**Exploitation of Nanotechnology in the Share of Biomass**

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**Abstract:** Utilization of shared resources using nanotechnology to renewable biomass that is done in conditions of economic equilibrium of the environment is at any time. The property has free access to natural resources and productive individual or business can provide free fishing. No state fishing regulations for the stage does not run. Fishing as well as the volume of biomass was added to the circuit, is determined. In this paper, economic and environmental balance in the relationship between the behavior of the fishing efforts. The amount of fishing effort and efficiency in the utilization of shared nanotechnology to achieve, and the total cost as a function of fishing effort and get the volume of biomass.

**Keywords:** Nano, biomass, fishing, environmental, resource utilization, cost

**Balance in the operation of the property by using nanotechnology:**

Shared utilization of renewable sources of biomass in terms of Economic, ecological balance, which is located at any time. The balance between equity and growth rates of fish in each show. The amount of prey biomass was added as well as volume, is determined. When it comes to balance economic, environmental, behavioral relationship between fishing effort is determined. The idea is that the amount of fishing effort and to optimize its Using nanotechnology, we obtain in terms of operating shared, so that the economic balance of the environment is well established. Determine if the amount of fishing effort and total cost of fishing depends on the type. The property has free access to natural resources and productive individual or business can provide free fishing. No state fishing regulations for the stage does not run. In determining the optimal level of fishing efforts are shared under the terms of the operation:

A. We assume the fish are sold in a competitive market, so their product from the firm is trying to sell in a competitive market. $P$ is the price per unit of fishing firms is that the competitive market is determined by the mechanism. Neither firm cannot alter the market price. B. assume a certain amount is stored in biomass. This volume is determined by balancing economic, environmental.

C. we assume the operating system share, there are two types of balance. Economic and environmental balance. The balance, the fishing equivalent of the biological growth

Which is as follows:

$$W = X$$

(1)

In which $H$ catch rate and $W$ is the rate of growth. The second type of balance between total costs equal total revenue is derived. In the shared exploitation, fishing will continue until the activity of fishing is not profitable. If the activity is profitable fisheries, entry of new firms in the Hunters and fishing increased. To save the salmon will continue until the excess profits away. New people feel that hunting is no additional benefit and may decide to withdraw from fishing. So long as the fishing and hunting activities are new people who got their extra profits. An additional benefit is that when the Hunters are out of fishing activities. Employment because they feel caught in a financial loss and physical fatigue creates. Thus the equilibrium condition in the joint ownership and operation of open source in general when it comes to total revenue equals total cost. The balance to write the following:

$$R = C$$

(2)

$R = PH$, where the total income and $C$ is the total cost. Manufacturing firms open to the public use of natural resources that make zero profit from the fishing activity, the total income is equal to the total cost. On the other hand, stored in the biomass of prey does not change over time and is determined in static mode. If in (2) income from the total cost is more, new activities Hunters are fishing, and a lower total cost of the Hunters will be out of work. This process continues until the total income is equal to the total cost. If the return value of the average cost per unit of effort is more, new activities Hunters will be hunting, if it is less than the cost per unit of effort out of fishing activities will begin. As a result, the cost per unit output value when it was against this practice stops. Therefore it is necessary to determine the balance of property relations (1) and (2) to be established simultaneously. In this case the amount so determined. The balance is established in a collective operation. On the other hand, economic and environmental balance can be achieved. If the parties relating to (1)
in P, then we multiply the equation (2) also consider the balance of the property if the time comes to balance economic, environmental as follows:

\[ PW = PH = R = C \quad (3) \]

\( R = C \) balance in the system of common ownership and \( PW = PH \) balance economic and environmental conditions implies that the use of nanotechnology based on competitive market prices is evaluated. Determine the optimal amount of effort and determination to pursue its fishing operation in the cost function depends on shared characteristics. Hence the total cost function of the amount of effort, we assume, then we consider the effect of storage in biomass.

**Dependence of the cost of using nanotechnology:**

We assume the total cost of fishing the \( C = C (E) \) is independent of \( X \) stored in biomass and fishing as a function \( H = H (X, E) \) is. The amount of effort and biomass is stored. Since entry and exit activity is joint ownership, the effort in the state achieved a total revenue equals total cost. If instead the total cost and total revenue functions to consider in this regard (2) can be summarized as follows:

\[ PH (EX) = C (E) \quad (4) \]

That the price \( P \) is determined by competitive market conditions in the fisheries. According to equation (4) There is no profit if profit is positive, new firms enter until profits are wiped out fisheries activities. Relationship (4) the cost of fishing depends on the properties, it follows in particular the use of nanotechnology can write:

\[ C = dE \quad (5) \]

Where \( d \) is the cost per unit effort. The curve of cost function (5) is plotted in Figure 1. The slope of the curve \( d \) is the size.

**Diagram 1:**

If the cost per unit of fishing from \( d_1 \) to \( d_2 \), \( d_3 \) to increase the curve in this case revolves around the vertical axis of coordinates to that in Diagram 2.

Data. In this figure the total cost functions are the coordinates along the axis.

**Diagram 2:**
Economic, ecological balance is at any time. Biomass stored as static and stable over time is determined. This balance can be written as follows:

$$W(X) = H(E, X)$$  \hspace{1cm} (6)$$

$$\bar{X} = \bar{X}(E)$$  \hspace{1cm} (7)$$

Where $\bar{X}$. Remember that the amount of biomass depends on the balance. In order to determine the relationship (7) in relation (4) are replaced and the amount of effort will be made as follows:

$$PH(E, \bar{X}(E)) = C(E)$$  \hspace{1cm} (8)$$

Above the level of effort in terms of property are determined. The property:

A - ecological balance of the economy.

B - manufacturing firms with total income equal to the total cost of fishing.

The amount of effort using the following equation can be written:

$$E_c = E_c(P)$$  \hspace{1cm} (9)$$

Where $E_c$ is the extent to which the system can determine the shared utilization. By replacing $E_c$ in (7), stored in biomass is a function of the competitive prices that if $X_c = X_c(E_p(P)) = X_c(P)$ write. $E_c X_c$ functions and fishing in the $H = H(E, X)$ and put the fish in a competitive market supply function is derived as follows:

$$H_c = H_c(E_p(P), X(P)) = H_c(P)$$  \hspace{1cm} (10)$$

**Dependency try and save the total cost of biomass:**

The total cost of fishing is influenced by two major foreign and domestic. External storage is a growth factor for biomass production firm is out of control. Internal factors, the control units that fishing can be effective in increasing and decreasing them. Internal factors are measured as indicators of effort. So the total cost of the fish biomass to be saved by taking $C=C(X, E)$ write. In this regard (2) can be written as follows:

$$PH(X, E) = C(X, E)$$  \hspace{1cm} (11)$$

To determine the amount of fishing effort and looking at harnessing collaborative relationship (7) in relation (11) we can write it as follows:

$$PH(E, \bar{X}(E)) = C(\bar{X}(E), E)$$  \hspace{1cm} (12)$$

Equation (12) can correspond to the relationship (9) to get caught and then released into the equation (10) on competitive conditions we set.

**Determine and store biomass:**

Balance economic and environmental balance of the operation of shared use at the same time.

To determine the algebraic and $E_c X_c$, we have:

$$PhE \bar{X} = d.E$$  \hspace{1cm} (13)$$

Where $\bar{X}$ is stored in biomass. Environmental conditions of economic equilibrium is determined by the amount of effort to bring the property as follows:

$$E_c = \frac{a}{b} \frac{ab}{Ph^2K}$$  \hspace{1cm} (14)$$

The relation (14) is seen to affect the sale price is competitive. Apart from the parameters $a$ and $b$, and $d$ is the maximum cost per unit of biomass stored in the $K$ level efforts are effective. This rate can be influenced by the relationship (14) were measured. Relationship (14) can be written as follows:
\[ E_c = \frac{PB - d}{PA} \]  

(15)

Where \( B = bK \) and \( A = \frac{b^2 K}{a} \). The theoretical relation (15) by equation (8) is determined.

\[ X_c E_c \] value corresponds to the relation (13) is obtained as follows:

\[ X_c = \frac{d}{Pb} \]  

(16)

Based on the above prices and catch rates have an inverse effect. If the cost per unit of effort has a direct impact in saving lives.

Behavior is a function of fishing supplies. Fishing in the supply function of both the equilibrium we consider:

A - equal balance between revenue and total cost of fishing as a communal tap in any time

B - at any time between equality and growth rate of fish biomass as an environmental-economic balance will be realized. Considering the equilibrium supply function is determined by fishing.

**Conclusion:**

When it comes to balance economic, environmental, behavioral relationship between fishing effort can be determined. This is the amount of fishing effort and to optimize the use of nanotechnology, in terms of operating shared to achieve to equilibrium is established so that the economic environment. Equilibrium condition in the joint ownership and operation of open source in general when it comes to total revenue equals total cost. Economic, ecological balance is at any time. Biomass stored as static and stable over time is determined. The total cost of fishing is influenced by two major foreign and domestic. External storage is a growth factor for biomass production firm is out of control. Internal factors, the control units that fishing can be effective in increasing and decreasing them. Internal factors are measured as indicators of effort. The amount of the sale price is competitive.

**RESOURCES**


Ze Ming Li, Fan Yi Wen, Ying Yu, (2011th), Forest Inventory Data in Forest Biomass Estimation Based on Middle and Last Scales, Advanced Materials Research, Volum one hundred eighty-three to one hundred eighty-five, P: 220-224.