinajpur.¹¹



Malnutrition is still a problem in Dinajpur; it most affects **children** and **women** of reproductive age. High levels of undernutrition and micronutrient deficiencies, including anemia, are hampering the general health and development of people. In addition, there is a lack of **dietary diversity** due to the high reliance on staple foods like rice and potatoes. Although underweight, stunting, and wasting remain far more prevalent, the double burden of malnutrition cannot be overlooked in light of rising overweight rates, the growing burden of **non-communicable diseases (NCDs)** in urban areas, and the importance of recognizing these interconnections. NCDs have become a major contributor to ill health in Bangladesh, accounting for an estimated **64%** of **all deaths** by the year 2021. The leading contributors to this burden of NCDs include **cardiovascular diseases,**

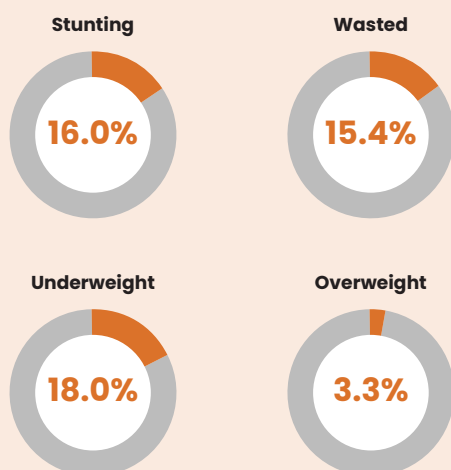
diabetes, cancers, and chronic respiratory illnesses, many of which are causes of premature death.¹³

This is on the rise because of risk factors such as tobacco use, unhealthy diets, physical inactivity, and air pollution. In response to these challenges, Bangladesh adopted the **Multisectoral Action Plan for NCD Prevention and Control**, putting emphasis on intersectoral collaboration in the management of risk factors to reduce the socioeconomic impact on families and community.^{13,14}

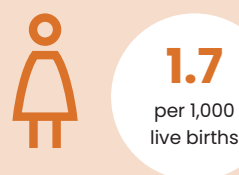
Globally, rates of exclusive breastfeeding in the first six months of life are at **48%** for 2023. Dinajpur performs better than the global average, with **59%** of infants being **exclusively breastfed** during this first life period.⁵

Key facts^{6,7}

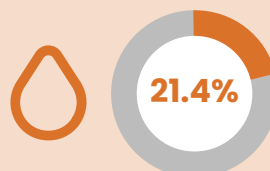
Health of children under 5 years (2022)



Maternal mortality



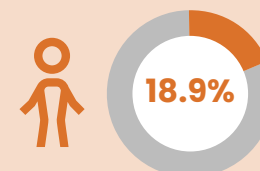
Pregnant women with anemia* (Hb<11g/dl)



Infant mortality



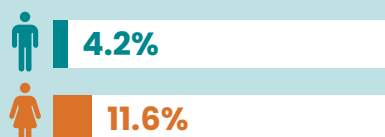
Low birth weight* (<2,500g)



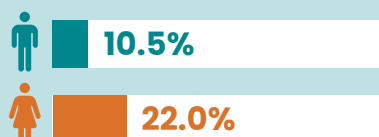
* measured at the antenatal clinics from January to March 2021

Prevalence of overweight

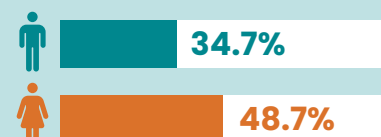
Adolescent 10–19 years



Youth 15–24 years



Reproductive age 15–49 years



Applying a systems approach to the Farm to Fork logic

Production

As mentioned earlier, Dinajpur's economy is powered predominantly by its **agricultural sector**. Mixed farming systems prevail, with most households engaging in both **crop cultivation** and **livestock rearing**, making agriculture diverse and resilient. **Staple crops** such as rice and potatoes are extensively grown and serve as the primary sustenance for the local populace. In addition to these staples, **seasonal vegetables** like bitter gourd, brinjal, and tomato, as well as **perennial fruits** like mango and litchi, and **leguminous crops** like alfalfa and lentil further diversify agricultural practices. These crops also contribute to maintaining and enhancing soil fertility.¹⁵

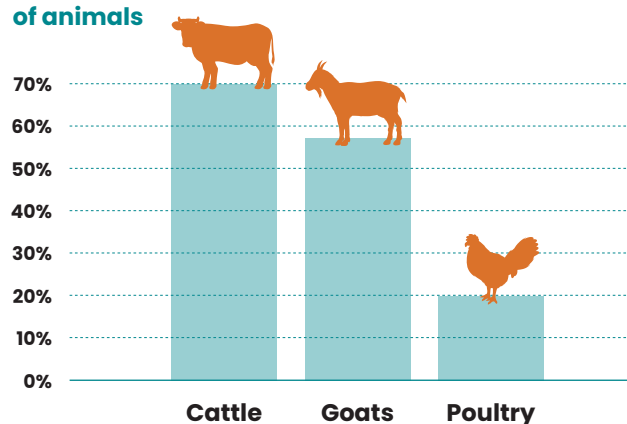
Livestock farming primarily focuses on **cattle** and **goats**, though some farms also raise poultry and engage in fishery, adding dimension to farming even on a relatively small scale. The integration of crop and livestock farming ensures greater **sustainability and resilience** within the agricultural sector.¹⁵

Institutional loans are available through agencies such as Grameen Bank, Krishi Bank, and Sonali Bank, as well as NGO support from organizations like Asa, which has begun providing much-needed assistance

to smallholders. Although currently accessed by only a small proportion (1.3%), this financial support serves as a **safety net for farmers** and encourages agricultural expansion.

Continuous improvements in agriculture, driven by both government and non-government organizations through **training** and **extension services**, may bring renewed hope and stability to the farming community in Dinajpur.^{5,15}

Household participation in the production of animals



Household participation in the production of crops

Seasonal crops ^a (Top 4)	% of households engaged in production
Rice	91%
Potato	77%
Bitter gourd	38%
Brinjal	37%

Perennial crops ^b (Top 4)	% of households engaged in production
Mango	61%
Litchi	36%
Lemon	15%
Guava	13%

Leguminous crops ^c (Top 4)	% of households engaged in production
Alfalfa	27%
Lentils	27%
Soya bean	18%
Neem	9%



a) **Seasonal crops** are plants that are cultivated and harvested during specific times of the year.

b) **Perennial crops** are plants that live for multiple years and produce crops year after year.

c) **Leguminous crops** are plants known for their ability to fix nitrogen in the soil, enhancing soil fertility.

Farming and agroecological practices

Farmers in Dinajpur manage **soil fertility** using both **organic** and **synthetic inputs**. While the former is widely applied, organic practices also include heavy applications of **livestock manure** and **compost**, which many farmers produce on their farm. Although **pests** pose a significant challenge, farmers adopt only partial pest management; therefore, this represents another entry point for enhanced agroecological approaches.¹⁵

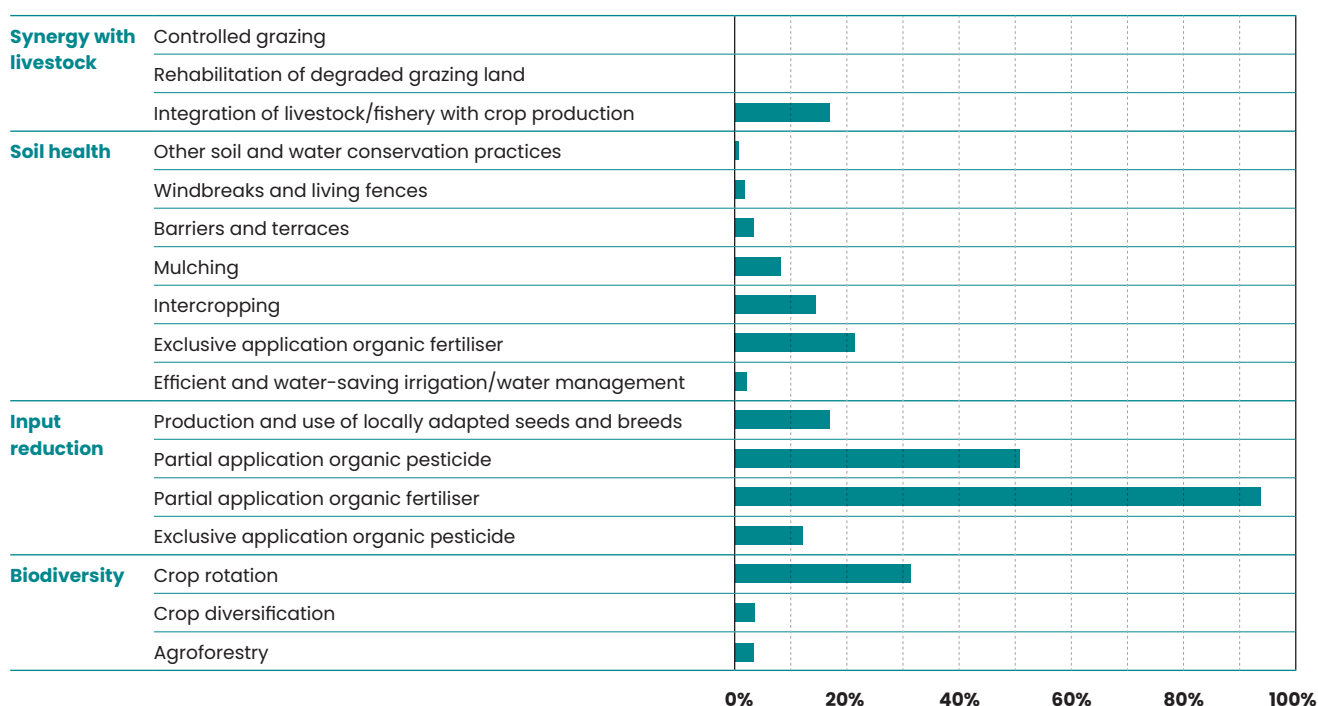
While there are approaches that could reduce reliance on inputs like **organic fertilizers** and **crop rotations**, they are not sufficiently emphasized. Never-

theless, farmers often continue to use **traditional livestock breeds** while adapting to newer **crop varieties**, reflecting a mix between maintaining traditional practices and adopting modern agricultural techniques.¹⁵

Additionally, local initiatives and support from agricultural organizations encourage farmers toward sustainability. Promoting **integrated pest management** and **soil conservation methods** aims to increase yields while minimizing environmental impacts. These efforts could pave the way for greater **food security** and **sustainability** in the agriculture of Dinajpur.¹⁵

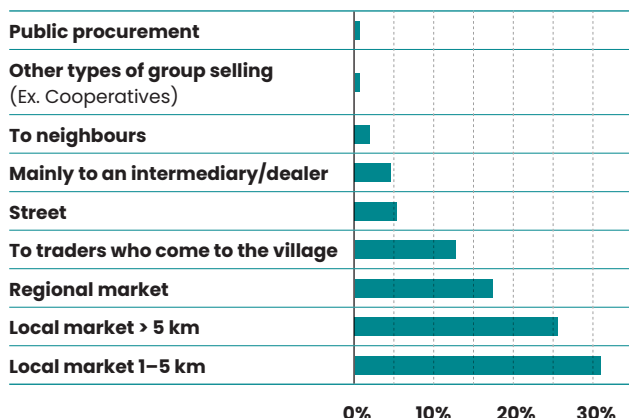


Agroecological practices



Selling locations

Most prominent selling channels/locations of farming output in Dinajpur



Local markets are the primary outlets in Dinajpur where farmers sell their produce. Most households sell their goods within a **short distance** from their farms. However, some farmers expand their marketing networks into **regional markets**, demonstrating a desire to reach **larger markets** for better profitability. Direct sales to visiting traders in the villages are also an important channel, allowing farmers to sell their goods without having to travel.¹⁵

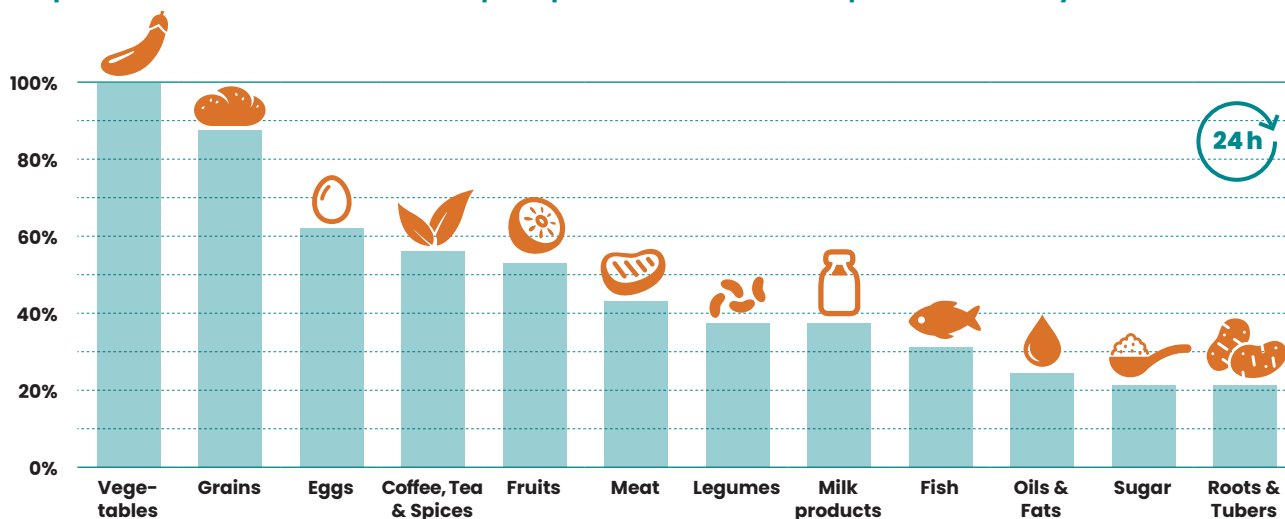
While selling methods through **street vending**, **middlemen**, and **cooperatives** are limited, they indicate potential avenues for development that could

enhance smallholders' access to these markets. Furthermore, **underdeveloped transport infrastructure** and related logistical challenges complicate farmers' ability to tap into larger markets. Improved **roads** and **transport services** could open up significant market opportunities and potentially increase farm incomes.

Other ways to empower farmers include strengthening **cooperative societies** and **farmer associations** by aggregating their produce, enhancing bargaining power, and ultimately enabling them to secure better prices and access larger markets.¹⁵

Food consumption

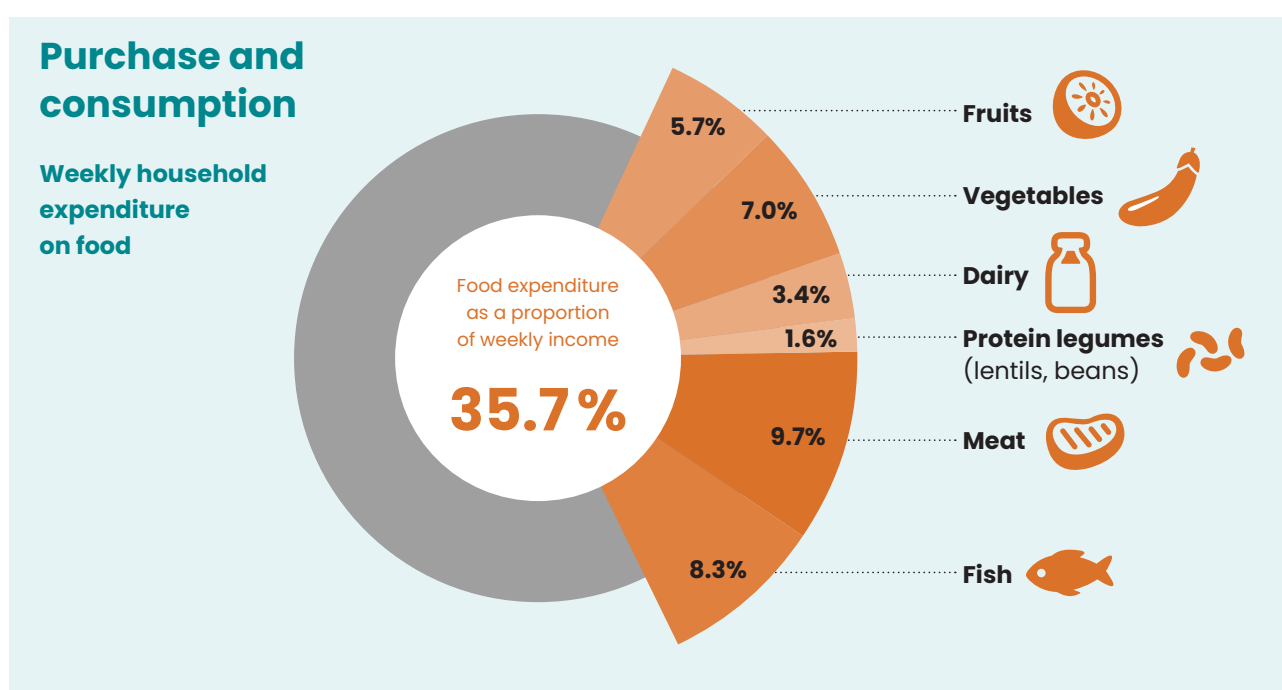
Respondents' household food consumption patterns in the 24 hours prior to the survey



The food culture of Dinajpur is primarily **plant-based**, with vegetables forming a major part of almost every household diet. **Grains** are also a staple in nearly every meal. **Eggs** and **fruits** are relatively common, although fewer households regularly consume **animal protein** such as meat, fish, or dairy. This emphasis on plant-based foods reflects local production patterns and economic factors, as animal products may be less accessible or more expensive for many residents. The average **household dietary diversity score** in Dinajpur is 7.6, higher than in most other cities, suggesting that households consume a wider range of food groups. However, there is still room for

improvement to ensure all residents have access to a fully **balanced and nutritious diet**.¹⁵

The reliance on plant-based foods has nutritional implications, particularly concerning **protein intake** and **micronutrients** typically derived from animal sources. Promoting the production and consumption of **protein-rich plant foods**, such as legumes and pulses, could help address these nutritional gaps. Additionally, **nutrition education programs** could raise awareness about the importance of a balanced diet, encouraging the inclusion of a wider variety of foods to improve overall health outcomes in the community.¹⁵



Women, youth, and other vulnerable groups

Women and youth are often carrying an **undervalued load of work** in farming activities in Dinajpur. **Inequalities** persist in decision-making and along the value chain. While female respondents hold most decision-making powers in subsistence crop farming, men dominate in cash crops and decisions related to livestock. Young women are actively involved in agricultural production and show a keen interest in taking on more **farming responsibilities**. However, their roles are typically concentrated in **post-harvest activities like sorting, processing, and storage**.¹⁵

The **NICE project** seeks to enhance the role and engagement of women and youth across the entire value chain. This initiative will not only involve traditional roles of women in post-harvest handling but also encourage their active participation in **planning production, marketing, and value addition**, supporting more equitable and sustainable food systems.¹⁵

For more detailed insights into farming systems, please refer to the [Farmers Survey Report](#)

Nutritional challenges



Food production and diversity



Dinajpur's agriculture is based on **staple crops** such as rice, which restricts most of the locally produced foods. Though the presence of a number of **seasonal** and **perennial crops** indicates some form of dietary diversity, actual consumption of legumes, fruits, and animal proteins remains very low. This lack of **dietary variety** poses a serious **nutritional challenge**, particularly to vulnerable populations like **children** and **women of reproductive age**.¹⁵

Nutrient deficiencies – sometimes called “**hidden hunger**” – are also widespread in the region. Along with the dearth, there are widespread **micronutrient deficiencies**, such as a lack of vitamins and minerals like **iron, vitamin A, and zinc**. These can cause serious health problems, including **anemia, weakened immune defenses, and stunted growth** in children. The solution to these problems involves diversifying the food supply and increasing knowledge about healthy eating.¹⁵

Climate and ecological impacts



The agricultural system of Dinajpur is under a formidable threat due to climate-related challenges, including **erratic rainfall patterns, floods**, and an unsettling rise in the frequency of **extreme weather events**. These problems are further aggravated by certain **pest infestations**, such as **insect borers** and **brown hoppers**, that cause severe damage to crop yields. Low adoption of integrated pest management

and sustainable ecological practices, guided by enhanced training and resources, calls for strong support to resilient and environmentally friendly farming. This might entail the adoption of **climate-smart agriculture**, a practice that empowers farmers to adjust to environmental shifts, enhances productivity, and reduces susceptibility to climate-related disruptions.¹⁵



Market access and post-harvest practices

Limited infrastructure and market access hinder farmers' ability to sell their produce beyond their local areas, adversely affecting their **income potential** and restricting the community's access to a **diverse array of foods**. Most farmers find themselves selling their goods **locally**, where insufficient transport and storage facilities lead to significant post-harvest losses, especially for perishable items. Improving **infrastructure** in the value chain, such as establishing

transportation networks or **cold storage facilities**, could reduce these losses and increase **food diversity** throughout the year, enhancing **food security** and **nutrition**. Turning to income, our survey of farming showed an average perceived income score of **6.5 out of 10**. While some farmers manage to reach financial stability, many are highly vulnerable to **market fluctuations** and **environmental stressors**.¹⁵

Farm resilience and knowledge sharing



The community in Dinajpur displays excellent social cohesion and collaboration; however, there are significant gaps in **knowledge sharing** and **sustainable resource management**. The low adoption of practices that integrate with ecosystems indicates the need for better **education** and **extension services**. It would be possible to encourage sharing of knowledge relat-

ed to sustainable practices, resource conservation, and innovative farming techniques by establishing **community-based learning networks** and **farmer field schools**. Fortifying the crop areas means the farmers will build their **resilience** to the shifting environments to better their lives.¹⁵



Policy environment



National

National Food and Nutrition Security Policy – NFNSP (2020–2030)

The NFNSP stands as a cornerstone policy dedicated to ensuring **food security** and **nutrition** throughout Bangladesh. In Dinajpur, this policy assumes a particularly vital role, given the significant rural population that depends on agriculture for its livelihood. It tackles the pressing issues of **food insecurity**, **malnutrition**, and **dietary deficiencies**, challenges that are especially pronounced in Dinajpur’s rural and vulnerable communities. The policy prioritizes the availability of food and aims to reduce malnutrition by enhancing access to **safe and nutritious options**. The **NICE project** in Dinajpur can leverage this policy by encouraging agroecological practices to increase local food production and enhance **dietary diversity**, especially for **women and youth**.^{16, 17}

National Nutrition Policy

This policy, launched in 2015, addresses the issue of **malnutrition**, with a strong emphasis on maternal and child nutrition. In Dinajpur, where **child stunting** and **maternal anemia** are widespread health challenges, the goals of this policy match the needs of the region. The National Nutrition Policy encourages multisectoral collaboration by bringing together **health**, **agriculture**, and **social services** to address **undernutrition**. NICE’s efforts to promote nutrition-sensitive agriculture could enhance the policy’s implementation, particularly by targeting **vulnerable populations** like women and children in Dinajpur’s peri-urban areas.^{16, 18}

National Agriculture Policy

This policy was enacted in 2018 to increase the productivity of agriculture while ensuring its **sustainability**. Dinajpur, with its agricultural base, benefits from this policy that encourages **modern farming techniques, climate-resilient crops, and agroecological practices**. The focus of the **NICE project** on sustainable agriculture in Dinajpur can help improve **food security** and nutrition outcomes by supporting the growing of nutrient-dense crops and responsible farming practices that reduce environmental degradation.^{16,19}

Second National Plan of Action for Nutrition – NPAN2 (2016–2025)

This plan aims at **malnutrition** through multi-sectoral collaboration in health, agriculture, and social protection initiatives. In Dinajpur itself, where **poverty** and **malnutrition** are most pervasive, it is very crucial for enhancing access to nutritious food and for reducing **stunting** according to the strategy of NPAN2. However, local capacities for implementation are still short, especially in **peri-urban areas**, where issues of **food insecurity** are manifold.^{16,20}

Bangladesh Climate-Smart Agriculture Strategy

Dinajpur is highly exposed to **climate change**, impacts of which are felt directly on agricultural productivity and, consequently, food security. The Bangladesh Climate Smart Agriculture Strategy was adopted in 2018, which encourages practices and promotes **climate-resilient crops**; this is very apt for Dinajpur due to rising poverty rates, linked to environmental challenges. The strategy encourages the use of **flood- and drought-resistant varieties** of crops for maintaining **food security** in this region.^{16,21}



Final notes



Limitations

Despite the involvement of local city officials and the use of data generated by the NICE project, there remains a dearth of information that is focused solely on Dinajpur City within the larger administrative unit. In cases where city-level data was unavailable, urban data from the broader administrative area or national data has been used as a reference.

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Further information is available on the **NICE webpage:**

nice-nutrition.ch