



This submission to the World Commission on Dams  
was presented at the Commission's  
*East / South-East Asia Regional Consultation*

**Hanoi, Vietnam**  
26-27 February 2000

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*The Beris Dam Resettlement Programme*

### **Synopsis**

The proposed Beris dam is a 40 m high concrete face rockfill dam which will supplement the irrigation and water supply needs of the States of Kedah and Penang. The resettlement of people affected by the dam is considered to be one of the most important component for the successful implementation of the Beris dam project. In all, it will involve 3,300 people from 577 households who will have to be moved before the actual impoundment of the dam. Their initial reaction to the proposed dam was not favourable and the situation deteriorated rapidly and reached a stage where it became very difficult for staff of the project proponent to enter the area to carry out their duties.

A series of dialogues were established with village elders and representatives to provide them with a wider perspective of the dam as well as the resettlement programme. It was recognised that the dam was important for the economic development of the region and the people agreed in principle to be resettled. Realising the major sacrifice of the people, the project proponent undertook to carry out a comprehensive resettlement programme. A socio-economic study was carried out to determine the main expectations among the villagers on the resettlement programme. Economic and business opportunities were identified to enable the villagers to continue to earn a reasonable income of not less than what they have been getting; and a concept plan was drafted to include the physical and socio-economic development of the new resettlement site.

The village elders and representatives were kept informed at all stages and adjustments made to accommodate requests as far as is possible. The feedback so far is that there is general acceptance of the resettlement programme, and recently there was a letter to the press complaining about the delays in starting the programme.

### **1.0 Introduction**

The proposed Beris dam is situated in the district of Sik, about 65 km south-east of Alor Setar, capital of the northern state of Kedah, Malaysia. The dam will be a 40 m high concrete face rockfill dam with a crest length of 155 m and width of 6 m. With a catchment area of 116 sq. km. the Beris dam will create a reservoir surface area of 13.7 sq. km. (normal) and 16.1 sq. km. (maximum). The dam will have a gross reservoir capacity of 122.4 million cu. m. of which 114 million cu. m. will be effective storage.

The dam will be constructed by the Department of Irrigation and Drainage Malaysia (DID) and will supplement the irrigation and water supply needs of the state of Kedah and the adjoining state of Penang. The Kedah-Penang region is the main growth area for the north-eastern portion of Peninsular Malaysia. Located within it are two (Muda and Perai) of the eight granary areas of the country and 75 other irrigation schemes. The Muda Irrigation Scheme, covering an irrigable area of about 96,558 ha, is the largest irrigation scheme in Malaysia and in 1997, it contributed slightly over 50 percent of the total padi production in the granaries (753,777 out of 1,492,004 tons). In addition, Penang State is heavily developed with several industrial complexes, while southern Kedah State, particularly at Sg Petani town, is rapidly becoming another hub of industrialisation. The present population of the region is 2.8 million and this is expected to grow to 4.9 million by 2050.

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## 2.0 Planning Options

In the project formulation for the Beris Dam, a number of planning options were considered. Among the critical questions posed were :

- Is a dam really necessary?
- Can the location of the dam be changed?
- Can the impounded area be reduced?

The Kedah-Penang region is one of the major water deficit region in Malaysia. In 1977, a serious drought resulted in a curtailment of planting in most of the irrigation schemes in the region. In 1982, another prolonged drought resulted in water levels in the Pedu Dam reaching a critical level and the off-season crop for the Muda Irrigation Scheme was cancelled. Again in 1991, low water levels at the existing dams resulted in the off-season crop being cancelled, affecting the livelihood of the farmers. There were more signs of water distress in many of the irrigation schemes during the 1998 drought associated with the EL-Nino phenomena which affected the Asia Pacific region. The present three dams (Muda, Pedu and Ahning) can only meet 1,940 of the 2,360 million cu. m. water require-ment based on a 1 in 5 years return period drought.

As the major water user in the region (accounting for 89 % of total water consumption), the irrigation sector is expected to face mounting pressures from the domestic and industrial water supply sector over its share of the water resources. Increasingly, there will be a need to develop inter-basin or even inter-state transfer of water. From an economic point of view, many of these proposals can be cost prohibitive, and hence in the near future, it is likely that many of the water allocation conflicts between irrigation and the non-agriculture sectors may have to be resolved through a policy of reconciliation. On its part, the irrigation sector has begun to shift from a supply management approach (the development of new water resources to meet the ever increasing water demands) to a demand management approach (managing water demand to fit within available water resources).

Water demand management monitors and improves the efficiency of the supply system whilst encouraging all water users to adjust their needs to the available water. Among the efforts being carried out are :

- Lining of earth canals to reduce water losses
- Recycling and reuse of irrigation runoff
- Improvement in water management through the provision of tertiary systems
- Modification of farming techniques such as direct seeding (the Muda Irrigation Scheme is a pioneer in the use of direct seeding)
- Developing computer-based irrigation prediction models and water demand forecasting, including the use of telemetry systems for real-time monitoring of rainfall
- Establishment of Water Users Groups.

Through such efforts, it is hoped that irrigation efficiencies can be raised from the present 40-50 % to a higher level of about 60-65 % by the year 2010. In addition, an Irrigation Modernisation programme is planned for the 8<sup>th</sup> Malaysian Plan (2001-2005). This programme will help to increase water use from 0.2 kg. padi per cu. m of water supplied to 0.4 kg padi per cu. m., while increasing the overall average yield from 4.0 to 5.5 tons per hectare and cropping intensity from 170 to 190 percent.

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In spite of all these programmes, the total water demand for the region is expected to increase due to population growth. Domestic and industrial water supply is projected to increase more than three-fold from the present 1,388 Mld (million litres per day) to 4,400 Mld by 2050, and new source facilities will be needed. Present plans call for the construction of 4 new dams, of which the Beris Dam will be the first to be implemented.

In developing the Beris Dam, a number of alternative locations were considered, and a number of alternative options i.e. different dam heights and various water impoundment areas were studied. The over-riding criterion in this process was to minimise the number of people to be resettlement, consistent with an optimum water storage capacity. This is because the impact on people and the resettlement of people affected by the dam is considered to be one of the most difficult problems to be resolved.

As part of the planning requirement, an Environmental Impact Assessment (EIA) was carried out and approved by the Department of Environment (DOE). An Environmental Management Plan (EMP) is presently being carried out and will be presented at a public seminar in February 2000.

### **3.0 Social-Economic Survey of Affected Population**

Of the more than 1,000 families living at or near the proposed dam and reservoir areas, almost 600 will have to be relocated, including non-landowners who are renting houses there. In all, it will involve some 3,300 people from 577 households living in 16 villages as shown in Table 1. A number of public facilities will also be affected as shown in Table 2.

*Table 1 - Breakdown of Households by Village*

Village	Number of households affected	Percentage of total
Kampung Besar, Sungai Batang	98	17.0
Kampung Kuala, Sungai Batang	45	7.8
Kampung Baru, Sungai Batang	36	6.2
Kampung Selekoh Z, Sungai Batang	17	2.9
Kampung Sungai Batang	42	7.3
Kampung Tengah, Sungai Batang	19	3.3

Kampung Paya, Sungai Batang	11	1.9
Kampung Bernas	99	17.2
Kampung Batu 54, Ternas	14	2.4
Kampung Batu Seketul	124	21.5
Kampung Perangin	11	1.9
Kampung Batu 56, Jalan Gulau	6	1.0
Kampung Carok Bakong	8	1.4
Kampung Carok Sungkai	15	2.6
Kampung Bendang Sulaiman	17	2.9
Kampung Lubuk Jerai	15	2.6
<b>Total :</b>	<b>577</b>	<b>100.0</b>

As shown in Table 3, almost 85 % of the affected households have been inhabiting in the area for more than 10 years and 40 % for more than 30 years, forging over the years a close attachment to the land and an ability to adapt to the local environment. The initial reaction to the proposed dam was not favourable and matters were not helped with the intervention of some NGOs from outside the area. The situation deteriorated rapidly and reached a stage where it became very difficult for DID staff to enter the area to carry out their duties.

*Table 2 – Public Facilities Affected*

Public facility affected	Number
Primary School	1
Community Halls	4
Clinic	1
Mosque	1
Surau	2
Siamese Temple	1
Burial ground	1

*Table 3 – Length of Inhabitation by Households*

Number of years staying in area	Number of households	Percentage of total
Less than 5 years	25	4.3
5 – 10	65	11.3
11 – 20	132	22.8
21 – 30	128	22.2
31 – 40	102	17.7
41 - 50	54	9.4
More than 50 years	71	12.3
<b>Total :</b>	<b>577</b>	<b>100</b>

With the close support of the Kedah State Government and other government agencies, a series of dialogues were established with village elders and representatives to provide them with a wider perspective of the dam as well as the resettlement programme. From these dialogues, the affected villagers recognised that the dam was important for the economic development of the region and they agreed in principle to be resettled, subject to further negotiations on the terms and conditions. Realising the major sacrifice of the people, the DID and the State Government undertook to carry out a comprehensive resettlement programme.

A detailed socio-economic study was first carried out to obtain background information as well as to determine the main expectations among the villagers on the resettlement programme. Table 4 and 5 give the demographic breakdown of the affected households, while Table 6 gives their educational background.

*Table 4 - Heads of Households by Age Groups*

Age Group (years)	Number	Percentage of total
20 – 30	55	10
31 – 40	144	25
41 – 50	135	23
51 and above	243	42
<b>Total :</b>	<b>577</b>	<b>100</b>

Of the 577 heads of households, 476 (82 %) are male while the rest are female. The 101 female heads of households are either widows or divorcees. In the social structure, the heads of household will generally make the decisions on behalf of their families.

*Table 5 - Distribution of Households Dependants*

Number of dependants	Number of households	Percentage of total
0	53	9
1	64	11
2	75	13
3	93	16
4	71	12
5	72	12.5
6	67	12
7	34	6
8	25	4
9	11	2
10	5	1
11	5	1
12	2	0.5
<b>Total :</b>	<b>577</b>	<b>100</b>

Dependants include wives, children, parents and close relatives staying within the households.

*Table 6 - Heads of Households – Educational Background*

Formal Education	Number	Percentage of total
Upper Secondary	39	7
Lower Secondary	74	13
Primary	307	53
No formal education	157	27
<b>Total :</b>	<b>577</b>	<b>100</b>

The level of education of the villagers is reasonably high. About three-quarters have received formal education with 53 percent having at least primary (6 years) education, while another 20 percent have secondary level education. It is likely that most of those with no education at all come from the age group of those above 55 years

A social-economic study was carried out to determine the main expectations among the villagers on the resettlement programme. The main results of this study indicated that the main expectations of the villagers were :

- They should be fairly compensated for the acquisition of their land, dwellings, crops, livestock and other properties
- The new site should be within a setting at least similar to the original villages with good infrastructure
- The houses to be provided in the new settlement should be of an acceptable standard complete with the required utilities and recreational facilities
- The type and composition of the development at the new place should reflect the present agricultural and rural based economic activities
- Sufficient facilities to be provided so that they can maintain if not improve on their standard of living
- Schools, places of worship and other social facilities to be provided
- They do not want to lose their neighbours and relatives in the groupings within the new settlement
- They should be provided with sufficient land to pursue their agricultural activities.

#### **4.0 Resettlement Plan**

The resettlement of the 577 households affected by the dam is considered to be one of the most important component for the successful implementation of the Beris dam project. In response to the expectations of the villagers, the following resettlement plan has been proposed :

- A house lot of 10,000 sq. feet (930 sq. m) with a core house to be provided for each family
- A 0.5 acre (0.2 ha) farm lot for fruit trees, vegetables and/or cash crops per family
- Public infrastructure including roads, drains, street lighting as well as sewerage system
- Public utilities such as water and electricity supply, and a telecommunication network
- Public facilities such as clinic, police post, school, places of worship (mosque, surau and temple), community hall, kindergartens, library, burial grounds
- Recreational facilities such as football field, badminton courts, children playgrounds, and public parks
- Commercial facilities such as a market, shops and hawker stalls
- Transportation hubs such as bus and taxi stations
- An area of about 6 ha to be developed for small and medium industries

In addition, economic and business opportunities were identified to enable the settlers to continue to earn a reasonable income of not less than what they have been getting; and a concept plan was drafted to include the physical and socio-economic development of the new resettlement site.

An area of about 680 ha of rubber estates and forests has now been identified as the new resettlement site. The area is about 30 km from the original settlements and near to the towns of Gurun and Sik, the main towns in the area.

The bulk of the rubber estates will be retained as an economic project for the settlers. A portion will be converted into approximately 600 residential lots with each family being allocated a lot of 10,000 sq. ft. (930 sq. m). Shoplots, small and medium scale industry areas and places for constructing the various public amenities and community projects will be provided and a substantial portion of the forest land will be maintained as a recreational forest.

Each housing lot will be provided with a "core house" complete with electricity, pipe water supply and sewerage system. Each lot will be planted with a few fruit trees and the balance of

the area can be used for planting vegetables and cash crops. A good road and drainage system complete with street lighting will link the lots to each other and to the public road system.

The village elders and representatives were kept informed at all stages and adjustments made to accommodate requests as far as is possible. The feedback so far is that there is general acceptance of the proposed resettlement programme. In fact, recently there was a letter to the press complaining about the delays in starting the programme. There is also some concern that the number of “affected villagers” will mushroom as news spreads about the proposed resettlement programme.

## **5.0 Lessons Learnt**

The progress of the Beris Dam project provides some insights into the changing scenario vis-à-vis the implementation of a major water resources development project in Malaysia. In the early stages of project planning, most of the inputs were from the project proponent which in this case was the Government through the Department of Irrigation and Drainage Malaysia. Looking mainly at the technical side, the early planning options were on achieving an optimum structure to provide the required water storage, though an important criterion was to minimise the number of people to be resettled. Partly to avoid land speculation, and partly from a misconception that “Government knows best”, the local populace was not brought into the planning circle at this stage.

Resulting from this, the villagers were open to rumours, fear and uncertainty, and easily susceptible to influences from outside, in particular from NGOs. These led to a confrontational situation between the project proponent and the affected population and much effort had to be expended to restore goodwill. There is thus a need to involve people who will be affected into the planning process as early as possible, more so where they are not the direct beneficiaries of the project. (This is a peculiar characteristic of dam projects).

The resettlement of people affected by a project is almost always an emotional process. People who have been inhabiting an area for decades will forge a close attachment to the land and an ability to adapt to the local environment. Being resettled brings with it fears and uncertainty about their ability to adapt to a new environment. The first step in such a process must be to reach out to the affected people and find out their expectations and hopes, and to mould a resettlement package to satisfy these as much as possible. It is generally possible to come up with an acceptable package, the question is at what cost. All too often, there is a tendency to under-value the cost of resettlement programmes, and to under-estimate the impact on the affected people, particularly where rural areas are involved. The lesson here is to provide an attractive package such that the affected people become impatient for the project to commence.

KA/Feb 2000

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