

Survey and Comparison of State and Private Property Right Exploitation in Parishan International Wetland Through Opportunity Cost Method

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Abstract: This research was carried out for the first time in Iran in order to determine the value of opportunity cost wasted by the government in Parishan region through opportunity cost method. Parishan wetland is one of the main international wetlands of Iran. It is located in Fars province and is 12 km far from Kazeron. The reason for selecting it is its unique biological biodiversity especially the birds and aquatic resources in addition to the fact that many habitants of that region and even tourists are always hunting or fishing in the region. In this research, value is defined as an individuals' preference degree which is determined by the WTP (willingness to pay) criterion. The basics of this research were to provide a virtual market in which operators were asked to state their willingness to pay in order to determine input and receiving licenses for privatization and meeting their expectations. Therefore, the total willingness to pay for entering the tourist site of the wetland and receiving licenses for fishing, hunting and even harvesting plants in the case of privatization were calculated. The results showed a total willingness to pay for entering Parishan region of \$ 33,000 annually and \$ 82,847 for receiving licenses. On the other hand, the total annual earnings of the government were estimated to be \$ 37,557. Finally, the total earnings of the government in the region were subtracted from the total earnings of the private section, so we calculated the opportunity cost wasted by the government which was \$ 133,418 in Shadegan international wetland.

Key words: Valuation • State and private property • Willingness to pay • Opportunity cost • Parishan international wetland

INTRODUCTION

Valuation is one the important and interesting issues for experts and specialists in environmental sciences today. Non-market goods like parks, jungles, grasslands and wetlands have undergone much loss in the opposite direction of the concept of stable development due to the lack of real market for valuation[1].

The main goal of economic valuation of goods and non-market service is to provide information which can help administrators and decision makers to exploit available resources effectively and efficiently in order to maximize social welfare and improvement [2].

The Definition of Wetland: There has been no exact and comprehensive definition which explains all the characteristics of wetland yet. Different definitions have been offered for wetland so far. For example, Dugan [3]

pointed out that there are more than 50 common definitions in this regard and also there is no agreement on the classification of wetlands in the world and different classifications are offered according to different views. Ramsar Convention defined wetland as: it refers to wet, watery and boggy lands and artificial or natural pools which contain still or moving water temporarily or constantly with sweet or salty taste and also areas at coasts whose height is not more than 6 meters during tides.

Parishan International Wetland: Parishan is one of the constant sweet-water wetlands located among Famour Mountains, 12 km far from south-eastern Kazeron and 125 km far from western Shiraz. The geographical coordination of the wetland is 30:29 north and 47:51 east (it lies at altitude 22:25:51 and at longitude 43:51:50). The wetland can be reached through Shiraz and Bushehr-Shiraz-Kazeron asphalted roads. This international

wetland is a part of Ramsar Site and UNESCO's Biosphere Reserve which is selected as a Wildlife Refuge according to the last regulations of the Supreme Council of Environment [4]. 28 species of fish live in Parishan wetland most of which are of economic and fishery value and 23 percent of people living around make a living on fish and fishing in this wetland [5]. This wetland has 123 species of native and immigrant birds. Moreover, 96 different species of (fodder, decorative and pharmaceutical) plants are identified. According to the article 16 of Environmental Protection and Reformation Code all wetlands belong to the government, are owned by Environmental Protection Organization and have state ownership. The Government and Environmental Protection Organization are responsible for the issuance of all related licenses including fishing and hunting ones according to the article 3 of the mentioned code. However, the government is losing a considerable income from existing available sources due to his ownership. The general income of the government in this section is only from issuing licenses while the government can earn much more from these sources through transferring ownership to the private section which is in line with the policies in the 44th provision of the constitution on privatization which can lead to job creation, income level raise, regional environmental quality increase and welfare-entertainment facilities establishment [6].

As it was mentioned, the lack of implementing this policy leads to losing incomes which the government loses due to his authority which is called opportunity cost and these sums and incomes can be realized providing transferring them to the private section in this research. We tried to study and evaluate the opportunity cost rate of the government through calculating the present income of the government from Parishan wetland and, on the other hand, calculating incomes providing ownership change.

MATERIALS AND METHODS

As it was noted in the previous section, the opportunity cost method was used to determine the economic value of state and private exploitation ownerships of Parishan Wetland. The people's spending tendency is studied through creating a hypothetical market in this method [7]. The first step of this research included collecting and searching for information in existing resource in and out of country and related offices and organizations in the area. Then, the area was visited and an 18 question questionnaire was designed with regard to areal conditions and people's (exploiters') characteristics. In order to assess the quality of the

questions and people's appreciation of the questionnaire and finally overcome shortcomings and faults, some questionnaires were distributed among people as a pretest.

The random classification sampling method was used to ultimately fill questionnaires and conduct interviews. The preliminary sampling was done in order to determine the appropriate sample quantity. Then, fifty questionnaires were filled by native and non-native interviewees around Parishan wetland. Habitants of the city Kazeron and villages Ghalatnilo, Malaere, Arabfamour and Kenarkhosk were used as native people and some people from Shiraz, Jahrom, Sepidan, Darab, Zabol and Borojen and villages Izadkhast, Ghir and Kazeron as non-native ones in data collection. After that, questionnaires were analyzed by SPSS when they were filled questionnaires and after face-to-face interviews.

RESULTS

As we noted, questionnaires and face-to-face interviews were used to carry out this research, the results of social features indicated that 88% of visitors and exploiters were men and 12% were women and 60% of the interviewees were 20-30 years old, 36% were 30-40 and 4% of them were 40-50.

Concerning the schooling level, results said that 4% of visitors were illiterate, 16% were under diploma, 43% had a diploma and 37% had a BS or a higher degree. At the present time, the wetland is exploited as 20% of interviewees were fishing, 8% of the same people were hunting, 40% of visitors were tourists, 12% used pharmaceutical plants, 8% used the water of the wetland for agricultural purposes and 28% were doing some other thing. The considerable and important point in this research was that the most important value of the wetland, in the views of 92% of people, was the direct value of the wetland like fishing and hunting and 8% believed its indirect value like controlling and protecting the wetland. On the other hand, a lot of damages and dangers threaten Parishan wetland as statistics showed that 36% of interviewees selected illegal hunters, 24% illegal fishers, 16% passengers, 20% native people and 4% selected ranching around the wetland as the threats to the wetland.

One of the considerable points about people participation in wetland protection is that despite its ownership and protection go to the government, 100% of visitors were eager to cooperate and participate in protecting the wetland. In the survey on ownership type (state or

private) in line with a better exploitation, results showed that 52% of people believe that private ownership can lead to a better productivity than state ownership while 48% believed that state ownership is better for people in terms of exploitation. However, it would be true if people's expectations are met by the private section which, from the most to the least important, include the creation of tourist centers, prevention of using poisons for fishing, prevention of the entrance of effluents from ranches, establishment of parks around the wetland, prevention of fishing in the spawning season, building an equipped wharf and wetland water protection.

Other results indicated that 60% believed that private ownership can make a bigger profit and on the other hand, 52% believed in probable further destruction by state ownership while 48% believed that private ownership can cause more destruction. Given that most of the responders and native people liked the transference of ownership from the state section to the private one and this transferring process is useful for the government, a questions rises here which asks how much the current income of the government is and how much it would be after privatization and how much the annual opportunity cost is.

In order to answer this question, the income of the government in different sections was estimated and, on the other hand, the income from privatization and ownership change from state to private was studied and the difference between these two was regarded as the opportunity cost of the wetland. The income of the government is only from selling fishing and hunting licenses and the government has no other income; however, researches have shown that other incomes can also be mentioned like entrance fee determination and issuing other licenses such as recreational and plant picking.

WTP Average for Entrance Fee Determination:

Questionnaire results show that people are ready to pay at least \$ 0.2 and at most \$ 5 for the entrance fee. The total suggested sum by fifty people was equal to 1,100 \$ whose average was calculated to be \$ 2.2 i.e. each person is ready to pay \$ 2.2 averagely to enter Parishan wetland. Given researches conducted on Parishan area, about 15,000 people enter the wetland annually and use its facilities and attractiveness. If each person paid \$ 2.2 as the entrance fee, \$ 33,000 would be earned every year which is the opportunity cost the government is losing each year but the private section can earn it.

WTP Average for Receiving Fishing License: Fishing is one of the main occupations in Parishan and neighboring villages and most people make a living on fishing and its income. People should receive a license from the Environmental Protection Organization for fishing. This license is issued from May 5 to applicants each year and is valid until March 5 in the next year. Fishing is forbidden from March 5 to May 5 due to the spawning season and no license is issued in this regard. According to the report of the Head Environmental Protection Organization of Khuzestan, 1280 licenses were issued for fishing applicants in the wetland in 2008-09 that each license cost \$ 25 per year. The income of the government from the above sum is deposited in the state treasury account by the Environmental Protection Organization.

The number of issued licenses \times the cost of each fishing license = Government's income

$$1280 \times 25 (\$) = \$ 32,000$$

But as it was mentioned, people are not satisfied with state ownership and are ready to pay much higher costs to receive fishing license provided privatization and meeting their expectations. The total paying tendencies to receive fishing license in the case of privatization was \$ 2,074 from 50 interviewees that the average sum is \$ 41.4 for each person. The income of the private section from issuing fishing license in one year is calculated as follows:

The number of issued licenses in a year \times the average suggested sum = the income of the private section.

$$1280 \times 41.4 (\$) = \$ 52,992$$

As you can see, the sum earned by the private section is much more than that of the government. The difference between the total sum earned from people in privatization and the sum earned by the government for issuing fishing licenses in a year is the opportunity cost the government is losing which is calculated like this:

The total earned sum by the government-the total earned sum in each year in privatization

$$52,992 - 32,000 = \$ 21,120$$

WTP Average to Receive Hunting License: Some people make a living on hunting birds in Parishan and neighboring villages. A license from the Environmental

Protection Organization is also needed for hunting. People can hunt land birds like pigeon, partridge and etc from September to around mid March after receiving the hunting license. The cost of each bird hunting license is \$ 6.5 for a year. The income of the government from issuing hunting licenses per year is calculated like this:

The number of issued licenses \times the cost received by the government for each license = government's income
 $855 \times 6.5 (\$) = \$ 5,557$

But people's paying tendency for hunting license in the case of privatization is a much higher sum. The total suggested sum of the 50 interviewees was \$ 1,754 that each person is ready to pay \$ 35 averagely each year for the hunting license. The income of the private section from issuing hunting license is calculated as follows:

The number issued licenses each year \times the average suggested sum = the income of the private section
 $855 \times 35 (\$) = \$ 29,925$

As you can see, the earned sum by the private section is much more than that of the government. The difference between the total earned sum from people in privatization and the earned sum by the government for issuing fishing licenses in a year is the opportunity cost the government is losing which is calculated like this:

The total annual earned income from people in the case of privatization-the total annual income of the government
 $29,925 - 5,557 = \$ 24,368$

WTP Average for Receiving Recreational License:

One of the ways of earning a good income in Parishan Region is the establishment of tourist centers. The private section can provide facilities for people and travelers and rent these facilities to the people of that region. Renters should pay a sum as rent to the private section every year. These facilities can include park, amusement park, boat riding and etc from which travelers can use and, certainly, pay the entrance fee and money for them. The interesting point is that the government has not provided any considerable facilities yet and clearly earns nothing from this way. We created a hypothetical market concerning above points and people were ready to pay an appropriate cost to receive the recreational license after plan implementation and they benefit themselves too. The total paying tendency for receiving the recreational license from 50 people was estimated to be \$ 1,310 whose average was \$ 26.1 per each person annually.

Regarding conducted researches and the large size of Parishan wetland, there will be at least 600 applicants of recreational license. The income of the private section from issuing recreational licenses is calculated as follows:

The number of applied licenses per year \times the suggested sum to receive recreational license = the income of the private section
 $600 \times 26.1 (\$) = \$ 15,600$

WTP Average for Plant Reaping: Ranching is one of the occupations of people around the wetland. The fodder in the wetland is one of the cheap sources of providing animal foods and this issue is very important for the people of that region. But the government has not cared about plant protection and also some people caused the demolition of these plants by their inconsideration. This issue may seem simple but plant demolition causes a great economic loss for the people of the region and more attention should be paid to plant protection. Another point is that there are also some pharmaceutical plants in the wetland which bear economic value. Generally, the government receives no money from people for reaping plants and, on the other hand, makes no effort to protect them. However, people are ready to pay a sum annually as the plant reaping license and protection is given to plants instead. This will be practical only with privatization.

The total paying tendencies of the 50 interviewees in the case of plant protection and reaping was \$ 1,310 whose average is \$ 26.2 per person.

Given the conducted research, about 1500 people of that region use the plants of the wetland for their ranches. The income of the private section from issuing plant reaping licenses was calculated as follows:

The number of applicants \times the suggested sum for plant reaping = the private section's income
 $1500 \times 26.2 (\$) = \$ 39,300$

This sum is the opportunity cost the government loses each year but will be earned through transferring the region to the private section.

The Total Opportunity Costs by the Government of Parishan Region: In this part, the total income that the government loses due to his ownership in Parishan Region is calculated which is like this:

The opportunity cost by the government in one year = entrance fee quantity + fishing license opportunity cost

+ hunting license opportunity cost + recreational license opportunity cost + annual plant reaping license opportunity cost

$$33,000 + 21,120 + 24,368 + 15,600 + 39,300 = \$ 133,418$$

Therefore, the opportunity cost by the government to issue licenses and receiving entrance fee is \$ 133,418 in one year which would be earned if Parishan wetland was transferred to the private section.

CONCLUSION

As it was mentioned in pervious sections, this research aimed to study and evaluate different ownership types in this wetland. Accordingly, the total income of the government in this region through state ownership was determined and, on the other hand, potential abilities and capacities were indentified and calculated to generate income for the government and the private section. Results showed that the government can realize opportunity costs which results from a lack of appropriate ownership exploitation through issuing recreational licenses for building motels and providing welfare facilities in the tourist section, pharmaceutical and fodder plants and also, through implementing some managerial changes, in fishing and hunting sections in addition to income generation and job creation. Given the obtained results in this research, following suggestions are made at the end to improve present conditions:

- It is suggested for the exploitation management of Parishan Region to be transferred to the private section legally in order for this section to satisfy people by meeting their expectations.
- The private section should earn the opportunity cost by the government providing shouldering the exploitation management of Parishan Region and receive the suggested sum by people for issuing fishing, hunting, recreational and plant reaping licenses in addition to entrance fee through developing neighboring areas.

- Given the conducted researches, most people believe that private ownership can make a bigger profit from the wetland and gives more protection to the wetland as well and causes less demolition. Therefore, given these points, it is suggested for the government to transfer all exploitation affairs of the wetland to the private suction for a further protection of the region.
- Noting that many travelers visit Parishan Region each year, it is suggested that the government or the private section increase tourist facilities as soon as possible if they obtained the ownership.
- The wildlife refuge in the region has much potential for attracting tourists due to scenic landscapes, life variety, historical structures and etc which requires scientific and practical planning in this regard.

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