

# PROTEIN DIVERSIFICATION IS A KEY PATHWAY FOR FOOD SECURITY, GLOBAL HEALTH & CLIMATE ACTION

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The world is facing unprecedented challenges in terms of health, food security, and environmental sustainability. As the global population continues to grow, the demand for food, particularly protein sources, is increasing. Traditional animal-based proteins, while nutrient-dense, pose significant challenges in terms of sustainability and equity. Protein diversification, encompassing plant-based proteins, insect proteins, and cultured meats, presents a promising solution to these issues. Our planet has 8 billion people with almost 4.5 billion without essential health services. The cascading risks from immune-compromised states and lack of micronutrients will inevitably present a challenge for creating healthy public health communities. With this background, it remains that we need to address not just global health outcomes, but we also need to look at food systems resilience and build better for food security to an ever-expanding planet thriving on fast depleting resources.

## The red market of blood meat

Almost 100 billion animals are killed every year to satisfy the human chain of food systems. Animal farming is mushrooming at the cost of land occupancy for livestock. To meet the growing demand, about 202 million chickens, 12 million ducks, 3.8 million pigs, 1.7 million sheep, 9 Lakh cows, 1.4

million goats are slaughtered daily for human consumption as per FAO 2021. Adding the protein obtained by fish, about 211 million fish die everyday through various statistical estimates. This statistic is bone-chilling to look at and presents reasons to be worried about. Livestock production is a major contributor to greenhouse gas emissions and deforestation. Plugging this is essential for achieving net zero futures. By shifting towards a balance of protein sources, we can significantly reduce our carbon footprint and mitigate the impacts of climate change. Plant-based proteins in general require fewer resources and are associated with lower emissions compared to conventional livestock farming. Cultivated meat, produced through cellular agriculture, have the potential to revolutionize protein production by drastically reducing land and water requirements while eliminating the need for animal slaughter altogether besides reducing certain types of cancer, cardiovascular diseases, metabolic syndrome and kidney ailments.

Plant based protein not only have lower carbon footprint, but also have much lower consumption during production thereby contributing to environment stability and sustainability. Insect proteins produce fewer greenhouse gases and are easily integrated into existing agri-based systems. Lab-grown meat involves growing muscle tissues from animal cells in a controlled environment. This has drastic potential to reduce carbon footprints.

This would also mean, local municipalities will have to customize and amend existing regulations and the food department will have to set new algorithms to accommodate the future of food.

Protein diversification comes with multiple nutritional benefits, reduces health risks and also improves food resources in a rapidly changing climatic condition.

### **Building a new mandate for protein diversification**

As this is a fairly emerging market, health promotional initiatives around protein diversification will need to be built. Health systems will need to embrace and extend a shift in education, culture, food habits and thinking as well.

The economic benefit of moving to plant-based protein will need supportive hand-holding and scale up. The introduction of new protein sources into the food supply chain requires rigorous regulatory frameworks to ensure safety and quality. Developing and implementing these regulations can be complex and time-consuming.

But the future of food and the combative climate action seems promising with sustained investment in protein diversification towards nurturing a healthy world.