

**Developing Research Agenda for the Caribbean Food System
to respond to Global Climate Change
19 – 20 September, 2002, UWI, St. Augustine Campus**

**Briefing Paper
on
“Research Issues related to Livestock Production”**

by

R.K. Rastogi, Department of Food Production, UWI.

The Context

1. Agricultural environment

- Faulty agricultural practices in the past, intensified since the advent of the “Green Revolution”, have contributed to significant environmental degradation.
- Increased (and inefficient) use of pesticides and nitrogen fertilizers produces severe **local** pollution.
- Agriculture is also becoming a major contributor to **regional** and **global** pollution producing significant levels of methane, carbon dioxide and nitrous oxide. Individually, or in combination, these gases are contributing to:
 - Acid deposition
 - Depletion of ozone in the stratosphere but its build-up in the lower atmosphere, and
 - Global warming
- High heat, in combination with high humidity, is resulting in productivity declines in crop and livestock systems – particularly in the low latitudes, where the Caribbean is located.
- Rise in sea level – expected to be of the order of 15cm by 2020.
- Significant fall in precipitation in the subtropics and tropics since the 1960s.
- Occurrence and increased incidence of extreme weather conditions leading to floods (Europe, India), drought (USA, India), hurricanes, extremes of high and low (frost) temperatures, etc. **The Caribbean is particularly susceptible to all this.**

2. Globalization and Trade Liberalization

- Caribbean islands' economies are small, generally resource poor, open, and highly vulnerable to trade liberalization and to any external shocks, e.g. dumping, hurricanes, etc.
- Globalization is making **competitiveness the most important issue**, which in turn necessitates **greater productivity – from research**.
- On the resource side, funding for **public sector research can be made more efficient through teams and partnerships employing information technology, sharper priority setting, stronger monitoring and effective out-sourcing**.
- For the Caribbean Region, it means, among other things, **an emphasis on competitiveness and productivity**. Trade liberalization may lead to lower food prices for Caribbean consumers but what effect would it have on producers in agriculture, forestry and fisheries sectors? **What would research contribute to sector's efficiency?**
- How would the need for increased efficiency in agriculture affect region's **biodiversity, land and water resources?**
- The above necessitates that the region's research strategy be based on conservation and enhancement of biodiversity and the environments, including the aquatic environment.
- Finally, there is need for **creating partnerships** in decision making process for horizontal collaboration.

3. Research Priorities

Based on the above, I propose the following research priorities for the livestock sector for your consideration and discussion. The list is by no means exhaustive.

A. Dairy and Beef

- Species diversification into the exploitation of water buffaloes which can utilize indigenous resources more efficiently than cattle and are also more healthy beings than cattle.
- Use of reproductive biotechnology, for example, continuous production of F₁ cows for milk production.
- Development of nutrient-rich pasture grasses.

B. Sheep, Goat and Rabbits

- Research is needed into diagnosis, epidemiology and control of internal parasites of small ruminants. Control of these parasites is expected to increase productivity by about 15%.
- Marketing systems need to be researched and developed such that small producers would benefit.

C. Pigs and Poultry

- Development of appropriate housing designs, particularly roof design, using indigenous resources and technology in order to reduce heat and humidity stress and thus, to increase efficiency and productivity. (Applicable to all classes of animals)
- Development of environment-friendly waste disposal systems.
- Research into ways to reduce vulnerability of this sector.

NOTE: The above presentation is based on several sources of information but the list of research priorities reflects author's own thinking and bias.

August 20, 2002