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**IMPACTS OF TEMENGGOR DAM ON THE SOCIO-ECONOMIC CONDITIONS OF
ORANG ASLI OF THE TEMENGGOR LAKE AREA**

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ABSTRACT

A socio-economic survey was done in two villages, Kampong Bersia and Kampong Chuweh, Tasik Temenggor Lake, Perak, Malaysia during 01 May to 30 June 2010 to study the impacts of newly constructed dams on the Temenggor Lake on the socio-economic conditions of *Orang asli* living in the lake areas. Tasik Temenggor Lake is the second largest lake in the Peninsular Malaysia, which is a source of income of a big number of peoples through fish culture, education, training, recreation and others. *Orang asli* have been living in different islands within this big lake. A structured questionnaire was used to collect the data. A translator was used to translate bahasa Melayu to English. Collected data were analysed properly to generate the information. It was noticed that a remarkable negative impacts of dams on the socio-economic conditions of *Orang asli* were occurred. Stopping of spontaneous water flow as the effects of dams and the addition of sewerage water from different cities to the lake, the quality of water is impaired; species diversity and availability of fishes were reduced by 40%. The income of the *Orang asli* has been reduced to RM 400/month only. Attention of *Orang asli* has been diverted to illegal logging and hill agriculture. Illegal logging near the lake shore made sedimentation in the lake. Many fishes were died due to reduced water quality.

Keywords: *Orang asli*, Tasik Temenggor Dam Implication, Kampong Bersia, Kampong Chuweh, Malaysia

INTRODUCTION

The *Orang asli* are the indigenous minority peoples of Peninsular Malaysia. The name is a Malay term which transliterates as “original peoples” or “first peoples”. They are scattered mainly in the hilly areas of the country and remain away from the normal Malay peoples under modern civilization. Usually they are poor and their social cultures and traditions are different than Malay peoples. The Malaysian government has been trying to improve their socio-economic conditions by providing with better land with cash cropping opportunity [1] but the response from *Orang asli* is very slow. Although they have their own local languages, all of them can speak bahasa Malaysia. Few groups of *Orang asli* have been living in the lake area of Tasik Bersia and Tasik Temenggor, Perak, Peninsular Malaysia. Temenggor Lake is a very big water catchment, the second largest lake in the Peninsula (15, 800 ha) [2].

Within the lake there are some islands, e.g. Pulau Pendidikan, Pulau perikanan, Pulau Polis, Pulau Belia, Pulau Pertanian etc. which are used by different institutes for education, training and recreation. Many people are practicing fish culture in case within the lake (Figure 1). All these information indicate importance of conservation and sustainable management of Temenggor Lake. Malaysian

government has built some dams (Figure 2a & b) in the lakes for generating hydro-electricity.

As a result the spontaneous flow of water is stopped. Moreover, many rivers carrying sewerage and waste from different cities and industries joined the lake. Therefore, the quality of lake water is deteriorating day by day. Some projects have been initiated to study the wetland ecosystems of the lake. The EAMKAY Foundation has also established a research station near the lake, at Pulau Banding, to study all of these aspects. Professor Mashhor Mansor, School of Biological Sciences, USM started a research project with a few PhD students to study the impacts of dams on the water quality and fish diversity in different lakes across the Perak river. The objective of this study was to investigate the impacts of dams on the socio-economic conditions of *Orang asli*, living in the lake areas.

METHODOLOGY

A structured questionnaire was prepared in advance. The study was conducted during 01 May to 30 June 2010 in two villages, i) Kampong Bersia and ii) Kampong Chuweh, Tasik Temenggor Lake (Figure 3 & 4). Twenty individuals (age 25 to 50 years) from each village were selected randomly. The

heads of two villages were also included. The questions asked to them were related mainly to i) family size, ii) level of education, iii) source of their income, iv) system of their agriculture, v) benefits of the lakes, vi) cultural activities they observe, vii) religious belief, viii) marketing facilities, ix) facility for education for their children, x) availability of sports and recreational facilities, xi) any support from the government, xii) any

problems created due to dams such as (a) Impact of dam on water quality, (b) Impacts on number of fish species, (c) Impacts on the availability of fishes, (d) Difficulty in catching fishes from the lake etc.

The conversation was translated by Mr. Zarul Hazrin Hashim, a Malaysian PhD student. The collected data were analysed for generation of appropriate information.



Figure 1: Fish Culture in Cases in Temenggor Lake



Figure 2a: Temenggor Dam



Figure 2b: Bersia Dam



Figure 3: Study site: Kampong Bersia and Kampong Chuweh



Figure 4: Interview with *Orang asli* in Kg. Bersia



Figure 4b: Interview with *Orang asli* in Kg. Chuweh

RESULTS AND DISCUSSION**(a) Socio-economic Conditions of *Orang asli*:**

The socio-economic data of *Orang asli* of two villages are presented in **Table 1**. Many differences between two villages are noticed in respect of their standard of living, availability of facilities, children's education, religious belief and income. The peoples of Kg. Bersia are organized and supported by local government. They are more conscious about the education of their children, although all the children do not go to the schools. Peoples of Kg. Chuweh, Tasik Temenggor are migrated from another place five years ago after Tsunami in 2004. Very less and irregular support from the government comes to them. However, one Non Government Organization (NGO) has provided the facility of drinking water. They have established water purifying plant, which is run by diesel operated machine. The government supply fuel twice a year, if more fuel is needed then they has to manage by their own capacity. Since all the peoples of Kg. Chuweh believe in "Jahai" religion, there is no surau, but in the Kg. Bersia, there is properly built surau where an Ustaz comes from Gerik Islamic Center and teaches them islam every week. They receive government subsidy for cultivation of rice and rubber plantation. Usually they cultivate rice once a year without any artificial fertilizer.

They cut the plants in the forest (usually 7 months ahead of rice sowing), burn them after drying and mix the ashes in the soil. For water they wait for natural precipitation. Among the fruits, they grow rambutan, jackfruit, and banana. Sometimes they go to forest for wood and honey collection. Fishing in the lake is one of the important activities they do for their own consumption and for sale. To sell their products they go to bazars using boats as transports. Sometimes both male and females go to markets for selling and buying purposes. Hayati *et al.* [3] observed that the *Orang asli* of Grik, Peninsular Malaysia have been suffering from nutritional deficiency. Among other reasons, one reason is low earning due to construction of Temenggor dam.

(b) Impact of Dams: As per their statements, the availability of fishes in both the lakes has reduced (about 40%) than previous days (5/7 years earlier). The number of species has also been reduced. Now only 4 to 5 species of fishes they can catch but during earlier days they used to catch more than 10 species of fishes (**Table 2**). They reported that some of the fishes like Kelah, Tengalan, Temoleh are endangered. At the earlier time the depth of water was shallow they could catch fishes with cast-nets but due to building of dams the water depth became high and they cannot use the cast-nets rather they have to use gill nets

and other fish traps. Due to reduction of fish availability the peoples of Kg. Bersia diverted their attention more towards hill agriculture (**Figure 5**).

They cultivate hill rice with subsidy from the government. However, the peoples of Kg. Chuweh are still not well-established. They have planted rubber trees in the hill forest but not yet matured to collect the latex. They go mainly for fishing and cultivation of hill rice. Poultry rearing is more practiced by the peoples of Kg. Chuweh than the Kg. Bersia.

Many *Orang asli* go for logging in the hill forest. Sometimes they do illegal logging and cut the plants which are very close to lake water (**Figure 6**). Due to this kind of logging sedimentation in lake takes place and as a result the breeding of fishes are affected. Many fishes are also died and floated on the water surface (**Figure 7**). Lin [4] also reported similar serious implications of Temenggor Dam on the displaced *Orang asli* communities.



Figure 5: Clearing of Hill by *Orang asli* for Hill Agriculture



Figure 6: Illegal Logging in Lake Area



Figure 7: Dieing of Fish in Temenggor Lake

Table 1: Socio-Economic Conditions of *Orang asli* in the Kg. Bersia and Kg. Chuweh, Temenggor Lake Areas

Item of Socio-Economy	Kg. Bersia	Kg. Chuweh, Temenggor Lake
Total population	70 families (Total = 350)	17 families (Total = 100)
Kampong ketua (Head of village)	Present	Present
Availability of electricity	Present (Diesel-operated generator)	Not present
Availability of drinking water facility	Present (Through Government)	Present (Through NGO)
Availability of cultural/sports facility	Present	Not present
Government support	Present	Not present or very less
7. Religion	Islam	Jahai
Availability of surau	Present	Not present
Source of income	Cultivation of hill rice, latex collection from rubber plant	Fishing and cultivation of hill rice
Rearing of poultry	Present	Present
Rearing of cattle	Not present	Not present
Knowledge about crop pests	Have less idea	Have good idea
Children's education	Send to Grik Schools	No school going children
Standard of living	Average	Low
Transport availability	Motor-fitted boats, more or less good quality	Few small boats and bamboo-made floats

Table 2: Impacts of Dams on the Socio-Economic Conditions of *Orang asli* in the Kg. Bersia and Kg. Chuweh, Temenggor Lake Areas

Item of socio-economy	Kg. Bersia	Kg. Chuweh
Number of fishes	Reduced*	Reduced
Fish diversity	Reduced	Don't know
Income of inhabitants	Reduced	No impact
Poultry rearing	No impact	No impact
Hill agriculture	No impact	No impact
Water quality	Reduced	Don't know
Fishing habit	Changed and moved more to agriculture	Not changed

* When More Than 50% Interviewee Responded Positively the Decision was in Favour of Them

CONCLUSIONS

Obviously the establishment of dams has created some negative impacts on the socio-economic conditions of *Orang asli* of the lake areas. One of the important sources of income is fishing in the lake which has been affected to some extent. The availability and species diversity of fishes has been reduced to great extent. The income of the peoples was reduced than previous time, only RM 400/month or less. The reason for reduction of fish availability might be loss of water quality and stoppage of spontaneous water flow of the lakes. More research to be done to find out the alternate ways of improving water quality of the lake and increase the availability of fishes.

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