

Comprehensive Training on Cost, Profit and Loss Analysis in Agriculture

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I. Introduction

On 22 October 2025, WorldFish, in collaboration with the International Institute of Rural Reconstruction (IIRR), organized one-day *Comprehensive Training on Cost, Profit and Loss Analysis in Agriculture*. The event aimed to strengthen participants' understanding of agricultural cost analysis and enhance their capacity to apply practical financial tools in their work.

The training was designed in response to the capacity assessment conducted with producers in September 2025, which identified business planning and marketing as one of the most critical needs. See Annex 2 – Needs Assessment Report in Kampong Thom (Ou & Chanthalath, 2025). The training also highlights the importance of strengthening linkages among various actors, including aquaculture farmers, rice–fish farmers, vegetable growers, other crop producers, and business-oriented farmers representing five agricultural cooperatives

This training also supports homestead aquaculture farmers and rice–fish farmers engaged under Area of Work 2 of the Scaling for Impact (S4I), ASEAN CGIAR Program IP/IP1+, by enhancing their skills in conducting simple cost-and-profit analyses for different commodities.

II. Objectives

The training aimed to strengthen participants' knowledge and practical skills in agricultural cost analysis by introducing essential financial concepts, tools, and methods. Specifically, it sought to build participants' capacity to accurately assess production costs, analyze financial performance, and apply cost-analysis techniques to improve decision-making in agricultural production planning and implementation.

III. Date, Venue and Participants

A total of 16 participants including 11 women took part in the training and organized in Santuk district, Kampong Thom province. All attendees were Agricultural Cooperative (AC) Committee Members. The sessions were facilitated by WorldFish and co-organized by partner International Institution for Rural Reconstruction (IIRR).

IV. Training Process and Results

Welcome remark and facilitation by WorldFish's Project Manager

Facilitated by Ms. Ou Pichong, WorldFish Staff, the session began with an introductory exercise in which participants identified their main commodities and current business activities. Through a prioritization process, the group selected **Cashew Nut, Rice–Prawn, Rice Milling** and **Organic Fertilizer** as their key products.

Using participatory discussions and group work, participants analyzed the **inputs, outputs, and associated costs** for each selected commodity. Each group completed a **detailed cost analysis worksheet** (The photos attached separately) to document their findings.

During the training, the facilitator assessed all participants to measure their knowledge of the topics before and after the session. All participants reported that they had never received training on these topics before. After the training, the assessment showed that all participants increased their knowledge to 60–70%, compared to 0% before training.

Key Findings and Discussion Points

Most participants reported that they did not keep systematic records of their production costs, particularly for family labor and small daily expenses. Through the exercise, participants realized that the absence of proper records made it difficult to accurately calculate profits or losses. They acknowledged the importance of simple recording templates to better track expenses, inputs, and outputs. Several participants expressed interest in continuing this practice within their ACs to regularly monitor business performance. At the end of the session, participants shared their reflections and committed themselves to improving their record-keeping systems using the tools introduced.

Short executive summary (optional):

- Limited cost record-keeping was common among participants
- Lack of records hindered profit/loss calculation
- Participants recognized the value of simple recording tools
- Commitment expressed to adopt improved record-keeping within AC.

Training content focused on cost analysis

The brief cost analysis summary for the three agricultural commodities including 1) Cashew Nut (processing & production), 2) Rice–Prawn integrated farming, 3) Rice Mill operations and 4) Organic Fertilizer Operation with key cost components and typical financial factors in each case:

Cashew Nut Production

- **Production costs** include inputs like fertilizers, farming supplies, irrigation and labor for harvesting. A “fair price” threshold for raw nuts is covering costs and profit.
- **Cultivation costs** (general agriculture context) include land preparation, manure, fertilizers, irrigation, pesticides, and labor can vary with farm size and location.

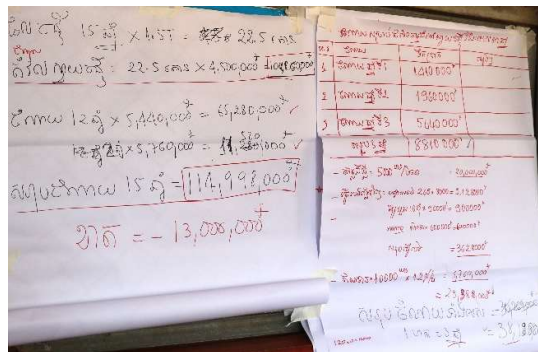


Figure 1: Cost analysis for cashew nut production

Rice–Prawn Integrated Farming

Cost structure

- **Primary variable costs** include seedlings, organic fertilizers, irrigation, and hired labor for rice; **prawn seeds** (post-larvae) are often the highest individual variable cost in prawn production segment.

Profit & Returns

- Based on farmer practice in the previous it is shown that Integrated systems practice (rice + prawn) generally shows **higher net returns** than monoculture rice due to additional revenue streams from prawn and better resource utilization.

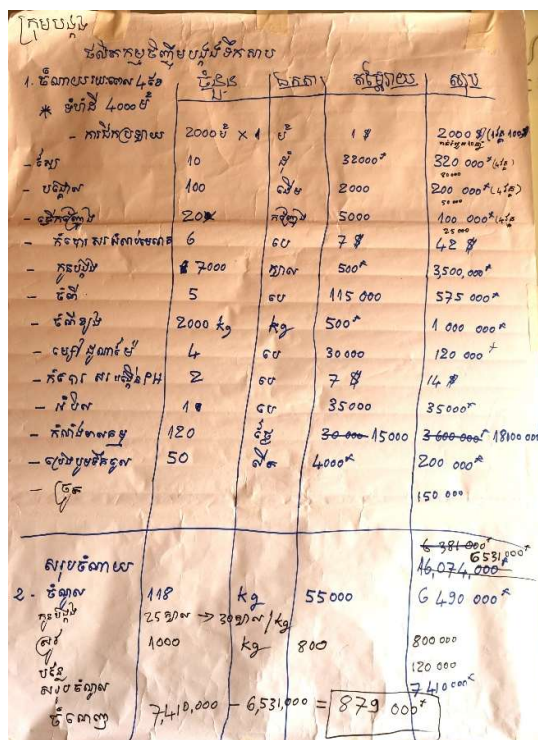


Figure 2: Cost analysis for rice prawn integrated farming

Rice Miller (Processing Paddy to Milled Rice)

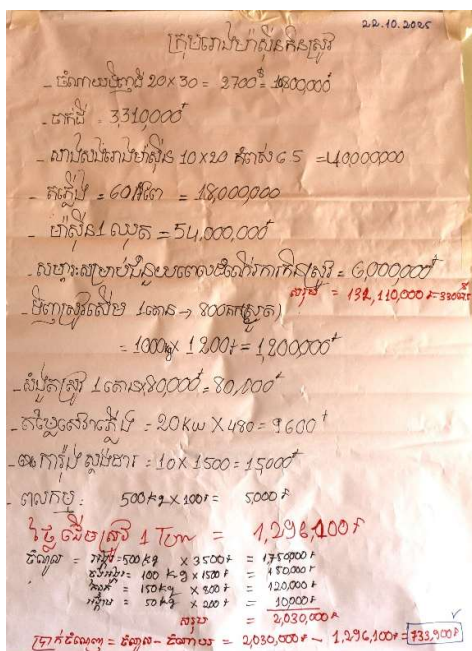


Figure 3: Cost analysis for rice miller

A. Capital (Setup) Costs

- **Costs vary by capacity & automation:**
 - Small mills might require tens of thousands in machinery, while larger mills can range into **hundreds of thousands or more**, excluding land and civil works.
 - Equipment for a full polishing/parboiling mill can push project costs much higher (especially in fully automated setups).

B. Operational Costs

- **Raw material (paddy)** cost of buying paddy is a significant part of total operational cost.
- **Key cost components:**
 - Energy (electricity/fuel)
 - Labor
 - Maintenance
 - Utilities
 - By-product handling
 - These often make up the bulk of recurring expenses after paddy procurement.

C. Cost Per Unit Processed

- Based on the assessments, **milling cost per ton ranged from about 1,000,000 to 1,296,100 riels (≈ \$ 250 – \$ 324) per tonne** of milled rice, with energy and fixed asset costs major contributors. The net profit is about 732,900 riels (≈ \$ 183.22)

D. Value Recovery & By-products

- By-products (bran, husk) can add value/reduce net cost if sold/used efficiently.

Key cost drivers: paddy acquisition price, energy usage, labor costs, mill technology (automated vs manual), capacity utilization rate, and handling of products.



Figure 4: Group discussion activities

Organic Fertilizer Operation

An organic fertilizer operation converts organic waste (animal manure, crop residues, food waste, compost materials) into fertilizer products such as: Compost, Vermicompost, Biofertilizers, Liquid organic fertilizers, etc.

The other important things which are considered including costs (Inputs, fixed and variable cost),

1. Costs (Inputs / Expenses)

A. Initial (Fixed) Costs

These are mostly one-time or long-term expenses:

- a. **Land / Space**
 - Purchase or rent of land
 - Storage and processing area
- b. **Equipment**
 - Compost turners
 - Shredders
 - Sieves
 - Water pumps
 - Packaging tools
- c. **Infrastructure**
 - Sheds
 - Compost pits or bins
 - Drainage system
- d. **Licensing & Certification**
 - Organic certification
 - Business registration
 - Environmental permits

B. Operating (Variable) Costs

These occur regularly:

- a. **Raw Materials**
 - Animal manure
 - Crop waste
 - Food waste

- b. **Labor**
 - Workers for collection, turning, packaging and transportation
- c. **Utilities**
 - Water
 - Electricity (if machines are used)
- d. **Transportation**
 - Collecting raw materials
 - Delivering finished products
- e. **Packaging & Marketing**
 - Bags
 - Labels
 - Advertising

2. Benefits (Returns / Gains)

A. Direct Economic Benefits

- a. **Sales Revenue**
 - Sale of compost
 - Higher prices compared to chemical fertilizers (organic premium)
- b. **Low Raw Material Cost**
 - Many inputs are free or very cheap (waste materials)
- c. **High Demand**
 - Growing interest in organic farming
 - Government and NGO support

Order	Input Name	Quantity	Unit Price	Total Cost
1	Land	1200 sq ft	400 ₹	480000 ₹
2	Compost turner	1	9500 ₹	9500 ₹
3	Shredder	1	700 ₹	700 ₹
4	Sieve	1	45 ₹	45 ₹
5	Water pump	1	45 ₹	45 ₹
6	Packaging tools	1	70 ₹	70 ₹
7	Shed	1	100 ₹	100 ₹
8	Compost pit/bin	1	350 ₹	350 ₹
9	Drainage system	1	70 ₹	70 ₹
Total			11,010 ₹	11,010 ₹

Total cost of raw materials = 24,810 ₹
 Total cost of equipment = 26,269.5 ₹
 Total cost of infrastructure = 30,000 ₹
 Total cost of labor = 2,730.5 ₹
 Total cost = 83,810 ₹

Figure 5: Cost analysis for organic fertilizer operation

B. Indirect & Long-Term Benefits

- a. **Environmental Benefits**
 - Reduces waste pollution
 - Improves soil health
 - Reduces chemical runoff
- b. **Soil Productivity**
 - Improves soil structure and fertility
 - Long-term yield stability for farmers
- c. **Social Benefits**
 - Job creation
 - Supports sustainable agriculture

3. Benefit (Cost Comparison)

Item	Amount (per year)
Total Costs	\$ 26,269.50
Total Benefits (Sales)	\$ 30,000.00
Net Benefit	\$ 3,730.50

V. Conclusion

This training course successfully strengthened participants' knowledge and practical skills in agricultural cost analysis by equipping them with essential financial concepts, tools, and methods. Through a combination of theoretical understanding and hands-on application, participants developed the capacity to accurately assess production costs, analyze financial performance, and interpret cost structures within agricultural systems. The skills gained enable participants to make more informed, evidence-based decisions that enhance efficiency, profitability, and sustainability in agricultural planning and implementation. Overall, the training has laid a strong foundation for improved financial management practices, supporting more effective resource allocation and better outcomes across agricultural activities.



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