



LexQuest Foundation

Policy Brief

Animal Agriculture:

Tracing The Roots Of Injustice And Scope For The Future

LexQuest Foundation

April, 2020

New Delhi, India



LexQuest Foundation

Acknowledgements:

Conceptualised and Created by:

- ❑ Akanksha Arora, Chief Executive Officer & Founder Trustee
- ❑ Tanya Chandra, Chief Operating Officer & Founder Trustee

Author:

- ❑ Twinkle Jaspal, Research Associate, Urbanisation & Environmental Policies
- ❑ Vishwanadha Modali, Research Associate, Policy

About the Organisation:

LexQuest Foundation (LQF) is an independent, non-profit, research and action organisation, established in 2014, in New Delhi. We are striving to create, advocate and implement effective solutions for a diverse range of development issues.

To endorse participative governance, we engage with a broad spectrum of stakeholders, from various sections of the society, to ensure that policy-making remains a democratic process. We utilize pragmatic and futuristic research to disseminate actionable knowledge to decision-makers, experts and the general public.

Our key activities include capacity and skill-building workshops, policy advisory programs, public outreach, and stakeholder consultations. We collaborate with the government, other organizations and individuals for impactful policy formulation and execution.

By employing sustainable and equitable solutions through our multidisciplinary, intersectional initiatives and programs, we are constantly working towards creating empowered communities.



LexQuest Foundation

Background



Image Source: PETA

Human dominion, especially to acquire the top position in the food chain, came soon after we were able to develop tools, however, the truly **pivotal point in human history was our venturing into agriculture**. Agriculture not only brought us permanent settlements, but also massive civilizations which kept on growing and transforming, giving rise to the world we see today.

Humans have gone from relying on nature to provide for resources, to manipulating nature to produce resources as per their will. Amidst all our self-serving advancements, we may not realize the simultaneous growth of a self-destructive culture growing in our periphery. It is the rapid growth of Animal Agriculture, which we need to acknowledge as it is ailing with the symptoms of massive destruction.



LexQuest Foundation

Animal Agriculture is the **process of breeding and growing animals to act as sources of a variety of animal products like dairy, but most exhaustively, for the production of meat. Meat has become the backbone of the food industry due to its level of consumption all over the globe.** Certain reports from the last few years have shown its adverse effects on the climate, and if countries today want to maintain their promises for conserving the environment, then a **reduction in meat consumption is the ultimate step required for decreasing their carbon footprint.**

However, this is not the case that follows; given the statistics of meat consumption of countries across the world, the **meat industry shows no intention of ceasing its growth.** Animal agriculture, as a result, remains a continuing cruelty.



LexQuest Foundation

Environment, Natural Resources and Animals: Cycle of Adversities

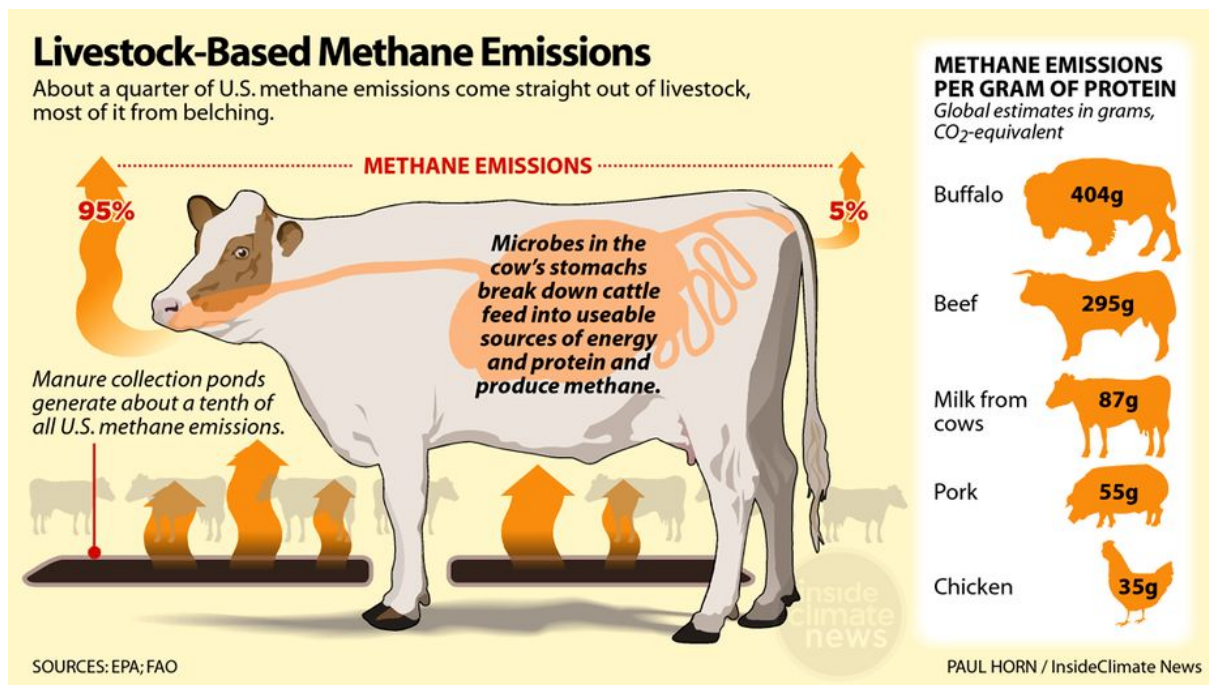


Image Source: InsideClimate News

Animal agriculture contributes to about 18% of greenhouse gas emissions, more than the combined emissions from all transportation in the world. The **gases produced are a third of all methane and two-thirds of all nitrous oxide emissions in the world; these greenhouse gases are capable of trapping more heat than carbon dioxide.**

It consumes water ranging from 34-76 trillion gallons annually. In terms of food production, it is quite important to note that while this industry utilizes about 70 billion animals for producing food resources of up to 8 billion (enough to feed the entire world population). Moreover, for every 100 calories we feed to factory-farmed livestock, we only get 40 calories back in the form of milk, 22 back in the form of eggs, 12 back in the form of chicken meat, 10 in the form of pork and 3 in the form of beef. The strain on our limited resources doesn't stop there, **a farm with 2,500 dairy cows produces the same amount of waste as a city of 411,000 people, in terms of land, water, and energy.** There is also an intensification of crop



LexQuest Foundation

production as a result of **massive amounts of crops required for feeding the animals, which has led to poor soil quality, as well as even further growing levels of pollution, carbon emissions, and deforestation.**

Additionally, a staggering 60 percent of all biodiversity loss is attributable to land-use changes from animal cultivation, and as much as 80 percent of all land in farming is devoted either to raising animals or growing their feed.



LexQuest Foundation

Significance, Diversity and Impact of Animal Agriculture in India

And yet, animal agriculture is abundantly and increasingly even more brutal to the animals, especially the livestock produced for food. In this paper, we will try and examine its effects on different types of livestock that are harshly commodified and abused in the name of “sufficient food production”.

Chickens & Hens: The lives of chickens and hens are short and full of suffering, being raised for flesh or eggs. They are crammed together to live in spaces only a little bigger than their size. Forced to live under artificial light allows more economically profitable exploitation, but changes the biological cycle of the animals causing increasing stress, that leads to behaviors such as pulling each other’s feathers out and cannibalism. To minimize the harm done by such behavior, it is considered acceptable for the chickens’ beaks to be partially amputated, a painful operation that uses no anesthetics.

Cows: Cows are forced to reproduce without any consideration for their natural reproductive cycle, as milk production can be increased manifold in a lactating cow. This means that artificial insemination is the norm in the industry, to increase the level of milk production, a fact which can easily be credited for India's high milk production capability. As lactation is a process through which mammals are able to produce milk in their bodies to feed the newborn, increasing milk production through artificial insemination means that the calf doesn’t get the food it needs, and the industry gets to increase its profits by exploiting an animal and breaching its natural biological processes. Male calves are separated from the cow and sent to slaughterhouses, as they cannot be used for milk production. Due to a repetitive cycle of forced pregnancy and lactation, cows often do not get to live through their natural life cycle, as their bodies eventually give in to exhaustion of this forced cycle, coupled with the overdose of hormones that is injected into their system to further enhance the milk production artificially. Cows are also killed when their production decreases. Calves at slaughterhouses are killed to be eaten as “tender meat” or raised for a few months for “veal” or “beef” production.

Pigs: Pigs live in filthy conditions with very little space, locked in crates inside of which they cannot move, and their children are mutilated in different ways and



LexQuest Foundation

killed when they are only a few months old for the sustenance of the huge pork industry around the world.

Sheep & Goats: Sheep and goats are also commonly bred and killed. They are used for several purposes, which includes wool and the production of milk and meat. They are also killed when they are young for the purpose of tender red meat which is widely popular and in demand.

Fish: More animals are harmed by fishing for food than by any other human use. These animals, billions each year, suffer terribly in different ways when they are caught and killed primarily for the sake of the human pallet.



LexQuest Foundation

Economic Output



Image Source: KrishiJagran

The value of global livestock production in 2013 has been estimated at 883 billion dollars (constant 2005-2006 dollars). Apart from food, several non-food products of animal agriculture include leather, wool, pharmaceuticals, bone products, industrial protein, fats and even intestinal contents removed at the time of slaughter, which are used as fertilizer. Livestock manure is utilized in enriching the fertility of grazing lands for animals. Apart from serving as a source of income, **animal agriculture practices provide food and economic stability to a lot of rural families**. They pose as an insurance against risk, and an economic cushion in some regions and some economies and their inability to cope with poverty in the face of harsh climates. Even for some livestock owners in developed nations, livestock **can serve as a kind of insurance or as a strategy for diversification of their income sources, to reduce risks related to weather and markets**. In developed economies



LexQuest Foundation

like **Australia and New Zealand, livestock held by farmers to produce dairy products still plays a significant role in maintaining rural economies.** According to the Food and Agriculture Organization (FAO) of the United Nations, an approximate of 67.5 billion land animals were raised globally for human consumption in 2008 out of which India was recorded to have the largest herd of cattle and buffaloes in the world, “with over 170 million cattle and over 100 million buffaloes.”

Food Production



Image Source: PETA

Cattle & Buffalo Production: It was also stated that above **38 million buffaloes and 38 million cattle were being utilized to manufacture milk in India** in the same year. India is **acknowledged as the largest producer of milk in the world with its**



LexQuest Foundation

production increasing steadily over the years from 55.6 million tonnes in 1991-92 to 176.3 million tonnes in 2017-18, at an average annual growth rate of 4.5 percent.

Chicken & Egg Production: India was declared as **one of the top five egg and chicken meat producers in the world**. “The nation’s 230 million egg-laying hens produce approximately 55.6 billion eggs per year.”

Fisheries: Marine animals are caught on hooks or with nets, kept in live-animal markets or raised on fish farms. According to government figures, **about six million metric tonnes of fish are consumed in India each year while four million metric tonnes are exported**.

Non-Food Production



Image Source: PETA



LexQuest Foundation

Wool Industry: Animal agriculture reprises its role in numerous other sectors including the production of wool using rabbits and sheep to produce nearly 47.9 million kg of wool per annum. PETA also recorded cases of violence towards sheep in the industry, “Shearers are often paid by volume, not by the hour, which encourages fast, violent work and can lead to severe cuts on sheep’s bodies. Workers were never seen giving sheep painkillers before crudely sewing shut the worst of the bleeding wounds they caused – and they deprive sheep of food and water before shearing, in part so the animals will feel weak and put up minimal resistance.” The wool industry also places significant harm to the environment.

Leather Industry: The Indian leather industry accounts for around 12.93 percent of the world’s leather production of hide/skin; leather is primarily obtained from the skins of buffalo, goat, cow, and sheep. However, other animals like rats, cats, and stray dogs are also killed for their skin. Alligators are also exhaustively factory-farmed and face horrible living conditions. Up to 600 animals can be kept in a single tiny building in alligator ranches. The buildings reek of rancid meat, alligator waste, and stagnant water. Although alligators in nature sometimes live to be 60 years old, on farms they are usually butchered before the age of 4.

Transport: Camels, horses, donkeys, and mules in addition to bullocks are also used as a means of transport. In high altitude regions, yaks are used for their milk, meat, fur, and as a means of transport.

Honey Industry: Profiting from honey requires the manipulation and exploitation of the insects’ desire to live and protect their hive. Like other factory-farmed animals, honeybees are victims of unnatural living conditions, genetic manipulation, and stressful transportation. On top of that, the beekeeping industry is also recorded to be feeding antibiotics to honeybees to enhance production by minimizing disease outbreaks during farming which is highly likely to impact the health of human beings as well. Yet, the honey industry is on a rise with production increasing from 3.7 metric tonnes in 2017 to 4 metric tonnes in 2018.

Silk Industry: To produce just 100 grams of silk, approximately 1,500 worms are killed. “Some silkworm chrysalises are put aside to allow the moths to emerge and mate. Once the female moth lays eggs, she is crushed so that workers can check for



LexQuest Foundation

diseases. If she appears to be diseased, her eggs are destroyed. After mating, male moths are dumped into a basket and thrown out. Because of generations of inbreeding, they are no longer able to fly. Birds commonly pick at them from bins outside silk manufacturing centers.”

Cultural Symbolism



Image Source: Google

Livestock has a huge cultural impact on the lives of people in developing countries wherein the cultural norms guide the practice of keeping and maintaining livestock. It is the key subsistence activity for many countries in the developing world and is highly attached to the social identity and living of the people. In the case of India, our **historical as well religious texts reflect the significance that was attached to rearing animals and using their resources for sustenance and barter.** India's social values had a considerable impact on the country's reliance on animal



LexQuest Foundation

agriculture in an essentially rural economy and traditional country. Even in the new age liberal first world, a study of livestock ranching permitted on national forest land in New Mexico, USA, concluded that **"ranching maintains traditional values and connects families to ancestral lands and cultural heritage", and that a "sense of place, attachment to land, and the value of preserving open space were common themes"**.



LexQuest Foundation

Endorsing Intensive Animal Agriculture: Cause and Reality



Image Source: National Compass

Covering on the packages of animal products usually depicts meaningful animal welfare standards to mask the true cruelty behind their production practices. This causes confusion among consumers and prevents them from advocating for better treatment of farm animals. For instance, several bans have been placed on veal crates, barren-battery cages and sow stalls in the EU in 2007, 2012 and 2013 respectively, deemed as milestones in the advancement of the welfare of farm animals. However, no improvement in the “cages” for animals was included in the ban, and sow stalls are still allowed in the first four weeks of pregnancy. To add insult to injury, factory farming wraps itself in a cloak of virtue: its advocates tell us that 70% more food must be produced to feed a world population of 9.6 billion in 2050 and that intensive farming is our only hope of achieving this.



LexQuest Foundation

This blind fixation with producing “70% more” drives global food and farming policy, justifying industrial and technology-based “solutions” to achieve food security. What it fails to acknowledge, however, is that the **planet’s natural resources – upon which our ability to produce food depends – are under serious threat from intensification, and that there is already enough food on the planet to feed the world’s projected population.** It’s been calculated that **all the cereals due to be fed to intensively farmed livestock by 2050 (when the global population is expected to peak) could provide the necessary food energy for an astonishing 3.5 billion people every year.** What’s needed, then, is a fairer distribution of food; and this, **in large part, will involve curbing the demand for “cheap” meat and dairy.**



LexQuest Foundation

Endorsing Sustainable and Cruelty Free Food Choices: Status and Scope

Calculated estimates declare that by 2050, to satisfy the demands of a growing and wealthier population with an increased meat demand, **food production will have to increase by at least 50 percent from the current production rates**. However, this increase will only further escalate environmental pressure around the world and impact peoples' health and livelihoods. So how are we to accomplish such high food demands while simultaneously adopting more sustainable techniques? The answer lies in the **innovations of science utilizing plant-based technology to come up with food that is far more nutritious and produced with highly sustainable methods**.

Finding Alternatives to Meat

We need to acknowledge and understand the work of organizations like Beyond Meat, and Impossible Foods, that are already making use of technology to bring top-notch **alternatives to animal products**.



Image Source: CNBC



LexQuest Foundation

Beyond Meat was able to narrow down the key ingredients in “meat” and “beef” and produce them directly from their plant sources. A quarter-pound “Beyond Burger” (the resulting innovation) was found to **require 99% less water, 93% less land and generates 90% fewer greenhouse gas emissions, using 46% less energy to produce, in the U.S., than its beef equivalent**. For Impossible Foods, the key discovery was of the “magic ingredient” heme – **an iron-containing molecule that occurs naturally in every cell of every animal and plant, and it attributes to the unique flavor of the meat**. The team found that by adding a **plant gene to yeast cells, they could produce heme in unlimited quantities, with a tiny fraction of environmental impact**. The Impossible Burger requires approximately **75% less water and 95% less land, generating about 87% lower greenhouse gas emissions than beef burgers**.

Advocating Veganism

We are aware of the Vegetarian and Non-vegetarian criteria of food diets that are widely followed across the world. However, ‘Veganism’ is a movement that has grown with raging popularity in contemporary times. Unlike its counterparts, veganism isn’t just a diet but **a philosophy that excludes the exploitation and cruelty of animals in all forms**. A vegan diet excludes all animal-based foods and ensures that their food, clothing, household products, and energy are ethically and sustainably sourced.



LexQuest Foundation

Benefits of Plant Based Food Choices



Image Source: Cosmos Magazine

Health Benefits: According to a [2013 Nutritional Update for Physicians](#), "Plant-based diets are cost-effective, low-risk interventions that may lower body mass index, blood pressure, HbA1C, and cholesterol levels."

Benefits to Animals: Vegans choose cruelty-free products and avoid any clothing, furniture, etc., that is made from animal products such as leather; many also avoid wool, silk, and other materials made from or by animals.

Benefits to the Environment: Animal husbandry has a significant negative impact on the environment, which would be eradicated in a vegan world.

Socio-Economic Benefits: Animal diets are expensive, both in terms of financial cost and land use. It has been argued that people in poorer areas of the world, the cost of animal-based products is overwhelmingly [high](#) relative to the cost of



LexQuest Foundation

plant-based foods that offer similar nutrition, though as of now, this may not be true for a country like India.



LexQuest Foundation

Animal Welfare versus Animal Agriculture Policies at a Global Scale

World Animal Protection (an international non-profit animal welfare organization) constructed the Animal Protection Index which classifies 50 countries around the world in their commitment to protect and propagate animal welfare through policies and legislation. The countries which remained at the top of the chart with Grade 'A' included Austria, the UK, New Zealand, and Switzerland. **India was accredited with Grade 'C'. The grade implies that while the country upholds due recognition of animal sentience and the importance of animal protection as a societal value, there are inconsistencies in policy-making and policy enforcement.**

Animal Welfare, as a valid cause of concern, sees much **better momentum in developed countries than in developing or underdeveloped countries.** For instance, the latest achievement in Animal Welfare policies in the US, includes the 'Preventing Animal Cruelty and Torture Act', passed on Nov. 5, 2019. The Act is to follow strongly on eliminating wrongful and illegal practices of farm-based breeding of animals. However, since this step only targets practices of animal agriculture in field-based farming, factory farming remains at an all-time high in the country. Similarly, the UK, which is considered as one of the best countries concerning animal welfare, fails to address factory farming as it is still extremely prevalent in the UK, with no effective policy to account for it.

Livestock production has been directly related to the socio-economic development of Developing and Underdeveloped countries. Hence, these **countries are continually reliant on animal agriculture for their sustenance and growth.** This may also account for the lack of effective policies in terms of animal exploitation during livestock production since the **focus is on increasing the amount of livestock production to enhance the economy of the country and their subsequent socio-cultural conditions.** The welfare of animals, therefore, becomes secondary, or in fact in most cases a non-issue. As a result, most of the developing world is yet to recognise animal welfare policies as a primary concern and a relevant part of their animal agriculture policies.



LexQuest Foundation

Status of Animal Welfare Policies in India



Image Source: Reuters

India has some inherent advantages when it comes to avoiding the negative externalities of meat consumption and production. India, culturally consumes less meat than any country in the world. Despite **vegetarians being a minority, there is a tendency for meat eaters in India to consume less meat**. This is very evident as India consumes only **3.16kg of meat per person while a country like the United States consumes 98.6 kg per person or even a developing country like Vietnam consumes 52.9 kg of meat per person**. This low consumption of meat products means that a **large amount of meat produced in India is for export purposes, making the problem an economic concern**. If we were to formulate policies to significantly reduce animal slaughter then it will have to address the economic



LexQuest Foundation

alternative which will be provided to the primary sector which is considered the backbone of the rural Indian economy.

Legal Sanction for Animal Welfare Policies

Many countries across the world have certain programs or government bodies to ensure animal welfare, including India. The Indian Constitution, the Indian Penal Code as well as the Animal Welfare Board of India (AWBI), have laid out several policies to promote and guard the safety of animals, which can be summarised as follows:

Article 51A(g): It is the fundamental duty of every citizen of India to have compassion for all living creatures.

IPC Sections 428 and 429: To kill or maim animals, including stray animals, is a punishable offense.

Prevention of Cruelty to Animals (PCA), 1960: The Prevention of Cruelty to Animals Act was enacted in 1960 to prevent the implying of unnecessary pain or suffering on animals. After the enactment of this Act, the Animal Board of India was formed for the promotion of animal welfare.

The Wildlife Protection Act, 1972: The Government of India enacted the Wildlife (Protection) Act to guard and protect the wildlife and restrict the activities of poaching, smuggling and illegal trade in wildlife and its derivatives.

It is important to note that it is due to the improper and poor implementation of these provisions and legislations, which is responsible for protecting many animals that continue to be illegally exploited and killed under the garb of animal agriculture. At various points in time, attempts have been made to amend and improve upon the available legal sanctions for the welfare and protection of animals. For instance, in 2017, [Prevention of Cruelty to Animals \(Regulation of Livestock Markets\) Rules](#) were passed, which restricted the sale of “all types of cattle, including buffalo, and camels for slaughter via markets”. The sale was only permitted for “agriculturalists” (a person who could prove their employment in



LexQuest Foundation

agriculture with documentation). **Other cruelties like hot branding and cold branding, mutilating animals' ears, force-feeding fluid to make the animals appear fatter to fetch a better price were also prohibited under the rule.** Following that, a rule passed last year by the Indian Ministry of Agriculture, an improvement in the breeding and living conditions of chickens is also to be implemented. The Prevention of Cruelty to Animals (Egg-Laying Hens) Rules, 2019 states that not over eight birds are to be kept in a cage, keeping account of the total floor area available for the hens and so on, or farm owners' licenses can be canceled. **However, there are no policies, as of yet, for abhorring the wrongful practices taking place in the dairy industry.**

In the non food sector, concerning the silk industry, the mulberry silkworm is domesticated and reared indoors. However, there is a policy in India for the rearing of non-mulberry silkworms, which was passed as an amendment of the Forest Conservation Act. The said policy permits to **treat non-mulberry sericulture as forest-based activity enabling the farmers to undertake silkworm rearing in the natural host plantation in the forests.** The only scheme in the wool industry for animal welfare is for sheep, under the Sheep & Wool Improvement Scheme (SWIS). This was introduced during the 10th Five Year Plan period, as part of the Integrated Wool Improvement Programme (IWIP), to provide health care to sheep to improve their breed. However, **this was only targeted towards improving the wool quality and production of the sheep.**

The leather industry is one of the biggest violators of the PCA Act as the provisions of the said Act prohibit practices like beating, kicking, overloading and overcrowding animals during transit; depriving animals of food and water during transportation; selling abused or mutilated animals, however, **no action takes place against the perpetrators due to the immensely poor implementation of the Act.** India regulates the production of honey under the Prevention of Food Adulteration Rules, 1954, the voluntary Bureau of Indian Standards for ISI mark, and Honey Grading and Marking Rules, 2008, under the Agricultural Produce (Grading and Marking) Act, 1937, also known as AGMAR, all of which **prohibit treating honey bees with antibiotics, however, the exploitation under the practice of beekeeping remains unaddressed.**



LexQuest Foundation

Policy Recommendations

It is extremely important that the human population not only in India but around the world, become sensitized to the persisting cruelty within the animal industry to produce a collective voice against all the injustices that prevail. Policy reformations also need to take place if we want to truly, once and for all, leave such abhorrent practices in the past and move towards a more sustainable future. In the case of India, the stakeholders could look into the following suggestions for policy reformations:

→ Protection against Exploitation under Animal Agriculture

It is truly important that animals are no longer treated as mere “commodities” but actual sentient beings. There needs to be strong punishments against wrongful feeding of “antibiotics” to enhance livestock production, causing animals to live under inhumane conditions, among other cruelties meted out to them. **A revision of the punishments under the PCA Act needs to be taken up to input stronger implementation**, besides amendments that would safeguard the lives of animals which were not protected under the Act before.

→ Focus on Diversification of Crop yield rather than Livestock Production

Much focus is put on livestock production during policy-making as it has been seen as the fastest way of growing our economy, as well as a “safety net” in case of failure in crop yields. Investing in crop production (which is only a little behind livestock production in its contribution to GDP) to improve their yields would not only still maintain the growth of our economy, but will also allow us to lower our dependence on animal products. But the problem with this is that a significant amount of crop produce is sold to meat producers, so if crop yield increases then stock feed for poultry, etc., might get cheaper. To counter this the **government should aim to diversify the crops grown**. They could do this by altering incentives of the seed subsidy schemes. This can be done by **not providing seed subsidies for those crops which are used in meat production, rather**



LexQuest Foundation

providing greater subsidies for other crops, for e.g., hemp, flax, etc. Economic feasibility studies would have to be conducted to determine which crops can be grown in which region to produce optimal profits and subsidies be provided on this information.

→ **Revamping Packaging and Marketing of Animal Products**

Policies should mandate that packaging of the animal products should include truthful description of real-life conditions of the process of production rather than falsified images and illustrations to show consumers the actual cost of what they're buying. Similar warnings have been put up on cigarette packets and though the results of studies of its impact are mixed, it did show a reduction of smoking in young adults. However, it will be a challenge to get companies to comply with this policy when consuming animal products is extremely normalized and consumption of commodities like milk is encouraged.

→ **Endorsing Adoption of Alternative Diets**

Emphasis could be put nation-wide on the horrid practices of animal agriculture through campaigns and Public Service Announcements or PSAs. Simultaneously, adoption of vegan diets (including no animal product) should be encouraged by **introducing the various benefits of the diet including its positive impact on the environment and relatively low cost of production through aforementioned campaigns/PSAs.**

→ **Research-funds for finding Alternatives to Animal Products**

Many budding researchers in the field of science and technology, food and nutrition, agriculture, etc., can be encouraged through access to funds offered by the government to search for high-quality alternatives to existing animal products. The government bodies could also look into such research and development. Certain private entities could be encouraged to delve into this research, especially keeping in mind the overall impact of such a switch and transformation in our diets on the economy.



LexQuest Foundation

→ Expanding on the Rural Dairy Cooperatives System

India has had a unique model of dairy production where instead of relying on large machine based dairy farms, milk is sourced from a bulk of villages with families with cows as producers. Expanding on this system would involve the **government setting a dynamic price floor on the price of milk which would be adjusted to the supply of these rural cooperatives**. This would over time **do away with machine based dairy farms which come with numerous ethical and environmental concerns**. Furthermore, given that we have a large rural population, over time, the price of milk will be adjusted to the demand, this would mean that there likely will not be a dramatic increase in the price of the milk. To access this system of cooperatives (which comes with better prices) dairy producers could go through a process of obtaining **membership into the cooperatives which could be used to vet and monitor unethical activities**. However, care has to be taken while implementing this by making it very accessible as a sizable chunk of our dairy producers in rural areas might find it difficult to obtain membership.



LexQuest Foundation

Concluding Remarks

Policies accounting for animal agriculture are often very tricky because they significantly impact a vulnerable population. But reform in this sector is absolutely required due to the severe ethical wrongs done towards animals and the environmental degradation that it contributes to. This makes it an industry that is very unsustainable. There are three broad applicable policies for reducing the unsustainability of animal agriculture in India. **Reducing demand for meat through effective public campaigns that really connect with the masses.** Provide **alternative economic avenues for suppliers,** this could be done by new research or by **providing subsidies selectively to dictate supply.** Finally, formalizing the animal agriculture market would make it much easier to monitor and enforce current laws on animal cruelty and environmental sustainability, an example of this would be the consolidation of dairy cooperatives mentioned above. Though these policies will not be conclusive in ending the many problems of the animal agriculture sector they are definitely good first steps.



LexQuest Foundation

References

1. [Meat and Dairy Production](#), Hannah Ritchie and Max Roser, Our World in Data
2. [The Facts](#), Cowspiracy
3. [Water Sustainability And Animal Agriculture](#), The Modern Studio
4. [Ending Factory Farming. Why does Factory Farming Still Exist?](#), Compassion in World Farming
5. [Intensification in agriculture-forest frontiers: Land use responses to development and conservation policies in Brazil](#), R.D. Garrett, I.Koh, Y.Le Polain De Waroux, J.H. Kastens & J.C. Brown, Global Environmental Change, Science Direct
6. [Why Factory Farming Is The Largest Cause Of Animal Abuse In History](#), Animal Equality
7. [Manure Management](#), Advances in Agronomy, Science Direct
8. [Great Indian cattle count: An inside story](#), Shantanu Nandan Sharma, The Economic Times
9. [The Impact of Animal Agriculture on the Environment and Climate Change in India: A Focus on Methane](#), HSI Fact Sheet, Humane Society International
10. [India's fish production pegged at 12.6 million tonnes in '17-18](#), The Hindu BusinessLine
11. [Contribution of Livestock Sector to Indian Economy](#), Soumyakanta Dash, Indian Journal of Research
12. [Animals Used for Clothing, Leather Is Dead Skin](#), PETA, India
13. [Animals Used For Clothing, Silk](#), PETA, India
14. [Animals Used For Clothing, Wool](#), PETA, India
15. [What's in your honey?](#), Chandra Bhushan, Savvy Soumya Misra, Arnab Pratim Dutta, Down To Earth
16. [Production volume of honey across India from FY 2015 to FY 2018 \(in 1,000 metric tons\)](#), Statista
17. [The Livestock Roles in the Wellbeing of Rural Communities of Timor-Leste](#), Elisa Maria Varela Bettencourt, Mário Tilman, Vanda Narciso, Maria Leonor da Silva Carvalho, Pedro Damião de Sousa Henriques, SciELO
18. [Livestock Ranching and Traditional Culture in Northern New Mexico](#), Carol Raish & Alice McSweeney, Natural Resources Journal
19. [Beyond Meat's Beyond Burger Life Cycle Assessment: A Detailed Comparison Between A Plant-Based And An Animal-Based Protein Source](#), Martin C. Heller & Gregory A. Keoleian, Center for Sustainable Systems, University of Michigan
20. [What Is Heme? Impossible Foods' Magic Ingredient Has Caused Some Controversy](#), Sophie Hirsh, GreenMatters



LexQuest Foundation

21. [How To Smoothly Transition To A Plant-Based Diet](#), Noma Nazish, Forbes
22. [Nutritional Update for Physicians: Plant-Based Diets](#), Philip J Tusso, Mohamed H Ismail, Benjamin P Ha & Carole Bartolotto, The Permanente Journal
23. [A Vegetarian Diet Can Save You Roughly \\$750 A Year: Study](#), Arti Patel, The Huffington Post Canada
24. [World Animal Protection](#), India
25. [Trump signs a sweeping federal ban on animal cruelty](#), Hannah Knowles & Katie Mettler, The Washington Post
26. [Pro-Poor Livestock Policy Initiative, A Living from Livestock: Livestock sector development for poverty reduction: An economic and policy perspective Livestock's many virtues](#), J. Otte, A. Costales, J. Dijkman, U. Pica-Ciamarra, T. Robinson, V. Ahuja, C. Ly & D. Roland-Holst, Food & Agriculture Organisation of the United Nations
27. [Meat consumption per capita](#), DataBlog, The Guardian
28. [Government dilutes rules on cattle sale in animal market](#), Nidhi Sharma, The Economic Times
29. [Centre scripts draft rules for better poultry farming practices](#), The Hindu BusinessLine
30. [The reality of the dairy industry and its cows](#), Kasmin Fernandes, The CSR Journal
31. [Non: Mulberry Sericulture](#), Rubia Bukhari, Kiran Pal Singh & Rashad Hussain Shah, Journal of Pharmacognosy & Phytochemistry
32. [Integrated Wool Improvement & Development Scheme \(IWIDP\)](#), Central Wool Development Board, India
33. [The Prevention of Food Adulteration Act & Rules](#), Food Safety and Standard Authority of India
34. [Unhealthy bitter truths about honey in India](#), India Today
35. [Honey Grading and Marking Rules, 2008](#), Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India