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Investing in rural people

President's report

Proposed loan and grant to the Republic of Rwanda for the Rwanda Dairy Development Project

Note to Executive Board representatives

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For: Approval

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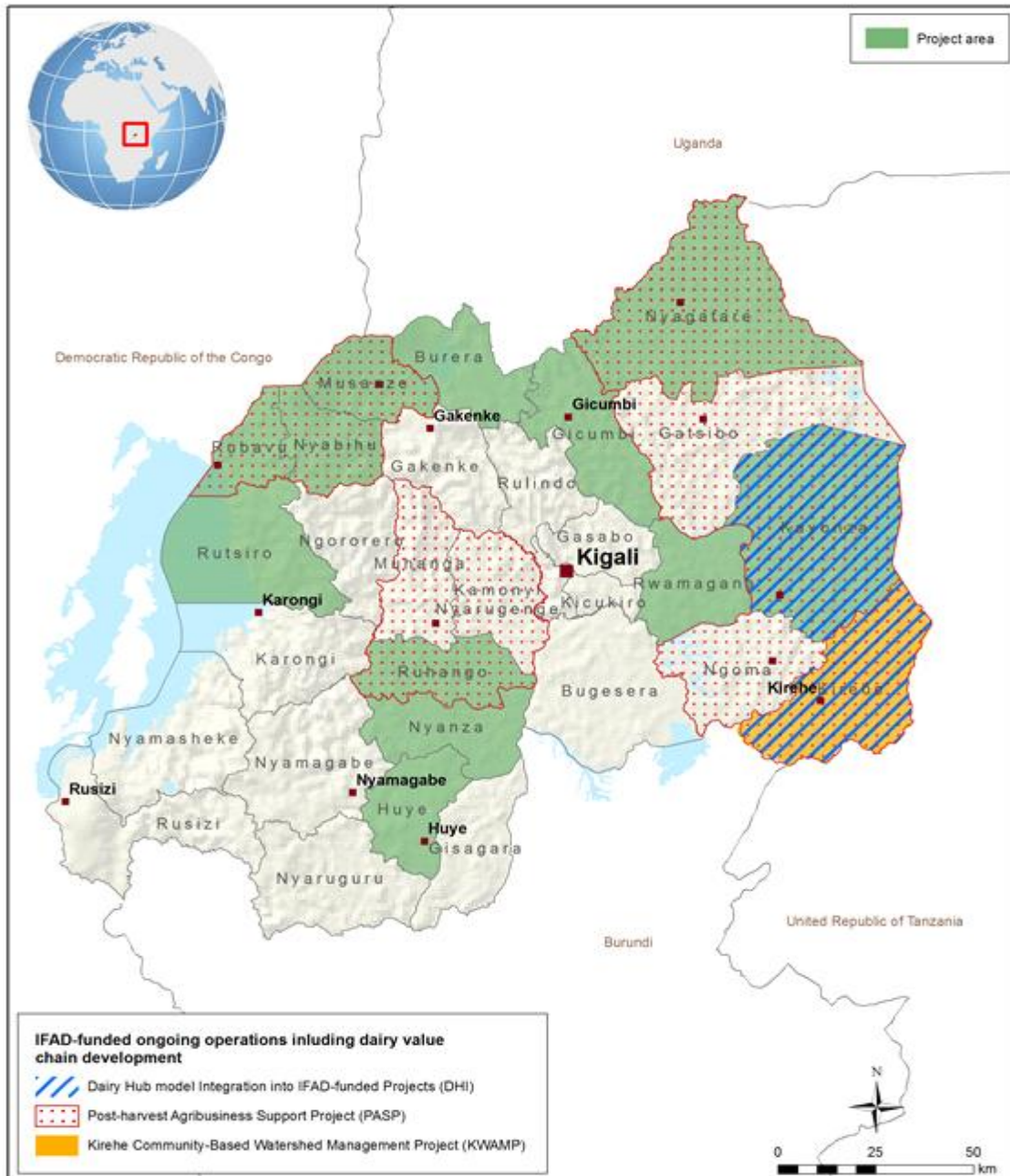
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Abbreviations and acronyms

COSOP	results-based country strategic opportunities programme
FAO	Food and Agriculture Organization of the United Nations
GHG	greenhouse gas
HPI	Heifer Project International
L-FFS	livestock farmer field school
MCC	milk collection centre
MINAGRI	Ministry of Agriculture and Animal Resources
NISR	National Institute of Statistics of Rwanda
RAB	Rwanda Agriculture Board
RDDP	Rwanda Dairy Development Project
RIMS	IFAD's Results and Impact Management System
SPIU	single project implementation unit

Map of the project area

Rwanda Rwanda Dairy Development Project (RDDP)



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.
Map compiled by IFAD | 19-02-2016

Republic of Rwanda

Rwanda Dairy Development Project

Financing summary

Initiating institution:	IFAD
Borrower:	Ministry of Finance and Economic Planning/ Republic of Rwanda
Executing agency:	Ministry of Agriculture and Animal Resources
Total project cost:	US\$65.1 million
Amount of IFAD loan:	SDR million (equivalent to approximately US\$43.6 million)
Amount of IFAD grant:	SDR million (equivalent to approximately US\$1.1 million)
Terms of IFAD loan:	Highly concessional loan
Cofinancier:	Heifer Project International (HPI)
Amount of cofinancing:	Heifer Project International: US\$4 million Private sector: US\$6.6 million
Terms of cofinancing:	Grant
Contribution of borrower:	US\$3.9 million
Contribution of beneficiaries:	US\$5.9 million
Appraising institution:	IFAD
Cooperating institution:	Directly supervised by IFAD

Recommendation for approval

The Executive Board is invited to approve the recommendation for the proposed financing to the Republic of Rwanda for the Rwanda Dairy Development Project, as contained in paragraph 46.

Proposed loan and grant to the Republic of Rwanda for the Rwanda Dairy Development Project

I. Strategic context and rationale

A. Country, rural development and poverty context

1. Rwanda is a small, landlocked country in east-central Africa with a land area of 26,338 km². Its estimated population in 2016 is 11.55 million with an annual growth rate of 2.36 per cent. Population density has increased from 321 persons per km² in 2002 to 445 persons per km² in 2015 – the highest in Africa.
2. While Rwanda has had an impressive record translating its sustained growth into poverty reduction across the country, poverty remains a major challenge with slightly over 4.4 million people estimated to be living in poverty. The country is ranked 163rd out of 188 countries in the 2014 Human Development Index, classifying Rwanda as a low human development country. The latest national poverty survey identified 39.1 per cent of the population as poor and 16.3 per cent as extremely poor (unable to afford the basic basket of goods and services estimated at RwF 159,375 per household per year in 2014).¹
3. Poverty is mostly a rural phenomenon: the incidence of poverty in rural areas is estimated at 43 per cent compared to 22 per cent in urban areas. The country's land distribution is skewed – 36 per cent of households own 6 per cent of all farm land, with an average of 0.1 hectare (ha) per household (compared to the national average of 0.33 ha per household). The HIV prevalence rate has fallen below 3 per cent as a result of concerted efforts to promote awareness and behaviour change, coupled with ensuring that pregnant women living with HIV have access to antiretroviral medicines.
4. Official estimates show that 19 per cent of Rwandan households are food insecure. Food insecurity follows a similar distribution across districts as poverty and is highest in the northern (46.2 per cent) and western (45.3 per cent) provinces. Food insecurity is often related to the stability of rural incomes, access to land, animal ownership and events such as crop failures and seasonal scarcities, which reduce access to food. While there has been a marked reduction in the prevalence of chronic malnutrition over the last decade, stunting continues to be above the World Health Organization severity threshold and is a major public health concern. Almost 38 per cent of children under 5 are chronically malnourished, with stunting levels above 40 per cent reported in over 30 per cent of districts in the country.
5. Dairy is a strategic commodity and the dairy subsector is crucial for rural development, poverty reduction and food and nutrition security in Rwanda. It offers a pathway out of poverty for the large number of households keeping livestock and those who provide services and add value throughout the supply chain. The current "farm gate" value of annual milk production is approximately US\$153.90 million. The dairy subsector is the largest segment of the livestock sector in Rwanda, which accounts for 10.5 per cent of agricultural gross domestic product and is the fastest growing subsector within agriculture.

¹ National Institute of Statistics of Rwanda (NISR), Rwanda Poverty Profile Reports 2013/2014, 2015.

6. In recognition of the importance of dairy, the Government has made significant investments in the industry over the past decade aimed at transforming it from subsistence to a business-oriented, modern sector capable of meeting the country's demand for dairy products and producing surpluses for the regional market. The results of these investments are clearly visible today and include the transformation of the national cattle herd from 600,000 cattle dominated by local breeds with low milk production potential in the 1990s to today's national herd of 1.35 million, which includes 54 per cent improved dairy breeds. In tandem with this transformation of the sector, annual milk production increased from 50,000 metric tons in 2000 to 731,000 metric tons in 2015. Per capita milk consumption has also steadily increased from below 20 litres per year in the 1990s to 64 litres per year in 2015.
7. While the impressive growth of the dairy sector in Rwanda has enabled the country to become a significant player in the regional dairy industry, the sector's performance still lags behind that of competing countries in the region, and there are still many challenges to be tackled. The Government's National Dairy Strategy seeks to build on the gains made so far to address the remaining factors constraining the dairy sector from achieving its potential. A key thrust of the strategy is to formalize the dairy value chain and – considering the health benefits – increase national consumption of processed milk instead of the raw milk currently being consumed. The strategy also seeks to improve value addition and product diversification based on the anticipated milk surplus. The National Dairy Strategy aims to not only increase the number of improved breed cows but enhance their productivity through improved feeding across seasons. The latter is important to ensure consistent milk supply, particularly during the dry season when milk supply has consistently been far below demand. The Government is also seeking to expand the milk-collection infrastructure, including the establishment of more milk collection centres (MCCs) and increased commercialization of their operations. Improved productivity and efficiency along the dairy value chain are expected to reduce costs, making Rwanda's dairy products less expensive and more competitive in regional markets.
8. The National Dairy Strategy emphasizes the importance of public-private-producer partnerships in achieving its objectives. The Government has spearheaded the development of the dairy industry through projects such as the African Development Bank-funded Livestock Infrastructure Support Project and the Rwanda Dairy Competitiveness Programme I and II funded by the United States Agency for International Development. In addition, the Netherlands Development Organisation, Heifer Project International (HPI), Send-a-Cow and the recently completed East Africa Dairy Development Programme funded by the Bill & Melinda Gates Foundation have supported dairy development in Rwanda. The projects are being implemented in prescribed districts, with the Rwanda Dairy Competitiveness Programme II active in 17 districts across the country's five milksheds.
9. Despite remarkable progress in developing the country's dairy sector, significant challenges remain. Key among them are: (i) low milk productivity, attributed to the low number of improved dairy cattle and compounded by inadequate forage, animal feeding practices and seasonal fluctuations in water availability; (ii) limited support services (such as artificial insemination, veterinary services, extension and inputs), and inadequate knowledge of dairy cattle management; (iii) limited organization of farmers for collective action in marketing of milk and accessing inputs and services; (iv) inadequate development and management of milk collection, processing and marketing infrastructure for the supply of quality milk to domestic and regional markets; (v) limited access to financing for dairy value chain actors, especially women and youth; and (vi) a nascent policy and institutional framework and the need for specific laws, regulations and institutional capacity development to encourage the industry's growth.

10. The dairy sector is susceptible to climate change on both the production and marketing sides as water and land become more limited for fodder production and temperatures increase, requiring changes in forage-feeding systems. This makes the transport and safe storage of milk to consumers more complex and requires more energy use. On the other hand, dairy farming contributes to climate change since increasing dairy production may contribute to anthropogenic greenhouse gas (GHG) emissions, biophysical degradation and loss of biodiversity if green strategies are not promoted along with good dairy-management practices. For these reasons, dairy production needs to be increased through well-managed intensification rather than an extensification approach, and must incorporate climate-smart measures and technologies to mitigate against adverse environmental impacts.

B. Rationale and alignment with government priorities and COSOP

11. The proposed Rwanda Dairy Development Project (RDDP) will address these challenges and capitalize on the opportunities created by past investments in the sector. At the current level of productivity, milk-supply projections show that the country will not be able to meet the rapidly growing domestic demand for milk and sustain the upward trend in cross-border exports to the Democratic Republic of the Congo and the Republic of Burundi. RDDP is expected to contribute to closing this gap. The project design builds upon lessons learned in the dairy sector by developing the value chain through: improving cattle productivity, milk quality and the processing capacity of the dairy industry; and strengthening the policy and institutional framework for the sector. RDDP supports all three strategic objectives of the results-based country strategic opportunities programme (COSOP) 2013-2018.

II. Project description

A. Project area and target group

12. The project area comprises 12 districts throughout Rwanda. Selection of the targeted districts was based on: (i) the current cattle population and level of milk production; (ii) current and projected market development potential, including investments in MCCs, dairy processing plants and animal feed factories; and (iii) levels of poverty, food insecurity and malnutrition. With an estimated population of 4.6 million, poverty in the project area is higher than the national average, with the highest poverty in targeted districts in the north and west.
13. The project's primary target group comprises slightly over 100,000 resource-poor rural households, of whom 80,000 will be involved in dairy farming and 20,000 in off-farm activities along the dairy value chain. The target groups include:
- 51,800 smallholder dairy farmers in zero-grazing systems who typically own up to three cows – this is the predominant livestock system in Rwanda, accounting for 92 per cent of all livestock keepers, producing mainly for home consumption and selling a small surplus locally;
 - 22,200 smallholder dairy farmers in semi-extensive grazing systems with up to 10 cows – they are principally located in the northern and eastern provinces, and typically have 5-10 ha, which form a good base for sufficient supply of forage for their cattle, but face challenges associated with shortages of water and pastures during dry months;
 - 6,000 Girinka (one-cow-per-poor-family) beneficiaries, who will receive a cow in-calf and pass on the first heifer to a qualifying neighbour – these households meet the criteria set by the government programme, with some land for forage production and ability to construct a cowshed;

- 15,400 young farm assistants age 15 to 24 working as wage labourers on dairy farms, especially in women-headed households with no male adults – they are typically from very poor families, with little or no education, and a limited skills base;
 - 5,400 rural women age 15-35, who will benefit from new economic opportunities and the creation of small off-farm business opportunities; and
 - 640 livestock farmer field school (L-FFS) facilitators, 450 producers of forage seeds and vegetative-planting materials, 175 veterinarians, 72 community animal health workers and artificial insemination technicians, members of dairy cooperatives, milk-collectors and dairy processors.
14. The gender strategy aims to provide equal opportunities for women and men to participate in, and benefit from, development of the dairy value chain through RDDP-supported activities. It is expected that women will account for at least 45 per cent of all project beneficiaries. Women-headed households and women in men-headed households will be empowered to build small businesses or engage in activities related to dairy farming. The Gender Action Learning System will ensure that women fully participate in household decision-making, especially regarding dairy activities. Women's participation in L-FFS will encourage their membership and leadership in dairy farmers' organizations, apex organizations and policy engagement. Climate-smart investments will support the use of labour-saving technologies such as rainwater harvesting, and the intensification of dairy production will provide opportunities for biogas systems, which can be used for household energy.

B. Project development objective

15. The overall goal of RDDP is to contribute to pro-poor national economic growth and improve the livelihoods of resource-poor rural households. This will be achieved by focusing on food security and nutrition, empowering women and youth, increasing smallholder dairy farmers' incomes and developing a climate-resilient dairy value chain. Specifically, the project seeks to increase the dairy sector's competitiveness and profitability through the provision of quality products from small-scale producers to domestic and regional consumers, thus improving their livelihoods, food security and nutrition while building overall resilience.
16. There are two specific objectives:
- Sustainably intensify dairy production and increase productivity among participating smallholder farmers. This shall be achieved through: the promotion of improved climate-smart dairy-farming practices and access to quality dairy inputs; extension services including veterinary and artificial insemination services; green technologies; and business and financial services, following a hub-model approach.
 - Increase incomes among 80 per cent of participating smallholder farmers from dairy farming through the combined effects of increased milk production and improved market access. This shall be achieved through the: development of 30 dairy hubs; establishment and strengthening of dairy farmers' organizations; and facilitation of linkages to markets and dairy value chain actors such as milk collectors, processors, transporters, traders and investors in milk quality through public-private-producer partnerships.

C. Components/outcomes

17. To achieve its objectives, RDDP has three technical components:
18. Component 1: Climate-smart dairy production intensification aims at increasing the capacity of smallholder dairy farmers and farm assistants to sustainably produce and supply higher volumes of quality milk to the dairy market. This component focuses on: (i) enhancing the capacity of smallholder dairy farmers and farm assistants to improve their knowledge, attitudes and behaviours for increased milk productivity and quality; (ii) providing smallholder dairy farmers with sustainable access to public and private livestock services and inputs; and (iii) supporting resource-poor households without cattle to acquire dairy assets so that they can begin dairy farming through the Girinka programme and increase their capacity to implement climate-smart investments aimed at sustainably improving milk productivity and quality, as well as increasing household-level milk consumption.
19. Component 2: Producer organization and value chain development is designed to enable farmers to capitalize on productivity gains realized through investments made under component 1. This component aims to increase their earnings through: (i) organization and capacity-building of dairy-farmer cooperatives for improved service delivery to farmers in milk collection and marketing, input supply, animal-health services and financial services under the hub model; (ii) investment in climate-resilient milk collection, processing and marketing infrastructure aimed at reducing post-production losses and enhancing the supply of quality milk in the domestic and regional markets; and (iii) leveraging financing for climate-resilient dairy enterprise development aimed at catalysing growth in all segments of the dairy value chain.
20. Component 3: Institutional and policy development aims to facilitate the establishment of an evidence-based, inclusive policy framework and institutional structure for the Rwandan dairy sector. It will achieve this by supporting: (i) formulation of a national dairy policy and legislation necessary for improving the regulatory environment of the sector; (ii) policy implementation and institutional strengthening; and (iii) policy-related analysis and technical assistance.

III. Project implementation

A. Approach

21. The starting point of RDDP will be the value chain for milk and milk products; it will focus on supporting milk production, marketing and processing. In the process, it will also support public and private production service providers such as extensionists, input suppliers, artificial insemination and veterinary services, smallholder dairy farmers and their organizations, informal traders and transporters, small private dairy and MCC operators, and milk processors. The project will facilitate the emergence of diverse subsector value chains offering a range of products to different markets. In all of them, emphasis will be on: increasing the quantity of milk marketed and processed; promoting efficiency in value chains; ensuring the quality and safety of the final products; and increasing household-level milk consumption.

B. Organizational framework

22. The lead agency in project implementation will be the Ministry of Agriculture and Animal Resources (MINAGRI). Within the Ministry, daily operations will be managed by the single project implementation unit (SPIU), which currently implements the IFAD-supported Project for Rural Income through Exports, Post-harvest and Agribusiness Support Project and the Kirehe Community-based Watershed Management Project in Rwanda. In line with the sector-wide approach principles and to mainstream project implementation within government agencies responsible for dairy development, the main implementing body for the project will be the

Rwanda Agriculture Board (RAB), which will work closely with HPI in developing the dairy-hub model. Other implementing partners will be the Rwanda Council of Veterinary Doctors, the Rwanda Cooperative Agency, Rwanda's Business Development Fund and the Rwanda National Dairy Platform. These agencies will provide facilitation and technical services in line with their mandated roles to support project implementation. Collaboration will also be forged with the Food and Agriculture Organization of the United Nations (FAO) for technical support.

23. Performance-based contracts. Project implementation will be structured around performance-based memoranda of understanding and partnership agreements with government and non-governmental agencies, and service contracts with recruited service providers. To ensure uninterrupted service delivery during implementation, MINAGRI will enter into multi-year agreements with government implementing partners and HPI, but provide annual reviews to ensure the achievement of results. All service contracts for multi-year engagement will be issued on an annual basis, and will be renewable only upon achievement of clearly set performance targets.

C. Planning, monitoring and evaluation, and learning and knowledge management

24. Project management will be guided by a results-based management approach, which aims to ensure that all processes, services and activities of the project and its implementing partners contribute to achieving the project targets within the framework of the project's theory of change. As part of this approach, planning will be guided by the project's strategy, logframe and broader results framework, which will inform the development of annual workplans and budgets.
25. The objectives of the project's monitoring and evaluation system are to: (i) provide information on progress towards results as required for results-based management at all levels; (ii) enable the tracking of physical progress against the targets in the annual workplan and budget; and (iii) collect and disseminate lessons for learning purposes, including options for scaling up, replication and risk management. In line with IFAD's Results and Impact Management System (RIMS), results will be measured at the output, outcome and impact levels. The project logframe will be extracted from the results framework and linked to the economic and financial analysis in line with IFAD guidelines.
26. A knowledge management strategy for the dairy sector will be developed building on three pillars: people, processes and technology. Quarterly reviews with implementing partners will be organized by the SPIU to discuss progress towards planned results in order to prepare quarterly progress reports, which will focus on lessons learned, challenges and good practices. Study tours, exchange visits and learning visits will be organized for lateral knowledge transfer.

D. Financial management, procurement and governance

27. MINAGRI will have overall responsibility for the project's financial management system. It will be administered through the existing SPIU financial management structure, which is regarded as a best practice in the region. The SPIU uses the TOMPRO accounting system for both project and government reporting. The financial reporting and audit standards are acceptable to IFAD.
28. Project audit. The SPIU will recruit an internal auditor to assess compliance of the project's internal controls and procedures. The external audit will be performed by the Office of the Auditor General.
29. Funds flow and disbursement arrangements. IFAD will disburse loan and grant proceeds through a designated account to be opened at the National Bank of Rwanda. The operational and counterpart funds accounts, denominated in Rwandan francs, will also be opened at the National Bank of Rwanda, through which daily payments to suppliers will be made. Funds will be transferred to other implementing partners from the operational account. Implementing partners may

be required to open bank accounts specifically for RDDP funds depending on whether they will receive substantial advances for activities under their responsibility. Project funds will flow from the SPIU to the RAB and other implementing partners only once memoranda of understanding are in place.

30. Start-up costs. Withdrawals for start-up costs are encouraged for eligible expenditures to be incurred between the date of entry into force of the financing agreement and the satisfaction of the conditions precedent to withdrawal.
31. Procurement. RDDP will adopt national procurement systems in line with the international competitive-bidding threshold for goods, works and services, provided that this system is in compliance with IFAD's guidelines and in accordance with the financing agreement and the letter to the borrower. The following actions will be mainstreamed during RDDP implementation to ensure greater transparency and accountability in financial management and procurement: (i) disclosure of information to a wider audience, including at the community level; (ii) beneficiary/civil society oversight for monitoring purposes and to ensure that project-related information is discussed openly; (iii) a responsive complaints-handling system; and (iv) sound accounting and audit measures within a context of rigorous financial management.

E. Supervision

32. Project supervision will be carried out by IFAD jointly with MINAGRI, and with the participation of HPI. Two implementation support/supervision missions will be conducted every year and a midterm review will be organized by MINAGRI in the third year. The IFAD Country Office will play an important role in supervising the project by continually assessing bottlenecks and risks to successful implementation and sustainability, and monitoring changes in implementation that require proactive adjustments to the project design, implementation arrangements and logframe.

IV. Project costs, financing, and benefits

A. Project costs

33. Total project costs over six years, including physical and price contingencies, are estimated at US\$65.1 million, as presented in table 1 below, which summarizes overall costs by component and financier. Component A represents 42 per cent of total base costs, component B, 46 per cent and component C, 3 per cent; project coordination and management costs are 9 per cent.

Table 1
Project costs by component and financier
 (Thousands of United States dollars)

	<i>IFAD loan</i>	<i>IFAD grant</i>	<i>Heifer</i>	<i>Private banks</i>	<i>Beneficiaries</i>	<i>Government</i>	<i>Total</i>	
	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>%</i>
A. Climate-smart dairy production intensification		-	-	-	-			
1. Knowledge, attitudes and behaviour	8 973.6	-				840.4	9 814.1	15.1
2. Sustainable access to public and private livestock services	6 485.2	535.7	404.0	115.6	603.6	790.4	8 934.5	13.7
3. Asset building and climate-smart productivity	6 084.4	-	594.0	1 584.8	-	625.5	8 888.7	13.7
Subtotal: Climate-smart dairy production intensification	21 543.3	535.7	998.0	1 700.4	603.6	2 256.3	27 637.3	42.5
B. Producer organization and value chain development								
1. Organization and capacity-building of farmer cooperatives and other value chain players	4 236.0	-	2 908.7	-	-	283.5	7 428.2	11.4
2. Investment in milk collection and processing infrastructure	3 146.2	344.7	90.2	-	928.2	1 036.7	5 546.0	8.5
3. Financing for dairy enterprise development	7 368.1	-	-	4 866.7	4 400.0	11.7	16 646.5	25.6
Subtotal: Producer organization and value chain development	14 750.2	344.7	2 998.9	4 866.7	5 328.2	1 332.0	29 620.7	45.5
C. Institutional and policy development								
1. Policy formulation	332.3	-	-	-	-	3.9	336.2	0.5
2. Policy implementation and institutional strengthening	1 073.4	-	-	-	-	141.0	1 214.4	1.9
3. Policy-related knowledge management	65.8	210.3	-	-	-	41.3	317.3	0.5
Subtotal: Institutional and policy development	1 471.5	210.3	-	-	-	186.1	1 867.8	2.9
D. Project coordination and management								
1. Project management	4 767.4	-	-	-	-	59.1	4 826.5	7.4
2. Monitoring and evaluation	1 086.5	-	-	-	-	30.3	1 116.8	1.7
Subtotal: Project coordination and management	5 853.8	-	-	-	-	89.4	5 943.3	9.1
Total	43 618.8	1 090.7	3 996.9	6 567.1	5 931.8	3 863.9	65 069.1	100.0

B. Project financing

34. The project will be financed by: (i) IFAD in the amount of US\$44.7 million (69 per cent of the total cost) through a highly concessional loan of US\$43.6 million and a grant of US\$1.1 million; (ii) HPI for US\$4 million (6 per cent of the total cost); (iii) the private sector/banks for US\$6.6 million (10 per cent of the total cost); (iv) the Government of Rwanda for US\$3.9 million (6 per cent) in the form of tax exemptions; and (v) beneficiaries for US\$5.9 million (9 per cent). Table 2 below details project costs by expenditure category and financier.

Table 2
Project costs by expenditure category and financier
 (Thousands of United States dollars)

	<i>IFAD loan</i>	<i>IFAD grant</i>	<i>Heifer</i>	<i>Private banks</i>	<i>Beneficiaries</i>	<i>Government</i>	<i>Total</i>	
	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>%</i>
I. Investment Costs								
Works	510.2	-				112.0	622.2	1.0
Vehicles	145.4	-				36.4	181.8	0.3
Equipment and materials	5 095.1	344.7	248.9	115.6	952.5	1 689.2	8 445.9	13.0
Goods, services, and inputs	9 796.3	210.3	1 476.2	-	579.3	2 026.4	14 088.4	21.7
Consultancies	5 842.5	535.7	1 133.6	-	-	0.0	7 511.8	11.5
Training and workshops	9 505.6	-	1 138.2	-	-	0.0	10 643.8	16.4
Grants and subsidies	7 777.2	-	-	6 451.5	4 400.0	-	18 628.7	28.6
Total investment costs	38 672.3	1 090.7	3 996.9	6 567.1	5 931.8	3 863.9	60 122.5	92.4
II. Recurrent costs								
A. Salaries and allowances	3 737.9	-	-	-	-	0.0	3 737.9	5.7
B. Operating costs	1 208.6	-	-	-	-	0.0	1 208.6	1.9
Total recurrent costs	4 946.5	-	-	-	-	0.0	4 946.5	7.6
Total	43 618.8	1 090.7	3 996.9	6 567.1	5 931.8	3 863.9	65 069.1	100.0

C. Summary benefit and economic analysis

35. The economic and financial analysis shows that the project would be profitable with an internal economic rate of return of 26.2 per cent and a net present value of US\$44.1 million at a 12 per cent economic discount rate. Sensitivity analysis shows that the economic profitability of RDDP remains satisfactory even if the project costs increase by 50 per cent, the project benefits decrease by 50 per cent or the benefits lag behind by two years. The project is financially profitable at the production, processing and marketing segments of the value chain, with the financial internal rate of return for farmers ranging from 22 per cent to 43 per cent depending on the production system (for small-scale processors, it is estimated at 43 per cent and for milk collection and marketing enterprises, it ranges from 25 per cent to 36 per cent).

D. Sustainability

36. RDDP will contribute to improving the livelihoods of targeted dairy-farmers and strengthening the resilience of their production systems through the promotion of dairy farming as a profitable business. The sustainability of project benefits will be ensured through:
- Implementation by national bodies and utilization of national procedures to build country ownership and sustain investment in the dairy value chain;
 - A focus on empowerment of dairy groups through L-FFSs, which contributes to a bottom-up approach for technology transfer, knowledge dissemination and support service delivery, enabling dairy farmers to access these services at affordable cost well beyond the project time frame;
 - An emphasis on cost-sharing with farmer beneficiaries to ensure their ownership and project investment support to enhance beneficiaries' entrepreneurial capacities so that farmer groups can access services and develop business enterprises supported by financial institutions, and conclude contracts with nationwide milk processors;

- Facilitation of dairy hubs' access to financial services, which will enable them to establish long-term business relationships with the financial sector so that businesses can grow and advance to a commercial scale; and
- Promotion of partnerships with stakeholders such as HPI for dairy-business hub development, FAO for technical assistance regarding animal-health and feeding, and operational partnerships with the Business Development Fund and the Rwanda Veterinary Doctors Council to ensure the continuity of project interventions beyond IFAD support.

E. Risk identification and mitigation

Main risks	Mitigation measures
Medium: Business management capacity of dairy hubs does not develop fast enough to cope with their expansion and ensure that activities are managed effectively in support of dairy value chain development.	RDDP is expected to provide inputs appropriate to the needs of the hubs that will be supported by an extensive training and business coaching programme. Where appropriate, the project will support a "turnaround" programme that has proved effective in other projects supporting cooperative development.
Low: RDDP interventions encourage non-commercial value chain investments.	RDDP has been designed in accordance with a value chain approach. The sustainability of this approach rests on commercial incentives and private-sector participation. The project will support dairy-farmers, MCCs and other dairy value chain stakeholders to build financially self-sustaining commercial linkages based on commercial incentives rather than reliance on subsidies. Results of the economic analysis show that the project has a good and resilient economic profitability that should remain satisfactory even in case of strong adverse developments in project costs, benefits and implementation delays.
Medium: Under-investment in rural roads, water and electricity infrastructure perpetuates the problems of low-quality milk for processing, high production costs and limited opportunities for export.	The Government has committed to provide additional resources through the Feeder Roads Development project to finance feeder road improvements under component 2, which are currently estimated at US\$12.8 million.
Low: Disease outbreak (e.g. foot-and-mouth disease, Rift Valley Fever, Contagious Bovine Pleuropneumonia) can cause losses for dairy producers and the dairy industry if contingency and mitigation plans are not implemented by national veterinary authorities.	The Government has put in place disease-control measures that include regular vaccination campaigns against these diseases and elaborate movement control of livestock and livestock products. Lessons learned from IFAD-funded projects in Zambia and Malawi on disease control have been considered in formulating project activities to strengthen national capacity for mitigating the risk of disease outbreaks.
Medium: The effects of climate change can have significant impacts on natural resources, especially pasture and forage/crop production, affecting seasonal available grazing and reducing the nutrition and lactation of cattle.	The project's climate-smart dairy intensification approach will strengthen community resilience through the sharing of dairy-farming best practices and adoption of green innovations in order to cope with extreme climate events. The project will train dairy farmers in forage conservation and invest in pasture improvement and conservation at the farm level. The project will also promote investments in climate-resilient and low-carbon post-production procedures, cooling, processing and value addition to reduce product losses and increase the incomes of farmers and rural labourers.
Medium: Rwanda has been ranked as maintaining a high level of integrity in public administration and has made significant progress in establishing mechanisms to support integrity and transparency in public procurement systems. The 2015 Transparency International Corruption Perception Index score of 54 places the country at medium risk.	Mitigation measures include strengthening the internal audit function, performing financial management assessments of new implementing agencies upgrading accounting software and maintaining a project implementation manual with all financial procedures.

V. Corporate considerations

A. Compliance with IFAD policies

37. RDDP complies with IFAD's policies on targeting, gender equality and women's empowerment, private sector, climate change, environment and natural resource management. The project is designed to be consistent with the IFAD's Private Sector Development and Partnership Strategy, its Rural Finance Policy and the associated Decision Tools for Rural Finance. The project is also in line with the approaches outlined in the Framework for Gender Mainstreaming in Programme Management Department Operations.
38. The project's Social, Environmental and Climate Assessment Procedures (SECAP) category is B considering that RDDP will promote enhanced natural resources management and integration of livestock and crop production. It will ensure that climate-resilience technologies (e.g. solar energy and biogas) are widely adopted along with improved management of natural resources and dairy cattle herds, which in turn will mitigate environmental risks.

B. Alignment and harmonization

39. RDDP investments will be integrated with ongoing IFAD, government and other partner-supported initiatives related to livestock, dairy and rural infrastructure development. The project is aligned with core programme areas of the Government's Strategic Plan for the Transformation of Agriculture (PSTA III), including: (i) agriculture and animal resources intensification; (ii) research and technology transfer, advisory services and professionalization of farmers; (iii) value chain development and private sector investment; and (iv) institutional development. In addition, RDDP will contribute to the goals of the Economic Development and Poverty Reduction Strategy II and the National Strategy on Climate Change and Low-Carbon Development.

C. Innovations and scaling up

40. RDDP builds on past and on-going experiences with improving the national dairy industry through the dairy-hub model. Through the promotion and support of this successfully-tested model, project interventions will seek to strengthen dairy-farmers' cooperatives and set up basic dairy infrastructure under a business framework that will evolve into sustainable farmer-managed dairy hubs. These dairy hubs will act as a nexus of private sector-led interventions designed to increase access to productive services such as feed and other inputs, artificial insemination and veterinary-extension services, output markets and dairy-related business development services such as finance, insurance, and market support.
41. Scaling-up of results under the RDDP will be achieved through linking focused project investment resources to leverage private co-investments and borrowing from the commercial banking system through public-private-producer partnerships – and in so doing, developing commercial value chain relationships and services that are market driven and sustainable. RDDP will strengthen the dairy value chain and, in particular, the linkages between smallholder dairy producers and their organizations on one hand, and processors and traders on the other. It will also: promote the development of a scalable model for integrating financial and non-financial services into commercial relationships between smallholder dairy farmers and processors; and support efforts to reduce the cost of doing business in the dairy-processing industry, thus creating incentives for further investments in the entire sector.

D. Policy engagement

42. By considering policy engagement as a full-fledged component of the project, IFAD emphasizes the need for a conducive – and inclusive – institutional framework for the Rwandan dairy sector in which smallholders are involved from the formulation

to the implementation of policies. The project will support dairy-farmer cooperatives, the Rwanda National Dairy Platform and the Rwanda Council of Veterinary Doctors in strengthening their technical and organizational capacities, thereby ensuring continuity and sustainability of support after the implementation period. The project will work across all phases of the national policy cycle – including policy formulation, implementation and evaluation – and will emphasize: partnerships and learning from previous experience; integration into national policy processes and existing governance structures; and the generation and use of evidence to inform policy decisions

VI. Legal instruments and authority

43. A project financing agreement between the Republic of Rwanda and IFAD will constitute the legal instrument for extending the proposed financing to the borrower/recipient. A copy of the negotiated financing agreement will be tabled at the session.
44. The Republic of Rwanda is empowered under its laws to receive financing from IFAD.
45. I am satisfied that the proposed financing will comply with the Agreement Establishing IFAD and the Policies and Criteria for IFAD Financing.

VII. Recommendation

46. I recommend that the Executive Board approve the proposed financing in terms of the following resolutions:

RESOLVED: that the Fund shall provide a loan on highly concessional terms to the Republic of Rwanda in an amount equivalent to ___ special drawing rights (SDR) (approximately US\$43.6 million), and upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented herein.

RESOLVED FURTHER: that the Fund shall provide a grant to the Republic of Rwanda in an amount equivalent to ___ special drawing rights (SDR) (approximately US\$1.1 million) and upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented herein.

Kanayo F. Nwanze
President

Negotiated financing agreement

(To be tabled at the session.)

Logical framework

	Indicators			Means of Verification			Assumptions
	Name	Baseline	End target	Source	Frequency	Responsibility	
Goal: Contribute to pro-poor national economic growth and improve the livelihoods of poor rural households	<ul style="list-style-type: none"> Number of female- and male-headed households that experience an increase in household assets 	-	80% of project beneficiaries	National statistics, household surveys incl. poverty & gender studies	Baseline and completion	SPIU	Income from milk sales will be used on household improvements
	<ul style="list-style-type: none"> Number of children 0-5 years suffering from chronic malnutrition in project area (stunting) 	TBD	5% reduction compared to baseline data				Income from increased sales accompanied by nutrition education and behaviour change will lead to greater availability of and access to a diversified diet and nutrient-rich crops/ food items.
Development Objective: To increase competitiveness and profitability of the dairy sector for the provision of quality products from small-scale producers to domestic and regional consumers, thus improving their livelihoods, food security and nutrition whilst building overall resilience	<ul style="list-style-type: none"> Volume and value of milk sold from targeted small-holder dairy farmers annually* 	Volume: 43 560 MT; Value: USD 9.3m	Volume: 95 040 MT; Value: USD 22.8 m	National Statistics	Baseline, midterm, completion	SPIU	Increased production will lead to sales and domestic consumption
	<ul style="list-style-type: none"> Volume of milk exported and penetration in the East Africa Community dairy market 	15,038,406 litres/year (2014-2015)	30-35 million litres by 2022 (4-5% penetration in the East Africa Community dairy market for Rwanda from the current 1%)	National Statistics (NISR, Statistical Year Book)	Baseline, midterm, completion	SPIU	Export data for dairy products are more reliable (considering that most of the milk currently exported to Congo DRC and Burundi is not recorded)
	<ul style="list-style-type: none"> Increased income among participating smallholder farmers from dairy farming 	-	80% of project beneficiaries	National statistics, household surveys incl. poverty & gender studies	Baseline and completion	SPIU	Incomes increase through a combined effect of increased milk production and improved market access
Outcomes: Smallholder dairy farming productivity and supply of quality milk enhanced and milk consumption at household level increased	<ul style="list-style-type: none"> Average kg of milk produced per cow per day during one lactation period 	Cross-breeds: 5.5 kg/day Local breed: 2.1 kg/day	Cross-breeds: 9 kg/day; Local breed: 2.4 kg/day; Pure breeds: 15 kg/day	MCC records	Continuous	SPIU / RAB / MINAGRI	Improved dairy practices will improve milk productivity regardless of breed purity
	<ul style="list-style-type: none"> Average consumption of milk at household level increased 	64 litres/person/Year	100 litres/person/year	National Statistics	Baseline, midterm, completion	SPIU / RAB / MINAGRI	Increased and safer dairy production, consumption and education campaigns will lead to domestic consumption
Enhanced organizational capacity and enterprise skills of dairy cooperatives	<ul style="list-style-type: none"> Number (and %) of MCCs serving targeted farmers in milk collection and marketing, dairy input supply, animal health and extension services and financial services 	38% (25 out of 65 category 1 MCCs)	90%	MCC records Thematic study	Continuous Quarterly and completion	Service provider SPIU / Rwanda cooperatives agency	Well-functioning MCCs intend to provide multiple services to farmers beyond mere milk collection and marketing
Expansion and improved utilization of milk collection and processing infrastructure	<ul style="list-style-type: none"> Number of dairy farmers using a formal milk collection system (by gender) 	30%	80%	Thematic study	Midterm and completion	Service provider SPIU / Rwanda cooperatives agency	Farmers have adequate incentive to supply to formal sector

	Indicators			Means of Verification			Assumptions
	Name	Baseline	End target	Source	Frequency	Responsibility	
	<ul style="list-style-type: none"> % of installed capacity of milk collection and processing facilities functional and utilized 	45%	80%	MCC reports	Quarterly	Service provider	Sufficient access to services is available, e.g. to technicians, facilities, etc.
Enhanced policy and institutional environment for development of the smallholder dairy industry	<ul style="list-style-type: none"> Stakeholder satisfaction with policy and regulatory framework 	n/a	90%	Thematic study	Baseline, midterm and completion	SPIU	All relevant stakeholders are consulted and heard
Enhanced climate-smart dairy value chain and strengthened community resilience	<ul style="list-style-type: none"> GHG emissions (CO₂e/kg milk) avoided or sequestered by the climate-smart dairy production intensification approach (RIMS) 	TBD	TBD	Thematic study using ExAct methodology at baseline and completion	Baseline and completion	SPIU / RAB / RVC / MINAGRI	Climate-smart technologies will offset the carbon footprint of the dairy sector despite eventual increase in livestock population
Outputs: Developing farmer capacity in good dairy production practices	<ul style="list-style-type: none"> Number of households adopting technologies that reduce or sequester greenhouse gas emissions (RIMS) 	n/a	60 000	Service provider report	Quarterly	Service providers	L-FFS will lead to improved animal husbandry practices, leading to improved animal health, improved feeding and improved hygiene generally as well as natural resource base
Strengthening animal health services	<ul style="list-style-type: none"> Number of households receiving facilitated animal health services, incl. AI and % of success (RIMS) 		80% of project beneficiaries, incl. 60% AI conception rate	Service provider report	Quarterly	Service provider	Strengthening animal health services will result in more people accessing services. Private vet and insemination services will improve animal genetic resources and sustainability of services
Supporting informal sector to comply with milk quality standards	<ul style="list-style-type: none"> Number of milk zones, kiosks and bars that have been established or upgraded and certified for milk handling 	n/a	2 000	Authority in charge of animal product inspection	Quarterly	Implementing partner	The ministerial order on milk standards will be effectively implemented and informal sector allowed to upgrade to the level of required standards
Strengthening of value chain	<ul style="list-style-type: none"> Number of processors supported by project in improved processing, product diversification, packaging, certification and marketing 	-	30	Service provider report	Quarterly	Service provider	Dairy cooperatives and unions with category 1 MCCs will want to invest in processing. Existing processors are willing to engage with project.
Supporting organizational development of cooperatives	<ul style="list-style-type: none"> Number of cooperatives with new bankable enterprise development plans 	-	60	Service provider report	Quarterly	Service provider	Cooperatives are interested in operational and business development
Improving access to financial services	<ul style="list-style-type: none"> % financing gap of enterprise development plan 	-	10%	Service provider report	Quarterly	Service provider	Financial institutions are ready to invest in dairy cooperatives
Strengthening policy development	<ul style="list-style-type: none"> Number of national policies (laws and regulations) developed to strengthen dairy industry. 	n/a	5 enabling laws and regulation developed 1 national policy developed	Rwanda Standards Board records (tbd)	Bi-annually	SPIU	Budget for policy implementation is availed by government and capacity for operationalization exists at local level

*Volume of milk sold to market annually = (kg per lactation period excluding milk intake of calves and own household consumption).