MURUM Hydroelectric Power Project
Resettlement Action Plan
Final Report
November, 2011

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Acronyms
ATC: Agriculture Training Centre
AA: Agriculture Assistant
ADTEC: Advanced Technology Training Centre
AKDC: Asap-Koyan Development Committee
AFO: Area Farmers Organisation
ATC: Agriculture Training Centre
CDA: Community Development Assistant
CDC: Community Development Coordinator
DDC: Divisional Development Committee
DO: District Office
DOA: Department of Agriculture
DOH: Department of Health
ED: Education Department
ETS: Extension and Training System
FAMA: Federal Agriculture and Marketing Authority
FES: Front-line Extension Staff
GoS: Government of Sarawak
HRD: Human Resource Development
HEEP: Home Economics Extension Programme
HEP: Hydroelectricity Project
HRD: human resource development
IFC PS - International Finance Corporation Performance Standards
IKM: Institut Kemahiran MARA
JKR: Jabatan Kerja Raya (Public Works Department)
KEMAS: Jabatan Kemajuan Masyarakat
km kilometre
km2 Square Kilometre
l litre
LIT: low tapping intensity tapping

Return to Sarawak Report
L&S: Land and Survey Department
M Million
m metre
m3/s cubic metres per second
m asl Metres above sea level
MW Mega Watt
MDG - Millennium Development Goals
MPDC: Murum Penan Development Committee
NGO’S: non-government organisations
NREB: Natural Resource and Environment Board
NTFP: non-timber forest products
PAC: project affected community
PAH: project affected household
PPKS: Pusat Pembangunan Kemahiran Sarawak (Sarawak Skills Development Centre)
PPPOP - Persatuan Perkembangan Pendidikan Orang Peribumi (The Association for the Development Of Education Of Indigenous People)
PSC: Penan Service Centre
PVC: Penan Volunteer Corps
PWD: Public Works Department (Jabatan Kerja Raya)
REA: Resident Extension Agents
RISDA: Rubber Industry Smallholder Development Authority
RO: Resident's Office
RRIM: Rubber Research Institute Malaysia
SAVTI: Sarawak Vocational Training Institute
SAU’S: Small Agriculture Units
SCORE: Sarawak Corridor of Renewable Energy
SEB: Sarawak Energy Berhad
SEIA: Social and Environmental Impact Assessment
SFC: Sarawak Forestry Corporation
SFD: Sarawak Forest Department
SMD: Sarawak Museum Department
SMU: Special Murum Unit (in the SPU)
SPU: State Planning Unit
UNDRIP - United Nations Declaration for Rights of Indigenous People
VSADC: Village Security and Development Committee
WB OP - World Bank Operational Procedures
WEDA: Women Economic Development in Agriculture
WEDP: Women's Economic Development Programme
Definition of Terms

Contemporary Ethnography

Is the detailed documentation of all Project Affected Persons and their assets through structured interviews, detailed surveys, household enumeration and questionnaires, and map review.

The contemporary ethnography provides:

- A record of the ethnography of the communities;
- A complete inventory of affected households and their assets as a basis for compensation;
- Identifies non-entitled persons; and
- Minimises the impact of a later influx of ‘outsiders’ to the Project area.

The Contemporary Ethnography was also used to prepare a profile of the affected people and to prepare this Resettlement Action Plan. The survey results have been used to:

- Assess income, identify productive activities, and plan for income restoration;
- Develop relocation options, compensation packages and entitlement policies; and
- Develop the social preparation phase for vulnerable groups.

Compensation

Compensation includes the process of financial or material reimbursement for Project Affected Households (or Persons) who lose partial or absolute value of their assets as a result of the Project. Compensation also includes the valuation and reimbursement in monetary terms or in kind of financial and physical losses as a result of impacts of the Project.

Household

The Penan family unit or household is referred to as a lamin. A lamin is theoretically formed upon marriage, but whether the couple remains in the natal household generally depends on practical constraints. Many of the Penan households have grown to a size where they wish to fission, but are unable to do so because of the difficulty involved (i.e. finding the timber and other building materials to add apartments for new lamin).

Ownership

Ownership is recognized through village oral records, history and registration in the household register prepared for the Contemporary Ethnography. In the event of a dispute over ownership, it is up to the Village Headman and the Village Committee, to decide or to resolve any issues relating to customary and traditional ownership and use right over a particular land or assets.

PAH - Project Affected Households:

Project Affected Households (PAHs) are those persons residing on or in the vicinity of land affected by the Murum HEP, who on account of the execution of the Project, have their:

i. standard of living adversely affected; or

ii. rights title, or interest in any house, land (including premises, agricultural, and fruit orchards) or any other fixed or movable asset acquired or possessed, temporarily or permanently; or

iii. access to productive assets (including forest) adversely affected, temporarily or permanently; or

iv. occupation or place of residence or habitat adversely affected, temporarily or permanently.

By definition, these PAHs are entitled to compensation, resettlement and rehabilitation. Eligibility to any applicable compensation and rehabilitation for PAHs is based on: (a) ownership; and (b) use.

Replacement Cost

With regard to land and structures, "Replacement Cost" is defined as follows:

a) For agriculture land: it is the pre-project value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes.
b) For residential land: it is the pre-displacement value of land of at least equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes.

c) For houses and other structures, it is the cost needed to build a replacement structure with an area and quantity similar to or better than those existing structures, plus the cost of transporting building materials to the construction site, plus the cost of any labour and contractor fees, plus the cost of any registration and transfer taxes. (In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the Project deducted from the valuation of an affected asset.)

d) Crops, trees and other perennials based on current market value:

1. Compensation for annual crops is equivalent to the production over the last three years multiplied by the market price for agricultural products at the time of the calculation of the compensation; and

2. Compensation for trees includes total investment costs plus production costs from the time of its planting to the expropriation. In case this cost cannot be determined, the compensation will be calculated on the basis of the type, age and productive value.

3. Other assets (i.e. income, cultural, aesthetic) based on replacement cost or cost mitigating measures. For example, compensation for the movement of graves includes all expenditures for exhumation, movement and reconstruction to its original state.

Vulnerable People (or Groups)

Distinct groups of people who might suffer disproportionately or face the risk of being marginalised by the effects of resettlement; nd specifically:

a) Poor families, (i.e. those households falling below the rural poverty index);

b) Physically handicapped people or people in poor physical health; and

c) Infants, children and women headed households.

Executive Summary

BACKGROUND

The Murum Hydroelectric Power Project (HEP) is located on the Murum River, a tributary of the Balui River in Belaga District, Kapit Division in northeastern Sarawak. The reservoir created by the Murum dam will affect over 1,400 persons (353 households) in six Penan and one Kenyah Badeng longhouse settlements. As a result of the impoundment, these communities will need to be resettled in new sites. The Government of Sarawak (GoS) sees the resettlement of the communities as an opportunity to bring development and progress to an area that was previously economically isolated and without basic social and civic amenities. The resettlement will address two major sets of issues:

- Replacement of losses resulting from the HEP; and
- Poverty eradication through livelihood enhancement.

The Resettlement Action Plan (RAP) is the culmination of the Social and Environmental Impact Assessment (SEIA) study carried out in consultation with the local communities. The SEIA complies with international standards for resettlement, including the World Bank Operational Policies (WB OP), the International Finance Corporation Performance Standards (IFC PS) and the United Nations Declaration for Rights of Indigenous People (UNDRIP)

PROJECT DESCRIPTION

Sarawak Energy Berhad (SEB) is the holding company developing the Murum HEP. The 140 m Murum dam will create a reservoir with a surface area of 245 km$^2$ and a storage capacity of 12 billion m$^3$ runoff water. The full supply level (FSL) of the reservoir will be elevation level (EL) 540 m above sea level and the dam will have an installed capacity of 944 Mega Watts. Downstream of the dam the Murum River flows into the reservoir created by the Bakun HEP dam.

Access to the dam is via a permanent 66 km road extending from the Km 65 point of the Bintulu-Bakun Road to the Project site. A further 7 km of internal roads provide access between the dam, the powerhouse and intake area.

Electrical energy generated by the project will be transmitted via high voltage transmission lines to a substation near Bintulu, a distance of approximately 150 km. This substation serves as the connection point to the Sarawak Power Transmission Grid.
Sarawak Energy Berhad is the owner of the Murum HEP and as part of their Corporate Social Responsibility (CSR) has a policy for assisting communities. SEB has pledged to assist communities in the state to bring them into the mainstream of development. **RESETTLEMENT POLICY FRAMEWORK**

While there is currently no specific resettlement policy in place at either the State or Federal levels, the existing legislation and institutions are deemed sufficient to address the issues and pertinent matters arising from the Murum Dam project. A special unit within the Sarawak State Planning Unit has been formed to coordinate the relevant government agencies involved in the resettlement exercise and ensure implementation conforms to international standards.

One of the key government agencies with over-arching responsibilities is the Ministry of Planning and Resource Management. Any project involving resettlement of communities will ultimately come under the planning guidance of the MPRM or one of the agencies it oversees. The legislation relevant to the resettlement process includes:

- The Sarawak Land Code covers all matters dealing with land in Sarawak. The Department of Land and Survey Sarawak is the authority to enforce and monitor the Land Code and of their nine divisions or branches The Land, Planning, Native valuation and Enforcement Branches have particular relevance to the resettlement.

- Natural Resources and Environmental (Amendment) Ordinance 1993. The Social and Environmental Impact Assessment for the dam project is a requirement of this ordinance and the Natural Resources and Environmental Board (NREB) is the responsible agency.

- Sarawak Forest Ordinance provides for the protection and management of the forests of Sarawak including regulations on the extraction of forest produce, the procedures for establishing communal forests, and the inclusion of community rights to forest access.

**Land Ownership of Penan communities**

The Penan communities have been resident in the Murum area for generations and have been semi-settled and living in longhouses since the late 1960’s. Their territories are defined by the presence of burial sites, former habitation sites, access trails and areas commonly used for gathering forest produce and hunting.

For the Penan, land represents the assurance of their survival and is testimony and witness to their existence. Their territorial domain covers a large area with hunting and gathering trips as far as 10 km from the main settlement as normal. Ownership of land in the territory is based on the principle that the plot belongs to the first person to cultivate that plot: the ‘first feller’ principle. This also applies to resources such as fruit and sago trees, except instead of felling, the tree is marked to indicate usufruct ‘ownership’. These customary rights to land are generally untitled or undocumented but the land can be passed from one generation to the next in accordance with the local custom and adat.

Forest resources are viewed as a community asset with all members having a responsibility to maintain the resources in order to share the benefits and to ensure the resources are preserved for the future.

Under the Sarawak Land Code, the Penan community rights of territory need to be established (and recognized) through means than clearing for agriculture such as:

- The planting of fruit trees;
- The occupation or cultivation of the land;
- The use of land for a burial ground or shrine;
- The use of land of any class of rights of way.

**International Commitments**

Malaysia is signatory to a number of international commitments including the United Nation Declaration on the Rights of Indigenous People (UNDRIP), created to protect the rights and privileges of indigenous people. To meet the International Finance Corporation’s requirements under the Equator Principles, the Handbook on Preparing a Resettlement Action Plan (RAP) and The World Bank Operational Manual on Involuntary Resettlement provide the guidelines for preparation of the RAP.

**THE COMMUNITIES**

The seven Project Affected Communities (PACs) are located in the river valleys of the Danum and Plieran Rivers, Belaga District of Kapit Division. These communities, their longhouses and the surrounding lands will be inundated by the dam project. In total, 353 households with 1,417 people (as of August 2011) comprised of 335 Penan households with 1,304 Penan and 18 Kenyah Badeng households with 113 Kenyah

<table>
<thead>
<tr>
<th>Community</th>
<th>Households</th>
<th>Population</th>
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</thead>
<tbody>
<tr>
<td>Long Wat</td>
<td>89</td>
<td>347</td>
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</tbody>
</table>
Two other Penan settlements (Long Jek and Long Peran) will not be inundated by the MDHEP, but have been affected by the loss of surrounding forest on which they depend for their livelihoods. The total population of these two settlements as of March 2010 was 313 in 83 households.

With the exception of Long Tangau and Long Luar the communities have logging road access providing a link to the Sungai Asap settlement as well as to the main service centre of Bintulu.

All the communities have had longhouse style houses built for them by the logging companies. This style of living is desirable as it retains the important communal values of sharing and cooperation. The communities have expressed a desire to have basic modern infrastructure facilities and access to other nearby social facilities (e.g. schools, clinics, roads, water and electricity).

**Summary of Socio-Economic Characteristics**

The Murum Penan communities began a shift from hunting-and-gathering to a more settled, agriculture-based way of life approximately 40 years ago. The household economy is a subsistence-based on farming and hunting, fishing and gathering of forest products. There is no cash crop farming (other than opportunistic sales of in-season fruit). The economy hinges on farming and forest-based gathering activities: the former characterised by low farm productivity and the latter by rapidly declining forest resources.

The rate of engagement in wage-earning employment is low with the average wage per family is a meagre RM102 per month. Allowances are received from the timber companies but are not regular and very low (estimated average is about RM54 per month). All families are thus well below the Sarawak official rural poverty line index of RM830 per month. There are four principal sources of cash income:

1. Non-wage activities (sale of forest products or crafts);
2. Wage-earning activities (timber, palm oil and other employment)
3. Allowances from timber companies.
4. Assistance from government

Transition to a more cash-based economy will take time and the forest remains as a ‘safety net’ for survival. Strong community ties are important, providing a form of ‘social insurance’ to survive periods when food is in short supply, hunting and fishing returns are low, and there is no money. The community aspect of Penan life is core to their survival and has been highlighted as an important factor as to why they wish to remain in their respective communities.

**Agriculture**

Current farm productivity is low with minimal field maintenance and no fertilizer inputs. To provide sufficient land for staple food production and cash crop planting, a household requires at least 14 hectares of land, with 6 : 8 hectares of land for swidden cultivation and the rest for the other crops. Agriculture extension will be a crucial component of the livelihood restoration for the resettled communities.

The Penan have had little or no experience with livestock farming. As most households do not produce sufficient food to even meet their needs, this situation must be overcome before livestock rearing can be promoted.

**Education**

None of the Murum communities have access to essential services such as schools, clinics, grocery shops or other service institutions. Travel times to Sungai Asap range from one to five and a half hours along logging
roads. The total number of persons who have had some form of formal education system and are deemed literate is 164 persons or 9.5% of the total population. The factors contributing to lack of schooling among the Penan are:

- The distance of their homes from school.
- Dependence logging companies for transport
- The cost of the travel between the school and community
- Students not doing well in class and becoming discouraged.

Health Services

The Sarawak Health Department provides health care services to the Murum area through its Health Clinic at Sungai Asap. The mobile Village Health Team (VHT) and the Flying Doctor Services (FDS) visit each of the longhouses at least once a month. Even though the Sungai Asap government clinic provides free service to the communities, the physical access to this clinic for the Penan is a major constraint. There is no public transport available and the only means of transport is by getting lift from whatever vehicle is available (normally the vehicles of the timber company).

Description of Impacts and Inventory of Losses

The impacts of the Murum HEP and the losses can be categorised into three general asset areas: Forest; Farming; and Social : Cultural Areas

<table>
<thead>
<tr>
<th>Area Impacted</th>
<th>Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forest Area</strong></td>
<td>-Forest resources providing food needs and for materials used in daily living</td>
</tr>
<tr>
<td></td>
<td>-Protein sources (fish &amp; wildlife)</td>
</tr>
<tr>
<td></td>
<td>-Wild fruits and sago</td>
</tr>
<tr>
<td><strong>Farming Area</strong></td>
<td>-Areas of farm land providing staples</td>
</tr>
<tr>
<td></td>
<td>-Fruit trees, tended sago groves, and other tended garden areas</td>
</tr>
<tr>
<td><strong>Social : Cultural Areas</strong></td>
<td>-Long house assets and buildings</td>
</tr>
<tr>
<td></td>
<td>-Burial grounds &amp; Cultural heritage areas</td>
</tr>
<tr>
<td></td>
<td>Road Access to sites</td>
</tr>
</tbody>
</table>

Vulnerable

Moving an entire community to a new area will be a traumatic and difficult process requiring adjustment and adaptation to new surroundings and new means of livelihood. There are members within each community who may find difficulty in adjusting and may require additional assistance or guidance.

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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Long Wat</td>
<td>89</td>
<td>56</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Long Malim</td>
<td>54</td>
<td>25</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Long Luar</td>
<td>52</td>
<td>46</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Long Pelutan</td>
<td>42</td>
<td>35</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Long Singu</td>
<td>67</td>
<td>52</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Long Tangau</td>
<td>31</td>
<td>22</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Long Jek</td>
<td>49</td>
<td>27</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Long Peran</td>
<td>34</td>
<td>22</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
ENTITLEMENTS AND

The affected communities entitled to benefits and compensation due to losses resulting from the Murum HEP have been included in the household register prepared when the communities were surveyed during the Contemporary Ethnography study.

An entitlement matrix has been prepared outlining the criteria for entitled households, the compensation and rehabilitation measures and how these address the resettlement demands submitted by the communities to the government through the MPDC. The project affected communities and households are entitled to compensation and livelihood restoration in the following categories:

1. Loss of Land: replacement community and agriculture land and access to areas of forest.
2. Loss of houses and other structures: replacement houses and community structures at the resettlement site.
3. Loss of crops and other productive assets: compensation according to Land and Survey assessment and schedule of rates. Assistance to reestablish crops and livelihoods.
4. Loss of common resources: Granting of access to areas of forest for collection of produce.
5. Transition assistance: allowances and support during the resettlement process.
6. Loss of community cultural features: compensation for items according to the Museum department and support for ceremonies.
7. Loss of community structures: replacement at the resettlement sites and provision of new facilities in the service centre.

Benefit-sharing

Establishing partnership agreements between developers and local communities is recognized as one of the most innovative forms of benefit sharing. For the developer, a partnership provides an assurance of the local acceptance of the project, thereby reducing the level of risk and the cost of lengthy feasibility studies and authorization processes. For the local communities, it is recognition of their entitlement to a share of the economic rent generated by the dam as well as of their rights to have a say in the management of local water resources.

RESETTLEMENT SITE SELECTION AND RELOCATION PLAN

The communities were consulted on their choices for resettlement. The Danum communities of Long Wat, Long Malim and the Long Malim Kenyah Badeng have agreed to be resettled at Sungai Tegulang; and the Plieran communities of Long Singu, Long Menapa, Long Luar and Long Tanggau have requested to be resettled at Sungai Metalun, Plieran.

The Tegulang site occupies an area of 5,710 ha and is located approximately 15 km by logging road from the main access road to the Murum HEP dam. The Metalun site is 4,420 ha and will be accessible from the Murum HEP dam by boat (1.5 : 2 hours) across the reservoir. These areas provide sufficient arable land to support the communities and provide for transition into cash crop agriculture for at least the next 10 to 15 years.

The Murum Service Centre will be located adjacent to the reservoir and the Murum HEP dam site and have direct road access to the Tegulang Resettlement Area.

The proposed resettlement areas and areas of forest for community access were presented to the government for approval in February 2011.

LIVELIHOOD RESTORATION

The resettlement is viewed as an opportunity to improve the lives of the Penan with the livelihood restoration having the following objectives:

- To eradicate poverty among the affected communities.
- To uplift the standard and quality of life of the affected communities.
- To develop the capacity of the local people to participate in the economic opportunities created by the HEP and SCORE.

The livelihood development goals for the affected communities under the Resettlement Action Plan are:

- Household incomes of affected communities significantly above the poverty line index level.
- Communities are self-supporting with a capacity for sustainable development and responsible for their own socio-economic environment.
The standard and quality of life on par with other communities in the State.

The livelihood development strategies focus on the following key development areas:

1. Agriculture projects - to improve income and adequate food
2. Forest Access - for non-timber forest products (NTFP) for crafts.
3. Agriculture extension and training - for improved farm technologies
4. Home Economics Extension Programme - to improve nutrition and health and quality of life
5. Cottage industry support - for handicrafts, blacksmithing, wood-carving
6. Support to SMEs
7. Farm market support - to enhance marketing and output delivery system.
8. Human resource development (HRD) - vocational and skill training programmes.

A number of employment opportunities will be possible in association with the education, health and agriculture extension programmes as well as with economic activities associated with the Murum HEP. Priority for these opportunities is to be given to members of the resettled communities with training for the jobs a priority.

Some of the employment opportunities include:

- Employment with the construction of resettlement facilities
- Village-based health care workers
- Agriculture extension assistants
- School assistants, supervisors
- Drivers & Boat men
- General school workers, cooks, cleaners, maintenance personnel, matrons
- Clinic attendants, assistant medical personnel,
- Contract workers

SOCIAL DEVELOPMENT AND COMMUNITY STRENGTHENING

The four major areas requiring initial support and guidance and then monitoring to ensure the success of the resettlement are:

- Community Health : to improve nutrition and hygiene
- Education : focusing on pre-school, kindergarten and primary levels for children and adult literacy, remedial classes and vocational training
- Agriculture : agriculture extension will be a key component of the livelihood restoration and is linked with vocational training.
- Employment : there are a number of employment opportunities and these need to be linked with potential candidates. Training needs will have to be identified and addressed.

Liaison personnel from each community will be key players in this process as they will provide the link from the ground to the implementing agencies. A key agency to oversee implementation will be the Murum Resettlement Unit, located in the Murum Service Centre. This agency will be the direct link to the communities and the Community Development Coordinator will be a key liaison person to oversee all the development programmes and act as an intermediary or coordinator between the communities, the implementing agencies and the government.

Efforts are needed to establish appropriate grassroots institutions especially women groups, youth groups and specific groups for a particular project (e.g. vegetable gardening, sago planting, fruit trees planting projects) in the resettlement area.

CONSULTATION, DISCLOSURE AND GRIEVANCE

Preparation of the RAP

The RAP development process has involved the participation of key members of the study team, Government, Penan community representatives and non-governmental organisations. The core information
for preparation of the RAP is based on the findings of the Contemporary Ethnography Report and the Culture and Heritage Management Plan. This information was gathered through household surveys, group discussions, dialogues and structured interviews as well as the incorporation of information from earlier consultations with the affected communities.

Disclosure

The SEIA, Contemporary Ethnography Study and RAP for the Murum HEP is to be made available to the public in accordance with the IFC's policies. All reports and documents will be presented and discussed with the MPDC to gather their feedback and comments before and publicly disclosing the information. The main documents will be available in key public locations in Sarawak as well as online through the Murum website.

Grievance Mechanism

In consultation with representatives from the affected villages, a mechanism for communicating grievances and issues was proposed and discussed. The representatives of the villages agreed that the Murum Penan Development Committee (MPDC) represented them to the government and endorsed the concept of the grievance mechanism. The Murum SEIA Working Group endorsed the grievance mechanism as a satisfactory method for receiving information from the villages and a means to communicate with the villages. A Community Executive, based in the Murum area was later appointed to deal with the grievance from the communities included in the MPDC.

INSTITUTIONAL SETUP

The key guiding principles for the establishment of an effective and efficient institutional framework for implementing the Murum HEP Resettlement Plan is that all agencies involved in the implementation of the Resettlement Plan share the same goal, i.e. poverty alleviation and uplifting the standard and quality of life of the project affected communities.

To oversee and manage the resettlement, a three-tier system is proposed consisting of:

- A policy-making level,
- An inter-agency coordination level, and
- An implementation level with a dedicated ground unit.

The Murum Resettlement Unit, is to be staffed with specific community development and development coordination personnel to significantly bolster the implementing function. The unit would be responsible for dealing with matters related to the resettlement programme and projects and would be based at the Murum Service Center. The unit would serve all the resettled communities and would report to the Deputy Resident who is responsible for development projects.

A Community Development Coordinator (CDC) would be responsible for monitoring and coordinating the programmes that contribute to the overall wellbeing of the resettled Penan. Community liaison personnel would provide linkages between the communities and the CDC and provide feedback on how the communities are adjusting to the resettlement. The CDC would play a critical role as an important linkage for information flow to the Resident's Office and the other line agencies. Having the communities involved in this process (whether through the CDC or the community organisations) will enable their views and concerns to be incorporated.

Strengthening Management and Organisation

Successful resettlement of the communities affected by the Murum HEP will require long-term monitoring of the programmes and projects and the ability to adapt to new and changing situations. The Special Murum Unit (SMU) based in the SPU should be strengthened through the establishment of the HEP Resettlement Sector, a permanent fixture in the SPU acting as the secretariat dealing with the management of all aspects of HEP resettlements in the State. To ensure that the HEP Resettlement Sector functions effectively, adequate manpower is required.

Community Organisations and Foundation

The Murum Penan Development Committee (MPDC) can continue to play an important role in community development as a conduit of information between the community and the District Office using the established headman setup. The MPDC provides a broader representation of the communities and also provide the scope for communication with other agencies, including non-government agencies.

The Murum Community Development Foundation should be established to support implementation of
the resettlement programmes and provide alternative means of project funding. Based in the Murum area, this support agency should include the participation of the local communities and have the role of identifying community needs and communicating these to the relevant authority or addressing these needs directly. An important aspect of this would be the ability to raise and receive funding and to implement projects at the ground level. The core activities of the foundation would focus on providing and facilitating community services including:

- Training programmes (in association with the agriculture extension)
- Education: community pre-schools, kindergartens and adult literacy classes
- Transportation: for school children and to and from the clinics
- Community projects: based on the needs identified.
- Micro-financing: for projects in the communities
- Establishing village shops and trading centres

The foundation would require budgets to hire and train local staff and to finance projects, programmes and the purchase of equipment. The foundation can also cooperate with local and foreign volunteer organizations willing to support through funding or capacity building.

**MONITORING AND EVALUATION**

Monitoring is an internal function focusing on specific situations or difficulties arising during implementation, and of the compliance of implementation with objectives and methods set out in the RAP. Reporting of the monitoring results is an important step in the process to provide information regarding the effectiveness of programme strategies towards achieving programme goals. This provides a means of correcting implementation methods during the course of resettlement program implementation as required. Monitoring is based on indicators of change relevant to the resettlement process and will be based as much as is possible on participation with affected households and communities. A summary of potential monitoring areas on which indicators will be based is outlined below

<table>
<thead>
<tr>
<th>Overall social and economic status</th>
<th>Social and economic status of households, and villages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reestablishment of agriculture</td>
</tr>
<tr>
<td></td>
<td>Actions targeting vulnerable groups</td>
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<tr>
<td></td>
<td>Access to employment and business opportunities</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Compensation and negotiations</th>
<th>Compensation payments made, timing of such payments</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Contracts and associated arrangements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resettlement</th>
<th>Resettlement options finalized</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relocation details and arrangements</td>
</tr>
<tr>
<td></td>
<td>Accommodations at relocation sites (house types, costs, facilities etc)</td>
</tr>
<tr>
<td></td>
<td>Relocation site development progress (status of construction works, testing and commissioning of housing, schedules etc)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic restoration activities and measures</th>
<th>Economic restoration programs implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Participation in assisted programs</td>
</tr>
<tr>
<td></td>
<td>Skills enhancement programs and activities</td>
</tr>
<tr>
<td></td>
<td>Small loans components</td>
</tr>
<tr>
<td></td>
<td>Economic support programmes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consultation &amp; disclosure</th>
<th>Perception of resettlement program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Satisfaction with compensation and other assistance</td>
</tr>
</tbody>
</table>
Information provided to affected households, villages and other stakeholders

<table>
<thead>
<tr>
<th>Complaints/grievances</th>
<th>Number, type and cause of complaints/grievances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resolution rates and effectiveness of complaints settling</td>
</tr>
</tbody>
</table>

**Evaluation** is an external process focusing on emergent, mid- and long-term impacts of the Project on the welfare of impacted households, communities, environment and local government and capacities. The aim is to provide lessons learnt for amending strategies and implementation in the longer term.

Evaluation will be conducted to:

i. Assess the compliance of the implementation of the RAP with objectives and methods set out in this document;

ii. Assess the compliance of implementation of the RAP with laws, regulations and safeguard policies;

iii. Evaluate the implementation of the RAP to achieve its objectives in particular "to improve or at least maintain the income and living conditions of the affected households after the resettlement process"; and

iv. Identify actions to be part of the ongoing monitoring process to improve the positive impacts of the program and to mitigate any possible negative impacts.

Evaluation reports should be publicly released and be available at the Project Information Centre at the Murum Service Centre and other relevant locations.

**RESETTLEMENT COSTS**

Infrastructure Development Budget Estimates

The estimated costs for establishing the infrastructure for the total resettlement scheme over the next 8 to 10 years are approximately **RM 893,839,000**. This includes all land clearing and site preparation, access roads, services, infrastructure and building costs for the two resettlement sites as well as for the the Murum service centre and the Metalun mini-service centre. A summary of the estimated infrastructure development costs is outlined below.

<table>
<thead>
<tr>
<th>(RM '000s)</th>
<th>Phase I</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stage 1</td>
<td>Stage 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tegulang</td>
<td>141,296</td>
<td>30,000</td>
<td>1,560</td>
<td>172,856</td>
</tr>
<tr>
<td>Metalun</td>
<td>181,080</td>
<td>30,000</td>
<td>211,080</td>
<td></td>
</tr>
<tr>
<td>Murum Service</td>
<td>136,800</td>
<td>111,000</td>
<td>247,800</td>
<td></td>
</tr>
<tr>
<td>Metalun Service</td>
<td>57,000</td>
<td>50,000</td>
<td>107,000</td>
<td></td>
</tr>
<tr>
<td>Supporting Infra</td>
<td>8,321</td>
<td>27,000</td>
<td>35,321</td>
<td></td>
</tr>
<tr>
<td>Livelihood restoration</td>
<td>93,575</td>
<td>26,207</td>
<td>119,782</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>330,697</td>
<td>347,375</td>
<td>215,767</td>
<td>893,839</td>
</tr>
</tbody>
</table>

Livelihood Restoration and Resettlement Support Costs

The estimated total budgets for the agriculture assistance programmes are outlined below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Costs (Year one) (RM)</th>
<th>Total Cost (6 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop establishment/Agriculture support</td>
<td>9,809,400</td>
<td>22,985,400</td>
</tr>
</tbody>
</table>
Training programs / market support | 847,200 | 3,320,000
Moving allowance / relocation support | 1,735,000 | 1,735,000
Annual transition support until crop production reached | 3,539,400 | 12,242,800
Total Cost | 15,211,000 | 40,283,200
(Total Per household) | (43,835) | (116,090)

IMPLEMENTATION SCHEDULE

The Murum HEP is due to be completed by May 2012 when impoundment will commence. Given this schedule, the resettlement scheme has to be developed in phases to ensure that essential works can be completed to accommodate the resettled communities by early Year 2012. The development phases and work to be completed in each are outlined below.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Development needs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1- (a):</strong> (Basic Infrastructure Implementation) 2011-Q1 2013</td>
<td>In advance of the village relocation, completion of community structures and services including:</td>
</tr>
<tr>
<td></td>
<td>• Housing (one unit per household in designated resettlement sites).</td>
</tr>
<tr>
<td></td>
<td>• Land clearing, and earthworks of 1 ha per household (for house) and 3 ha per household for home garden plots (fruit trees and vegetables).</td>
</tr>
<tr>
<td></td>
<td>• Access roads to the villages</td>
</tr>
<tr>
<td></td>
<td>• Pre-school/place of worship/community hall in the village</td>
</tr>
<tr>
<td></td>
<td>• Reliable power and potable water supply</td>
</tr>
<tr>
<td></td>
<td>• Sanitation</td>
</tr>
<tr>
<td></td>
<td>• Basic community structures including burial ground (Metalun only)</td>
</tr>
<tr>
<td>Proposed implementing agency: SEB</td>
<td>After relocation, the following community structures and support will be required:</td>
</tr>
<tr>
<td></td>
<td>• Primary schools</td>
</tr>
<tr>
<td></td>
<td>• The Murum service centre and Metalun mini service centre with:</td>
</tr>
<tr>
<td></td>
<td>• agriculture centre and extension services</td>
</tr>
<tr>
<td></td>
<td>• Home economics and vocational training programmes</td>
</tr>
<tr>
<td></td>
<td>• Transitional support as required</td>
</tr>
<tr>
<td></td>
<td>• government administrative offices and</td>
</tr>
<tr>
<td></td>
<td>• basic infrastructure in the service centres.</td>
</tr>
<tr>
<td><strong>Phase 1 : (b - c)</strong> (Livelihood Restoration &amp; Poverty Eradication) 2011 : 2013</td>
<td>Upgrading of access roads to the service centres, Improvements to the main Murum service centre and Metalun mini service centre including secondary school in Murum service centre, permanent jetty, telecommunication services, commercial units etc.</td>
</tr>
<tr>
<td>Proposed implementing agency: State Government</td>
<td>Secondary school at Murum service centre</td>
</tr>
</tbody>
</table>
Proposed implementing agency: State Government

Relocation Schedule

The Murum HEP Dam is slated for completion by the end of 2012 with impoundment and flooding to commence in early of 2013. Key milestones to implement prior to relocation of the communities include:

i. Detailed plans and designs for the resettlement scheme completed and approved;

ii. Tender document prepared released for tender;

iii. Houses for the communities to be resettled at Tegulang and Metalun constructed;

iv. Garden plots prepared and rubber estate initiated;

v. Murum Resettlement Unit office established in Murum to oversee the resettlement

vi. Agriculture office established and ready to implement extension programmes,

vii. Basic infrastructure (power, water, sanitation, access roads) established.

Annex 1 INTRODUCTION

1.1 Background

The Murum Hydroelectric Project (HEP) is being constructed to provide electricity for the industries of the Sarawak Corridor of Renewable Energy (SCORE). The Sarawak State Government has indicated that the construction and implementation of projects and developments associated with SCORE are to follow international standards and this includes the construction of the power supply. The main dam structure for the HEP will be built on the Murum River and the resulting reservoir will affect over 1,400 persons (347 households) in six Penan and one Kenyah Badeng longhouse settlements. As a result of the impoundment, these communities will need to be resettled in new sites. To understand the scope of the impacts (and as part of the Social and Environmental Impact Assessment), a study of the contemporary ethnography was initiated to document the culture, economy, priorities and way of life and to gauge the community views and perceptions toward resettlement. This information provides the baseline data to enable the detailed planning required to address the issues related to resettlement. The contemporary ethnography was the first step in the planning process and describes in detail the social, economic and cultural aspects of Penan.

The Government of Sarawak (GoS) sees the resettlement of the communities as an opportunity to bring development and progress to an area that was previously economically isolated and without basic social and civic amenities.

Thus, the overall objective for the Resettlement Action Plan (RAP) is to use the opportunity of resettlement to implement a poverty eradication programme for the Murum Penan. To achieve these objectives, there are two major sets of issues to be addressed:

- Replacement of the equivalent they have lost as a result of the HEP; and
- Poverty eradication: to improve livelihoods, bringing them substantially above the poverty line.

The RAP provides a set of actions to achieve successful voluntary resettlement and is the culmination of Part II of the SEIA study process. The major components of Part II include: the Contemporary ethnography, the Culture and Heritage Management Plan, the Social Impact Assessment, and the Resettlement Action Plan. The affected communities have been consulted and involved throughout the process and have been kept informed regarding the progress through dialogues and meetings held in the communities and at Sungai Asap.

The SEIA process was carried out to comply with international standards for resettlement, including the World Bank Operational Policies (WB OP), the International Finance Corporation Performance Standards (IFC PS) and the United Nations Declaration for Rights of Indigenous People (UNDRIP). Underscoring this, the Millennium Development Goals (MDG) provide the broad framework for the State and Federal programmes.
and policies for poverty eradication. These goals can be outlined as follows:

- Eradicate poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Improve overall health standards
- Ensure environmental sustainability (access to clean water & sanitation)
- Develop partnerships for development

1.2 Structure of the report

The RAP specifies the procedures the Government will follow and the actions it will take to resettle and compensate people and communities affected by the Murum HEP. This document has been prepared through consultation with the communities affected by the Murum HEP and with the relevant government agencies involved in the resettlement. The technical details of the RAP have been prepared for the State Government to meet international standards for the resettlement. As such the RAP provides the context for the agreements between the government and the affected communities and provides the details for implementation. As the resettlement agreement involves matters such as provision by Government of public infrastructure and services (e.g. roads, schools, clinics, electricity), a wide range of Government Agencies have been involved in providing input into the RAP.

The RAP has been prepared in consultation with the communities and with public disclosure of the decisions and agreements reached between the government and affected communities and is consistent with the International Finance Corporation (IFC) Handbook on Preparing a Resettlement Action Plan.

Annex 2 PROJECT DESCRIPTION

2.1 Project Features

The Murum project will involve the construction of a dam to create a reservoir in order to generate hydro-electric power. This initiative has been identified as part of the Sarawak Energy's least-cost power development plan. The Hydroelectric Project is anticipated to generate an average of 5,680 Gwh of electric energy per year in order to cater, in part, for the projected rise in electricity demands for domestic, commercial and industrial sectors in the State. In particular, the Murum Hydroelectric Power (HEP) Project is aimed at providing a source of renewable energy to power the developments associated with the Sarawak Corridor of Renewable Energy (SCORE).

The Murum Hydroelectric Power Project (HEP) is located on the Murum river, a tributary of the Balui River in Belaga District, Kapit Division, north-eastern Sarawak. The Murum River is formed by the confluence of Plieran and Danum rivers some 8 km upstream of the dam site.

The total catchment area is approximately 2,750 square kilometers extending to the border with Kalimantan, Indonesia. With the completion of the dam, a reservoir with an area of about 245 square kilometers (24,500 hectares) will inundate the Murum River Valley extending up the Danum and Plieran River Valleys (Figure 2). Six Penan communities and one Kenyah Badeng community are currently resident in the areas that will become the reservoir and they will require relocation.

Additionally, the Penan communities of Long Jek and Long Peran will be indirectly affected by the developments in the region. As these communities are in a separate watershed, they will not be affected by the flooding for the reservoir. However, the changes in land use surrounding the reservoir and the loss of forest resources will have an indirect impact on their incomes.

2.1.1 Project Proponent

Sarawak Energy Berhad (SEB) is the holding company developing the Murum HEP. SEB is principally involved in the power and electricity sector while its wholly owned subsidiary, Syarikat SESCO Berhad has the right to generate, transmit, distribute and supply electricity throughout the State of Sarawak.

2.1.2 Dam

The MDHEP Project consists of a 141 m Roller Compacted Concrete (RCC) Dam with a crest spillway incorporated in the dam body, an underground headwater conveyance system of tunnels, surge tanks and...
vertical shafts and a surface powerhouse with four turbine-generator units located approximately 12 km downstream at the rim of the future Bakun Reservoir. The total catchment of the area up river of the Murum dam is 2,750 km² extending to the border with Kalimantan, Indonesia. The MDHEP will create a reservoir with a surface area of 245 km² and a storage capacity of 12 billion m³ runoff water. The full supply level (FSL) of the reservoir will be elevation level (EL) 540 m asl. The details of the main features of the Murum Dam are shown in Table 2.

There are no communities in the vicinity of the actual dam site and there are also no communities resident downstream of the dam. Downriver, the Murum River flows into the reservoir created by the Bakun HEP dam.

Table 2 Specifications and Details of MDHEP.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hydrology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catchment Area</td>
<td>km²</td>
<td>2,750</td>
</tr>
<tr>
<td><strong>Reservoir</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Supply Level (FSL)</td>
<td>m asl</td>
<td>540</td>
</tr>
<tr>
<td>Minimum Operating Level (MOL)</td>
<td>m asl</td>
<td>515</td>
</tr>
<tr>
<td>Maximum Flood Level</td>
<td>m asl</td>
<td>547</td>
</tr>
<tr>
<td>Reservoir Volume at 540 masl</td>
<td>M m³</td>
<td>12,043</td>
</tr>
<tr>
<td>Reservoir Area</td>
<td>km²</td>
<td>245</td>
</tr>
<tr>
<td>Filling Time</td>
<td>Years</td>
<td>1.75</td>
</tr>
<tr>
<td>Active Storage Volume (540-515 masl)</td>
<td>M m³</td>
<td>5,475</td>
</tr>
<tr>
<td>Normal Drawdown</td>
<td>M</td>
<td>20</td>
</tr>
<tr>
<td><strong>Dam</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dam Type</td>
<td>RCC Dam</td>
<td></td>
</tr>
<tr>
<td>Dam Height</td>
<td>M</td>
<td>141</td>
</tr>
<tr>
<td>Crest Elevation (with top of parapet wall)</td>
<td>m asl</td>
<td>546</td>
</tr>
<tr>
<td>Foundation Elevation</td>
<td>m asl</td>
<td>390</td>
</tr>
<tr>
<td>Toe elevation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Å,Å· up stream (plinth)</td>
<td>m asl</td>
<td>395</td>
</tr>
<tr>
<td>Å,Å· down stream</td>
<td>m asl</td>
<td>390</td>
</tr>
<tr>
<td>Crest length</td>
<td>M</td>
<td>430</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Crest width</td>
<td>M</td>
<td>7</td>
</tr>
<tr>
<td>Width of dam along riverbed</td>
<td>M</td>
<td>75</td>
</tr>
<tr>
<td>Dam slopes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>· upstream (V:H)</td>
<td></td>
<td>0.15 : 0.00</td>
</tr>
<tr>
<td>· downstream (V:H)</td>
<td></td>
<td>0.85 : 0.751</td>
</tr>
<tr>
<td>Spillways</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crest Length</td>
<td>M</td>
<td>54</td>
</tr>
<tr>
<td>Capacity</td>
<td>m³/s</td>
<td>2,160</td>
</tr>
<tr>
<td>Design Flood</td>
<td>m³/s</td>
<td>2,160</td>
</tr>
<tr>
<td>Bottom Outlet</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Power Station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installed Capacity</td>
<td>MW</td>
<td>944 (4 x 236 MW)</td>
</tr>
<tr>
<td>Number of Turbines</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Average Turbine Outputs</td>
<td>m³/s</td>
<td>240</td>
</tr>
<tr>
<td>Maximum Turbine Outputs</td>
<td>m³/s</td>
<td>340</td>
</tr>
<tr>
<td>Mean Tailwater Elevation</td>
<td>m asl</td>
<td>224.7</td>
</tr>
<tr>
<td>Waterways</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headrace Tunnels</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Length</td>
<td>M</td>
<td>1,428/ 1,369</td>
</tr>
<tr>
<td>Pressure Shaft Length</td>
<td>M</td>
<td>239.51/ 235.64</td>
</tr>
<tr>
<td>Lower Tunnel Length</td>
<td>M</td>
<td>988.7/ 1,045</td>
</tr>
</tbody>
</table>

**2.1.3 Access roads**

The MDHEP is a diversion type power generation project featuring a high water head. The main dam, the intake and the powerhouse are separated requiring the construction of a network of access roads within the Project site.

A permanent 66 km Public Works Department R3 Standard access road is being built to connect from Km 65 of the Bintulu-Bakun Road to the Project site. This road is scheduled for completion by the time the electromechanical components such as the turbines are ready to be transported.

In the meantime, 6 km of five temporary access roads have been built on the left riverbank of the dam, at elevations ranging from 410 to 546 m. These roads range in width from 6 to 10 m. Eventually the road at the highest elevation (546 m) will be converted into permanent access to the dam crest with the lower roads providing access to the downstream and upstream cofferdams.
A further 7 km of 8 to 10 m width roads provide access to the powerhouse and intake area. These roads will be upgraded and maintained as permanent maintenance roads connecting the intake, the powerhouse and the surge tank.

2.1.4 Transmission line

Electrical energy generated by the project will be transmitted via high voltage transmission lines to a substation near Bintulu, a distance of approximately 150 km. This substation will serve as the connection point to the Sarawak Power Transmission Grid. The alignment of the transmission line has not yet been finalized.

2.1.5 Dam office and buildings

All the buildings supporting the construction of the HEP dam and powerhouse are located adjacent to the main Murum dam site (Figure 2). This land is state land that has been alienated to the project proponent for the purpose of the HEP dam. There were no communities living in the vicinity of the project or any claims to land used for the purpose of the dam buildings.

2.2 Project Alternative

During the preparation of this SIA, no project alternatives were considered because the construction of MDHEP had already commenced at the time of the report writing.

Figure 2 Location of the Murum communities and extent of reservoir.

Annex 3 POLICY FRAMEWORK

3.1 Introduction

While there is currently no specific resettlement policy in place at either the State or Federal levels, the Sarawak Government has stated that the Murum HEP is to conform to international standards. In this instance, the guidelines on resettlement provided by the International Finance Corporation (IFC) and The World Bank Operational Policies and the Manual provides an internationally recognized standard that can be used.

In Sarawak, there have been two recent resettlement exercises for communities affected by hydroelectric power projects. These resettlement exercises were administered and conducted by the state government through a system of technical committees and dedicated task forces comprised of government employees. The main state agency given the responsible for overseeing the completion of the resettlements was the State Planning Unit. Within the SPU, a special unit was formed to coordinate all the relevant government agencies involved.
3.2 Legislation

There are sufficient legislation and institutions in Malaysia to address the issues and pertinent matters arising from the Murum Dam project. Under the Federal Constitution, the State of Sarawak has the authority to create its own legislation and land, agriculture, forestry, local government, state works, native laws and customs are matters over which Sarawak has legislative authority. However, if any State law is found to be inconsistent with the Federal law, the Federal law shall prevail and the State law shall, to the extent of the inconsistency, be void (Article 75 of Federal Constitution).

The directive of the World Bank Operational Manual on Involuntary Resettlement (1 June 1990) states that a clear understanding of the legal issues involved in resettlement is needed to design a feasible resettlement plan. The framework should include: a) the scope of the power of eminent domain, the nature of compensation associated with it; b) the legal and administrative procedures applicable; including the appeals procedures and time frame for such procedures; c) land titling and registration procedures; and d) laws and regulations relating to the agencies responsible for implementing resettlement and those related to land compensation, consolidation, land use, environment, water use and social welfare.

The relevant legislation, the responsible monitoring and enforcing institutions and their respective levels of jurisdiction are outlined in Table 3.

Table 3 The Legislation and Responsible Institutions for Resettlement in Malaysia.

<table>
<thead>
<tr>
<th>Level</th>
<th>Legislation</th>
<th>Responsible Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>Constitution of Malaysia</td>
<td>Federal Government</td>
</tr>
<tr>
<td>State</td>
<td>Land Code 1958 (Cap 81)</td>
<td>Department of Land and Survey Sarawak</td>
</tr>
<tr>
<td>State</td>
<td>Forest Ordinance, 1958 (Cap 126)</td>
<td>Forestry Department Sarawak</td>
</tr>
<tr>
<td>State</td>
<td>Sarawak Forest Corporation Ordinance, 1995 (Cap 17)</td>
<td>Sarawak Forest Corporation</td>
</tr>
<tr>
<td>State</td>
<td>Sarawak Wildlife and Protection Ordinance</td>
<td>Forestry Department Sarawak</td>
</tr>
<tr>
<td>State</td>
<td>Natural Resources and Environmental (Amendment) Ordinance, 2001(Cap 84)</td>
<td>Natural Resources and Environmental Board, Sarawak</td>
</tr>
<tr>
<td>State</td>
<td>Local Authority Ordinance, 1996</td>
<td>Local Authority</td>
</tr>
<tr>
<td>State</td>
<td>Biodiversity Centre (Amendment) Ordinance 2003 (Cap 24)</td>
<td>Sarawak Biodiversity Centre</td>
</tr>
<tr>
<td>State</td>
<td>Sarawak Water Ordinance</td>
<td>Public Works Department Sarawak</td>
</tr>
</tbody>
</table>

3.2.1 Federal Legislation

The Federal Constitution

The Federal Constitution provides the overall framework for the government and protects the rights, security and privileges of every citizen of Malaysia. Article 5 ensures that no person shall be deprived of his life or personal liberty. Equality for all citizens is enshrined in Article 8 where it states that all persons irrespective of race or religion are equal before the law and entitled to equal protection of the law. The Yang di-Pertuan Agong is entrusted to safeguard the special position of the Malays and the natives of the States of Sabah and Sarawak and the legitimate interest of other communities (Article 161A). Article 153 grants special status to the Malays and the Natives of Sabah and Sarawak; the Penan are listed as native and indigenous to Sarawak.

Malaysia does not have any specific legislation on resettlement, however under the Federal Constitution no person shall be deprived of property and no law shall provide for the compulsory acquisition or use of property without adequate compensation (Article 13).
3.2.2 State Legislation

Sarawak Ministry of Planning and Resource Management (MPRM)

The MPRM has the over-arching responsibility to formulate policies and enact legislation on forestry, land development, mining and town planning. The Murum hydroelectric power project and all the activities occurring in and around the catchment area fall under the jurisdiction of the MPRM or one of its sub-agencies. The resettlement of communities affected by developments ultimately comes under the planning guidance of the MPRM or one of the agencies it oversees. The key sub-sections responsible for resource management and their main functions and responsibilities within the MPRM are as follows:

1. Forest Section
   - Planning and management of the state's forests and timber resources including establishing areas for forest protection such as national parks and nature reserves, wildlife protection and heritage and culture conservation.

2. Land Section
   - Administration of state land in accordance with the Land Code.
   - Coordination of the resettlement and / or village extension programme.
   - Planning of state land alienation for plantation, housing, industrial and commercial purposes.
   - Acquisition of land required for public development purposes.
   - Consideration of applications for Native Land Status under the Land Code.
   - Planning and control of mineral exploitation (excluding gas and petroleum).

3. Planning Section
   - Formulation of strategies for urban and rural land development.
   - Administration of applications for location of government buildings, subdivision of land and changes of title conditions.

While the MPRM is mainly concerned with the policies, the agencies under its jurisdiction are responsible for executing the ministerial policies. The four departments or agencies with functions of direct relevance to the resettlement are:

- Land and Surveys Department (L & S D);
- Natural Resources and Environment Board (NREB).
- Sarawak Forest Department (SFD);
- Sarawak Forestry Corporation (SFC);

In addition, the Ministry also acts as Secretariat to a number of committees concerned with land allocation, natural resource planning, land management and development. The relevant committees include:

- State Planning Committee;
- Industrial Land Committee;
- Plantation Land Committee;
- Forestry Enforcement Committee;
- State Mineral Resources Committee; and
- State resettlement Scheme Committee

The various legislations falling under the MPRM mandate include the:

- Sarawak Land Code;
- Natural Resources and Environment Ordinance.
- Forest Ordinance;
- National Parks and Nature Reserves Ordinance;
- Wild Life protection Ordinance;
The Sarawak Land Code 1958

Land is under the jurisdiction of the State and as outlined in the 2nd State List or the Concurrent List of the Federal Constitution. The Sarawak Land Code 1958 was enacted with the objective of consolidating the laws relating to land in one piece of legislation and thereby creating a sound administration of land and related matters. The Land Code also provides for the alienation of State Land, administration of alienated land, classification of land, compulsory acquisition of land for public purposes, adjudication of rights to land, survey and registration of dealings in land.

The Department of Land and Survey Sarawak, under the Ministry of Planning and Resource Management, is the authority to enforce and monitor the Land Code. The functions of the Department are carried out by nine divisions or branches as follows: Survey Division; Land Branch; Planning Branch; Adjudication and Registration of Native Right Branch; Valuation Branch; Enforcement Branch; Information System Branch; Human Resource Development Branch; and Administration Branch. In addition, a Public Relations Unit was recently established.

The Planning, Land, and Enforcement Branches have particular relevance to this study.

The main functions and activities of the Planning Branch are:

- Industry and Government development project siting;
- Building and engineering plans;
- Urban development and planning studies;
- Variation of land title conditions;
- Development and control of subdivision of land; and
- Evaluation of EIAs

The main functions and activities of the Land Branch include:

- Alienation and Re-alienation of land;
- Mining/quarry licenses;
- Acquisition of land; and
- Land administration; extension of Term of Title.

The functions and activities of the Enforcement Branch are:

- Enforcement and Prosecution;
- Issuance of licenses for removal of rock material;
- Land use (control of Prescribed Trading Activities) Ordinance, 1997;
- Planning/monitoring of enforcement activities;
- Prevention, demolition and eviction of squatters;
- Other activities related to enforcement.

Land acquisition for major infrastructure projects is a sensitive issue as it involves the compulsory taking away of land, often against the wishes of the landowners or the community at large. The Land Code outlines the procedures for the acquired land to be compensated. Section 13 of the Ordinance states that land shall not be alienated until all customary rights therein have been surrendered or extinguished or provision has been made for compensating the person(s) entitled to such rights.

Natural Resources and Environmental (Amendment) Ordinance 1993

In 1994, under Section 3 (1) of the ordinance, the Natural Resources and Environmental Board (NREB) was established and is the lead agency responsible for protecting and managing the environmental quality and natural resources of the State. The NREB is also responsible to determine the mode and manner for the utilization of natural resources in the State; to ensure that use does not damage, pollute or cause adverse impact to the environment. The Board is both a policy-making and an executing institution.
The NREB core activities include:

- Review and adjudication of Environmental Impact Assessments (EIA) and Environmental Management Plans (EMP);
- Studies to integrate environmental and resource management issues in development planning.
- Environmental Monitoring and Auditing to ensure compliance to the terms and conditions of EIA approval.
- Management and Conservation of Water Catchment Area (Under Section 8 and 10 of the Water Ordinance, the NREB is responsible to provide guidelines for the management of water catchment areas in Sarawak to protect and control water sources including inland water bodies).

The Natural Resource and Environment Ordinance (NREO) is the main legislation for the conservation and management of natural resources, the prevention of injury to natural resources, the protection and enhancement of the environment and the prevention and control of activities which may cause or likely to cause pollution.

Under Section 10 of the NREO the Controller is empowered to take measures on any activities that he deems would likely to cause harm to the environment. The EIA for the Murum Hydroelectric Power Project as well as for the resettlement sites is a requirement of the NREB.

The key instrument of this Ordinance can be found in Section 11A which requires an Environmental Impact Assessment (EIA) report to be made for prescribed activities having significant impact on the environment and natural resources.

The prescribed activities with particular relevance to the Murum Dam Project are outlined in Table 3.

Table 3 Activities Prescribed under the NREO.

<table>
<thead>
<tr>
<th>Article</th>
<th>Activity</th>
<th>Coverage</th>
</tr>
</thead>
</table>
| 1.      | Agricultural Development                      | • Development of agricultural estates or plantations of an area exceeding 500 hectares (a) from land under secondary or primary forest, or (b) which would involve the resettlement of more than 100 families; or (c) which would involve modification in the use of the land.  
         |                                              | • Conversion of mangrove swamps into agricultural estates having an area exceeding 50 hectares. |
| 3.      | Development of commercial industrial and housing estates | • Development of commercial or housing estates of an area exceeding 10 hectares |
| 7.      | Any other activities which may damage or have an adverse impact on quality of environment or natural resources of the State including the following:  
         |                                              | vi) Any development activity intended to be carried out within a water catchments area declared under section 8 of the Water Ordinance, 1994.  
         |                                              | vii. Construction of roads through settlements, peat swamp, beachfront, mangrove or hill slopes of 20 degrees or more.  
         |                                              | x. The clearing of vegetation on any land or the braking up any land for any purpose of an area exceeding 50 hectares |

Sarawak Forest Ordinance

This Ordinance provides for the protection and management of the forests of Sarawak including regulations on the extraction of forest produce. Until 1997, the Forest Department Sarawak (FDS) was the sole agency having the mandate to undertake planning, management and conservation the forestry resources of the State. The corporatization process of the Department started with the enactment of the Sarawak Forestry Corporation Ordinance in 1997, and the Sarawak Forestry Corporation (SFC) was subsequently
established. With the formation of the Corporation, the functions of the FDS have been very much reduced to enactment of legislation, formulating and implementation of policies and collection of forest revenues for the Government (timber royalty, licenses, penalties, etc).

Of particular relevance to the resettlement of the forest-based communities, Section 40 of the Forest Ordinance outlines the procedures for establishing a communal forest. At the request of a community, the Minister may constitute any State land, not being a forest reserve, protected forest or other Government reserve, as a communal forest. When the Resident is satisfied that it is the desire of a majority of the members of a community that a communal forest shall be constituted, he shall, with the approval of a Minister, publish a Proclamation which shall specify the limits of the area, declare the proposal to constitute the communal forest and invite counter claims. Once gazetted, the communal forest becomes the responsibility of the community to maintain under the guidance of the Director of Forests.

Similarly, community rights to forest access can be included in the gazette notice for wildlife sanctuaries and national Parks. These provisions are included in the Wildlife Protection Ordinance 1998 and the National Parks and Nature Reserves Ordinance. Wildlife and National Parks are currently the responsibility of their respective units in the Sarawak Forest Corporation.

Local Authority Ordinance, 1996

This Ordinance was enacted to consolidate the laws covering local authorities (or local councils) in Sarawak. Under section 91 of the ordinance, the local authority has the power to make by-laws The enforcing agencies are the various Local Authorities, whose duties include, among others, collecting of rates, building assessments, maintenance and management of public places, food safety control and sewage and drainage works. Under section 3(1) of the Ordinance, the Yang-di Pertua Negeri may declare any area in the State to be a local authority area.

Relevant to resettlement, under the ordinance, a local authority is empowered to carry out the following tasks:

- Establish, maintain and carry out such sanitary services for the removal and destruction of or all refuse, waste and effluent;
- Safeguard and promote the public health and to take all necessary and reasonably practicable measures:
  - Preventing the occurrence of infectious, communicable or preventable disease;
  - Maintain the local authority area in a clean and sanitary condition; and
- Prevent the occurrence of, or for remedying or causing to be remedied, any nuisance or condition likely to be injurious or dangerous to health.

The collection and disposal of municipal solid waste is also the responsibility of the local councils.

The Local Authority Ordinance (LAO) empowers the local authorities to implement sewerage and drainage works within their jurisdiction areas as well as for areas outside their jurisdiction. The local authorities are also empowered to maintain the sewers and drains after construction is completed. Subject to the approval of the Director of Lands and Surveys the local authority can issue licenses for the use of other places within the local authority for the burial or cremation of corpses.

The powers to appoint headmen of communities are also provided by the LAO. The Yang di-Pertua Negeri may appoint for any local authority area any number of Headmen holding the rank of Tuai Rumah, Tua Kampung, Penghulu, Pemanca or Temenggong. The duties of the headmen are to assist the local authority in the provision of services and amenities for the benefit of the inhabitants of the local authority area.

Water Ordinance 1994

This Ordinance was created to regulate the conservation, protection, development and management of water resources of the State (including the supply and distribution of water). The Sarawak Water Resources Council (SWRC) is the agency responsible for policy and making recommendations to the State Government on issues relating to water resources in the State. The State Water Authority (SWA) was has the general control and supervision of all water supply authorities and the management of all water resources and water catchments areas in the State.

The functions and responsibilities of the Water Resource Council include identifying the available water resources in the State and promoting the conservation, management and proper use of these water resources. The council is also responsible for promotion of integration of water resource management and land-use planning in the State. The Natural Resources and Environment Board provides guidelines for catchment management and resource protection.

The State Public Works Department (JKR) plays an important role in the administration and management of water resources and water supply throughout the state. The Director of JKR is a member of the SWRC.
The Sarawak Biodiversity Council was established under the Sarawak Biodiversity Centre Ordinance 1997. The council is responsible to initiate programs for the conservation, utilization protection and sustainable development of biodiversity in the state.

The centre’s role is to initiate research and development of the state’s biological resources, particularly those that have been used by indigenous communities. The centre is also to facilitate the documentation of the fast disappearing traditional knowledge of the indigenous communities on the utilization of biological resources.

3.3 Land Ownership and Land Use Rights

In Sarawak land matters are a State concern governed by the Land Code 1958 (Cap 81) and monitored and enforced by the Department of Land and Survey. The Land Code defines native customary land as, "Land in which native customary rights, whether communal or otherwise, have lawfully been created prior to the 1st day of January, 1958." The definition further includes, 'Interior Area Land upon which native customary rights have been lawfully created pursuant to permits under section 10.' The Interpretation Ordinance defines customary law as a custom or body of customs to which the law of Sarawak gives effect and native system of personal law as customary law applying to any community, being a community forming the whole or part of any native race specified in the Schedule.

Under the Land Code native customary rights land may be created in accordance with native customary law of the community or communities concerned by any of the measures outlined, prior to 1st January 1958. The measures to create native customary rights are:

- The felling of virgin jungle and the occupation of the land thereby cleared;
- The planting of fruit trees;
- The occupation or cultivation of the land;
- The use of land for a burial ground or shrine;
- The use of land of any class of rights of way.

Native Customary Rights land is generally untitled or undocumented but the land can be passed from one generation to the next in accordance with the local custom and adat of the respective community. Each community has a recognized territory belonging to the community and including all the individual farms, gardens, gathering areas and cemeteries.

To protect native customary rights (Section 15), State land shall not be alienated until all customary rights therein have been surrendered or extinguished or provisions have been made for compensating the persons affected and entitled to such rights. The superintendent of Land and Survey has the power to grant land to any native if he is satisfied that the native has occupied or used the un-alienated land in accordance with rights acquired by customary tenure amounting to ownership of the land for residential or agricultural purposes.

This land can be granted in perpetuity.

3.3.1 Community and Individual Rights over Farmland

Rights of Penan communities

The Penan communities have been resident in the Murum area for generations and while the territories are recognized, there is no single well-defined boundary line between each community unless two or more communities are along the same river (Brosius, 1987). The Penan claim that they have established livelihoods in the Danum/Pleiran area as gatherers, hunters and now farmers for generations. Traditionally, their territorial domain is large with hunting and gathering trips as far as 10 km from the longhouse as normal to them. Taken literally (i.e. a 10 km radius), the area of influence by a longhouse could be as large as 30,000 hectares, especially in areas of flat terrain.

As with any of the indigenous groups, land is valued not only as property but as the source of livelihood and as a resource future generations can depend on. When an individual or a community harvests or works on a piece of land, they are creating a personal identity with the soil. Land is something to be carefully managed, guarded and defended. In the instance of the Penan, land represents the assurance of their survival and is testimony and witness to their existence.

The Penan affected by the Murum HEP have been semi-settled and living in longhouses since the late 1960’s. This has been documented in studies and reports from the time as well as through District Officer Reports. As the Murum Penan communities did not establish permanent settlements until relatively late (compared with other groups), they had not established Native Customary Land by clearing for agriculture. As they shifted to a more settled life, parts of their territory (tana’ pengurip) were cleared and cultivated as farms and gardens. The territory beyond the farms and gardens was left as forest and provided an important resource area for wild sago, wild fruits, forest products gathering of rattan and hunting.
The Sarawak Land Code stipulates that no native customary rights claim may be made to any plot of land unless it was cleared before January 1, 1958. Thus, according to the Land Code, the Penan community rights of territory need to be established (and recognized) through other means than clearing for agriculture. The measures to create native customary rights are:

- The felling of virgin jungle and the occupation of the land thereby cleared;
- The planting of fruit trees;
- The occupation or cultivation of the land;
- The use of land for a burial ground or shrine;
- The use of land of any class of rights of way.

**Individual rights of Penan households**

In general, families belonging to a particular longhouse community have the rights to the resources (including establishing a farm) within the longhouse territory. Thus, an individual can only acquire rights to the resources of the longhouse territory (e.g. to farm the land) if he is a member of the longhouse community. However, the right to possess the land is based on the principle that the plot belongs to the person who is the first to cultivate that plot: the 'first feller' principle. This also applies to resources such as fruit and sago trees, except instead of felling, the tree is marked to indicate usufruct 'ownership'.

**Land rights of Kenyah Badeng of Long Malim**

As with the Penan communities, the Kenyah Badeng community of Long Malim has a territory within which the community has the rights of gathering and use over the resources. The farming area occupied by the community is similar in size to that of the Penan. However, although the other communities in the area recognize their territory, there is no well-defined boundary to demarcate the territory.

For the Kenyah Badeng of Long Malim, the individual rights to land are similar to those of the neighbouring Penan communities in that the families belonging to the longhouse community have the rights to the resources (including establishing a farm) within the longhouse territory.

**3.3.2 Inheritance of Farmland**

Both married male and female members of the household have equal rights to inherit the farmland of the parental household. The children that detach from the original household to establish their own households can also inherit the household’s farmland as long as they remain members of the longhouse community. Any newly formed household is allowed to farm and create their own rights within the longhouse territory. A person who marries and follows the spouse to live in another longhouse will forfeit the rights to possess the land of the parental household. They are allowed to cultivate the plot (of his nuclear household) during any season, or collect any fruits during the fruiting season, but the longhouse community might no longer view them as a resident of their longhouse and they might not have any stake or say in the matters of the original longhouse.

**3.3.3 Longhouse Forest Hunting and Gathering Zone**

The Penan longhouse territory includes the area for hunting and gathering beyond the farming zone where the longhouse community collect jungle forest products, fishing and hunt. This area extends well beyond the community farms in all directions but is generally within the rivers catchment area. The Penan have a detailed and extensive resource and geographic knowledge of their areas including the rivers and landforms, former camps and settlements, fruit orchards, burial sites and places of cultural significance.

Rights to use of forest resources follow distinct community territories are recognized between the communities. In general, only families belonging to that particular community can exploit the resources within the community territory. These rights over certain forest resources (e.g. wild durian trees) have been established through a 'first-finder /marker' principle. In other words, the resource belongs to the first person finding and marking the resource in the forest.

Forest resources are not allocated to any individual in the manner of land for farming. Rather, forest is a community asset with all members having a responsibility to maintain the resources in order to share the benefits and to ensure the resources are preserved for the future. While there is no inheritance or ownership of general forest resources, specific resources (such as durian or sago trees) can be inherited by the descendants of the original claimant.

**Penan Customary Land Rights**

The Penan also have a distinct concept of territory with each community group foraging (hunting and harvesting or gathering food) in their own area referred to as their tana' pengurip. Unlike other native communities, the Penans did not cut, clear or fell the forest to establish customary rights to the land, instead using their territory for hunting and gathering wild sago, fruits and other jungle produce such as rattan. Each community territory has defined boundaries (sahang tana') following streams, watersheds,
mountain ridges and established landmarks known and recognized by other tribes or communities. Ancestral burial sites, old camp sites, knowledge of local history as well as knowledge of land features and resources within the landscape are used as evidence of rights to place of origin (oko’ bu’un) or ancestral land (tana’ pohoo) (Langub, 2007).

The Penan customary rights to land are through establishing rights to resources such as sago groves or a rattan stands, which they use on a rotational basis; taking what they need now and leaving the plant to grow so they can come back at a later time. These resources are marked and the community recognizes the ownership inferred by the marking. Ownership in this manner is established by being the first to find the resources and harvest them and to mark the resources for future use. The person who first finds the resources will establish the rights to the resources and these rights are inheritable and can be passed to the next generation. The Penan term for this is molong and this can be done individually or by the community. These local laws are outlined in the Draft Adet Penan (Penan Customary Laws) dated 5th September 1995.

3.4 Communal Forests

Under Section 6(1) of the Land Code the Minister may declare any area of State land to be a Native Communal Reserve for the use of any community having a native system of personal law and may declare that the customary law of such community in relation to the acquisition, transfer and transmission of rights and privileges in or over land, and in any building or other structure erected therein. Use of a Native Communal Reserve shall be regulated according to the customary law of the respective community for whose use it was declared.

Management of the State’s forest is under the jurisdiction of the State government. The Forests Ordinance, 1958 (Chapter 126) provides the legislation for the protection and management of the forests of Sarawak, and regulations for taking of forest produce. The Forest Department Sarawak is the government agency with the mandate to manage the State’s forests.

The Sarawak Forestry Corporation has been appointed to act as agent of the government to enforce provisions under the Forest Ordinance 1958, the National Parks and Nature Reserves Ordinance 1998 and the Wild Life Protection Ordinance 1990.

3.5 International Commitments

3.5.1 UNDRIP

As a member of the United Nations Malaysia is obliged to abide by any declarations made by the UN. One of the key commitments is the United Nation Declaration on the Rights of Indigenous People (UNDRIP), created to protect the rights and privileges of indigenous people.

Article 26 of UNDRIP outlines that indigenous peoples have the right to the land, territories and resources which they have traditionally owned, occupied or otherwise used or acquired and that the States shall give legal recognition and protection to these lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the indigenous peoples concerned. Though not a binding document on any country, the UNDRIP is nevertheless an important document and can be used a guideline for administrators in preparing and implementing any projects that would affect indigenous people.

3.5.2 International Finance Corporation

The IFC’s Environment and Social Development Department is responsible for ensuring that projects financed by its members conform to World Bank Group environmental and social safeguard policies. For resettlement, the IFC Handbook on Preparing a Resettlement Action Plan (RAP) and The World Bank Operational Manual on Involuntary Resettlement provides the necessary guidelines. The IFC’s policy on involuntary resettlement applies to any project that may result in the loss of assets, the impairment of livelihood, or the physical relocation of an individual, household, or community. The basic principles of the IFC for addressing involuntary resettlement are that involuntary resettlement should be avoided; but in the event that it is unavoidable, all people affected should be compensated fully and fairly for lost assets. Furthermore, involuntary resettlement must be conceived as an opportunity for improving the livelihoods of the affected people and undertaken accordingly. Most importantly, all people should be consulted and involved in resettlement planning to ensure that the mitigation of adverse effects as well as the benefits of resettlement is appropriate and sustainable.

3.5.3 The World Bank Operational Manual on Involuntary Resettlement

The World Bank directive for dealing with involuntary resettlement describes the policy and procedures as
well as the conditions that project borrowers must adhere to when dealing with involuntary resettlement. Planning and financing resettlement components or projects are an integral part of preparation for projects that cause involuntary displacement.

The Policy Objectives of the Bank's resettlement policy is to ensure that the population displaced by a project receives benefits from it and in planning; the borrower takes into account the following policy considerations:

a. Involuntary resettlement should be avoided or minimized where feasible, exploring all viable alternative project designs.

b. Where displacement is unavoidable, resettlement plans should be developed. Displaced persons should be (i) compensated for their losses at full replacement cost prior to the actual move; (ii) assisted with the move and supported during the transition period in the resettlement site; and (iii) assisted in their efforts to improve their former living standards, income earning capacity, and production levels, or at least to restore them.

c. Community participation in planning and implementing resettlement should be encouraged.

d. Adverse impacts on host communities are to be minimized.

e. Land, housing, infrastructure, and other compensation should be provided to the adversely affected population, indigenous groups, ethnic minorities, and pastoralists who may have usufruct or customary rights to the land or other resources taken for the project. The absence of legal title to land by such groups should not be a bar to compensation.

3.6 SEB Policy Framework for Resettlement

Sarawak Energy Berhad is a State-owned holding company principally involved in the power and electricity sector. A subsidiary, Syarikat SESCO Berhad, is responsible for distribution and supply of electricity throughout the State of Sarawak. While the SEB has no policy for resettlement and relies on the State government to handle all matters pertaining to resettlement, they do have a policy for assisting communities as part of their Corporate Social Responsibility.

As part of CSR, SEB has a long-standing tradition of contributing to society and believes in striking a balance between profitability and giving back to communities. They have embarked on a number of social projects to bring more benefits to the people including the implementation of rural electrification scheme projects. As well, SEB has provided support to the cultural rites in the vicinity of the Murum dam through contributions to the 'Pelah Daleh' ceremony for the Penan communities. In the future, SEB has pledged to continue to strive to give back to the communities and to assist communities in the remote parts of the state to bring them into the mainstream of development.

3.7 Sarawak Resettlement Administration

Malaysia and Sarawak does not have any specific legislation or agency responsible for resettlement. However, the Sarawak State Government has stated the desire that the Murum Hydroelectric Power Project be implemented following international standards. Therefore, in the absence of existing local guidelines, the International Finance Corporation (IFC) Handbook on Preparing a Resettlement Action Plan (RAP) of the (IFC) provide the guidance for the resettlement exercise.

Annex 4 The communities

4.1 Description of the communities

A household register was compiled during the community consultation and household census conducted as part of the Contemporary Ethnography. During the survey all the communities in the Murum area were included in the census and all were included in the household register.

Of the nine communities included in the census, there are six Penan communities and one Kenyah Badeng community situated in the area that will be inundated by the Murum HEP. These communities are located throughout the area and their respective core territories mirror the area that will be flooded by the Murum reservoir. The detailed descriptions of these communities have been outlined in the Contemporary Ethnography and the scope of the impacts from the Murum HEP has been outlined in the Social Impact Assessment document. The following sections provide a summary of the key socioeconomic characteristics. The communities directly affected by the Murum HEP and the population of each is outlined in Table 4.

Table 4 Communities and Population Directly Affected by the Murum HEP.

<table>
<thead>
<tr>
<th>Community</th>
<th>Households</th>
<th>Population</th>
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4.1.1 Location, Communication and Access

The communities are generally isolated from each other with travelling distances between settlements varying between 30 minutes to 5 hours (Figure 4). Since the late 1980’s timber concessions have been granted over most of this area and the majority of the longhouses (with the exception of Long Tangau and Long Luar) now have logging road access. The logging roads provide a link to the Sungai Asap settlement as well as to the main service centre of Bintulu. The most distant longhouse community is Long Malim located on the upper reaches of Danum River. Across the river from Long Malim is a Kenyah Badeng village. The other Penan community along the Danum River is Long Wat, located downriver from Long Malim and across from the proposed dam site.

Figure 4 Major settlements and distances in the Murum catchment.

The isolation of the communities has meant that none currently have access to essential services such as schools clinics, grocery shops or other service institutions. The closest centre providing government, education and health services is the Sungai Asap Settlement area established for communities affected by the Bakun HEP. Sungai Asap has a government sub-district office, a government clinic, schools, and market and retail business shops. Access to Asap for the Murum Penan requires a full day trip from their longhouses hitching lifts from vehicles owned by the many timber camps located along the route.

En route to Sungai Asap is a sub-centre called Aloi Junction situated the junction of the Bintulu - Asap - Bakun road, and the main feeder road leading to the various timber camps in the Seping, Murum, and Danum and Plieran valleys. A general store provides household goods, a coffee shop and an occasional market servicing mainly the workers of the timber camps as well as the Penan.

4.1.2 Transition Towards a Settled Life

Commencing approximately 40 years ago, all the Murum Penan communities began a shift from hunting-and-gathering to a more settled, agriculture-based way of life. The traditional communities were always relatively large (up to 200 persons) with a central base camp that could be inhabited for up to a year at a time. As their agriculture crops developed, the central base camps gradually became permanent settlements. Their strong institution of leadership enabled them to organize for agricultural tasks when agriculture became part of their everyday life (Brosius 1987, 1992).

All the communities have had houses built for them by the logging companies. All these are a longhouse style of structure with modifications according to community and individual preferences. The communities have reported that this style of living is desirable as it retains the important communal values of sharing and cooperation among members and households. They have expressed a desire to have basic modern infrastructure facilities and access to other nearby social facilities (e.g. schools, clinics, roads, water and electricity).

4.1.3 Tenure and Territorial rights

The Penan have a strong sense of territory with every community having a specific area that it “belongs” to and over which it has recognized rights of ownership and use (Brosius 1987:34). The basis for historical claims to land is based on ancestry and genealogy and is intimately related to a group’s migration history (Langub, 2004). For the Penan, land constitutes a sort of collective cultural investment in the future and thus is an important subject for all negotiations with concessionaires and authorities.
Traditionally, Penan communities moved freely through each other's territory and made use of the resources (permission was tacitly or explicitly given), provided the resources were plentiful and historical relations between the groups were friendly. Thus, shared boundaries between communities (e.g. between Long Wat and Long Malim along the Danum) are more notional than actual. The question of boundaries has arisen only because there is a need to divide the land for compensation claims.

With non-Penan groups, the rules of use are somewhat more formal. Outsiders should not move into a place and extract resources without permission. A common pattern is for longhouse men from other areas to hunt in Penan territory: but they may not do so without asking for permission and giving a share to the locals. While the operation of logging in the Penan area is seemingly at odds with these practices, the logging companies have gained 'permission' through the payment of allowances to the community headmen.

As for the Kenyah Badeng community at Long Malim, they have long been living a settled life in which agriculture activities are centred on planting of hill paddy using the bush fallow system. Whatever lands they have cleared for hill paddy planting belong to the households under their territorial rights.

### 4.2 Summary of Socio-Economic Characteristics

The economy of the households of the eight Murum communities is based on farming and forest-based activities of hunting, fishing and gathering of forest products. Farming is concentrated entirely on food production and there is no cash cropping. The household economy is essentially a subsistence economy as there is very little excess for sale. The rate of engagement in wage-earning employment is low. The average wage per family is a meagre RM102 per month. There are other sources of cash income to the community with the main one being allowances received from the timber companies. However, the distribution of the allowances is not regular and as such the allowance per family is very low (estimated average is about RM54 per month).

The low cash income in the communities places all the families well below the Sarawak official rural poverty line index of RM830 per month. However, the Penan have been able to survive by relying on the forest for food and material needs, albeit very much on a hand-to-mouth basis. By monetising the replacement values of forest and farm products and adding together the cash incomes, the total average family 'income' per month is estimated to be just over RM900 (this estimation is based on a generous allocation of the farm production and yields from the forest). The actual situation for the majority of the Penan communities in the eight settlements and the minority Kenyah Badeng of Long Malim is that their household economy hinges mainly on two production bases, namely: farming and forest-based gathering activities : the former characterised by low farm productivity and the latter by rapidly declining forest resources. The economy is practically cash-poor and faced with the rising needs for cash to meet the daily household necessities, a considerable proportion of which is food items, the majority of the households can be considered to be living in poverty.

### 4.2.1 Sources of Income and Occupations

The average cash incomes (from wages and allowances) vary between RM 49 and RM272 per household per month. Assuming that the wages and allowances are distributed throughout the communities, the average wage per family is a meager RM102 per month and the allowance per family is RM54, giving a household income of RM156 per month. There are four principal sources of cash income:

5. Income from non-wage earning activities including; hunting, gathering jungle products, farming, gardening, handicraft making, and other traditional activities;

6. Income from wage-earning activities including employment in the following sectors:
   i. Timber industry: employs less than 3% of total number of Penan.
   ii. Oil palm plantations: very few employed (only two persons were identified).
   iii. Other employment: a few individuals (1% of the population).

7. Allowances received from timber companies. The amount is relatively small but has become an important source of cash income to the cash-poor economy of the Penan.

8. Assistance from government - important but assistance has not been regular.

In the past, the Penan have been able to survive by relying on the forest for much of their food and material needs. This situation, however, is precarious as the forest resources are under increasing pressure from other land uses and the Penan must spend increasing amounts of time to gather forest products. This time is also time lost from potential wage earning. The communities are thus in transition from an economy based on forest products to one requiring cash income from other sources including employment and increased agriculture to bring their household income above the poverty line. However, this transition will take time and for the Penan the forest remains as a ‘safety net’ for survival.

### 4.2.2 The Social Aspects of Money and Food

For the Penan the forest remains as a ‘safety net’ for agriculture and the other land uses and the Penan must spend increasing amounts of time to gather forest products. Time lost from potential wage earning. The Penan have been able to survive by relying on the forest for much of their food and material needs. This situation, however, is precarious as the forest resources are under increasing pressure from other land uses and the Penan must spend increasing amounts of time to gather forest products. This time is also time lost from potential wage earning. The communities are thus in transition from an economy based on forest products to one requiring cash income from other sources including employment and increased agriculture to bring their household income above the poverty line. However, this transition will take time and for the Penan the forest remains as a ‘safety net’ for survival.
In addition to the forest, the Penan also rely on their community network to support each other through lean times. Maintaining community ties is important to the Penan as this provides a form of 'social insurance' to survive periods when they need food, are not able to get much from hunting and fishing, and have no money. They survive by seeking assistance from among their relatives and neighbours and in turn providing assistance when asked and when they are able to provide. These informal transactions and assistance occur between households in the community on a regular and on-going basis. This aspect of Penan life is core to their survival and has been highlighted as an important factor as to why they wish to remain in their respective communities.

4.2.3 Household Expenditures

As the landscape around them changes through logging and conversion of land to oil palm plantation, the Penan have had to adapt in order to survive. The diminishing forest resources mean that they now increasingly rely on items bought or bartered for to meet their daily needs. Food items have become the main household expenditure with rice incurring the highest expenditure. Sago flour is the food item that incurs the next highest expenditure with sugar as the third highest for all longhouses. The fourth highest expenditure is on soap. Other expenditures include transport and fuel for generators or outboard motors.

4.2.4 Agriculture

Farm Land

The communities generally farm within a strip 0.5 to 1.0 km wide of suitable farmland on the narrow levees on either side along the main rivers near where their houses are located. The majority of the farms are located within 5 km of the longhouse with only 25% located beyond this distance up to a maximum of 10 km away. Hill rice farms are normally established within walking distance from the longhouses or along the riverbanks where the farm can be reached using small boats. Farms located a longer distance (from the longhouse) require that families construct farm huts where they stay during the farming season. Based on these factors, the area of the farming zone for a longhouse community could be as large as 4,000 hectares (20 km x 2 km). The actual size of the longhouse territory is larger as it includes the areas used for hunting and gathering that are generally located outside of the farming zone. The Land and Survey Department have not surveyed the land to verify the usage and as such this land has never been given Native Customary Rights (NCR) status according to the Sarawak Land Code.

The MDHEP reservoir will inundate virtually all the community agriculture land.

Farm Sizes

Hill rice farm sizes generally range from 0.4 to 0.8 hectare with the average 0.6 hectare. The majority of the Penan farmers establish one plot per season with only a few farmers establishing 2 plots per season. The Penan seldom farm the same plots on consecutive years, instead practicing a 10 to 15 year rotation period, which gives sufficient time for natural regeneration of soil fertility. Given this rotation period, the household would require 6-8 hectares of land under hill rice cultivation. In addition, many of the households have planted fruit trees and other food crops. Thus, it is estimated that a household requires at least 14 hectares of land for food production and cash crop planting, with 6-8 hectares of land for swidden cultivation of hill rice and the rest for the other crops.

Crops Cultivated

The main crop cultivated by all communities is hill rice and this now constitutes as the staple food with tapioca planted as a secondary staple for use in times of rice shortage. Other subsistence crops such as sweet potatoes and yam are also cultivated around the farm and on the lower slopes. Most farmers also grow a variety of vegetables including maize, pumpkin, cucumber, eggplant and others depending on the types of vegetable seeds available to them. Semi-perennial crops comprise mainly banana, pineapples and sugarcane.

The practice of mixed cropping, especially of food crops, is a deliberate food security strategy to ensure some supply of food after rice stocks have been exhausted. Some households do not intercrop vegetables with the hill rice because they still rely on the collection of jungle produce. Tobacco is planted mainly for self-consumption as the majority of Penan (men and women, young and old) smoke heavily.

Most of the households also have a variety of fruit trees with the most common being local fruit such as durian, rambutan, pulasan, terap, jack fruit and mata kucing. Some of these trees (e.g. durian) are inherited while other more common fruits such as rambutan are planted. The planting of cash crops is almost non-existent among the Penan communities. In spite of a lack of experience in cash crops, all communities have expressed their desire and willingness to plant cash crops.

Farm Productivity

The Penan farm yields depend very much upon the forces of nature, as there is minimal field maintenance and no fertilizer inputs. The rice grain yield in a good season averages about 10 bags (or 500 kg) from a 0.6 ha field or approximately 240 - 260 kg of rice. This level of harvest can only provide a household of 4 persons
with rice for 4 to 5 months. During a bad season there is often nothing to harvest. When the rice supply is exhausted, households survive on tapioca, sweet potatoes and yam, banana and other food crops planted in the field and in their home gardens as well as on sago flour from wild sago palm in the forest. These other food crops might be able to sustain the community for another 3 to 4 months after which food must be purchased or collected from the forest. Thus, cash income is increasingly becoming important for basic survival.

By contrast, the average rice production per year for the Kenyah Badeng of Long Malim is estimated to be about four (4) metric tons (some households with larger workforce can attain the level of six (6) metric tons per year). Many households do not need to plant paddy every year since they have surplus rice from the previous season. Many Kenyah households often contribute rice to those Malim Penan households facing food shortage.

Livestock

The Penan have had very little experience with livestock and generally do not keep any livestock such as pigs. Some households do keep free-range chickens but this has not been successful and stock is often wiped out by disease. As such, livestock rearing is an entirely new undertaking and will take time to acquire the knowledge and skills in animal husbandry practices. Moreover, the viability of livestock rearing such as poultry and pig depends on the availability of surplus food (rice bran, tapioca, sweet potato, sago, etc). As most households do not have sufficient food to even meet their needs, this has to be overcome before livestock rearing can be promoted.

Issues Related to Farm Productivity

While the Penan have taken up farming as a means of livelihood, they have not completely discarded their traditional dependence on the surrounding forest. Farming is primarily for providing rice as a staple food, but this endeavour currently only meets four months of the yearly staple food needs. To survive, the Penan have continued to rely on gathering, fishing and hunting. A central issue for Penan community development is to ensure agriculture production and food security to be able to sustain the community and enhance their quality of life. This will require addressing the constraints to farm productivity:

Labour - increasing labour inputs to the farming endeavour to ensure that crops are maintained so that the productivity can increase.

Technical knowledge and skills: improving methods for sowing, weed control, pest and disease control and application of fertilizers.

Farm inputs: ensuring a supply of pesticides, fertilizers and planting materials to enhance productivity

4.2.5 Forest-based Activities

The Penan survival has relied on the integrated management of the surrounding forest resources with agriculture. Gathering, fishing and hunting activities in the forest provide supplementary sources of food and income to the households. The non-timber forest products (NTFPs) include materials for food, construction, fibres, firewood, tools, handicraft, furniture, medicine, wrapping and other household uses. These products not only have important household uses but also are a source of household income. A huge variety of plants are exploited including, ferns, palms, wild fruits and flowers, mushrooms and many others providing important sources of food as well as income for the households. The main source of household protein is still obtained through hunting and fishing. A number of animals are hunted with excess wild meat sold to generate income.

However, as the surrounding environment has been degraded due to logging and plantation development, there has been a decline in fish catch, and game (traditional mainstays of Penan subsistence). Hunting now requires more effort and the yields per effort in terms of time have plummeted sharply. To make up for this deficit, the Penan now need to spend more time planting crops for both subsistence and sale.

4.3 Access to Public Facilities

4.3.1 Education

At present the Murum communities have to depend on the primary and secondary schools at Sungai Asap for their children's education. Travelling between the schools and the settlements depends on timber roads and transport assistance from the logging companies. The total number of persons who have had some form of formal education system and are deemed literate is 164 persons or 9.5% of the total population. The factors contributing to lack of schooling among the Penan are:

- The distance of their homes from school.
- Dependence logging companies for transport
- The cost of the travel between the school and community
- Students not doing well in class and becoming discouraged.
4.3.2 Health Services

The Sarawak Health Department provides health care services to the Murum area through its Health Clinic at Sungai Asap. The mobile Village Health Team (VHT) and the Flying Doctor Services (FDS) visit each of the longhouses at least once a month. Even though the Sungai Asap government clinic provides free service to the communities, the physical access to this clinic for the Penan is a major constraint. There is no public transport available and the only means of transport is by getting lift from whatever vehicle is available (normally the vehicles of the timber company).

The long distance and the lack of transport are major problems preventing sending the children and pregnant women for check-ups at the Sungai Asap Health Clinic. The outreach programme provided by clinic does not provide satisfactory scope and frequency of health services to meet the needs of the local communities. The Murum communities have requested for a government clinic in their area providing basic services such as those provided by Sungai Asap Health Clinic.

4.4 Description of Impacts and Inventory of Losses

The seven Project Affected Communities (PACs) are located in the river valleys of the Danum and Plieran Rivers, Belaga District of Kapit Division. These communities, their longhouses and the surrounding lands will be inundated by the dam project. In total, 353 households with 1,417 people (as of August 2010) comprised of 335 Penan households with 1,304 Penan and 18 Kenyah Badeng households with 113 Kenyah will be affected.

There are two other Penan settlements (Long Jek and Long Peran) situated to the west of the future reservoir along the Seping River. These communities will not be inundated by the MDHEP, but the development of the dam and other associated infrastructure will have an impact on their communities, especially on the surrounding forest on which they depend for their livelihoods. The total population of these two settlements as of March 2010 was 313 in 83 households.

The Penan have traditionally relied on the forest for the majority of their sustenance and economic livelihood and it is only relatively recently (in the last 30 years) that they have adopted more sedentary agriculture. The Kenyah Badeng, on the other hand, are traditional swidden agriculturalists, live in settled communities and are considered to be more economically advanced than the Penan in their agriculture.

The impacts of the MDHEP and the inventory of losses can be categorised into three asset areas: (i) Forest; (ii) Farming; and (iii) Social and cultural.

4.4.1 Forest Area

The communities located in the Murum area depend on the forest resources for a large portion of their food needs as well as for materials used in daily living. Non-timber forest products (NTFPs) have also been a source of income. The main asset items that will be lost due the inundation of the forest area include the following:

(a) Fish

The communities rely on fish as an important protein supplement and this source will be lost in the short term. With the change in habitat characteristics from river to lake, there will be loss of the river specialist species and replacement by those tolerant to lake conditions and slower moving rivers. The inundated area will be deprived of fish stock because the water quality will deteriorate due to rotting of organic matter resulting in build-up of toxic substances including ammonia, hydrogen sulphide and others as well as low levels of dissolved oxygen. Some fish may migrate to other parts of the rivers, but if other parts of the rivers are also subjected to pollution due to other human activities, the fish stock will further decline as their breeding grounds will be destroyed. It will take many years for the new water body (lake) to stabilise and become habitable for fish and other aquatic organisms to the level that these become an important source of fish protein for the Murum communities.

(b) Wild life

The forest resources have been affected by the extensive land use activities with large areas being converted to plantations. The result of this has been loss and fragmentation of habitat and this has had a direct impact on the abundance and availability of wildlife in the area. The inundation of an area of 245 square kilometres, or 24,500 hectares will eliminate a large area of habitat including the flora and fauna relying on this area. The Murum communities have traditionally depended on the wild life (especially wild boar) as an important source of protein. Considering the already declining wildlife population due to environmental degradation and over-hunting, with the loss of habitat there will be a serious problem of shortage of protein for the affected communities.

(c) Flora

The communities utilise a wide variety of plant materials and natural products collected from the forest that
surrounds them. With inundation, the flora that support the lives of the fauna and also provides food and materials for household needs and craft-making will be lost. Economic activities surrounding the reservoir (such as logging and conversion of forest to plantations) will further impact the flora, reducing the variety available to the affected communities.

4.4.2 Farming Area

The main areas suitable for agriculture (comprising the levee and sloping land) lie within a strip about 0.5 to 1.0 km wide on either side of the main rivers such as the Plieran River, the lower Danum River and the upper Danum around Long Malim. The Penan also utilise fruit trees and forest products that exist in a large area corresponding to the area surrounding their current settlements. The reservoir created by the Murum HEP will inundate this area. The estimated size of the farmland used by each affected community is indicated in Table 4.

Table 4 Estimated Area of Home Range Farm and Forest Produce Land for PACs.

<table>
<thead>
<tr>
<th>Longhouse communities</th>
<th>Estimated size of home range* (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Malim (upper Danum River)</td>
<td>5,680</td>
</tr>
<tr>
<td>Long Wat (Murum/Danum Rivers)</td>
<td>5,380</td>
</tr>
<tr>
<td>Long Singu; Long Luar; Long Tangan; &amp; Long Menapa (lower Plieran River &amp; tributaries)</td>
<td>14,320</td>
</tr>
</tbody>
</table>

*A proportion of the land may not fit into the definition of the Native Customary Rights (NCR) land as stipulated in the Sarawak Land Code.

4.4.3 Social and Cultural Areas

Longhouse assets

The assets that belong to the longhouse community include the physical structures comprising longhouse building and the buildings and annexed storage; church/chapel, community hall, roads and foot-paths, bridges, recreational facilities (e.g. football field), water supply, toilets, waste disposal facilities, etc. These assets will be lost due to inundation of the longhouses and surrounding area.

Burial grounds and cultural heritage sites

There are numerous sites with local cultural significance located throughout the Penan home range area. Some of these are burial sites marked with burial poles (kelireng), others have marked graves while still others are known grave sites with fewer visible markers but are remembered and are part of the Penan oral cultural record. Other cultural sites include the sacred rocks, pools and areas along the river that are part of the Penan oral tradition. In addition to these major features there are also areas that are remembered for significant events and are important markers of the history of the affected communities. These areas will be submerged due to the HEP and the physical link of the oral history to the land will be lost. These cultural features determine the cultural identity of the community and serve as a record of their history. As such, these features are also part of the culture and history of Sarawak.

The survey and assessment carried out in the eight communities revealed numerous sites with cultural significance. These include burial sites with burial poles (kelireng), graves and cultural sites with sacred rocks that mark the individual history of settlements of the communities. These sites will be inundated. The details of the burial grounds and cultural sites are summarised in Table 4.

Table 4 Cultural Sites Affected by the Murum HEP.

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Burial Sites</th>
<th>Burial Poles (Kelireng)</th>
<th>Cultural Sites</th>
<th>River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Singu</td>
<td>-Lubuk Tudek</td>
<td>564</td>
<td></td>
<td>Plieran</td>
</tr>
</tbody>
</table>
- Lubuk Kerepik

<table>
<thead>
<tr>
<th>Long Luar</th>
<th>Kuala Luar</th>
<th>1,089</th>
<th>Kuala Luar</th>
<th>Plieran</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Tangau</td>
<td>Long Tangau</td>
<td>432</td>
<td>Long Tangau</td>
<td>Plieran</td>
</tr>
<tr>
<td>Long Menapa/Pelutan</td>
<td>-Ujan Nguyuyit</td>
<td>779</td>
<td>-Sg. Menawan</td>
<td>10 sacred rock sites</td>
</tr>
<tr>
<td>Long Jaik</td>
<td>-Bok Magai</td>
<td>480</td>
<td></td>
<td>Seping</td>
</tr>
<tr>
<td>Long Peran</td>
<td>-Lubuk Ja</td>
<td>1,690</td>
<td></td>
<td>Seping</td>
</tr>
<tr>
<td>Long Peran</td>
<td>-Long Peran</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Peran</td>
<td>-Lubuk Tebah,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Peran</td>
<td>-Long Bela</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Peran</td>
<td>-Lubuk Udeng</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Wat</td>
<td>-Murum &amp; its tributaries</td>
<td>989</td>
<td>Batu Tungun</td>
<td>Murum</td>
</tr>
<tr>
<td>Long Malim (Penan)</td>
<td>-Sungai Penganen,</td>
<td>856</td>
<td></td>
<td>Danum</td>
</tr>
<tr>
<td>Long Malim (Kenya Badeng)</td>
<td>-Kubur Badeng</td>
<td>3,072</td>
<td></td>
<td>Danum</td>
</tr>
<tr>
<td>Other Sites</td>
<td></td>
<td></td>
<td></td>
<td>Batu Asuk</td>
</tr>
</tbody>
</table>

### 4.5 Vulnerable Households

Moving an entire community to a new area will be a traumatic and difficult process requiring adjustment and adaptation to new surroundings and new means of livelihood. The Penan are particularly dependent on their surrounding and rely on an intimate knowledge of the surrounding to survive. The resettlement areas have been chosen because these are areas that are familiar and the community will be better able to adapt quickly to the new environment. However, there are members within each community who may find difficulty in adjusting and may require additional assistance or guidance.

#### 4.5.1 Households below the poverty level index

With the exception of one or two families in each community, all households fall into this group. The average income of all the affected households is below the rural poverty line index of RM 830.00 per household per month. Thus, as a group the Penan are generally vulnerable to worsening poverty because they have had limited access to assets for self-insurance and rely to a large degree on their community social network.

The Penan have overcome their limited assets through a strong social network, which provides them the equivalent of social insurance. Transition from their forest product based economy moves them from an asset-rich (in terms of natural resources) situation to a asset-poor situation. While they are currently below the poverty line, they have been able to survive by exploiting their surroundings and relying on their social network.

The resettlement of these communities will further expose them to risk as they are moved away from the...
resources that once supported them. Furthermore, the transition to cash-crop agriculture will require a concerted effort in terms of guidance and support on the part of the relevant government departments. Some households will be able to adapt better than others and will have sufficient labour resources to invest in the new economic endeavour. The communities will need to stay intact and maintain their social network to be able to bring along assist all members of the community and especially those having difficulty adjusting to the new economy.

4.5.2 Household heads without identity cards

There are a number of household heads who do not have national identity cards (IC). The lack of identity cards has been cited as one of the reasons many of the Penan (who seek employment) cannot get higher paid employment. In addition, without these cards they cannot be registered for some of the national and state poverty eradication programs and their inclusion in these programmes may be delayed. The timely extension of livelihood assistance programmes for the entire community is critical to ensure the establishment of the agriculture and cash-based economy. Furthermore, the registration of ownership for land titles and the disbursing of compensation will require the recipients to have identity cards.

The total number of heads of household without National Registration Identity Cards is 285.

4.5.3 Elderly household heads

The elderly in the communities are potentially vulnerable if the development programmes initiated draw people away from the community. The Penan social support network relies on other people sharing to make up for what they (the elderly) cannot gather or supply. This vulnerability will increase should people move from the community to live elsewhere and there are fewer able people to support their elderly.

The livelihood restoration programmes are focused mainly on the planting of cash crops (rubber) and gardens to meet the daily nutritional needs. These gardens will require a certain level of effort and household labour inputs. Households headed by older members of the community will be potentially vulnerable if they are unable to supply the required labour. There are 19 households with heads aged 65 years and above and of these 3 are female (Table 4 ). These households will be potentially vulnerable during the implementation of the agriculture crop schemes and will need the support of the rest of the community members. Agriculture extension services will also have to be cognizant of the needs of the elder members of the community and ensure that they are not being omitted from the programmes.

Table 4 Number of Murum Community Household Heads Aged 65 years or greater.

<table>
<thead>
<tr>
<th>65 years old</th>
<th>Male : Female</th>
<th>Married : Single</th>
<th>Average household size (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>16 : 3</td>
<td>18 : 1</td>
<td>3 (2 : 6)</td>
</tr>
</tbody>
</table>

4.5.4 Single heads of household

The resettlement and transition to a new economy based on agriculture will require considerable effort and sharing of responsibilities and work within households. There are a number of households within the communities whose heads are single either because of the death of the partner or due to other circumstances. A number of these households are headed by women. As with the elderly, these households will be potentially vulnerable during the implementation of the agriculture crop schemes due to the labour requirements and will need the support of the rest of the community members. Agriculture extension services will also have to be cognizant of the needs of the members (especially the women-headed households) of the community and ensure that they are not being omitted from the programmes. The total number of single heads of households is 27 comprised of 15 female heads and 12 male (Table 4 ).

Table 4 Number of Single Murum Community Households Heads.

<table>
<thead>
<tr>
<th>Number of single heads of household</th>
<th>Female</th>
<th>Male</th>
<th>Average household size (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>15</td>
<td>12</td>
<td>2.6 (1 -5)</td>
</tr>
</tbody>
</table>

4.5.5 Teen Aged Girls

Teenaged girls and young women are a dynamic part of Penan society but are potentially vulnerable if they are not involved in the overall development and education process. Education levels are generally very low and many teenage girls as young as 13 years old are married and producing children (Table 4 ). By the time they are 16 just over half the girls are married. (By comparison, the youngest man to be married was 16 years old with most only getting married after 18 years of age.) Uneducated and with a family, the young
teenaged girls will have to rely on home-based activities to provide any income for their family.

Table 4 Numbers of Teenage Girls per Age Class and Community (denotes married).

<table>
<thead>
<tr>
<th>Age Class / Community</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luar</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Malim</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Pelutan</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Peran</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Singu</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Tangau</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Wat</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Jek</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>31</td>
<td>23</td>
<td>24</td>
<td>10</td>
<td>24</td>
<td>12</td>
</tr>
</tbody>
</table>

Given the opportunity the young girls have the potential to be a catalyst for social change within Penan society. Building on the development of Penan craft products, the young women can be trained to run the marketing and distribution aspects of this new enterprise. The young unmarried women tend to be mobile and willing to move around the communities and could be instrumental in gathering and sourcing products. However, given the fact there are relatively many of them, they will need to be given courses in literacy and numeracy to bring them up to a minimum level as a starting point. While some will be able to participate in the craft marketing, others will have to be given opportunities to be involved in the new development programmes (education, agriculture and health). Some of the young women are already involved with the Health Clinics programmes (as midwives and liaison officers) and these can be used to teach the younger ones. This group should also be considered as one of the primary targets for the agriculture development programmes (home gardens, livestock and the rubber cash crop farming).

1. Impacts on Vulnerable Groups

According to the World Bank, a vulnerable group is a population that has some specific characteristics that place it at higher risk of falling into poverty than others living in areas targeted by a project. Poverty in this case is defined as reflecting an unacceptable level of wellbeing while vulnerability is the exposure to uninsured risk leading to a socially unacceptable level of well-being.

The Millennium Development Goals (MDG) provides guidance for what is socially unacceptable welfare or well-being outcomes. These can be summarized as follows:

- Falling below the poverty line;
- Being malnourished;
- Not completing primary education;
- Experiencing unequal gender outcomes;
- High child or maternal mortality; and
- High exposure to disease (including malaria).

With the resettlement of communities affected by the Murum HEP there is a risk that members of the community could be more vulnerable (i.e. more prone to poverty) than others. Physical displacement and loss of land and productive assets could result in impacts to vulnerable people, including:

- Loss of accommodation, particularly for those who do not own property or land, and/or those that have
poor existing housing quality and are therefore eligible for limited compensation for existing assets;

- Loss of source of livelihood, particularly for those who may be unable to fully access off-farm employment opportunities, such as the elderly, women headed households and the ill or disabled; and

- Weakening or loss of support networks, particularly where vulnerable households move away from some of their formal or informal support channels.

Vulnerable people can also feel a general sense of loss of well-being as a result of resettlement and measures to prevent impacts are important to enhance self-sufficiency and to the extent practical improve the livelihoods of already impoverished or disadvantaged groups.

A summary of impacts and the numbers vulnerable to these is outlined in

Table 4 Vulnerable Groups Affected by the Murum HEP project.

<table>
<thead>
<tr>
<th>Community</th>
<th>Households below the Rural Poverty Index</th>
<th>Household heads without IC</th>
<th>Elderly Household Heads (&gt; 65 years)</th>
<th>Single heads of household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Wat</td>
<td>89</td>
<td>56</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Long Malim</td>
<td>54</td>
<td>25</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Long Luar</td>
<td>52</td>
<td>46</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Long Pelutan</td>
<td>42</td>
<td>35</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Long Singu</td>
<td>31</td>
<td>52</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Long Tangau</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Jek</td>
<td>49</td>
<td>27</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Long Peran</td>
<td>34</td>
<td>22</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

2. Programmes to assist vulnerable groups

The role of the Community Development Coordinator and the community based extension assistants will be very important to monitor progress and ensure that the vulnerable members of the community are participating in the livelihood restoration programmes. The details of these roles and their responsibilities are outlined in Section Annex 10.

Penan men generally do not like to be far away from their families and will take their families with them when they move to work in timber camps. To counter a situation where all the able-bodied men and women are housed off-site (working or studying, as is the current situation in Long Wat and Asap) it is necessary to ensure that development programmes are community-based. By encouraging this type of development, the communities will continue to be vibrant and the existing social network will be strengthened. This will, in part, ensure that there are people from the community to assist and look after the vulnerable segments (especially the elderly) in the community. By having development programmes in the vicinity of the longhouse it will be possible for women to combine work with their domestic obligations. Programmes that involve women need to be cognizant that they have to juggle childcare with work.

The programmes that address these concerns and outline the goals for restoration of livelihoods are provided in detail in Section Annex 7.

Annex 5 ENTITLEMENTS AND BENEFIT-SHARING

5.1 Compensation and Resettlement

The Government of Sarawak objective for the resettlement of the Murum Penan is to use this as an opportunity to improve their lives, through implementation of poverty eradication programmes and provision of civil services such as schools, clinics and agriculture extension. The contemporary ethnography and the
social impact assessment provide the baseline information for what the Penan will lose as a result of the Murum HEP. The RAP provides the details of how the communities are to be resettled and how their losses are to be compensated. The improvement of the lives of the Penan through the resettlement exercise meets the GoS objectives to bring development to the people and the SEB corporate objectives to ensure that people benefit from the development of hydropower in the state.

The Sarawak Energy Berhad is the project proponent and is responsible for the implementation of the HEP project. The GoS is responsible for guiding the resettlement process and ensuring that the needs of the affected communities are met.

Specific compensation and livelihood restoration entitlements for project impacts are presented in the Entitlement Matrix (Table 5).

### 5.2 Eligibility

All project affected peoples or communities who have land, assets or seek a livelihood from any land affected by the Murum HEP at the time the Contemporary Ethnography Study was undertaken, are considered as eligible for compensation and rehabilitation.

The affected communities entitled to benefits and compensation due to losses resulting from the Murum HEP have been included in the household register prepared when the communities were surveyed during the Contemporary Ethnography study.

There are seven communities that will be required to relocate as a result of the Murum HEP including six Penan communities located along the Danum and Plieran Rivers (Long Wat, Long Malim, Long Tangau, Long Singu, Long Luar and Long Menapa) and one Kenyah Badeng community located near Long Malim.

### 5.3 PAH Entitlements

The general entitlements of people whose land, assets or livelihoods are affected by the Murum HEP are detailed in the Entitlement Matrix Table 5. Both male and female PAHs are equally consulted and recognized, and negotiations and compensation payments and livelihood restoration program entitlements are made with both male and female heads of each household.

The entitlement matrix also indicates how the measures and compensation address the resettlement demands submitted by the communities to the government through the MPDC. The details of these demands have been outlined in the Social Impact Assessment and are included as Annex One.

<table>
<thead>
<tr>
<th>TYPE OF LOSS</th>
<th>ENTITLED Households</th>
<th>COMPENSATION AND REHABILITATION MEASURES</th>
<th>Meets Community Demands For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Loss of Land</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1.1 Permanent loss of community residential land (for: houses, community structures and amenities, infrastructure, access) | Documented residents of the community (validated by village authorities) | Project Affected communities (PACs) will be entitled to compensation by the provision of replacement land, as below:  
  i) PACs will be provided with replacement land granted by the State (at no cost to the PAC) of at least equal size and amenity to the lost land in a location acceptable to PAC (or equivalent in total to 1 ha per affected household). The land will be cleared and leveled at the expense of the Project Proponent.  
  ii) Such replacement land will be provided with access (either by road or river) of at least equal amenity to the current access. The PAC will also be provided with access to electricity and water at the replacement land.  
  iii) Such replacement land will be provided with area for housing - Land titles | - Area for housing  
- Land titles |
iv) Land will have room for expansion of the community.

v) Any registration and land transfer fees will be paid by the Project Proponent on behalf of the PACs.

<table>
<thead>
<tr>
<th>1.2 Permanent loss of agricultural land</th>
<th>Documented owners with or without certificate at the time of Baseline Study.</th>
<th>The community to be granted from the State, 14 ha per Project Affected Household (PAHs) of suitable agriculture land (Class IV or better) of equivalent production potential to what is lost.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>i) Of the 14 ha, 3 ha per to be allocated for home gardens and farm orchards for fruit production, 4 ha for cash crops (rubber) and 7 ha for subsistence crops.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Technical assistance (TA) to be provided for the planting and establishment of cash crops.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Agriculture extension to be provided for gardens to give PAHs the opportunity to reach production potential.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv) Replacement land will be distributed to individual households according to community adat.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>v) Assistance in community land allocation and planning to be provided free of charge (through Murum Community Development Foundation / MPDC support)</td>
</tr>
</tbody>
</table>

Any taxes, registration and land transfer fees will be paid by the Project Proponent on behalf of the PAHs. The Project Proponent will assist in clearing and preparing agricultural land and provision of suitable planting materials as required.

<table>
<thead>
<tr>
<th>1.3 Permanent loss of access to forest land (for gathering/hunting: rattan, sago, forest products, game, fishing etc.)</th>
<th>Documented residents according to the Baseline Study.</th>
<th>PACs who lose their access to forest land are entitled to access to areas of replacement forest of equivalent quality and area.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>i) Protected from conversion to non-forest land</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• For the Danum River communities the equivalent forest area is an area of 9,270 ha; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• For the Plieran communities the equivalent forest area is an area of 10,230 ha.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-The replacement forest is:</td>
</tr>
</tbody>
</table>

-Agriculture land
-Land titles
uses (i.e. plantation) and has security of tenure.

   ii) Gazetted as communal forest in favour of PACs and PACs have gazetted rights of access to the forest; or,

   iii) In the Danum-Linau National Park (subject to the final gazettal of the National Park) to which PACs have gazetted access and gathering rights.

Assistance to reduce reliance on forest-based livelihood to be provided through promotion of employment opportunities and agriculture. The initiatives include:

- Vocational training programmes,
- Assistance with job identification and procurement of employment and
- Agriculture extension.

### 2. Loss of House and other Structures

#### 2.1 Permanent loss of houses and other structures (rice stores, storage sheds, toilets, kitchens, etc.)

<table>
<thead>
<tr>
<th>Documented owners/occupiers identified during Baseline Study (households or lamin identified in the Household Register)</th>
<th>PAHs, (i.e. those who lose their housing structures) are entitled to the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>i) Replacement house at no cost to PAH.</td>
</tr>
<tr>
<td></td>
<td>ii) The provision of a new house and other structures for each registered household. The house materials to be either:</td>
</tr>
<tr>
<td></td>
<td>a) the minimum standard of wood walls and floors, tin roof and cement house footings; or</td>
</tr>
<tr>
<td></td>
<td>b) to the standard of materials as used in the current/lost houses, depending on the choice of the PAH;</td>
</tr>
<tr>
<td></td>
<td>iii) Houses to be provided with:</td>
</tr>
<tr>
<td></td>
<td>a) Toilet and bathroom and proper sanitation management</td>
</tr>
<tr>
<td></td>
<td>b) Electricity supply and electricity fittings</td>
</tr>
<tr>
<td></td>
<td>c) Domestic water supply</td>
</tr>
<tr>
<td></td>
<td>iv) PAH to have first refusal for employment constructing replacement houses;</td>
</tr>
<tr>
<td></td>
<td>v) House design to be approved by the village and the PAH with minimum housing area not less than 20m² of construction area per person;</td>
</tr>
<tr>
<td></td>
<td>vi) Sheds and other outbuildings to be provided;</td>
</tr>
</tbody>
</table>
3. Loss of crops, trees and other productive assets

| 3.1 Loss of fruit trees | Owner or person with customary right to harvest (in cases where impact is only on crop production and not related to the land) | The schedule of rates to be verified by the Department of Agriculture and Land and Survey. Compensation for fruit trees will be based on the type, age and productivity and the cost of production and growing of trees. | - Compensation for losses  
- Agreements signed prior to relocation |

Fruit trees compensated according to an established project schedule of rates by:

i) Cash compensation; and

ii) Production assistance to reestablish fruit trees (seedlings, fertilizer, extension assistance) to full production level

The schedule of rates to cover:

- The lost value of harvest until the period to which a tree of equivalent production can be established

- Replanting costs (seedling + labour + inputs (fertilizer, etc.))

| 3.2 Garden and field crops | Owner of the crops | - Compensation for any crop un-harvested at the time of relocation, or project impact, based on gross harvest income. Standing crops will be compensated at full replacement cost regardless of maturity of crops.  
- Additional compensation for one year’s agricultural production or more until replacement land is productive.  
- Two months notice (before the Projects impacts is expected to be felt) will be given to PAHs to harvest crops.  
- Assistance to re-establish garden plots at the resettlement site (including: tools, planting material, fertilizer and extension services) | - As above |

4. Loss of common resources
| 4.1 Loss of NTFP gathering areas | Residents with customary rights to the common property resource | The replacement NTFP areas will be identified and allocated as part of the communal forest allocated for community use. In case where alternative NTFP gathering area cannot be identified, then, depending on the preference of the village, the Project Proponent will either: (a) provide funds and assistance for the domestication of NTFPs; or (b) provide a support payments to the village development fund equivalent to 7 years of the value of impacted (lost) NTFPs until cash crops are productive. | Access to forest -On-going livelihood support |
|----------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 4.2 Loss of fish, wildlife and other sources of forest protein | Until cash crops have become productive, either: (a) Cash compensation, based on the value of the annual loss of catch x 5 years; or (b) Provision of replacement fish or protein production systems; or (c) Assistance in securing alternative livelihood enterprises producing net income equivalent to that lost. | - Compensation requests -On-going support |
| 5. Allowances and other transitional measures | 5.1 Materials transport allowance | All relocating PAHs -Relocation / hardship allowance -Transport of possessions to the new resettlement site -In kind assistance with vehicles and labourers. -Preference to be given to local transportation and labourers, particularly PAHs. | Compensation request |
| 5.2 Transitional Food Assistance | All relocating PAHs affected by loss of productive (food generating) assets who are identified in the Implementation Plan, and whose livelihood restoration program has not yet been fully implemented or successful | -Rice and protein supplements will be provided as required to Project Affected Persons to the extent that their rice and protein production and intake has been impacted by the Project and such rice and protein production and intake not yet restored. This will be assessed by the MPDC / Murum Resettlement Committees, and confirmed by the Community Development Coordinators and District Office, and reviewed from time to time by monitors. -The rice and protein supplement shall be provided by the Project Proponent on a quarterly basis, or more regularly if required, according to | Compensation request -On-going support |
needs. (Regular internal monitoring will be essential and prompt delivery of food security as soon as it is needed. A special fund will be available to enable quick response).

| 5.3 Transitional Income Assistance | All relocating PAHs affected by loss of productive (food generating) assets who are identified in the Implementation Plan, and whose livelihood restoration program has not yet been fully implemented or successful | -Cash will be provided as required to Project Affected Persons to the extent that their income has been impacted by the Project and such income not yet restored. This will be assessed by the MPDC / Murum Resettlement Committees, and confirmed by the District Office, and reviewed from time to time by monitors. The income assistance shall be provided by the Project Proponent on a quarterly basis, or more regularly, if required.

- Assistance to secure employment and to assist with training as required |

| 6. Loss of Community Cultural Features | All relocating PAHs | As the sacred site of Batu Tungun is within the Project area, the PACs are entitled to the provisions as listed below:

(a) An annual ceremony called Miring Tahunan Batu Tungun to be organized and funded by SEB as the Project developer.

(b) The District Officer shall be the head of the organizing committee for the Miring ceremony.

(c) The project developer shall provide transport (river or land transport) for the communities to attend the ceremony. The number of representatives from each community shall be determined in a meeting between the Project Developer and the MPDC with the District Officer as the Chairman. |

| 6.2 Loss of burial grounds and graves | All relocating PAHs recorded in the Culture and Archeological Inventory | 1. Each claimant will be compensated for relocation of grave sites according to Museum Department agreed rates |

- Rituals and annual ceremonies |

| 7. Community structures and infrastructure | All project affected households | 1. Each community to be provided with community structures including a community meeting hall, place of worship, recreational ground and agriculture extension office. |

- Provision of service centre |

2. Each community to be provided with a structure for use as a pre-school or kindergarten |
halls, recreational facilities, places of worship)

3. The main service centre at Murum to have the following facilities:
   - Primary school
   - Secondary school
   - Type 6 Clinic
   - Agriculture Extension Office
   - Sub-district office
   - Meeting hall
   - Market area and shops

4. The mini-service centre at the Metalun Resettlement is to have the following facilities:
   - Primary school
   - Agriculture extension sub-office
   - Sub-clinic office for visiting medical officers
   - Market area

5.4 Compensation

Land and Survey and the Museum Department have gathered the information regarding the details for what is to be compensated. The quantum of compensation for the PAH losses is according to the agency rates and subject to negotiation with the PAH. The details for the items to be compensated are outlined in Table 5.

<table>
<thead>
<tr>
<th>Item to be compensated</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops and fruit trees</td>
<td>Details of the crops according to Land and Survey</td>
</tr>
<tr>
<td></td>
<td>Amount of compensation to be determined and negotiated with the community according to Land and Survey findings and rates</td>
</tr>
<tr>
<td>Native Customary Rights Land</td>
<td>Size of land according to Land and Survey findings</td>
</tr>
<tr>
<td></td>
<td>Replaced with new land at the resettlement area</td>
</tr>
<tr>
<td>Existing houses</td>
<td>To be replaced with new houses (one per household)</td>
</tr>
<tr>
<td></td>
<td>Existing housing = 196 units</td>
</tr>
<tr>
<td>Boundary Survey</td>
<td>For the entire resettlement land area</td>
</tr>
</tbody>
</table>
Sub-division survey

- For individual farm plots (353 X 4 ha)

Graves & ritual costs

- Identified in the claimant list of the Cultural Heritage and Archeology Study (Excluding Long Wat and Long Malim (Kenyah))
- Rates for compensation and grave relocation to follow museum rates.

Annual Ritual

- To be negotiated between the SEB, the District Office and the communities

5.5 Resettlement Support

The resettled communities should receive some form of support to assist them with establishing their new homes and their new occupations. They will have no means of income during the first year and will also not have been able to establish their gardens to provide food. Into the second year, it is likely that there will still be difficulty in finding sufficient protein as much time will still be spent in establishing the new resettlement. There needs to be contingency planning for the possibility that many of the households will require some form of support in the form of transition assistance or allowance up until the time when the cash crops (i.e. the rubber trees) begin to produce (Year 6). This situation will require continual monitoring to determine the household levels of income and whether some households are lagging behind or not adjusting and therefore require additional assistance. The role of the Community Development Coordinator in monitoring and identifying special needs is crucial. The types of support recommended and the rationale are outlined in Table 5. The quantum and duration of the support will have to be negotiated between the communities and the government and be based on the needs and the levels of adjustment to the new livelihood schemes. Securing employment for the communities is a priority and will help to offset the need for long-term support.

Table 5 Summary of support requirements for resettled households.

<table>
<thead>
<tr>
<th>Year</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| 1    | - Moving Grant (353 families X RM x 4,000 per family)  
- Transport Cost (353 families X 4 vehicles)  
- RM 850 per month per household  
  - House moving; No means of production in new resettlement areas, limited access to sources of protein (especially fish) |
| 2    | RM 850 per month per household  
  - Garden crops started; limited production; limited access to sources of protein, some employment |
| 3    | RM 500 per month per household  
  - Rice, garden & some field crops producing; staple crops and vegetables; limited access to sources of protein, some employment |
| 4    | RM 500 per month per household  
  - Staple and garden crops producing as in Year 3; fruit and cash crops growing; some protein sources producing |
| 5    | Food support as required. This situation to be monitored by the resettlement unit.  
  - As year 4 for crops; some protein production |
| 6    | Food support as required. This situation to be monitored by the resettlement unit. |
5.6 Benefit-sharing

While the primary beneficiaries of dams usually live far away from the dam sites, the project-affected communities generally sustain most of the negative impacts of dams. One way to support development and assist local communities that are negatively affected by the dam is to share a portion of the benefits generated by dam operation with these communities. In this way, benefit sharing mechanisms can be considered as an important means for complementing cash compensation.

Benefit sharing can be used as a means for the project developer to establish a partnership with local communities, through the establishment of a long-term regional economic development fund. Various benefit sharing mechanisms have been developed and applied to dam projects, both in developed and developing countries. These are based on the premise that dam projects may generate a significant economic rent that can be shared with project-affected populations. The following types of benefit sharing mechanisms may be considered: a) revenue sharing; b) developments funds; c) equity sharing; d) taxes paid to regional or local authorities; and e) preferential electricity rates or water-related fees.

Examples of Benefit Sharing

In many countries, the benefit sharing framework is defined in a legislation taking the form of transfers of part of the revenues to municipalities or regional entities. This has been case for the Colombian, Brazilian and Nepalese legislations.

In Columbia, legislation stipulates the 3% of hydropower revenue is to be transferred annually to the watershed management agency to fund watershed management in cooperation with the communities located in the basin communities (income raising). Under the Brazil Constitution (1988) the government taxes water used to generate electricity. 45% of the income from the water-use tax goes to municipalities losing land; 45% to the provincial authorities; and 10% to finance power sector regulatory functions.

In Nepal, 1% of project revenue paid into development budget of affected villages via the regulatory agency (representing up to 80% of budget).

While the legislations do not directly address the project-affected people, the people may benefit from the infrastructures and services put in place with the funds received from the projects. This is a positive step towards equitable sharing of benefits from hydropower development, provided sound mechanisms are implemented to manage the funds received.

In the case of China, the legislation also comprises a revenue transfer mechanism that takes the form of 'Later Stage Support Funds' to resolve outstanding problems resulting from dam-induced population displacement. These funds are financed from power sales and managed by the Provincial Resettlement Bureaus for restoration of the livelihood of the resettled people.

An example of revenue transfer is the Paix des Braves Agreement between the Government of Québec and the Grand Council of the Crees in Canada. This agreement recognizes the rights of the Indigenous communities to have a say in the management of natural resources on their ancestral lands.

Establishing partnership agreements between developers and local communities is recognized as one of the most innovative forms of benefit sharing. For the developer, a partnership provides an assurance of the local acceptance of the project, thereby reducing the level of risk and the cost of lengthy feasibility studies and authorization processes. For the local communities, it is recognition of their entitlement to a share of the economic rent generated by the dam as well as of their rights to have a say in the management of local water resources.

Annex 6 RESETTLEMENT SITE SELECTION AND RELOCATION PLAN

6.1 Identification of Resettlement Site

The Murum resettlement will involve seven communities being relocated to two separate selected sites. These sites are the Tegulang River site along the Tegulang River and the Metalun River site along the Plieran River.

The communities of Long Wat, Long Malim and the Long Malim Kenyah Badeng have agreed to be resettled at Tegulang River, while Long Singu, Long Menapa, Long Luar and Long Tangau have requested to be
resettled at Metalun River, Plieran.

6.1.1 Site Selection Process

During the feasibility study for the Murum HEP in 1993, the affected communities were first approached and asked their views on resettlement. All the communities expressed the views that they would not want to be moved together into one area. The communities living along the Danum River preferred to be moved near to each other but not together with the communities living along the Plieran River. The communities along the Plieran River expressed a similar sentiment in that they could be moved near to each other but preferred not to be together with the Danum communities. The existing community locations are illustrated in Figure 6.

During the preparation of the Contemporary Ethnography, the communities were consulted on their choices for resettlement. The Danum communities indicated that should it be necessary, they would be willing to move to an area along the Tegulang River and the Plieran communities indicated that they would be willing to move to an area further up the Plieran near the Metalun River. (The first choice of the Plieran communities was an area located near the Metanik River. This site was not feasible as the area would be inundated.) The community of Long Malim indicated that they preferred to stay in the upper Danum River above the reservoir. The proposed sites for community relocation are illustrated in Figure 6.

Figure 6 Site plan of the Murum HEP area and the proposed resettlement sites.

Figure 6 Proposed community migration plan.
Site visits to each of the proposed resettlement areas with members of the community verified the locations and the suitability of the land. The agriculture capability of the areas was checked against the Sarawak soil and agriculture capability maps and found to provide the best available agriculture land, comparable to the areas they currently occupy.

In terms of size, the areas provide sufficient arable land to support the communities and provide for transition into cash crop agriculture for at least the next 10 to 15 years. Access to areas of forest from the Tegulang site will be somewhat of a constraint as the site is located outside of the Murum catchment. Access to forest on the upper Danum River will be possible using boats (1.5 : 2 hours) along the reservoir and the Danum River.

The communities of the Metalun site will have access to areas of forest further up the Plieran River as well as to forest to the north of the Plieran River towards the Usun Apau massif.

### 6.1.2 Community Preferences

The sites have been selected based on the requests of and the dialogues with the affected communities. During these discussions, the participants expressed their desire that the communities be separate entities in the resettlement areas to retain their original and distinct structure. A core concern was that the essence and spirit of the community that includes sharing, social support and networking be retained in the resettlement area. Members of the community provided a number of concept designs and drawings and these were incorporated into the design for the resettlement communities. While their current housing structure is based on a longhouse design, the Penan indicated that they would prefer connected houses grouped by family and relatives rather than a longhouse. This preference reflects the structure of their traditional settlements. The house design drawings are included in Annex Two. The requested housing structure may be varied in the number of units or families but should be able to be modified and extended for families when needed.

The communities have also stated that they wish to have proper sanitary and waste management facilities in the resettlement area as well as power and a source of water.

### 6.1.3 Confirmation of Sites

The community's requests for the resettlement sites were presented to the state government in August of 2010. The government agreed in principle to the requests but asked that the community of Long Malim move down river to the Tegulang site to be closer to schools and other civic services. The community agreed on the condition that they would continue to have access to their land located above the reservoir.

The proposed resettlement areas and areas of forest for community access were presented to the government for approval in February 2011 (Figure 6). The communities confirmed their acceptance of the resettlement locations during a meeting in July, 2011 and subject to final survey and detailed site planning. During a series of visits to the sites the communities indicated their preferred locations for the communities (Figure 6 to Figure 6: Marking the Long Luar site with Long Luar’s representative).

![Figure 6 Marking the site for the Long Wat community.](image-url)
Figure 6: Marking the site for Long Malim-Penan community

Figure 6: Marking the site with Long Malim-Kenyah community

Figure 6: Marking the site for the Long Menapa community.
6.1.4 Community Facilities

Each community shall be provided with an area that will serve as a recreation area for sports and community events. The size of this area shall be large enough to accommodate a football pitch. This facility is to be located in an area adjacent or central to the main housing.
In addition to the housing, each community shall be provided with a multi-purpose community hall that can also serve as a meeting place, a place of worship, kindergarten, pre-school, and a training centre for community extension projects. The size of the community hall shall be sufficient to accommodate the number of families resident in the community and be located to provide easy access by all members of the community. The typical design of the community facilities drawings are included in Annex Two.

### 6.1.5 Community and Agriculture Land Allocation

The allocation of land for community purposes (longhouse, community buildings, road access, dump sites, etc.) is 1 ha per household. The total allocation of agriculture land is 14 ha per household, providing a total community land area equivalent to 15 ha per household.

The 1 ha per household community land will be taken up in road reserves, community buildings, dumpsites, football fields, place of worship, etc. Each household allocated an apartment or ‘bilek’ in the longhouse will be allocated land for a home garden plot (0.5 ha) and for farm gardens (2.5 ha). A land area of 4 ha is to be allocated for cash crop (rubber) and the remaining 7 ha will be for subsistence cropping of staple foods such as hill rice, which requires rotation farming on a 10 year cycle. The land in the immediate vicinity of the community will be allocated for household use as garden plots to plant vegetables and fruit trees and to raise livestock. The allocation of land for each household is outlined in Table 6.

Land to be surveyed during Phase 1 includes:

- Community land (for the longhouse, the infrastructure, the community buildings and other community needs);
- Land for the home gardens; and
- Land for the farm gardens.

#### Table 6 Household community and agriculture land allocation.

<table>
<thead>
<tr>
<th>Type of land</th>
<th>Size of land (ha / household)</th>
<th>Location of land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home gardens (for vegetable plots and livestock)</td>
<td>0.5</td>
<td>Adjacent to or within 0.5 km of the longhouse</td>
</tr>
<tr>
<td>Farm gardens (fruit orchards and other crops)</td>
<td>2.5</td>
<td>Within 1 km* of the longhouse</td>
</tr>
<tr>
<td>Rubber mini-estate (Oil Palm Plantation)</td>
<td>4</td>
<td>Within 2 km* of the longhouse</td>
</tr>
<tr>
<td>Other farmland (rice and other staples)</td>
<td>7</td>
<td>Within 3 km* of the longhouse</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>14.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

*This distance is to serve as a guideline only and it is understood that depending on the location of the longhouse and the orientation of the land lot, this distance may not be achievable*

The summary of the land allocation for each of the community is tabulated in Table 6.

#### Table 6 Summary of community land allocation.

<table>
<thead>
<tr>
<th>Resettlement Site</th>
<th>Size (ha)</th>
<th>Longhouse and land requirement</th>
<th>Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Name</td>
<td>Size (ha)</td>
<td>No.</td>
</tr>
<tr>
<td>Tegulang</td>
<td>5,710</td>
<td>3 Long Malim (Kenyah Badeng)</td>
<td>270 18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Long Malim (Penan)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Long Wat (Penan)</td>
</tr>
<tr>
<td>Community</td>
<td>Area</td>
<td>Population</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Metalun</td>
<td>4,420</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Long Menapa</td>
<td>630</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Long Luar</td>
<td>780</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Long Tangau</td>
<td>465</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Long Singu</td>
<td>1005</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10,130</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

### 6.1.5.1 Tegulang Resettlement Area

The Tegulang site occupies an area of 5,710 ha along the Tegulang River, extending northwards towards the future reservoir. Three communities are to be resettled in this area with the community sites located along the Tegulang valley. The new service centre will be located adjacent to the reservoir and the Murum HEP dam site with road access to the resettlement sites. While the valley area provides land for agriculture and community development, much of the outlying area is mountainous (Figure 6).

### 6.1.5.2 Metalun Resettlement Area

The Metalun area is 4,420 ha in size and located along the Plieran River above and below the junction with the Metalun River. The Plieran River runs along the entire northern boundary of the resettlement area, with tributaries (including the Metalun River) running intermittently across the whole site. The terrain at the resettlement site is generally undulating. A mini-service centre to service the four communities will provide a primary school, agriculture extension and clinic offices is proposed for the Metalun area (Figure 6).

### 6.1.6 Service Centres

The new service centre will be located adjacent to the reservoir and the Murum HEP dam site and have direct road access to the Tegulang Resettlement Area. Access to the centre from the communities located at the Metalun site will be by boat across the reservoir. The Service Centre will be the centre for Murum Administration and the commercial hub for the area. The facilities will include:

- A K-9 category school where students can attend up to Form 3 before transferring to Sungai Asap to continue their normal school or entering vocational school (the primary school classes will be located at the Tegulang site to cater to the communities there).
- A Type 6 Health Clinic to serve the communities and the Murum HEP including a dispensary
- A commercial area with shops
- Government administration buildings to house the Sub-District Office
- Agriculture Office and Extension Centre
- Market area
- Storage area
- Guest houses and accommodation for government officials
- Housing for service centre personnel

As the Metalun resettlement site will be located some distance from the Murum Service Centre, it will require a number of facilities to support the four communities. A mini service centre will be built and will include the following:

- School (Primary 1 to 6)
- Government sub-clinic for mobile clinic visits
- Agriculture extension sub-station
- Offices for visiting Government Administrative staff
- Accommodation for visiting officials

### 6.1.6.1 Schools
The Malaysian government is committed to providing every child up to the age of eighteen with free education. The Ministry of Education Malaysia, through the Department of Education Sarawak is the agency responsible for building facilities and providing teachers and supporting staff to run the school. The populations of these two resettlement areas are sufficiently large to warrant the establishment of two primary schools (one for each resettlement area). At present there are no school facilities for the communities along the Murum River. To address this need, the following facilities are required:

a. **Primary Schools:**

There shall be facilities for two full primary schools; one in each of the Tegulang and Metalun resettlement areas. Construction of these facilities should start as soon as the land has been allocated. The land size allocated for each of these schools should not be less than eight hectares (20 acres) to cater for future expansion and to provide for recreational facilities. Importantly, the area should provide an atmosphere of natural environment for the younger population who will be going through the modern education system. Normal primary (and secondary) schooling are for those who are of school age.

b. **Secondary School**

A secondary school shall also be provided, to be fully operational within six years after the primary schools commence operation. However, the construction of the secondary school should start in as soon as possible. This secondary school is to be located at the Murum service centre near Tegulang. To accommodate the facilities required for the secondary school, 10 hectares (25 acres) should be allocated.

In line with the requirements of the Ministry of Education, each of the schools will include the following facilities:

- An administration block.
- Inter-connected academic building housing classrooms for the primary and secondary school.
- Facilities for laboratories, domestic science, woodwork shop and a library.
- A multi-purpose hall large enough for sports.
- A kitchen building for the secondary and a canteen for the primary school.
- Separate boarding facilities for boys and girls are required in the secondary school.
- Games courts, playing fields and a school green and assembly ground.
- Space and structures for teacher’s quarters and guardhouse.

c. **Vocational School**

A Vocational School should be established as part of the Agriculture Extension Station to serve as training centre. An area of twelve hectares (thirty acres) shall be allocated for the agriculture extension station and the vocational school and construction should start as soon as land is allocated. The vocational school should be ready when the two primary schools are ready in 2011. This is to enable all the young Penan, from 15 to 30 years, who are now past elementary school age, to be trained for vocations for ‘modern skills’ and acquire basic literacy. Persons in this age category require training in order to be able to cope with the new economic environment. The vocational school should be adjacent to and associated with the secondary school within the Murum Service Centre area. The emphasis for the training centre will be on providing training for learning a variety of skills including: agriculture, building, brick laying, carpentry, metal work, and electrical works. The school should also cover subjects such as home science, nutrition and cookery.

The vocational school focus should be on skills training. The classroom component for training centre courses should be not more than three hours per day, Monday to Friday. Saturday should be devoted to practical work in any one of the major subject areas.

6.1.6.2 Health Facilities

Based on the number of communities and the population, a Type 6 Clinic located at the main service centre in Murum is required. This clinic will require a land area of 5 to 6 acres and the following facilities, staff and equipments:

- 1 unit - Clinic block
- 12 units - Residential quarters for staff
- 1 unit - Rest House for visiting patients (Rumah Temuai)
- 2 unit of Vehicles - 1 unit of ambulance for referral of patients & 1 unit 4WD for other official duty
- 1 unit - Outboard Engine (25-30 HP)
- 1 unit - Boat (with life jackets)

The following staff are required for a Type 6 clinic:

- Assistant Medical Officer (AMO) Grade U32 1
- Assistant Medical Officer (AMO) Grade U29 2
- Jururawat Masyarakat (JM) Grade U19 2
- Pembantu Perawatan Kesihatan (PPK) Grade U3 2
- Pemandu Kenderaan Bermotor (PKB) Grade R3 2
- Pekerja Rendah Awam (PRA) Grade R3 2
- Pembantu Kesihatan Awam (PKA) Grade U17 1

To provide medical services and outreach to the Metalun communities located at a distance from the clinic, a mobile health service is required. This would be river-based and visits by the health team should operate on a fixed schedule to the upriver communities. The mobile unit would require the following staff and facilities:

- Assistant Medical Officer (AMO) Grade U29 1
- Jururawat Masyarakat (JM) Grade U19 1
- Pemandu Kenderaan Bermotor (PKB) Grade R3 1
- Pekerja Rendah Awam (PRA) Grade R3 1
- Pembantu Kesihatan Awam (PKA) Grade U17 1
- A sub office / Mini clinic and staff accommodation for overnight stay at various locality.
- Boats and engines

It is recommended that the physical facilities (i.e. the buildings) be constructed as part of the overall resettlement plan and made ready for use by the Sarawak Health Department. The Sarawak Health Department would be responsible for providing staff and annual operating budgets.
6.2 House Design

The design and planning of the houses is based on dialogues with the Penan and also taking into consideration their traditions and preferences for the type house they desire to live in. The communities have indicated that they do not prefer the extended longhouse design similar to other ethnic communities. Rather, they prefer smaller clustered family-based blocks of up to 10 apartment units each. The common verandah or 'Ruai' is an important feature where community interaction can take place as well as serving as an area of gatherings and meeting.

Each individual apartment shall have: 3 bedrooms, a family / dining area, a kitchen at the rear. A front ruai and a rear breezeway are proposed where such activities as weaving, mending of fishing nets could take place. The back breezeway / walkway also provides a cooling area for airflow into the house and to serve as a firebreak. A fireplace shall be planned adjacent to the kitchen (rear of apartment) for firewood cooking and the toilets / bath area should be separated by a drying platform.

The apartment shall be designed to be elevated above the ground to provide a cooling space for the apartment and also to serve as an area for storage, playing or relaxation. To encourage community
interaction, staircases to each apartment block shall be kept at a minimum but at the same time meeting safety requirement.

The recommended apartment size is a minimum $130 \, \text{m}^2$ per household comprising the components outlined in Table 6.

Table 6 Recommended Living Space for Resettlement Housing.

<table>
<thead>
<tr>
<th>Apartment Components</th>
<th>$\text{m}^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 bedrooms @ 15 $\text{m}^2$ each</td>
<td>45</td>
</tr>
<tr>
<td>Living area</td>
<td>20</td>
</tr>
<tr>
<td>Front ruai (minimum 3 m wide)</td>
<td>18</td>
</tr>
<tr>
<td>Rear ruai / walkway (2.5 m wide)</td>
<td>15</td>
</tr>
<tr>
<td>Separate Kitchen and dining area</td>
<td>15</td>
</tr>
<tr>
<td>Utility area / toilet / bath</td>
<td>8</td>
</tr>
<tr>
<td>Wood Fire kitchen</td>
<td>4</td>
</tr>
<tr>
<td>Stairwells / landings</td>
<td>8</td>
</tr>
<tr>
<td>Recommended total area</td>
<td>133</td>
</tr>
</tbody>
</table>

Each apartment or house shall have water and electricity as well as waste management facilities. Raw water harvesting will be incorporated in the design to gather rainwater for washing and toilets.

6.2.1 House construction

The house design should be a hybrid construction of concrete and wood. The structural framing and foundation would be in concrete, while the flooring and walling, except for wet area shall be in timber. Partition walls are to be of brick to provide firebreaks. Houses are to be built to meet local authority standards.

The foundation of the house should be concrete piles based on confirmation of future soil investigation. The reinforced concrete frame for the building walls shall be a conventional structure. Timber shall be used for the rest of the structure infill and floorings. Where possible, all materials shall be of local origin.

The roofing material shall be of metal for easy and efficient installation and shall be insulated against heat. High ceilings have been incorporated into the design to provide efficient cooling for the habitable space.

6.3 Housing Water, Sanitary and Power

The domestic water supply line for the houses is to be tapped from the external distribution piping supplied from the main water supply. Houses to be supplied with internal water reticulation. The internal water piping system shall be ABS material or other material of equivalent quality. Each household unit is proposed to have a minimum 900 litre water storage tank for a full day storage capacity.

A proper sanitary plumbing service shall be provided for each housing unit and adequate treatment shall be provided for the sewage generated.

All houses shall be internally wired to standard specifications to provide for adequate lighting and use of basic home appliances.

6.3.1 Water Supply

The raw water sources shall be from the adjacent hills and shall be gravity fed to the two resettlement sites. A supplementary water supply system will also need to be provided to cater for the immediate needs of the villages during the time when the permanent water supply scheme is being implemented. The temporary water supply option also acts as a backup system to supply the population with water in the event of a main
treatment system failure. Rain harvesting systems can be used to effectively harvest water from the longhouse roof with collection in water tanks for domestic uses. A rain harvesting system comprises of the following basic components:

- The collection area (roof)
- The conveyance system (gutters and pipes)
- The collection system (water tanks)

### 6.3.2 Provision of Sewerage Treatment

A sewerage treatment system is required to handle household sewage or Black Water. Grey Water (discharge from kitchen and washing basins) will be discharged to the perimeter drains.

Individual septic tanks (one per household) are the most suitable to avoid problems or responsibility for operation and maintenance of a community system. The effluent from the septic tanks can be piped to a septic field with land percolation for further treatment of the effluent (soak-away concept).

Direct sewerage discharge to the nearby river is to be avoided. The minimum number of septic tank to be provided to each community is estimated in Table 6.

<table>
<thead>
<tr>
<th>Resettlement Site</th>
<th>Household Number</th>
<th>Number of Septic Tank for Long Houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tegulang Resettlement Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Wat</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Long Malim (Penan)</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>Long Malim (Badeng Kenyah)</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Metalun Resettlement Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Luar</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Long Singu</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

### 6.3.3 Resettlement Site Electrification (Power Supply)

Due to the remoteness of the two resettlement sites a self-generated rural electrification program would be the preferred option. Currently there is no SEB power supply network to the two sites. However, it is likely upon the completion of the Murum HEP Dam, SEB will extend the power supply to the Tegulang area. This scheme of installing diesel powered generator sets in the two sites will serve as an solution to supply power to the community pending for the supply cable lines and Murum HEP facility to be completed especially to Tegulang site.

A centralized diesel powered generator set powerhouse shall be constructed at a strategic location (optimizing the power line distribution and to provide easy accessibility for maintenance and operation purposes) to provide sufficient power to serve the needs of the communities of the two areas. It is proposed that each power generating plant shall comprise of a minimum two generator sets with a full load rating operating on an alternate duty stand-by basis. In the future, should additional load be required, this can be accommodated by the installation of additional generator sets.

### 6.3.4 Solid Waste Management System

An area within the vicinity of the resettlement site is to be designated as a landfill for each community. The landfill site should be designed to serve the population for at least 20 years and meet NREB’s Level 1
Standard: Controlled Tipping requirements. Table 6 indicates the minimum dumpsite area required for each community.

### Table 6 Area Requirements for Level 1 Community Landfill

<table>
<thead>
<tr>
<th>Community</th>
<th>Population (people)</th>
<th>Dumpsite area requirement + 30% additional capacity to allow for population expansion (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tegulang Resettlement Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Wat</td>
<td>347</td>
<td>4133</td>
</tr>
<tr>
<td>Long Malim (Penan)</td>
<td>222</td>
<td>2644</td>
</tr>
<tr>
<td>Long Malim (Badeng Kenyah)</td>
<td>171</td>
<td>2037</td>
</tr>
<tr>
<td>Metalun Resettlement Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Luar</td>
<td>198</td>
<td>2358</td>
</tr>
<tr>
<td>Long Tangau</td>
<td>208</td>
<td>2478</td>
</tr>
<tr>
<td>Long Singu</td>
<td>258</td>
<td>3050</td>
</tr>
<tr>
<td>Long Menapa</td>
<td>166</td>
<td>1858</td>
</tr>
</tbody>
</table>

The basic selection criteria for the landfill site are:

- Sites must be free from potential problem such as landslides, subsidence and flooding;
- The site must be located away from any rivers or water bodies to prevent contamination due to leachate;
- Sites should be 500 m away from the nearest household but accessible by all the households in the village;
- Sites should be located away from any farm land or subsistence farming crops;
- Proper bunds and fencing are required to prevent the intrusion of pests/animals into the dumpsite; and
- A proper drainage system is required to drain surface runoff and to prevent flooding in the dumpsite.

### 6.4 Community Layout

The land size allocated for each community, inclusive of a housing, community buildings, infrastructure, recreation facilities, access and provision of water supplies and sanitation and waste management is 1 ha per household. Layout drawings of each community layout are shown in Annex Two. The communities have requested that they remain separate entities and that the housing units area grouped according to family and relatives rather than following a traditional longhouse design.

### 6.5 Site Accessibility

The main access to the Murum HEP and the respective Penan settlements is via a logging road that connects to KM 108 of the Bakun - Tubau Road. This unpaved logging road branches off through several logging feeder roads before reaching the Murum Hydroelectric Project site with some of the feeder roads providing access to the existing Penan communities settlement. Logging roads also connect the Tegulang and Plieran resettlement sites to the main Bakun - Tubau road and to the Murum Dam site. A number of access roads are being planned and will be constructed by the Public Works Department (Jabatan Kerja Raya (JKR)).

#### 6.5.1 Main Access Road to the Murum Dam Site
This road will have a total length of 61.3 km starting from KM 108 of the Bakun-Tubau Road (near the existing rest area called the Aloi junction Rest Shop). The proposed road extends east-wards, closely following the route of the current logging road for 20 km before branching off from the logging road and continuing in southeast direction for 36 km until it intersects the logging road again. The new road will run parallel to the logging road and after crossing Murum River will run along the southern bank of the river south-eastwards to the vicinity of the dam site (see Figure 6).

6.5.2 Alternative Access Road to the Murum Dam

This alternative road alignment totals a length of about 9 km and is grouped under Section C of the proposed Access Road to Murum HEP, Kapit Division, Sarawak.

This section is part of the overall road development to provide direct alternative access, Section C1, to Murum Dam Crest from the road connecting the Bakun-Tubau Road to the Murum Dam site. The starting point is in the vicinity of the bridge crossing the Murum River.

The overview of the overall road development is illustrated in Figure 6 and the proposed alternative route to the Murum Dam Crest (Section C1) is shown in Figure 6.

These JKR access roads only provide access to the Murum Dam site and not to the proposed resettlement sites at Sungai Tegulang or Sungai Metalun. The proposed access to the resettlement sites is described below.

6.5.3 Access to the Tegulang Resettlement Site

The Tegulang resettlement site is located approximately 15 km by logging road from the main access road to the Murum HEP dam. With the completion of the new Sungai Asap : Murum road, the existing logging road could be upgraded providing access between the Tegulang resettlement area and the new Murum Township. This road links the Tegulang resettlement site to the main road network leading to Sungai Asap and Bintulu. Access between the Tegulang resettlement communities will be served by existing logging roads.

6.5.4 Access to the Metalun Resettlement Site

The Metalun site is accessible using existing logging roads along the upper Plieran River. These roads connect to the main logging access road that connects to the Singu logging camp and the main Bakun : Tubau road. However, once the area is inundated these roads will be cut off and the only means of access to the Metalun site from the Murum Service Centre will be by boat across the reservoir. The boat journey should take between 1.5 : 2 hours. A resettlement access road will be required to connect all the communities in the Metalun site to a central landing area on or upriver of the reservoir. The connection jetties are to be constructed concurrently when the respective service centres of both resettlement areas are being built.

While the resettled communities will be reliant on boats for transport, they will have a measure of independence not possible in their current situation. Boats can and have been built by most members of the community and most people can afford outboard motors. Alternatively, the communities in Metalun can also commute by land using the existing logging tracks to reach the Murum service centre via a north-bound logging track. The logging track route to Murum service centre is of longer distance and more time consuming than travel by boat but offers an alternative commuting means for the communities to reach the main service centre.
Annex 7 LIVELIHOOD RESTORATION

7.1 Background

7.1.1 Pre-resettlement socio-economic situation

The household economies of the eight Murum Penan communities and one Kenyah Badeng of Long Malim are based on farming and forest-based activities (hunting, fishing and gathering of forest products). The farming is primarily traditional hill paddy and other small-scale subsistence food crops; cash crops are absent in the farm system. The household economy is therefore essentially a subsistence economy as there is very little excess for sale. The rate of engagement in wage-earning employment is also low. The average monthly wage per family is estimated at just over RM100 per month. Other sources of cash income for the community include allowances from timber companies, but the amount per family is also very low (RM54 per month) and irregular.

The livelihoods of the affected communities in the Murum catchment area hinge on two production bases; farming and forest-based activities. Farming is characterised by low productivity and the latter by rapid decline in the available forest resources. The household economy is therefore cash-poor, and faced with the rising needs for cash to meet the daily household necessities, a large proportion of which is food items, the majority of the households are considered to be living in poverty. Resettlement places these communities in a precarious situation as their already low productivity will be further complicated by being in new areas with which they are unfamiliar. This is a source of concern as the communities are unsure of what will happen to their livelihoods, and whether the resettlement exercise will leave them worse off than they are now. This concern has been expressed during the interviews in connection with the Contemporary Ethnography Study.

7.1.2 Economic growth and employment opportunities associated with HEP development

The Murum HEP will have a number of economic spin-offs and create new economic opportunities. Participation in these new economic opportunities could enhance the development of cash economy among the affected communities as well as the other nearby communities. The development of the HEP will also bring improved infrastructure and the establishment of a new service centre. This will serve to potentially improve the socio-economic conditions by providing employment opportunities as well as small and medium business opportunities that should be made available for the local communities.

The Murum HEP will stimulate development of ancillary economic projects and services associated within the following areas:
i) Construction industry: will require carpenters, masons, electricians, plumbers and other trade people and labourers to work as employees or as sub-contractors.

ii) Transport industry: with the development of infrastructure and economic activities associated with the HEP, there will be a greater demand for drivers and auto-mechanics. There will also be demand for provision of transport services.

iii) Maintenance industry: maintenance and service for vehicles, machinery and infrastructure are expected to be on the increase in the expansion of economic activities due to the HEP.

iv) Trading: trading businesses (wholesale and retail trade) are expected to expand due to the influx of outside workers and people involved in the HEP and associated economic activities.

v) Markets and market gardens: The improvement in infrastructure and facilities as well as increase in population due to the HEP will enhance the output delivery system as well as demand for farm produce; all these will create better incentives for the farmers in the Murum communities to produce crops and other traditional and cultural products (e.g. handicrafts, tools, etc) for sale.

vi) Service industry (restaurants, coffee shops): there will be greater opportunities for employment in the catering business as employees or as operators.

vii) Aquaculture industry: the water body created by the HEP dam will have the potential for freshwater fish aquaculture when the water conditions have stabilised (7 to 8 years after the impoundment). There will be opportunities for the local communities to undertake commercial aquaculture projects (cage culture).

viii) New government facilities and services: There will be new jobs created with the establishment of new institutions such as schools, new government offices at the services centres and their bases at the community level. To ensure the people of the affected communities benefit from the HEP, the employment of staff for these new jobs should be from the local communities.

7.2 Principles of Livelihood Restoration Plan for Resettlement

7.2.1 Objectives

The objectives of livelihood restoration plan for resettlement are:

- To eradicate poverty among the affected communities.
- To uplift the standard and quality of life of the affected communities.
- To develop the capacity of the local people to participate in the economic opportunities created by the HEP and SCORE.

7.2.2 Goals

The livelihood development goals for the affected communities under the Resettlement Action Plan are:

- Improve household incomes of affected communities significantly above the poverty line index level.
- Self-supporting and vibrant communities with a capacity for sustainable development and responsible for their own socio-economic environment.
- Improved standard and quality of life on par with other communities in the State.

7.2.3 Strategies and approaches for livelihood restoration

The economic strategies for the affected communities are based on the concept of fostering self-reliant sustainable community development to cater for the immediate and long-term needs of the affected communities. The main characteristic this approach is the promotion of participation among community members to look after and develop their own community. The participatory approach encourages communities to utilize their own resources and improve their own socio-economic wellbeing without over-reliance on government resources.

A core strategy is to mobilise the local community institutions in the planning and implementation of resettlement projects. Local institutions include the Village Security and Development Committee (VSDC), its various sub-committees (or bureaus), women organizations, youth organizations, and other local institutions. These agencies should be strengthened through training programmes to build the capacity and capability to manage their organisations and implement the development projects.

The economic development strategies are therefore targeted at all segments of the affected communities to assist the households’ entry into the cash economy through a combination of modern agriculture, wage-earning employment and small and medium business enterprises. The details of the livelihood restoration programmes are outlined in Annex Three. The development strategies will adopt the following approaches:
1. Agriculture projects - to generate income to meet household cash requirements and ensure adequate supplies of food while gradually reducing dependence on forest resources.

2. Forest Access - to provide the affected communities with opportunities for gathering, hunting, fishing and collection of non-timber forest products (NTFP) for household use until farm production reaches potential and for use in making local crafts such as mats and baskets.

3. Agriculture extension and training - for improved farm technologies to enhance productivity and sustainability of the farming enterprises and to assist members of the affected communities in the transition from subsistence farming to cash-oriented farming.

4. Home Economics Extension Programme - to improve and enhance participation in improving the economy, nutrition and health and quality of life of the community.

5. Cottage industry support - for traditional community products (handicrafts, basketry, blacksmithing, wood-carving, etc.) as a means to preserve the local culture using the local talent and knowledge of indigenous materials.

6. Support for participation in small and medium business ventures associated with the development of HEP.

7. Farm market support - development of the infrastructure, facilities and services to enhance marketing and output delivery system for supply of farm inputs and marketing of farm products.

8. Human resource development (HRD) - through vocational and skill training programmes to develop employment skills and enhance employment opportunities in industries associated with HEP or SCORE.

7.3 Agriculture Development Projects

To ensure food security and generation of sufficient long-term cash income from agriculture, the minimum size of cultivable land required for the implementation of agricultural projects is 14 hectares per household. The guiding principle for replacement of land lost to inundation was that it should be of the same or better quality in terms of agriculture capability. Land replacement is a form of re-capitalisation of the resettled households and will support the successful reestablishment of the community. The Department of Agriculture is the responsible agency for implementing the agriculture programmes and ensuring that the extension work reaches the intended targets. In support of the strategies, there are a number of Federal agriculture programmes to develop the cash crops, especially rubber under the Rubber Industry Smallholders Development Authority (RISDA).

The agriculture development programmes will be focused on developing the land with a combination of cash crops and crops for food security. The food crops are to deal with the immediate nutritional and subsistence needs of the community and to provide food security. The cash crops are to address longer-term goals of providing the community with a strong resource base that can provide cash income in the future and bring the communities out of poverty.

Initially, much of the 14 hectares land allocation will be allocated to food production and the planting of permanent fruit orchards. Due to the nature of the main food crops (mainly hill rice and root crops) this land will require long fallow periods to sustain productivity. Food security is important to ensure a sustainable food supply and to prevent the need for or dependence on outside food assistance. Of the 14 ha per household, 3 ha will be targeted for gardens and fruit crops while 7 ha will be for staple food crops.

The main cash crop will be rubber and this will occupy just over four hectares of land to be developed initially under a mini-estate concept.

7.4 Access to Forest for Food Gathering and Hunting

7.4.1 Rationale

Although the livelihood development initiatives focus on mainstream economic activities: agriculture, wage-earning employment, and entrepreneurship: it is likely that many of the Project Affected Communities (PAC's) will continue to rely to some degree on traditional forest-based activities to support their families. As such, access to a forest area that can provide the necessary resources is needed during the transition to the new agriculture based cash economy in the resettlement area.

7.4.2 Mechanism of implementation

Access through gazetted rights to a suitable forest area will provide the PACs with opportunity to gather food product, hunt, fish and collect non-timber forest products (NTFP). The forest area that would be acceptable to the Penan would be the catchments of Ulu Sungai Danum, Ulu Sungai Plieran and Sungai Tiyut adjacent to the Indonesian Kalimatan border. Much of this area has already been identified as important to conservation.
and has been included in the Danum - Linau Proposed National Park. This park should be gazetted and the Penan collecting rights included in the gazettal notice.

The protected area can also be used to provide employment opportunities to members of the PACs. Suitable members of the communities could be employed as Forest Guards, labourers, boat drivers and general workers in the management of the National Park.

Community collecting rights do not imply ownership and the affected communities are only allowed to have access to the forest for hunting, gathering of forest products and fishing. These rights can be reviewed at a later date when farms have come into production and once members of the community have remunerative employment in the wage-earning sector of employment. In view of their ‘Emolong’ culture: to foster the resource for future use: their traditional activities pose little or no threat to the forest resources of the proposed National Park.

7.4.3 Benefits

The forest products derived from the proposed National Park would help to supplement the PACs household food supply, provide materials and additional income while waiting for their farms to be fully productive. The Penan’s sustainable way of managing forest resources: essentially to conserve the forest resources for future use: would not cause any damage to the forest resources in the National Park and the creation of a National Park would help to conserve the biodiversity. The area of the upper Danum and Linau Rivers provides important breeding grounds for indigenous fish species including high-value species such as Empurau (Tor tambroides), Semah (Tor duoronensis), Tengadak (Puntius schwanenfeldii), Labang (Pangasius sp), and many others. In addition, the conservation of the upper reaches of the river catchments would help to reduce siltation of the reservoir and protect the Murum Dam.

7.5 Employment

At present, the number of Penan employed in any sector is relatively low. There are a number of reasons for this including lack of applicable skills, lack of identity cards and lack of employment opportunities near their communities. However, this situation is rapidly changing and there are increasing numbers of employment opportunities in the region. There is also a greater desire by the Penan to seek employment as they are faced with an increasing need for cash to purchase the household necessities.

Given that there are over 300 households affected by the Murum HEP there is a need to create or find job opportunities that will ensure each affected household has at least one member employed. With the wide range of economic activities occurring as a result of the HEP as well as the resettlement exercise, there will be numerous employment opportunities for a variety of workers including labourers, semi- and skilled workers.

Within the resettlement exercise alone, there will be a number of immediate short-term employment opportunities that should go to the affected households. These include:

7.5.1 Short-term (1-2 years)

- Construction workers, carpenters and general workers for the houses and other facilities to be built in the resettlement communities
- Construction workers for the service centre facilities
- General workers for agriculture extension facilities for the resettled communities
- On-site training or an apprenticeship programme required

7.5.2 Short- to Long-term

- With the main stakeholders such as SEB there are a number of jobs are available that will require varying levels of skills and training that can be provided through training programmes
- The newly established schools in the Metalun and Tegulang will require teachers, classroom assistants, janitors, cooks and wards (for boarding school) as well as boat drivers, maintenance people and a variety of other positions
- The Forestry sector will have a continued involvement in the catchment and there are opportunities for employment in sectors related to Reduction of Emissions from Deforestation and Forest Degradation (REDD) programmes including reforestation, seed collection, nursery management, forestry jobs;
- The Health care facilities will require assistants, maintenance people, drivers and a variety of general workers.
- The agency responsible for managing the Murum Catchment will require workers to carry out bank restoration, nursery management, and boundary watches
• The agriculture extension services will require community extension workers as well as liaison people as well as general workers and drivers.

There will be a number of employment opportunities with the various agencies involved in the implementation of the programmes associated with the resettlement of the communities affected by the Murum HEP (Table 7). Priority for employment with any agency involved in the resettlement process should go to the local residents. This needs to be a condition of any contractual agreements prepared for work (e.g. construction of housing or service buildings) done in the Murum resettlement schemes.

To ensure opportunities are realized, it will be necessary to develop a database identifying the people available and willing to work, their existing capacity or skills and the training needs. Much of this information has already been collated during the census gathered during the Contemporary Ethnography study. The employment database should be done through the community liaison personnel, the village headmen and the Murum Penan Development Committee. The Community Development Coordinator assigned to oversee and coordinate the resettlement will be a key person to provide the link between these community agencies and the potential employers.

### 7.5.3 Employing members of the community

There will be considerable economic activity in the area as a result of the construction projects and this will result in a number of employment opportunities being created. To ensure that the local communities benefit from the employment opportunities created, one of the requirements for the tender bids should be that contractors are required to given priority to the members of the local communities to be hired as part of their labour force for the construction work. This will help to provide some income for the local communities and give the youths some opportunity to learn some construction skills. The local hiring is to be coordinated through the Murum Resettlement Unit, the MPDC and the Community Development Coordinator. This coordination is necessary to ensure there is not misunderstanding with regards to the expectations of both the employer and the employee and to ensure where and when needed, there will be on-the-job training for the new employees.

As the resettlement sites are located at a distance from the original communities, workers will either have to be transported to the work site on a daily basis or housed in temporary quarters on or near the site. The latter scenario will be the most cost and time efficient and could also serve to assist with the establishment of the gardens.

During the time when the community structures are being prepared, establishment of the community gardens and the cash crop mini-estate needs to be ongoing. This is to ensure that the gardens are ready for production when the communities move in and the cash crops have been planted and fully established. Employment establishing the mini-estate and the local gardens can also be a source of income for members of the community.

### Table 7 Possible Employment Opportunities for Resettled Communities.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employment possibilities</th>
<th>Number of positions</th>
<th>Total number jobs</th>
<th>Training needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-General</td>
<td>-Community liaison : to identify workers and to facilitate communication between employers and the employees</td>
<td>1</td>
<td>1</td>
<td>-None, but budgets required for transport between communities and the employers</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-Community extension workers : to be the ground contacts for agriculture extension work</td>
<td>1 per community</td>
<td>8</td>
<td>-Agriculture training</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-Extension assistants to work between agriculture extension and the community extension workers</td>
<td>1 : 2 persons</td>
<td>2</td>
<td>-Extension training (Sebiew)</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-Boat drivers for the extension office</td>
<td>2 person</td>
<td>2</td>
<td>-none</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-Vehicle drivers</td>
<td>1 person</td>
<td>1</td>
<td>-Driver training, license needed</td>
</tr>
<tr>
<td>Sector</td>
<td>Position</td>
<td>Quantity</td>
<td>Training Details</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>Workers to establish rubber mini-estates</td>
<td>5 per community</td>
<td>40 basic training&lt;br&gt;- Work would be only until estates established</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Kindergarten teachers</td>
<td>1 per community</td>
<td>8 basic training</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>‘house mothers’ : to look after the children in each boarding school (1:50 students)</td>
<td>3 per school</td>
<td>6 Basic training for duties</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Matrons: to work as cooks and cleaners in the boarding schools</td>
<td>4 per school</td>
<td>8 Basic training for duties</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Teacher assistants</td>
<td>1 per class per school</td>
<td>12 -Training for assisting the teacher (need for flexible hiring requirements from Dept of Ed)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>General workers: to assist around school and provide daily maintenance</td>
<td>2 per school</td>
<td>4 Basic training</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>Boat drivers</td>
<td>2</td>
<td>2 Basic training</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>Vehicle driver</td>
<td>1</td>
<td>1 -Training plus license required</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>General workers: at the main service centre</td>
<td>2</td>
<td>2 Basic training</td>
<td></td>
</tr>
<tr>
<td>Forestry Department</td>
<td>General workers: for boundary clearance, replanting, nursery maintenance</td>
<td>12+</td>
<td>12 Basic training</td>
<td></td>
</tr>
<tr>
<td>Murum HEP</td>
<td>General workers</td>
<td>30+</td>
<td>30 Basic training</td>
<td></td>
</tr>
<tr>
<td>House construction</td>
<td>General workers for the construction of the resettlement houses</td>
<td>10 per site</td>
<td>70 -Basic training in carpentry, masonry, construction&lt;br&gt;- Work only until construction finished</td>
<td></td>
</tr>
<tr>
<td>Service centre construction</td>
<td>General workers for the construction of the service centre</td>
<td>20</td>
<td>20 -Basic training in carpentry, masonry, construction&lt;br&gt;- Work only until construction finished</td>
<td></td>
</tr>
</tbody>
</table>

### 7.6 Training Opportunities

There are a number of training institutions conducting training courses relevant to the needs of the youths and
potential employees from the communities resettled as a result of the Murum HEP. As many of the candidates for training lack formal education, the courses and training syllabus will have to be adapted to the training needs and the local conditions in the Murum area. The training possibilities, courses and major agencies relevant to the vocational and skill training of the Murum communities are outlined below.

7.6.1 On-the-Job Training Opportunities

An effective means of training for the largely uneducated workforce from the Penan communities will be practical training on the job site. This will require liaison with the main employers in the vicinity to identify the job opportunities available, the numbers of workers required and the types of training required for these jobs. The community liaison officer and/or the Community Development Coordinator of the Resettlement Unit will need to coordinate between the communities and the employers and the employee-trainees. The community liaison officer in each community will be responsible for developing a database of potential employees and the Resettlement Unit will be responsible for developing a database of potential jobs.

There are a number of agencies that could provide employment including; Sarawak Energy Berhad, the various government departments involved with the resettlement (e.g. the Forest, Agriculture, and Health Departments), sawmills, oil palm plantations, and timber companies. The resettlement unit should initiate discussion prior to resettlement with the communities and the employers to ensure that expectations are kept realistic on the part of the employees and that the employers are committed to providing the necessary training and the employment opportunities.

The tenders for the construction of the facilities for the resettled communities should include conditions for employing local residents. Where training is required, this should be provided on site and support to the contractors should be provided to conduct this training. The support can take the form of technical assistance or financial support for training.

7.6.2 Department of Agriculture (DOA)

Agriculture Certificate course - a two-year vocational training in agriculture to prepare trainees to become Agriculture Technicians at the Agriculture Institute (AI), Semengoh, Kuching. Graduates of the AI can be employed as Agriculture Technicians in DOA, and other institutions dealing with agriculture or as plantation supervisors in oil palm plantations.

Agriculture Training Centres (ATC’s) - Short specialized courses:
- Special crop maintenance and production;
- Aquaculture;
- Poultry and other livestock.

The Extension service courses: are to promote improved agricultural technologies among the farmers to improve their farm productivity and income. Under the extension services, there are front-line extension workers to introduce new improved agricultural technologies through field demonstration, informal talks and on-the-spot advice to the farmers.

The Women's Economic Development Programme (WEDP) - provides cottage industry courses. The WEDP is aimed at improving the economic position of rural women through development of entrepreneurship skills, family-based cottage industry projects in food industry, handicraft, agro-based industry and other related activities. Here participants will be given both formal and hands-on entrepreneurial skills training.

7.6.3 Sarawak Skills Development Centre (PPKS)

The Sarawak Skills Development Centre or Pusat Pembangunan Kemahiran Sarawak (PPKS) is an agency under the Federal Ministry of Entrepreneur Development and the State Human Resource Development Unit, Chief Minister's Office. The PPKS has been conducting a one-year certificate course on oil palm plantation management in the Sarawak Vocational Training Institute (SAVTI) at Kabuloh, Miri Division. The course aims to train rural school leavers of SPM level to become supervisors or field managers in oil palm estates. Graduates from this institute should be able to be employed by the DOA, other government agencies and oil palm plantations.

PPKS also offers technical skills courses on various subjects for school leavers, diploma and degree holders at its premise at Jalan Alwi, Tabuan Jaya, Kuching. These courses include:
- Sijil Kemahiran Malaysia (SKM).
- Industrial Skills Enhancement Programme (INSEP).
- Diploma Kemahiran Malaysia (DKM).
- Pre-employment Programme.
Under the International College of Advanced Technology Sarawak (ICATS), which was set up by PPKS, various academic courses are offered. They include diploma and certificate levels for:

- Electrical and Electronic Engineering;
- Mechanical Engineering;
- Plantation Science
- Mechanical Engineering
- Software Engineering
- Information Technology
- Nursing
- Environmental Tourism
- Plantation Management

In collaboration with University Technology Malaysia on:

- Mechanical Technology (Industrial Design)
- Electronic Engineering
- Electrical Engineering
- Electrical Engineering (Power)

Higher National Diploma Level in Electrical and Electronic Engineering (Edexcel UK certification) PPKS offers courses (programmes) for school leavers and industrial workers and these courses include:

- Certificate in Electrical/Electronic Engineering
- Sijil Kemahiran Malaysia in
  - Information System
  - Computer System
  - Graphic Design
  - Mechatronic
  - Industrial Electronics
- INSEP (Graduate Reskilling Programme) in Plantation Management.

7.6.4 Education Department

The Education Department in Sarawak has established the Politeknik at Matang, Kuching, catering for SPM school leavers. The school conducts certificate courses on auto-mechanics, electrical and electronic, surveying and other technical subjects that will qualify the graduates to work in government agencies and the private sector as Technical Assistants.

In addition, the Department has established seven technical schools called Sekolah Menengah Teknik (SMT), which provide technical and vocational training. These seven SMTs are located at Kuching, Matang, Betong, Sibu, Bintulu, Miri and Sejingkat. The SMTs provide vocational training for students who passed Penilaian Menengah Rendah (PMR : Form 3) examination to prepare them to sit for SPM level examinations in various fields including business administration, accounting, agriculture, food technology, information technology, carpentry, and various engineering subjects which include auto-mechanics, electrical and electronic engineering and building construction, and other subjects related to the industrial sector.

In addition to vocational education, three of the SMTs (i.e. Kuching, Matang and Betong) also conduct technical courses in the same fields as the vocational training courses.

7.6.5 MARA

MARA has established vocational training institutes called Institut Kemahiran MARA (IKM) in Kuching and Bintulu to provide skills training for SPM (Form 5) school leavers. The course include the following:

- Automobile Engineering Technology.
• Information Communication Technology.
• Electrical and Electronic Technology.
• Civil Engineering.
• Accountancy.
• Other technical subjects relevant to the local industries.

In addition, the institution has also established 16 training centres called Pusat Giat MARA at Petra Jaya, Kuching, Sibu, Serian, Sarakei, Saratok, Samarahan, Oya (Mukah), Miri, Lundu, Kuala Rajang (Sarakei), Bukit Mas (Limbang), Bintulu, Betong, Batang Sadong and Baram. These centres provide skills and vocational courses for school leavers who have passed Form 3 or PMR examinations. The subjects in these courses include the following:

• auto-mechanics.
• electrical engineering.
• electronic engineering.
• land surveying.
• civil engineering.
• building construction.
• other technical subjects.

7.6.6 Federal Ministry of Human Resource

The Federal Ministry of Human Resource has established an industrial institute called Institut Latihan Perindustrian Samarahan at Kota Samarahan. The institute provides vocational training specializing in high-technology trade as required by the industrial sector. This institute provides the opportunity for secondary school leavers to acquire technical knowledge and skills that will equip them to work in the industrial sector.

The newly established Advanced Technology Training Centre (ADTEC) at Kilometre 20, Jalan Bintulu-Sibu will be completed in October 2010. The courses offered will include welding technology, quality control technology, automotive technology, mechanical management, air-conditioning, instrumentation, piping and gas. These courses cater for school leavers who are unable to study at universities. The graduates of these courses will produce a pool of skilled workers for Sarawak Corridor of Renewal Energy (SCORE).

7.6.7 Chief Minister’s Department and AZAM

The Human Resource Development and Quality Unit of the Chief Minister’s Department in collaboration with AZAM, a Government sponsored NGO, is conducting leadership training courses for grass-root leaders throughout the State.

7.6.8 State Ministry of Rural Development (MRD)

Short courses for members of the rural community that include topics on creating awareness of government development programmes and projects; attitude change; motivation and leadership development; food industries; aquaculture; oil palm plantation development; entrepreneurship development; and information technology in the Rural Resources Development Centre (Pusat Sumber Pembangunan Desa- PSPD) at Layar, Betong Division.

7.7 Monitoring and Coordinating Employment

A primary target for employment is that there is at least one person from each household employed.

There will have to be on-going monitoring of the communities to check whether the employment opportunities are being offered to the communities and whether the members of the communities are acting upon the opportunities.

The measure of the outcome of the training programmes will be whether participants are employed and whether the training is suited for the employment opportunities. A component of the monitoring will be tracking those who have undergone training and their success in finding employment.

7.7.1 Coordinating Employment Demands

The resettled communities will require guidance and time to adjust to not only the resettlement setting, but also the new demands of employment. There will be concurrent community and family demands that may be
in conflict with the employment demands and employers will have to be made aware of these so that they can work with the communities. For example, while there is an expressed desire to work, there is also still a need for some members of the community to go to the forest to look for game and food.

One of the important initial tasks of the Community Development Coordinator will be to coordinate with the community liaison personnel and the MPDC to determine how the communities are going to work on projects such as the construction of the resettlement houses. The work requirements have to be clearly outlined to ensure understanding on the part of the community regarding what is expected of them. Similarly, details such as how many workers per day are required, where the Penan live, how they get to the work site and how meals are provided needs to be clearly outlined and agreed.

This will require at least one person from each community to be responsible for coordinating labour in conjunction with the overall community liaison person and the community Development Coordinator.

7.7.2 Database

The Community Development Coordinator in coordination with the community-based liaison officers, the MPDC and the local community agencies will be responsible for developing a database of members of each community seeking employment. This database will include past work or skills of each member so that they can be matched to possible job opportunities.

The database should be updated as community members receive training or obtain employment and will serve as a support to the monitoring.

Annex 8 SOCIAL DEVELOPMENT AND COMMUNITY STRENGTHENING

8.1 Introduction

There are essentially four major areas that need initial support and guidance and then monitoring to ensure the success of the resettlement. These areas are:

- Community Health;
- Education;
- Agriculture; and
- Employment

All these areas of interest are inter-linked and coordination of support is needed to ensure that the various programmes address community needs and all members of the resettled communities are involved and benefit. The Penan communities have a tradition of sharing and internal support but with the change to a more cash-based agriculture economy, some members may not be able to adapt as quickly as others. Attention needs to be paid to the existing community structure to ensure that there is a means to identify and reach all members.

The health of the community in general and of individuals in particular will depend on the successful implementation of the livelihood programmes and access to the available civil services. The availability of education facilities however does not automatically mean that all children will be educated and similarly not all members of the community may adapt to cash crop farming. There will be constraints that need to be recognized, identified and overcome and this will require working within and with the community structure on a day-to-day basis.

To assist with the effective delivery of the various programmes, the links to the community must be strong so that the community needs can be articulated and acted upon. The liaison personnel from each community will be key players in this process as they will provide the link from the ground to the implementing agencies. As has been outlined in Section 10.2.6 a key agency to oversee implementation will be the Murum Resettlement Unit, located in the Murum Service Centre. This agency will be the direct link to the communities and the Community Development Coordinator will be a key liaison person to oversee all the development programmes and act as an intermediary or coordinator between the communities, the implementing agencies and the government.

8.2 Strengthening Local Community-based Institutions

The success of implementation of the village-based resettlement projects depends very much on the participation of the VSDC, its bureaus and women and youth groups. As such, the implementing agencies need to develop and strengthen these community-based institutions. Efforts are needed to establish appropriate grassroots institutions especially women groups, youth groups and specific groups for a
particular project (e.g. vegetable gardening, sago planting, fruit trees planting projects) in the resettlement area. Establishing these grassroots institutions includes explaining the purpose, objectives, functions and organisation of forming the groups, leadership development, and democratic process in the election of leaders and assistant leaders. To ensure better linkages with the VSDC, these groups should be incorporated in the VSDC as its bureaus or subcommittees.

8.3 Cultural Heritage Preservation

The Murum dam area contains several types of tangible cultural heritage such as burial or gravesites, sacred rock sites and remnants of old longhouses. The majority of these sites will be inundated by the reservoir created by the Murum Dam. Those items of cultural heritage not flooded should be protected and preserved while those to be inundated (and recorded during the cultural heritage survey) should be, if possible, rescued and put on display in a cultural centre or museum.

The sacred rock sites of Batu Tungun and Batu Tau situated at the Murum Dam are located above the dam level and should therefore be preserved because they are the sacred sites of the Penan and are of historical and cultural value to the State. A viewing platform and information panels about the history and significance of Batu Tungun and Batu Tau sacred rock sites should be constructed for visitors to these sites. Preservation and conservation of Batu Tau and Batu Tungun should be done by SEB in cooperation with government agencies such as the Sarawak Museum Department. A concern is that these rock structures have cracks that need to be strengthened or reinforced to protect them from further deterioration. In addition, any future development in the vicinity of these sacred rock sites should include the inputs from the Penan to prevent further losses or damage to their customs and cultural heritage. The procedure and responsibilities for this has been outlined in detail the Murum Cultural Heritage Master Plan.

Most of the burial sites, except those the Penan community have requested to be relocated to higher ground, will be inundated. Relocation of graves to new burial sites should be done by the Sarawak Museum Department and relevant government agencies in accordance to the wishes of the Penan and the Kayan-Kenyah communities affected by the Murum Dam.

As for the old longhouses or settlements, it is deemed unnecessary to salvage them because most of their structures have collapsed or decayed and previous excavations have only recovered fragments of pottery, porcelain, and glass, beads, iron objects, stone work, and a few old hardwood piles. All these finds are dated to a relatively recent period and are common artifacts (not rare pieces).

Ideally, a Penan Cultural Centre should be built to inform the public about the history and cultural heritage of the Penan living in Murum, Belaga. This cultural centre can also house and exhibit both tangible and intangible cultural heritage of the Penan such as their history, legends and material cultures recorded or saved prior to the flooding of the Murum Dam. It can also function as a home stay centre for visitors to Murum in order to generate some income for the maintenance of the centre. This cultural centre can be set up near the Murum dam or incorporated into the present cultural centre, which is currently being built by the Sarawak Museum Department at Sungai Asap for the natives affected by the Bakun Dam project.

The Sarawak Museum is the responsible authority and the requirements and protocols for dealing with cultural heritage have been outlined in the Cultural Heritage Management Plan endorsed by the Museum.

8.4 Enhancing Health at Village Level

8.4.1 Village Health volunteers

The Department of Health through the Murum Clinic staff will be responsible for the health of the communities. To improve the health standards and involve the communities it is recommended that village health volunteers be identified to assist the medical teams during the mobile health team visits. These volunteers would require training in basic health care and first aid and should be able to treat minor ailments, minor wounds (minor first aid), identify malaria symptoms and take blood samples. They would be responsible for maintaining a village first aid kit that would be replenished during the mobile medical team visits. While the assistants would be called volunteers, they should be paid a daily wage during the health team visits and provided with an allowance for serving as the health care person. Within each community there are possible candidates including those who have worked as volunteers in the past. There should be at least one woman per community engaged as a health assistant. Where appropriate, incorporating the traditional birth attendants (TBA) as the health assistant should be encouraged.

8.4.2 Community Outreach programme

A community health outreach programme is recommended to improve the health and nutritional standards in the communities. These programmes should be coordinated and implemented through the main clinic at the Murum Service Centre and delivered to the communities through the mobile clinic programme.

Primary targets are to improve nutrition and to ensure that there are no occurrences of malnutrition in any of the communities. This can be implemented through a Food basket programme targeting children under 5 years of age to ensure they are getting sufficient nutritious food. Recipients would have to be registered at
the main clinic so that progress and success can be monitored. Identification of potential recipients or those in need should be included in the duties of the mobile health service team. Incidence of malnutrition can be identified during the mobile health team visits and the persons registered to receive food support. Funds to support the programme can be channeled through the Residents Office and the coordination and implementation can be through the mobile health team.

8.4.3 Related employment opportunities

One of the objectives of the resettlement is to improve the livelihoods of those affected by providing economic opportunities including employment. With the establishment of the clinic at the service centre there will be a number of employment opportunities for local residents. Local workers will potentially provide better coordination on the ground and the benefits from employment will go directly to the communities. It is recommended that priority be given to employing local people for positions with the main and sub-clinic. Where necessary, training should be provided. Some of the employment opportunities include:

- Village-based health care workers
- Drivers (primary school and valid license)
- Boat men
- General workers
- Clinic attendants
- Contract workers

8.4.4 Health Risks and Monitoring

The success of the health programme can be measured through the improvements in the overall health and nutrition of the community members. This information should be collected as part of the mobile health team duties to monitor the effectiveness of the programmes and to able to detect and changes in health status. Reductions in the incidence of disease will be a key indicator.

However, there are on-going risks to the health of the communities from outside source that need to be monitored. With the rapid development of the Murum area, there has been and will continue to be an influx of foreign workers to the area. There is a need to monitor the health of these workers to ensure that the local communities are not put at risk. The concerns include:

- Incidence of communicable diseases from foreign workers (Typhoid, malaria)
- The need for better health monitoring of foreign workers.
- The need to get data from the estates
- The potential impacts on the relocated communities

8.5 Early Childhood Care and Development

8.5.1 Play School and Kindergarten

In view of the relatively late start of the Penan in Murum in schooling, there is a need to instil in the community a schooling culture. However, this has to be done in a way acceptable to the culture of the people starting with a less regimented, but nonetheless organised pre-school system. A play school within the village is recommended for children as young as three years old. The venue for the school can be a section of the longhouse veranda, or within the village meetinghouse. Alternatively, if the primary school is close by, the play school can occupy a section of the primary school.

Operation of the play school should commence as soon as possible. Childcare personnel shall be recruited from the community to be trained to organize and supervise the play school programme. The overall purpose of the play school is to prepare children for a more formal school setting so they can be placed in kindergarten when they are five years old.

As with the Play School, each community is to have a Kindergarten to prepare children for entry into Primary school. The Kindergarten is to be located within the community using the community hall structure as a venue.

The play school and kindergarten shall be the responsibility of the Ministry of Rural Development or, as an alternative, KEMAS. The Department of Community Development (Jabatan Kemajuan Masyarakat KEMAS) is a government agency under the Federal Ministry of Rural Development. The main activities include establishing and running kindergartens in rural communities, implementing home improvement projects, organizing adult literacy classes and undertaking other community-based projects for village improvement.
The Ministry of Rural Development, in coordination with the Ministry of Education, is to identify prospective individuals from the community to be trained as kindergarten teachers and play school supervisors. There should be one kindergarten teacher and three supervisors for each kindergarten and play school (a ratio of one teacher to 8 children).

Identified candidates can receive training at kindergarten and play schools in town. The cost of training should be borne by the Ministry of Rural Development, the Ministry of Education, or KEMAS. Alternative sources of funding could be through non-government sources channelled through the Murum Penan Development Committee.

8.5.2 Implementation Agency for Early Education

A local Non-Governmental Organisation (NGO) that specializes in and has been addressing the needs of rural early education is the Persatuan Perkembangan Pendidikan Orang Peribumi (PPPOP), based in Kuching, Sarawak. The Peribumi (or indigenous) group referred to is primarily the Penan, who have been excluded from almost all the rural development efforts. The association originally focused its efforts in the Baram area but could be approached to consider expanding its efforts to the Murum community. This would be subject to the availability of human and financial resources.

The PPPOP can be an effective agency to train play school helpers and kindergarten teachers and to start the play schools and kindergartens in the resettled Murum Penan communities. They have had working experience among the Penan in the upper Baram and have proven themselves effective in going to the ground and addressing the early education needs. This NGO only needs the funding to carry out their work. The Murum Resettlement Unit or the Murum Community Development Foundation should have funds and budget lines that can be channelled to this type of project. The PPPOP could submit their project outline and budget requests to the Murum Resettlement Unit, the Foundation or through the MPDC, and these agencies can allocate funds towards this type of grass-roots early education project.

8.6 Educational Needs

8.6.1 School Staffing

All the staff in playschools and kindergarten shall be from the local communities. Furthermore, all non-teaching staff in the two primary schools, the secondary and vocational school, shall be from the local community. The purpose of this is to ensure that the affected communities are involved in the schooling process and also have the possibility to benefit economically from the presence of the schools in the community.

For the teaching staff in all three schools, preference also shall be given to the persons of local origin (subject of course to qualifications). For the vocational school, it is suggested that if no local person is available only the key training personnel be from outside the rural community. Preference to be given to native Sarawakians trained in the technical fields (wood work, metal works, electrical works, and agriculture: husbandry, horticulture, fishery). The emphasis is to be on developing local trainers who can continue the training programmes for the local communities. The administration of the vocational school is to have local community members to ensure that the training needs are understood and the local communities receive economic benefits.

8.6.2 Play School Supervisors

Based on an attendance of 15-20 children, three persons are required for every play school. There should be one play school supervisor and two assistants. The persons filling these positions should come from the community where the play school is located and they should receive the following training:

- Basic organization skills for children activities;
- Basic information about children growth and development;
- Recognition of differential rates of children development;

8.6.3 Kindergarten Teachers.

There should be one kindergarten teacher and one assistant for every class. Where possible, persons filling these positions should come from the local community and they should receive the following training:

- Basic pedagogy: teaching and learning as a process;
- Classroom management and administration i.e. keeping of records of children's work, attendance and progress;
- Basic organization skills for children activities;
- Basic information about children growth and development;
• Recognition of differential rates of children development;

One of the first steps will be to identify the candidates to be trained as play school supervisors, kindergarten teachers and assistants. As the aim is to have local people involved in the education process there may be a need to adapt training to suit the local needs. There are seven communities that will be directly affected and a further two or three that are indirectly affected. The training should be adapted to suit the local situation and the possible limited academic qualifications of the local candidates. There will be 15 : 20 trainees and the aim of the syllabus is to train teacher's assistants and to be able to conduct basic play school and kindergarten classes. The focus is on preparing the children for primary school. Training for play school and kindergarten teachers can be conducted in private Institutions in the town and budgets should cover the cost of the training and the support for the trainees during the training.

8.6.4 Primary and Secondary School Teachers

As the schools will be new and the majority of the students will be new to school, it is recommended that the student - teacher ratio for the Penan schools be one teacher and one teacher's assistant per class. There is a genuine need for more teachers in order to provide the necessary attention and to guide and teach.

All the teachers for the two primary and one secondary school shall be from the pool of Education Ministry trained teachers. These teachers will have the prescribed training through the local teacher's training colleges. There is a need to identify and select suitable local persons for teacher training to be able to serve in the rural schools. Where suitable candidates are from the local communities, they should receive an 'express training course', in the manner the Ministry gave retraining for the Grade 3B in the 1980s. This will enable more local persons to be recruited as teachers or assistant teachers. For the secondary school it is proposed to have two teachers (2:1) per class. In the lower secondary school, the average number of classes per teacher per week is 28 periods. The principal and the senior assistants in the school, by virtue of their administrative duties, do not teach the full quota of 28 periods a week.

8.6.5 Vocational Schools Teachers and Instructors.

The types of training programmes required for the communities have been outlined in Section 7.6. The training should be a part of the Agriculture Extension programme and be linked to the employment opportunities identified in the area. The vocational training centre will be part of the Murum Service centre and should respond to the inputs from the Murum Resettlement Unit and the Murum Community Development Foundation. The vocational school will require a number of key trained personnel qualified to administer the school and to deliver the courses. These courses should target the youths who have missed schooling and the adults who desire training. Where possible, the vocational training should be linked to the job opportunities and be on-the-job training. The Community Development Coordinator will be an instrumental resource in identifying these options.

The members of the vocational staff should be instructors or trainers with expertise in the following:

• Agriculture - an Agriculture Assistant (AA) or Junior AA with sufficient experience may be seconded. Alternatively, recruitment of a retired AA or JAA may be recruited.

• Carpentry - retired 'Woodwork' teacher or carpenter from the town willing to serve as instructors in carpentry.

• Brick laying, mixing of cement and plastering.

• Boat building

• Mechanic and motor repair: small motor, outboard engine maintenance, diesel

• Electrical works.

• Welding

The syllabus for each training scheme shall be tailored to equip the trainees with sufficient skill and knowledge to be a handyman, manage his own business, or farm. Higher skills and knowledge may enable the person to be employable elsewhere. Attachment teachers/instructors/voluntary corps may be deployed, out of university scholarship students on long vacations. These may be paid stipends by their sponsors.

8.7 Adult Educational Needs

The Education Department will be responsible for the delivery of basic education in the schools established in the resettlement areas. In addition to the school age students there is a great need to provide adult literacy and numeracy programmes for the people of the communities who have missed education.

Classes for the teaching of basic reading skills and numeracy including arithmetic should be available to all adults wishing to learn. These classes can be conducted up to three times a week (e.g. on Wednesday, Friday and Sunday nights from 7pm to 9pm). This would be an average of one hour reading writing and
another hour of arithmetic. Funding for materials and additional pay for the teachers could be through the Murum Community Development Foundation educational funds or through the MPDC.

8.7.1 Proposed Teachers

The teachers employed to teach at the new schools should have as their primary focus the education needs of the children. The teachers can also be given the responsibility to introduce and facilitate adult education classes that can be either conducted in the schools after school hours or in the communities themselves. The focus for these programmes should be on establishing literacy and numeracy in the community. Funding assistance to the teachers or for outside resources can be through the Murum Community Development Foundation or from other agencies that have specializations in adult education.

While the teachers can provide the resources and guidance for the adult education, their time will likely be fully committed with the new students in the kindergarten, primary and secondary classes. For the adults, the local pastors or the community liaison personnel or other volunteers can be enlisted to carry out the actual adult teaching. In other communities in Sarawak, the best person to be teaching the adult, working people are the church pastors. The pastors can relate well socially and understand the undercurrent of problems in the community and are therefore able to use life examples when teaching reading skills and numeracy. The techniques employed by the new school teachers may not be completely appropriate for adult students and this could cause the adult learners to stop their studies.

The teachers will play a very important role in the community teaching and providing guidance to the students. This should be their primary role and responsibility. The social link between the students and the teachers will be very important to nurture the students and this will occupy much of the teachers time. However, where the teachers do take on the role of adult educators, this work will be in addition to their regular teaching duties. As such the teachers should be paid for the additional time. A starting rate of RM30.00 per hour of teaching is recommended. Allocation of a budget for purchase of light refreshments (tea, coffee, and biscuits) for the evening classes is also recommended.

8.7.2 Monitoring Progress

The levels of attainment in reading and arithmetic for each adult should be regularly measured and recorded to gauge progress. Certificates of attendance and of attainment of specific levels of equivalent formal school will provide a target for the attendees. This is especially important for the younger members (below 30 years of age) who may wish to seek employment.

8.7.3 Remedial classes for youths

A programme of remedial classes is recommended for those in the community who have already had some schooling but whose attainment was not up to the level deemed appropriate for their age. The professionally trained teachers employed in the resettlement schools should be deployed to address these remedial education needs. The objective of the remedial classes is to assist the young people to attain the approximate schooling level of their age group so that they can join the normal school system.

All the teachers in the regular school would have a full teaching load and be responsible for an average of 28 to 32 periods a week, as well as extra-curricular activities in school. The teacher will also have preparation time and examination of their students’ work in the evening. The additional remedial classes will place additional demands on the teachers’ time. This additional work will also require a specialized type of teaching involving understanding of the student needs. The teachers deployed for the remedial teaching should be given incentive in the form additional pay for the additional hours of teaching.

8.8 Banking and Credit Training

There is a need for banking and financial training for all relocating PAHs receiving compensation. This also implies that there is a need for some form of banking facilities at the service centre. In the initial stages, the Murum Service Centre may not be large enough to warrant establishment of a bank and these facilities may have to be placed at Asap. Regardless, as all communities will be receiving compensation, there is an urgent need to ensure that those receiving money are provided with the information and knowledge to manage the resources. Those receiving compensation payments should undergo financial management training to:

- Promote prudent use of compensation cash
- Ensure security (protection from theft)
- Protect the PAH from fraud
- Promote use of financial instruments (investing)
- Be educated on credit facilities and secure financial instruments

Annex 9 Public consultation, participation,
disclosure and Grievance

9.1 Background to the RAP

The aim of resettlement planning is to ensure that the resettled Penan communities affected by the Murum Dam are provided with livelihoods and life qualities comparable to or better than their original livelihoods. With this objective in mind, planning methodologies that meet international standards and are locally appropriate and acceptable have been employed. The RAP development process has involved the participation of key members of the Study team, Government, Penan community representatives and non-governmental organisations. Chemsain Konsultant Sdn Bhd (CKSB), as the main consultant, has facilitated the necessary consultations and discussions involving the Government and the Penan. The resulting Resettlement Action Plan (RAP) details the preferred resettlement outcome as deliberated between the Government and the Penan.

Under IFC Performance Standard 5, the Government as the Proponent for resettlement has a central role in the consultation. In addition to the Contemporary Ethnography, three other streams of information have supported the RAP development process: Firstly, information from the consultation process between the State Planning Unit and the Murum Penan towards reaching an agreement on moving (as required by International Standards); Secondly, technical input from key specialists with special knowledge and experience in fields such as agriculture, social services, the environment, infrastructure, poverty and forest resources; and Thirdly, policy guidance from the Government and the State Planning Unit on land and financial resourcing issues.

9.2 Contemporary Ethnography

The supporting information for preparation of the RAP is based on the findings of the Contemporary Ethnography Report and the Culture and Heritage Management Plan. The baseline data for these plans was gathered over a period of just over six months commencing October, 2009. Prior to commencement of the fieldwork for the Contemporary Ethnography, a meeting was held between the study team and the headmen of the communities to seek their permission and to provide an opportunity to express any concerns with respect to the study. This meeting was held in Sungai Asap and was chaired by the District Officer from Belaga and government officials from the State Planning Unit.

The study teams employed a combination of household surveys, group discussions, and structured interviews to gather the information for the contemporary ethnography. The study also collated and incorporated information resulting from earlier consultations with the affected communities.

The field study tasks were divided among a number of study teams to ensure that all households were interviewed and comprehensive database of all households was developed. The development of a Household Register of occupants was an important output from this fieldwork. The field study teams were led by experts in archeology, anthropology, social science, agriculture, health and food security to gather information for the baseline database and the contemporary ethnography. Six core themes were identified as being central to the people, and therefore central to the research. These are:

- Subsistence agriculture and cash cropping;
- The use of social services such as health and education;
- Environmental changes;
- Housing and infrastructure;
- The incidence of poverty; and
- The extent of dependency on forest resources

9.3 Cultural Heritage

The Cultural Heritage Management Plan (CHMP) was completed in compliance with the Sarawak Heritage Ordinance 1993, other applicable State and Federal Laws and relevant international standards. This document includes:

- A register describing the characteristics, significance, location and custodianship of those heritage sites that can be protected and conserved and also those heritage sites that cannot be practically protected and conserved;
- A description of measures agreed by custodians for the salvage, safe relocation or destruction of items of cultural heritage that cannot practically be protected and conserved in situ within the impoundment area;
• A description of measures agreed between traditional custodians, the project proponent and the State for the protection and conservation of cultural heritage sites that can be protected within the impoundment area;

• A recommended formula for the payment of compensation, where appropriate, for graves and other items of cultural heritage that cannot be practically protected and conserved within the impoundment area; and

• The identity and responsibilities of the appropriate parties or individuals, including representatives of the traditional custodians, with responsibility for monitoring and managing the CHMP.

9.4 The Murum Resettlement Lab

As part of the Malaysian Government Transformation Programme, poverty eradication is one of the Key Performance Indicators. A lab on the Murum Resettlement was held in Kuching during March 2010 with the objective of confirming all the steps needed to ensure that the resettlement process is in compliance with International Standards as well as the local rules and regulations. A parallel objective was to document a procedure that could become the standard for resettlement in the state.

The lab provided an opportunity to discuss all the issues that needed to be addressed and to deliberate on the appropriate means to deal with these. Representatives from all government agencies connected with the Murum resettlement attended the lab and this wide range of expertise and knowledge allowed discussions to focus on solutions and actions to address the issues.

The members of the lab included all the relevant government agencies, NGOs, the human rights commission and the research team. The members were presented with a summary of the contemporary ethnography providing an overview of the progress in the SEIA study and the current socio-economic state of the Penan. A summary of the resettlement requests from the Penan was also provided. These requests were grouped into four broad categories:

• Location related demands (land area and location)
• Compensation related demands
• Long term support
• Procedure (the mechanism for delivery and agreements)

The lab participants debated the issues and the various options to address the core issues and Penan demands under the framework of meeting international standards. The contemporary ethnography provided the baseline information and context for discussion with supporting information provided by the study experts.

Deliberated over the period of a week, the lab provided an excellent opportunity to work towards solutions to the key issues and, at the same time, receive the endorsement of the key government implementing agencies. The information gathered during the lab identified the existing programmes, the budget timelines, the staffing resources, the constraints, the institutional setup and, importantly, the approval process. The programmes outlined in the RAP were refined during and as a result of the Murum lab.

9.5 District and Government Level Consultation

The findings of the Contemporary Ethnography Study provide the basis for formulation of the programs covering compensation, resettlement and restoration of livelihoods. These proposed schemes and programs were then presented to the affected communities over the course of several meetings and discussions for their consideration, comment and approval. Final acceptance of the schemes and programs will be based on approval of the RAP.

The consultation process leading to the RAP involved the following steps:

i. An introductory meeting between the Government, Project Implementer (SEB), SEIA Consultants and affected communities.

ii. Recognition of village organizations through the establishment of the Murum Penan Development Committee (MPDC). MPDC is the main representative for the affected communities and is actively involved in the grievance mechanism.

iii. Using a community participatory approach, collation of information for the contemporary ethnography. This information plus a household census to determine the composition of the affected communities and the entitlements.

iv. Community consultation to gather inputs on preferred resettlement sites and conditions to resettlement.

v. Government approval of the proposed resettlement sites;
vi. Presentation of the resettlement sites, compensation and resettlement plan to the affected communities. MPDC to review plan and discuss issues arising with the Government. Once approval is received from MPDC, the RAP shall be finalised.

vii. The RAP shall form the guiding document outlining the final compensation scheme and resettlement program for public disclosure and discussion.

Although the compensation scheme is based on the contemporary ethnography findings and the requests from the affected communities, the key stakeholders, namely the SPU and Murum Working Committee, shall undertake a combined review of the compensation scheme and options prior to approval. Where applicable, a consensus on a compensation scheme must be obtained from MPDC through discussion and meetings. A summary of the consultations with the communities and the stakeholders is included as Annex Four.

9.6 Disclosure

The SEIA, Contemporary Ethnography Study and RAP for the Murum HEP is to be disclosed and made available to the public as to comply with the IFC’s policies on environmental assessment of Projects and disclosure of information. The disclosure strategy is to be divided into two phases:

9.6.1 Phase 1: Stakeholders Disclosure Plan

Once all reports and documents have been reviewed and approved by the Government, the consultants shall organize a meeting with the MPDC to present the findings for their review and consideration. The reports and relevant documents will be made available during the meeting for their reference. A period of 14 days shall be allocated for MPDC to provide their feedback and comments. At the end of the 14 days, another meeting will be held for the primary stakeholders to meet and reach a consensus on the findings. Once approval is obtained from MPDC the second phase, namely Public Disclosure can take place.

9.6.2 Phase 2: Public Disclosure Plan

The SEIA, Contemporary Ethnography and RAP shall be made available to the public through summaries of the studies and reports prepared in English, Bahasa Malaysia and Kayan languages. Among the Orang Ulu group in Sarawak (which broadly includes the Penan) the Kayan language is the most widely spoken thus giving the document a potentially wider range of distribution and understanding. This will be supported through meetings and dialogues to discuss the entitlements and the resettlement process to ensure understanding and to be able to address any concerns the project affected communities may have. Verbal discourse with the District Office has been the traditional means of disseminating information in the rural areas and this method will continue to play an important role in the Murum resettlement process.

The documents will be available at the following locations:

1. District Office in Belaga, Kapit and Bintulu;
2. State environmental legislative authority- Natural Resources and Environmental Board (NREB) and Department of Environment (DOE) Kuching;
3. State Planning Unit and Sarawak Energy Berhad offices;
4. State Library in Kuching and public libraries in Bintulu;
5. Asap River Police Station;

A public notice shall be displayed in all major newspapers to notify the public on the availability of the studies and reports. The public shall have access to the reports for approximately 30 days during which time they can provide enquiries, comments or concerns regarding the documents. Feedback and queries will be received through:

- Written comments through Kapit, Belaga and Bintulu District offices;
- Written comments through the State Planning Unit (SPU)
- Online social networking websites: www.facebook/murumseiaforum.com
- Via feedback link found on www.seiamurum.com.my

The input or feedback received will be circulated among the stakeholders for further discussion and amendments to the SEIA and RAP shall be made where necessary.

9.7 Grievance Mechanism
During the 7 October, 2009 meeting with the representatives from the affected villages, a mechanism for communicating grievances and issues was proposed and discussed. The representatives of the eight villages agreed that the existing Murum Penan Development Committee (MPDC) was the correct channel to connect their villages with the government. During the meeting they endorsed the concept of the grievance mechanism.

During a subsequent meeting on 9 October, 2009 the Murum SEIA Working Group was briefed about the grievance mechanism. This meeting agreed that the mechanism was a satisfactory method for receiving information from the villages and that this would also provide a good method to communicate with the villages. The mechanism was modified to include the District Officer and the elected state representative for the area (YB Liwan Lagang) as an intermediate step between the MPDC and the government.

With this background the grievance mechanism was put in place, however it was not functional. There was a need to provide a framework in which the mechanism could work and that included having someone with the responsibility to ensure the process was active.

To address this key aspect, the Asap Koyan Development Committee (AKDC)13 appointed Mr. Saran Ju as a Community Executive to deal with the communities included in the MPDC. AKDC allocated a salary and a travel budget for the MPDC activities and this allowed the community executive to schedule regular visits to the communities as well as meetings of the MPDC.

The main activities for the community executive are:

- To visit each community to deliver updates and record any grievances and issues raised and relay these through AKDC to the government
- To organise a monthly meeting of the MPDC to discuss any issues
- To deliver the replies to any of the grievances to the MPDC and the communities
- To maintain a logbook of grievances received or questions raised through the Grievance Procedure as well as record of the replies

The procedure for processing of grievances was initially coordinated by the consultant managing the SEIA study for the Murum HEP. This was carried out with the assistance of the AKDC and the local elected representative, YB Liwan Lagang. The steps in this procedure are outlined in Figure 9.
Annex 10 IMPLEMENTATION ARRANGEMENTS AND INSTITUTIONAL RESPONSIBILITIES

10.1 Institutional Review of Past HEP

The institutional arrangements for resettlement exercises associated with previous HEP’s in Sarawak (i.e. Batang Ai and Bakun) were ad hoc involving the existing institutions and the establishment of a coordinating body. There was no formal administrative structure established to deal with resettlement and the rationale for this arrangement was based on the following factors:

- The existence of a number of agencies, each with a mandate and interest in implementing the various development projects or enforcing laws in the protection of natural resources and environment;
- The existence of the Divisional Development Committee (DDC) in the Resident's Office;
- The Resident's Office link to the State Planning Unit (SPU) and the Chief Minister's Office, the highest policy-making body;
- Creation of new agencies would be costly, and time-consuming to build up the necessary capacity;
- The need to resettle the affected communities expeditiously; and
Use of existing Inter-agency arrangements would not impose heavy additional administrative and financial cost to the Government.

The institutional arrangements established for the two previous HEP’s consisted of three levels of organisation; (a) the top policy-making level; (b) the coordination level; and (c) the implementation level. The main features and the functions of the institutions in these three levels are outlined in Annex Five.

10.2 Proposed Institutional Arrangements for Murum Resettlement

10.2.1 Rationale

The institutional arrangements for Murum resettlement will adopt the basic framework and institutions employed in the previous HEP settlement exercises with some modifications to ensure effectiveness and efficiency in the implementation of the resettlement programmes. While the existing framework provides existing avenues for coordination and assigning responsibilities, there are a number of areas requiring strengthening. This is to ensure the organisation and management system work effectively and efficiently for the implementation of Murum HEP Resettlement Plan.

The proposed institutional framework shall continue to use a three-tier system with a key additional component to strengthen implementation level. The addition of a dedicated ground unit, The Murum Resettlement Unit, staffed by personnel with specific community development and development coordination skills will significantly bolster the implementing function. The arrangement for this three-tier system is illustrated in Figure 10.

Figure 10 Institutional framework for organisation and management of the resettlement.

10.2.2 Guiding Principles for the Establishment of Institutional Framework

The guiding principles for the establishment of an effective and efficient institutional framework for implementing the Murum HEP Resettlement Plan are as follows:

- All agencies involved in the implementation of the Resettlement Plan share the same goals; i.e. poverty alleviation and uplifting the standard and quality of life of the project affected communities.
- The institutional framework takes cognizance of and serves to address the long-term needs of the development of the PAC’s.
- The institutional arrangements secure a total commitment of implementing agencies at all levels to the implementation of the Murum HEP Resettlement Plan.
- The projects implemented are in line with the underlying strategies and objectives of the Murum HEP Resettlement Action Plan.
- There are strong linkages between the functions of project planning, implementation, co-ordination, monitoring and evaluation.
- The implementing agencies involved in the resettlement projects have adequate capacity for implementing their own areas of responsibility.
- There is continuous review and upgrading of the capacity and capability of the personnel of implementing agencies and the people at the grassroots level.
- Project planning, appraisal and monitoring and evaluation of resettlement projects involve the participation of all stakeholders including the PACs.
- Planning, implementation monitoring and evaluation of resettlement projects uses a participatory approach.

10.2.3 The Policy-making Level - SPU

The SPU is the lead agency in the implementation of the HEP Resettlement Action Plan and has the following functions:

- Providing leadership in the planning, design and implementation of the resettlement programme and projects
- Coordinating the relevant implementing agencies.
• Monitoring and evaluating the results in collaboration with the relevant implementing agencies.

• Collecting and collating data on progress and making recommendations for modification of policies and programme design and costing to the State Secretary.

• Communicating information on progress and problems of implementation of resettlement programme.

• Providing the leadership in budget preparations and the identification of sources of fund for the resettlement programme and projects.

• Communicating the policy decisions to the Divisional DC for necessary action.

10.2.4 Inter-agency Coordination - Resident’s Office and the DDC

At the Divisional level, the Resident’s Office (RO) is the lead agency with the authority and ability to coordinate the other agencies to provide strong linkages and integration among all the relevant agencies and institutions. The functions of the RO through the Divisional Development Committee (DDC) will be as follows:

• Coordination of the implementing agencies involved in the resettlement programmes and projects.

• Providing feedback to SPU on the progress of the resettlement programme and projects implementation, and providing recommendations for modification of policies, project design, implementation schedule and costing for resettlement programme and projects.

• Collection and collation of data on progress and problems of implementation of all resettlement projects.

• Assisting SPU in preparing annual budgets for the resettlement programme and projects.

• Administering and disbursing funds to the implementing agencies for the implementation of resettlement projects.

• Establishing communication between implementing agencies, grassroots institutions, DDC and SPU.

10.2.5 Implementing Agencies - the Regional/Division Level

The line agencies at the regional/divisional level are responsible for the implementation of the resettlement projects and enforcement of the relevant legislations to protect the resources and environment. To achieve the goals and targets of the Resettlement Action Plan, their activities shall be coordinated by the Divisional Development Committee and their specific functions shall be primarily concerned with their respective mandates and areas of interest. The functions shall be as follows:

• Implementing projects or measures according to the mandates to achieve the resettlement goals and targets in their areas of responsibility; e.g. the Public Works Department (PWD) on infrastructure development projects; Department of Agriculture (DOA) on agriculture development projects; Department of Health (DOH) on health development projects Survey (L&S) on land planning, administration; DO on minor rural projects; The Sarawak Museum Department (MD) on cultural and historical matters, and others.

• Enforcement of the relevant legislations (Acts, Ordinances, and Regulations) by enforcement agencies; e.g. by NREB on Natural Resources and Environment Ordinance; L&S on Sarawak Land Code; the Sarawak Forest Department (SFD) and the Sarawak Forestry Corporation (SFC) on Sarawak Forest Ordinance, National Parks and Nature Reserves Ordinance, and Wildlife Protection Ordinance.

• Monitoring of the status of progress of implementation of projects assigned to respective agencies.

• Providing feedback through reporting to the DDC and their respective headquarters on the progress of implementation.

10.2.6 The Murum Resettlement Unit

To enhance the capacity on the ground for coordination and implementation of the Resettlement Plan, the Murum Resettlement Unit should be established. Under the Resident’s Office, this unit would be responsible for dealing with matters related to the resettlement programme and projects and would be based at the Murum Service Center. The unit would serve all the resettled communities and would report to the the Deputy Resident who is responsible for development projects. The functions of the unit would be:

i. To provide liaison between the PAC’s and the implementation agencies through the Murum Penan Development Committee (MPDC) on matters concerning the implementation of the Resettlement Plan and related programmes.

ii. To assist the Resident in making recommendations for modification of policies, programme design and costing to SPU and headquarters of implementing agencies for decision and appropriate action.
iii. To coordinate the development programmes and identify and solve any problems at an early stage.

iv. To assist in the identification of employment opportunities and match these with potential employees from the communities.

v. To monitor the progress and health in the communities and maintain a database.

vi. To provide a communication linkage between the government and the communities.

10.2.6.1 Murum Resettlement Unit Staff

The Murum Resettlement Unit will play a key role overseeing the coordination and implementation of the programmes and monitoring the progress of the resettled communities. The unit will require an administrator who can take on the role of Community Development Coordinator (CDC). The responsibilities of the CDC and of the staff in the unit are outlined below:

i. A Community Development Coordinator to serve as the Administrative Officer and Officer-in-charge of the Murum Resettlement Unit directly responsible to the Deputy Resident on implementation of Murum resettlements of projects including the management of Monitoring and Evaluation systems and communication with implementing agencies.

ii. One Sarawak Administrative Officer (SAO) to assist the Administrative Officer in-charge in the day-to-day management of resettlement projects as well as liaising with the implementing agencies in collecting and collating all field information concerned with implementation of resettlement programmes. A preference would be for this person to be from the area.

iii. One Account Clerk to handle the accounts for the implementation of resettlement projects.

The detailed programmes and proposals for institutional capacity building are included in Annex Six.

10.3 Community Development Coordinator

The Community Development Coordinator (CDC) is the person in charge of the Murum Resettlement Unit and responsible for monitoring and coordinating the programmes that contribute to the overall wellbeing of the resettled Penan. The CDC needs to be sufficiently qualified and placed at a level to be able to oversee all the development initiatives (schools, agriculture extension, health and identification of employment opportunities). This could be a contract position for a suitable candidate with the experience and willingness to work on the resettlement process.

The CDC would work directly with the District Officer and the Resident and oversee and assist in the coordination of the various line agencies (e.g. education, agriculture, health) programmes. The role is essentially to monitor that the programmes are proceeding and to check on progress of the implementation on the ground and to help solve any problems. This role would require the person to be based on site and committed to the whole process. The CDC would have to have the experience and project coordination ability to address any problems as well as the having the initiative and authority to act. They would need to have one or two (preferably local) assistants who would understudy the CDC. The CDC requires the following skills and attributes:

- Excellent communication skills;
- Able to solve problems;
- Concern about the welfare of the local community;
- Management ability to see what needs to be done and have the initiative (plus authority and access to budgets) to act;
- Able to trouble-shoot and call in the resources to solve problems;
- Knowledge of the people in the community; and
- Ability to coordinate the line agencies to do their work.

The physical location or base of operations for the CDC is very important. He/she would need to be based in Murum at the service centre or wherever the main implementing agencies (health, agriculture, and education) are located. This is to be able to immediate access to the agencies as well as to the communities.

Another key role of the CDC would be in identifying the various employment opportunities and coordinating this with the available workforce in the resettled communities. This would require working with the community-based liaison personnel to develop an employee database and working with the various companies and agencies associated with the Murum HEP to develop an employer database with job opportunities. This information is required to better match employees with possible employers. This would also involve the identification of training needs and coordination of on-the-job training programmes.
Ensuring the realization of the employment opportunities would also require organizing the Penan workforce through the community liaison personnel. The format of the employment would have to be negotiated and understood by both the employees and the employers including issues such as: when people work, how they work, how many work, how they are fed, where they live and so on. These issues need to be understood to prevent misunderstandings and to ensure that the communities receive employment and the employers have a workforce.

The liaison with the community workers is very important, as it would be through this means that people who are having trouble adjusting could be identified. The CDC would be responsible for counseling these people and finding means to either assist them in adapting to the available livelihood options or finding alternative solutions at an early stage. It is likely that the CDC and the assistants would also require some training for this role.

**10.4 Strengthening Inter-agency Communication Linkages.**

Vertical communication from the policy-decision level (SPU) to coordination level (Resident's Office) and to the implementation level (government line agencies) is essential to ensure that policies result in implementable programmes and projects; and these programmes and projects are practical and realistic and executed efficiently and effectively. A two-way flow of information is required so that the policy level receives reports on progress and feedback on policy so that any changes that might be necessary can be quickly implemented.

There are also communication linkages needed between the SPU and the corporations or NGO's involved with the affected communities. These initiatives may include provision of technical or financial assistance for poverty eradication projects and capacity building and human resource development to augment those projects undertaken by the government.

Each line agency has its own line of communication from the central level to the divisional level implementing agency. Thus, at the central level, it is important that the agencies responsible for resettlement are part of the policy development and share common goals and objectives. Effective vertical communication linkages within the implementing agencies are important to ensure that the agency programmes are in line with the priorities and specific needs of the Resettlement Plan, and feedback from the ground can be acted on.

In order for the Resident's Office to function as a coordinator for resettlement implementation there needs to be a two-way flow of information between the Resident's Office and the divisional implementing agencies. Information on the resettlement policies, and strategies and priorities of projects and budget will flow from the Resident's Office to the implementing agencies. Information on progress of implementation of the resettlement projects and recommendations for modification of policies, strategies, programme design, project proposals and budget shall flow from the respective agencies to the Resident's Office and then on to SPU.

The vertical and horizontal communication system, and the linkages between the SPU and Resident's Office, and the various levels of implementing agencies are essential to provide an effective mechanism for continuous reassessment of the implementation of the resettlement programme and projects. This feedback system will help redefine resettlement projects' goals and targets, and identify needs for improvement of policies, strategies and programme in the light of changing circumstances during the course of implementation of the Resettlement Plan.

The Community Development Coordinator plays a critical role as an important linkage for information flow in the region, especially between the ground, the Resident's Office and the other line agencies. Maintenance of these communication linkages is important to provide timely feedback on the needs from the ground and the success of the programmes being implemented. Regular meetings and programme review will enable information and progress to be analysed and adjustments to be made in the programme approach, the measures or the targets. Having the communities involved in this process (whether through the CDC or the community organisations) will enable their views and concerns to be incorporated.

The functional linkages and information flow and feedback loops from the State Secretary down to the implementing agencies and grassroots institutions are depicted in Figure 10.

**Figure 10 Interagency linkages, information flow and feedback loops.**

**10.5 Strengthening Management and Organisation**

**10.5.1 HEP Resettlement Sector in the Special Murum Unit (SMU) at SPU**
Successful resettlement of the communities affected by the Murum HEP will require long-term monitoring of the programmes and projects and the ability to adapt to new and changing situations. Furthermore, the state is investigating the possibility of harnessing additional HEP power and this will likely require future resettlement programmes.

The Special Murum Unit (SMU) based in the SPU should be strengthened through the establishment of the **HEP Resettlement Sector**. The sector would have functional linkages with the relevant government agencies (departments and ministries), statutory bodies and the Resident's Offices to deal with formulation of policy, design of programmes and projects, monitoring and evaluation of the implementation plans on resettlement matters as well as budgeting and securing funds for the programmes and projects for all HEP's in the State. The sector will be a permanent structure in the SPU acting as the secretariat dealing with the management of all aspects of HEP resettlements in the State.

### 10.5.1.1 Functions of the HEP Resettlement Sector

The main functions and tasks of the HEP Resettlement Sector are as follows:

**Overall Functions**

- To oversee the relocation of the project affected communities (PAC's).
- To serve as the focal point for addressing issues related to resettlement of communities affected by projects including, land compensation, infrastructure development, agriculture development, education development and health development.
- To plan and prepare budgets for Poverty Eradication Schemes.
- To coordinate funding from the Federal Ministry of Rural and Regional Development (MRRD) as well as from other State and Federal agencies for financing the implementation of the poverty eradication schemes and other development projects under the Resettlement Plan.

**Specific Functions**

The Sector shall be responsible for the following specific tasks:

- To plan and monitor the Resettlement Plan and the programme and projects under it (including poverty eradication schemes)
- To coordinate with the Resident's Office (RO) and the relevant agencies on the planning and budget requirements for the implementation of the projects under the poverty eradication schemes and the Resettlement Plan.
- To formulate strategies for capacity building for the implementing agencies and the community-based institutions.
- To provide reporting on the progress (financial and physical) of the implementation of the poverty eradication schemes and Resettlement Plan.
- To incorporate the project proposals and budgets submitted by the RO for decision and action.
- To communicate the decisions of the State Secretary and SPU on the proposed modifications of policies and programme design, project proposals and approved budget to the RO and implementing agencies for necessary action.

### 10.5.1.2 Human Resource Requirements in HEP Resettlement Sector

To ensure that the HEP Resettlement Sector functions effectively, adequate manpower is required. Under the establishment of the Murum Resettlement Section of SPU in 2008, the following posts have already been created for the Murum HEP resettlement:

- Special Administrative Officer (Pegawai Tadbir Khas); the Office-in-charge of the section directly responsible to the Director of SPU on Murum relocation and resettlements of project affected communities and coordination of collection and collation of information for the Monitoring and Evaluation (M&E) system from the Resident's Office.
- Administrative Officers (Pegawai Tadbir); 3 posts; one to deal with general duties; one to deal with resettlement activities; and one to handle relocation activities.
- Administrative Assistant (Pembantu Tadbir); to handle the accounts.
- Driver.

Upgrading the present Special Murum Unit to the level of a sector of SPU, will require that the post of the Special Administrative Officer be upgraded to the post of Assistant Director-in-charge of the HEP.
Resettlement Sector responsible for dealing with all HEP settlement programmes throughout the State.

It is also proposed that an Information Analyst should be recruited to handle the monitoring and evaluation system. Specifically, the functions of the Information Analyst are as follows:

- Collect and collate all field information concerned with implementation of resettlement programmes throughout the State.
- Analysis of field information and preparation of reports.
- Coordinate field data collection with all Resident's Offices (HEP Resettlement Units) throughout the State.

10.6 Community Organisations and Foundation

10.6.1 Murum Penan Development Committee

The Murum Penan Development Committee (MPDC) was officially formed on 15th March 2009 with the elected office-bearers comprising the headmen, community leaders and educated Penan from all project affected villages. The purpose of the committee is to represent the communities in negotiations with the Government and to provide the SEIA consultants inputs during the development of the Resettlement Action Plan (RAP). The MPDC also provides a mechanism for communication between the Murum communities and other agencies including the government.

The MPDC appointed Datuk Billy Abit Joo, Liwan Lagang and Penghulu Pao Tului as their advisors. Datuk Billy Abit Joo is the Member of Parliament for Upper Rejang and Liwan Lagang is the State Legislative Assemblyman for Belaga.

The MPDC receives guidance and financial assistance from the Asap Koyan Development Committee (AKDC). This arrangement enables the MPDC committee gain the experience required to eventually operate on their own to deal with Murum Penan concerns. For the time being, the MPDC is placed as a Special Interest Group as per Article 7 Clause 7.4 of the AKDC Constitution.

The initial meetings and briefings for the Murum SEIA were conducted with the MPDC and the grievance mechanism was established MPDC as the main communication link between the government and the people. The grievance mechanism also included the District Officer as an advisor along with the state legislature representative.

The MPDC was first been recognized by the Government as a valid representative for the affected communities in Murum when they were invited on the 8th April 2009 to a dialogue at the Sungai Asap Sub-District Office on matters related to historical sites in the Murum HEP area. During a Murum SEIA Technical Committee meeting on 5th October 2009, the State Government officially recognized MPDC as a representative of the Murum Community and accepted the Grievance Mechanism as the line of communication between the Government and the affected communities. The MPDC has since taken an active role in all the relevant meetings and dialogue sessions held by the State Government and SEIA Consultants.

In the future, the MPDC can continue to play an important role in community development as a conduit of information to and from the community. To be effective in this role, it will be necessary that communication links to the community continue to be through the MPDC and the community members recognize the MPDC and the means to communicate their needs. The linkages to the District Office are very important and these are met through the established headman institution. The MPDC provides a broader representation of the communities and also provide the scope for communication with other agencies, including non-government agencies.

10.6.2 Murum Community Development Foundation

Successful support to the implementation of the resettlement programmes will be best served by an agency based in the Murum area. This support agency should take the form of a locally established foundation that includes the participation of the local communities. Their involvement and participation is important to ensure that programmes are addressing the actual needs of the people in a manner that is acceptable to the local conditions. While the primary focus for the foundation would be the resettled communities, this scope is not limited to these communities and should include the development needs of all communities in the Murum area.

The foundation would have the role of identifying community needs and communicating these to the relevant authority or addressing these needs directly. An important aspect of this would be the ability to raise and receive funding and to implement projects at the ground level. Basing the foundation in the Murum Service Centre with sub-offices in the various communities will provide the necessary linkages to the ground.

The foundation should coordinate with the District office but be based in the Murum Service centre and able to operate independently. The existing MPDC provides a good starting point for the core membership and
community representation and this should be augmented with corporate memberships, government liaison and other groups with an interest to assist the communities. The Community Development Coordinator will be a key resource person to advise and guide the foundation and to provide assistance with identification of projects needing funding.

With a foundation that can function independent of the government, it will be possible to obtain funding from sources other than (or in addition to) the government. This would provide an opportunity for involvement of NGOs and a means for corporate bodies to channel community programmes to the ground. Many companies have corporate social responsibility (CSR) commitments and the foundation would provide an avenue to develop these programmes.

The foundation can also receive funding through benefit sharing from the Murum HEP and can channel this money to support community livelihood and extension programs as well as other community projects including transport support and education for all levels. In other countries (Laos, Philippines, Vietnam) a portion of the dam revenues is channeled to the community to provide tangible benefits from the project. This benefit sharing provides the communities with the additional financing to support a range of activities including education, health and village extension and provision of transport and support to teachers and adult education.

Initially, the core activities of the foundation would focus on providing and facilitating community services. These services could include:

- Training programmes (in association with the agriculture extension)
- Education: community pre-schools, kindergartens and adult literacy classes
- Transportation: for school children and to and from the clinics
- Community projects: based on the needs identified.
- Micro-financing: for projects in the communities
- Establishing village shops and trading centres

The foundation would require budgets to hire local staff and to finance the purchase of equipment including boats and vehicles. The staff would require training and in the initial stages guidance in their roles. Agencies such as AZAM or the Agriculture and Rural Development Unit in the SPU or NGOs could provide the guidance and assist with the initial start-up.

The foundation can also cooperate with local and foreign volunteer organizations willing to support through funding or capacity building.

Annex 11 MONITORING AND EVALUATION

11.1 Introduction

In order to determine the success of the resettlement, it will be necessary to measure progress over time and towards a set of established targets. The Government of Sarawak views the resettlement as an opportunity to improve the situation of the Penan. Gauging this will require continual monitoring of a number of factors to ensure that there is indeed progress. Furthermore, monitoring is required to be able to identify at an early stage any problems that may need to be addressed. The resettled communities will require on-going assistance to help them adjust to their new areas and to their new economy. Extension programmes will have to be flexible to adjust to changing needs and changing demands and this will require being able to recognize these changes through monitoring.

Monitoring and evaluation are key components of the Resettlement Action Plan and have the following general objectives:

**Monitoring:** Monitoring of specific situations or difficulties arising during implementation, and of the compliance of implementation with objectives and methods set out in the RAP; and

**Evaluation:** Evaluating emergent, mid- and long-term impacts of the Project on the welfare of impacted households, communities, environment and local government and capacities.

Monitoring aims at correcting implementation methods during the course of resettlement program implementation as required, while evaluation is intended at providing lessons learnt for amending strategies...
and implementation in the longer term.

Monitoring and evaluation will also provide a picture of socio-economic status of Project Affected Persons after relocation and if required, propose necessary solutions for solving outstanding issues. Monitoring will be essentially an internal function whereas evaluation will generally by external.

11.2 Internal Monitoring

11.2.1 Monitoring Methodology and Process

The monitoring of day-to-day implementation of the RAP will be the responsibility of the Resettlement Implementation Unit located in the District Office.

Monitoring will be undertaken under the direction and responsibility of the Community Development Coordinator reporting to the Deputy Resident of the Division. The monitoring process will be designed to:

i. Verify the provision of compensation and other entitlements being carried out in accordance with the provisions of the RAP; to this end, a database will be set up and shared by the Resettlement Unit, SPU and the SEB;

ii. Verify that funds for implementing the RAP have been provided in a timely manner, that the amounts are sufficient for their purpose, and that such funds have been used in accordance with the provisions of the RAP;

iii. Track progress against the schedule for implementing the RAP to ensure it is being met;

iv. Track any complaints from the affected people and that these have been addressed on time and according to the proposed mechanism for complaints;

v. Determine if the objectives of the resettlement project are being met in terms of livelihood and income being restored and improved.

vi. Determine whether the procedures for delivery of compensation and other rehabilitation entitlements to affected people and organisations have been carried out in accordance with the provisions of the RAP;

vii. Gather quantitative and qualitative information of the social and economic impact of the Project on the livelihoods of affected households.

viii. Suggest mitigation measures and modifications to achieve the principles and objectives of the RAP including the Project resettlement policies.

11.2.2 Indicators and Information Management

Monitoring will be based on indicators of change relevant to the compensation and resettlement process and will be based as much as is possible on participation with affected households and communities. Table 11 provides a summary of potential monitoring areas on which indicators will be based.

Table 11 Monitoring Aspects and Indicator Areas.

<table>
<thead>
<tr>
<th>Overall social and economic status</th>
<th>Social and economic status of households, and villages</th>
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<tbody>
<tr>
<td></td>
<td>Reestablishment of agriculture</td>
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<td></td>
<td>Actions targeting vulnerable groups</td>
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<tr>
<td></td>
<td>Access to employment and business opportunities</td>
</tr>
<tr>
<td>Compensation and negotiations</td>
<td>Compensation payments made, timing of such payments</td>
</tr>
<tr>
<td></td>
<td>Contracts and associated arrangements</td>
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<tr>
<td>Resettlement</td>
<td>Resettlement options finalized</td>
</tr>
<tr>
<td></td>
<td>Relocation details and arrangements</td>
</tr>
<tr>
<td></td>
<td>Accommodations at relocation sites (house types, costs, facilities etc)</td>
</tr>
<tr>
<td></td>
<td>Relocation site development progress (status of construction works, testing and commissioning of housing, schedules etc)</td>
</tr>
</tbody>
</table>
**Economic restoration activities and measures**
- Economic restoration programs implemented
- Participation in assisted programs
- Skills enhancement programs and activities
- Small loans components
- Economic support programmes

**Consultation & disclosure**
- Perception of resettlement program
- Satisfaction with compensation and other assistance
- Information provided to affected households, villages and other stakeholders

**Complaints/grievances**
- Number, type and cause of complaints/grievances
- Resolution rates and effectiveness of complaints settling

Monitoring is a long-term and potentially open-ended activity. The relevant authorities and the community will work to define end-points and year on year goals to enable targeted and effective monitoring. This approach is intended to allow monitoring to be reduced in areas where activities have been completed and goals achieved while maintaining focus on problematic issues.

The data base and information on entitlements, compensation payments, socio-economic status of affected households will be the main reference and will be expanded to cover additional data and statistics as RAP implementation progresses.

The Murum Resettlement Unit will have as one of their chief tasks, the collation of the information for monitoring the ambient condition of the communities. This information will be gathered from several sources including the various agencies implementing the resettlement. The various agencies involved in the implementation of the resettlement programmes and targets to be monitored are outlined below.

**11.2.3 Murum Resettlement Unit**

In addition to being responsible for the overall monitoring, the Murum Resettlement also has a role to play in livelihood restoration. An important role will be the maintenance of a database of potential employees and a resource list of potential employment opportunities. This information will also be important for guiding the training needs. The key target relate to employment will be:

Livelihoods
- Year one : one person in every family employed

Economy
- Income above the Poverty Line by the 6th year of resettlement

**11.2.4 Agriculture Department**

The Agriculture Department will be responsible for the implementation of a large proportion of the livelihood restoration projects. The area to be planted with different crops (e.g. 4 ha rubber, 3 ha garden and fruit crops) provides an overall goal. Setting a time limit provides a target. The targets and time frame for implementation of the various agriculture projects are outlined below:

Home Gardens
- End of Year One - All households have 0.5 ha of garden plot planted and growing produce by the end of the first year of resettlement
- Year Two : All household gardens are capable of providing produce

Fruit orchards
- Year 2 - Fruit trees are planted on at least 1 ha of land by all households

Rubber mini-estate
- Year 1: at least half the allocated acreage (2 ha per household) is planted
- Year 2: all the allocated acreage is planted (4 ha)
- Year 3: at least 90% of rubber trees are growing
- Year 6: half the planted trees are ready to tap
- Year 7: all the trees are ready to tap

Agriculture Extension
- Year 1: There are village extension staff in each community

11.2.5 Education Department

The Education Department is responsible for administering the schools and providing education opportunities for the communities. The first goal is to ensure that the physical structures for the schools are in place and there are staff for each. The immediate targets for education are as outlined below:

*Education (once schools are established)*

- There are sufficient teachers for the numbers of students
- Year 1: all school age children (5 - 13 year) are in school
- Year 1: Adult education classes are available in all communities
- Year 2: All school age children are still in school (< 10% drop out)
- Support is available and distributed to all children who require it

11.2.6 Health Department

The Penan are well aware that health is a very important asset and they realize and seek modern health services. The resettlement and development of a service centre provides an opportunity to bring much needed health care services closer to the people. This will be achieved through the establishment of clinics and the implementation of health extension and outreach programmes. While the health programmes introduced by the DOH have been well received, some key health challenges remain:

- Improving nutrition among young children (of 7 years and below) and pregnant and nursing mothers: this is not purely an issue of DOH as it also has to do with food availability, household income and nutrition education.
- Improving environmental sanitation: the most immediate task is to provide sanitary latrines and communal waste disposal facilities for every household.
- Reducing the risk of infant and maternal mortality: Such risks can be greatly reduced by the establishment health clinics that are accessible to the communities;
- Reducing the risks of vaccine-preventable diseases such as measles, tuberculosis, small-pox, etc.: Immunisation programmes do not reach the communities.
- Reducing the risk of non-communicable diseases: through health education and public awareness campaigns.
- Prevention of malaria: improved sanitation and living conditions to control vectors and to provide medication as required.
- Health anxieties among the Penan: Lack of food supply due to low farm productivity and dwindling food sources from the forest is the greatest health anxiety among the Penan especially for the infants and children who are the important vulnerable groups in the communities. There is an acute awareness that the children are not growing well and often falling sick due to poor nutrition, and the Penan feel that the government should introduce some effective nutritional intervention programmes in conjunction with community health programmes to rectify this situation.

The Health Department is responsible for the collection of basic health data. Some of the indicators to monitor the progress in health for the Penan community include:

- All communities have access to health services
- The mobile clinic to has a regular (once per week) schedule to the Metalun area.
- All communities have clean water supply and sanitation facilities
• Year two: there are no recorded incidences of malnutrition
• Year Three: Children size and weight is no worse than for other communities in the state
• Incidence of disease is no worse than for other communities in the state
• All children are immunized
• Incidence of infant mortality no worse than for other communities in the state

11.2.7 Monitoring of Cultural and Ethnic Stability

The communities are well aware of the threats to their cultural identity that could result from resettlement. For this reason, they (the communities) have been adamant regarding the need to resettle according to their communities and the need to maintain community structure. The designs for the new communities have responded to these requests.

The Contemporary Ethnography has elaborated on the importance of landscape to the Penan and how their surroundings provide a validation of who they are and where they are.

11.2.8 Monitoring Reports

Reporting of the monitoring results is an important step in the process to provide information regarding the effectiveness of programme strategies towards achieving programme goals. This type of review assesses the current state against the targets and indicators so that any needed changes in either the measures employed or the targets to be achieved can be made. The State Planning Unit will be provided with a monitoring report prepared by the Murum Resettlement Unit every three months. These reports will evaluate the implementation status and include suggestions to improve implementation and intended outcomes. The monitoring reports will be available in Malay and English and made available in Malay at the Project Information Centre at the Murum Service Centre and other locations as relevant.

The functional linkages between the levels of managing an iterative monitoring and reporting system are depicted in Figure 11.

Figure 11 Functional linkages for managing a management and evaluation system.

11.3 Independent Evaluation and Auditing

11.3.1 Evaluation Methodology and Process

Evaluation will be conducted to:

viii. Assess the compliance of the implementation of the RAP with objectives and methods set out in this document;
ix. Assess the compliance of implementation of the RAP with laws, regulations and safeguard policies;
x. Evaluate the implementation of the RAP to achieve its objectives in particular "to improve or at least maintain the income and living conditions of the affected households after the resettlement process"; and
xi. Identify actions to be part of the ongoing monitoring process to improve the positive impacts of the program and to mitigate any possible negative impacts.

Specifically, the independent evaluation team will be responsible to include, but not be limited by the following tasks:

i. Review the Resettlement Action Plan and associated studies and efforts;
ii. Review unit costs of compensation applied in the RAP and check at the site to ensure the compensation costs are at replacement value;
iii. Review consultation activities, information campaigns and disclosures;
iv. Evaluate socio-economic impacts of the Project on the PAP;
v. Assess compensation and resettlement procedures including:
   • Compensation payments and delivery in a timely manner;
   • Relocation site development and the allocation of plots to the affected households; and
Livelihood status of affected households.

vi. Assess the progress of relevant programs such as those for economic restoration and programs for vulnerable groups etc.

vii. Offer suggestions on how to improve RAP implementation; and

viii. Evaluate complaints and grievances.

The Terms of Reference (TOR) for the independent evaluation are to include:

i. The Project details and background;

ii. Purpose and objectives of evaluation;

iii. Scope of services required;

iv. Description of evaluation tasks;

v. Hiring and qualifications of the consultant/s;

vi. Mode of operation;

vii. Reporting and deliverables;

viii. Inputs available;

ix. Timing and schedules;

x. Location of work; and

xi. Type of contract proposed.

The schedule for independent evaluation will include a mission/visit at least twice a year during implementation and then once a year after operations begin for at least 2 years. The reference documentation for the evaluation will include the following:

- The Resettlement Action Plan and associated source documents;
- The Sarawak and Malaysian laws and regulations as described; and
- The applicable World Bank Group safeguard policies, i.e. OP 4.12 'Involuntary Resettlement'.

Other reference documents may include relevant materials and information developed and disseminated for local residents and internal monitoring reports when these are available.

11.3.2 Auditors

The auditor/s will be an independent consultant/s or NGO with experience in resettlement program design and practical implementation, and with no previous involvement with the Project.

An independent Panel of Experts (POE) will initially provide this evaluation function for the Project. The POE should undertake their first independent review in late 2011 and have unrestricted access to internal documentation.

The Malaysian Human Rights Commission (SUHAKAM) can be involved as one of the independent auditors. SUHAKAM was established by Parliament under the Human Rights Commission of Malaysia Act 1999, Act 597. Section 2 of this Act defines "human rights" as referring to the "fundamental liberties as enshrined in Part II of the Federal Constitution". The functions of SUHAKAM as set out in Section 4(1) are to:

- Promote awareness of and provide education relating to human rights;
- Advise and assist Government in formulating legislation and procedures and recommend the necessary measures to be taken;
- Recommend to the Government with regard to subscription or accession of treaties and other international instruments in the field of human rights; and
- Inquire into complaints regarding infringements of human rights.

11.3.3 Evaluation Reports

Evaluation reports prepared by the independent evaluation should be publicly released and be available at the Project Information Centre at the Murum Service Centre and other relevant locations.
In addition to the evaluation reports, the evaluation team will produce a completion report to be prepared six months after the completion of the entire resettlement program. This document shall provide detailed evaluation of the RAP and its implementation. It shall also report the outcome of interviews with the affected households on their situation and their opinions after they have been resettled and compensated.

**Annex 12 Resettlement Cost**

**12.1 Development Budget Estimates**

The resettlement sites have had no previous development and will require construction of all infrastructure and buildings for the two separate resettlement sites, the establishment of the service centre and the construction of associated access roads and services. The completion of the full complement of infrastructure will take several years and has been segmented into development phases (Section Annex 13). The estimated cost for establishing the infrastructure for the entire resettlement scheme is **RM 893,839,749.00**.

The estimated cost for the development of the resettlement infrastructure, according to different communities, is tabulated in Table 12.

**12.2 Detailed Survey of The Resettlement Sites**

There is an immediate need for detailed survey to be conducted at the proposed resettlement sites namely at Metalun and Tegulang areas. The detailed survey will provide the necessary information on the feasible area for the establishment of the villages, the garden plots and also the infrastructures on site. The Land and Survey Department has been assigned the task to carry out the survey and the detailed plan with the survey costing has yet to be finalized.

The detailed survey plan should be made available when the resettlement scheme moves into detailed design phase to enable final cost estimates and budgets to be formulated. During this phase the implementation agency will need to have the details of the resettlement locations so the construction tenders can be be called for the contractors to carry out the work.

---

**Table 12: Infrastructure and Building Costs for Tegulang and Metalun Resettlements.**

<table>
<thead>
<tr>
<th>Type of Project</th>
<th>Tegulang Resettlement</th>
<th>Metalun Resettlement</th>
<th>Total Resettlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Living Housing</strong></td>
<td>45,014,620.00</td>
<td>38,790,000.00</td>
<td>83,804,620.00</td>
</tr>
<tr>
<td>2. <strong>Infrastructure and Buildings</strong></td>
<td>164,222,530.00</td>
<td>259,775,305.00</td>
<td>423,997,835.00</td>
</tr>
<tr>
<td>3. <strong>Utilities and Services</strong></td>
<td>24,653,815.00</td>
<td>24,653,815.00</td>
<td>24,653,815.00</td>
</tr>
<tr>
<td>4. <strong>Maintenance</strong></td>
<td>6,065,815.00</td>
<td>6,065,815.00</td>
<td>6,065,815.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>239,627,890.00</td>
<td>409,359,830.00</td>
<td>648,987,720.00</td>
</tr>
</tbody>
</table>
The funding for the establishment of the rubber mini-estate will have to be available by the end of 2011 so that contracts to prepare the land and plant can be awarded. This will also provide an opportunity for employment and tender documents should specify that local residents from the communities are given priority for jobs.

In the meantime, budgets for the agriculture extension staff and programmes will have to be available by the 2012 so that the home garden plots can be prepared in advance of when the communities move to the resettlement area. These home garden plots are important to ensure there will be sufficient production potential for basic household food needs. The households will likely still need to have some form of livelihood support in the initial stages to see them through until the time when the rubber trees can be tapped and the rubber can be sold.

The estimated total budgets for the agriculture assistance programmes are outlined in Table 12. The details of the various programmes, the extension required, the training and the detailed budget estimate for the restoration of livelihood programmes are outlined in Annex Three.

Table 12 Summary of Estimated Costs for Agriculture Assistance Programmes

<table>
<thead>
<tr>
<th>Item</th>
<th>Costs (Year one)</th>
<th>Total Cost (6 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber estate establishment</td>
<td>9,091,400</td>
<td>20,897,600</td>
</tr>
<tr>
<td>Rice / Staple crop support</td>
<td>26,525</td>
<td>160,000</td>
</tr>
<tr>
<td>Fruit and other crops</td>
<td>706,000</td>
<td>2,471,000</td>
</tr>
<tr>
<td>Training programs</td>
<td>750,800</td>
<td>4,504,800</td>
</tr>
</tbody>
</table>

12.3 Livelihood Restoration Budgets

The funding for the establishment of the rubber mini-estate will have to be available by the end of 2011 so that contracts to prepare the land and plant can be awarded. This will also provide an opportunity for employment and tender documents should specify that local residents from the communities are given priority for jobs.

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</tr>
<tr>
<td>Training programs</td>
<td>750,800</td>
<td>4,504,800</td>
</tr>
</tbody>
</table>
12.4 Resettlement Support

The project affected households will require varying levels of support until the time when the cash crops (i.e., the rubber trees) begin to produce (Year 6). This support will be required to enable them to purchase food and other items that are not being produced from their gardens or being gathered from the forest. The quantum of support should be no less than the present poverty level index (in the case of Sarawak RM 850 per month per household). Once the communities have settled and the gardens have begun to produce, the need for this support will diminish. However, the role of the Community Development Coordinator in monitoring and identifying special needs and the current situation will be crucial. The estimated budget for the support required is outlined in Table 12. Securing employment for the communities is a priority and will help to offset the need for mid- and long-term support.

Table 12 Cost of resettlement support requirements for resettled households.

<table>
<thead>
<tr>
<th>Year</th>
<th>Item</th>
<th>Total (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-Moving Grant (353 families X RM 4,000 per family)</td>
<td>1,412,000</td>
</tr>
<tr>
<td></td>
<td>-Transport (353 families X 4 vehicles @ RM500)</td>
<td>706,000</td>
</tr>
<tr>
<td></td>
<td>-Support (RM 850 per month per household)</td>
<td>3,600,600</td>
</tr>
<tr>
<td>2</td>
<td>-Support (RM 850 per month per household)</td>
<td>3,600,600</td>
</tr>
<tr>
<td>3</td>
<td>-Support (RM 500 per month per household)</td>
<td>2,118,000</td>
</tr>
<tr>
<td>4</td>
<td>-Support (RM 500 per month per household)</td>
<td>2,118,000</td>
</tr>
<tr>
<td>5</td>
<td>-Food support as required (situation to be monitored by the resettlement unit)</td>
<td>500,000</td>
</tr>
<tr>
<td>6</td>
<td>-Food support as required (situation to be monitored by the resettlement unit)</td>
<td>500,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total for six years</strong></td>
<td><strong>14,555,200</strong></td>
</tr>
</tbody>
</table>

12.5 Compensation

Land and Survey and the Museum Department have gathered the information regarding the details for what is to be compensated. The quantum of compensation for the PAH losses is according to the agency rates and subject to negotiation with the PAH. The details for the items to be compensated are outlined in Table 12.

Table 12. Categories of items to be compensated.

<table>
<thead>
<tr>
<th>Item to be compensated</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops and fruit trees</td>
<td>• Details of the crops according to Land and Survey</td>
</tr>
</tbody>
</table>
- Amount of compensation to be determined and negotiated with the community according to Land and Survey findings and rates
  - RM 190,000 per family

<table>
<thead>
<tr>
<th>Native Customary Rights Land</th>
<th>Size of land according to Land and Survey findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Replaced with new land at the resettlement area</td>
</tr>
<tr>
<td></td>
<td>10 acres X RM 3,000 / acre</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing houses</th>
<th>As per Land and Survey department survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To be replaced with new houses (one per registered household) at the resettlement site.</td>
</tr>
<tr>
<td></td>
<td>Existing housing = 196 units</td>
</tr>
<tr>
<td></td>
<td>RM80,000 per existing house</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graves &amp; ritual costs</th>
<th>Identified in the claimant list of the Cultural Heritage and Archeology Study (Excluding Long Wat and Long Malim (Kenyah))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rates for compensation and grave relocation to follow Museum Department rates for compensation and relocation of graves</td>
</tr>
</tbody>
</table>

| Annual Ritual               | To be negotiated between the SEB, the District Office and the communities |

**Annex 13 Implementation Schedule**

The full development of all the proposed resettlement facilities for the communities is estimated to take a minimum of five years to complete. However, the Murum HEP is due to be completed by May 2012 when impoundment will commence. Given this schedule, the resettlement scheme has to be developed in phases to ensure that essential works can be completed to accommodate the resettled communities by early Year 2012. The distribution of development work into phases also provides for a longer period over which sufficient funding can be raised to finance the required facilities. The proposed infrastructure development schedule for the resettlement scheme will span three phases with Phase One have two stages (Table 13).

**Table 13 Infrastructure Development Schedule for the Murum Resettlement Sites.**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Development needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1- (a):</td>
<td>In advance of the village relocation, completion of community structures and services including:</td>
</tr>
<tr>
<td>(Basic Infrastructure Implementation)</td>
<td></td>
</tr>
<tr>
<td>2011-Q1 2013</td>
<td>Housing (one unit per household in designated resettlement sites).</td>
</tr>
<tr>
<td></td>
<td>Land clearing, and earthworks of 1 ha per household (for house) and 3 ha per household for home garden plots (fruit trees and vegetables)</td>
</tr>
<tr>
<td></td>
<td>Access roads to the villages</td>
</tr>
<tr>
<td></td>
<td>Pre-school/place of worship/community hall in the village</td>
</tr>
<tr>
<td></td>
<td>Reliable power and potable water supply</td>
</tr>
<tr>
<td></td>
<td>Sanitation</td>
</tr>
<tr>
<td></td>
<td>Basic community structures including burial ground (Metalun only)</td>
</tr>
</tbody>
</table>
Phase 1: (b - c)  After relocation, the following community structures and support will be required:

- Primary schools
- The Murum service centre and Metalun mini service centre with:
  - agriculture centre and extension services
  - Home economics and vocational training programmes
  - Transitional support as required
  - government administrative offices and
  - basic infrastructure in the service centres.

Phase 2:  Upgrading of access roads to the service centres, improvements to the main Murum service centre and Metalun mini service centre including secondary school in Murum service centre, permanent jetty, telecommunication services, commercial units etc.

| Secondary school at Murum service centre |

13.1 Relocation Schedule

The Murum HEP Dam is slated for completion by early 2012 with impoundment and flooding to commence in May of 2013. Key milestones to implement prior to relocation of the communities include:

i. Detailed plans and designs for the resettlement scheme completed and approved;

ii. Tender document prepared released for tender;

iii. Houses for the communities to be resettled at Tegulang and Metalun constructed;

iv. Garden plots prepared and rubber estate initiated;

v. Murum Resettlement Unit office established in Murum to oversee the resettlement

vi. Agriculture office established and ready to implement extension programmes,

vii. Basic infrastructure (power, water, sanitation, access roads) established.

With impoundment and flooding activity due to commence mid 2012, completion of the housing and basic works for the resettlement sites is of utmost urgency. For this reason the development has been phased with Stage 1 of Phase I focusing on the preparation of housing and the resettlement site. This is due to the fact that the existing access roads to the Metalun resettlement area, will become inaccessible after the impoundment starts. Finding an alternative access route post-flooding or transportation of material by river to the site will prove to be costly and time consuming. The detailed design, the tendering process and the tender award needs to be completed before the end of 2011. Site preparation and construction work for the resettlement sites should commence by the end of 2011. The scope of work for construction will need to be packaged and designed to allow for concurrent construction of the two resettlement sites and the service centres.

13.2 Preparation of Agriculture Land

One of the demands from the community was that the new sites be prepared and ready before they are requested to move and that all the agriculture areas and crops are planted and ready to produce.

At the same time the community structures are being constructed the garden plots and agriculture land needs to be established. This is important so that when, the communities move to the new resettlement sites there will be a means of providing for the immediate food needs.

The Department of Agriculture is the responsible agency for the implementation of the livelihood restoration programmes linked to agriculture. As cash crop agriculture through rubber will be the anchor of the programme, and rubber has at least a six year gestation to production, there is a need to initiate this programme as soon as possible. Given the schedules in play, it will not be possible to have the rubber in
production by the time the communities are moved to the new resettlements. However, if planting can commence as the communities are being constructed the lag time from moving to rubber production can conceivably be reduced to four to five years.

13.3 Project Implementation

The technical details for the infrastructure required are outlined in Section 2 and Annex Two and the institutional arrangements have been outlined in Section Annex 10.

Guidance for the resettlement will be from the Murum Steering Committee Chaired by the State Secretary. The Special Murum Unit in State Planning Unit is the agency with overall responsibility for the resettlement activity. To coordinate the activities on the ground and to ensure the continued involvement of the local communities, the exercise should be coordinated on the ground through the Murum Resettlement Unit and the Murum Penan Development Committee.

The project implementation of the community villages and service centres is most likely to be undertaken by SPU via a tender process for local contractors to take up the construction works. Due to the short time frame, it is proposed that the overall project be sub-divided into multiple construction packages allowing for different contractors to proceed concurrently. At least 3 construction work packages will be required for the implementation of this project:

- One package for the building works of Tegulang Resettlement site, including Murum Service Centre;
- One package for the building works of Metalun Resettlement site, including Metalun’s mini service centre; and
- One package for the infrastructure works including roads, bridges, drainage, water supply and electricity supply etc.

The three construction packages should be supervised by a group of consultant specialists comprising of the architects, civil and structural engineers, mechanical and electrical engineers and quantity surveyors to ensure the work done is of high quality and the project meets its schedule.

Annex 14 list of references


Department of Agriculture, Sarawak: Program Pembanunan Usahawan dan Industri Asas Tani dan Makanan Negeri (Farm-based and Food Industries and Entrepreneurship Development Programme [State]), 10th Malaysia Plan.

Department of Agriculture, Sarawak: Pembangunan Usahawan dan Industri Asas Tani dan Makanan Persekutuan (Farm-based and Food Industries and Entrepreneurship Development Programme [Federal]), 10th Malaysia Plan

Department of Agriculture, Sarawak: Agriculture Diversification Scheme, 9th Malaysian Plan.

Department of Agriculture, Sarawak: Rubber Development Programme, 9th Malaysian Plan


Annexes

1. List of demands from the Murum Penan

Annex 15 Infrastructure Development Programme

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Site Key Plan-Metalun Resettlement

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Site Layout Plan: Long Malim P
Site Layout Plan: Long Malim K
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Site Layout Plan: Long Menapa

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Annex 16 Livelihood Restoration Programmes
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Annex 18 Functions of the institutions in the various management levels
Annex 19 Programmes and proposals for institutional capacity building

1. Local traditional law
3. The King
4. Natural Resources and Environment (Prescribed Activities) (Amendment) Order 1997
5. The State Governor (through the Sarawak Gazette)
6. Local traditional law
7. Referred to as pemakai menoa in the Iban language
8. Section 18
9. Section 10(a)(b)(c) Sarawak Forestry Ordinance, 1995
10. Traditional community laws and customs.
11. The Association for the Development Of Education Of Indigenous People
12. Literally: Up River People
13. The AKDC is a local agency, formed by the people of the Asap resettlement, to provide representation to the government and to initiate and facilitate projects at the ground level to create employment and assist the resettled communities.