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Sustainable Livestock Systems and Concurrent Challenges: A Mini Review

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Introduction

The economy of sustainable livestock relies on production and consumption of quality products in the market. The by-product should be evaluated technically for preparation, production practices and marketing endeavours for maintaining its yield and demand in the open market for attributes of livestock systems. To fulfil the attribute, there is requirement of a system consisting of high genetic material and high producing animals. Now a days, many scheme and experiment trials funded by central, or state government are carried out in different zones of India and abroad for identification of these traits. There is need to understand the failure of any product in market and their acceptance in the society. After seeking many efforts, the advantage and disadvantage of the specific product should be admired and taken in an account viz. its potential liabilities associated to global warming, resistance towards microbes and ethics towards the livestock and then may be further designed or inculcate in the manufacturing house for further production of the product. The product should be value added and varieties preferably to high and low income consumers.

Sustainable Livestock System

The livestock is rearing mainly for dietary convergence and meat consumption. The average annual per capita consumption was 48 kg by 2013 **[1]** and predicted to enhance for 75% to 145% by 2050 **[2,3]**. The high income households and commercial firms impute grass-fed, extensive and organic systems that commonly communicated to match consumer preferences. But lower income families consumes need based livestock as they rear their animals from the rest food of household and roaming in their backyard. Greenhouse gas emissions are the most prominent global upshot associated with the livestock economy. Reducing the intension of emissions is an increasingly important focus for livestock sector. The animal-sourced food present major opportunities for adaptation and mitigation while generating significant co-benefits in terms of human health. The impacts attributed for debate to livestock may be due to intermediate stages of ecosystem transition. The beneficial side of livestock is that it contribute to soil and grassland health, fertility and the potential for biomass in grassland systems **[4]**. In context of smallholder livelihood, animals are used for draught and grazing services and reuse of animal waste are crucial for sustainable livelihoods where fertiliser and energy are scarce. The animals are often used as cash product and eventually a ramp out of poverty. The livestock within the systemic economy frame are also used as cow dung cake and novel uses as energy generation.

Dimension of Livestock product

The livestock products like meat, dairy, wool, skin, etc. bestow the major source of various nutrients like protein and multi-minerals and vitamins. Income is the key economic driver explaining the nutrition transition with relation ship

over time and across countries **[5]**. Consistently, low income nations are associated with a positive income as fluidity of demand, means that increasing incomes lead to higher meat demand **[6]**. At a certain income level, country specific to reached peak meat yield, beyond which higher income is associated with lower demand or an implied negative income flexibility. Practical increase demand of meat includes own price and cross price fluidity increases includes meat substitutes and other lab grown products.

Market demand can be segmented by identifiable consumer preferences for different production and consumption attributes that can be both market and non-market. Market demand attributes are largely reflected in observable prices and are mostly driven by traditional quality and credence attributes specific to the product as observed at the point of purchase **[7]**. Perceived quality is multidimensional, based on sensory, safety, healthiness and convenience. At the point of purchase, important consumer quality cues can be promoted by so called extrinsic messaging such as quality labelling and use by dates information, as well as production and processing attributes

Source: Google-EIT Food is supported by the EIT a body of the European Union

Regulation for consumption of livestock products

Since there is no direct global guideline or governance to regulate food supply chains within or intra country/continent, it is regulated indirectly by a diverse national policies concentrated on production and consumption. There is no any direct regulation of livestock products for feasibility of transportation and regarding application of carbon prices. There is requirement to attain the voluntary regulation with governmental strengthen industry and producers (farmers) for an innovative and apprehended good practices. Still, there is a lack of performance evaluations in the agri-food sector and hence, inefficient advancement to the national targets on less carbon objectivity. Still, the current scenario seeks unsuitable and leads to increased scrutiny of agricultural and livestock emissions **[8]**. This increased legal liabilities for decrease in carbon pricing elevates the price of livestock product and withheld to act globally.

Diet and health

In present scenario, consumers of livestock meat are very much aware for the consequences of consuming red and processed meat **[9]**, which is associated with weight gain and various devastating health impact. The consumer should have concerned with nutritional and dietary information and understand the effects of unbalanced consumption of livestock products. More recent variants of planetary diets **[10,11]** are more discriminating between the impacts of red and processed meats and also point to joint health and environmental outcomes from modified meat consumption. The effectiveness of prescribed diets is contested in terms of measured health effects and their normative nature.

There is nevertheless a growing consensus and emerging social norm that moderated meat consumption in high-income countries has to play a role in meeting both dietary and environmental targets. This consensus will be slower to evolve in lower-income settings where nutritional needs are met from livestock sources due to restricted dietary options.

Advancement

Biotechnology is a potential route for reducing the external cost of livestock production, combining molecular, quantitative and statistical genetics, reproductive biology and precision agriculture. The livestock sector is also plausibly suffering as poor communication of the benefits and cost of genetically modified crops. These tools can be established to meet specific public good objectives such as the removal of GHG emissions.

Conclusion

This is in consideration for spreading of the challenges towards pop up to domain, salutary and nutritive value against the production and consumption of the product. So, the researchers and scientists involved in livestock sector requires special attention to govern their behavioural, habitat and genetic aspect for better quality production and reproduction aspect.

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