

The Philippines' Beef Cattle Industry: Status, Government Programs, and Proposed Solutions/Alternatives for Sustainable Development

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Introduction

In the Philippines, livestock raising is integrated into the economic structure of farm and village. It is recognized as contributing to rural income and the efficient use of the available resources in the rural sector. Cattle as well as carabao are basic livestock occupying important role in the subsistence of rural families. They are raised for both draught purposes and source of cash in time of needs.

Cattle raising in the country is predominantly a backyard endeavor. They are usually maintained on a low to medium plane of nutrition. They are either

stall-fed or tethered along roadsides and backyards with whatever available feed grown, not weeds and farm by-products like straw or corn stover, cane tops, etc. Concentrate feeding is minimal and inputs for health maintenance are generally lacking.

If has been evaluated, however, that beef cattle raising in the country has a comparative advantage over other animal production ventures considering the increasing demand for beef; ability to transform low-quality and fibrous feed materials; availability of other forages and favorable climate for fodder production and adequate processing technologies and increased productivity.

THE PROBLEM: Its Source and Background

In the 1960s, the potential of beef cattle production in the country was very high. The country's fertile soil; presence of feed resources, sufficient rainfall which provided plentiful rainwater and the presence of more idle, cheap labor were among of its assets that could be readily tapped for a successful cattle production (Aranez, 1993).

In the later part of 1980, however, cattle production showed an average yearly decline of 5.14% (Castillo). Annual extraction rate had averaged 17% from 1980-1983. There was also a marked reduction in per capita consumption of beef (2.22 kg in 1977 vs. 1.44 kg in 1987) although there was a 26% extraction rate of its population. The situation implied growing excess demand for beef and, consequently, increasing meat importation requirements in the succeeding years.

The industry was also besieged with problems, like the presence of weeds which poison grazing land, peace and order and more squatters invading pasture lands. Other problems that were identified to adversely affect the industry were: stringent lending policies and procedure of the available livestock loan program aside from the absence of long term financing program; non-receptivity of small farmers to new and/or recommended production technologies; inefficient utilization of crop residues and farm by-products; low quality forage feed; inadequate market information system and structure; poor transport facilities in rural areas; high cost of transport and handling; low farm gate prices due to extended and costly marketing channels; high equity requirements for medium to large ranches, and lack of farm-to-market roads (Castillo).

The aforestated problems were compounded by low productive and reproductive performance and shortfall in the number as well the indiscriminate slaughtering of the existing breeding and pregnant stocks. These problems enhanced low productivity and resulted to the disparity between demand and

supply of beef, with demand soaring high while supply dwindling. Figure 1 depicts the identified problems and their immediate consequence.

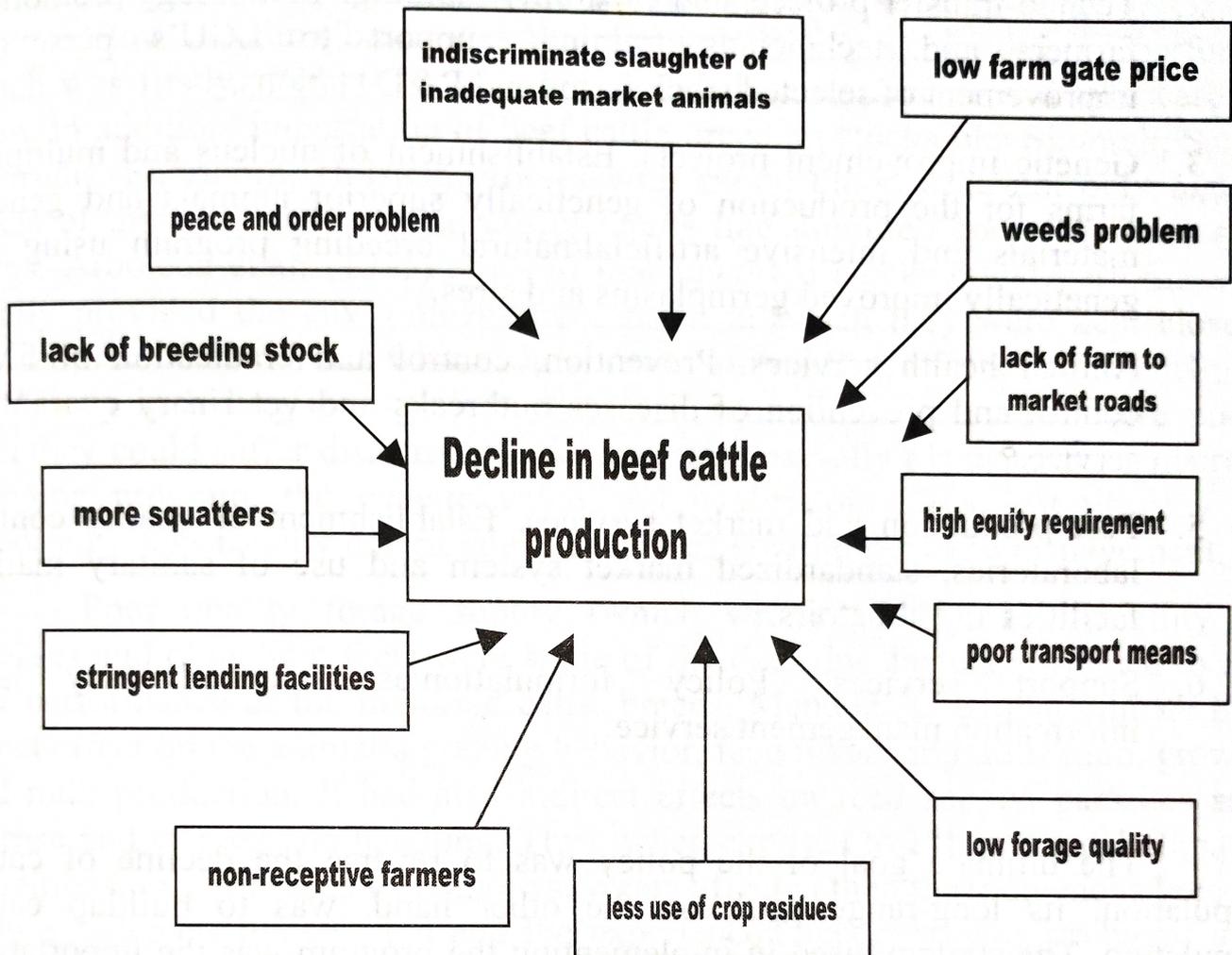


Figure 1. Identified problems and immediate consequence affecting the beef cattle industry.

Government's Implemented Solution and Its Effects

To arrest the decline of the beef cattle population in the country, the government's quick response was the implementation of a cattle development program/policy. The program was aimed to develop a rural-based, small farmer-oriented cattle industry that would increase productivity, raise income, ensure profitability, promote self-reliance and improve the standard of living (Castillo). The strategy to implement the strategy was shifting cattle production from hill-beef ranchers to smallholders with both breeding and fattening herds. The components of the program which were eventually modified under the Agrikulturang makaMASA LIVESTOCK and later adapted as the policy for implementation of developing the cattle industry through then Agriculture and Fishery Modernization Act of 1997 (AFMA) were as follows:

1. Credit. Modular and/or clusters livestock production and credit-stock loan program.
2. Techno-transfer projects and capability building. Technology promotion, farmers and technicians training, support to LGU's personnel, improvement of selected stock farms and R&D stations.
3. Genetic improvement projects. Establishment of nucleus and multiplier farms for the production of genetically superior animals and genetic materials and intensive artificial/natural breeding program using the genetically improved germplasms and sires.
4. Animal health services. Prevention, control and eradication of FMD control and prevention of diseases outbreaks and veterinary quarantine services.
5. Post production and market services. Establishment of quality control laboratories, standardized market system and use of sanitary market facilities and abattoirs.
6. Support services. Policy formulation/assessment/advocacy and information management service.

The ultimate goal of the policy was to reverse the decline of cattle population. Its long-range goal, on the other hand, was to buildup cattle population. The strategy used in implementing the program was the importation of breeder and feeder cattle stocks for a six-year duration with the appropriation of 56 million pesos (Zobel, 1995). The feeder cattle were distributed to commercial feedlot and backyard (cooperative) raisers. The breeding cattle, on the other hand, were brought to government and private nucleus farms and then to multiplier farms. The breeding animals produced from these farms were distributed to small raisers. Along with this stock importation was the policy of the government to allow importation of beef in order to cater to local needs not satisfied by existing market cattle. Appendix 1 shows the live cattle beef importation from 1990 to 2001.

This importation strategy has resulted in the emergence and proliferation of the commercial feedlot farming venture. Commercial ranchers, on the other hand, decreased in number. Factors like peace and order situation in production areas, implementation of the comprehensive agrarian reform law, land use conversion, changing policies on pasture lease, increasing input costs and poor herd and pasture management were identified to have caused the dwindling

number of commercial ranchers, thus the eventual decrease in cow-calf operations.

Another noticeable effect of this importation strategy aside from the observed low breeding bases was that exotic breeding stocks did not perform, which was firstly attributed to the farmers' failure to manage and take care of them. In addition, importation of beef cattle breeding stocks like Simbrah, Santa Gertrudis, Shorthorn, Holstein crosses with exotic blood need not only higher levels of management but also costly inputs like imported corn, soybeans and drugs. Arboleda et.al. (1995) stressed that imported stocks could perform well locally provided the environmental condition in which they were kept closely approximate those from which they came from. But, if the environmental conditions including management that these animals are provided were poor, then they could suffer disastrously. Without any carefully planned and deliberate breeding program, the genetic value and quality of subsequent progeny of imported stocks usually deteriorated because of environment and management.

Poor quality forage supply (which was seasonal), susceptibility to diseases and climatic effects were some of the deterring factors attributed to the low performance of the imported cattle breeds. Mendoza cited that climate had direct effect on the animal's grazing behavior, feed intake and utilization, growth and milk production. It had also indirect effects on feed supply, parasites and disease and storage and handling. Thus, when exposed to extreme local climatic conditions, exotic breeds were more severely affected than the indigenous breeds. Figure 2 depicts the solution and the experienced accompanying problems and the eventual consequence.

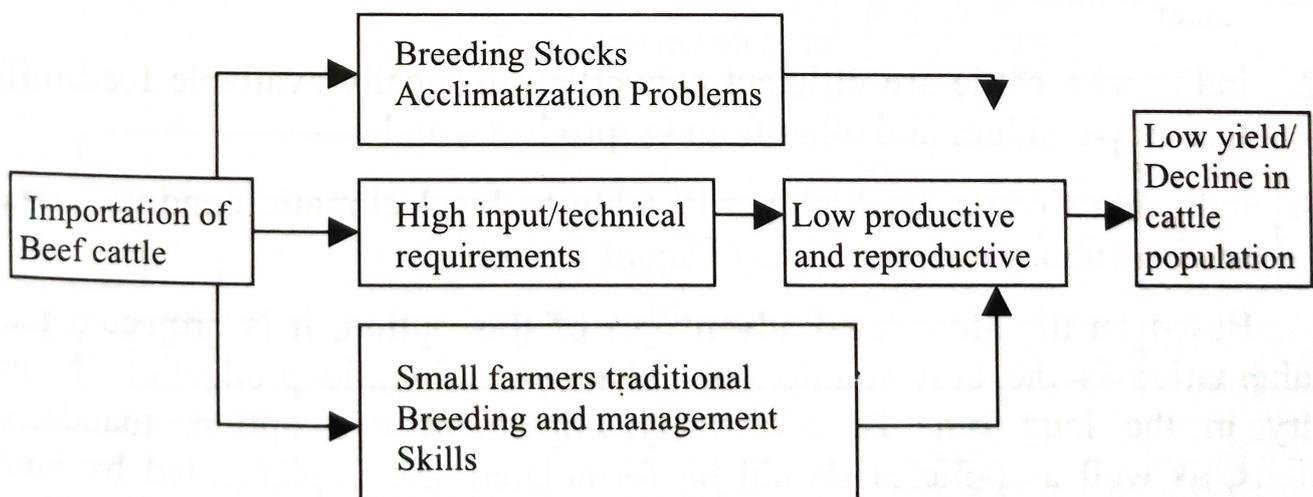


Figure 2. Identified solution, potential problems and consequences

Proposed Alternatives/Options (Level 1 Analysis)

The following alternatives were identified:

1. Importation of feeder stocks for fattening purposes instead of breeding animals.

This option offered lesser risks, lower management and production input requirements than the imported breeding animals. Experiences by commercial feedlot operators and groups of farmers in Batac, Ilocos Norte (Battad et.al., 1995) showed that imported feeder cattle could be profitably fattened under small farmers' local conditions and with adequate or strategic feed supplementation of local feedstuff.

It can be noted, however, that this option would favor, in the long run, the commercial feedlot owners more than the small/backyard raisers, considering the availability of feed resources of the former compared with the latter group of raisers.

2. The government, through the Department of Agriculture and other conduit financial institutions and government agencies, should develop a long-term national breeding program, as well as formulate policies in coordination with backyard raisers, ranchers and other stakeholders (retailers, consumers, etc.) to propagate indigenous breeds that are adaptable to local environmental conditions and traditional capabilities of small raisers.

This option is expected to enhance a much lower production cost due to:

1. input requirements of indigenous breeds are low, thus affordable by local raiser
2. indigenous cattle are efficient converters of locally-available feedstuffs like crop residues and other farm by-products, and
3. indigenous cattle are highly adaptable to local climatic conditions and rearing (traditional) practices of small farmers.

Based on the aforestated advantages of this option, it is projected that this alternative is the best solution to enhance beef cattle production in the country in the long run. To effectively implement this option, mandated functions, as well as policies should be formulated and implemented by both financing and government agencies in collaboration with the other stakeholders in the industry (Table 1).

Table 1. Recommended mandated tasks of the stakeholders of the Philippine cattle industry.

Stakeholder	Mandated tasks
Financing institutions	Institutionalize an attractive financial assistance to beef cattle farmers like easy to accomplish loan requirements, low interest rate (5-6% per annum) and longer term of payments (10-15 years)
Government	Formulate policies that: Protect own farmers, ban importation, impose strict meat grading, promote direct farmer-consumer marketing, stable PLAs for all raisers, utilize farm residues instead of burning, promote cattle raising as a MIANLINE not a SIDELINE endeavor work for a zero less tariff on imported inputs and impose the practice of sustainable agriculture in aspects of production

Proposed Option's Level 2 Analysis

To speed up the proposed strategy on conservation, development and utilization of improved indigenous cattle, as presented in Appendix 2, it is recommended that the implementation of the present genetic improvement program be innovated and/or modified with active participation of all identified stakeholders as shown in Figure 3.

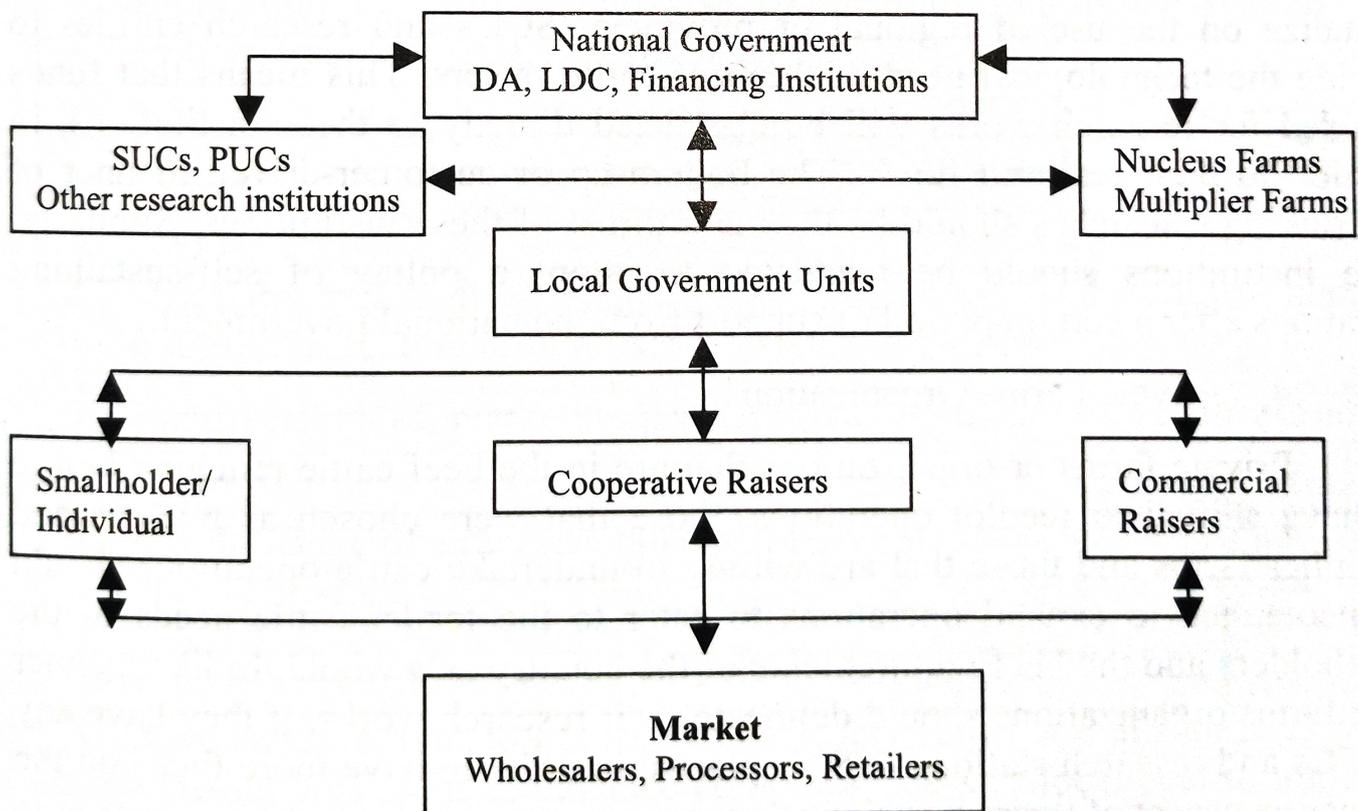


Figure 3. Scheme of stakeholders' participation in the genetic program implementation.

The proposed involvement or participation of the identified stakeholders are as follows:

1. Farmers/farmers organization/other vertical integrators

This group is encouraged to raise feeder cattle only when enough supply of feeder cattle is available. The breeding stock component should be removed purposely to unload them from the burden of raising stocks that are intensive resource-users that require exhaustive efforts and longer time.

2. Local government units LGUs)

These stakeholders are required to assume greater responsibility in the promotion and supervision of cattle projects in their respective areas. They have to actively develop strategies to enhance productivity through intensive campaign for utilization of technologies marketing and processing strategies and facilitate the provision of the much needed infrastructure support.

3. State Colleges and Universities (SCUs) and other research institutions located in the specific production areas.

These stakeholders' role of developing appropriate technologies should be strengthened through provision of more funding and other resources. Since production requirements are location-specific, the national government should capitalize on the use of regional or provincial SCUs and research entities to provide the technological need of the beef cattle raisers. This means that funds intended for research works will be channeled directly to these institutions, in addition to their research funds. The bottom-up or customer-driven manner of undertaking researches should be the main thrust of these institutions. Similarly, these institutions should be mandated to adopt a policy of self-sustaining operations after a certain period of support from the national government.

4. Private Farms/Organizations

Private farms or organizations that are in the beef cattle ranching before but have shifted to feedlot operations, those that were chosen as nucleus and multiplier farms and those that are willing to undertake cattle operations should be encouraged to expand operations to cater to the feeder cattle needs of the smallholders and the beef requirements of the country as a whole. In like manner these farms/organizations should delineate their research works, if they have any to SUCs and research stations in their places, in order to have more focus on the production aspect of their operations.

5. National government through appropriate agencies like the Department of Agriculture and its sub-units like the Livestock Development Council, etc.

The national government should delineate its former functions such as stock procurement, technology generation, extension and other related activities to the other stakeholders. It has to concentrate more on catering to the provision of financial requirement, infrastructure and developing policies in support and protection of local governments and the other stakeholders operations.

6. Market/Consumers Group

This group should be urged to patronize the direct producer to market disposal strategy in order to limit added costs of beef, which in turn benefit the consumers. Similarly, a direct feedback strategy between this stakeholder and the raisers, as well as LGUs and SUCs should be pursued in order to facilitate production of quality beef.

The implementation strategy to be adopted should be the interventions suggested by PCARRD([HYPERLINK:http:// www. pcarrd dost. gov. ph/ commodities/ lrd/ ruminants/ cattle population.htm](http://www.pcarrd.dost.gov.ph/commodities/lrd/ruminants/cattle_population.htm)) which are:

1. build up of the population base and improvement of the quality of stock through a well-defined breeding program and use of an improved indigenous breeding cattle as shown in Appendix 2.
2. increase cattle productivity through improved husbandry practices and application of bio-technologies, i.e., use of multiple ovulation and embryo transfer (MOET) technology
3. promotion of appropriate feeding program, using silage technology and utilization of non-conventional feedstuff coupled with strategic supplementation
4. strict implementation of quarantine procedures and efficient disease control/eradication programs
5. improvement of marketing/pricing systems and existing infrastructure support
6. development of grades/standards for live animals, carcasses and other animal products
7. review of current program on production credit system
8. advocacy program to access GATT safety funds and adjustments of its existing provisions to enhance competitiveness of local beef to imported beef
9. monitor of world and domestic supply and demand situation of cattle and beef

The proposed budget requirement to implement the program is 37 billion pesos. It will be given to at least two SUCs/PUCs and identified research institutions, as well to other stakeholders of the industry in the 17 regions of the country. The breakdown of this proposed budget is as follows:

a. Equipment	: 4 billion pesos
b. Beef breeding stocks	: 5 billion pesos
c. Pasture development	: 2 billion pesos
d. Supplies/Materials	: 4 billion pesos
e. Research & Development	: 6 billion pesos
f. Extension	: 6 billion pesos
g. Support for LGUs	: 10 billion pesos

The stakeholders' equity to the program's implementation will be through its infrastructure, technical assets and financial counterpart in case there will be shortfalls of the initial budget given by the national government. It is also emphasized that all stakeholders will be self-sustaining within 10 years of operation.

Proposed Option's Level 3 Analysis

The increase in beef cattle population, as a result of the implementation of the proposed breeding program, enhances sufficiency in the beef requirements of the country. The strategy to increase cattle population in extensive system may not pose competition to human for food requirements since they can be grown with grasses, herbs and shrubs, crop residues and crop by-products. If cattle, however, will be raised under confinement (feedlot operation), they can be stiff competitors to humans for their grain requirement. More so, an increase in animal population will cause environmental and health hazards and animal welfare problems as shown in Figure 4.

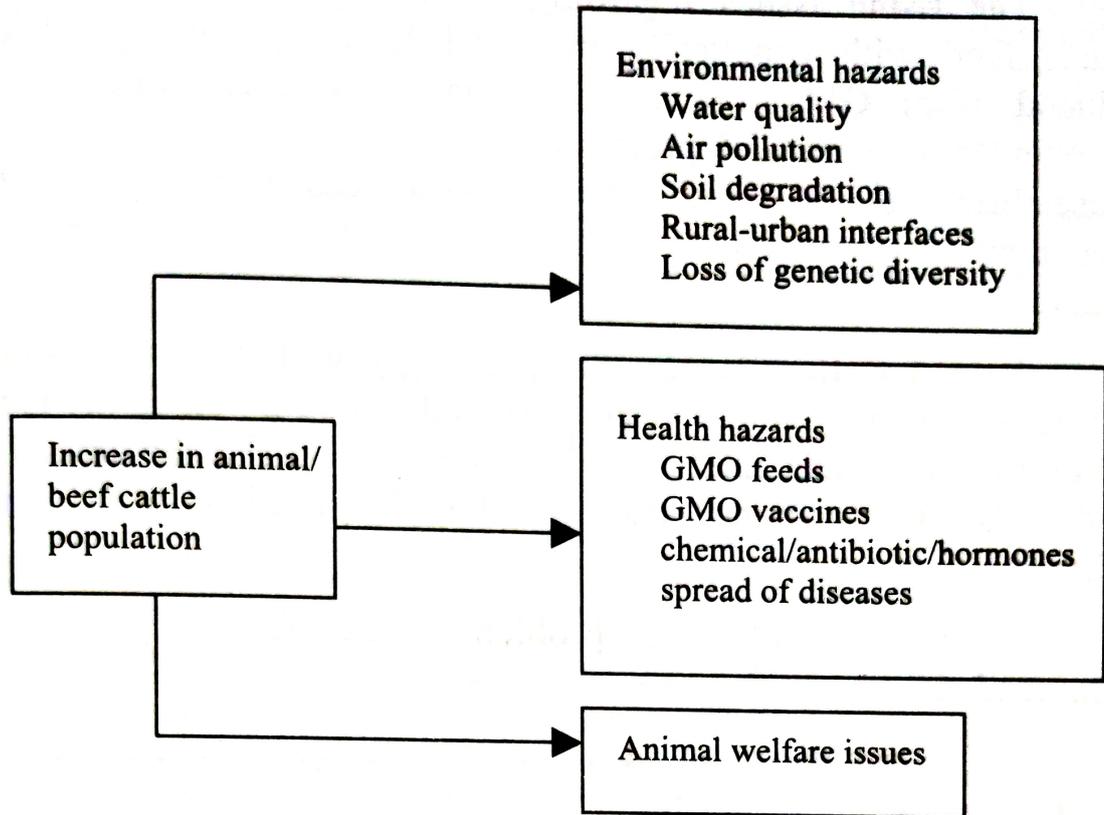


Figure 4. Increased cattle production with its potential problems

The environmental hazards caused by an increased animal population include:

1. soil degradation and decrease in soil fertility due to overgrazing, soil compaction and erosion;
2. surface run-off and leaching that may contaminate ground or surface waters due to excessive application of nutrients (from manure/inorganic fertilizer), nitrate leaching, ammonia toxicity, and phosphorous induce increase demand of oxygen which interfere with the well-being of fish and wildlife;
3. air pollution which is enhanced by accumulation of greenhouse gas from methane and nitrogen oxides of manure and volatilization of ammonia which causes acid rain;
4. friction between urban and rural residents due to emission of odor from animal manure; and
5. loss of genetic diversity which limit capacity of animals to emerging pests and diseases.

The rising issues regarding the safety of consuming products from animals feed with genetically modified feed; animal treated with vaccines produced from GM organisms; animals given chemicals, antibiotics and hormones treatments and prospects of exotic and zoonoses-caused livestock diseases bring negative implications to an increased livestock production. These issues may constrain continuing efforts to increase cattle production in the country.

Animal welfare issue correspondingly will rise as livestock production will intensify. Commercial livestock as well as poultry slaughter is now regulated to ensure both product safety and humane treatment of the animal. This implies added costs for equipment and technical application in complying the set animal welfare standards.

To attend to these problems, the following interventions are recommended:

1. The mandatory application of sustainable agriculture concepts in all aspects of beef cattle production operation. Feeding intervention, e.g., the use of crop residues, fodder trees, herbs, shrubs, can be a best preventive strategy against overgrazing and the eventual soil degradation and erosion.

2. Application of nutritional management that limit the known hazards of manure. Some of these techniques include:

- a. use of supplement (synthetic amino acids and reduced protein in feeds, enzymes-cellulases & phytases, and growth promoting substances) and systems approach (formulation of feeds close to requirements, phase feeding and use of highly digestible feed nutrients;
- b. use of fertilization or disposal option (as fertilizer/conditional or treatment option) – some of the treatment options to remove odor, reduce amount of nutrients and volume of manure are:
 - 1) removing solids using separator,
 - 2) composting – aerobic, anaerobic, vermiculture,
 - 3) activated sludge process,
 - 4) sequencing batch process,
 - 5) reverse osmosis,
 - 6) mixing with chemical fertilizer,

7) biofilter

c. modifications to livestock housing;

3. The conduct of more researches to validate the safety of using GMO feeds, vaccines, chemicals, antibiotics and hormones in animal feeding; and

4. The slaughtering procedures should be in compliance with animal welfare standards.

SUMMARY AND IMPLICATIONS

The beef cattle industry has shown a vast potential, in terms of viability and profitability, in the early 60's. It was observed, however, that there was a reversing trend in the 70's and the early 80's. It was at this situation that the government, through the Department of Agriculture and Food, conceptualized and placed into operation a cattle development program. This country's cattle development program, that was implemented since the late 1980's until the full implementation of the Agriculture and Fishery Modernization Law in 1997, showed some milestones as well as some shortfalls on its targets. The shortfalls included: the reduction of calving rate (born alive/cow) from 60% to 65% in the year 2000; extraction rate had decreased from 24.0% to 24.20% in 2000; a low breeding base of 40%; an estimated 73% shortfall of the number of slaughter cattle in 2000; projected increase of beef importation exceeding the 42,694,316 kgs in 2000; low output of the genetic improvement program; unavailability of ranching areas; poor quality feeds; inadequate marketing system and structures, farm to market roads and processing plants; inadequate veterinary and extension services and possible unfavorable effects of globalization on the local industry.

Based on these off-target results and projected increase in the demand of beef in the next years, there is a need for a change in the strategy of implementing the present cattle development policy from importation of breeding cattle to the utilization of indigenous cattle, utilization of the known supporting resources and the implementation of available technologies which are projected to enhance beef sufficiency and sustainable beef cattle production operation. It is also recommended that implementation of the proposed alternative should be through collective efforts of the direct stakeholders of the industry. Emphasis should be given to delineating some of the current functions of the national government to agencies directly involved in the industry, like research and development activities of local SUCs and research institutions, instead of the highly centralized research networks; a breeding/production focus operation of identified nucleus and multiplier farms; LGUs strengthened role in cattle

production activities in their respective localities and enhancement of the direct producer-market disposal strategy.

The budgetary requirement, which totaled 37 billion pesos, of the suggested option will be sourced-out from existing research funds and other available funds intended for cattle development. It is recommended, however, that the sooner the proposed stakeholders' operation stabilize, the sooner will their operations become self-sustaining, with the national government's role limited to providing safety nets against after-effects of the full implementation of GATT and world trading imbalances and extension support services to the industry's stakeholders.

It is visualized that the suggested options will bring sufficiency to the beef requirements of Filipino consumers. This sufficiency, however, can be accompanied by environmental and health hazards to the country's human population. Nevertheless, these hazards can be minimized through imposing the suggested management interventions.

References

- AHAJ. 1996. Israel, RP Eye Use of "Satellite Farming." p. 38.
- Aranez, G.B. 1993. The Cattle Feedlot Industry and Its Environmental Impact. *AHAJ*. pp. 57-62.
- Arboleda, C., V.A. Arganosa, B.A. Parker, O.L. Bondoc. 1996. Livestock Importation, Some Policy Issues. In: Zobel, E. 1995. The Government Program is Full of Bull. *AHAJ*. pp. 27-28, 37.
- Battad, Z.M., B.A. Oliveros, V.A. Sayaboc, R.R. Sair, R.R. Caluya and S. Ma. Publico. 1986. On-farm Performance of Feedlot Cattle Fed with Local Feedstuff With or Without Supplementation. *AHAJ*. pp. 26-31.
- Castillo, A.C. _____. Backyard Beef Production in the Philippines. Internet research.
- Mendoza, T.S. _____. A Compendium of Lecture Notes in AGRI 112 (Introduction to Farming Systems. Dept. of Agronomy, College of Agriculture, UPLB, College, Laguna.
- Zobel, E. 1995. The Government Program is Full of Bull. *AHAJ*. pp. 27-28, 37.