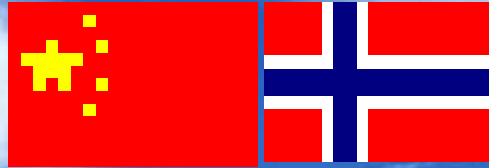


Norway-China White Fish Processing Research



June 3rd, 2013

Outline:

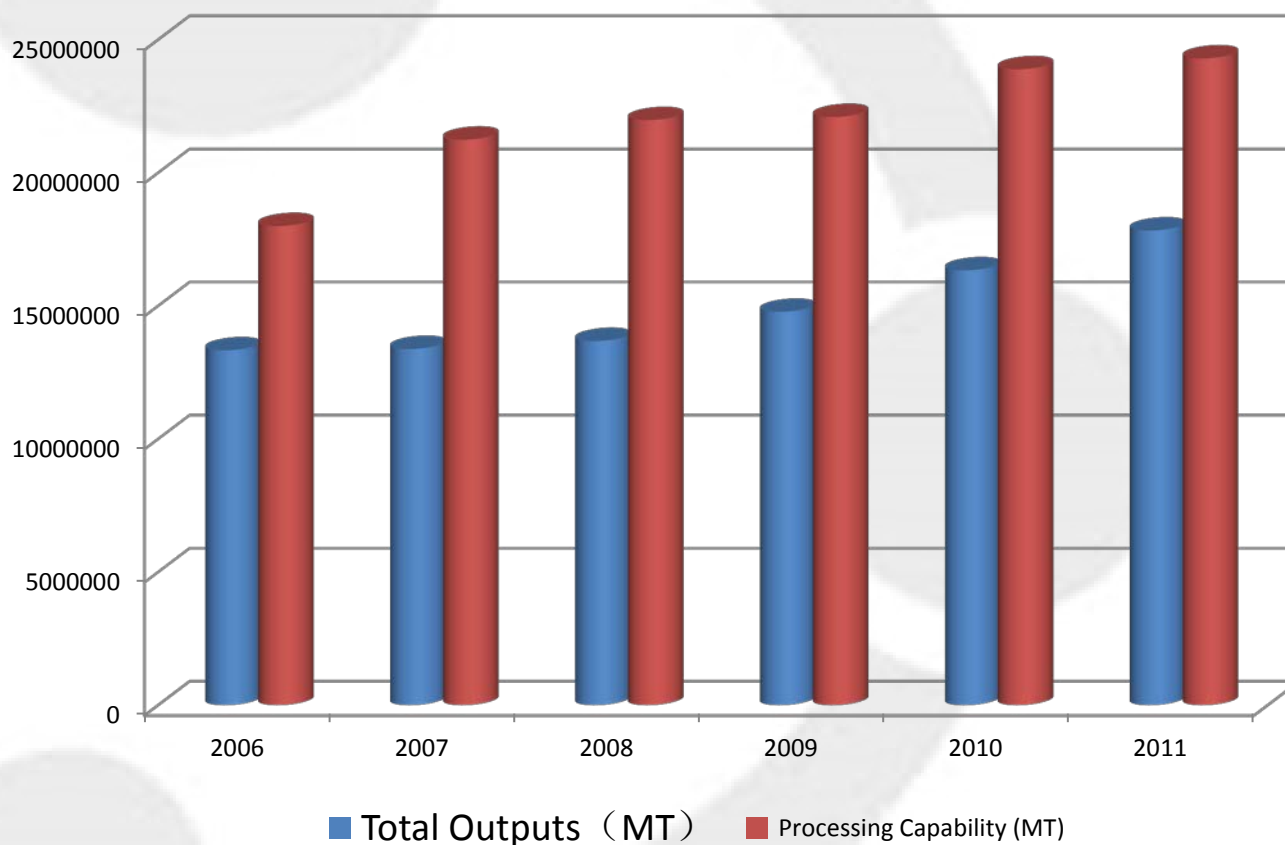
1 General Introduction of Aquatic Product Processing in China

2 Changes of The White Fish Processing in Shandong

3 Logistics and Value Chain



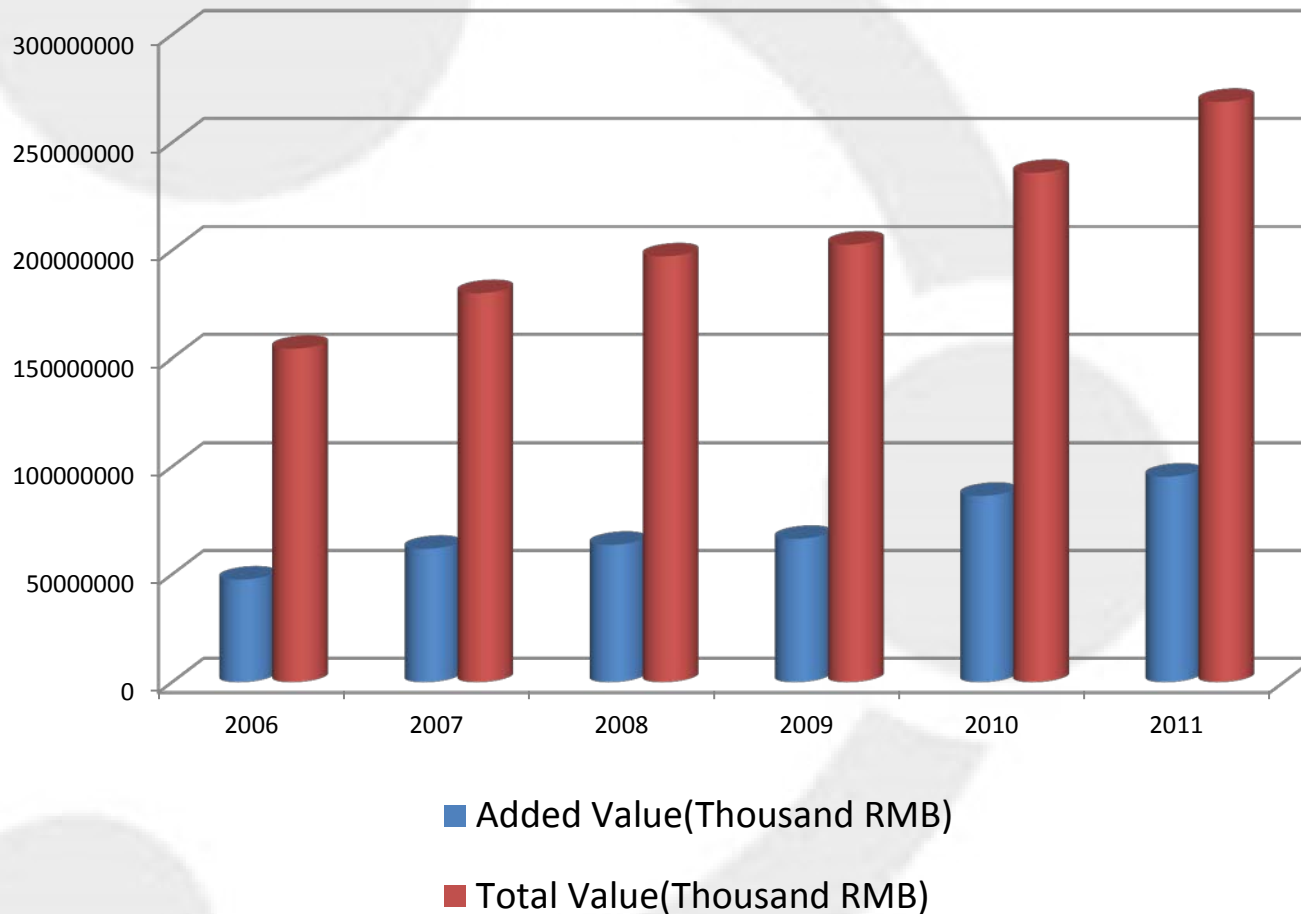
1.1. Total output and processing capability of aquatic product from 2006 to 2011 in China



Data Resource: China Fishery Statistical Yearbook



1.2. Added value and total value of aquatic product from 2006 to 2011 in China

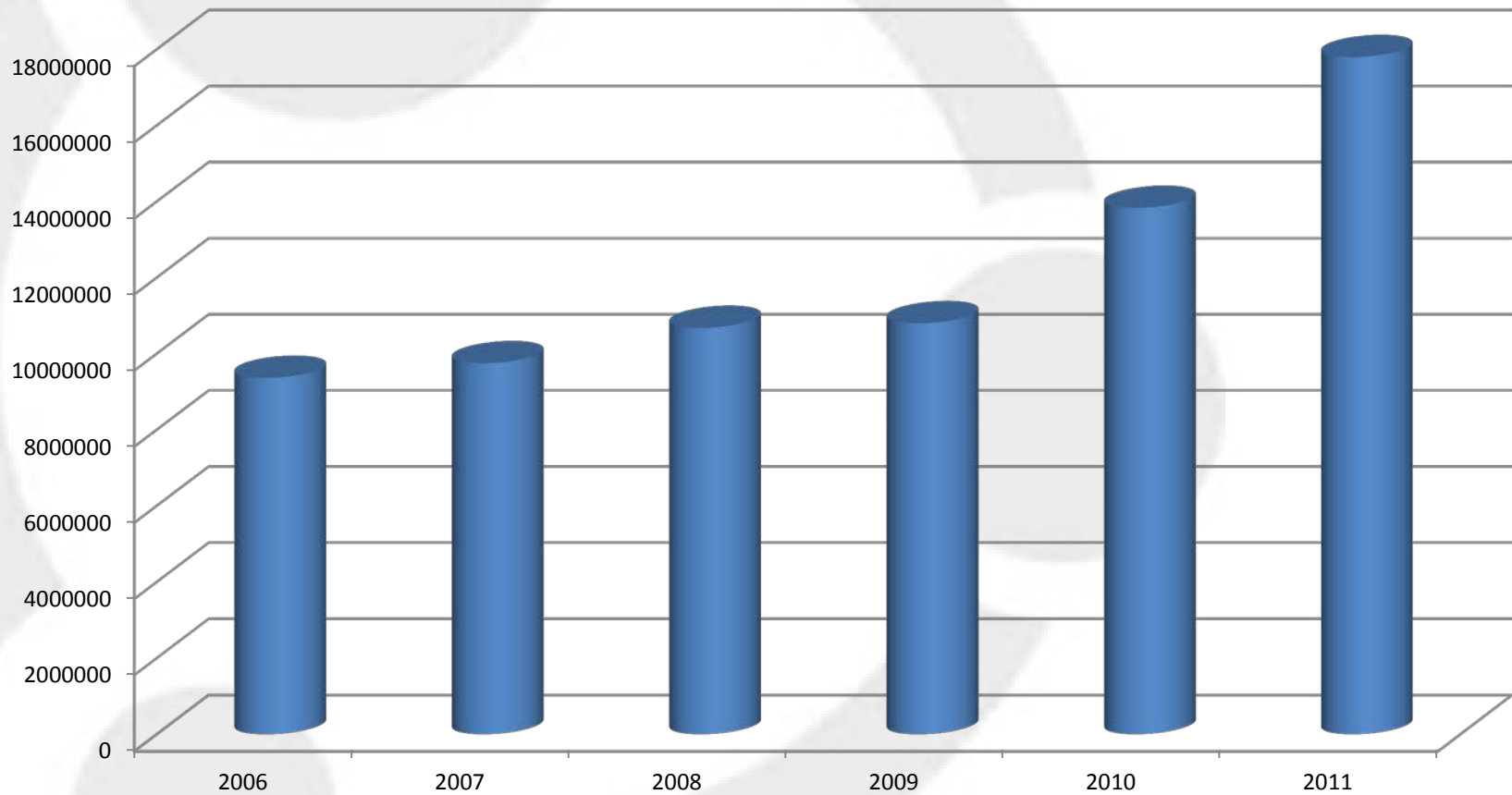


Data Resource: China Fishery Statistical Yearbook



1.3. Total value of the exported aquatic product from 2006 to 2011 in China

Total Value of The Exported Aquatic Products (Thousand Dollar)



Data Resource: China Fishery Statistical Yearbook



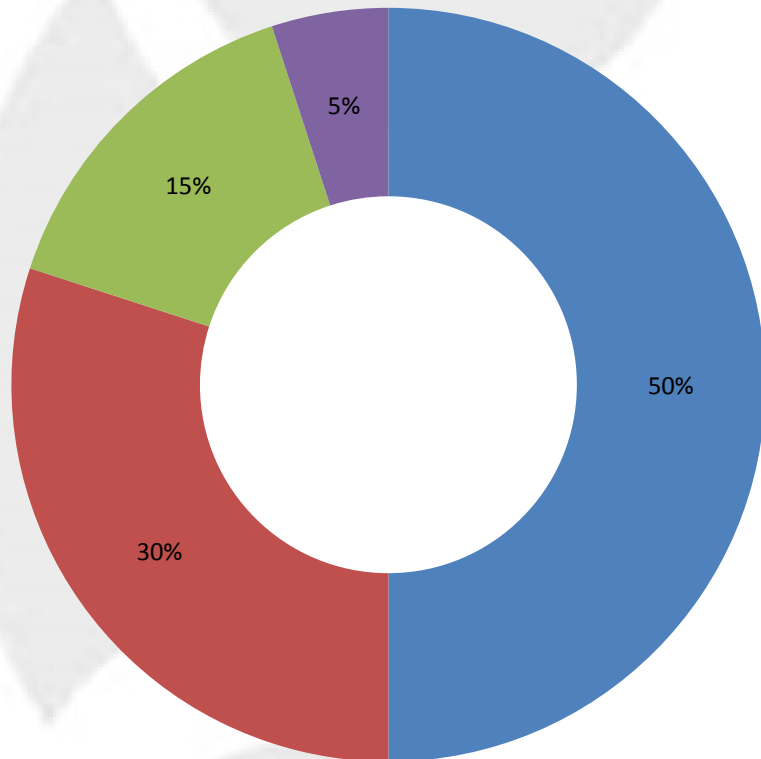
2. Changes of The White Fish Processing in Shandong

- ◆ The aquatic product processing output in Shandong province accounts for 1/3 of that in China. There are a lot of white fish processing enterprises in Shandong Province, mainly locate in Qingdao Chengyang District. The Chengyang District is the largest processing base of white fish. We finds that the general situation of the white fish processing in Shandong is better than last year through further investigation. Now we elaborate the changes in detail.



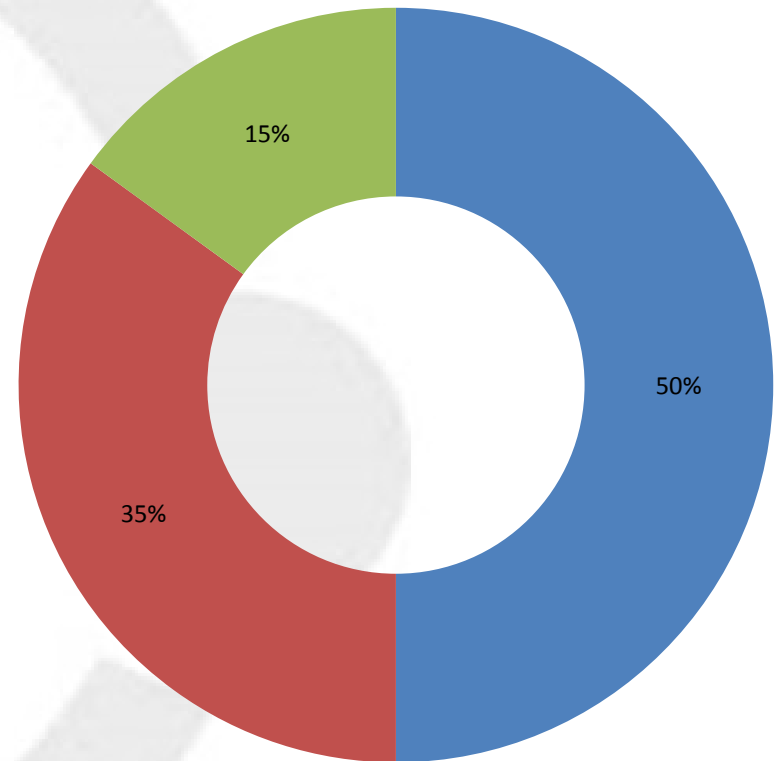
2.1. The Import and Export Countries

Import Countries



■ Russia ■ America
■ Norway ■ Iceland

Export Countries



■ EU ■ America ■ Others



2.2. The Import and Export Prices

| | Import Price (CFR \$/MT) | Export Price (FOB \$/MT) |
|----------------|-------------------------------------|-------------------------------------|
| A.COD | 2800 | 5100-5600 |
| P.COD | 2000 | 4100-5100 |
| Haddock | 2900 | 5600-6100 |
| Pollock | 1200 | 2800-2900 |



2.3. Processing Cost

- ◆ The processing cost includes workers' wage, water & electricity, low-value goods cost, machines depreciation and so on.
- ◆ In 2013, the average processing cost is about \$850 – \$1000/MT, in which the workers' wage accounts for 70%, and water & electricity accounts for 15%.



Worker's wage increases annually at the rate of about 20%.

| Type of Job | Wage(PMB/month) |
|----------------------------------|-----------------|
| slicing | 4000—6000 |
| peeling | 3500—4200 |
| other processing job | 3200—3500 |
| assisting job (such as cleaning) | 2600—3000 |



- ◆ With the increase of workers' wage, some companies begin to use machines in stead of workers. generally speaking, machine has higher efficiency, for example, one slicer can replace ten workers, but its yield rate is much lower. One insider told us that according to our government's goal---- citizens' wage will double in 2020 , compared with that in 2010, and if the machine can have higher yield rate, then it is inevitable that the machine will replace manual workers in the future.



2.4. Yield Rate

- * Different kind of white fish has different yield rate.

| | Yield Rate |
|---------|------------|
| A.COD | 65%—70% |
| P.COD | 65%—70% |
| Haddock | 62%—65% |
| Pollock | 65%—68% |



2.5. Food Security

- ◆ Generally, the enterprises don't add the food additives, because the raw materials' quality is very good, commodity Inspection Bureaus have a quite strict additives control and the products exported to EU don't allow to be added additive.
- ◆ Sometimes asked by the clients, the enterprises also add certain additives to keep products fresh, white, or even to increase weight, such as polyphosphate. The additives are mainly imported from Europe and USA , and the amount of additives can't exceed the standard.

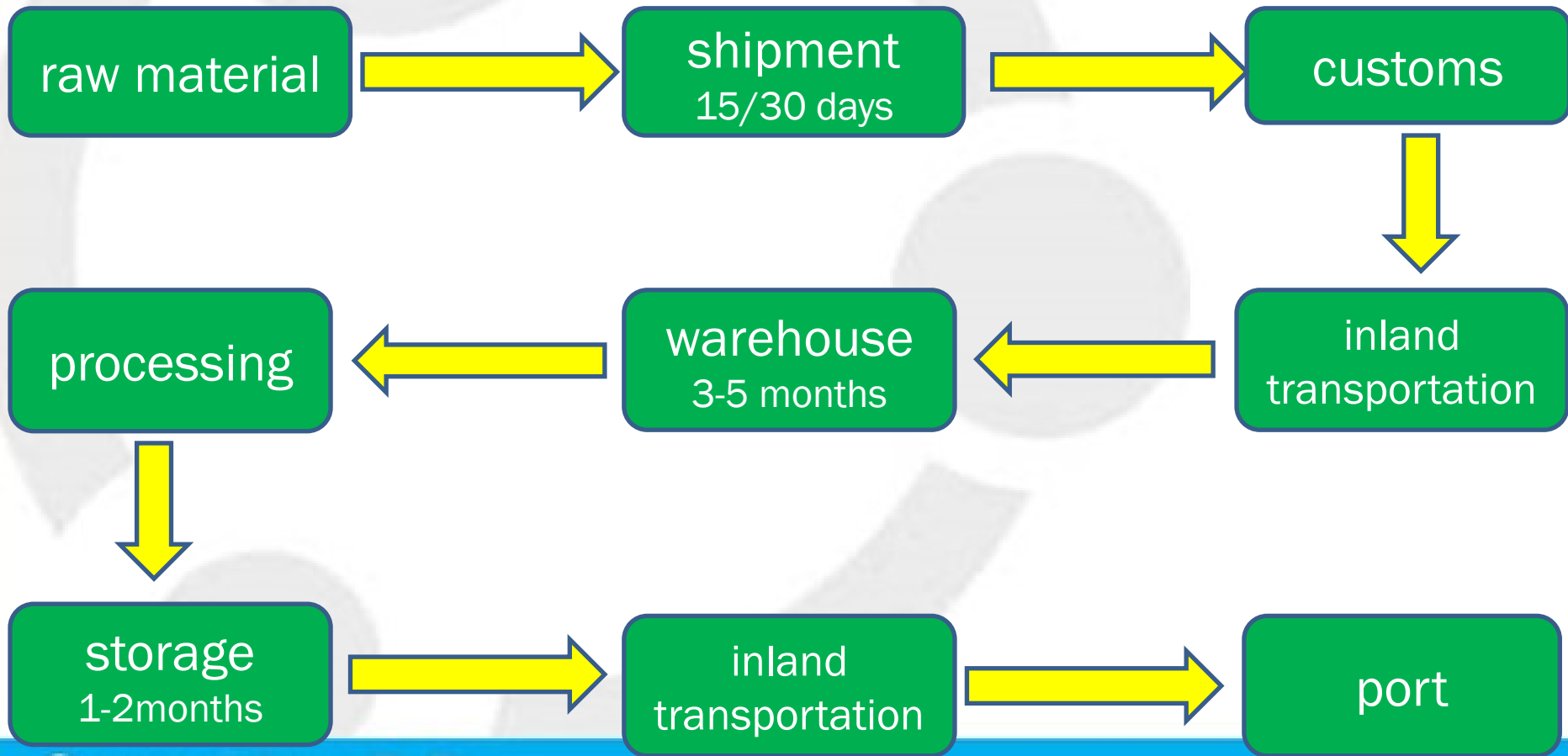


- ◆ The horse meat scandal brings negative influences on Chinese traders, and they need to face more strict food security standards. However some insiders insist that it is actually a new trade barrier. EU implements different standards on foreign traders and its own traders.



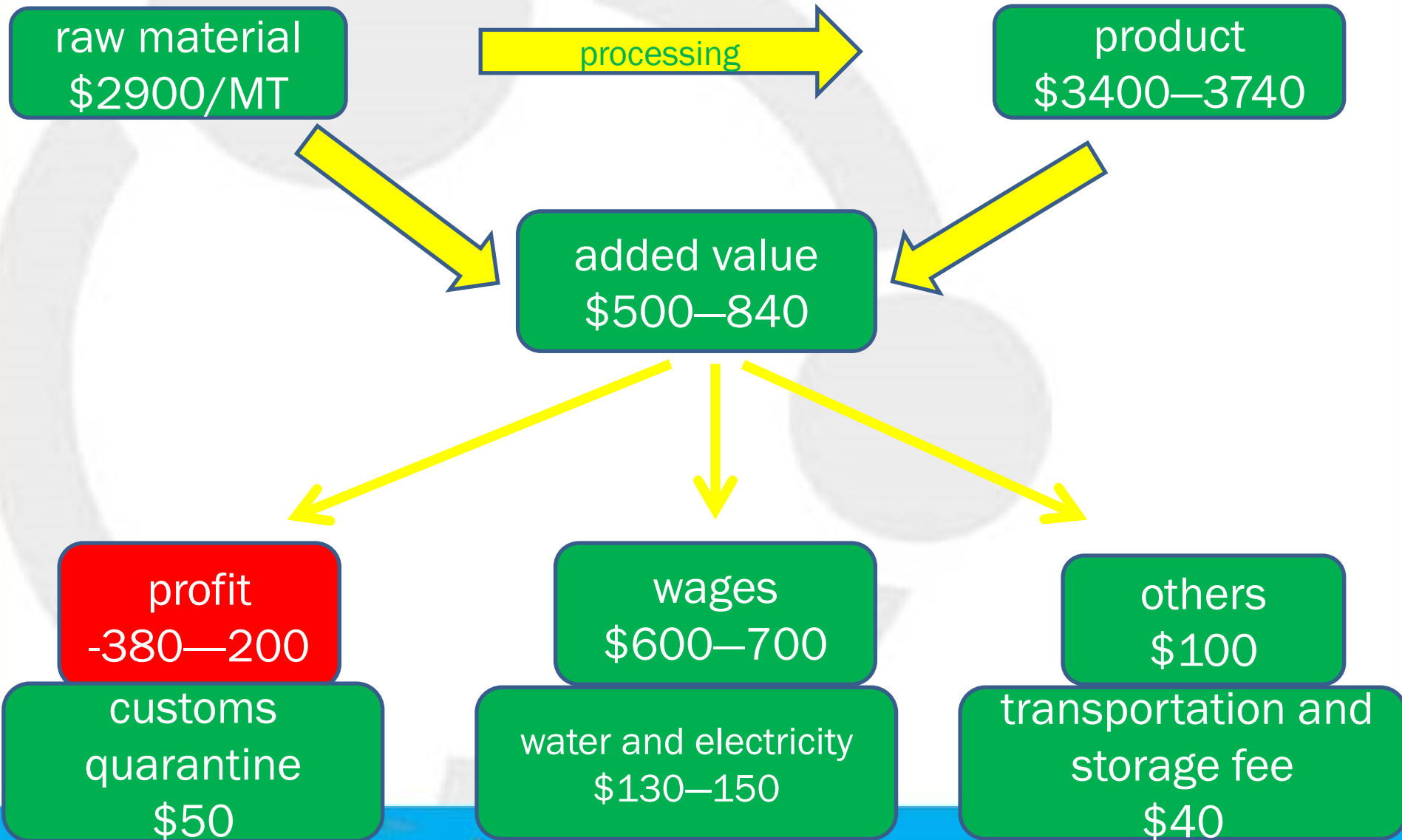
3.1. Logistics

Usually speaking, the total process from importing raw material to exporting product takes about half a year.

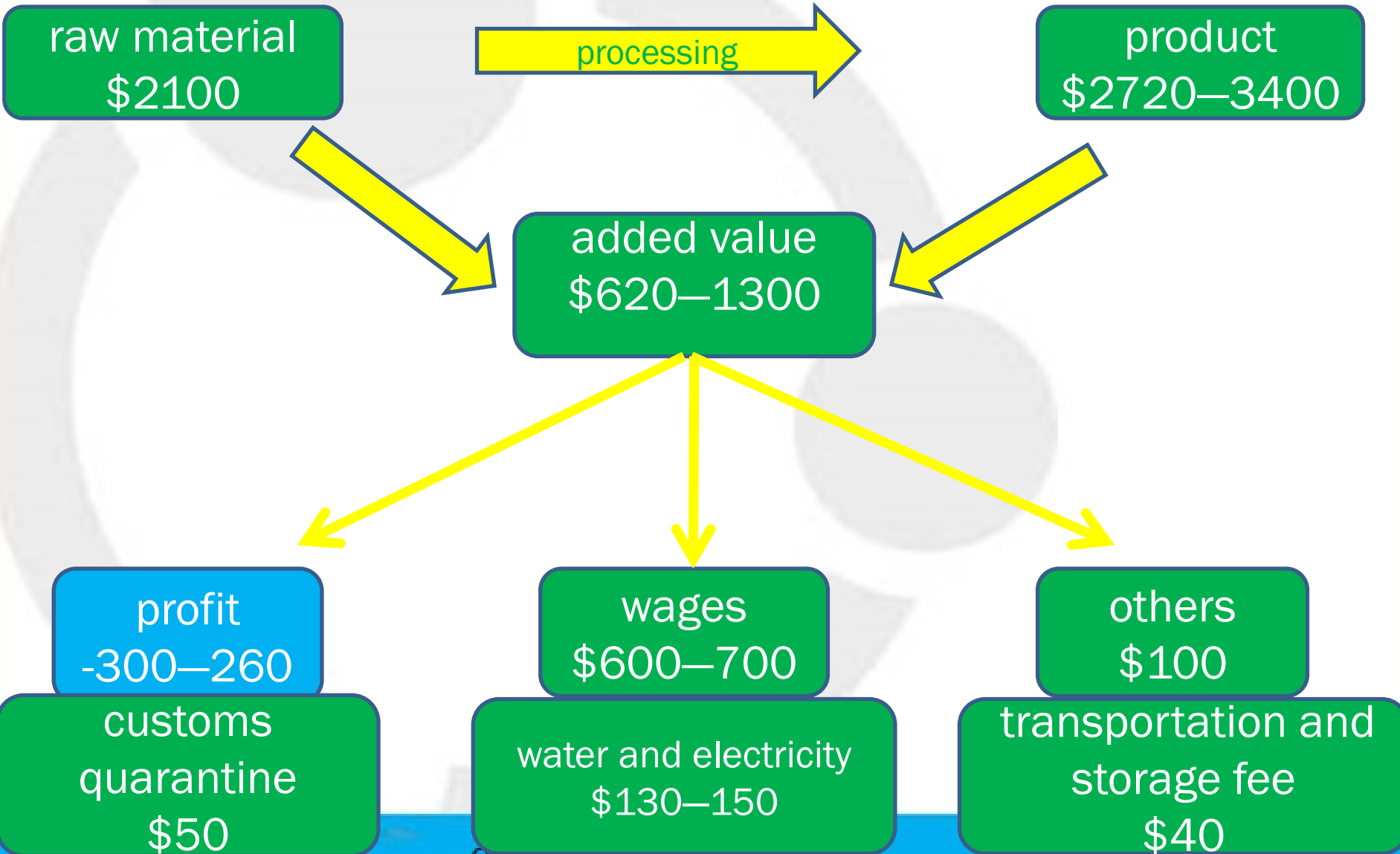


3.2. Value Chain

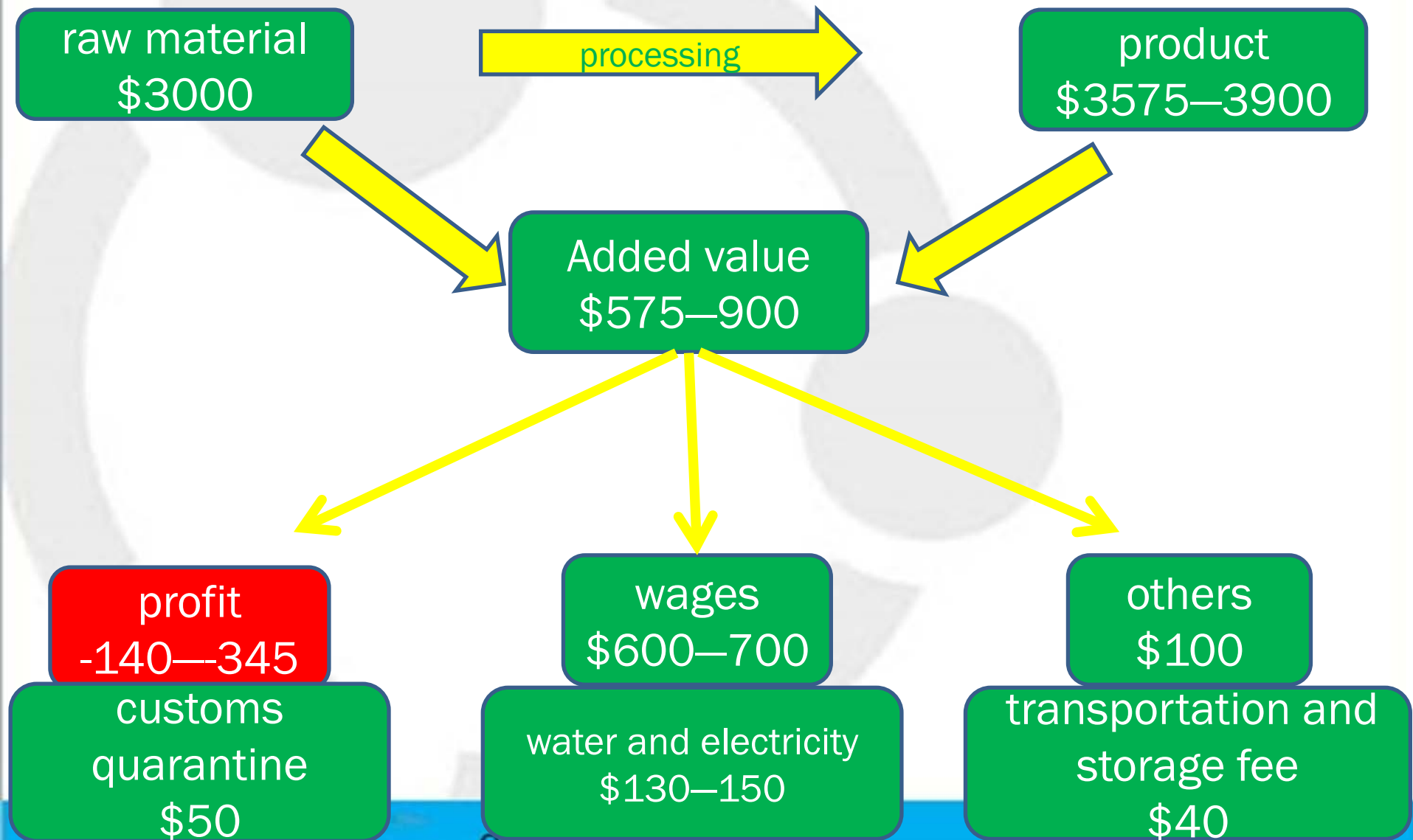
A.COD, yield rate: 70%



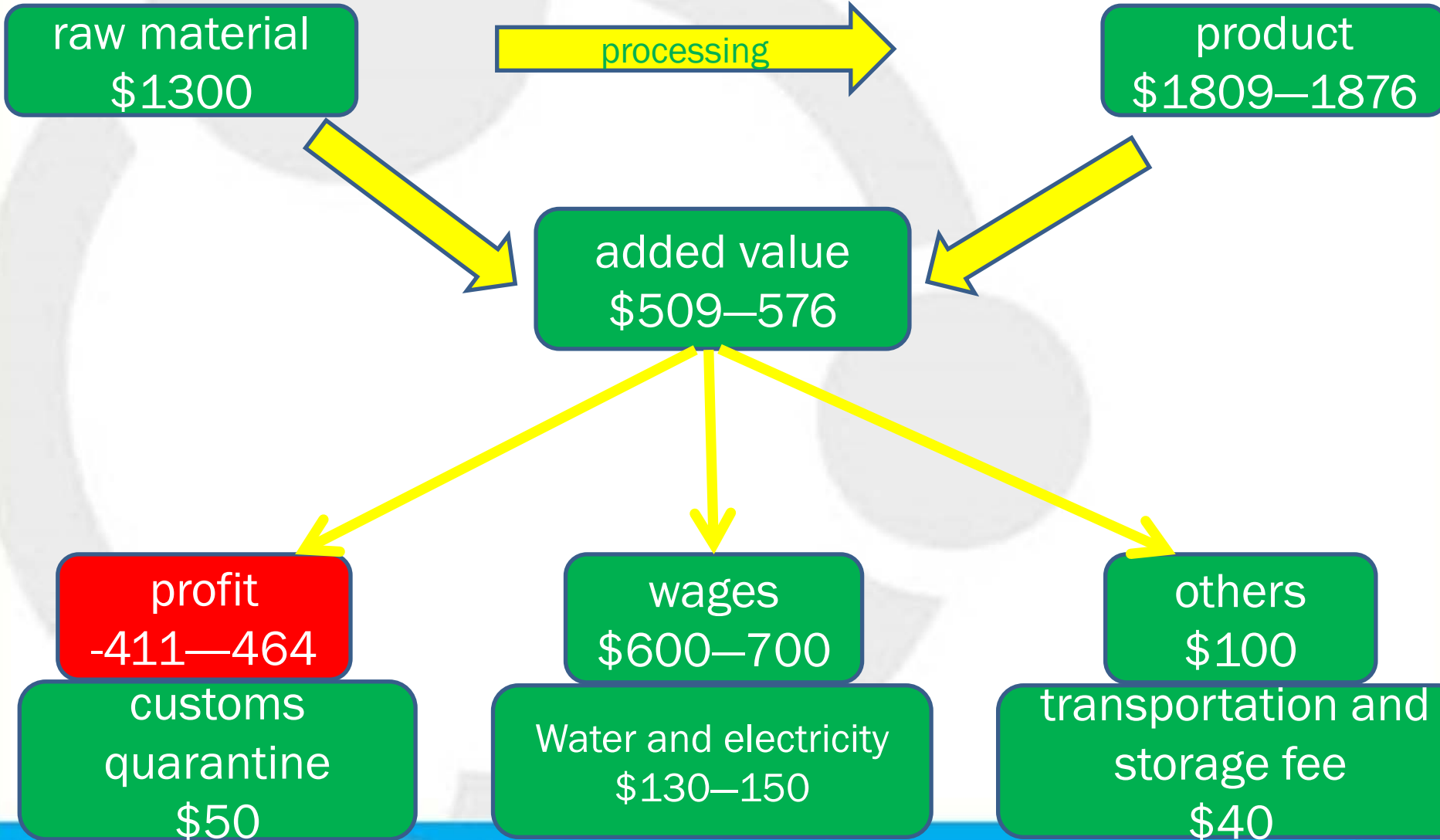
P.COD, yield rate:70%



Haddock, yield rate: 65%



Pollock, yield rate: 67%



Thank You!



Ocean University of China