



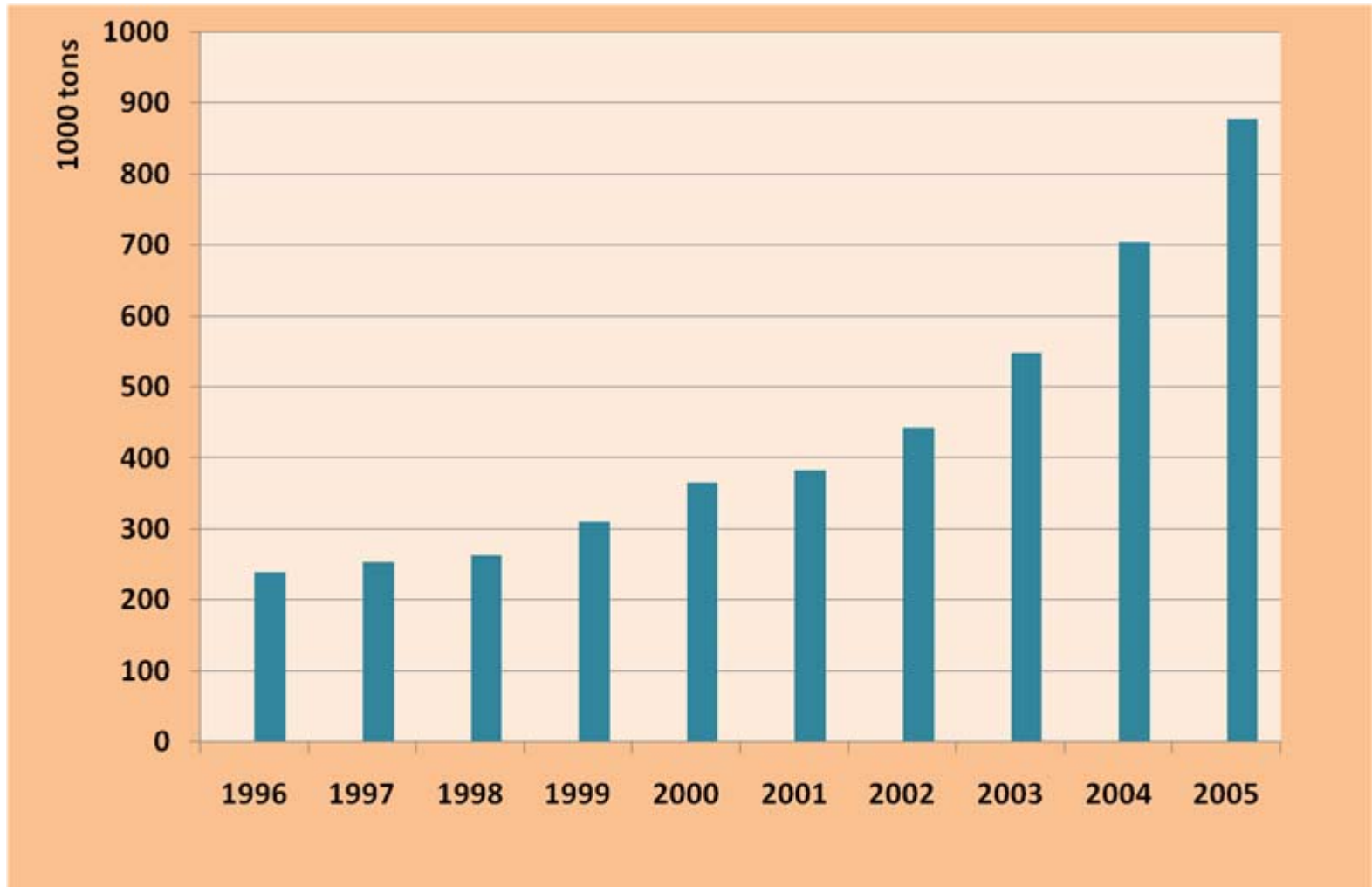
# **Development of feed supply for commercially important species in the Mekong Delta: Results and experiences of a Hungarian ODA project**

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# The growth of freshwater aquaculture in Vietnam



Source: FAO FishStat Plus, 2007

# Feed is a critical element of sustainable aquaculture development

- Intensification in aquaculture production
- Economical efficiency – competitiveness
- Environmental considerations



# Hungarian-Vietnamese collaboration in the development of fish feed supply

## Background:

- There is traditional collaboration between Hungary & VN, between RIA-2 and HAKI
- R&D work in fish nutrition and fish feeding is an important activity in both institutions
- Innovation and the practical application of R&D results are important aspects at both institutions
- There is a MU of collaboration framework between the two governments.

# Hungarian-Vietnamese collaboration in the development of fish feed supply

Old style experimental shrimp-feed mill of RIA2 before this project

The difficulties when research with this facility:

- Unable to monitor and control its technological parameters
- Inefficient in using raw materials and energy
- Unstable quality of products
- Pollution



# Rationale of the joint development program

- R&D results and experiences in fish feeding and aqua-feed manufacturing both in RIA-2 and HAKI
- Vietnamese aquaculture is booming, need for low cost but good quality feed
- Trends from home-made feeds towards pelleted feed
- Potential for feed manufacturing by a cluster of farmers
- Locally available cheap ingredients
- Low labour cost for feed manufacturing
- Possibility of extension, training and reference operation

# Frame of the joint development program



**Hungarian ODA (NEFE) Project No. 824/NEFE/2004:**

***„Development of seed and feed supply for economically important freshwater species cultured by small scale farmers in the Mekong Delta of Vietnam”***

# Objectives of the project

## 1. To contribute to the development of aqua-feed technology in the Mekong Delta

Providing high-tech apparatuses to the experimental feed mill of RIA2 so that this institution can use to study aqua-feed technologies in order:

- + To apply directly to its research and development in aquaculture
- + To extend its research results to the community of local feed manufacturing and aquaculture.

Through these activities, the suitable feed with low FCR and acceptable price can be produced to improve efficiency and sustainability of the local aquaculture. to the aqua-farming community

## 2. To contribute to the development of the aquaculture in the region in fish nutrition, seeding, propagation and rearing

*by the means* of transfer high technologies from Hungary and EU to Vietnam through RIA2 in these subjects, thus it can contribute to the development of the aquaculture in Mekong Delta in particular, also in Vietnam in general.

## 3. To strengthen collaboration between the two institutions in particular, and the aquaculture scientific community of the two countries in general.



# Main resources of the project

## **Financial resources:**

**Total budget for the project is around 637.000 USD (equiv. 10.100.000.000 VND), mainly from two resources:**

- Non-repayment aid from Hungarian Government: 550.000 USD (equiv. 109.999.160HUF or 8.700.000.000 VND)
- Vietnamese Government support: 87.000 USD (equiv. 1.400.000.000 VND).

## **Human resources for project implementation:**

- Research staffs and technicians from HAKI and RIA2
- Experts and workers from the two countries in the involving areas.

## **Location for the project implementation:**

“National Breeding Center for Southern Freshwater Aquaculture” of RIA-2 in Cai be District, Tien Giang Province.

# Main outputs of the project

1. One advanced production line for fish feed manufacturing is now in operation

(used as an experimental factory for RIA II and practical model to transfer the similar technology to farmers in Viet Nam).

2. More than 30 staffs of RIA2 are trained for:

- + Technical skills of operation to the feed mill
- + Improving knowledge of nutrition for aquatic animals
- + Improving knowledge of fish breeding technology for freshwater cultured species in the region

3. The solid foundation of co-operation between the two institutes and the relationship of two countries are strengthened.

# **Aqua-feed mill - main component of project**

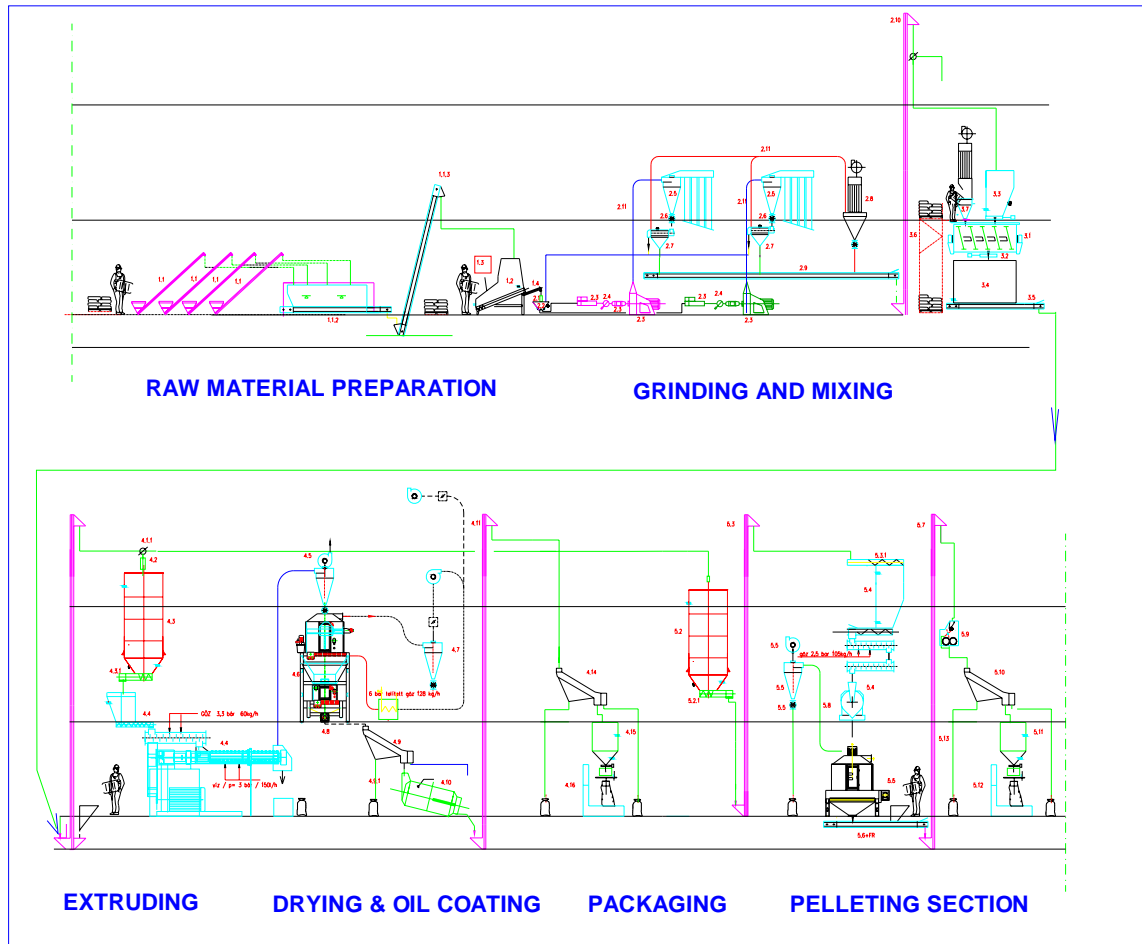
## **Establishment of a aqua-feed mill is a core activity of the project**

Fish feed mill used 75 % the total budget of the project (400 USD for equipment and 87,600 USD for building infrastructure).

### **Some major participants:**

- Initial ideas: HAKI and RIA2**
- Design for production line: Takarmányszervíz Kft. – Hungary**
- Design for building: SACO – Vietnam**
- Manufacturing/Assembling:**  
**Takarmányszervíz Kft. Hungary**  
**Thang Long Co., Viet Thanh Co. - Vietnam**
- Training of staff: RIA-2 and HAKI**
- Supervision: RIA-2 and HAKI**
- Development of feed formulas: RIA-2 and HAKI**

# Production line of the aqua-feed mill



## Capacity of the feed mill:

- 600 – 1000 kg/h
- 5 different sizes (2, 4, 6, 8, 10 mm)
- Energy saving
- Low environment pollution
- High level of process control and automatization.
- Hygiene and safety for workers and feed product
- Stable in operation

## Main sections of production line:

- Raw material preparation
- Grinding and mixing
- Extruding
- Drying
- Oil coating
- Packaging
- Pelleting section (standby)

# Main equipment of the fish feed mill

## AUTOMATIC WEIGHING MACHINE



# Main equipment of the fish feed mill

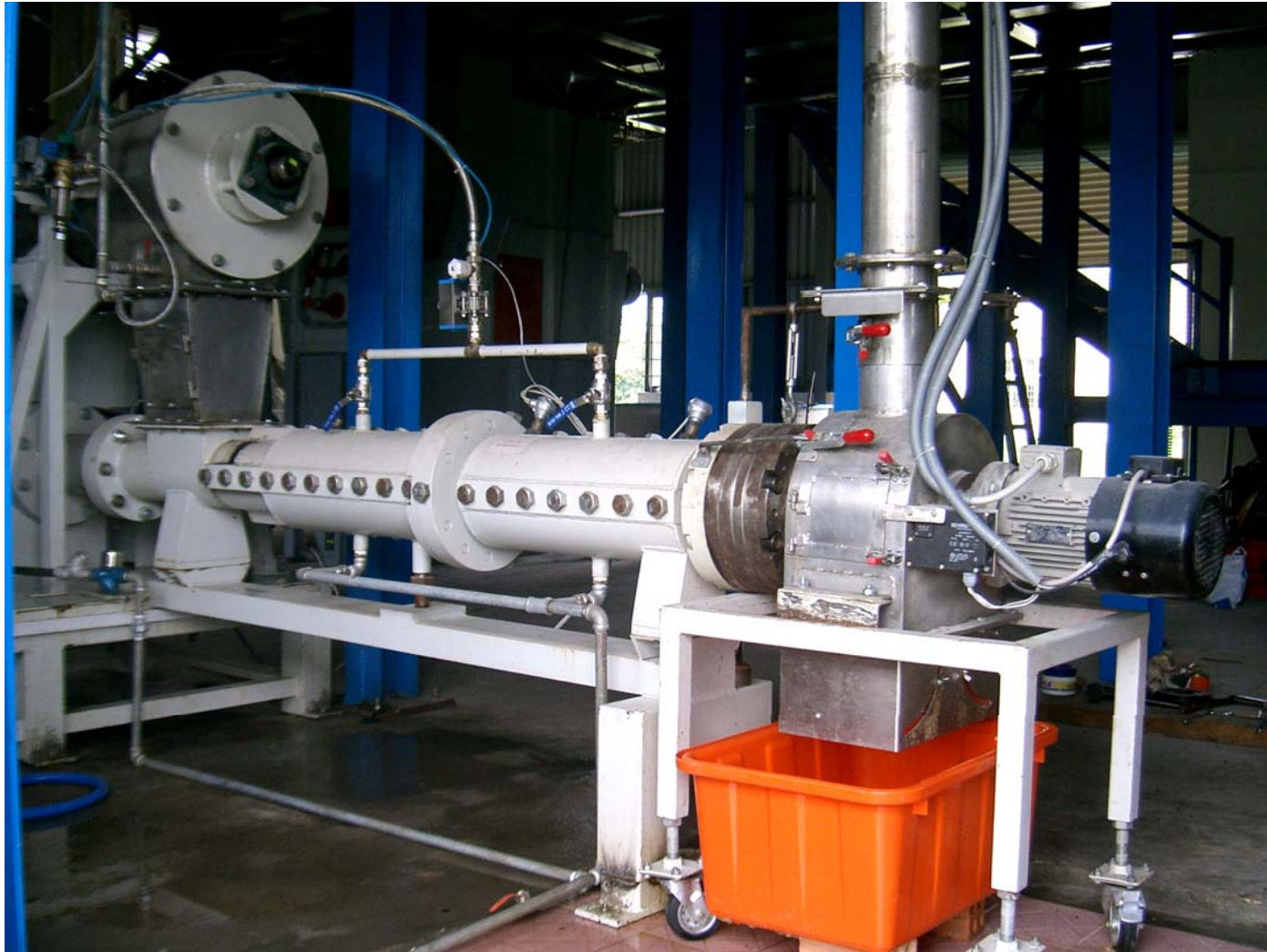
## GRINDING SYSTEM





# Main equipment of the fish feed mill

EXTRUDER FOR FORMING FLOATING FEED



# Main equipment of the fish feed mill

## DRYER & COOLER





# Main equipment of the fish feed mill

## OIL COATING MACHINE



# Trial for feed production



# Some experiences withdrew from implementation of the project

## Challenges during implementation of project

- Finding financial supports to the projects
- Partners for implementation
- Location to deploy project
- Choosing technology to be applied
- Complicated procedures we must follow when doing governmental support (ODA) projects
- Different rules and regulation between the two countries regarding to the implementation of projects
- Geological far distance between Hungary and Vietnam (it costs a lot for time, transportation and traveling)

# Some experiences withdrew from implementation of the project

## **Main factors for success of the project:**

- Having a good idea and proposal for project
- Strong willing and determination of both institutes
- Appropriate staffs for doing project (suitable expertise, positive thinking, with responsibility and decisive actions)
- Taking advantages of opportunities and running with the time.
- Being very patient and flexible to overcome many obstacles during the project implementation
- Being supported from the 2 governments and local authorities
- Being lucky.



# The biggest result of the project

**Collaboration and friendship between the two institutions (also the two countries) is significantly strengthened**



Happiness of Vietnamese and Hungarian friends after successful running test for the aqua-feed mill

**Thank you for your attention**