

DAIRY INTERVENTIONS FOR MITIGATION AND ADAPTATION (DAIMA)

FUNDING PROPOSAL

ANNEX 8: GENDER ASSESSMENT AND PROGRAMME-LEVEL ACTION PLAN

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ACRONYMS

AGYW	Adolescent Girls and Young Women
AI	Artificial Insemination
ASDP-L	Agricultural Sector Development Programme–Livestock
BBT-YAI	Build a Better Tomorrow – Youth Agribusiness Initiative
BDS	Business Development Services
CAHW	Community Animal Health Workers
CC	Climate Change
C-SDTP	Climate Smart Smallholder Dairy Transformation Project
CVIL	Central Veterinary Investigation Laboratory of Zanzibar
DaIMA	Dairy Interventions for Mitigation and Adaptation
DHS	Demographic and Health Survey and Malaria Indicator Survey
DVC	Dairy Value Chain
EAC	East African Community
EADD	East African Dairy Development Project
ELISA	Enzyme Linked Immunosorbent Assay
ESADA	East and Southern Africa Dairy Association
FDA	Food and Drugs Authority
FGM	Female Genital Mutilation
FGM/C	Female Genital Mutilation/Cutting
GALS	Gender Action Learning System
GBV	Gender-Based Violence
GDFF	Green Dairy Financing Facility
GESI	Gender and Social Inclusion
GEWE	Gender Equality Women’s Empowerment
GHG	Green House Gas(ses)
GoT	Government of Tanzania
HDI	Health Development Initiative
HHs	Households

HIV	Human immunodeficiency virus
HPI	Heifer Project International
ICPALD	Center for Pastoral Areas and Livestock Development
ICT	Information and communication technology
IFAD	International Fund for Agricultural Development
IGAD	Inter-Governmental Authority on Development
KALRO	Kenya Agriculture and Livestock Research Organization (KALRO)
KAOP	Kenya Agricultural Observatory Platform
KDB	Kenya Dairy Board
KDHS	Kenya Demographic and Health Survey
KeLCoP	Kenya Livestock Commercialization Project
LEWs	Livestock Extension Workers
L-FFS	Livestock Farmer Field School (L-FFS)
MCC	Milk Collection Centre
MCP	Milk Collection Plant
MDAs	Ministries, Departments, and Agencies
MoA	Ministry of Agriculture
MRV	Measurement, Reporting and Verification
MSMES	Micro, small and medium enterprises
NGO	Non-Governmental Organization
NVL	National Veterinary Laboratory
OHRECA One Health Research and Education Centre in Africa	
OUT	Open University of Tanzania
PCR	Polymerase Chain Reaction
PFF	Pastoralist Field Schools
PFI	Participating Financial Institutions
PICSA	Participatory Integrated Climate Services for Agriculture
PSEAH	Preventing Sexual Exploitation, Abuse and Harassment
PSTA5	Strategic Plan for Agriculture Transformation 5
PWDs	People Living with Disabilities

RNDP	Rwanda National Development Plan
RSB	Rwanda Standards Board
SACCO	Savings and Credit Cooperative
SDLD	State Department of Livestock Development
SEAH	Sexual Exploitation, Abuse and Harassment
SGBV	Sexual Gender-Based Violence
SOA	The Sexual Offenses Act
SOPs	Standard Operating Procedures
SSTC	South-South and Triangular Cooperation
SUA	Sokoini University of Agriculture
TAD	Transboundary Animal Diseases
TDB	Tanzania Dairy Board
TMR	Total Mixed Rations
ToT	Training of Trainers
TVET	Technical and Vocational Education and Training
TVLA	Tanzanian Veterinary Laboratories Agency
UDSM	University of Dar-es-Salaam
UMMB	urea-molasses multi-nutrient blocks
VCs	Value Chains
VMGs	Vulnerable and Marginalized groups
YLP	Youths Livelihood Programme

INTRODUCTION

This annex sets out the main parameters of the Gender Equality and Social Inclusion (GESI) assessment and action plan for implementation of DaIMA's interventions in Tanzania, Kenya, Rwanda and Uganda. Part 1 provides a contextual GESI analysis of smallholder dairy farmers and MSMEs (dairy cooperatives and processors) in each respective country. Identifying the key challenges for gender equality and women empowerment, youth empowerment, nutrition, marginalized and vulnerable groups and persons living with disability (PWDs) in dairy production and associated services enterprises and proposes required interventions. Part 2 provides the gender action plan setting out proposed actions to achieve the Gender Equality and Social Inclusion (GESI) targets. These will be further reviewed and revised during project start-up.

The DaIMA theory of change is "IF technological solutions to reduce methane and GHG emissions and financial services to efficiently sustain production and marketing processes, which increase revenue and/or reduce production costs, are supported for dairy farmers and milk processors to adopt in East Africa, THEN farm-level methane emissions and supply chain GHG emissions will be reduced, because a cross-cutting transition to net-zero dairy production will be economically attractive to farmers, pastoralists and dairy sector processors". The key objectives of DaIMA are: (i) To strengthen systemic and institutional capacities of the livestock sector to enable smallholder dairy producers and local value chain actors to reduce CH₄ and other GHG emissions (ii) To increase production, market knowledge and tools for smallholder dairy producers and private sector value chain operators for a low-emission, climate-resilient, and sustainable pathway (iii) To enable smallholder dairy producers and local private sector value chain actors access to required financial services to make the necessary transition to low-carbon, climate-resilient, and sustainable livestock production and value chain development.

PART 1: GESI ANALYSIS

Agriculture plays a significant role in the economy, providing employment and income to millions of people. As a result, the impact of climate change on agriculture may have long-reaching consequences that extend well beyond individual farmers and their families. According to the United Nations, this output is mostly generated by family farms, where women supply around 60 to 80 percent of the labor input. East Africa has demonstrated the positive effects of dairy production on income, food security and dietary diversity. Most of the EAC countries have ratified international frameworks and progressive national legal and policy frameworks promoting gender equality and women empowerment. However, women in agriculture face gender-specific barriers, including limited access to land, financing, and other resources¹. Policy implementation remains weak in country and regional disparities persist. Each country, therefore, presents a unique context with varying statistics and progress towards closing the gender gaps. Nevertheless, present data reveals some progress towards achieving the stated policy commitments for the four DaIMA project focus countries and the need to address barriers in the dairy sector as outlined below.

Rwanda

In Rwanda, maternal and child health has improved significantly over the last two decades and exceeded Millennium Development Goals (MDGs) ambitions. Maternal mortality reduced by 80% between 2000 and 2014 while infant and child-mortality decreased by over 70% in the same period.² Free universal basic education was initiated and scaled up

¹ FAO 2019. ESA Working Paper No. 11-02 March 2011 Agricultural Development Economics Division. The Food and Agriculture Organization of the United Nations www.fao.org/economic/esa

² The National Institute of Statistics of Rwanda (NISR), 2015. Demographic and Health Survey (2014/15). Kigali, National Institute of Statistics of Rwanda.

to 12 years. This resulted in a net enrolment of nearly 100% in primary school for both boys and girls. Gender parity was achieved with more girls than boys in primary school.³

Women outnumber men (92% compared to 77%, as per 2012 population census) in the rural population working in agriculture.⁴ About 25% of the (rural) households in Rwanda are headed by women and working age youth (ages 15-34) constitute 77% of the rural population. Women account for only 24% of the agro-dealers in Rwanda. Women and men farmers in dual households are characterized by unequal power relations, and women have limited decision-making powers. Within the dairy value chain, women have distinct and significant roles, although those roles vary by production system. In extensive systems, men and boys predominately bring the animals to graze and find water, while women care for the calves and process the milk. In zero grazing systems, which are required for participation in the GIRINKA⁵ program, women are responsible for feeding the animals, cleaning the stalls and milking utensils, while men are more involved in the milking of cows as well as the transport and sale of milk. These social and gender dynamics related to both women's roles in the production as well as consumption of livestock, if not fully considered, limit the effectiveness of such programs, or worse, increase gender inequalities within the household. Such cases may occur, for instance, when men take over decision-making and control of income from a livestock product, such as dairy, that has become more lucrative following the intervention⁶. Additionally, women in agriculture are more vulnerable to climate change and land degradation because they generally do not have other livelihood options to support their families.⁷

Uganda

The Government of Uganda has identified gender equality and women's empowerment as critical to achieving accelerated socio-economic transformation. The country has ratified key gender equality instruments and commitments and has put in place a legal framework to promote Gender Equality and Women's Empowerment (GEWE). Although the Government of Uganda has established the Gender Equality Commission, which produces an annual report on the state of gender equality in the country, and signs Gender Equality Compacts with Ministries, Departments and Agencies to track the country's progress in improving the livelihoods and well-being of the most vulnerable, gaps remain in the economic, political and social inclusion of women. Men generally own cattle while women have ownership over the milk with women tending to engage more in dairy processing. Women are hindered in dairy development by a lack of ownership, access to resources and assets, which also results in lack of collateral for financial instruments. Generally, at household or farm level women's decision-making power can be assumed low as also seen in farmers groups, in which they seldom hold leadership positions. The proportion of women in the cabinet rose from 9.4 percent in 1996 to 32.8% in 2003 but decreased to 19.4 percent in 2006. However, most women in Uganda are engaged in livestock yet have limited access to agricultural assets, including large-livestock, land, labor and credit. In most communities, land and other productive assets belong to men, and women's access is mediated through men.

Tanzania

Women constitute 52 percent of the population in Tanzania. 75 percent of these women live in rural areas. Of these, 90.4 percent work in the agriculture sector, 0.1 percent in the mining sector and 1.2 percent in small and medium enterprises (SMES). 44.1 percent of women in the urban centres work in SMES and mainly sell clothes, food and non-

³ NISR, 2017. *Statistical yearbook 2016*. Kigali, National Institute of Statistics of Rwanda.

⁴ Agriculture Policy of Rwanda 2018

⁵ Rwanda National Government programme where a poor family receives a heifer by way of donation. When a cow gives birth, the first female calf is given to a neighbour or community member. Once that cow gives birth, its first female calf is given to the next selected beneficiary and so on

⁶ Umuzigambeho, J.F. 2017. Gender assessment of dairy value chains: evidence from Rwanda, Rome, FAO. <http://www.fao.org/3/a-i6845e.pdf>

⁷ ibid

alcoholic and alcoholic beverages. Among the challenges experienced by women doing business include lack of capital, materials, markets, expertise / skills, knowledge and physical spaces to conduct business.⁸ The constitution recommends 30 percent among all appointed and elected officers.⁹ Women and youth tend to have limited access to and control over the resources and information needed for dairy production, value addition, and marketing. Men generally own cattle while women have ownership over the milk. Women are hindered in dairy development by a lack of ownership and access to resources and assets, which also results in lack of collateral for credit. Generally, at household or farm level women's decision-making power is low as also seen in farmers groups, in which they seldom hold leadership and decision-making positions.

Mostly, gender relations vary with diverse cultural contexts, and this diversity should inform analysis and interventions. In traditional dairy production systems, gender roles vary with geographies. For example, in the Southern Highlands of Tanzania, milking is a man's activity, but not a taboo for women, whereas in Tanga both women and men can milk. In both these areas, men own the cattle and women the milk, but the man can sell the milking cow and therefore the woman loses the milk. Youth too often have limited rights over household assets, control and ownership of commodities. As value chains commercialize and markets become sophisticated, moving further away from the farm gate, women tend to lose control of the commodities in question. For as long as the production of milk is low and the markets rudimentary, milk shall remain a woman's commodity. Once the productivity increases to profitable magnitudes and the value chain becomes commercialized the ownership of milk is likely to change to men. To address these, lessons learnt from the Heifer Project International (HPI) Tanzania, which DaIMA foresees as implementing partner, uses participatory sensitization meetings with women and men at household and farmer group level to develop agreed gender strategies and action plans for mainstreaming and transformation. Couple training in the Gender Action Learning System (GALS) where women have multiple livelihood options, such as dairy production, crop residue preservation for fodder production and fodder harvesting "cut and carry" from communal lands, raise poultry, collect and trade with non-timber forest products such as medicinal herbs and gums (for food, medicine and other uses). With support for the various livelihood options, the women can still survive the worst-case scenario of losing milk business to men. The DaIMA and the IFAD Climate Smart Smallholder Dairy Transformation Project (C-SDTP) interventions have much complementarity including areas of geographical coverage. DaIMA will, support additional geographical areas such as the peri-urban dairy communities in the coastal region as well as some pastoral communities not included in the C-SDTP.

Kenya

women have a right to own land according to law, however socio-cultural practices favour male inheritance. Only about 7 percent women own land alone. Without secure rights to land, women's participation in and benefit from land uses such as dairy is inhibited. Yet women provide up to 75% of agricultural labour in addition to heavy workloads related to unpaid childcare and other domestic chores. They produce food crops for domestic consumption and provide labour for commercial farming where they are paid a pittance. Women also have less access to information, extension services and climate smart technologies. The situation is compounded by the delineation of agriculture as a function of the county government necessitating coordination and cooperation between the national and county governments.

For the various activities within the livestock sub-sector, women contribute between 60-80 percent of the labour-force, especially in ASAL areas. On average, women work longer hours (12.9 hours) than men (8.2 hours), yet they earn less because most of these hours are taken by unremunerated work despite contribution to mainstream economic activities. Enrolment of both boys and girls in primary and secondary schools has been increasing from 2009

⁸ The policy for gender equality and women empowerment (Tanzania sera ya maendeleo ya wanawake na jinsia) 2000.

⁹ The Constitution of the United Republic of Tanzania 1977 and Zanzibar 1984.

to 2018 and is almost at par with 49.1 percent boys and 47.3 percent girls. Females also account for 41.3 percent of public and private university enrolments, 43 percent of technical and TVET institutions and 69.2 percent adult education learners. Performance of girls has shown remarkable improvements especially in Modern Agriculture, Manufacturing, Wholesale finance and insurance. Generally, boys perform better than girls, but girls also perform well.

Maternal mortality is improving, the Kenya Demographic and Health Survey (KDHS) 2014 the ratio stood at 362 deaths per 100,000 live births compared to a high ratio of 488 deaths per 100,000 in the 2008-09 KDHS. The prevalence of HIV is higher among women compared to men. In 2017, the National adult HIV prevalence rate had reduced and was estimated at 4.9% with prevalence higher among women (5.2%) than men (4.5%). Retrogressive and harmful cultural practices continue to limit women's empowerment. Prevalence of FGM in Kenya was 32% in 2003; 27% in 2008/9; and 21% in 2014 for women 15 – 24yrs. Prevalence of FGM varies among ethnicities was highest among the Somali – 94%; Samburu – 86%; Kisii 84; and Maasai – 78%.

Climate change is one of the greatest environmental and development challenges facing the world today. Women bear most burden related to gender roles such as in access to water for domestic use and livestock. Dairy provides an opportunity for women to earn income from the sale of dairy products, have decent jobs, and improve their nutrition and provide for their household's general wellbeing.

Youth empowerment. Youth in East Africa accounts for over 40 percent of those between the ages of 15-35. Youth unemployment remains high and is higher than among young women than men. In rural areas youths are informally employed (and underemployed) in subsistence agriculture and family-based livelihood activities. This demographic dividend has tremendous potential to transform the supply and demand of food and will impact the agri-food industry. As the largest employer in the country, the agriculture sector remains a key entry point for job creation, inclusive growth and poverty reduction.

However, most young people face barriers to participate in dairy due to huge capital and operational investments required. Involving the youth in dairy farming is crucial as it provides a platform to tap into the potential of a young, educated population that can be trained and skilled to meet input and services delivery gaps necessary to develop sustainable agri-value chains and food systems. Youth are resourceful, innovative and crucial for the future of the dairy sector. Youth's openness towards new practices can be key in development of, for example, new and environmentally responsible dairy practices and to fully utilize the potential of new technologies such as ICT for the dairy sector. For example, it is evident that the 23% growth of the Kenyan dairy sector triggered by increased demand of milk has resulted to many employment opportunities along in support activities for agriculture. The youth mainly involved in the informal jobs, which are majorly self-employment opportunities, include mobile milk traders, milk bars and shops and kiosks. Youth participation in dairy is hampered by limited access to productive resources, including land, capital, limited entrepreneurial skills, poor rural infrastructure, mindset barriers and drudgery of farm labour due to limited access to modern technologies. Addressing these constraints will raise the industry's productivity, which in turn would create more jobs for the young women and men.

The 2003 Rwandan Constitution enshrines gender equality and social inclusion and sets out the obligations of the State. In 2019, MINAGRI launched its Gender and Youth Mainstreaming Strategy aimed at providing women and youth with increased knowledge and access to services, as well as enabling them to participate equally in the value chain. The youth population in Uganda comprises of both the educated/skilled and the unskilled living majority in rural areas. Two-thirds of the labour force is below 35 years. Although 65.5 per cent of the population works in agriculture, its contribution to national GDP is only 29 per cent. For the youth, having access to productive assets, being linked to a market, have an opportunity for access to credit and finance, and working with modern and digital technologies are important. Specially, creating jobs and decent employment for youth in dairy and beef value chain, can reduce rural

poverty, improve food security and nutrition in the country. In Tanzania. Youth (15-35 years) and children (0-15 years) account for 75% of the population, with a median age of 18 years old. Two-thirds of Tanzania's labour force is younger than 35 years. Around half of the 16 million youth are, however, engaged in farming (off-farm agribusiness: 24%). Young men more often than young women find non-agriculture employment, approximately 60% versus 40%.

The Government of Tanzania (GoT), specifically the Ministry of Agriculture (MoA), is implementing the Build a Better Tomorrow – Youth Agribusiness Initiative 2022-2030 (BBT-YAI), with the following strategic objectives: i) inspire youth through implementing behaviour/attitude-changing communication strategy; ii) empower youth through training mentoring and coaching; iii) engage youth in profitable and sustainable management of agribusinesses; iv) enable youth-led enterprises by improving business environment; and v) coordinate effectively youth agribusiness support initiatives for synergy and efficiency. Through partnerships between the private sector, NGOs and government institutions, the MoA anticipates achieving 12,000 new agribusiness enterprises in villages across the country, for which 200,000 youth are trained via internship and 15,000 youth are mentored through incubation programmes. For livestock specifically, youth involvement is less well documented. There are eight Youth Incubation Centres for beef and goat fattening that will take 240 and 1,000 youth in 2022/23 and 2023/24 respectively. Collective action for the youth has been explored and has successfully worked in Zanzibar, as a result of the Agricultural Sector Development Programme–Livestock (ASDP-L) project. Communal Cowsheds for dairy are a type of Livestock Farmer Field School (L-FFS) that is dependent on social cohesion from which youth learn and farm dairy together¹⁰. The Communal Cowshed Concept could serve as a dairy production incubator for youth, having the young farmers passing through and starting their own dairy business from there.

Kenya's population is largely young, with 35.7 million Kenyans (75.1%) below the age of 35 years and offers a dynamic workforce that is highly adaptable, with a high uptake of technological innovations. Yet, youth record a high unemployment rate of 35%. The key challenges for youth participation in agriculture include negative perception and attitude to agriculture, inadequate skills, knowledge, and information such as in dairy farming, limited agricultural innovation, limited access to finance and resources such as land. The GoK has put in place various legal, institutional and policy frameworks to empower the youth at national level and county levels. However, most counties are yet to enact youth policies.

Marginalized and vulnerable groups. In Rwanda, the 2003 Constitution does not recognize the economic, social and cultural rights of the Batwa and it only refers indirectly to them under the term “historically marginalized communities”, a term that during the constitution-making process was generally understood to refer to the Batwa. The Constitution of Uganda provides a list of indigenous communities under its Third Schedule and bears no compatibility with the definitions of indigenous peoples under international and regional human rights law – in particular the emphasis on the right to self-identification – and can therefore not be interpreted as a similar legal protection of the rights of indigenous peoples within the meaning of international and regional human rights law. However, the National land policy does make considerations for pastoralists such as the Karamoja community living in the North. Tanzania consists of over 100 distinct ethnic groups (in majority indigenous of Bantu and Nilotic origin) and with no group dominating. However, Tanzania policy is conservative in specifically identifying indigenous peoples. Ethnic controversy and conflict are low in Tanzania compared to neighbouring countries. Tension between peoples of sedentary smallholder mix farming and pastoralism is, however, increasing with climate change. Sector transformations, private financial investments, and policies favour sedentary over pastoral livelihoods.

Protection of pastoral peoples' rights can be difficult, since they often migrate (in marginal areas) across national borders and are not seen as indigenous to a nation, region or district. In the Southern Highlands and Zanzibar, indigenous people are sedentary smallholder farmers combining agriculture, horticulture and livestock farming. From

¹⁰ IFAD 2022. https://www.ifad.org/documents/38714170/47116743/Stocktaking_ESA_web.pdf/cc8f6720-6dc1-5a92-f61b-4bccc4d1d15?t=1671547955602

Tabora and Singida, indigenous pastoralists migrate to Mbeya and Iringa in search for grazing. In Tanga pastoralists and smallholders, both indigenous to Tanga, coexist with their free-grazing livestock, sharing communal pastures. Cross-border migration from Kenya and Rwanda respectively takes place. GoT allocated land owned by the National Ranching Company to new farmers (including pastoralists deciding to become farmers) through tripartite loans. Consultation with selected members of the Maasai community in Matebete Village, Mbarali district in Mbeya region, revealed that 12,750 hectares of land that they currently use for their settlements and livestock grazing used to be the government ranch in the 1970s. The beneficiaries of this land, however, still move their cattle to other areas in search for fodder and water, especially during dry season. C-SDTP is not expected to target indigenous people's territories and will not alter their culture nor marginalize them, neither should DaIMA.

An estimated 79,000 people identify as indigenous in Kenya, and are found among the pastoralist communities of Turkana, Rendille, Borana, Maasai, Samburu, Ilchamus, Somali, Gabra, Pokot and Endorois communities. Some of these groups may be found living in the project areas of Nandi, Elgeyo Marakwet and West Pokot. They experience land and resource tenure insecurity, poor service delivery, weak political representation, as well as general discrimination and exclusion. It is also important to recognize that they are valuable partners and holders of local traditional knowledge that can improve nutrition and enhance biodiversity. Marginalised groups also include Persons Living with HIV and AIDS (PLWHAs) and Persons with Disabilities (PWDs), who are estimated to be about 4.6% of the population.

People living with Disability. The EAC Secretariat has developed a regional EAC Policy on Persons with Disabilities (PWD) 2009 and each country has a related Policy and institutional framework to manage affairs of the PWDs. People with disabilities are among the most vulnerable groups in society. They are often undereducated, untrained, unemployed or underemployed. They are also likely to be extremely poor – especially women, youth and those living in rural areas. In Tanzania, movements supporting / protecting the rights of people with disability are quite well established. In the four countries, different disabled persons' organisations and the umbrella organisation regularly take part in discussions with the government on issues affecting the lives of people with disabilities. Therefore, there is need to systematically equity, and ultimately equality of people with disability and living in rural areas where they rely on agriculture and related activities with the rest of the rural population. This can be achieved by providing them with opportunities to engage in agri-business and supporting them with access to training, finance and productive resources to participate in the dairy sector.

Nutrition. There has been modest progress towards achieving global nutrition targets in the East Africa region. However, not a single country in the subregion is on course to meet the targets for anemia in women of reproductive age (aged 15 to 49 years), low birth weight, diabetes among men, diabetes among women, obesity among men, and obesity among women. The latest data shows that anaemia affects an estimated 31.9% of women of reproductive age. Some 13.4% of infants have a low weight at birth in the Eastern Africa subregion. East Africa still experiences a malnutrition burden among children aged under 5 years. The average prevalence of overweight is 4.0% - the second lowest compared to other subregions in Africa with sufficient data. The prevalence of stunting is 32.6%, which is significantly higher than the global average of 22.0%. Conversely, the East Africa subregion's prevalence of wasting is 5.2%, which is lower than the global average of 6.7%. In addition, the region's adult population also faces a malnutrition burden: an average of 7.0% of adult (aged 18 and over) men live with diabetes, compared to 6.5% of women. Meanwhile, 12.1% of women and 3.5% of men live with obesity¹¹.

In Rwanda, anaemia among children went down from 52% in 2005 to 38% in 2010 but this prevalence is still high. Among children under one year of age, seven out of ten are suffering from anaemia. Among pregnant women, (20%) were found to be anaemic. Seven percent of Rwandan women are too thin and 16 percent are overweight or obese.

¹¹ <https://globalnutritionreport.org/resources/nutrition-profiles/africa/eastern-africa> assessed 13 December 2023

Overweight and obesity is higher in urban areas with 30% prevalence for women in the City of Kigali. Vitamin A and Iodine deficiency has reduced more than anaemia, which mainly affects pregnant women and children six to 24 months. During pregnancy and from 6-24 months are periods of rapid growth and more iron is needed. The demand cannot be met by diet alone. In 2010, anaemia prevalence in Rwanda was 25% during pregnancy and 17% among women of reproductive age. More than 70% of children 6-12 months were found to be anaemic. Malnutrition of young children adds permanent risks to their health, growth and cognitive development as well as a loss to their economic productivity estimated at up to 10% over a lifetime. Cumulating these negative effects can result in economic losses of up to 3% of GDP.

In Uganda, gender relations play an important role in food security and nutrition management in the community. Women produce most of the food and with limited resources, but they have no control over this food. Food and nutrition data available for Uganda are over two decades old and need to be updated. Even so, in 2003, the infant mortality rate was at 88.4 per 1,000 live births while the under-five mortality rate was 152 per 1000 live births. The Maternal Mortality Ratio (MMR) was estimated to be 495 per 100,000 live births.¹² Pockets of malnutrition, famine and hunger exist and childhood under-nutrition still persists. 40 percent of deaths among children were due to malnutrition. Over thirty-eight per cent of the children below 5 years were stunted, 4.0 per cent were wasted and 22.5 per cent were under weight.¹³ Micro-nutrient deficiencies are common, especially vitamin A deficiencies which had a prevalence rate of 5.4%, iron deficiency anaemia was slightly more than 50%, while 10% of the women population were undernourished. The total goitre rate ranged between 60-70%¹⁴. Under-nutrition is widespread, affecting mainly children less than 5 years old, school-going-age children, adolescents, women in the reproductive age, internally displaced persons and prisoners.¹⁵

Malnutrition in Tanzania remains high. Over 34% of children under the age of five are stunted and nearly 45% of women of reproductive age suffer from anaemia. The most affected regions, with a prevalence of stunting exceeding 40%, include the semi-arid areas of Ruvuma (41%), Iringa (47%), Rukwa (48%), Kigoma (42%), Njombe (54%), and Songwe (43%). In Pemba North, 39%, and, in Pemba South, 31%, of children are stunted. In Zanzibar, stunting rates range from 20 to 24% in Stone Town and Unguja North, respectively.¹⁴ 14% of children under five are underweight (too thin for age). Inadequate caring and feeding practices, low nutrition education on dietary needs of different age groups (young children, adolescent girls, women of reproductive age, pregnant and lactating mothers, etc.) remain an issue. Studies also show that 59% of the Tanzanian population cannot afford a nutritionally adequate diet. To improve access to milk, a nutritious (high protein animal source food), dairy farmers need to be trained on the importance of allocating some of the milk (mainly evening milk) for household consumption and the importance of making other animal source foods such as chicken and eggs available for consumption at home, rather than selling. For the sake of nutrition, protection of women's livelihood options such as poultry, and collective action in the milk cooperative will empower these women on knowledge on nutrition. DaIMA, partners e.g. GoT, HPI etc can support school milk feeding programs by applying lessons from past successful interventions such as in Kenya whereby providing school milk increased nutrition, attendance and enrolment.

In Kenya, lack of access to adequate and diversified diet results in various forms of nutrition problems. In 2011, over 2 million children (35%) were reported to be stunted. Children under five years are particularly affected by deficiencies in vitamin A (84% of children), iron (73.4%), and zinc (51%). Women, especially pregnant women, are among the most vulnerable with a high risk of iron deficiency (60% among pregnant woman) and vitamin A. An estimated 16% of adult

¹² UDHS, 2000/2001

¹³ *ibid*

¹⁴ Uganda government 2003. The Uganda Food and Nutrition Policy

¹⁵ *ibid*

males suffer from iron deficiency (anaemia). Kenya is also increasingly faced with diet-related non-communicable diseases, especially in urban areas. These are mainly caused by excessive energy intake associated with purchased meals and processed foods and decreasing levels of physical activity in urban settings. Additionally, millions of children and adults suffer from the ill health effects of food-borne diseases.

Gender Based Violence (GBV) and Sexual Exploitation Abuse and Harassment (SEAH). In Rwanda, cultural and patriarchal stereotypes and attitudes perpetuate GBV. Negative gendered attitudes, roles and expectations such as a culture of silence, traditional settlement of GBV cases within families is common. This compromises justice for survivors. Men and boys are often left out of the dialogue and seen as perpetrators rather than allies in GBV prevention. For male survivors, service seeking is limited mainly by the fear of ridicule, loss of influence and space in the community of men. Some forms of GBV are culturally accepted complicates and compromises response measures. Coupled with gendered power imbalances, the culture of silence and the high levels of tolerance and non-reporting, the practice of GBV in Rwanda has created an internal self-sustaining cycle which can only be broken through combined efforts of transformative and strategic engagement with communities and their leaders and law enforcement¹⁶.

In Uganda, the 2016 Demographic and Health Survey revealed that seven in 10 women who had suffered sexual violence neither sought help nor told anyone. Factors that contribute to under-reporting of GBV include social stigma and shame, fear of reprisal, concerns about confidentiality and being believed, and, in some cultural settings, a high tolerance for violence. Most Ugandans think the police take GBV cases seriously, but majorities also see domestic violence as a private rather than a criminal matter and think that women who report GBV to the authorities will face negative reactions from the community. The negative social norms often accept violence such as wife battering, child marriage, FGM, and in some cases rape as normal societal occurrences.¹⁷ Sexual gender-based violence predisposes survivors to HIV, unwanted teenage pregnancies, and mental illnesses like depression. This leads to dropouts among adolescent girls and young women (AGYW), increased risk of HIV transmission, and socio-economic challenges related to child pregnancies. Uganda has a high prevalence of SGBV (22%) among women 15-49 years. While SGBV among AGYW does not necessarily lead to pregnancy, an analysis of District Health Information System (DHIS2) data indicates that an increase in SGBV among AGYW occurred with an increase in teenage pregnancies.¹⁸

Tanzania has a supportive policy and legal framework for GBV. However, many forms of GBV, including intimate partner violence and rape, are tolerated by both men and women—although the justifications for acceptance differ. Women and girls are also frequently blamed for causing or provoking GBV. In part due to blame and shame, women and girls rarely report GBV to authorities or seek other kinds of treatment or support. For example, President Kikwete publicly stated that GBV should be included as one of the Millennium Development Goals. Furthermore, Tanzania's National Strategy for Growth and Poverty Reduction lists violence against women as one of its indicators of poverty—which is rare among poverty reduction strategy papers in other countries.¹⁹

The Kenya Demographic and Health Survey, shows that 45 percent of women aged 15-49 have experienced either physical or sexual violence, while nearly half (47 percent) of those ever married experienced either emotional, physical or sexual violence. Women are also largely at risk of FGM/C, the prevalence rate in Kenya being 27 percent. Furthermore, children also experience sexual violence which are usually perpetrated by persons the victims know.

¹⁶ Republic of Rwanda 2011. National Policy against Gender-Based Violence.

http://197.243.22.137/migeprof/fileadmin/_migrated/content_uploads/GBV_Policy-2_1_.pdf

¹⁷ UNFFPA 2024. Ending Gender Based Violence and Harmful Practices. <https://uganda.unfpa.org/en/topics/ending-gender-based-violence-and-harmful-practices>

¹⁸ Sexual Gender-Based Violence among Adolescent Girls and Young Women 10-24 Years during COVID-19 Pandemic, Bukedi Region, Eastern Uganda. Uganda National Institute of Public Health. Quarterly Epidemiological Bulletin: October–December, 2022 Volume 7 / Issue 4 /Article No. 4.

¹⁹ USAID 2008. Gender-based Violence in Tanzania: An Assessment of Policies, Services, and Promising Interventions. http://www.healthpolicyplus.com/archive/ns/pubs/hpi/Documents/1454_1_TZ_GBV_Summary_FINAL_6_8_11_acc.pdf

However, social stigma and family shame result in the knowledge of the abuse being kept within the family. At times, families are paid “damage money” to buy their silence. This culture of secrecy serves to aid the impunity of the perpetrators.²⁰ In regard to GBV and Sexual exploitation, abuse and harassment, DaIMA will seek to support prevention of GBV and SEAH, by creating awareness, supporting reporting and referral of cases through establishment of Grievance Redress Mechanisms in the IFAD baseline projects as detailed in the Gender Action Plan.

Programme beneficiaries

DaIMA will benefit about 590,000 households (HHs) of which 145,000 HHs will be involved in dairy value chains. The project will target 40 %women, 20 % youth (50 % female) and 5 % vulnerable groups including minorities and PWDs. The majority are dairy farmers in intensive and semi-intensive systems who currently sell or aim to sell milk in formal and informal markets. These smallholder dairy farmers have generally between 1 to 5 dairy cows (6 to 10 kg of milk/cow/day) in zero-grazing/intensive or semi-zero grazing/semi-intensive systems. They are the essential segment of producers who need to be scaled to support the formalization of the dairy sector and foster sustainable intensification based on sound investments and viable business development (see Feasibility Study and Market Studies). Dairy value chain support will also benefit medium and large commercial farmers (6 or more dairy cows, 5-9 kg of milk/cow/day in semi-intensive systems, 12 or more kg/cow/day in intensive systems). Under Output 2.3, the Programme will also benefit (i) pastoralists and agro-pastoralists, and (ii) medium- and large-scale extensive farmers through the rehabilitation/ improved management of 268,000 hectares of rangelands. Entry points to reach dairy farmers will also benefit from the Programme’s support, including dairy cooperatives and milk collection centres (MCCs), L-FFS and Pastoralist field schools (PFS), farmers and community-based organisations. These smallholder farmers will be mainly targeted through Component 1 and Component 2. Beneficiaries of Component 3 will be the larger formal stakeholders in the value chain (dairy cooperatives, private enterprises, processors, input suppliers) who have the capacity (with the support of technical assistance) to prepare business plans for green investments, submit funding applications, and manage implementation. These formal stakeholders will provide backward and forward linkages, extension services and agro supplies to the smallholders.

²⁰ 2012. Sexual and Gender Based Violence in Kenya: A Call For Action Overview of Gender Based violence
<https://ncpd.go.ke/wp-content/uploads/2021/02/Policy-Brief-26-Sexual-and-Gender-Based-Violence-in-Kenya.pdf>

The target beneficiaries for DalMA will include:

- smallholder dairy farmers/ entrepreneurs, pastoralists, input and service providers including dairy processors and their communities, including women, youth, children and vulnerable groups such as people with disabilities and indigenous people involved in dairy keeping.

Others who will benefit in order to facilitate services to smallholder dairy farmers will include;

- ***financial service providers:*** Participating Financial Institutions (PFIs) which will be offering financial services to the small holder dairy entrepreneurs and MSME markets e.g., dairy cooperatives and SACCOs and other micro-finance institutions (MFIs).
- ***other service providers:*** such as advisory and extension staff, input suppliers, agrovets, value chain actors;
- ***program management:*** DalMA Facility Coordination Unit at IFAD and implementing partners or focal points at country subsidiaries.

Targeting strategy and approaches

The targeting strategy will comprise of: (i) geographic targeting, to identify participating Districts and regions and sites in Uganda, Kenya, Tanzania and Rwanda, where dairy has been developed and there is potential to develop the identified VC interventions, and where mature clustered farmers exist for marketing potential. The programme intervention areas are identified based on the integration of: (i) the climate risk hotspots; (ii) absolute methane emissions from the dairy sector; (iii) soil carbon sequestration potential in pastures and rangelands; (iv) milk production by district/county; and (v) complementarity with other international financing institutions (IFI)-funded interventions, more particularly from IFAD (see figure 1 below); (ii) direct targeting of the vulnerable households, including those women headed, youth, vulnerable and marginalized and PWDS to reach the 40 per cent and 30 per cent quota for youth (iii) self-targeting, with activities geared towards the needs of small and medium producers that are engaged in dairy and iv) Enabling and capacity-building measures to develop the capacity and self-confidence of those with less of a voice and less power so that they can articulate their needs and participate in planning, decision-making and project activities.

PART 2: GENDER AND SOCIAL INCLUSION ACTION PLAN

DalMA will target 40 per cent women, 30 per cent youth, and 5 per cent comprising of persons living with disabilities (PWDs), indigenous people. Women, youth and PWDs will be targeted with technological solutions to reduce methane and GHG emissions, and the financial support services to sustain efficient production and marketing processes. Indigenous people will be protected by ensuring that they will not be displaced from their ancestral land; children will benefit from nutrition interventions, which will include milk provision through the school feeding program and other interventions such as mother nutrition education.

The objective of this DalMA GESI action plan is to ensure that women, youth, people with disabilities and marginalized groups have equal opportunities to participate in, and benefit from, the program as men in these communities. Social inclusion considerations for these groups will be achieved by increasing their participation in project activities, economic empowerment opportunities, access to information and skills as well as linkage to market and value addition. In this regard, the action plan primarily proposes to integrate GESI actions within the project activities and sub-activities and only proposes separate GESI actions such as those to address GBV and SEAH where a direct fit is not guaranteed with core DalMA activities.

Purpose

The purpose of the DaIMA Programme is to increase smallholder dairy production and associated input and service providers' revenue, and/or reduce their production costs through reduced methane and other GHG emissions by adopting the GHG emission reduction technologies and financial services to efficiently sustain production and marketing processes.

Objectives of the Programme

- i. To strengthen systemic and institutional capacities of the livestock sector to enable smallholder dairy producers and local value chain actors to reduce CH₄ and other GHG emissions
- ii. To increase production, market knowledge and tools for smallholder dairy producers and private sector value chain operators for a low-emission, climate-resilient, and sustainable pathway
- iii. To enable smallholder dairy producers and local private sector value chain actors access to required financial services to make the necessary transition to low-carbon, climate-resilient, and sustainable livestock production and value chain development.

Theory of change, assumptions and risks

The programme will integrate GESI considerations into DaIMA Components and activities, complemented by targeted interventions for women and youth to overcome the specific barriers identified. This approach will enable programme opportunities to be expanded to women, young women and men, vulnerable groups and persons with disabilities, while also addressing the main gaps and barriers they face to inclusion.

The GESI theory of change is founded on the need to identify and address systemic barriers and social and negative gender norms that perpetuate inequalities and exacerbate barriers for women, youth and vulnerable groups that preventing from equally participating in and benefitting from dairy production. Therefore, the integration of GESI activities within the Programme Components is critical. Component 1 is about strengthened national capacities and enabling environment for low-emission climate-resilient dairy sector, whereas Component 2 addresses low emission and climate resilient primary dairy production and Component 3 on Green Dairy Financing Facility (GDFF).

DaIMA aims to address the following challenges: (i) strengthening climate resilience, (ii) reducing emissions across the dairy value chain; (iii) the reduction of GHG emissions per kg of milk; and (iv) improving the livelihoods of dairy farmers in East Africa. This requires a holistic approach to improving all aspects of the dairy sector, from improving policy, institutional and service delivery environments to building the capacity of smallholder farmers including women, youth and the marginalized. It also includes measures to facilitate access to finance and innovative technologies with mitigation and adaptation benefits. As a result, female and youth dairy farmers and processors will be motivated to adopt more efficient, climate-resilient practices that will increase incomes, reduce production costs, and help combat climate change. Central to this transformative approach is the symbiosis of private sector support and financial access within the dairy sector. This integration aims to foster market growth while promoting climate resilience and reducing GHG emissions.

To address these gendered barriers, DaIMA will contribute to gender equality and women empowerment women by: (i) Increasing women economic empowerment through access to improved dairy breeds, better access to productive resources and services, marketing and value addition and access to finance by targeting women dairy smallholders in dairy production; (iii) Balancing and reducing women workloads related to dairy keeping through improved technologies, climate-resilient crop and sustainable productions and greater efficiency; (iv) increased women participation, voice and decision-making in dairy farmer organizations and cooperatives (v) Increasing positive gender and social norms such as joint benefits sharing through the GALS methodology and (vi) Contributing to policy

engagement by undertaking gender analyses or developing policy briefs in the planned related policy reviews. These interventions will target women involved in dairy production, young females and males and vulnerable groups including PWDs among beneficiary communities. Addressing barriers to gender equality and women empowerment, youth, nutrition and social inclusion will ensure that project benefits will be equally distributed. This will be integrated throughout the project activities strengthening capacity of those responsible for programme delivery and strengthening of the monitoring and evaluation system to ensure sex and gender disaggregated data. The section below highlights specific GESI interventions that will be integrated under each of the project activities for alignment and ease of implementation by teams.

COMPONENT 1: STRENGTHENED NATIONAL CAPACITIES AND ENHANCED ENABLING ENVIRONMENT FOR LOW EMISSIONS CLIMATE RESILIENT DAIRY SECTORS

1. Output 1.1: Climate-responsive policy and regulatory environment established.

Activity 1.1.1: Review and formulate Dairy Sector policies, strategies and regulations for climate-change adaptation and mitigation. In the four countries, the Programme will support the Ministries, Departments and aligned institutions in charge of the dairy sector to review and formulate national policies, strategies, and regulations that are gender and socially inclusive and essential for a sustainable transformation of the dairy sector, in line with the NDCs and NAPs. This includes aspects related to mainstreaming CC adaptation and mitigation, and adopting export and import regulations that favour sustainable development and private sector engagement and investment in the dairy value chain (taxation of imports of dairy produce, specialized equipment, inputs, such as germplasm, fodder seeds, feed additives, solar cooling, biodigesters, etc.). Resources will be provided to (i) mobilize national and international expertise for policy review and formulation; (ii) facilitate stakeholder consultations to ensure that the policy review and dialogues are inclusive; (iii) validation processes, and (iv) the preparation of policy briefs and communication materials for popularization.

Sub-activity 1.1.1.1 Support the review and preparation of national dairy policies, strategies, and regulations to mainstream climate-change adaptation and mitigation. Priorities in the four countries will be the following. In **Kenya**, (i) the Dairy Industry Strategy and Investment Plan to guide the sustainable transition of the dairy sector; (ii) the draft National Strategy and legal framework for Animal Feed and Fodder; (iii) a National Strategy for Animal Breeding and breeding regulations (iv) the draft Dairy Industry Act (1958); (v) the Kenya Agricultural Sector Extension Policy (KASEP), (vi) the development of compost and bio-slurry standards; and (vii) milk and milk product standards on food safety and quality. In **Rwanda**, the upcoming Strategic Plan for Agriculture Transformation 5 (PSTA5) provides a framework for a low-carbon and climate-resilient agriculture sector. Within this framework, the Programme will support the review of: (i) national climate and sectorial policies that are regulating the dairy sector; a new agriculture and livestock policy for Rwanda is currently under development which includes climate resilient livestock production; (ii) the regulatory framework and standard operating procedures (SOP's) for dairy value chain operators in direct collaboration with Rwanda Food and Drugs Authority (FDA) and Rwanda Standards Board (RSB), for milk quality, standards and safety, feed formulation, energy efficiency, and CC; (iii) the 2016 Ministerial Order to address new dairy value chain realities, including the MCP-model and the need to regulate the raw milk market, whose actors are mainly women and young men. Support will be given to the formulation of a national regulatory framework for the private veterinary practice including for Community Animal Health Workers (CAHWs) and Livestock Farmer Field Schools (L-FFS) facilitators with considerations of increasing women and youth participation; (iv) support will also be given to RNDP for the formulation of the dairy value chain (DVC) regulatory law empowering the platform to conduct overall DVC regulation as in EAC member countries. In **Tanzania**, the Programme will support finalizing the draft national Livestock Policy, as well as the review of: (i) the Animal Health Act (2003) to update aspects related to private practitioners; (ii) the Dairy Act to update regulations on raw milk trade considering that raw milk is mainly traded by women and young men; (iii) the

formulation of disease contingency and control plans; (iii) the draft Tanzania Dairy Development Strategy and roadmap to become carbon neutral, sustainable and inclusive. In **Uganda**, the Programme will support: (i) finalizing the National Livestock Development Policy, integrating CC priorities (breeding, feeding), enabling policies for private sector investments, research strategies on climate-resilient feed germplasm to offset predicted yield declines, as well as rangeland ecology; (ii) the review of the Dairy Industry Act, the Animal Disease and Health Act, and the Animal Breeding Act; (iii) support drafting regulations for animal identification, dairy cattle breeding, livestock insurance) to integrate CC mitigation; (iv) review land policies and regulation to mitigate land tenure insecurity for dairy farmers.

The gender activity will review of existing IFAD investment project baselines to analyse the barriers for women, youth and vulnerable groups and recommend actions where DaIMA will be operating. This will be undertaken using the Pro WEAI approach adapting the IFAD Empowerment Indicator. And will include an analysis of (i) Existing laws, sectoral policies (in review), regulations, and institutional practices (ii) Cultural norms and beliefs related to women and men in targeted communities in relation to dairy production (iii) Gender roles, responsibilities and Time Used in dairy activities (iv) Access to and Control over Assets and Resources and (v) Patterns of power and decision-making to identify gaps and opportunities for advancing gender equality and women empowerment. This analysis will recommend and inform targeted interventions to address identified gender barriers and challenges specific to the dairy sector if not already complimented by ongoing IFAD investments.

Sub-activity 1.1.1.2: Support the regional policy dialogue to mainstream climate-change adaptation and mitigation in regional dairy policies, strategies, and regulations. In coordination with regional and national dairy platforms and stakeholders, DaIMA will support a region-level EAC assessment and proposals for further regional alignment on dairy sector regulations, including export and import regulations, to accelerate regional convergence in dairy standards and market integration, and to enhance climate responsiveness. National stakeholders will be supported to participate in regional events. Under this activity the programme will facilitate women, youth and vulnerable groups participation in the events. This will include supporting women with childcare, special provisions for PWDs access and participation.

Sub-activity 1.1.1.3 National dairy value chain governance and awareness creation. The aim of this activity is to enhance dairy value chain governance and to mainstream the importance of climate-change in this process. At national level, the national dairy boards (KDB, DDA, TDB, RNDP) and other relevant professional bodies of private stakeholders, will be supported to create gender awareness in the dairy policy dialogue, to create awareness and education/capacity building on climate, feed and dairy policies and regulations and how they affect women, youth and the vulnerable.

Sub-activity 1.1.1.4 District/regional/county level dairy value chain governance and planning. Local-level multi-stakeholder platforms involving delegates from dairy value chain stakeholders will participate in the annual planning and review of Programme activities. DaIMA will ensure participants women, youth dairy cooperative members, milk collectors, milk processors, service providers of artificial insemination (AI), veterinary services, extension staff and local government.

Activity 1.1.2 Launch awareness campaigns on nutritional benefits of milk and food safety aspects. This will be a targeted support to milk consumption and nutrition awareness, accompanied by nutrition education and social behaviour change among smallholder producer and consumer households, informal dairy value chain actors and milk handlers in the school milk program. The aim is to improve nutritionally vulnerable groups' consumption of milk, therefore enhancing their individual health and nutrition. The Programme will support milk consumption and nutrition awareness through increased availability, accessibility, affordability, and consumption of high-quality and safe dairy products, accompanied by nutrition education and social behaviour change and communication (SBCC) to reach out to informal dairy value chain actors, milk handlers at home and institutions and nutritionally vulnerable groups. This

activity will target 40 per cent women ensuring male engagement to increase the participation of men in improving household nutrition. Women will be trained as ToTs and facilitated to roll out community outreach campaign sessions and food exhibitions and demonstrations.

Sub-activity 1.1.2.1 Public awareness on the contribution of milk to nutrition and resilience, with focus on climate vulnerable population. The awareness raising will use various community platforms such as extension, L-FFS, MCC/cooperatives will include women and other vulnerable and marginalized groups meeting quotas. Topics will include improved milk treatment, food safety, handling and nutritional benefits of dairy produce, pasteurized and processed milk. In **Rwanda**, it will include participation in dairy fairs/expos under the auspices of RNDP to showcase climate-friendly and energy efficient local processing and consumption of dairy products. In **Tanzania and Uganda**, the Programme will scale up school milk programs for improved nutrition of vulnerable children especially those under five years.

Sub-activity 1.1.2.2 Build capacity of dairy inspection to ensure milk quality and safety and reduce waste. Dairy inspection is essential for sector-level milk quality and safety, thus encouraging formal market growth and reduction of milk rejection and waste (less GHG emission intensities). The Programme will provide technical training and equipment to the actors in the informal dairy sector, especially women and male youth, strengthen capacities of inspections to ensure development and enforcement of milk quality and safety standards. Women and youth will be considered among the inspectors to increase their capacity development and execution of inspection, creating jobs.

Activity 1.1.3 Improve land tenure security for sustainable dairy farming. The Programme will adopt a fit-for-purpose approach to identify and mitigate tenure risks. Activities to mitigate this risk will vary depending on the type of land, type of governance and sex and age of the person accessing and controlling the land. For pastoral and agropastoral systems, the focus will be on the identification of use of rangelands by gender, their protection and supporting gender and social inclusive participatory planning and management. In **Rwanda**, all land is registered and individually owned. The focus will be on optimizing land productivity through land consolidation and land use planning. Activities will include capacity building and support to participatory planning processes to create local-level capacities.

Sub-activity 1.1.3.1: Mapping of local tenure risks and preparation of training materials. The Programme will mobilize specialized technical assistance to: (a) implement a rapid tenure governance capacity assessment, including a tenure risk assessment for the Programme target areas analysing gender barriers for women; (b) develop training material to increase local authorities' capacity to secure gender and social inclusive tenure rights for dairy production and the public's capacity to identify and secure legitimate tenure rights. Based on the national tenure context, each dairy production system's tenure risks in terms of gendered access, use and security of land will be identified and assessed, and appropriate gendered mitigating strategies will be proposed.

Sub-activity 1.1.3.2: Developing capacity on land tenure at decentralized level. The focus will be on capacity building of local authorities and raising public awareness on options to incrementally increase tenure security for women and men of all ages and the vulnerable such as allocation of government land to youth groups. The Programme will support public awareness campaigns on tools available to secure tenure rights for women, youth and the vulnerable.

Sub-activity 1.1.3.3: Participatory planning of tenure for dairy farms on communal and customary land at local level. The Programme will scale-up best practices in gender and social inclusive communal rangelands participatory planning and management. This activity will support the participation of women as community members and leaders in the planning of tenure for dairy farms on communal and customary land for example ensuring the community committees include 40 percent women.

2. Output 1.2 Improved service delivery to the dairy sector

Activity 1.2.1 Strengthen veterinary services for better animal health, higher milk yields and reduced losses. A key barrier to reduce GHG emissions and sustainably increase the productivity of dairy animals is animal health and welfare. Climate change exacerbates the emergence and re-emergence of diseases and infestation (East Coast Fever – ECF, helminths infestation, etc.). Healthier animals are more resilient to climate hazards and more productive, with less milk to be discarded, leading to a reduction of “unproductive” GHG emissions. The higher revenues provide incentives for farmers to adopt animal health and welfare measures, especially if the benefits are equitably distributed among the men, women and youth in the household. To expand the outreach and capacity of veterinary services, the Programme will invest in proximity animal health support, as well as in national diagnostic capacity of veterinary laboratories while supporting equitable capacity development targeting women service providers.

Sub-activity 1.2.1.1 Support the installation of both private and public veterinarians and veterinary paraprofessionals. The Programme will implement the animal health support and disease control system, using the “One Health” approach. The approach will have three levels: (i) support private veterinarians and para-veterinarians, in particular young female and male practitioners; (ii) recruit and support livestock extension workers, while ensuring gender (sex and age) equity in participation at local level; (iii) provide additional training to lead female, male and youthful farmers from the L-FFS for coaching their peers and assist private female and male para-veterinarians and livestock extension workers. In **Kenya**, veterinary education, and training programs to women and men from both private and public veterinarians and veterinary paraprofessionals in the Programme area will be enhanced. In **Rwanda**, support will be provided for the installation of young female and male veterinary doctors and veterinary technicians as private practitioners to enhance accessibility of services while creating jobs. In **Tanzania**, female and male Livestock Extension Workers (LEWs) will be equipped and trained, and private male and female paravets will be incentivised to ensure the last mile animal health and extension services. In **Uganda**, the Programme will build capacity of female and male veterinarians, para-veterinarian technicians, and community-based animal health workers (CAHWs) on One Health principles, disease diagnosis, emerging and re-emerging diseases because of CC.

Sub-activity 1.2.1.2. Strengthening diagnostic capacity of veterinary laboratories and capacity to test quality of animal feed. In **Kenya**, the Programme will improve disease control (surveillance and monitoring, contingency planning, and treatment) of targeted diseases including modern diagnostic equipment in regional centres (located in Nairobi i.e. Kabete and Embakasi, Nakuru, Kericho, Eldoret, Karatina, Garissa and Mariakani), testing kits, telemedicine. In **Rwanda**, four (4) satellite laboratories will receive additional equipment for serology (ELISA) and molecular diagnosis (PCR) to enable rapid detection of infectious diseases, as well as equipment for handling biological waste and the establishment of environmentally friendly practices. The Programme will also strengthen the national veterinary laboratory (NVL) to handle advanced diagnostic capacity for viral diseases affecting livestock. In **Tanzania**, the Programme will: (a) strengthen the Tanzanian Veterinary Laboratories Agency (TVLA) and the Central Veterinary Investigation Laboratory in Zanzibar; (b) support the establishment of district mobile laboratories that will serve LEWs local (para)vets; (c) train female and male laboratory technicians for each mobile laboratory. In **Uganda**, veterinary laboratories will be strengthened (equipment, reagents, consumables for sample collection and mobile laboratory facility) for detection of the diseases related to CC. It will also establish a national data management system on emerging and re-emerging diseases because of CC (TAD and zoonosis). In each country, the Programme will: (i) enhance the capacity to undertake feed testing in the national research institutions (KALRO in Kenya, RAB and UR-CAVM in Rwanda, NARO in Uganda, TALIRI in Tanzania); this includes equipment, training of young female and male researchers, and inputs for testing feed samples; (ii) undertake on-farm feed sampling and laboratory quality testing (e.g., dry matter, carbohydrates, protein, fat, minerals, vitamins).

Activity 1.2.2 Strengthen extension services for low-carbon and climate resilient dairy sector. To reach out to men, women and youth dairy farmers, raise awareness and build their capacity in the field of CC mitigation and adaptation, the Programme will adopt innovative extension models and tools (including digital), and enhance the capacity of extension services. This activity will involve improving delivery of public and private extension services at farm and cooperative/ aggregation levels, by female and male local (district/county) livestock officers who coordinate the community-based extension system. To provide proximity advisory services on climate-smart practices, the Programme will provide support through Livestock Farmer Field Schools (L-FFS), affirmatively ensuring the involvement of female lead and participant farmers, youth, in mixed crop-livestock systems and Pastoralist Field Schools (PFS) in grazing and pastoralist systems.

Sub-activity 1.2.2.1. Preparation of training modules for extension in climate mitigation and adaptation measures.

If required, specific topics that are part of the proposed pathways under Outputs 2.2 and 2.3 and related to CC will be added to the modules of the L-FFS (or other extension approaches). The topics in the training modules related to climate-smart milk production and handling could include: fodder production, harvesting and conservation; use of conserved silage and urea-molasses multi-nutrient blocks (UMMB); supplementation (use of non-conventional feed resources e.g. sweet potato vines or tannin-rich plants reducing and inhibiting CH₄ production) reproductive management; health management including One-Health aspects and management of anti-microbials, biogas and manure management, use of drought-resistant fodder, application of crop residues, seed production (certification, traceability, quality control), improved diet formulation to reduce emission intensities (use of feed formulation software, such as the innovative SNV-developed Rumen8® tool), and animal welfare, including housing in zero-grazing practices. The guidelines will be prepared on improved fodder cultivar and climate-smart technologies, innovative management practices for pasture and fodder production, and agroforestry practices (e.g. leguminous fodder trees as standalone or line trees). The L-FFS modules will be developed with the support of national or international technical assistance. The L-FFS modules will include gender modules with strategies and guidelines to support women, youth and vulnerable groups participation DaIMA will support the selection of female and young trainers.

Sub-activity 1.2.2.2 Training of master trainers (ToTs) and facilitators of extension systems in climate-change related topics. The Programme will support the strengthening of existing L-FFS and the establishment of new L-FFS (aiming at 40 percent women and 30 percent youth). To support the sustainability and scaling up of the L-FFS, existing L-FFS/ PFS male and female master trainers and facilitators will be trained on the specific topics listed above. The training modules will include Gender and related topics.

Sub-activity 1.2.2.3 Promote innovative extension tools. These innovative extension tools could include: (i) participatory extension approaches, such as the Participatory Integrated Climate Services for Agriculture (PICSA), which has been piloted in **Kenya, Rwanda and Tanzania**, (ii) e-extension tools by using bulk SMS and internet to reach more farmers, provide highly captivating and interactive packages, partner with other stakeholders including targeting youth in the development of content and capacity and to improve ability to access and share knowledge and skills on farming technologies, (iii) TV, radio and social media networks. In addition, other innovative extension tools could include: in Kenya, the use of the agro-weather platform namely Kenya Agricultural Observatory Platform (KAOP), a digital platform developed through a joint initiative between the KALRO and the KMD, designed to provide weather information to support decision-making in the agricultural sector in Kenya to develop capacity of extension officers and producers on climate change adaptability. In **Tanzania**, the iCow app and or other innovative extension tool will be developed and promoted. In **Rwanda** digital agriculture solutions such as the *smart-nkunganire* system provides services to farmers.

3. Output 1.3: Improved GHG MRV capacities & monitoring of climate vulnerabilities

To reliably track progress on the ambitious climate goals of the national NDCs, state-of-the-art systems of Measurement, Reporting and Verification (MRV) of GHG emissions are needed within the participating countries, along with national capacity to manage such systems, more particularly in the livestock sector. This Output will enable countries to report with accuracy on emissions in the dairy sub-sector in their national GHG inventories at Tier 2 level, and address the institutional, planning and knowledge barriers identified in the ToC. It will also enable countries to capture the impact of investments in dairy on GHG emissions in their NDC and therefore contribute to their climate commitments. Improved MRV systems will ensure that participating countries can conduct their own GHG calculations with cutting-edge methods, develop their own mitigation pathways and policies, and attract more public and private climate finance, including through carbon credits. This Output will also address the issues related to the data for climate vulnerability assessment and national feed balances, all contributing to improved climate resilience. Countries will receive implementation support from ILRI (Mazingira Centre and research stations) to execute Activities 1.3.1 and 1.3.2.

Activity 1.3.1: Develop capacity in the country on MRV system. The Programme will identify critical capacity needs at national and local levels to improve the operation of MRV systems by young and older women and men. This will help developing consistent MRV systems for the dairy sub-sector that allows systematic updates, so that the impact of interventions of the Programme, and beyond, can be monitored over time, and progress can be assessed against an established baseline.

Sub-activity 1.3.1.1: Capacity assessment and development in capturing, recording, tracking, and reporting data on dairy GHG emissions. This sub-activity will carry out in depth capacity assessments of existing MRV tools and frameworks in the four countries, and the place of dairy in them. Based on these assessments, capacity development will be provided to design activity data questionnaires for Tier 2 GHG emissions in dairy (e.g. animal numbers, weights, productivity, feed rations, animal health interventions, manure management and grassland management) and develop a data management system to ensure reliable flow of information between the various national and local agencies involved in the MRV system. ILRI's Mazingira Centre will provide trainings to young women and men from the countries on data collection protocols adjusted to their needs to relevant stakeholders (technicians, university staff, staff of national research institutes and ministries, and other relevant actors). ILRI will provide dedicated digital data collection tools (e.g. ODK), data quality control, and calculation of GHG emissions for inventory reporting, following established protocols.

Sub-activity 1.3.1.2: Developing MRV systems for the livestock sub-sector. This intervention will include baseline, measurement of individual mitigation activities, impact assessment on absolute emissions and emission intensities and institutional arrangements. To ensure sustainability and impact at scale, the sub-activity will update of national livestock census questionnaires to include activity data requirements for GHG inventories outlined by IPCC on other cattle and livestock. This will allow countries to track livestock productivity and to report on enteric CH₄ and manure CH₄ and N₂O emissions, and soil carbon storage in grasslands/ rangelands, following international inventory guidelines, using IPCC Tier 2 methodology.

Activity 1.3.2: Improve GHG emission measurements in dairy value chains. On-farm data like animal live weights and milk yields are necessary to calculate Tier2 GHG emissions. Emission factors also need to be improved to reflect local conditions (e.g., animal metabolism, feed composition). This activity will comprise the following sub-activities:

Sub-activity 1.3.2.1: Collect activity data on farm to calculate Tier 2 dairy emissions under various herd, feed, animal health and manure management situations. The Programme will finance the collection on-farm activity data for baseline and “with-project” situation, using digital tools (e.g. livestock Tier 2-specific ODK tool). This includes data on animal numbers, weights, productivity, feed rations and manure management system. The measurements will be disaggregated by sex and age of the owner if the animal. This sub-activity will be performed annually with the support of ILRI, in direct partnership with national research institutions and academia of the four countries, to ensure sustainability and replication through the transfer of capacity (see output 1.4). This activity will inform the Programme’s M&E system and provide data for baseline and “with-project” situation.

Activity 1.3.4: Climate risk and vulnerability assessments. Together with improvements to extension services under output 1.2, the Programme will seek to improve the accuracy and use of information (climate, feed availability) to last mile-users in the dairy sector especially women as livestock caretakers. This will include building the capacity of devolved CC units and decentralized meteorological offices to develop and disseminate climate and usage of information services by different groups, including (i) impacts of CC on the dairy sector; and (ii) information on availability of feed, through tools like national feed balance sheets.

Sub-activity 1.3.4.1: Climate risk and vulnerability assessments, including impacts on the dairy sector, at local level. It will consist of carrying out dairy sector climate risk and vulnerability assessments at local level, based on historical and projected climate data. This will involve the development of agro-climatic zone maps and Dairy Sector suitability maps based on the current climate (1991-2020 period). The assessments will include gendered aspects related to vulnerabilities faced by women and other groups such as pastoralists etc.

4. Output 1.4 Knowledge management and regional cooperation enhanced.

The Programme will facilitate transfer of knowledge through regional and South-South and Triangular Cooperation (SSTC), with the objective to replicate the transformative practices for climate-resilient and low-carbon dairy adopted by the Programme. The EAC / AU-IBAR will contribute to the implementation, by facilitating regional platforms, sharing experiences, exporting best practices, and spearheading policy dialogue. ILRI Mazingira Centre, as a State-of-the-Art environmental and regional research and education Centre, will also contribute. This Output will address the institutional, planning and knowledge barriers identified in the ToC. Shared knowledge will enhance future low-carbon planning in the dairy sector, minimize climate risks and enable participating countries to take advantage of available climate smart opportunities within the region.

Activity 1.4.1. Support to Regional Centres of Excellence for technology validation and for maintaining a regional database on practices, GHG emissions and adaptation indicators. To ensure sustainability and transfer of capacity to national institutions, the Programme will provide scientific support combined with capacity development targeting female and young officers in the “regional centres of excellence” to export knowledge regionally and globally on CC and GHG emissions for the dairy value chain. National Centres of Excellence (or “knowledge hubs”) will include national agricultural research institutions (e.g., KALRO in Kenya, NARO in Uganda, TALIRI in Tanzania, RAB in Rwanda), local universities (e.g., Makerere in Uganda; University of Nairobi, Eldoret or Maseno; University of Dar es Salaam or Sokoine University of Agriculture (SUA) in Tanzania). It will build on the legacy of the East Africa Agricultural Productivity Programme (EAAPP, World Bank-funded), which has built Regional Centre of Excellence (RCoE) in the dairy sector in Kenya.

Sub-activity 1.4.1.1: Support to regional Centres of Excellence in technology validation and dissemination. The Programme will assist the above-mentioned institutions with (i) technical trainings and protocols for GHG measurements (emission factors, soil carbon storage) and estimation methods to build their own capacity for research, MRV and technology validation linked to climate change mitigation, (ii) research capacity for conducting innovative research such as optimizing the biogas process for enhanced energy and nutrient recovery and building efficient biogas technologies, (iii) vocational training and development of materials, standards, university-level educational curricula and guidelines integrating youth and women, and (iv) knowledge, information and visibility products, related to the four focus areas feeding, animal health, manure management and biogas, and grassland management and soil carbon sequestration.

Sub-activity 1.4.1.2: Develop and maintain a regional database/ repository on practices, GHG emissions per sources and systems, and climate change adaptation. This sub-activity will consist in developing, maintaining, and promoting a regional database on best practices, and their impact on GHG emissions per source and livestock production system, and adaptation indicators. ILRI has a large repository of training materials on its open-access “CGSpace” platform, which will be leveraged, and made available to all actors in the Programme, with the support of the EAC.

Activity 1.4.2: Establish regional cooperation platforms and participation to regional/ global networks for knowledge exchange and policy dialogue on climate-smart dairy sector transformation. The regional collaboration platforms will include various public and private stakeholders, including the EAC, AU-IBAR, IFAD, FAO, ILRI, the East and Southern Africa Dairy Association (ESADA), local government partners, centres of excellence, international organisations and NGOs, and involve private sector platforms and networks (e.g. One Health Research and Education Centre in Africa – OHRECA; Global Research Alliance Manure Management Network; Global Dairy Platform; Nutrient Circularity Network; National Biogas Stakeholders Network in Kenya). The participants will include women and youth. The Inter-Governmental Authority on Development (IGAD), through its Center for Pastoral Areas and Livestock Development (ICPALD), will be invited to share its experience in facilitating appropriate and applicable knowledge, research, and technology development, including their domestication, adoption, and transfer through regional platforms.

Sub-activity 1.4.2.1: Regional platform for knowledge sharing and policy dialogue to enhance low-emission, climate resilient dairy development. A regional platform – involving the above-mentioned entities - will be organised on a rotational basis in each of the participating countries to share experiences and scientific innovations and best practices implemented on farm. The regional platform will function as the knowledge management mechanism for the Programme. It will capture and disseminate good practices and lessons learned from both public sector, private sector, networks and the research and academic community. This sub-activity will provide evidence – generated from the Programme M&E system - on the GHG efficiency gains (from breeding, artificial insemination/ herd management, feed, animal health), circularity (manure management, recycling) and carbon sequestration. Success stories for replication (e.g. Kenya for Tier 2 MRV), scientific innovations (animal nutrition / TIMPs, manure management for continuous improvement) will be documented. It will finance annual regional workshops, conferences, seminars, tours (exchange visits), meetings and policy briefs ensuring participation quotas for women and youth are met.

Sub-activity 1.4.2.2: Participation in regional and global climate policy mechanisms. In practice, the sub-activity will consist of a joint participation of the 4 countries in global and regional events (global science and policy mechanisms on dairy and climate change) such as the Greenhouse Gas and Animal Agriculture Conference – GGAA 2025, the African Climate Summit, the African Dairy Conference, and the UNFCCC COP). The objective will be to present the progress and results from the Programme for scaling-up and replication, increase its visibility and engage with other countries

in sharing experience and learning. Participants in these conferences will include women, youth leaders and include other intersectional / marginalizing attributes such as disability.

Sub-activity 1.4.2.3: South-South and Triangular Cooperation (SSTC). This sub-activity will support the emergence of a global network of experience and expertise on reducing GHG emissions, especially methane, in dairy production and value chains, as well as financing solutions to support these reductions. This sub-activity will finance the participation in knowledge-exchange programs, including through IFAD's "Learning Routes" with e.g. Argentina, Brazil (Embrapa), Costa Rica and Uruguay on Tier2 analysis and climate impact assessments in the dairy sector. Other initiatives for SSTC will be identified and assessed by the Regional Steering Committee in collaboration with the EAC. It will finance study tours and gender and socially inclusive country delegations to workshops to share innovations and scalable practices generated by the Programme.

COMPONENT 2: LOW EMISSION AND CLIMATE RESILIENT PRIMARY DAIRY PRODUCTION

5. Output 2.1: Smallholders' and cooperative capacity development strengthened.

Activity 2.1.1 Strengthen dairy cooperatives on organizational management and service delivery. This activity aims to strengthen cooperative, organizational, and technical capacities of dairy cooperatives, and raise their climate-change and gender and social inclusion awareness of their management team. Also enhance the enrolment of women and youth dairy value chain actors in the cooperative membership and leadership. Support will also be provided to establish or enhance their network of MCCs and MCPs, and their business linkages.

Sub-activity 2.1.1.1 Strengthen the governance and management structures of dairy cooperatives. This sub-activity will include: (i) training on cooperative governance and management practices for all management, supervisory and general committees of dairy cooperatives, (ii) the business coaching of cooperatives by business development service providers, (iii) where desirable, assistance for the registration as a formal dairy cooperative; and (iv) the participation in national and regional events that are essential for dairy value chain governance, promoting inclusive policy, and business dialogues.

Sub-activity 2.1.1.2 Strengthen capacity to reduce milk losses and ensure milk quality and safety. At the aggregation stage, up to approximately 8 percent of the milk is lost via spillage and spoilage. Aiming at reducing unproductive GHG emissions due to milk loss or quality loss, this sub-activity is to assist dairy cooperatives, MCCs and MCPs in upgrading their technical capacity in milk quality control covering raw milk testing at milk collection, hygiene, and initial processing beyond the sale of raw milk, in line with national and regional food safety standards. The support will assist women and youth to acquire (i) basic equipment for milk collection (motorcycles, milk cans and can holders, testing equipment), (ii) insulated milk transport vehicles (demonstration purpose); and (iii) training on milk quality, food safety and hygiene including informal milk vendors, transporters and technical staff of cooperatives, MCCs and MCPs ensuring women and youth participate.

Sub-activity 2.1.1.3 Expand the outreach and capacity of dairy cooperatives, MCCs and MCPs. The targeted MCCs and MCPs will be supported to develop gender and youth responsive action plans to ensure opportunities for youth employment such as inclusive and equal employment opportunities ensuring women can work such as 'zero tolerance' to GBV and SEAH and other inclusive policies and practices. This may include trainings or technical assistance for such institutional capacity building.

Sub-activity 2.1.1.4 Create gender awareness and roll out GALS among households of dairy farmers. Gender transformative approaches will be integrated in the Programme. Capacity building and trainings for stakeholders on

gender equality and women empowerment will be rolled out across the four countries. This will be done for national, regional and community level stakeholders. The enhanced Gender Action Learning System (GALS+) methodology will be used to address power relations and inequalities especially targeting households and at group or community levels. As men and women have diverse ways of coping and adapting to the adverse impacts of CC, GALS+ includes (i) an integrated climate component to strengthen the mitigation measures and adaptive capacities of households and communities to CC; (ii) nutrition and food safety aspects. DaIMA will support: (i) gender awareness and targeting workshops for staff of implementation units and contractors; (ii) training lead farmers and cooperative committees in the GALS methodology; (iii) rolling out of GALS in L-FFS households including support for community outreach sessions; and (iv) national gender sensitization and training workshops for the management of dairy cooperatives. This activity will include trainings on the prevention of GBV and SEA. Specifically, DaIMA will ensure awareness on GBV and prevention of SEA training for each new employee, intern/fellow, volunteer, contractor, board member or partner as part of their orientation. This may include development of Project guidelines or policy with clear reporting channels and redress mechanisms.

Activity 2.1.2 Build and enhance Productive Alliances along the dairy value chain. The Programme will provide support to productive alliances between farmer cooperatives and enterprises with farmer-allied engagement models, and scaling-up of gender and social inclusive dairy clusters. This will enable female and young farmers to access affordable, high-quality inputs and services.

Sub-activity 2.1.2.1 Strengthen cooperatives' capacity in business and financial management. The aim is to ensure that dairy cooperatives and their MCCs are run as viable business enterprises. Therefore, the Programme will support cooperatives in building out business plans and partnerships for expanding and enhancing the services they offer member farmers (e.g., facilitated feed and AI service purchases checked-off against milk sales) – serving as “dairy hubs”. These dairy hubs will build capacity of young farmer leads as mentors to increase youth engagement. For implementation, providers of business development services (BDS) will be mobilized. In addition, the members of dairy cooperatives and MCCs will receive: (i) financial literacy training, financial management training and equipment (software and IT equipment); (ii) gender-sensitive and inclusive business management and business plan development training (using participatory tools such as RuralInvest, developed by FAO). This activity will support job placements for trained young people in participating MCCs and MCPs as part of increasing their employability and creating jobs. Further, youth trainees will receive business mentorship and coaching on business and financial management in well performing dairy cooperatives and enterprises over an agreed period after completing their job placements.

Sub-activity 2.1.2.2. Build linkages along the dairy value chain. The suppliers of BDS will also provide capacity building for negotiation of offtake agreements between cooperatives and private off takers (Productive Alliance model), as well as public procurement (e.g. school or hospital procurement) for better milk prices guaranteed by contract. The aim is to support establishing Productive Alliances with cooperatives and in designing, enhancing, and scaling key components of their farmer engagement models, such as quality-based or volume-based price incentive terms offered by processors, extension provision, and direct or facilitated provision of inputs and services. Through this support, a pre-investment pipeline will be developed, and related financing needs identified. This support will facilitate youth and women led alliances.

Sub-activity 2.1.2.3. Promote digitalization and traceability of dairy operations. The Programme will promote digitalization and traceability to ensure quality and entry into formal supply arrangements that come with services, and improved accounting (money and stock) for access to credit. Young technicians will be trained in these digital solutions to scale up uptake and usage especially ensuring female farmers benefit. Use of transformative end-to-end (E2) digital solutions is currently limited. Digitalized systems for monitoring on-farm activities, milk production

disaggregated by farm (gender of farmer), aggregation, transportation, and marketing will increase the efficiency and transparency in the dairy value chain and cold chain. It will support off-takers and cooperatives to improve timely payments to farmers, traceability of the quality of milk and linkage to advisory services where farmers might need advisory interventions and access to finance. In the four countries, the Programme will enhance the capacity of milk aggregators and cooperatives to improve their record-keeping and management through a digital cooperative and MCC management information system (MIS) that will: (a) record the production of farmers, (b) track milk flow/volumes and quality, (c) manage records of farmer payments allowing the development of digital profiles and credit scores. Digital solutions developed by local agritechs and agri-fintechs (e.g. Emata in Uganda) or FAO (Collect Mobile App) and youth led fintechs will be scaled-up to enable business operations management and credit-scoring for better access to finance. A pilot will start with a limited number of cooperatives in each country and gradually upgraded. The Programme will finance the required IT equipment and services.

Activity 2.1.3 Promote renewable energy (RE) and waste management technologies. The decarbonization of the dairy value chain will be promoted. The Programme will focus on resource use efficiency and the substitution of fossil fuels and firewood by green energy sources such as solar especially targeting female headed households or less wood-intensive energy sources for milk cooling and processing. Insulated vehicles and solar energy supply are typically more suitable solutions for larger MCCs (>3m³ Litres capacity). For processing, cold chain and quality preservation solutions (e.g., cooling tanks, insulated / refrigerated trucks) are fundamental to business operations, yet not always used by small-scale processors. Solar is the key mitigation solution and most applicable to relatively larger processors in the short-term given high upfront costs (*See Feasibility Study*). Also, the management of waste and wastewater will be promoted. There is limited adoption of waste management solutions along the value chain today. Processors only re-use waste (e.g., by-product whey as feed) selectively and recycling is not a priority. Beneficiaries of the support would be MCCs and SMEs.

Sub-activity 2.1.3.1 Assess the need and viability of renewable energy and waste management solutions. The aim will be to assess the clean energy needs of dairy cooperatives and propose RE solutions (photovoltaic – PV, biogas systems, etc.), energy-efficient equipment, and solid and water waste management solutions. The assessment will look at scale and viability of such investments not just needs and potential tech solutions.

Sub-activity 2.1.3.2 Support the acquisition of renewable energy and waste management solutions. This would include the upgrading or equipping of dairy cooperatives with suitable RE, PV-powered technology for milk coolers for milk aggregation, milk transfer tanks, solar water heaters, water recycling systems, heat exchangers, milk pasteurizers, butter churners and cheese makers. Solar energy will complement the existing electricity from national grid or generated by standby generators to cool down milk to 4 C°. This activity will facilitate support for women to acquire energy and labour-saving equipment for use in dairy at home or dairy value chain activities.

Sub-activity 2.1.3.3 Organize capacity building in energy efficiency and waste management. This training will focus on the management of the RE solutions in dairy cooperatives, SMEs and MCCs. Such will include trainings for women as lead trainers and participants in waste management activities.

6. Output 2.2: Breeding, feed and fodder, manure management improved.

Activity 2.2.1 Promote the adoption of climate-smart dairy breeds adapted to climate change. Breeding and genetic improvement will aim at improving productivity and heat resistance of dairy cattle while preserving resilience of livestock keeping systems by crossing indigenous and exotic breeds through artificial insemination (AI). Exotic breeds, such as Holstein-Friesian or Jersey, are more vulnerable to high temperatures, and consequently to climate change,

but present a higher productive potential. Indigenous breeds, despite their lower productive potential and small size, are a reservoir for resilience traits such as hardiness, mobility, rendering them more adaptable to extreme climatic conditions and to certain diseases. Different generations of crossbreeds (exotic x native breeds) would contribute to maintaining the resilience traits of indigenous breeds, while also adding productive traits to the gene pool, increasing the offspring's productivity in milk production, therefore contributing to reducing GHG emission intensity. Available studies shows that improved dairy animals have a significantly lower GHG emission intensity per kg of milk due to their higher production when compared to indigenous breeds. This activity will target women and youth to benefit from distribution and 'pass on' of improved breeds to increase their economic empowerment.

Sub-activity 2.2.1.1 Make good quality semen for climate-smart breeds available, adaptable to extreme climatic conditions and to diseases. The Programme will enhance availability and accessibility of germplasm of exotic that will be crossed with local. This will be achieved through (i) the identification of potential climate-smart cattle breeds; (ii) the import of sexed semen and/or embryos, if needed; (iii) the procurement of high genetic merit bulls to produce sexed semen or no-sexed semen for national and regional use; (iii) the production and conservation of climate-smart breeds' germplasm, using laboratory techniques like in-vitro fertilization, or simply artificial insemination (AI); and (iv) capacity development of laboratory personnel including youth to produce sexed semen to increase production of dairy heifers.

Sub-activity 2.2.1.2 Invest in breeding and AI centres. To solve bottlenecks in AI and embryo transfer, the Programme will support scaling up capacities for production and distribution of liquid nitrogen, semen, and embryos. This includes the availability of liquid nitrogen, storage and quality control equipment, dry ice pilots for conservation of semen, and other specialized equipment. In addition, the following investment will be supported. In **Kenya**, the Programme will involve the Kenya Livestock Breeders Association, which is specialised in extension and training, breed inspection and registration, performance recording and reporting and feedback. In **Rwanda**, support will be given for the establishment of semen and liquid nitrogen storage and distribution centers, as well as to the existing bull centre in Songa Station to acquire micro-manipulators to enhance semen production operations. Moreover, RAB will be strengthened in record keeping and continuous updates of the Studbook to identify resilient and high productive crossbreeds. In **Tanzania**, support would be given to establish an AI centre in Southern Highland. Also, the feasibility of an LN unit in Zanzibar will be analysed. In **Uganda**, this investment will strengthen the NAGRC and Data Bank to improve the production and access to high-quality semen in small and medium size farms. DaIMA will facilitate women and youth led farms to access high-quality semen at subsidized costs.

Sub-activity 2.2.1.3 Scale up the insemination of dairy cattle to make the herd more productive and climate resilient. The Programme will (i) train AI technicians, who can be private inseminators, para-veterinarians, lead farmers of L-FFS and District livestock officers (at least 30 percent youth and 40 percent women); (ii) scale up the insemination of dairy cattle in the Programme intervention area; (iii) include aspects of the interaction between dairy cattle husbandry and climate change in the L-FFS curriculum. In **Kenya**, the Programme will support the National Breeding Strategy and Action Plan, in collaboration with the Kenya Livestock Breeders Association. Public and private partnerships (PPP) will be promoted to have AI services accessible to the male and female farmers. In **Rwanda**, the breeding programme of RAB will be scaled up including the training of more private AI technicians. In **Tanzania**, additional technicians will be trained and equipped with start-up kits. In addition, bull centers will be established in regions where AI is not available. In **Uganda**, more AI technicians will be trained by the NAGRC and will be equipped with AI kits focusing on the regions where AI services are still poorly developed.

Sub-activity 2.2.1.4 Organize awareness campaigns and support breeders' organizations. This activity will facilitate female and youth members of dairy cooperatives and L-FFS groups to create awareness on the use of sexed-semen,

thus impacting the herd's sex ratio, and further reduce absolute GHG emissions and the emission intensity per kg of milk produced mainly by replacing many low-productive local cows with a few adapted and high performant crossbreeds, thus reducing the herd size. In the four countries, support will be given to the breeders' associations and societies (that include women and youth in their membership) for animal registration and maintenance of breeding standards.

Activity 2.2.2 Provide support for better animal care, herd management and disease prevention. In East Africa, infectious diseases and parasites rank among the primary causes of livestock productivity and production loss. Production losses through reduced performance (growth rates, milk yield) or animal loss through morbidity, mortality, and abortion results in cows with relatively high GHG emission intensities. These losses affect people's resilience to CC, livelihoods and nutrition security and can affect human health through zoonotic disease transmission. In addition, the growing importance of zero-grazing systems has implications for animal welfare, thus farmers will be encouraged to consider animal well-being aspects. Day to day feeding and management is mainly a female and male youth gender role in the four project countries. Although they may not own the dairy cattle, they should constitute a major target group in this intervention.

Sub-activity 2.2.2.1 Organise trainings on animal husbandry, with a specific focus on animal health, animal welfare, herd management and disease prevention. Updated modules of the L-FFS training on animal health and welfare, and herd and reproduction management will be implemented. Female and young dairy farmers, managers and handlers (feeding and milking) will receive training to better care for the animals and to adopt biosecurity measures to prevent common diseases and pests that impact the production or suitability of the milk for human consumption. They will also receive support to better manage their herds, reproduction calendar, and animal nutrition to reduce animal mortality, heat stress and increase productivity, thus further reducing absolute CH₄ emissions and the emission intensity per unit of milk produced through targeted pro women and youth extension activities.

Sub-activity 2.2.2.2 Scale up the use of digital apps to monitor animal health and herd performance. Digital record keeping on-farm (e.g., using iCow, DigiCow Africa, My Fugo) will be scaled up to monitor the productive and health performances of the herd (e.g., records of calf mortality and causes, number of lame animals), to plan artificial insemination, and guide herd management. The use of the app will be promoted through the L-FFS in interested groups using youth as digital leads. The support includes: (i) training of L-FFS lead farmers including women on the use of the apps; (ii) guiding L-FFS farmers in the use of the technology; (iii) equip the (youthful) farmers in the pilot with digital tools e.g. by providing start-up gadgets and mobile phones. To implement the sub-activity, the Programme will work with agritech companies including some youth led ones and start-ups to develop digital solutions that will enhance transparency in farm data and operations, monitoring of CH₄ emissions reduction and traceability of milk products increase create job opportunities.

Sub-activity 2.2.2.3 Scale-up vaccination campaigns to mitigate the impact of climate change on the spread of diseases. The Programme will scale up and extend the vaccination campaigns to target in priority dairy farmers in the Programme area, who are members of various cooperatives and L-FFS. Youth will be supported to lead creative campaigns such as using road shows and other community media. The vaccination campaign will focus on: (i) the spread of East Coast Fever (ECF), Contagious Bovine Pleuropneumonia (CBPP) and Heartwater disease to new production areas through an extended vaccination campaign, in **Kenya**; (ii) ECF, RVF and FMD in **Rwanda**; (iii) ECF, FMD, RVF and CBPP in **Tanzania**; (iv) trans boundary animal diseases (TADs) like FMD, CBPP, and LSD in **Uganda**.

Activity 2.2.3 Promote climate-smart forage production and conservation. The adoption of climate resilient forage varieties and conservation technologies is essential to reduce enteric methane emissions intensities in the dairy value

chain, while increasing milk yields of dairy cattle. The benefits are multiple and encompass CC adaptation through adoption of a resilient forage variety (*Lablab purpureus*, *Brachiaria sp.*, *Cenchrus purpureus* (Napier grass), *Leucaena*, *Calliandra*, *Panicum maximum* (Giant Panicum)), improvements in soil fertility and increased capacity of farmers, managers and handlers (feeding and milking) to meet forage production needs during dry periods and to respond to climate-induced pests and diseases.

Sub-activity 2.2.3.1 Make certified forage seed available to private and community multipliers. This sub-activity will (i) support the multiplication of breeder and foundation seeds for climate-smart, emission-reducing fodder by the national mandated public services; (ii) facilitate a seed certification scheme and sensitize the private sector to produce certified forage and fodder seeds.

Sub-activity 2.2.3.2 Support multiplication of climate-resilient seed for fodder crops and pastures. This sub-activity will include contracting community and private seed multipliers (including the youth and women) for multiplication, conservation of forage and pasture seeds. In each country, standard approaches will be used to multiply seeds and make them available to L-FFS, PFS, cooperatives, and other groups.

Sub-activity 2.2.3.3 Build capacity of dairy farmers on forage production and conservation on intensive and semi-intensive dairy farms. The L-FFS will be the knowledge-sharing vehicle to promote improved forage production and conservation. The L-FFS will focus on (i) training on good forage management practices (e.g., grass and legume intercropping, agroforestry, weed management, (ii) training and demonstration on small-scale irrigation to produce forage crops; (iii) training and demonstrations of mechanization of forage production with fodder choppers/cutters and conservation equipment; (iv) training and demonstrations on forage conservation practices, to respond to seasonal feed availability and quality (e.g., protein content, digestibility) variations. Youth and women groups will be supported to venture into commercial fodder production, which may include production using hydroponic technology²¹.

Sub-activity 2.2.3.4 Access to water for animals and forage production in intensive and semi-intensive dairy systems. The Programme will provide small-scale equipment for rainwater harvesting and recycling (e.g. individual dam sheets, 3m³ rooftop catchment water tanks and water distribution kits). This activity will target to provide green solutions for women aiming to reduce workloads related to accessing water.

Activity 2.2.4 Promote climate-smart feeding practices to reduce enteric methane emissions. Appropriate diet formulation is key to improve dairy cattle productivity, improve animal welfare, while reducing methane (CH₄) emissions. Balanced diets (more energy-dense or more digestible) decrease retention time in the rumen and reduce ruminal fermentation and methane yield (kg CH₄/kg dry matter intake). Better nutrient utilization (e.g., avoiding deficiencies or surpluses) reduces the environmental impact of livestock.

Sub-activity 2.2.4.2 Build capacity on appropriate feed formulation. In each country, the Programme will support the capacity development of technical advisors, cooperative management, small feed processing plants and L-FFS lead farmers on sustainable animal feed formulations such as total mixed rations (TMR) to enhance productive efficiency and to mitigate GHG emissions.

Sub-activity 2.2.4.3 Promote appropriate diet formulation that reduces enteric methane emissions. In the four countries, the L-FFS and the dairy cooperatives will be the vehicle to reach out to dairy farmers and promote

²¹ .

appropriate feeding of dairy cattle. The Programme will: (i) provide start-up kits for youth and women in L-FFS to monitor diet formulation to reduce methane yield (e.g., Rumen8 tool by SNV); (ii) run L-FFS of feed formulation, including on the use of agroforestry leguminous fodder trees with methane inhibiting properties such as *Calliandra sp.* for improved feed supplementation and carbon sequestration. The Programme will also pilot and leverage on the existing innovative enteric methane inhibitors used as mixtures in feed to be adopted in zero-grazing and commercial/intensive systems.

Activity 2.2.5 Increase sustainable nutrient recycling of manure and dairy waste to reduce emissions. Livestock manure is a source of methane (CH₄) and nitrous oxide (N₂O) emissions, as well as of pollutants such as ammonia (NH₃) and nitrate (NO₃-). At the same time, manure contains essential nutrients and is often the primary source of crop fertilization on smallholder dairy farms, as mineral fertilizers are too expensive or unavailable. In addition, its costs have further increased due to recent events (COVID-19 pandemic, Ukraine war). Many smallholder farms are limited in nutrients, which limits crop yields. Circular management of agricultural nutrients via livestock manure is the best scalable option to overcome these limitations, improve soil health, and improve on-farm productivity. This has a positive effect on livestock productivity, as better manure management also improves the nutrient availability for feed and forages, which increases their growth, biomass yield and nutritional quality and ultimately improves milk production. In addition, manure application reduces soil nutrient mining and soil degradation and prevents additional CO₂ emissions from loss of soil organic carbon.

Sub-activity 2.2.5.1 Manure management in intensive and semi-intensive dairy production systems. The Programme will create awareness and build capacity on low-cost manure management for soil health and soil microbiome improvement. The sub-activity will consist in providing trainings through L-FFS and demonstration farms, using existing manuals developed by NARO in Uganda, ILRI, etc. on scalable and already tested manure management practices (pit storage, manure ponds, manure covering with banana leaves, compaction, etc..) and manure use applications offering livelihoods opportunities. This activity will target to include women and youth led farms as demonstration centres to attract more women and youth to participate.

Sub-activity 2.2.5.2 Promote adapted animal housing. The Programme will promote adapted animal housing with the possibility of separating solid and liquid manure. Good example of animal housing promoted by Heifer International can be scaled up targeting women and youth dairy farmers.

Sub-activity 2.2.5.3 Manure management in extensive systems (pastoral and agro-pastoral dairying regions). The Programme will: (i) run L-FFS/PFS for promoting manure collection from communal kraals for use, sale/ income generation at community level; and (ii) establish community manure sheds to promote manure collection, storage and covering for better manure management and reduce emissions. This activity will target to support women and youth led groups.

Activity 2.2.6 Build capacity for on-farm use of biodigesters and biogas. Biogas digesters utilize microorganisms to break down organic matter such as livestock manure or other organic waste, during which biogas and a nutrient-rich by-product (called digestate or bio-slurry) are produced. This technology offers a clean source of energy for people who do not have access to clean cooking fuels. In addition, it creates a biofertilizer (for use as organic fertiliser on nearby fields), reduces methane emissions (up to 70-90 percent compared to liquid manure storage) and ammonia and nitrous oxide emissions. Biodigesters can reduce deforestation and empower women by reducing the time they spent collecting firewood. As part of the low-carbon pathways, the Programme will encourage the uptake of on-farm biodigesters for intensive and semi-intensive dairy farms. Women are the main consumers of biogas and should be

involved in trainings on how the setup works as well as identifying where outside and inside the house the equipment should be placed not to curtail the functionality of the kitchen.

Sub-activity 2.2.6.1 Support capacity building in biodigester management. The Programme will support the training and accreditation of biodigester technicians and consumers, with a particular focus on women and youth, in the target districts. In addition to installation-related aspects of biogas valorisation and quality management, including safe working standards.

Sub-activity 2.2.6.2 Support investments in biodigesters at the household level. The Programme will support investments in biodigesters for dairy farms ensuring women and jointly owned farms are supported in the intervention area.

7. Output 2.3: Pasture and grasslands management improved

Activity 2.3.1 Strengthen rangeland governance structures for communal grazing areas. This activity will finance interventions to improve rangeland management (including access to water), mainly in **Kenya, Tanzania and Uganda**. Engagement and awareness raising among local stakeholders involved in landscape management is essential for locally led adaptation and people-centred planning.

Sub-activity 2.3.1.1 Participatory rangeland management planning. In selected districts/counties, the Programme will (i) map and conduct a capacity assessment of existing community governance structures (including status of women participation and opportunities to increase representation of women), formal (e.g. village land committees, environmental committees, water use committees, local government, district) and informal entities (grazing committees, traditional committees, clan leaders); (ii) support community governance structures to produce pasture and rangelands management plans, including land tenure to secure tenure rights, water access, as well as possible conflict resolution over land and water use, and (iii) support the development, revitalization and strengthening of laws/charters and by-laws governing the use of communal resources (including water). The groups to be supported will be require meeting the women and youth quotas in representation.

Activity 2.3.2. Restoration of degraded pasture lands, including access to water. This activity will finance interventions to restore rangelands.

Sub-activity 2.3.2.1 Training on rangeland and pasture management. The Programme will facilitate L-FFS/PFS aimed at guiding and engaging farmers towards improving the management of rangelands and pastures. L-FFS will focus on (i) rotational grazing, (ii) management of grazing intensity (destocking and restocking i.e. sale of animals during the dry season and restocking during seasons of high food availability to reduce pressure on pastures), (iii) integration of sylvo-pastoral practices (multipurpose leguminous trees) for better carbon sequestration and reduction of livestock exposure to heat stress conditions, by providing shade for animals (more particularly around water harvesting points), and (iv) biochar production, elaborated from invasive bush species. This activity will support female and youth farmers with animal shades and biochar production.

Sub-activity 2.3.2.2 Rangelands restoration. This sub-activity, focusing on communal grazing areas, will focus on: (i) reseedling and integration of legumes with grasses in natural pastures, (ii) integration of multipurpose leguminous trees and shrubs (improved agro-forestry systems) and control of invasive tree species, (iii) preservation of traditional non-forest tree products (medicinal and other) known to women mainly and (iv) implementation of soil and water

conservation practices to increase water availability and biomass productivity. Women and youth groups will be supported with tree seedlings

Sub-activity 2.3.2.3 Water availability. Depending on the country, to enhance access to water for dairy cattle in extensive systems, the Programme will invest in water harvesting systems such as micro-dams, small-scale valley-dams, construction/ rehabilitation of charco dams and rock-catchments schemes. Feasibility studies will be carried out before the start of the work to assess sustainability. The Programme will also enhance the capacity of the community-based water supply organizations (COWSOs) to better manage and operate all water harvesting and storage infrastructures. The design of water infrastructure will follow the guidelines of the local government authorities and integrate gender sensitive facilities such as toilet and sanitation blocks and washing bays.

COMPONENT 3: GREEN DAIRY FINANCING FACILITY (GDFF)

Component 3 aims to enhance access to finance and support the implementation of climate-smart solutions and practices, thereby facilitating the transition to sustainable, low-carbon, climate-resilient dairy value chains. Component 3 will have two key outputs: (3.1) the establishment of an investment window, and (3.2) the establishment of a Technical Assistance (TA) Facility. Eligible businesses for GDPs will need to exhibit clear ambitions to invest, develop or distribute climate-smart technologies, productivity-enhancing technologies or SHF extension services and have a track record of SHF allyship. Investment decisions will be made on a case-by-case basis depending on business need. The GDFF's credit decisions will be based on a thorough assessment of potential investees' ability to repay and to invest in products tailored for women and youth. Dairy Loan Products will target smaller businesses, and investees will be eligible to receive light-touch pre-deal TA to translate investment needs into investment requests, and they can be connected to other DaIMA components to access any post-deal TA support needed.

Through the (3.1) Investment window established, the main objective of the GDFF is to facilitate the larger-scale transition to sustainable, low-carbon, climate-resilient dairy value chains in Kenya, Uganda, Rwanda and Tanzania. To do so, the GDFF will improve access to finance for underserved dairy value chain SMEs that operate as farmer-allied enterprises and are therefore well-integrated—or have the ambition to be well-integrated—across the value chain. These enterprises will be required to show considerations for women and youth farmers in their business plans and business operations.

Output 3.1 on the Technical Assistance Facility, low-emission cold chains and inefficient, low-loss milk processing units will be established and upgraded. This will overcome the limited processing infrastructure and inadequate utilization capacity barriers. The eligible facilities will receive technical assistance (TA) to integrate Gender action plans into their business plans. Key expected outputs expected from the units will be to (i) create jobs for male and female youth aged 18-35 years as part of their workforce (ii) Be gender-responsive and create an inclusive policy environment whereby women and men have equal opportunities. Only units with gender (sex and age) sensitive and socially inclusive policies and practices shall participate in the project. These units will target to employ 40% women, 30% youth and vulnerable groups.

Activity 3.1.1 Fund set up. This activity aims to establish the GDFF fund as a functioning entity with the required policies, structures and staffing, and to crowd in private commercial capital in pursuit of the programme's climate impact ambitions. The GDFF staffing and structure will include provisions for gender and youth expertise.

Sub-Activity 3.1.1.2 Investor engagement and negotiation (led by Fund Manager, in coordination with IFAD). The Fund Manager will be responsible for identifying, engaging and carrying out due diligence on prospective investors. The Fund Manager will develop criteria for screening investors demonstrate forward and backward linkages with women and youth enterprises.

Activity 3.1.2 Identify eligible businesses for investment. While this will focus on developing a screening framework to assess prospective investees for potential impact and financial return. This activity will ensure identification of women and youth led businesses by making gender and youth provisions in the screening framework.

Sub-Activity 3.1.2.1 Develop screening framework. The Fund Manager will establish a screening framework to ensure consistency in investment decisions. This screening framework will be underpinned by a taxonomy of investment categories which are justified and eligible for investment including those that facilitate women and youth empowerment by creating jobs and employment opportunities.

Sub-Activity 3.1.2.2 Pipeline development and screening. The pipeline for the GDFF will be sourced through three main channels; (i) GDFF Investment Advisors, (ii) DaLMA's PCUs, and (iii) TA providers under Component 2. Investment Advisors will screen prospective investees against pre-defined screening criteria, which will include women and youth considerations and quotas to ensure uptake.

Activity 3.1.3 Climate-smart lending products and services are rolled out by GDFF to eligible businesses. These will include labour and energy saving products aimed at reducing workloads for women. The two products: Green Dairy Partnerships and Dairy Loans will ensure the partnerships promote business working with women and youth farmers. The Dairy loan tickets will be developed to ensure the ticket sizes are affordable and accessible to these groups. Provisions for community outreach will be made through different media to ensure uptake. The Fund Manager's gender and youth expert will be responsible for monitoring this.

Output 3.2 Technical Assistance Facility established. The Green Dairy Financing Facility will invest in climate-resilient dairy producers, off-takers, processors, and livestock businesses. Tailored financial products with technical assistance will increase access to finance and affordable credit for on-farm investments especially for youth, women and vulnerable groups. Women and youth will receive tailored BDS and financial literacy modules that incorporate gender transformative approaches such as confidence building, communication skills and agency building. The GDFF will use a technical assistance (TA) facility to maximise both impact and returns by enhancing the capacity of investees (including on gender and youth sensitive approaches) to implement effective strategies, improve operational efficiencies and achieve growth.

Activity 3.2.1 Prospective investees will receive targeted pre-deal TA under Output 3.2. Noting that Component 2 also provides funding to assist dairy cooperatives in acquiring renewable energy and waste management solutions (see Sub-Activity 2.1.3.2), Investment Advisors will liaise with the TA providers of Component 2 to ensure targeting of women and youth linked enterprises.

Sub-Activity 3.2.1.1 Pre-Deal Development for Dairy Loan Products. These businesses will receive light touch TA to translate their investment needs, into a well-defined investment request prior to the deal. Tailored support will be developed to support women and youth friendly loan products.

Activity 3.2.2 Post-deal TA: Providing ongoing support post-deal to ensure successful implementation, monitor progress and ensure outcomes are met. Activity 3.2.2 focuses on providing post-deal TA to Green Dairy Partnership investees, ensuring that outcomes are achieved. The type and level of support will be tailored based on the specific needs identified for each business. This TA will coach, mentor and profile good case examples of women and youth investments for learning exchanges and scale-up. Considering the Dairy Loans will be short-term, Dairy Loan investees especially women, youth and vulnerable groups may be considered for follow-ups in place of post-deal TA.

Implementation arrangements

The GESI action plan shall be implemented through implementation partner or Service Providers activities as defined by the project and IFAD supported investment projects.

DalMA will seek implementing partners with experience working on gender equality and women empowerment, youth sensitive programmes, nutrition and social inclusion, with emphasis on community centred approaches promoting integration of young men and women, vulnerable groups, persons with disabilities. This may include youthful enterprises, NGOs, the academia and researchers.

Component 3: Programme management. Actions to strengthen the GESI dimensions of programme management:

- Support for GESI Action Plan implementation will be provided through the Technical Assistance, which includes capacity building at different levels including for implementing partners and end beneficiaries.
- A **GESI specialist** for each Country operation shall ensure the roll out of the GESI action plan for each country. Additional expertise will be procured under the GDFF and Technical assistance sub activities to ensure access and uptake for women and youth. The specific TA will include; (i) capacity strengthening and technical support to partner staff and agents; (iii) the recruitment of experienced service providers to support outreach, gendered approaches and capacity building at the community level; (iv) liaison with the Monitoring and Evaluation team; and (v) ongoing GESI technical support during implementation.
- Include a specific commitment to gender-responsive planning in the terms of reference of the implementation teams from partner organizations. This shall be backed by capacity strengthening on identifying and addressing gender issues. Annual performance reviews, aligned to the Logframe targets will track performance on delivering GEWE and GESI goals.
- Select implementing partners (input and service providers) with a proven commitment to community participatory approaches and gender equality, and staff with the relevant GESI skills. The implementing partners shall be held accountable for delivering on GESI targets.
- Ensure that annual work plans and budgets are prepared, delivered and tracked from a gender perspective, and that the funds allocated and/ or locked to implement gender-related activities are appropriate.
- Ensure the DalMA project and implementing partners promote facilities, processes and policies are gender-responsive, supporting gender parity in recruitment, promotion, and retention of staff; equal pay between women and men for the same grade of employment; life-work balance; policies and communications on the prevention of sexual exploitation, discrimination, harassment and the abuse of authority.²²
- Ensure the systematic integration of GESI considerations – including attention to representation and expertise – in the programme’s governance, operational procedures, technical expert advisory bodies and decision-making structures.

Monitoring, evaluation and knowledge management will:

- Support to planned any additional gender and social norms assessments for the dairy interventions where the baselines of IFAD country projects may not be adequate. Gender and social norms assessment studies on dairy may precede the alignment of the DalMA GESI strategy and IFAD investment gender strategies. In order to increase the inclusion of women, youth and people with disabilities and facilitate their economic empowerment in the dairy interventions, assessment questions will be integrated into baselines, mid-terms and end term reviews of the IFAD country projects to understand gender and social status and monitor improvements over the lifecycle of DalMA. The findings will help inform the detailed GESI strategies for each of the IFAD project to ensure that the

²² Detailed in the DALMA grievance procedures.

implementation of DaIMA will lead to more effective interventions to increase inclusion in climate smart dairy enterprises.

- Ensure all data in the logframe are disaggregated by sex, age, location and disability, where appropriate (including targets and data on youth²³) using standard formats at all levels of implementation.
- Ensure the integration of the IFAD empowerment index to measure gender transformation which applies the principles of the Women's Empowerment in Agriculture Index (Pro-WEAI) at baseline, mid-term and end-term studies and adjust project interventions as required to address any negative impacts.
- Train staff on inclusive collection, analysis and interpretation of disaggregated data at various levels: from the communities, service providers to DaIMA focal points at country subsidiaries considering female enumerators where possible at household.
- Track performance indicators, including by sex, age, location of the dairy entrepreneurs, input and service providers including MSME. Establish and monitor mechanisms for tracking progress on targets and outputs between the different levels of programme management and service providers.
- Support IFAD baseline investment annual outcome surveys to monitor and analyse benefits for women and men of different ages. Develop recommendations for project actions if required to narrow the gender gaps.
- Undertake studies on good practices leading to gender-responsive dairy enterprise outcomes and impacts and organize knowledge management and sharing events to disseminate findings.
- Ensure GESI issues and climate smart dairying actions are addressed during supervision missions and mid-term review. Make provision for additional TA if it is recognized that the programme is failing to deliver on GESI targets during the project implementation.

²³ The youth target of 20% of beneficiaries needs to be disaggregated by sex; that is, 40% of the youth target is young women.

GENDER AND SOCIAL INCLUSION ACTION PLAN MATRIX

<p>Impact Statement:</p> <p>Outcome Statement:</p>	<p>IF technological solutions for reducing methane and other greenhouse gas (GHG) emissions and increasing climate resilience are adopted by dairy farmers and milk processors in East Africa, and IF financial services that enhance revenue or lower production costs are utilized, THEN a decrease in farm-level methane emissions and a reduction in supply chain GHG emissions will be observed. This is BECAUSE a transition to net-zero dairy production will be perceived as economically beneficial to farmers, pastoralists, and dairy sector processors.</p> <p>DAIMA will secure climate change-resilient dairy enterprise dependent livelihoods with the benefits of food and nutrition security for women, men, youth and vulnerable groups. Business and employment opportunities and incomes will improve with more equitable benefits to all key players DAIMA intends to achieve the following gender-responsive outcomes:</p> <ol style="list-style-type: none"> 1. Strengthened systemic and institutional capacities of the livestock sector, which will enable smallholder dairy producers and local value chain actors to reduce CH₄ and other GHG emissions 2. Increased production, market knowledge and tools for smallholder dairy producers and private sector value chain operators for a low-emission, climate-resilient, and sustainable pathway 3. Enabled access to required financial services to make the necessary transition to low-carbon, climate-resilient, and sustainable livestock production and value chain development, for smallholder dairy producers and local private sector value chain actors. <p>The overall budget required to implement the GESI responsive DAIMA program is estimated to be USD 2,399,608</p>				
Outputs, activities and sub-activities	Indicators and Targets	Time line	Responsibilities	Budget in USD for the 4 countries combined	Gender sensitive based on women participation
COMPONENT 1: STRENGTHENED NATIONAL CAPACITIES AND ENHANCED ENABLING ENVIRONMENT FOR LOW EMISSIONS CLIMATE RESILIENT DAIRY SECTORS			MLF, MoALD, MAAIF, RAB	520,818	Yes

Output 1.1: Climate-responsive policy and regulatory environment established. Activity 1.1.1: Review and formulate Dairy Sector policies, strategies and regulations for climate-change adaptation and mitigation. In the four countries, the Programme will support the Ministries, Departments and aligned institutions in charge of the dairy sector to review and formulate national policies, strategies, and regulations that are gender and socially inclusive and essential for a sustainable transformation of the dairy sector, in line with the NDCs and NAPs	Number of policies and strategies prioritized for gender analysis review (Target at least one per country)	By Year 3			
Sub-activity 1.1.1.1 Support the preparation of gender and social analysis for the national dairy policies, strategies, and regulations to mainstream climate-change adaptation and mitigation. In the four countries, Rwanda, Uganda, Tanzania and Kenya. For all four countries, there will be (i) (Dairy Act) regulation of the raw milk market, (ii) Support will be given to the formulation of a national regulatory framework for the private veterinary practice including for Community Animal Health Workers (CAHWs) and Livestock Farmer Field Schools (L-FFS) facilitators	Number gender analysis and recommendations supported per country (at least one per country) Existing/new laws, regulations, policies or strategies proposed to policy makers for approval, ratification or amendment	By Year 3	MLF, MoALD, MAAIF, RAB	525,636	Yes
Sub-activity 1.1.1.3 National dairy value chain governance and awareness creation. The aim of this activity is to enhance dairy value chain governance and to mainstream the importance of climate-change in this process. At national level, the national dairy boards (KDB, DDA, TDB, RNDP) and other relevant professional bodies of private stakeholders, will be supported to participate in the dairy policy dialogue, to create awareness and education/capacity building on climate, feed and dairy policies and regulations. Support women participation (4 countries)	Number of female participants in the national policy dialogues held (40% women in each country)	Annually	MLF, RAB, KDB, MAAIF	515,000	Yes
Sub-activity 1.1.1.4 District/regional/county level dairy value chain governance and planning. Local-level multi-stakeholder platforms involving delegates from dairy value chain stakeholders will participate in the annual planning and review of Programme activities. Participants will include dairy cooperative female and male members, milk collectors, milk processors, service providers of artificial insemination (AI), veterinary services, extension staff and local government. Support women participation in District/local platforms.	Number of female participants in the district policy dialogues held (<40% women) Functioning multi-stakeholder platforms	Annually	MLF, RAB, KDB, MAAIF	320,000	Yes

	supported including women farmers				
Activity 1.1.2 Launch awareness campaigns on nutritional benefits of milk and food safety aspects. This will be a targeted support to milk consumption and nutrition awareness, accompanied by nutrition education and social behaviour change among smallholder producer and consumer households, informal dairy value chain actors and milk handlers in the school milk program. The aim is to improve nutritionally vulnerable groups' consumption of milk, therefore enhancing their individual health and climate resilience. The Programme will support milk consumption and nutrition awareness through increased availability, accessibility, affordability, and consumption of high-quality and safe dairy products, accompanied by nutrition education and social behaviour change and communication (SBCC) to reach out to informal dairy value chain actors, milk handlers at home and institutions and nutritionally vulnerable groups. Support food/nutrition demos in events.	No of women in milk campaign events per county/ district and nationally per year (<40%)	Year 2-5	MLF, RAB, KDB, MAAIF	412,818	Yes
Sub-activity 1.1.2.1 Public awareness on the contribution of milk to nutrition and resilience, with focus on climate vulnerable population. The awareness raising in all four countries will use various community platforms such as extension, L-FFS, MCC/cooperatives that should include women and marginalized groups. Topics will include improved milk treatment, food safety and nutritional benefits of dairy produce, pasteurized and processed milk. In Rwanda, it will include women, youth participation in dairy fairs/expos under the auspices of RNDP to showcase climate-friendly and energy efficient local processing and consumption of dairy products. In Tanzania, Uganda and Kenya the Programme will scale up school milk programs for improved nutrition of vulnerable children.	No. of women, men participating in forums (<40% women)		MLF, RAB, KDB, MAAIF	612,818	Yes
Sub-activity 1.1.2.2 Build capacity of dairy inspection to ensure milk quality and safety and reduce waste in all four countries. Dairy inspection is essential for sector-level milk quality and safety, thus encouraging formal market growth and reduction of milk rejection and waste (less GHG emission intensities). The Programme will provide technical training and equipment for women and male youth, strengthen capacities of inspections to ensure development and enforcement of milk quality and safety standards. Gender inclusion will be considered among the inspectors identified for capacity development and execution of inspection. Women and youth will be supported to attend/travel to trainings.	Number and gender (sex and age) of trained inspectors (<40% women)		MLF, RAB, KDB, MAAIF	512,818	Yes

Activity 1.1.3 Improve land tenure security for sustainable dairy farming. The Programme will adopt a fit-for-purpose approach to identify and mitigate tenure risks. This activity will support in country study to document land tenure risks, challenges and opportunities for women and produce policy briefs. For pastoral and agropastoral systems, the focus will be on the identification of use of rangelands by gender, their protection and supporting gender and social inclusive participatory planning and management. In Rwanda, all land is registered and individually owned. The focus will be on optimizing land productivity through land consolidation and land use planning. The project will include capacity building and support to participatory planning processes to create awareness of land rights for women and youth local-level capacities.	% no. of studies supported on women and youth land tenure risks		MLF, RAB, KDB, MAAIF	712,818	Yes
Sub-activity 1.1.3.1: Mapping of local tenure risks and preparation of training materials. The Programme will mobilize specialized technical assistance to: (a) develop training material to increase local authorities' capacity to secure gender and social inclusive tenure rights for dairy production and the public's capacity to identify and secure legitimate tenure rights. Based on the national tenure context, each dairy production system's tenure risks in terms of gendered access, use and security of land will be identified and assessed, and appropriate mitigating strategies will be proposed.	Number of identified land tenure capacity development materials with gender modules developed (at least one per country) Beneficiaries (M/F) gaining increased secure access to land		MLF, RAB, KDB, MAAIF	320,818	Yes
Sub-activity 1.1.3.2: Developing capacity on land tenure at decentralized level. In all four countries the focus will be on capacity building of local authorities and raising public awareness on options to incrementally increase tenure security for women, men and youth and the vulnerable (e.g. disability, ethnicity). The Programme can support public awareness campaigns on tools available to secure tenure rights.	No. of local authorities trained (M/F) to secure land tenure for women, youth per country (<40% women)		MLF, RAB, KDB, MAAIF	612,818	Yes
Sub-activity 1.1.3.3: Participatory planning of tenure for dairy farms on communal and customary land at local level. In the four countries, the Programme will document and scale-up best practices including women and youth in communal rangelands participatory planning and management.	No. female and male participants per country (<40% women) Increased participation of beneficiaries in the forums (M/F)		MLF, RAB, KDB, MAAIF	212,818	Yes

<p>Output 1.2 Improved service delivery to the dairy sector</p> <p>Activity 1.2.1 Strengthen veterinary services for better animal health, higher milk yields and reduced losses.</p> <p>In all four countries interventions in disease control (focus on prevention). Healthier animals are more resilient to climate hazards and more productive, with less milk to be discarded, leading to a reduction of “unproductive” GHG emissions. The higher revenues provide incentives for farmers to adopt animal health and welfare measures, especially if the benefits are equitably distributed among the men, women and youth in the household. To expand the outreach and capacity of veterinary services to women, the Programme will support community outreach to female farmers and train women service providers at community levels.</p>	<p>No. of women trained per country (<40% women)</p> <p>Households reporting adoption of new/improved inputs, technologies or practices</p>		MLF, RAB, KDB, MAAIF	591,770	Yes
<p>Sub-activity 1.2.1.1 Support the installation of both private and public veterinarians and veterinary paraprofessionals by providing travel grants. The Programme will implement the animal health support and disease control system, using the “One Health” approach in all four countries. The approach will have three levels: (i) support private veterinarians and para-veterinarians, in particular young female and male practitioners; (ii) recruit and support livestock extension workers, while ensuring gender (sex and age) equity in participation at local level; (iii) provide additional training to lead female, male and youthful farmers from the L-FFS for coaching their peers and assist private female and male para-veterinarians and livestock extension workers.</p> <p>In Kenya, veterinary education, and training programs to women and men from both private and public veterinarians and veterinary paraprofessionals in the Programme area will be enhanced. In Rwanda, support will be provided for the installation of young female and male veterinary doctors and veterinary technicians as private practitioners to enhance accessibility of services while creating jobs. In Tanzania, female and male Livestock Extension Workers (LEWs) will be equipped and trained, and private male and female paravets will be incentivised to ensure the last mile animal health and extension services. In Uganda, the Programme will build capacity of female and male veterinarians, para-veterinarian technicians, and community-based animal health workers (CAHWs) on One Health principles, disease diagnosis, emerging and re-emerging diseases because of CC.</p>	<p>Number of female trained laboratory personnel on use of the facilities in the lab and in the field</p> <p>Number of female technicians trained (<40%)</p> <p>Number of CAHWs trained Target: 40% women, 30% youth</p>		MLF, RAB, KDB, MAAIF	859,770	Yes
<p>Activity 1.2.2 Strengthen extension services for low-carbon and climate resilient dairy sector. In all four countries, reach out to men, women and youth dairy farmers, raise awareness and build their capacity in the field of CC mitigation and</p>	<p>Number of women receiving extension</p>		MLF, RAB, KDB, MAAIF	459,770	Yes

adaptation, the Programme will adopt innovative extension models and tools (including digital), and enhance the capacity of extension services. This activity will involve improving delivery of public and private extension services at farm and cooperative/ aggregation levels, by female and male local (district/county) livestock officers who coordinate the community-based extension system. To provide proximity advisory services on climate-smart practices, the Programme will provide support through Livestock Farmer Field Schools (L-FFS), including male and female lead and youth, in mixed crop-livestock systems and Pastoralist Field Schools (PFS) in grazing and pastoralist systems.	services through LFFS (<40%) Households reporting an increase in production				
Sub-activity 1.2.2.1. Preparation of training modules for extension in climate mitigation and adaptation measures. If required, specific topics that are part of the proposed pathways under Outputs 2.2 and 2.3 and related to CC will be added to the modules of the mixed gender L-FFS (or other extension approaches). The L-FFS modules will be developed with the support of national or international technical assistance. Also gender transformative training modules on the implementation of guidelines will be developed. Trainers will be constituted by young and middle-aged women and men.	No. of gender transformative modules developed for L-FFS (Target one per country) No. of female trainers trained (<40%)		MLF, RAB, KDB, MAAIF	659,770	Yes
Sub-activity 1.2.2.2 Training of master trainers (ToTs) and facilitators of extension systems in climate-change related topics. The Programme will support the strengthening of existing L-FFS and the establishment of new L-FFS (aiming at 40 percent women and 30 percent youth). To support the sustainability and scaling up of the L-FFS, existing L-FFS/ PFS male and female master trainers and facilitators will be trained on the specific topics listed above.	Number of women TOTs trained (<40%) Households reporting adoption of environmentally sustainable and climate- resilient technologies and practices (disaggregated)		MLF, RAB, MoALD, MAAIF	579,770	Yes
Output 1.3: Improved GHG MRV capacities & monitoring of climate vulnerabilities Sub-activity 1.3.1.1: Capacity assessment and development in capturing, recording, tracking, and reporting data on dairy GHG emissions. This sub-activity will carry out in depth capacity assessments of existing MRV tools and frameworks	Number of young women trained by Mazingira (<40%)		MLF, RAB, MoALD, MAAIF	643,250	Yes

in the four countries, and the place of dairy in them. Based on these assessments, capacity development will be provided to design activity data questionnaires for Tier 2 GHG emissions in dairy (e.g. animal numbers, weights, productivity, feed rations, animal health interventions, manure management and grassland management) and develop a data management system to ensure reliable flow of information between the various national and local agencies involved in the MRV system. ILRI's Mazingira Centre will provide trainings to young women and men from the four countries on data collection protocols adjusted to their needs to relevant stakeholders (technicians, university staff, staff of national research institutes and ministries, and other relevant actors). ILRI will provide dedicated digital data collection tools (e.g. ODK), data quality control, and calculation of GHG emissions for inventory reporting, following established protocols.	Number of women (<40%) as iii. AI tech Trainees ii. Lead farmers iii. New AI technology				
Activity 1.3.4: Climate risk and vulnerability assessments. Together with improvements to extension services conducted by women and men under output 1.2, the Programme will seek to improve the accuracy and use of information (climate, feed availability) to last mile-users in the dairy sector. This will include building the capacity of devolved CC units and decentralized meteorological offices to develop and disseminate climate information services, including (i) impacts of CC on the dairy sector; and (ii) on availability of feed, through tools like national feed balance sheets.	No. of women trained in devolved CC units (<40%)		MLF, RAB, MoALD, MAAIF	34,250	Yes
Activity 1.4.2: Establish regional cooperation platforms and participation to regional/ global networks for knowledge exchange and policy dialogue on climate-smart dairy sector transformation. Sub-activity 1.4.2.2: Participation in regional and global climate policy mechanisms. In practice, the sub-activity will consist of a joint participation of the 4 countries in global and regional events (global science and policy mechanisms on dairy and climate change) such as the Greenhouse Gas and Animal Agriculture Conference – GGAA 2025, the African Climate Summit, the African Dairy Conference, and the UNFCCC COP). The objective will be to present the progress and results from the Programme for scaling-up and replication, increase its visibility and engage with other countries in sharing experience and learning. Participants include women, youth, those with disability and marginalized	Number of women and youth farmers supported to attend Oregional campaign activities (<40% women) Households reporting they can influence decision-making of local authorities (disaggregated)		MLF, RAB, MoALD, MAAIF	824,250	Yes

<p>Sub-activity 1.4.2.3: South-South and Triangular Cooperation (SSTC). This sub-activity will support the emergence of a global network of experience and expertise on reducing GHG emissions, especially methane, in dairy production and value chains, as well as financing solutions to support these reductions. This sub-activity will finance the participation in knowledge-exchange programs, including through IFAD's "Learning Routes" with e.g. Argentina, Brazil (Embrapa), Costa Rica and Uruguay on Tier2 analysis and climate impact assessments in the dairy sector. Other initiatives for SSTC will be identified and assessed by the Regional Steering Committee in collaboration with the EAC. It will finance study tours and participation of country delegations (including women and youth) to workshops to share innovations and scalable practices generated by the Programme.</p>	No. of women supported to take part in the South-to-South exchange learnings (<40%)		MLF, RAB, MoALD, MAAIF	1,142,500	Yes
<p>COMPONENT 2: LOW EMISSION AND CLIMATE RESILIENT PRIMARY DAIRY PRODUCTION</p> <p>Output 2.1: Smallholders' and cooperative capacity development strengthened.</p> <p>Activity 2.1.1 Strengthen dairy cooperatives on organizational management and service delivery. This activity aims to strengthen cooperative, organizational, and technical capacities of dairy cooperatives, and raise their climate-change and gender and social inclusion awareness of their management team. Support the enrolment of women and youth dairy value chain actors in the cooperative membership and leadership. Support will also be provided to establish or enhance women only networks in MCCs and MCPs, and their business linkages.</p>	No. of women in executive committees leadership in cooperatives (<40%)		MLF, RAB, KDB, MAAIF	520,500	Yes
<p>Sub-activity 2.1.1.2 Strengthen capacity to reduce milk losses and ensure milk quality and safety. At the aggregation stage, up to approximately 8 percent of the milk is lost via spillage and spoilage. Aiming at reducing unproductive GHG emissions due to milk loss or quality loss, this sub-activity is to assist dairy cooperatives, MCCs and MCPs in upgrading their technical capacity in milk quality control covering raw milk testing at milk collection, hygiene, and initial processing beyond the sale of raw milk, in line with national and regional food safety standards. The support will assist to acquire (i) basic equipment for milk collection (motorcycles, milk cans and can holders, testing equipment), (ii) insulated milk transport vehicles (demonstration purpose); and (iii) training on milk quality, food safety and hygiene for informal milk vendors (often women), transporters (often men) and technical staff of cooperatives, MCCs and MCPs.</p>	<p>No of women supported with milk handling equipment (<40%)</p> <p>No. of women trained on milk quality and safety (<40%)</p> <p>Percentage of people/households reporting an increase in production /milk sales (M/F)</p>		MLF, RAB, KDB, MAAIF	1,420,500	Yes

Sub-activity 2.1.1.3 Expand the outreach and capacity of dairy cooperatives, MCCs and MCPs. The targeted MCCs and MCPs will be supported to develop gender and youth responsive action plans e.g. ensure opportunities for youth employment as well as inclusive and equal employment opportunities ensuring women can work such as 'zero tolerance' to GBV and SEAH and other inclusive policies and practices. This may include trainings or technical assistance for such institutional capacity building. This activity will include trainings on the prevention of GBV and SEA	No of MCCs and MCPs supported on gender and youth approaches Beneficiaries reporting reduction of GBV (M/F)		MLF, RAB, KDB, MAAIF	920,500	Yes
Sub-activity 2.1.1.4 Create gender awareness and roll out GALS among households of dairy farmers. The GALS trainings will first train TOTs in each country and then roll out regional, community trainings. In each community GALS facilitators will be trained. The GALS facilitators will train households and identify gender champions who will undertake community outreach and sessions. Gender transformative approaches will be integrated in the Programme activities as much as possible. However specific GALS sessions and trainings for stakeholders on gender equality and women empowerment will be rolled out across the four countries. This will be done for national, regional and community level stakeholders. This will include exchange visits and learning events. Support trainings in GALS to encourage men sharing household and farm workloads and positive gender norms.	No of women and men TOTs trained on GALS (<40% women) Beneficiaries reporting reduced or more balanced workloads for women		MLF, RAB, KDB, MAAIF	2,920,500	Yes
Activity 2.1.2 Build and enhance Productive Alliances along the dairy value chain. The Programme will provide support to productive alliances between farmer cooperatives and enterprises with farmer-allied engagement models, and scaling-up of gender and socially inclusive dairy clusters. This activity will support women and youth led farmer groups to participate in the Alliances	No of women and youth led groups participating (<40% women)		MLF, RAB, KDB, MAAIF	425,500	Yes
Activity 2.1.2.3 Sub-activity 2.1.2.1 Strengthen cooperatives' capacity in business and financial management. The aim is to ensure that dairy cooperatives and their MCCs) are run as viable business enterprises. This activity will support job placements for trained young people in participating MCCs and MCPs as part of increasing their employability and creating jobs. Further, youth trainees will receive business mentorship and coaching on business and financial management through paid for placements in well performing dairy cooperatives and enterprises over an agreed period after completing their job placements.	No. of jobs/placements for youth (M/F) percentage of rural producer organizations engaged in formal partnerships/agreements or contracts with public or private entities supporting youth		MLF, RAB, KDB, MAAIF	1,920,500	Yes
Output 2.2: Breeding, feed and fodder, manure management improved.			MLF, RAB, KDB, MAAIF	923,502	Yes

<p>Sub-activity 2.2.1.3 Scale up the insemination of dairy cattle to make the herd more productive and climate resilient. The Programme will (i) train AI technicians, who can be private inseminators, para-veterinarians, lead farmers of L-FFS and District livestock officers (at least 30 percent youth and 40 percent women); (ii) scale up the insemination of dairy cattle in the Programme intervention area; (iii) include aspects of the interaction between dairy cattle husbandry and climate change in the L-FFS curriculum. In Kenya, the Programme will support the National Breeding Strategy and Action Plan, in collaboration with the Kenya Livestock Breeders Association. Public and private partnerships (PPP) will be promoted to have AI services accessible to the male and female farmers. In Rwanda, the breeding programme of RAB will be scaled up including the training of more private AI technicians. In Tanzania, additional technicians will be trained and equipped with start-up kits. In addition, bull centers will be established in regions where AI is not available. In Uganda, more AI technicians will be trained by the NAGRC and will be equipped with AI kits focusing on the regions where AI services are still poorly developed.</p> <p>Campaigns and support breeders' organizations. The campaigns will target male, female and youth members of dairy cooperatives and L-FFS groups to create awareness on the use of sexed-semen, thus impacting the herd's sex ratio, and further reduce absolute GHG emissions and the emission intensity per kg of milk produced mainly by replacing many low-productive local cows with a few adapted and high performant crossbreeds, thus reducing the herd size. In the four countries, support will be given to the breeders' associations and societies for animal registration and maintenance of breeding standards.</p>	<p>No. of female technicians trained (<40% women)</p> <p>No. of women equipped with start-up kits (<40%)</p> <p>percentage of supported rural producers who are members of rural producer organizations reporting new or improved services provided by their organization</p>				
<p>Activity 2.2.2 Provide support for better animal care, herd management and disease prevention. Day to day feeding and management is mainly a female and male youth gender role in the four project countries. Women will be trained.</p>	<p>Number of women trained (< 40% women and 30% youth)</p>		MLF, RAB, MoALD, MAAIF	327,123	Yes
<p>Sub-activity 2.2.2.1 Organize trainings on animal husbandry, with a specific focus on animal health, animal welfare, herd management and disease prevention targeting women and youth. Updated modules of the L-FFS training on animal health and welfare, and herd and reproduction management will be implemented. Dairy farmers, managers and handlers (feeding and milking) will receive training to better care for the animals and to adopt biosecurity measures to prevent common diseases and pests that impact the production or suitability of the milk for human consumption. They will also receive support to better manage their herds, reproduction calendar, and animal nutrition to reduce animal mortality, heat</p>	<p>Number of women and youth trained (< 40% women and 30% youth)</p>		MLF, RAB, KDB, MAAIF	525,500	Yes

stress and increase productivity, thus further reducing absolute CH4 emissions and the emission intensity per unit of milk produced.					
<p>Sub-activity 2.2.2.2 Scale up the use of digital apps to monitor animal health and herd performance. Digital record keeping on-farm (e.g., using iCow, DigiCow Africa, My Fugo) will be scaled up to monitor the productive and health performances of the herd (e.g., records of calf mortality and causes, number of lame animals), to plan artificial insemination, and guide herd management. The use of the app will be promoted through the L-FFS in interested groups. The support includes: (i) training of L-FFS lead mixed gender farmers on the use of the apps; (ii) guiding L-FFS farmers in the use of the technology; (iii) equip the (youth) farmers in the pilot with digital tools. To implement the sub-activity, the Programme will work with agritech companies and start-up to develop digital solutions that will enhance transparency in farm data and operations, monitoring of CH4 emissions reduction and traceability of milk products.</p>	Number of women and youth supported with digital tools (< 40% women and 30% youth)		MLF, RAB, KDB, MAAIF	1,720,500	Yes
<p>Activity 2.2.3 Promote climate-smart forage production and conservation. The adoption of climate resilient forage varieties and conservation technologies is essential to reduce enteric methane emissions intensities in the dairy value chain, while increasing milk yields of dairy cattle. The benefits are multiple and encompass CC adaptation through adoption of a resilient forage variety (Lablab purpureus, Brachiaria sp., Cenchrus purpureus (Napier grass), Leucaena, Calliandra, Panicum maximum (Giant Panicum)), improvements in soil fertility and increased capacity of farmers, managers and handlers (feeding and milking) to meet forage production needs during dry periods and to respond to climate-induced pests and diseases.</p> <p>Sub-activity 2.2.3.3 Build capacity of dairy farmers on forage production and intensive dairy farms. The L-FFS will be the gender inclusive knowledge-sharing vehicle to promote improved forage production and conservation. The L-FFS will focus on (i) training on good forage management practices (e.g., grass and legume intercropping, agroforestry, weed management, (ii) training and demonstration on small-scale irrigation to produce forage crops; (iii) training and demonstrations of mechanization of forage production with fodder choppers/cutters and conservation equipment; (iv) training and demonstrations on forage conservation practices, to respond to seasonal feed availability and quality (e.g., protein content, digestibility) variations. Mixed gender Youth groups will be supported to venture into commercial fodder production, which may include production using hydroponic technology.</p>	<p>Number of women benefitting from climate and energy saving technologies tools (< 40%)</p> <p>percentage of people/households reporting a significant reduction in time spent collecting cooking fuel</p>		MLF, RAB, KDB, MAAIF	920,500	Yes

<p>Activity 2.2.6 Build capacity for on-farm use of biodigesters and biogas. Biogas digesters utilize microorganisms to break down organic matter such as livestock manure or other organic waste, during which biogas and a nutrient-rich by-product (called digestate or bio slurry) are produced. This technology offers a clean source of energy for people who do not have access to clean cooking fuels. In addition, it creates a biofertilizer (for use as organic fertiliser on nearby fields), reduces methane emissions (up to 70-90 percent compared to liquid manure storage) and ammonia and nitrous oxide emissions. Biodigesters can reduce deforestation and empower women by reducing the time they spent collecting firewood. As part of the low-carbon pathways, the Programme will encourage the uptake of on-farm biodigesters for intensive and semi-intensive dairy farms. Including women are the main consumers of biogas.</p> <p>Sub-activity 2.2.6.1 Support capacity building in biodigester management. The Programme will support the training and accreditation of biodigester technicians and consumers, with a particular focus on women and youth, in the target districts. In addition to installation-related aspects of biogas valorisation and quality management, including safe working standards.</p>	<p>Number of women supported with biodigesters, biogas tools (< 40%)</p> <p>Number of youths trained as biodigesters, biogas technicians (< 30%)</p>		MLF, RAB, KDB, MAAIF	2,500,000	Yes
<p>Sub-activity 2.3.2.2 Rangelands restoration. This sub-activity, focusing on communal grazing areas, will focus on: (i) reseedling and integration of legumes with grasses in natural pastures, (ii) integration of multipurpose leguminous trees and shrubs (improved agro-forestry systems) and control of invasive tree species, (iii) preservation of traditional non-forest tree products (medicinal and other) known to women mainly and (iv) implementation of soil and water conservation practices to increase water availability and biomass productivity.</p>	<p>Number of women supported with biodigesters, biogas tools (< 40%)</p>		MLF, RAB, KDB, MAAIF	2,000,000	Yes
COMPONENT 3: GREEN DAIRY FINANCING FACILITY (GDFF)					
<p>Activity 3.1.1 Fund set up. This activity aims to establish the GDFF fund as a functioning entity with the required policies, structures and staffing, and to crowd in private commercial capital in pursuit of the programme's climate impact ambitions. The GDFF staffing and structure will include provisions for gender and youth expert.</p>	<p>Gender and youth expert identified and in post</p>	Annual (Yr2-6)	Regional	50,000	Yes
<p>Sub-Activity 3.1.1.2 Investor engagement and negotiation (led by Fund Manager, in coordination with IFAD). The Fund Manager will be responsible for identifying, engaging and carrying out due diligence on prospective investors. The Fund Manager will develop criteria for screening investors demonstrate forward and backward linkages with women and youth enterprises. Expertise may be needed to support youth and women screening</p>	<p>Gender and youth expert identified and in post</p>	Annual (Yr2-6)	Regional	50,000	Yes

Activity 3.1.2 Identify eligible businesses for investment. While this will focus on developing a screening framework to assess prospective investees for potential impact and financial return. This activity will ensure identification of women and youth led businesses by making gender and youth provisions in the screening framework.	Number of women and youth businesses identified (< 40% women, youth < 30%)	Annual (Yr2-6)	Regional	50,000	Yes
Sub-Activity 3.1.2.1 Develop screening framework. The Fund Manager will establish a screening framework to ensure consistency in investment decisions. This screening framework will be underpinned by a taxonomy of investment categories which are justified and eligible for investment including those that facilitate women and youth empowerment by creating jobs and employment opportunities.	No. of taxonomies suitable for women and youth	Annual (Yr2-6)	Regional	312,000	Yes
Sub-Activity 3.1.2.2 Pipeline development and screening. The pipeline for the GDFF will be sourced through three main channels; (i) GDFF Investment Advisors, (ii) DaIMA's PCUs, and (iii) TA providers under Component 2. Investment Advisors will screen prospective investees against pre-defined screening criteria, which will include women and youth considerations and quotas to ensure uptake. Undertake mobilization drives for women and youth investees	No. of women and youth qualifying for investments (< 40% women, youth < 30%)	Annual (Yr2-6)	Regional	525000	Yes
Activity 3.1.3 Climate-smart lending products and services are rolled out by GDFF to eligible businesses. These will include labour and energy saving products aimed at reducing workloads for women. The two products: Green Dairy Partnerships and Dairy Loans will ensure the partnerships promote business working with women and youth farmers. The Dairy loan tickets will be developed to ensure the ticket sizes are affordable and accessible to these groups. Undertake community outreach will be made through different media to ensure uptake by these groups	No. of women and youth accessing climate smart products and services (< 40% women, youth < 30%) percentage of people/households reporting using financial services	Annual (Yr2-6)	Regional	3,150,000	Yes
Output 3.2 Technical Assistance Facility established. The Green Dairy Financing Facility will invest in climate-resilient dairy producers, off-takers, processors, and livestock businesses. Tailored financial products with technical assistance will increase access to finance and affordable credit for on-farm investments especially for youth, women and vulnerable groups. Women and youth will receive tailored BDS and financial literacy modules that incorporate gender transformative approaches such as confidence building, communication skills and agency building. The GDFF will use a technical assistance (TA) facility to maximise both impact and returns by enhancing the capacity of investees (including on gender and youth sensitive approaches) to implement effective strategies, improve operational efficiencies and achieve growth.	No. of women and youth receiving targeted BDS. Financial literacy (< 40% women, youth < 30%) percentage of financial actors offering women and youth centric products	Annual (Yr2-6)	Regional	4,150,000	Yes

Activity 3.2.1 Prospective investees will receive targeted pre-deal TA under Output 3.2. Noting that Component 2 also provides funding to assist dairy cooperatives in acquiring renewable energy and waste management solutions (see Sub-Activity 2.1.3.2), Investment Advisors will liaise with the TA providers of Component 2 to ensure targeting of women and youth linked enterprises.	No. of women and youth linked enterprises (< 40% women, youth < 30%) Percentage of people/households reporting improved physical access to processing and milk storage facilities	Annual (Yr2-6)	Regional	550,000	Yes
Sub-Activity 3.2.1.1 Pre-Deal Development for Dairy Loan Products. These businesses will receive light touch TA to translate their investment needs, into a well-defined investment request prior to the deal. Tailored support will be developed to support women and youth friendly loan products.	No. of women and youth linked enterprises benefiting from loan products developed (< 40% women, youth < 30%)	Annual (Yr2-6)	Regional	550,000	Yes
Activity 3.2.2 Post-deal TA: Providing ongoing support post-deal to ensure successful implementation, monitor progress and ensure outcomes are met.	No. of women and youth linked enterprises (< 40% women, youth < 30%)	Annual (Yr2-6)	Regional	5,150,000	Yes
3.2.2 focuses on providing post-deal TA to Green Dairy Partnership investees, ensuring that outcomes are achieved. The type and level of support will be tailored based on the specific needs identified for each business. This TA will coach, mentor and profile good case examples of women and youth investments for learning exchanges and scale-up. Considering the Dairy Loans will be short-term, Dairy Loan investees especially women, youth and vulnerable groups may be considered for follow-ups in place of post-deal TA.	No. of women and youth products developed (< 40% women, youth < 30%)	Annual (Yr2-6)	Regional	15,150,000	Yes
Programme management and coordination DaIMA Gender and Social Inclusion expert (full time)		Yr 2-7	Regional	500,000	Yes
M and E (support Baseline, mid-term and end term) to include Empowerment indicator (for gender) and new and decent jobs indicator (youth)		Yr1. Yr2 and Yr6	Per country	4,123,320	
Grand Total				62,429,725	

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