Emitters intensively (Ei) of enteric methane (CH4) vary greatly across the globe and are often higher in developing countries where productivity in low and milk output is growing fast to meet demand, information on activity data and emission factors are weak but where there is a large potential for Ei reduction. Efforts to identify mitigation options and potentials that simultaneously improve and livelihoods, are relatively low, mostly on the fly and have little effect on the effectiveness and visibility of mitigation measures over a range of regions and livestock production systems. In addition, there is a growing realization that mitigation actions cannot be considered in isolation; true mitigation potential needs to consider ‘packages’ of actions assessed in terms of impacts on multiple gases and synergies or trade-offs between individual actions.

WHY IS CH4 IMPORTANT?

• CH4 is a Short-Lived Climate Pollutant (SLCP) and has a half-life of 12 years – in comparison to carbon dioxide, which stays in the atmosphere for hundreds of thousands of years. CH4 traps over 84 times as much heat as CO2 over the first two decades after it is released into the air.

• Even over a 100-year period, the comparative warming effect of CH4 is 26 times greater than carbon dioxide [per kg]. Using the 20-year GWP for CH4 – a measure of the short-term climate impact of different GHGs – the share of CH4 increases to over 18% of global GHG (with emissions of 49 Gt CO2e), from slightly less than 6% at the 100-year timeframe. Therefore, reducing the rate of CH4 emissions would help reduce the warming in the near term and, if emissions reductions are sustained, can also help limit peak warming.

• About 70% of the CH4 emissions from agriculture are attributed to enteric fermentation.

WHAT CAN FARMERS DO?

Agriculture is the source of livelihoods for one-third of all mankind, about 60% of farmers own livestock. Livestock are essential to the livelihoods of millions of producers and critical to human health and global food and nutritional security. A large proportion of these livestock keepers are highly exposed and vulnerable to the impacts of climate change (such as ODFs and hot waves) and people that live in rural and marginal areas, about 430 million are estimated to be poor livestock keepers.

Helping farmers improve the productivity of ruminants is a way to improve rural livelihoods and improve food security. Farming systems that are much more productive generally also reduce CH4 Ei. Outcomes will be achieved by making improvements in the following three areas:

Feed and Nutrition

Improving feed quality through improved grassland management, improved pasture species, range mix and greater use of locally available supplements. Matching ruminant production to underlying grazing resources, ration balancing, undertaking adequate feed preparation and preservation will improve nutrient uptake, rumen productivity and fertility.

Animal Health and Husbandry

Improving the reproductive rate and ending the reproductive life of the animal will reduce productivity, and reduce CH4 Ei. Relevant interventions include reducing the incidence of endemic, production-limiting diseases that have a number of negative outcomes, including death or cull of previously healthy animals, reduced live-weight gain, reduced milk yield and quality, reduced fertility, and increased waste in the system. Healthier animals are generally more productive and have lower Ei.

Animal Genetics and Breeding

Genetic selection is a key measure to increase productivity of animals. Breeding can help adapt animals to local conditions and address issues associated with reproduction, vulnerability to stress, adaptability to climate change, and disease incidence. Improved breeding management practices (using AI for example and ensuring access to wide genetic pools for selection) can accelerate those gains.

This project complements existing initiatives by developing baseline emissions profiles in beef production systems in South America (Argentina and Uruguay) and dairy production systems in Sub-Saharan Africa (Ethiopia, Kenya, Uganda, Tanzania, Benin, Burkina Faso, Senegal, Mali, and Niger) and South Asia (Bangladesh, Sri Lanka). It identifies packages of existing low- or cost mitigation measures that allow increase productivity and thus deliver against food security and development goals, and understand barriers to uptake and the economic costs and benefits of the measures. The goal is to identify packages of measures that fit local farm systems, resources and capabilities and avoid inadvertent trade-offs.

A case study: MIXED DAIRY PRODUCTION IN EAST AFRICA

East Africa has approximately 10% of the world’s dairy cows but produces only 1% of the global milk. Dairy production is developing fast and the predominant mixed farming systems produce 75% of total milk production. Kenya is the largest producer, with 37% of total milk produced in East Africa and a dynamic dairy sector that has increased by 60% since 1990, as a response to growing domestic demand. Ethiopia, Tanzania and Uganda, with respectively 21%, 14% and 10% of the region’s milk production, also show a lot of potential to increase productivity and reduce CH4 Ei. Relevant interventions include reducing the incidence of endemic, production-limiting diseases that have a number of negative outcomes, including death or cull of previously healthy animals, reduced live-weight gain, reduced milk yield and quality, reduced fertility, and increased waste in the system. Healthier animals are generally more productive and have lower Ei.

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