



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 29-Apr-2022 | Report No: PIDC33808

**BASIC INFORMATION****A. Basic Project Data**

Country India	Project ID P178239	Parent Project ID (if any)	Project Name National Dairy Support Project (NDSP) - Phase 2 (P178239)
Region SOUTH ASIA	Estimated Appraisal Date Jan 09, 2023	Estimated Board Date Mar 31, 2023	Practice Area (Lead) Agriculture and Food
Financing Instrument Investment Project Financing	Borrower(s) Republic of India	Implementing Agency Department of Animal Husbandry and Dairying, National Dairy Development Board	

Proposed Development Objective(s)

The project development objective is to support the development of an inclusive and competitive milk value chain, focusing on smallholder livestock rearers and producer-owned institutions in the project area.

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	174.43
Total Financing	174.43
of which IBRD/IDA	77.81
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	77.81
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Non-World Bank Group Financing

Counterpart Funding	96.62
Borrower/Recipient	77.81
Local Beneficiaries	18.81



Environmental and Social Risk Classification

Moderate

Concept Review Decision

Track I-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Growth rebound in FY22 has been quick, pulled up by investment, recovering consumer demand and, more importantly, a low base.** Real GDP growth moderated from an average of 7.4 percent during FY15/16-FY18/19 to an estimated 3.7 percent in FY19/20¹, mostly due to (i) shocks to the financial sector, and (ii) decline in private consumption growth². Against this backdrop, the outbreak of COVID-19 had a significant impact, with real GDP contracting by 6.6 percent in FY20/21³. On the fiscal side, the general government deficit widened significantly in FY20/21, owing to higher spending and low revenues⁴. However, with the easing of Covid-19 restrictions, Goods and Services Tax (GST) collections have crossed INR 1.1 trillion mark every month since July 2021. The robust GST revenues are expected to continue as the economic recovery gathers momentum. The real GDP growth⁵ for FY21/22 is likely to be 8.3 percent, on the back of increased capital expenditure by the government and recovering consumer demand. The real GDP in FY21/22 is expected to reach the FY19/20 level. Given the global concerns on significant uncertainty around the pandemic, elevated inflation, geo-political tensions and extended supply disruptions, growth in FY22/23 is expected to be 8 percent⁶. Nonetheless, the expected recovery will put India among the world's fastest-growing economies over the next two years.

2. **Although India has made remarkable progress in reducing absolute poverty in recent years, the COVID-19 outbreak has delayed the course of poverty reduction⁷.** Between 2011-12 and 2020-21, India's poverty rate is estimated to have declined from 22.5 percent⁸ to values estimated to range between 9 to 12.3 percent.⁹ However, recent projections of GDP per capita growth, taking into account the impact of the pandemic, suggest that poverty rates in 2020 have likely reverted to estimated levels in 2016.¹⁰ Labor market indicators from high frequency surveys -including from the Centre for Monitoring Indian Economy (CMIE)- suggest that vulnerability has increased, particularly for urban households. Overall, the pandemic and its economic impacts are estimated to have raised urban poverty, creating a set of "new poor" that are relatively more likely to be engaged in the non-farm sector and to have received at least secondary education.

1 National Accounts Data, National Statistical Office, Ministry of Statistics and Program Implementation (MOSPI).

2 National Accounts Data, National Statistical Office, MOSPI.

3 National Accounts Data, National Statistical Office, MOSPI.

4 Union budget 2021, 2022, Ministry of Finance.

5 World Bank real GDP forecast published in April 2022.

6 World Bank real GDP forecasts for FY22/23 published in April 2022.

7 World Bank projections. The Government of India has deployed significant resources for social assistance, including towards urban poor households and migrants.

8 Consumption Expenditure Survey 2011-12, National Sample Survey Office (NSSO), Government of India;

9 World Bank estimates. Macro Poverty Outlook, October 2021.

10 World Bank estimates. Source: Macro Poverty Outlook, 2020.



Sectoral and Institutional Context

3. **India's dairy sector has seen a remarkable transformation over several decades, and it has become the largest milk producer in the world, accounting for about 21% of the world output** (FAOSTAT, 2021). After suffering from acute milk shortages for decades, an intense focus on dairy development activities initiated through Operation Flood (OF) programs between 1970 and 1996 increased milk production rapidly from 21.2 million tons in 1968-69 to 55 million tons in 1991 to 146 million tons in 2014-15 to 210 million tons in 2020-21. The World Bank was a significant partner in this expansion, supporting five operations linked to OF led by the National Dairy Development Board (NDDB). A sixth operation supported the first phase of the National Dairy Development Plan, covering the period from 2012 to 2019.

4. **Dairy is the single largest agricultural commodity, contributing to 5% of the national economy and providing additional income to more than 80 million farmers (Economic Survey 2021-22)**. Livestock is the main source of livelihood for small and marginal farmers. Income of agricultural households from livestock has grown 53.6% between 2012-13 and 2018-19 and comprises 15.5% of total household income (SAS, 2019). Furthermore, cattle are an essential asset for many rural households, providing draught power, manure for agricultural production, and fallback against extreme weather. The dairy sector is also an important source of nutrition, accounting for 16% of per capita protein consumption - more than poultry, meat, and pulses. An assessment commissioned by NDDB estimates the overall domestic demand for milk to grow to 266 million tons by 2030, driven by a large population, cultural affinity towards dairy products, increasing per capita incomes and dietary changes. Further, there is significant inter-state variability in milk production and per capita milk availability of milk 2020-21. The all-India per capita availability of milk stands at 427 grams per day.

5. **The Indian dairy sector is characterized by a smallholder production system with small herd sizes and low productivity**. Globally, India has the largest bovine population comprised of 110 million buffaloes and 193 million cattle (Livestock Census, DAHD, 2019, FAOSTAT). These are distributed across nearly 80 million small-scale dairy farms in the country with an average herd size of 1-3 female bovines, reflecting the landholding pattern in the country⁷. Furthermore, 49% of total bovines nationally are non-descript animals, with the ratio of non-descript to descript bovines being higher than the national average in majority of states (Livestock Census, DAHD, 2019). Current milk yields across crossbred and indigenous cows and buffaloes range from only 20-60% of frontier yields globally – 2.8 litres per day (LPD) for indigenous cows, 7.5 LPD for crossbreds and 5.2 LPD for buffaloes against average global yields of approximately 20 LPD. Nationally, 75% of milk production comes from descript bovines, and 25% from non-descript bovines.

6. **Important drivers for yield improvements include breed improvement, provision of animal health services, and balanced nutrition**. However, current Artificial Insemination (AI) interventions only cover 30% of the breedable bovine population. Feed and fodder accounts for about 60-70% share in cost of milk production and the timely unavailability of nutritionally rich feed and fodder is a significant impediment on productivity growth. There is an estimated deficit of 284 million tons of green fodder and 122 million tons of dry fodder⁸. Relatively high incidence of animal diseases such as Foot and Mouth Disease (FMD), bovine mastitis, and brucellosis lower productivity and cause large economic losses. Mastitis alone is estimated to have caused economic losses worth US\$ 1.55 billion (2009). Strengthening provision of extension support to farmers, adopting appropriate policies to promote breed improvements, and enhancing the adoption of Good Animal Husbandry Practices (GAHP) at the community level will be critical in addressing these gaps.

7. **There are significant regional variations in the pace of dairy development, with the rapid growth of the private sector limited to a few states**. 12 states accounted for approximately 90% of overall milk production, with 80% of daily milk procurement through the cooperative sector further concentrated in just five states: Gujarat, Karnataka, Maharashtra, Tamil Nadu, and Rajasthan. Private sector participation in the sector has expanded rapidly and now exceeds

⁷ Compared to average herd size of 300 in the United States and 100 in China, the second and third largest dairy producers globally.

⁸ Report of the 34th Parliamentary Standing Committee on Agriculture.



the total daily milk procurement of the cooperative sector nationally. However, such investments are also concentrated in a few states where public investments have laid the foundation for market development and productivity enhancements. Private sector dairy firms have a strong foothold in 8 of the 12 major dairy producing states, but negligible presence in other states. Within these states, the private sector participation is further concentrated in a few geographies. Additionally, except for a few large corporate dairy companies, the private sector has been reluctant to invest in setting up the village level procurement system and is primarily dependent on collection agents⁹.

8. **Despite the development of a large cooperative institutional architecture and increasing private sector participation, a significant proportion of sales continues to be in the informal, unorganized sector.** OF created a three-tier cooperative structure¹⁰ to provide extension services to farmers, and to aggregate and market milk from rural areas to more than 200 cities and 550 smaller towns. Currently, there are 216,560 village level collection centres nationally covering about 18 million producer members with a total milk procurement of 19 million tons in 2019-20¹¹. However, even with increasing private sector participation, only an estimated 34% of marketable production – total production minus milk consumed by producers themselves – is procured by the formal sector, with 66% continuing to be procured and sold by local traders and contractors.

9. **Several reform measures at the national and state level have enabled growth of the sector and greater private sector participation, but significant regulatory and institutional capacity hurdles remain.** Expansion of the dairying sector in India and increased private sector competition means that the operations of the cooperative institutions have become more complex, requiring greater techno-professional management capacity. Many of the cooperatives are effectively parastatal organizations. Of the 14 major state-level cooperatives in the country, 10 have state government equity - 6 of these in excess of 51% - and some have government administrators instead of an elected board of directors. An analysis of the financial performance of 158 POIs¹², found that 40% of them were running with accumulated losses totaling INR 166 million, which limits their ability to fulfill their mandate of expanding service provision to farmers, milk procurement, and market development. Agriculture and allied sectors is a state subject and several critical policy and regulatory levers are held at the state level. These include increasing farmers equity in cooperative structures above the 50% controlling stake; creating a level playing field for all the producer owned institutions, and price subsidies to the cooperative sector, which risk crowding out private investments in the more developed dairy states.

10. **Food safety and quality, and underlying animal health issues, are gaining importance.** Evidence indicates that food safety consciousness (FSC) of the consumer influences greater expenditure, implying a latent demand for product attributes such as food safety. FSC consumers are more likely to choose formal market outlets and are willing to pay for safer and better-quality products. However, adoption of food safety measures at the dairy farm level is still low with wide interstate variations. While the Food Safety and Standards Authority of India (FSSAI) has minimum standards in place for milk and other dairy products, cooperatives and private sector firms must register with FSSAI and maintain product testing records for inspection, there is no such testing regime in place for the informal sector. Accessing higher value domestic and global markets will require a greater focus on traceability and food safety.

⁹ Nestle follows a twofold contracting arrangement. For those having more than 25 milch animals, it enters a formal contract. For small producers, the milk is procured through the agents, with whom the firm has a formal contract.

¹⁰ Three tier structures consist of a Dairy Cooperative Society (DCS) at the village level affiliated to a Milk Union at the District level, further federated into a Milk Federation at the State level. This three-tier structure delegates the various functions of the milk supply chain, viz., milk collection by the DCS, milk procurement and processing by the milk Union, and marketing by the State Milk Federation. This structure helps in eliminating not only internal competition but also ensuring economies of scale.

¹¹ NDDDB DPR – annex 1. Cooperatives cover 34% of Indian villages and 22% of dairy farmers.

¹² 8 Milk Federations, 148 Milk unions and 2 Producer Companies.



11. **Women account for a bulk of animal rearers and labor in the dairy sector, but face additional barriers in access to resources and extension services**¹³. Livestock rearing is the preferred occupational choice done mostly by women in farm households because it remains a traditional family activity in Indian households¹⁴. However, women tend to own and control smaller and less valuable livestock such as goats and poultry, while men tend to own and control larger and more valuable livestock such as cows. Additionally, despite significant labor contributions to upkeep of dairy animals, socio-cultural norms typically confer authority for income from sale of dairy products to men. Due to the design of extension systems and mobility constraints, women are also less likely to be able to access extension services. While significant progress has been made in enhancing inclusion of women in Producer Owned Institutions (POIs), women still only comprise 31% of overall POI membership (5.4 million women members out of a total membership of 17.2 million). Lessons from NDSP-I show that targeted interventions have significant impact, with women gaining confidence to demand fair wages; increasing influence in decision making; and increasing ownership of cattle.

12. **The livestock sector is a large contributor to GHG emissions, and the sector is also vulnerable to climate change impacts.** Dairy animals contribute 9%¹⁵ of the total Green House Gas (GHG) produced in India, including 52% of methane production. The sector's GHG emissions have been increasing due to an overall increase livestock production in response to higher consumer demand, and changes in production efficiency within the sector. While the production efficiency (measured by decreasing GHG emissions intensity) is increasing, India's dairy cattle emission intensity is still high in comparison to other leading dairy countries (with slightly lower buffalo emission intensity). Large variations in emission intensity are also found within the country, with some states like Jharkhand, Madhya Pradesh having higher emissions intensity than the national average. Increasing temperature affects most of the critical factors of livestock production, such as water availability, animal production and reproduction, and animal health mostly through heat stress, leading to animal morbidity, mortality, and distress sales. Appropriate mitigation measures need to be adopted to address these challenges.

Relationship to CPF

13. **The proposed National Dairy Support Project – Phase 2 (NDSP2) project aligns directly with the India Country Partnership Framework (FY18–22) and focuses on the CPF priority areas of Resource Efficient Growth and Quality Jobs for Women.** The project supports enhanced technical service provision and market access support to rearers, with a focus on women rearers, to enhance productivity, access to organized markets, and widespread adoption of climate friendly rearing practices, thereby increasing revenues, incomes, and resilience of milk producers. The program also focuses on enhancing the proportion of women technical service professionals in the dairy value chain including as para-veterinary workers and extension service providers. The proposed program has substantial investments aligned to the CPF focus on the “how” by strengthening the capacity of core institutions in the dairy sector – DAHD, NDDB, State Animal Husbandry Departments and POIs – to enhance quality, coverage, and cost recovery of critical support services. The project will partner with a select group of focus states to build planning and implementation capacity. The project also supports scaling up private sector participation through adoption and implementation of regulatory frameworks at the national and state levels, enhanced implementation of direct ongoing support interventions by DAHD, and increasing adoption of market standards on food quality and safety. Lastly, it supports Lighthouse India through joint knowledge generation and policy dialogue, with lessons from the focus states informing the dairy support program in other states.

¹³ Baseline survey of NDP-I has reported that of the total time spent on dairying, women's share is 64 per cent

¹⁴ https://www.dairyknowledge.in/sites/default/files/article_preference_for_dairying_among_rural_women_doing_domestic_duties_in_india.pdf

¹⁵ MoEFCC (2018). India: Second Biennial Update Report to the United Nations Framework Convention on Climate Change. Ministry of Environment, Forest and Climate Change, Government of India. Website: <http://moef.gov.in/wp-content/uploads/2019/10/BUR-Report-Final-2019-1.pdf>



C. Proposed Development Objective(s)

The project development objective is to support the development of an inclusive and competitive milk value chain, focusing on smallholder livestock rearers and producer-owned institutions in the project area.

Key Results (From PCN)

- a) Increase in net price realization at producer level (measured in real terms by increase over baseline in value of marketed output less costs),
- b) Increase in volume of milk sold through organized sector (disaggregated by gender and social category, with a target for women and Scheduled Cast (SC) and Scheduled Tribes (ST) and minorities populations),
- c) Increase in proportion of milk production sold through quality mark/quality assessment systems (disaggregated by gender and social category, with a target for women and SC and ST and minorities populations),
- d) Number of livestock rearers adopting climate-smart rearing practices.

D. Concept Description

18. The proposed project will address key well known gaps and deficiencies in the dairy sector in selected states in India and support the sector's transformation towards increased productivity, resilience, and profitability. By doing so it will contribute to key aspects of the GoI and the Bank's CPF strategic objectives related to faster and broader agriculture sector growth and inclusive development. The project will also work closely with the pipeline project under development – Animal Health System Support for Improved One Health (AHSSOH) – to enhance animal health management. In line with the PDO, the project will have four interlinked intervention areas to support the development of inclusive and competitive milk value chain viz., (i) Enhancing institutional capacity and sustainability; (ii) Strengthening dairy market development; (iii) Enhancing food safety and quality; and (iv) GHG mitigation and climate resilience.

- a. **Enhancing Institutional Capacity and Sustainability.** The focus on this intervention area is to enhance capacity of DAHD, NDDB, state Animal Husbandry and Agriculture Departments, and POIs to (i) adopt supportive policy framework to support market-led growth of the organized dairy sector (ii) increase coverage of technical and extension services to rearers, and (iii) more effectively perform aggregation and market access functions. Under this focus area, the project will also support an enabling framework and interventions to enhance private sector participation in the dairying sector.
- b. **Strengthening Dairy Market Development.** The focus of this intervention area is to enhance linkages of small producers, with a particular focus on women producers, to markets through market development activities, expansion of milk procurement and transportation logistics coverage, and development of value-added dairy products by POIs.
- c. **Enhancing Food Safety and Quality.** Strengthening food safety and quality interventions: the focus of this intervention area is to enhance food quality and safety across the value chains of milk and associated dairy products through enhanced testing and reporting; capacity building of NDDB, POIs and rearers; and scaling up of quality certification programs.
- d. **Mitigation and Climate Resilience.** The focus on this intervention area is to reduce per unit GHG emission from the dairy sector in focus states through supporting improved productivity and emissions reduction interventions.



Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

19. Environment and Social Risks/Impacts may arise from four interlinked intervention areas enhancing institutional capacity and sustainability; market development; food safety and quality; and greening investments - to enhance productivity and market access of milk producers in selected focus states. Once the activities are finalized, the team will segregate investments for Technical Assistance (TA) and investments for better articulation of environment and social risks. There are opportunities to strengthen systems to (i) enhance women and youth technical service professionals in value chains (including as para-veterinary workers and extension service providers), (ii) improve outreach to the vulnerable, particularly BPL, SC and ST, small and marginal farmers and OBCs, (iii) improve resource efficiency measures in both traditional dairying and processing sectors, (iv) enhance waste and manure management for reducing pollution and GHG emissions, and (v) promote indigenous livestock varieties for addressing climate change. The preliminary assessment indicates that the risks and impacts are: (i) exclusion of vulnerable sub-groups, from accessing project activities and decision making in the functioning of the POIs; (ii) increased workload for women dairy farmers; (iii) permanent loss of land and assets due to project activities; (iv) construction (minor civil works for milk pouring centers, rooms for equipment, small to medium processing centers etc.) induced impacts on host community, labour health and safety; (v) SEA-SH (Sexual exploitation and Abuse – Sexual Harassment) at the workplace and construction sites; (vi) inefficient resource use, such as, high energy consumption in milk processing and excessive water use in dairying; (vii) increased pollution and GHG emissions through mismanaged manure, dairy waste and poor feed quality, (viii) milk quality and food safety issues, (ix) occupational risks in procuring, installing and operationalizing equipment, such as, processing machinery, feed mill equipment, and maintenance of refrigerated trucks, (x) exposure to zoonotic diseases from frequent human-livestock-wildlife interactions; (xi) inadequate monitoring for evidence-based reporting; and (xii) implementing entities coordination. The SEA-SH risk assessment tool was applied, and accordingly, the score is 8 (on a scale of 0 to 25) and is therefore categorized as low risk.
20. Management of Environment and Social Risks/Issues: As per the preliminary assessment, ESS 1, ESS 2, ESS 3, ESS 4, ESS 5, ESS 6, ESS 7, and ESS 10 are relevant, and risks are expected to be moderate. The risk ratings will be reviewed during preparation. The project proposes to focus on strengthening the institutional capacity of the NDDB and states with environmental and social focal persons housed at NDDB and states to manage, monitor, and report on compliance. By appraisal, the Environmental and Social Management Framework (ESMF), Stakeholder Engagement Plan (SEP), and Environmental and Social Commitment Plan (ESCP) will be prepared to guide the preparation of impact assessments and mitigation plans for investments. SEA-SH risks mitigation measures will form part of the ESMF and sub-project ESMPs. The draft documents will be publicly disclosed prior to the appraisal, and final documents to be disclosed prior to Negotiations. The ESMP will provide actions, timelines, budgets, responsibilities, and monitoring mechanisms for risk mitigation.



CONTACT POINT

World Bank

Manivannan Pathy, Adarsh Kumar
Sr Agricultural Spec.

Borrower/Client/Recipient

Republic of India
Hanish Chhabra
Director
hanish.ias@ias.nic.in

Implementing Agencies

Department of Animal Husbandry and Dairying
Ms Varsha Joshi
Additional Secretary
jsdairy-ahd@gov.in

National Dairy Development Board
Meenesh Shah
Chairman & Executive Director
meenesh@nddb.coop

FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>

APPROVAL

Task Team Leader(s):	Manivannan Pathy, Adarsh Kumar
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Approved By

Practice Manager/Manager:		
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Country Director:	Kevin A Tomlinson	01-May-2022
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