



# The Role of Dairy in Sustainable Nutrition

**Good health depends on good nutrition. Good nutrition, in turn, depends on agriculture to provide the foods for a balanced diet that meets our needs for energy and essential nutrients like protein, vitamins and minerals. To achieve this goal, stakeholders from agriculture, industry, academia and government will have to collaborate to identify practical, sustainable interventions to safeguard the health and well-being of our global population – now and in the future.**

## The Issue

We are witness to significant shifts in the global food and nutrition environment, some being very positive but others posing deep concerns. Specifically:

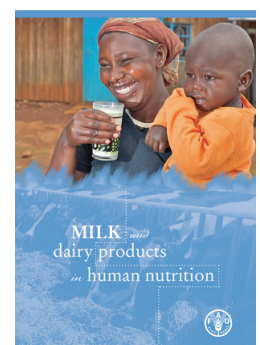
- Hunger and malnutrition continue to be issues worldwide. While there has been a noteworthy reduction in undernourishment in the world in the last 20 years, there still remains 870 million people chronically undernourished.<sup>2</sup> Close to 1 billion people are unable to meet their minimum energy requirements and 2 billion suffer from micronutrient deficiencies. Those population segments at greatest risk include the poor, especially young children, pregnant and lactating women, the sick and the elderly.<sup>1</sup>
- At the same time, according to the World Health Organization (WHO), obesity rates have doubled since 1980 and is growing in high, middle and low income countries. Over one billion adults were overweight in 2008, with half of them obese.<sup>2</sup>
- Rapid and continuous increases in chronic diseases are common in developing and developed populations. According to WHO, 63% of deaths worldwide (36 million) are attributable to chronic disease each year.<sup>3</sup>
- Estimates from the Food and Agriculture Organization (FAO) project population growth to rise from approximately 7 billion in 2011 to 9.5 billion in 2050.<sup>1</sup> These population increases place demands on a global food supply that operates with finite resources. Increasing numbers of people with rising incomes translate to increased demand for meat and dairy products. Global dairy demand alone is projected to reach 900 million ton equivalents of fresh milk (excluding butter). Meeting this demand will require

innovative sustainable solutions.<sup>ref A4</sup> A need for environmentally sustainable agricultural and food manufacturing practices is critical. A rapid growth in production and consumption of livestock products, including dairy, has a number of positive yet potentially harmful effects. For example, increased demands for feed will place greater stress on land and water resources.<sup>2</sup>


Given this context, the role of milk and dairy foods in the diets of infants, children, adolescents and adults is being examined by policy makers, researchers, health care professionals and consumers as well as members of the dairy industry itself.

## The Facts

According to a 2013 FAO report, *Milk and Dairy Products in Human Nutrition*, milk and dairy products can be important in diversifying the diet. They are nutrient-dense and provide high quality protein and micronutrients in an easily absorbed form that can benefit both nutritionally vulnerable people as well as healthy people when consumed in appropriate quantities and as part of a healthy eating patterns. Milk and dairy products are important sources of calcium, magnesium, selenium, riboflavin, vitamin B12 and pantothenic acid.<sup>2</sup> The inclusion of dairy foods adds diversity and improves the intake of essential nutrients to a plant-based diet.



FAO estimates can be found in *Milk and Dairy Products in Human Nutrition*, FAO, 2013



In short, the growing consumption of dairy can bring important nutritional benefits to large segments of the population in developing and developed countries.

Milk plays a key role in treating undernutrition in both industrialized and developing countries. Some components of milk that are important to growth in undernourished children include protein, minerals (especially phosphorous) and lactose.<sup>2</sup>

Most countries recommend at least one serving of milk or milk products daily; some, up to four servings each day. Unfortunately, consumption data collected from several countries confirm that intakes of dairy foods fall short of recommendations.

The health benefits of milk and dairy consumption extend far beyond its role in bone health. Dairy products are associated with maintaining a healthy weight and evidence continues to mount for associations with reduced risk of several diseases and conditions, including osteoporosis, hypertension, colon cancer, metabolic syndrome and type 2 diabetes.<sup>2</sup> In many cases the precise mechanisms of these protective effects are not well understood, indicating a need for further research.

Dairy, as is true with most livestock products, has been challenged as conferring too great of a carbon footprint and/or overall environmental toll. All foods have an effect on environmental sustainability, including land usage, water resource preservation, biodiversity, erosion and air pollution. However, for generations the dairy industry has operated in a manner to continually reduce its impact on natural resources while producing and delivering fresh, wholesome foods. In fact, globally the dairy sector, which includes milk production, processing and transportation, accounts for around 3 percent of all GHG emissions.<sup>5</sup>

To find out more about all the ways the dairy industry is working to protect the environment visit [www.dairysustainabilityframework.org](http://www.dairysustainabilityframework.org)

Dairy cows are extremely efficient at converting human-inedible plant material into high-quality

milk and are net contributors to the human food supply<sup>6</sup>. Land that is too poor or too erodible for crops can be productive with grazing ruminants. Still, misperceptions that dairy farming is an inefficient use of natural resources are pervasive.

### *Challenges and Gaps*

Despite occasional calls by food activist groups to adopt solely plant-based diets in the name of health and sustainability, only a small number of studies globally have begun to examine impacts of dietary patterns on use of natural resources and environmental impacts. Standardized data on environmental impacts of foods, evaluated comprehensively, is needed to assess impacts of different dietary patterns. The literature today is nascent with the majority of the limited number of studies to date published in just the past few years.<sup>7,8,9</sup> Until a strong scientific foundation of research can be built, it is not possible to make informed decisions about optimal eating patterns from an integrated view, that is, nutritional adequacy and environmental sustainability.

Tackling food waste (edible materials intended for human consumption) is considered to be a quick win by many. It has been estimated by FAO that globally as much as 30% of food is wasted either before it reaches the consumer (on farm, during transport or processing) or after it has been purchased.<sup>10</sup>

Barriers to increasing consumption of dairy products differ for developing and developed countries. Perhaps the greatest impediment to increasing consumption of dairy products in low income populations is their price. Like other animal-source foods, dairy products tend to be an expensive source of energy compared with cereal staples. Price is less an issue in developed countries and is, in fact, an economical, nutrient-rich choice.

### *Conclusion and Recommendations*

As the world population continues to increase, it will become even more critical to provide nutrient-rich foods for health in a way that addresses the health of individuals, communities and the planet. “Better nutrition” must address both quality of nutrients,

which vary according to their source (e.g. animal vs. plant), and quantity of nutrients sourced through a wide variety of foods. The production and distribution of those foods must be accomplished while reducing environmental impact and increasing access and affordability. Applying the multiple “filters” noted above, milk and milk products should be endorsed as an integral component of healthy eating patterns. These foods are:

- Nutritionally beneficial
- Environmentally sustainable
- Economically viable
- Culturally acceptable

Dairy sector development programs highlight the pivotal role of milk and dairy products in the diets of people worldwide. Benefits include high nutritional quality of a wide range of products; economic growth through jobs and income; environmental stewardship through research and education efforts that promote sustainable practices.

The Global Dairy Agenda for Action, a group originally convened in 2009, has as a dairy sustainability vision: “a vibrant dairy sector committed to continuously improving its ability to provide safe and nutritious products from healthy cattle, whilst: 1. Preserving natural resources 2. Ensuring decent livelihoods across the sector.

## References

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