4. Coping strategies and management measures to strengthen national capacity to ensure aquafeed supply

This section provides a brief overview of coping strategies and management measures to strengthen national capacity to address aquafeed supply and to mitigate against rising costs of aquafeed ingredients in terms of policies, research and private sector and farmers' initiatives.

4.1 GOVERNMENT AND POLICIES

- Research institutes should build "institute-industry research partnerships" with feed manufacturers to improve stability of feeds and to increase dietary nutrient retention.
- Given the current limited capacities of national, highly decentralized institutions to conduct the necessary research, development of networking between regional and national institutions appears to be essential. Policies to foster collaboration among the various stakeholders must be formulated and nurtured. Collaboration among local and international research centres, universities, non-governmental organizations and the private sector must also be strengthened.
- Government must formulate policy guidelines that encourage the private sector to participate in research and to build institute-industry partnerships in research. Roles and activities that require public support and those that need to be left to the private sector need to be identified.
- Research policies in aquaculture must reflect present and future incentives for feed manufacturers and incorporate links to other policies regarding taxes, tariffs and subsidies. Import tariffs on feed ingredients and on equipment should be reduced or removed to lower the cost of producing fish feeds and to maintain and improve the country's competitiveness in the world market.
- Government should grant tax holidays for feed manufacturers to compensate for price increases.
- Other sectoral policies regarding credit and investments continue to play significant roles in promoting the expansion of aquaculture throughout the country. Credit is still needed to finance different aquaculture activities, including feed manufacturing and feed operation costs of farmers. An appropriate credit programme should be devised to serve these functions. While private investment should be encouraged, considerable public investment in infrastructure, capacity building (of farmers and small-scale feed producers) and institutional strengthening are needed to sustain the growth and development of the aquaculture sector.
- Capacity building of small-scale farmers should particularly be targeted towards improved feed management at the farm level, including selection of appropriate feed, quantity of feed and feeding methods.
- Water scarcity due to climatic changes has triggered food crisis in many regions of the world and led to recent food shortages and an increase in prices, including prices for ingredients such as grains used in fish feeds. Therefore, agriculture needs to be more efficient to reduce water consumption. Increasing population,

BOX 5
Farmer response to rising aquafeed prices

As of December 2007, farmers and feed producers in the Mekong (Cuu Long) delta region were faced with serious losses as the price of fish feed continued to rocket.

The director of a domestic feed-producing company said that the crux of the problem was the rising costs of raw materials such as bran, soybean residue and saltwater fish.

"They are becoming just too expensive, especially imported material. Producers in the region are looking for replacements but it's a challenge to find products with a high enough protein content."

During November 2007, the prices of these basic ingredients increased by 30 percent, pushing up the cost of feed by VND13 000-VND13 500 per kg.

For fish farmer Le Thi Thu from Tan Khanh Trung village in Dong Thap province, the accelerating prices had a huge impact on her spending, as she needed at least 3 tonnes of feed per day to maintain her two ponds.

"It means I have to spend an additional VND1.8 million per day if I want to buy my favourite brand Pro Conco," she said.

Things were just as bad in the neighbouring provinces of An Giang and Can Tho, fish farmer Nguyen Thi Tien in Thot Not district, Can Tho, complained.

"With the current price of feed, my family has to spend about VND120 million extra to maintain our pond, which is capable of producing 100 tonnes of fish."

Many farmers were reduced to taking out high-interest bank loans to cope with the crisis, while others were turning to home-produced feed. One fish farmer in Chau Phu district, An Giang province said he invested VND500 million in setting up a feed production line and was reaping the rewards.

"I can make as much as I want when I want," he said.

Experienced farmer Sau Huu, from Thot Not district, said he heads to border areas to barter for cheaper materials. Being the owner of a pond capable of producing 8 000 tonnes of *tra* catfish a day, his needs were great.

"I go to the border area near Cambodia to buy soybean residue and place orders with domestic seaports to get cheaper seafish," he said.

Source: http://vietnamnews.vnanet.vn/showarticle.php?num=03ECO061207

pressure on limited land and increasing industrialization and urbanization require agriculture to increase productivity and yield. Thus, the key solution is to improve water use ratio and efficiency. Therefore, governments should invest in innovative technologies for water efficient practices in agriculture to face the food crisis. This in turn will benefit the aquaculture feed industry.

4.2 THE ROLE OF REGIONAL/INTERNATIONAL ORGANIZATIONS

- Research to replace proteins and lipids with alternate plant sources, and to produce nutritionally balanced diets in a cost-effective manner needs to be coordinated at a regional and international level.
- Promotion of low polluting feeds such as low phosphorus diets, improvement of food conversion ratios (FCRs) and reduction of nutrient release to the ecosystem should be given higher priority.
- There is a knowledge gap about the dietary requirements of many commercially important cultured species which is evidenced by fish feeds which lack the balanced nutrient regime required by target species and may well inadvertently increase feed costs.

- Solutions to fishmeal substitution are multifaceted. Recently, microbial and algal species have provided new innovative sources of proteins and land-based animal by-products are being investigated. Research on these new protein sources needs to continue with special emphasis on the issue of the cost of manufacturing.
- To address the critical information gap and to establish networking among the various stakeholders, it would be useful to develop a web-based information network, focusing on aquaculture nutrition and feed resources together with guidelines on how to use and apply the information. The information network would also include analysis of the availability and accessibility of aquaculture feed and feed ingredients and commodity prices as part of a programme to understand the impact of soaring feed prices. The database would be linked to the market prices of feed and commodities and would assist the various stakeholders in devising coping strategies under different scenarios and with different options.

4.3 ROLE OF THE PRIVATE SECTOR

- The private sector should establish small-scale feed producers'/manufacturers' associations catering to farm clusters and the concurrent organization of clusters of small farmers in aquaclubs and/or farmers' associations.
- To reduce production costs, farmers should conduct a technical audit to optimize feed management techniques (selection of appropriate feed [e.g. extruded vs sinking pellet], quantity of feed used and feeding methods [e.g. increasing feeding frequency]).
- To reduce production costs further, farmers should minimize other operating costs.
- The private sector should improve natural productivity (e.g. use of fertilizers) in the relevant production systems to offset costly micronutrients and, therefore, feed costs.

4.4 FARMERS' COPING STRATEGIES TO MITIGATE THE RISING COSTS OF AQUAFEED

Aquafeeds account for 50–70 percent of production costs and, therefore, aquafeed producers require significant working and operational capital for aquafeed production. Farmers who depend on aquafeed ingredients for their own feed production are particularly vulnerable because their inventories and, therefore, risks are invariably higher than commercial aquafeed producers who can buy aquafeed ingredients in bulk. During the recent escalation of feed ingredient prices, costs to farmers of aquafeeds increased by 30–50 percent, thus requiring farmers to secure additional funds to purchase feeds. To mitigate these price increases, farmers in Viet Nam, for example, had to borrow money at significantly high interest rates, travel long distances to obtain cheaper and alternative feedstuffs and in some instances even build their own feed plants (Box 5). In the Mekong Delta, sustained price increases of fish feed had also forced many farmers out of business (Box 6), reducing the area under catfish production by as much as 50 percent. Besides catfish farmers, shrimp farmers are also affected by increasing feed prices and the area under production has decreased by 75 percent in a year (Box 6).

BOX 6

Rising feed prices have forced a significant number of catfish, shrimp and livestock breeders in the southern region of Viet Nam to give up their occupations

More than 30 percent of the catfish breeders in the Cuu Long (Mekong) Delta closed their businesses because of losses caused by high fish-feed prices, according to the Viet Nam Association of Seafood Exporters and Processors (VASEP).

The shrimp breeding area in Bac Lieu province fell from 10 000 ha last year to 2 000 ha this year.

The rise in fish-feed prices was mainly responsible for a loss of VND1 000 (US$0.06) on every kilogram of catfish, said Le Viet Tien, a catfish breeder in Tien Giang province. Many shrimp ponds in the region were also idle for the same reason. The shrimp breeding area in Bac Lieu province had decreased from 10 000 ha in 2008 to 2 000 ha in 2009.

The Animal Feed Association said catfish sold at VND16 500 (US$0.90) a kilogram, up about VND3 000 ($0.20) over the last five months of 2009. The increase in animal feed prices of around VND160 per kilogram, therefore, was reasonable but had no impact on breeders, an association official said.

However, the peak prices, according to catfish breeders, lasted for a very short time, and selling prices at the end of 2009 were just VND14 000 ($0.80) per kilogram. Experts noted that while livestock breeders had expanded production during 2008 by 15 to 20 percent, the area for catfish and shrimp breeding in the Mekong Delta had reduced sharply by 50 percent.

Source: http://english.vietnamnet.vn/biz/2009/06/853846