

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) BAD KA  
ENVIRONMENTAL MANAGEMENT PLAN (EMP) JONG  
KA MYNTDU LESHKA STAGE-II HYDRO ELECTRIC  
PROJECT, (210 MW)  
MEGHALAYA  
(Sector 1(c); Cat "A")**



**Ka Pasoh**

**September, 2022**

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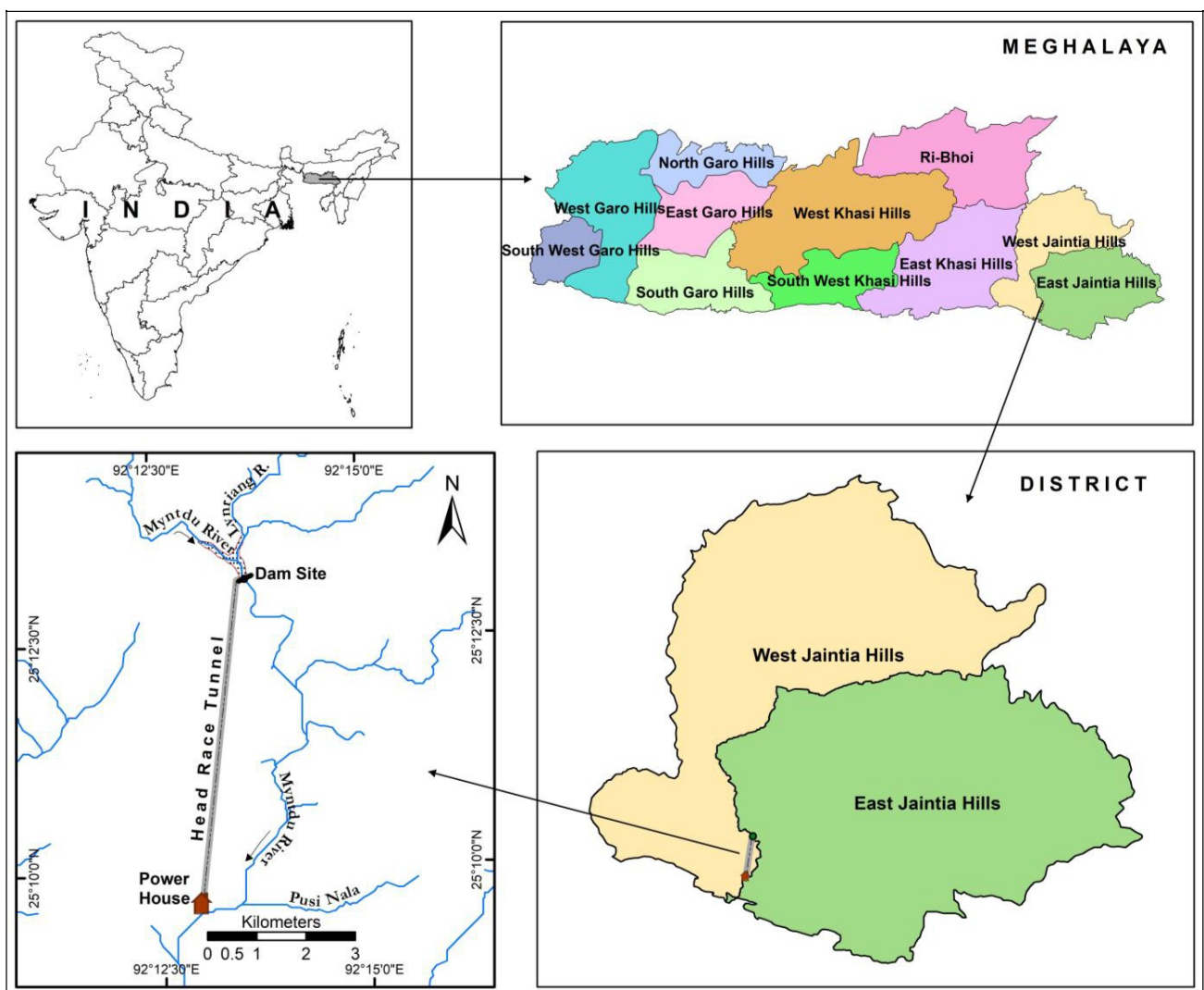
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## MYNTDU-LESHKA STAGE-II HYDRO ELECTRIC PROJECT (3 X 70 MW)

### KA PASOH JONG KA EIA BAD EMP REPORT

#### 1. KA JINGLAMPHRANG

Ka Myntdu Leshka Hydro Electric Project (HEP) Stage-II ka don hajan ka shnong Trangblang ha West Jaintia Hills District jong ka jylla Meghalaya. Ka jingthmu jong kane ka projek ka long ban pynmih bording na ka um jong ka wah Myntdu kumba la pyni ha ka Dur 1 harum:



Dur 1: Ka map kaba pyni ia ka jaka ba don ka Myntdu Leshka HEP Stage-II HEP (Location map)

## 2. SHAPHANG KA PROJEK

Ka Myntdu-Leshka Stage-II Projek ka dei ka projek pynmih bording ha kaba yn tei da ka Dam dewbilat (concrete gravity dam) ka ban pyniaid ia ka um lyngba ka thliw tan um (intake) ka ba don ha ka liang ka mon jong ka wah Myntdu. Ia kane ka um yn pyntuid shuh shuh lyngba ka lynti um napoh khyndew (underground water conductor system) kaba kynthup ruh ia u thliw pynpei um ba pyllun (pressure shaft) shaduh ki mashin ba don ha ka iing pynmih bording. Ka iing pynmih bording (surface power house) ka don sha ka liang ka mon jong ka rud wah. Ka um kaba mih pat na katei ka iing pynmih bording, ynda la dep pyndonkam ia ka, yn pyntuid biang sha ka wah Myntdu. Kane ka projek kan pynmih bording kaban kot sha ka 605.64 MU (ha ka 90% jong ka dependable year). Ka jingpyntrei ia ka projek ka kynthup ia ki kam harum:

- Ka jingkynjang ka Dam dewbilat (high concrete dam) ha ka wah Myntdu ka long 46 m kaba lah ban pynlang um kumba 2.73 Mcum (live storage) naduh ka jingkynjang (MDDL) El 254.5 m haduh ka jingkynjang jong ka um (FRL) El 270 m.
- Ka lynti um napoh khyndew (tunnel) kaba jrong kumba 6.175 km bad ka jingiar ba pyllun (diameter) ba 6 m ka ban poi shaduh u thliw pyllait lyer (surge shaft).
- U thliw pyllait lyer (surge shaft) ba kynjang 69 m bad jingiar pyllun 21 m (diameter)
- U nar pyniaid um (Pressure shaft) ba pyllun napoh khyndew, uba iar pyllun 4.8 m (diameter) bad uba jrong 835 m
- Ka iing pynmih bording (Power House) kaba don lai tylli ki Francis Turbine ha kaba uwei uwei u turbine un pynmih ka bording kaba 70 MW na ka jingkynjang kaba 228.38 m
- Ka lynti pyllait um na ka iing pynmih bording sha ka wah Myntdu (Tail race channel) ha ka jingkynjang El 13 m

Ki mat bad jingtip ba kongsan (salient features) jong ka projek la pyni ha ka Table 1. Ka map ba pyni ia ki bynta jong ka Myntdu Leshka HEP Stage-II HEP (Layout map) la pyni ha ka Dur 2:

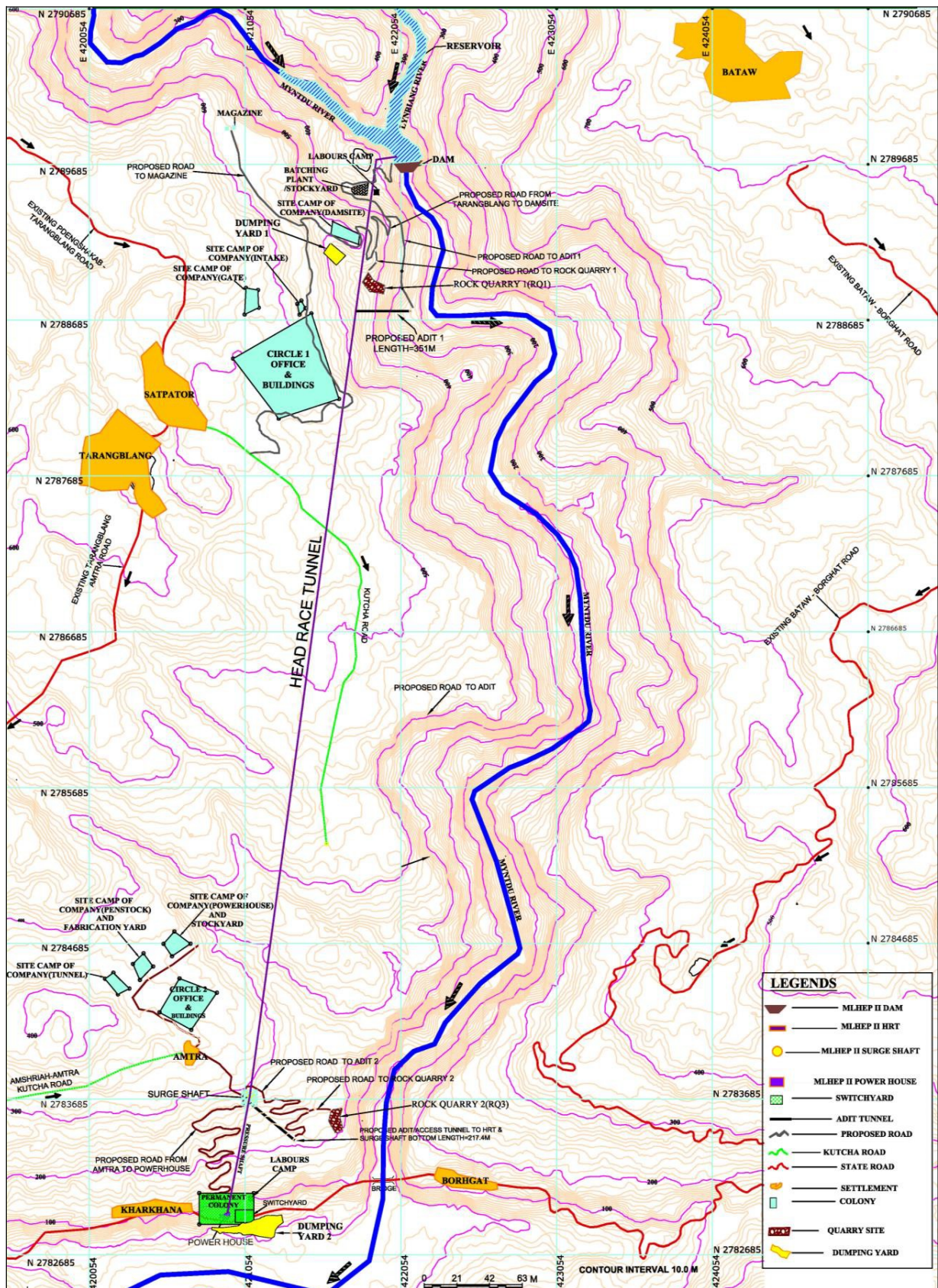
**Table 1: Ki mat ba kongsan (salient features) jong ka Myntdu Leshka HEP Stage-II HEP**

| LOCATION                |                             |               |
|-------------------------|-----------------------------|---------------|
| State                   | Meghalaya                   |               |
| District                | West bad East Jaintia Hills |               |
| River                   | Myntdu                      |               |
| Annual Energy Potential |                             |               |
|                         | 90% DEP. YEAR               | 50% DEP. YEAR |
| Energy Generated        | 605.64 MU                   | 788.27 MU     |
| Design Energy           | 593.04 MU                   | 770.12 MU     |
| Annual PLF              | 32.92 %                     | 42.85 %       |
| Lean PLF                | 3.22 %                      | 8.97 %        |

|                                                      |                                                                      |
|------------------------------------------------------|----------------------------------------------------------------------|
| <b>DAM SITE</b>                                      |                                                                      |
| Location                                             | Right Bank: Near Village Trangblang<br>Left Bank: Near village Bataw |
| Latitude                                             | 25°13'17.45" N                                                       |
| Longitude                                            | 92°13'35.96" E                                                       |
| Nearest Airport                                      | Shillong, Meghalaya                                                  |
| Nearest Rail Head                                    | Guwahati (103 km from Shillong)                                      |
| <b>HYDROLOGY</b>                                     |                                                                      |
| Catchment area at the dam site                       | 480.00 sq km                                                         |
| Average annual runoff                                | 2290.90 MCM                                                          |
| 90% dependable annual runoff                         | 1668.717 MCM                                                         |
| 50% dependable annual runoff                         | 2304.89 MCM                                                          |
| Minimum Avg. Annual Discharge (2013-14)              | 1609.49 Cumec                                                        |
| Maximum Avg. Annual Discharge (2010-11)              | 2810.98 Cumec                                                        |
| <b>RESERVOIR</b>                                     |                                                                      |
| Full Reservoir Level (FRL)                           | El.270.00 m                                                          |
| Maximum Water Level (MWL)                            | El. 270.00 m                                                         |
| Minimum Drawdown Level (MDDL)                        | El. 254.50 m                                                         |
| Gross Storage at FRL                                 | 5.06 MCum                                                            |
| Live Storage                                         | 2.73 MCum                                                            |
| Area under submergence at FRL                        | 0.14 Sq Km                                                           |
| <b>DAM</b>                                           |                                                                      |
| Type                                                 | Concrete Gravity                                                     |
| Top elevation of the dam                             | El. 272.00 m                                                         |
| Crest Level                                          | El. 253.40 m                                                         |
| Riverbed level                                       | El. 226.00 m                                                         |
| Height of dam above riverbed level up to Crest Level | 27.40 m                                                              |
| Height of dam above riverbed level up to FRL         | 46 m                                                                 |
| Length of the dam at the top                         | 210.76 m                                                             |
| <b>SPILLWAY</b>                                      |                                                                      |
| Design flood (PMF)                                   | 10400 Cumec                                                          |
| Type                                                 | Ogee                                                                 |
| Crest Elevation                                      | EL 240.5 m                                                           |
| Number of bays                                       | 7                                                                    |
| Length of Spillway                                   | 140.00m                                                              |
| Energy dissipation                                   | Ski-Jump Bucket                                                      |
| Gate Size (Radial)                                   | 7 Nos. x 8.0 m x 16.6 m                                              |
| <b>INTAKE</b>                                        |                                                                      |
| Invert level                                         | EL 242.5 m                                                           |
| Number                                               | 1                                                                    |
| Gate Size                                            | 6.50 m x 6.30 m                                                      |
| <b>HEAD RACE TUNNEL</b>                              |                                                                      |
| Number                                               | 1                                                                    |
| Size                                                 | 6.0 m dia.                                                           |
| Shape                                                | Modified horseshoe                                                   |
| Length                                               | 6175 m                                                               |
| Design Discharge                                     | 101.89 Cumec (for 210 MW)                                            |
| Slope                                                | 1:231                                                                |

|                                         |                                    |
|-----------------------------------------|------------------------------------|
| <b>SURGE SHAFT</b>                      |                                    |
| Number                                  | 1                                  |
| Type                                    | Restricted orifice                 |
| Size                                    | 21.00m dia.                        |
| Height                                  | 69 m                               |
| Latitude                                | 25°10'2.18" N                      |
| Longitude                               | 92°13'0.86" E                      |
| <b>PRESSURE SHAFT</b>                   |                                    |
| Numbers                                 | 1 (Trifurcated into 3 of 3.09 m Ø) |
| Size                                    | 4.8 m dia.                         |
| Length                                  | 835 m                              |
| <b>POWERHOUSE</b>                       |                                    |
| Type                                    | Surface                            |
| Size (Length x Breadth)                 |                                    |
| (i) 45.2 m x 19.40 m                    | Machine hall                       |
| (ii) 20.0 m x 19.40 m                   | Service bay                        |
| (iii) 65.2 m x 8.5 m                    | Control bay                        |
| Switch yard                             | 37 m x 30 m                        |
| Height of service bay/ generation level | 16.20 m                            |
| Installed capacity                      | 3 x 70 MW                          |
| Number of Units                         | 3 Nos.                             |
| Latitude                                | 25°9'36.47" N                      |
| Longitude                               | 92°12'55.46" E                     |
| Centre Line of Machine                  | 13 m                               |
| GIS Hall                                | 69.20 m x 15.20 m                  |
| Pot Head Yard (220KV)                   | 81.50 m x 23.00 m                  |
| <b>TURBINE</b>                          |                                    |
| Type of turbine                         | Francis turbine                    |
| Max head                                | 250.10 m                           |
| Min head                                | 229.93 m                           |
| Rated Head                              | 228.38 m                           |
| Tail Water Level                        | 13 m                               |
| Specific speed                          | 130 rpm                            |
| Synchronous speed                       | 375 rpm                            |
| <b>TAIL RACE</b>                        |                                    |
| Type                                    | Open Channel                       |
| Length                                  | 145 m                              |
| Size                                    | 5.5 m                              |
| Bed Level                               | El. 20.0 m                         |
| <b>GENERATOR</b>                        |                                    |
| Rated Output                            | 70000 kW                           |
| Capacity Overload                       | 77000 kW                           |
| Power Capacity Factor                   | 0.85 lagging                       |
| Frequency                               | 50 Hz                              |
| Rated Terminal Voltage                  | 11kV                               |





Dur 2: Ka map ba pyini ia ki bynta jong ka Myntdu Leshka HEP Stage-II HEP (Layout map)



### 3. JINGDONKAM JAKA NA KA BYNTA KA PROJEK

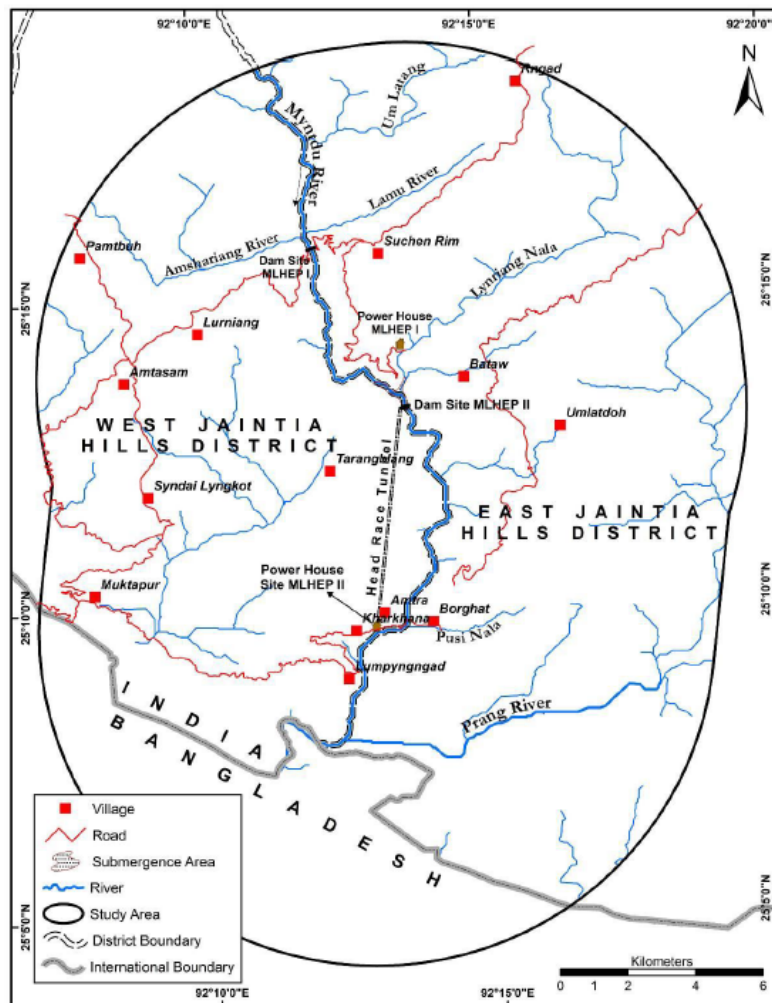
Ka jingdonkam jaka na ka bynta ban shna ia ki jingtei bapher bapher jong ka projek kan long kumba 85.229 Ha, kiba dei ki jaka riew shimet. Na kane ka jingdonkam jaka ba 85.229 Ha, 11.349 Ha ki dei ki jaka khlaw, 65.880 Ha ki dei ki jaka bym long khlaw bad kaba sah 8 Ha ka dei ka jaka jong ka wah. Ha kaba iadei bad ka jingiakylliing jaka ia ki jaka khlaw jong ka projek bad ka Forest Department, ki kam ki dang iaid shaphrang. Ki jingdonkam jaka na ka bynta ki kam bapher bapher na ka bynta ban shna ia ka Myntdu-Leshka Stage-II HEP la kdew ha ka table 2:

**Table 2: Jingdonkam ia ki jaka ki puta na ka bynta ban shna ia ka Myntdu Leshka HEP Stage-II HEP**

| S. No. | Ki bynta jong ka projek                                   | Jaka khlaw (Ha) | Jaka bym long khlaw (Ha) | Jaka ka wah (Ha) | Area baroh (Ha) |
|--------|-----------------------------------------------------------|-----------------|--------------------------|------------------|-----------------|
| 1.     | Ka surok na Trangblang sha Damsite(Satpator)              | 2.550           | 5.100                    | -                | 7.650           |
| 2.     | Circle 1 Office bad Buildings                             | -               | 25.730                   | -                | 25.730          |
| 3.     | Site Camp jong ka Company (Gate)                          | -               | 1.190                    | -                | 1.190           |
| 4.     | Site Camp jong ka Company (Intake)                        | -               | 0.250                    | -                | 0.250           |
| 5.     | Dumping Yard 1                                            | -               | 1.000                    | -                | 1.000           |
| 6.     | Site Camp jong ka Company (Damsite)                       | -               | 1.370                    | -                | 1.370           |
| 7.     | Batching Plant/Stockyard                                  | 0.629           | -                        | -                | 0.629           |
| 8.     | Rock Quarry                                               | 2.000           | -                        | -                | 2.000           |
| 9.     | Ka surok sha Adit 1                                       | -               | 2.040                    | -                | 2.040           |
| 10.    | Magazine A                                                | 0.040           | -                        | -                | 0.040           |
| 11.    | Magazine B                                                | 0.040           | -                        | -                | 0.040           |
| 12.    | Labour Camp ha Dam Axis                                   | 0.090           | -                        | -                | 0.090           |
| 13.    | Reservoir Area                                            | 6.000           | -                        | 8.000            | 14.000          |
| 14.    | Ka surok na Amtra sha Site Camp Colony                    | -               | 1.755                    | -                | 1.755           |
| 15.    | Circle 2 Office bad Buildings                             | -               | 6.550                    | -                | 6.550           |
| 16.    | Site Camp jong ka Company (Tunnel)                        | -               | 0.990                    | -                | 0.990           |
| 17.    | Site Camp jong ka Company (Penstock) bad Fabrication Yard | -               | 1.120                    | -                | 1.120           |
| 18.    | Site Camp jong ka Company (Powerhouse bad Stockyard)      | -               | 1.370                    | -                | 1.370           |
| 19.    | Surok na Amtra sha Powerhouse                             | -               | 3.975                    | -                | 3.975           |
| 20.    | Surge Shaft                                               | -               | 1.000                    | -                | 1.000           |
| 21.    | Surok na Surge Shaft sha Adit 2                           | -               | 2.040                    | -                | 2.040           |
| 22.    | Dumping Yard 2 ha Powerhouse                              | -               | 3.400                    | -                | 3.400           |
| 23.    | Permanent Colony + Powerhouse Area + Switchyard           | -               | 7.000                    | -                | 7.000           |
|        | <b>Total Area</b>                                         | <b>11.349</b>   | <b>65.880</b>            | <b>8.000</b>     | <b>85.229</b>   |

#### 4. KA JINGLONG JINGMAN KA MARIANG HA KA SAWDONG SAWKUN JONG KA PROJEK

Na ka jingwad jingtip halor ka jinglong jingman jong ka mariang sawdong sawkun ka mariang kat kum ka ToR (ki kyndon ba la bthah da ka Ministry of Environment, Forest and Climate Change (MoEF&CC), jong ka Sorkar India, ban sngewthuh ia ka jinglong tynrai jong ka mariang shwa ban tei ia ka projek lah dep lum thup. Halor kane, la shna ia ka map jingwad jingtip jong ka jaka (study area), kumba la pyni ha ka Dur 3. la kine ki jingwad jingtip lah batai lyngkot kumne harum:



Dur 3: Ka Map jingwad jingtip jong ka jaka (Study area map)

##### 4.1 KA JINGLONG JINGMAN KA KHYNDEW KA SHYIAP BAD KI DIENG KI SIEJ

Ia ka jinglong jingman ka khyndew ka shyiap bad ki dieng ki siej jong ka jingwad jingtip jong ka jaka kaba iar 10 km na ka dam bad power house (study area), la wad bniah na ki satellite. Ha ka jingwad jingtip bniah, la shem ba ki khlaw ki btap ki long kham bun bad kham kynrei. Kumba 64% jong ka jaka wad bniah ki dei ki khlaw rben bad 48.28% ki dei ki khlaw stang.

#### **4.2 KA JINGJRONG JINGSHARING JONG KA JAKA**

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La shem kumba 46% jong ka jaka wad jingtip (study area), ka don hapteng 500 m haduh 1000 m ka jingkynjang na ka duriaw (elevation). Tang kumba khyndiat percent (7.58%) na ka jaka wad jingtip, ka don ka jingkynjang palat ia ka 1000 m na ka duriaw, ha kaba ka jingkynjang kaba jrong tam ka long 1190 m na duriaw. Shi bynta na ka lai bynta jong kane ka jaka wad jingtip ki dei ki jaka ba kham madan kaba ka jingkynjang ka long haduh 250 m. Kine ki jaka ki dei ki bynta kiba sharum jong ka projek ha kaba ka wah ka ia id lyngba ki jaka ba kham madan bad markhap bad ka ri Bangladesh. Bun na ki jingtrei kiba don ha ka projek ki hap ha ka jingkynjang hapteng 200 m haduh 500 m na duriaw. Bun na ki jaka ki long ba kham sharing malu mala bad kham madan ruh.

#### **4.3 KA JINGLONG KA DEW MARIANG (GEOLOGY)**

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Hadien ki jingwad bniah ia ka dew mariang jong ka projek, la lap ba ki maw kiba kham bun jait ki dei u granite gneiss. Ha ka jaka ban tei ia ka dam, ki jait maw migmatites, la lap hapoh ka wah, bad ia ki jait maw granite gneiss ha baroh ar liang jong ka rud wah. La lap ba bun ki bynta ha ka jaka ban pyniaid ia ka lynti um napoh khyndew, la syrtap da ki kynja mawshyap ba lah ban lap ha ki nala um. Ka jaka ban tei ia ka projek ka hap hapoh ka Seismic Zone V jong ka seismic zoning map jong ka ri India. Ia ki jingwadbniah ha kaba iadei bad ki jingkhynniuh jumai (earthquake parameters) jong ka Myntdu Leshka HEP Stage-II projek, la dep leh da ka Department of Earthquake Engineering, Indian Institute of Technology, Roorkee. Ia kine ki jinglap na katei ka jing wad bniah, la mynjur da ka NCSDP (National Committee of Seismic Design Parameters), Central Water Commission, New Delhi na ka bynta ki Dam kiba heh. Ki jingkein jong ki horizontal bad vertical seismic coefficients ba la mynjur da ka commission ki long 0.24 bad 0.16.

#### **4.4 KA JINGLONG JONG KA SUIN BNENG (METEOROLOGY)**

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Ka jaka wad bniah jong ka projek ka hap hapoh ka West Jaintia Hills bad East Jaintia Hills jong ka jylla Meghalaya. Ka jinglong ka suin bneng ha Jaintia Hills ka long kaba pyngngad bad sngewtynnad. Kam da shit than ha ka por lyiur ne khriat than ha ka por tlang. Ka jylla Meghalaya hi ka dei ka jylla kaba bun lyoh, khamtam ha ka por lyiur. Ka jinglong jingman jong ka jaka ka dei kaba jur bha u slap uba wan hap lyngba ka south-west monsoon na ki duriaw jong ka Bay of Bengal bad Arabian Sea. Ha ka por lyiur (monsoon), u slap u kham jur hapteng ki bnai laiong bad Nailur.

#### **4.5 JINGLONG JINGMAN KA KHYNDEW**

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Hadien ki jingwad bniah ia ki jait khyndew jong ka jaka, la lap ba don ar jait ki jait khyndew, ka khyndew kaba rong ktieh bad ka dew saw byrtem, ba mih na ki mawshyap bad na u granite bad ka khyndew sboh (alluvial soil) na ki rud wah. Kumban shu khein kyllum, na ki jingwad jingtip, la lap ba ka ka jinglong jong ka khyndew ha kine ki jaka ka long kaba seisoh. Ka jingsboh jong ka

khyndew, la thew da ka Nutrient Index NPK kaba pyni ba ka Potassium ka kham bun, katba ka Nitrogen bad Phosphorus pat ki kham duna.

39% na kine ki jaka wad bniah ki hap hapoh ka Soil Unit 20 bad Soil Unit 21 kiba dei ki dew jem ki bym shong skhem ha ki jaka ranab ba long sharing kiba synjor bad suk ban shah rong ha ka um slap.

#### **4.6 JINGLONG KA LYER BAD KA JINGSAWA**

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Ia ka jinglong ka lyer lah thew bad wad bniah katkum ki kyndon jong ka 'National Ambient Air Quality Standards for Industrial Residential, Rural and other areas and Ecologically Sensitive areas'. Ki 'er jaboh ha ka mariang ki duna bha ha kine ki thain, ha kaba ki Particulate matters (PM)  $PM_{2.5}$ ,  $PM_{10}$ ,  $SO_2$ , bad  $NO_2$  kim tam ia ki kyndon ba la buh da ka National Ambient Air Quality Standard 2009 ba lah pynmih da ka Central Pollution Control Board (CPCB).

Ia ka jinglong jingman ka lyer la shim na ki jingthew kyllum ha ka arphew saw kynta jong ka jingbun ka  $PM_{2.5}$ ,  $PM_{10}$ ,  $SO_2$ , bad  $NO_2$  ha ka jingkhein AQI calculator jong ka CPCB. Ha baroh ki jaka kiba lah thew ia kane ka jingkhuid ka lyer la lap ba ki hap ha ka kyndon ba bha ('Good' category) ha baroh ki saw aiom.

#### **4.7 JINGLONG KA UM**

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Ka jinglong jingman ka um hapoh kane ka jaka wad bniah, kumban shu ong kyllum, ka long ka bym da bit da biang (poor).

Ka um kaba tuid ha sla khyndew:

- Ka um jong ka wah Myntdu ka long acid
- Ka um jong ka wah Myntdu kam hap ha kano kano ka klas hapoh ka Water Quality Criteria jong ka Central Pollution Control Board
- Katkum ki kyndon jong ka Water Quality Index, ka jinglong ka um ha ki saw aiom, ka long ka bym bit bym biang (poor category)
- Na ki jinglum jingtip ia ki um ba la tong na bun ki jaka, la lap ba ka jinglong ka um ka hap ha kine ki bynta 'Moderately Hard Water'/'Hard Water'

#### **4.8 KI JINGTHUNG BA IM HA KI JAKA WAD BNIAH JONG KA PROJEK**

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Ia ki khlaw hapoh ka jaka wad bniah jong ka projek, la bynta hapoh ka 1B/C3 Cachar Tropical Evergreen Forest, 2B/C1a Assam Alluvial Plains Semi-Evergreen Forest, 2/2S1 Secondary Moist Bamboo Brakes, bad 8B/C2 Khasi Sub-Tropical Wet Hill Forest.

Ka jinglong ka jaka wad bniah ha ka projek ka long lum long them ha kaba ki bun ki khlaw kiba ki khot ka Tropical Moist mixed deciduous forest kiba don ha ki sharing lum bad harud baroh ar liang jong ka wah Myntdu bad ki shnat wah jong ka. Ki jaka rep jaka riang ki kham pajih iwei na iwei ha kine ki jaka. Kine ki khlaw ki dei kiba ia khleh bun jait ki dieng kum ki *Altingia excelsa*, *Celtis australis*, *Terminalia myriocarpa*, *Alangium chinense*, *Dillenia indica*, *Macaranga denticulata*, *Ostodes paniculata*, *Pandanus dubius*, *Acrocarpus fraxinifolius*, *Albizia chinensis*, *Duabanga grandiflora*, *Ailanthus integrifolia*, *Artocarpus heterophyllus*, etc. *Chimonobambusa callosa*, *Dendrocalamus giganteus*, *Dendrocalamus strictus*, *Yushania hirsuta*, *Calamus erectus*, *Calamus floribundus* bad *Calamus tenuis* etc. ki dei ki jait siej jait shken (thri) kiba la lap na kine ki jaka.

Kiwei pait ki jait siej jait shken ki long kum u champa (*Michelia champaca*), chyrngan (*Schima wallichii*), lahit (*Aristolochia saccata*), bad soh kyrbait (*Citrus* spp.) ki dei ki jingrep kiba kham kongsan ba lah lap ha kine ki jaka. U sohniamtra bad u sohtrun ki dei kiwei pat ki jingrep ba thung bha ha kine ki jaka.

Ki dieng rit kiba kham bun ha kine ki jaka ki dei *Artemisia capillaris*, *Barleria cristata*, *Phlogacanthus tubiflorus*, *Brassaiopsis hainla*, *Buddleja asiatica*, *Debregeasia longifolia*, *Girardinia diversifolia*, *Justicia adhatoda*, *Lantana camara*, *Trevesia palmata*, *Urena lobata*, etc. Ki dieng rit kiba khie im biang na ki jaka ba lah dep thang khlaw kiba kham bun ki dei ki siej ki shken kum *Dendrocalamus hamiltonii*, *Bambusa tulda* bad *Musa* spp. U *Musa* spp. la kine la lap bha ha ki rud wah harum ka dam site.

Ki jaka phlang ha kine ki jaka ki dei ki kynbat kum *Thysanolaena latifolia* bad *Saccharum spontaneum*. Kiwei kiwei pat ki jait phlang kiba lah lap ki dei *Arundinella nepalensis*, *Arundo donax*, *Chrysopogon aciculatus*, *Cynodon dactylon*, *Digitaria ciliaris*, *Eragrostis amabilis*, *Imperata cylindrica*, *Phragmites karka*, *Poa annua*, *Pogonatherum biaristatum*. *Achyranthes aspera*, *Achyranthes bidentata*, *Ageratum conyzoides*, *Alpinia nigra*, *Arisaema concinnum*, *Chromolaena odorata*, *Commelina benghalensis*, *Justicia mollissima*, *Phyllanthus niruri*, *Senna tora*, *Sida rhombifolia*, *Solanum viarum*, *Urena lobata*, *Urtica dioica* ki dei ki jait kynbat kiba la lap ha ki khlaw, jaka rep syrti, ki jaka ba duna khlaw bad ruh hajan ki jaka shong shnong.

Hadien ka jingwad bniah la lap kumba 221 tylli ki angiosperms plant species bad tang uwei u jait gymnosperm na ki khlaw. Napdeng ki jingthung ba kham rit, la ioh jingtip badon 18 jait ki pteridophytes bad 14 jait ki bryophytes na kine ki jaka. U tiw rakot (*Nepenthes khasiana*) u dei u jingthung ba lah jan duh jait (endangered) bad u *Dipterocarpus gracilis* u dei u dieng uba don ha ka jingma ban duh jait (vulnerable). Ia u *Nepenthes khasiana* yn lap tang ha ki lum Khasi and Jaintia.

#### 4.9 KI MRAD KI MRENG HA KI JAKA JONG KA PROJEK

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Ha ka jingwad bniah, kham niar ban iohi ia ki mrad ki mreng. Ha ka por ba leh ia ka survey, la iohi tang ia ki Risang (*Herpestes edwardsii*). Nalor kine, ym shym la iohi ia kiwei kiwei pat ki jait mrad. Na ka jingwad bniah bad na ka jingioh jingtip lumlang na ki nongshong shnong, ki don tang 15 jait ki mrad ba la lum thup bad ruh ia ka jinglong jingman jong ki (conservation status).

Nalor kitei ki 15 jait ki mrad, bad kat kum ka kot lumthup, la ioh jingtip ia ka jingdon kiwei pat ki mrad kum u labasa (*Panthera pardus*) bad u khla thap sim (*Felis bengalensis*) wat la ym shym la iohi ia ki ha ka por ba leh survey. Ki nongshong shnong kim lah ban pynshisha ba ki don kitei ki khla ha kine ki jaka namar ba ki ialade ruh kim pat iohi ia ki.

Ha ka por survey, kiwei kiwei ki jait mrad ba lah ban iohi ki dei ki jait shrieh Rhesus macaque (*Macaca mulatta*), Risang (*Herpestes edwardsii*), bad jait shrieh langur (*Semnopithecus entellus*).

Ia ka jingdon jong u labasa (*Panthera pardus*), jait shrieh Hanuman Langur (*Semnopitheaus entellus*), jait skei Himalayan Goral (*Naemorhedus goral*), jait skei Indian Muntjac (*Muntiacus muntjac*), bad dngiem iong (*Ursus thibetanus*) la pynshisha da ki nongtrei ka Forest Department bad ruh ki nongshong shnong.

#### **Ki jait sim:**

Ha ka jingwad bniah, ym da kham iohi shibun ki sim ha ki khlaw. Bun na ki sim ba lah lum jingtip ha ka por survey ki dei kito kiba shong harud wah bad jngai na ki shnong sah briew. Haba shim kyllum, la lap ba 55 jait ki sim ki long ha ki 12 Orders. Ki langdkhur, tyngab khlaw, sim khar, myna, sim bam ngap, jyrwat, kja, ki han rit ki dei kiba kham iohi.

#### **Ki jait jingim ba par:**

Ha ka jingwad bniah, la lap kumba 10 jait ki jait jingim kiba par kiba hap hapoh ka 8 families. Nalor kine, la lap ruh ia ki 5 jait ki jait jingthaw kiba im ha ryngkew bad ha ki um.

#### **Ki thapbalieh:**

Kumba 19 jait ki thapbalieh kiba hap hapoh ka 4 families la lap na ki jaka wad bniah ka projek. Ha ka Nymphalidae family la lap ba ki dei na ka 9 jait bad bud da ki Papilionidae and Pieridae. Na kitei ki 19 jait kiba kham bun ki dei Indian Cabbage White (*Pieris canidia*), Plain Tiger Pale Grass, bad Blue Pansy. Ia kiwei pat ki jait thapbalieh la iohi tang ha ki ar ne lai jaka jong ka jaka wad bniah.

#### **Ki dohkha dohpnat:**

Ha ki por barim, ka wah Myntdu ka dei ka wah kaba roi bha ki jait dohkha dohpnat. Hynrei, na ka daw jong ka jingwantuid jong ka um na ki jaka tih bad pynlang dewiong, ka um khuid ka la

kylia long um jew (acidic) kaba la pyniap lut ia ki jait dohkha dohpnat bad ki jait jingim kiba im hapoh wah. Katkum ki survey ba lah leh da ka Meghalaya Pollution Control Board ha u snem 2018, la pyntip ba ym don shuh ki dohkha ha ka wah bad mynta ruh ym shym lap ia ki dohkha (Annexure-VII na ka report). Ha ki survey ba lah leh da u Consultant RSET ruh, ym shym la lap ia ki dohkha.

#### **Ka rukom pynneh pynsah ia ki mrad ki mreng (Conservation status)**

Ia baroh ki jait sim, ki mrad ba par bad ba her, bad ki thapbalieh lah kynthup ia ki ha ka jing wad bniah ban pynneh pynsah ia ki katkum ka IUCN Red List categories (Ver. 2021.2) bad WPA (1972) Schedules.

Katkum ka IUCN Red List of Threatened Species Version 2021.2, la lap ba baroh ki jait mrad ha kine ki jaka projek (study area) la kynthup hapoh ka 'Least Concern' category kaba mut ba ka jingroi jingpar jong ki ka dang bit dang biang.

Katkum ka Wildlife (Protection) Act, 1972, 6 jait ki mrad na kane ka jaka wad bniah la buh hapoh ka Schedule-II species, 2 jait pat ha ka Schedule-III species, 5 jait pat ha ka Schedule-IV species bad 1 jait ja ka Schedule-V. Ym shym la iohi ia ki jait mrad ba hap hapoh ka Schedule-I species.

Baroh kiwei pat ki jait sim ba la ioh jingtip ki hap hapoh ka 'Least Concern' category jong ka IUCN Red List Ver. 2021.3 kaba mut ba ka jingroi jingpar jong ki ka dang bit dang biang. Katkum ka Wildlife (Protection) Act, 1972, baroh ki jait sim ki hap hapoh ka Schedule IV species.

#### **4.10 JINGJAN NA KI JAKA IADA KYRPANG (PROTECTED AREA)**

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Ka don tang kawei ka Narpuh Wildlife Sanctuary ha East Jaintia Hills kaba dei ka jaka iada kyrpang (Protected Area) kaba jan tam na ka projek jong ka MLHEP-II. Ka jingjingai ka don kumba 14.5 km na ka iing pynmih bording (Power House) jong ka projek. Ka Narpuh Wildlife Sanctuary ka dei tang kane ka jaka ba rben khlaw kaba heh duh ha baroh ki ar tylli ki District (East bad West Jaintia Hills District).

#### **4.11 KA JINGLONG JINGMAN JONG KI BRIEW BA SHONG BA SAH HA JAN KA PROJEK**

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Ki don 52 tylli ki shnong hapoh ka jaka wad bniah kaba iar 10 km na ka dam site bad power house kaba kynthup 5 tylli ki shnong kiban shah ktah ha ka jingpyntrei ia ka projek. Na kitei ki 52 tylli ki shnong, 21 tylli ki don ha ka East Jaintia Hills District bad 31 tylli ha ka West Jaintia Hills District.

Na ki 5 tylli ki shnong kiban shah ktah, ka Bataw ka hap hapoh ka East Jaintia Hills District bad ka Satpator, Trangblang, Amtra bad Kharkhana ki hap hapoh ka West Jaintia Hills District.

#### **a. Ka jinglong jingman bad wad jingtip ia ki shnong kiba don ha ka jaka wad bniah jong ka Projek**

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Kane jingwad bniah shaphang ka imlang sahang ka ioh ka kot bad ia ki shnong kiba shah ktah ha ka projek, ka dei shaphang ka jinglong jingman, ka rukom rep rukom riang, ka trei ka ktah, ka pule ka dangle bad kiwei kiwei ki dak ki shin kiba pyni shai ia ka jinglong jingman jong ki briew. Ia kane ka jingwad bniah la pynshong nongrim na ka Census jong ka ri India jong u snem 2011.

Baroh ki iing ki sem ha kane ka jaka wad bniah ki don 4060 tylli, ha kaba ka jingbun ki briew baroh(population) ka long 22,113 ngut. Na kine, 11,111 ngut (50.25%) ki dei ki shynrang bad 11,002 ngut (49.75%) ki dei ki kynthei. Na man ki 1000 ngut ki shynrang, la shem ba ki kynthei ki don 990 ngut.

Ka jingbun ki riwulum (Scheduled Tribe) ka long 94.12% katba tang 1.04% ki dei na ri thor (Scheduled Caste). Haba khein kyllum ia ka jingdon jong ki briew ha kawei kawei ka longiing la shem ba ki don kumba 5 ngut. Kumba 23.52% na ka jingdon ki briew ha ki shnong ki thaw ki dei ki khynnah kiba dang hapoh 6 snem.

Ka jingdon jong kiba nangthoh nangtar kynthei bad shynrang ka long kumba 59.11%. Na ki shynrang ka dei 57.48% bad na ki kynthei ka dei 60.76%. Kane ka pyni ba ka don ka jingpher ha ka jingnang jingstad ha ka thoh ka tar hapdeng ki kynthei bad shynrang da kumba 3.28%.

Katkum ka Census jong ka 2011, kumba 43.50% na ki nongshong shnong ki trei ki ktah ha ki kam bapher bapher. Na ka jingbun briew jong ki shnong, 74.03% ki dei ki nongrep (main workers) bad ka ba sah 25.97% ki dei ki nongbylla (marginal workers).

Na ka jingbun briew kiba trei ba ktah, 58.54% ki dei ki shynrang bad 41.46% ki dei ki kynthei, kaba pyni ia ka jingiapher hapdeng ki shynrang bad ki kynthei da 17.08%. Hapdeng ki nongrep (main workers), 63.46% ki dei ki shynrang bad 36.54% ki dei ki kynthei, kaba pyni ia ka jinghiar kaba 26.92% ha ki kynthei, katba na ki nongbylla sngi (marginal workers), kumba 44.52% ki dei ki shynrang bad 55.48% ki dei ki kynthei, kaba pyni ia ka jingduna na ka liang ki shynrang kumba 10.96%.

Bun na ki nongtrei nongktah 55.99% ki dei ki ba trei ha ki kam rep kam riang, ha kaba 35.34% ki dei ki nongrep (Cultivators) bad 20.65% ki dei ki nongbylla sngi ha ki kam rep (Agricultural Labours). Tang khyndiat ngut eh (0.67%) jong ka jingbun ki long iing ki trei ha ki kam kharkhana bad kumba 43.35% ki trei ha ki kam lajong.

#### **b. Ka jinglong jingman bad wad jingtip ia ki shnong kiban shah ktah ha ka Projek**

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Ka jingbun ki briew (population) ha ki shnong ban shah ktah ha ka projek ka long 3477 ngut kaba kynthup ia ki longiing 568 tylli, bad haba khein kyllum kawei kawei ka longiing ka don 6 ngut ki dkhot. Na ka jingbun briew kaba 3477, 1680 ngut (48.32%) ki dei ki shynrang, kaba long tang 15.12% na ka jingbun briew jong ki shynrang ki don ha ki jaka wad bniah. 1797 ngut (51.68%) ki dei ki kynthei kiba long tang 16.33% na baroh ki kynthei kiba don ha ki shnong ka jaka wad bniah. Na man ki 1000 ngut ki shynrang, la lap ba ki kynthei ki don 1070 ngut.

Ka jingbun ki riwulum (Scheduled Tribe) ka long kumba 3448 ngut kaba kot sha ka 99.17% na baroh ki briew jong ki shnong ba shah ktah ha ka projek bad 16.57% na baroh ki briew na ki shnong ha ka jaka wad bniah. Na kine, 48.26% dei ki shynrang bad 51.74% dei ki kynthei.

Ym don kiwei pat ki nongshong shnong (Scheduled Caste) ha ki shnong ba shah ktah ha ka projek.

Ha ki shnong ba shah ktah ha ka projek, don 2250 ngut kiba nangthoh nangtar kaba kot 64.71% na ka jingbun briew ha ki shnong ba shah ktah jong ka projek, kaba long 22.51% na kiba nangthoh nangtar kiba sah ha ki shnong hapoh ka jaka wad bniah. Na kine kiba nang thoh nang tar, 47.07% ki dei ki shynrang bad 52.93% pat ki dei ki kynthei. 83.77% ka dei ka percentage jong ki kiba nangthoh nangtar (literacy rate), ki shynrang ki long 81.52% katba 85.87% ki dei ki kynthei kaba pyni ba ka don ka jinghiar ha ka jingnang jingstad ha ki shynrang kumba 4.35%.

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## **5. JINGIATYNGKHUH BAD KI JINGIADA IA KA MARIANG NA KA JINGWAN KA PROJEK**

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### **5.1 KA JINGLONG KA LYER SAWDONG SAWKUN**

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**Ki jingktah ha ka por ba tei:** Ka lyer bad ka huihui ha sawdong ka projek ia mynta ka long kaba khuid kaba suba bad kaba lait na ki pui pui bad jaboh. Ki thymmei bad ki jingtrei kiba lah ban ktah ia ka jinglong ka lyer ha ka por pyntrei ia ka projek ki long kum ha ka por ba iaid ki kali, ka jingrah jingkit bad jingpyllang iaki tiar ki tar, ki pum pum ba mih na ki surok khyndew, ki jingtrei kiba kynthup ia ka jingpyniaid ia ki kor (machine) ha ki por pyntrei bad ruh na ka jingpyndonkam ia ki jingthang dieng ha por shet por tiaw.

Nalor kata, kiwei pat ki jingpyntrei kam kum ki mashin jingtylliat maw, jingkhleh dewbilat, jingpyntrei ia ki jingtei bad jingiaid ki truk bad ki kali ha ki surok khyndew kin pynmih ia ki pum pum bad ka tdem kiba lah ban ktah ia ka jingkhuid ka lyer. Kaba thang ia ki niut ki nier ruh kan pynjaboh ia ka lyer. Lada ka jia ba ym don kum ka umphniang, ka gas ba biang, ki nongtrei ka projek ki lah ban poi pyndonkam da ki dieng ban shet jingshet bad pynsyaid ialade. Kine ruh kin ktah ia ka jingkhuid ka lyer.

**Ki jingktah ynda la dep shna:** Ha ki projek ba pynmih bording na ka um, ka jingktah ia ka lyer ka dei tang ha ka por ba dang shna ia ka projek. Ynda la pyniaid ia ka projek, kan ym don kum kita ki jingktah ia ka lyer.

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### **5.2 KA JINGKTAH NA KA JINGSAWA**

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**Ki jingktah ha ka por ba tei:** Ka jingsawa na ki jingtrei ha ki jaka ba tei jingtei ka lah ban ktah ia ki mrad ki mreng bad ia ki briew kiba sah hajan kitei ki jaka. Kan kiew ka jingsawa ruh na ka jingiaid ki truk bad ki kali ter ter ha ki surok bad ruh ha kito ki jaka ba pyntrei. Na ka daw jong kine ki jingtrei, ka jingsawa kan kiew ha ka por ba tei ia ka projek, hynrei, kane ka jingsawa kan dei tang ha kito ki jaka ba don ki jingpyntrei kiba kham heh. Kiwei ki jait jingsawa bad jingkhynniuh khyndew ki dei ha ki por ba pyndonkam ban pynbthei ia ki maw ha ka por ba pyntrei ia ka projek.

**Ki jingktah ynda la dep shna:** Ynda la pyniaid ia ka projek, kan ym don shuh ka jingkiew jong ka jingsawa.

### 5.3 KA JINGKTAH IA KI UM KI WAH

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**Ki jingktah ha ka por ba tei :** Ka um ba pyndonkam ha ki jingtrei ia ka projek ka pynmih ruh ia ka um jaboh kaba jngut. Ka um ba tuid na ki jaka ba sait ia ki mashin bad ki truk, ka pynmih ka um kaba kham lati khleh lang umphniang bad mobil. Kan shem jingeh ban khein ia ka jingtuid ka um jaboh ka ban mih na ki jingpyntrei bapher bapher bad kan don ruh ka jingktah ia ki um ki wah lada kane ka um jaboh ba jngut lada pyntuid sha ki. Kan don ka um jaboh ban mih na ki iingsah jong ki nongtrei ha kaba lada ka ioh lad ban tuid sha ki wah lane shapoh ki um khyndew khlem kano kano ka jingpynkhuid shwa, kan sa ktah ia ka jinglong jingman jong ki um ki wah.

**Ki jingktah ynda la dep shna:** Ka jingshna ia ka dam ban pynmih bording na ka um kan wanrah ruh ia ka jingkylla ha ka rukom tuid ka um ka wah, shaneng bad sharum ka dam ruh kumjuh. Ha ka por ba lah dep tei ia ka projek bad pyniaid ia ka, ka jingktah ia ka um kan duna bha, namar yn nym don shuh ki jingtrei kumba don ha ka por ba shna ia ka dam. Nalor kane, tang katto katne ngut ki nongtrei ban peit bad khmih ia ka projek kin sah ha ki iing kiba biang bad ki nala ba biang ban pyllait um jaboh sha ki jaka pynjar bad pynkhuid um, kan nym don shuh ka jingpynjaboh ia ki um ki wah. Ia kane ka um ba ba lah pynkhuid biang, yn pyndonkam ban ai um syntiew bad ai um ia ki dieng ki siej ha ki jaka projek.

### 5.4 KA JINGKTAH IA KA KHYNDEW KA SHYIAP HA KA JAKA PROJEK

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**Ki jingktah ha ka por ba tei :** Katto katne ki jingktah ia ka khyndew ka shyiap ha ka por pyntrei ia ka projek ki long kine harum:

- **Ka jingktah na ka jingdonkam bad jingpynkylla ia ka jinglong jingman jong ka khyndew:** Ka jingktah kaba kham jur ka long na ka jingpynkylla ia ki jaka ba la shim duh ban tei ia ka project ia kaba ym lah ban pynwan biang kumjuh. Ia kine ki jingktah ym lah ban pynduna; hynrei yn pynbiang pat da kaba pyntrei kam ia ki plan ban pynbha ia ka jinglong ka mariang kum ka Compensatory Afforestation Plan, ka Biodiversity Conservation Plan, ka Green Belt Development Plan ki ban iarap ban pynduna ia kitei ki jingktah.

- **Ka jingktah na ka khyndew kaba mih na ka jingpyntrei ia ka projek:** Ka khyndew ka ban mih na ka jingtih, ka jingkit bad jingleit bret ia ki khyndew, kan ktah shibun ia ka jinglong jingman ka jaka lada ym pyntrei bha ia ka rukom kit bad bret ia ka.
- **Ka jingktah na ka jingmih ka jaboh jabain:** Ki jait jaboh kiba lah ban shem ha ka projek ki long kine harum:
  - i. Municipal waste kaba dei ka jaboh ba mih na ki iingsah trei bad na ki jaka shet ha iing (kane ka kynthup ia ki jaboh na ki dukan bad ruh na ki iingsah kiba long tylli bad ruh kiba sngem lait noh kito ki jaboh kiba kham ma kiba kynthup ia ki kynja dawai)
  - ii. Construction and demolition debris (C&D waste) ki dei ki jaboh kiba mih na ki jaka pyntrei ia ka projek bad ha ka por ba pynpra ia ki jingtei bym donkam shuh.
  - iii. Bio-medical waste kiba dei ki jaboh kiba khleh dawai ba mih bunsien na ki Health Centre
  - iv. Hazardous waste kiba dei ki jaboh kum ki kynja umphniang (kiba mih na ki machine bad ki kor ki bor)
- **Ka jingktah na ka jingshna surok:** Ka jingktah kiba wan na ka jingshna ki surok bad ki lynti ki syngkien ka dei ka jingduhnoh ia ki jingthung bad ki deing ki siej bad kaba pynkylla ruh ia ka khyndew ka shyiap.
- **Ka jingktah na ka jingtih maw:** **Kham** bunsien ia ki parmaw la ju tih na ki rud lum. Ka lyer bad u slap ki lah ban shoh ia ki parmaw ba paw hadien ba tih ia ki bad ki lah ban pyntwa ha kitei ki jaka.

## 5.5 KA JINGKTAH IA KI KHLAW KI BTAP

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11.349 ha jong ka khlaw yn pyndonkam noh ban tei ia ki jingtei bapher bapher jong ka projek. Kane kan lam sha kaba jingduhnoh jong ki katto katne ki jait jingthung jingtep bad ki dieng ki siej ba ju pyndonkam. Ia kane ka jingktah yn ialeh ban pynbiang pat da kaba pyntrei ia ki plan kum ka Compensatory Afforestation Plan bad ka Biodiversity Conservation and Wildlife Management Plan.

## 5.6 KI DIENG KI SIEJ BAD KI MRAD KI MRENG

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### Ki jingktah ha ka por ba tei ia ka projek

**Jingktah ia ki dieng ki siej:** Ka jingwan ki nongtrei kiba bun kan ktah ia ka jingrben ki dieng ki siej. Kine ki nongtrei ki lah ban pom dieng ban pyndonkam ha ka shet ka tiew, ha ka shna jingshna bad shna iing. Na kata ka daw, ka long kaba donkam ban pynsngewthuh bad hikai lyngba ki training, kumno ban pikhir bad pyndonkam ia ka umphniang bad gas shet bad ruh donkam ban khmih bniah da ki bor pyniaid khnang ban pynduna ia ki jingktah ia ki dieng ki siej ha ka por ba shna ia ka projek.

**Jingktah ia ki mrad ki mreng:** Ha ka por ba shna ia ka projek, kin wan poi bun ki mashin, ki kor heh bad ruh ki nongtrei kaba lah ban pynthut ia ki mrad ki mreng kiba im ba sah ha ki jaka ba marjan. Ha ka por ba pyntrei ia kitei ki mashin kan pynkiew ia ka jingsawa bad ka jingkhynniuh



ka khyndew khamtam eh ha ka por ba pynbthei ki maw bad ban ktah shibun ia ki mrad ha kine ki jaka.

#### **Ki jingktah ynda la dep shna ia ka projek**

Ynda la dep shna ia ka proejk bad sdang pyniaid ia ka, ki jaka kiba la pyndonkam ha kaba tei ia kane ka projek yn pynbha bad pynitynnad biang ia ki. Ki nongtrei bad nongbylla kin leit phai noh sha kiwei pat ki projek lane sha ki jaka lajong. Ia ka mariang yn sdang pynbha pat na ki plan kum ka Green Belt Development Plan bad ka Restoration Plan ha kaba yn thung biang ia ki dieng ki siej. Ka jingroi ki jingthung kum ki dieng ki siej harud ka pung um kan pynroi ia ki sim ki doh bad kiwei kiwei ha kato ka jaka.

### **5.7 KA JINGKTAH IA KA JINGLONG JINGMAN JONG KI BRIEW BA SAH HAJAN KA PROJEK**

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#### **a) Ki jingioh jingmyntoi:**

Kine harum ki dei ki jingioh jingmyntoi ha ka ioh ka kot jong ki briew kiba sah ha ki shnong kiba hajan ka projek ha ka por ba pyntrei ia ka projek bad ruh ynda la pyniaid ia ka:

- i) Kin mih shibun ki kam bylla ki ba lah ban pynioh nong ia ki nongshong shnong ha ka por ba tei ia ka projek.
- ii) Ki bor pyniaid ka projek kin sa wanrah ia ki buit trei kam ban kyntiew ia ka roi ka par ha ki shnong ki thaw ki ban pynioh jingmyntoi ia ki nongshong shnong. Ka pule dangle, jaka sumar, ka jingkit ka bah, ki surok ki synkien bad kiwei kiwei ki jingtei bapher bapher kin kiew ha kane ka jaka jong ka projek.
- iii) Ka jingdon kiwei pat ki jait jingtrei na ka jingwan ka projek, ha kine ki thain ba kham kyndong, kan iarap kyrshan bad pynduna ia ka jingpyndonkam ki nongshong shnong ia ki khlaw ki btap.

#### **b) Ki jingduh jingmyntoi**

- i) Ka jingduh noh jong ki jaka rep jaka riang ha ki jaka ba tei ia ki jingtrei bapher ha ka projek.
- ii) Ka jingktah na ka jingwan ki nongtrei na shabar ban trei ha ka projek kaba lah ban wanrah ia ka jingbym iahap jingmut ha ka im ka sahleng ha ka por ba shna ia ka projek
- iii) Kan don ka jingmih bad jingsaphriang jong ki khniang jingpang

### **5.8 KI LAD KI LYNTI BAN WENG IA KI JABOH NA KA LYER, KA UM BAD RUH BAN PYNDUNA IA KA JINGSAWA**

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Kane ka projek ka kynthup ia ka jingtei ia ka dam, ka iing pynmih bording (power house), ka pung um ba heh, ki surok, ki lynti ki syngkien, bad kiwei kiwei ki jingtei, bad la buh por 72 bnai ban pyndep ia baroh ki jingtei. Ki jingtei kiba kham heh ki pynmih ia ki jaboh kiba lah ban ktah ia ki bynta jong ka mariang kumba la dep kdew haneng. Ia ki jingktah ba mih ba na ba tei ia ka projek, lah ban pynduna lane kiar noh da kaba pyntrei kam ia ki buit pynkhuid bad ki buit pikhir kiba long kumne harum:

**Ki lad teh lakam ia ka jingjaboh ka lyer:** Ban pynduna ia ka jingjaboh bad jing pum pum ka lyer ha ka por ba tei ia ka projek, baroh ki kontraktor kiba don kti ha ki kam shna jingshna, yn hukum ba kin hap bud bad pyntreikam ryntih ia ki kyndon jong ka Central Pollution Control Board bad ban pynthikna ba ka lyer kan long kaba khuid ha kine ki jaka ka projek.

**Ki lad ban pynduna ia ka jingsawa:**

- Ia ki generator diesel yn hap buh ha ki jaka kyrpang , kiba ki khot ki acoustic enclosure, ki ban pynduna ia ka jingsawa.
- Barabor dei ban sumar bha ia ki mashin da kaba pynlong phlin phlin (pyntyrsiang) ia ki.
- Ia ki mashin ba pynmih jingsawa (kum ki mashin tylliat maw) dei ban ker da ki tiar ba pynduna ia ka jingsawa
- Dei ban pyndonkam da ki mashin ba kham duna jingsawa bad ki kali ba lah pyndait da ki tiar pynduna jingsawa (silencer)
- Ia ka jingsawa kaba mih dei ban peitngor ban pynduna na ka por sha ka por ha baroh ki jaka

**Ki lad teh lakam ia ka jingjaboh ka um**

- Dei ban shna ia ki septic tank, ki thliew kynjit um kiba biang ha ki jaka sah ki nongtrei ka projek
- Ia ka um jaboh ba mih na ki iing sah ki nongtrei, dei ban iaid lyngba ki jaka jiar bad pynkhuid shwa ban pyllait pat ia ka
- Dei ban buh da ki tiar ban pyniakhlad ia ka umphniang na ka um bad dei ban bret ha ki jaka kiba la ioh jingbit lane kat kum ki kyndon jong ka Pollution Control Board
- Dei ban buh da ki kynja thliew bad ki tiar ki ban jiar ia ki kynja khlein umphniang ban iada ia ka jingtuid jong kine ki jaboh sha ki um ki wah

## **6. KA PROKRAM BAN BUD DIEN BAN SUMAR IA KA JINGLONG KA MARIANG (ENVIRONMENTAL MONITORING PROGRAMME)**

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Kan don ka jingbud dien bad jingpeit bniah ia ka jinglong ka mariang da ka kynhun ba dei peit ia ka, naduh ba sdang ka projek ban pynthikna ba kan ym don kino kino ka jingktah kiba kham heh nalor ia kitei kiba lah kdew haneng bad ruh ban pynshisha ia kitei ki jingktah ba la kdew haneng.

Ia baroh ki jingthew jingwoh yn pyniaid da kano kano ka laboratory agency ba la ithuh da ka NABL na ka bynta 6 snem kynthih ha ka por ba shna ia ka projek lane yn bteng shuh shuh lada ka jingpyntrei ia ka projek kam dep hapoh 6 snem, kata haduh ban da dep pyntrei ia ka projek. Ka jingthmu ia ki jingthew jingwoh jong ka projek ka long ban pynbiang ia kine ki mat harum:

- Ban bud dien bad ban peit bniah bha ia ka jinglong jingman ka mariang hapoh ka projek area bad ki shnong kiba marjan.
- Ban pynthikna lada ka jingktah ia ka mariang ka duna ne em bad lada ki lad jingmyntoi la pyntrei kam ne em bad lada ki long kiba ia id beit ia id ryntih.

La mang pisa 162.50 lakh tyngka na ka bynta ban pyntrei kam ia bun ki kam kumba la kdew hapoh ka Environmental Monitoring Programme

## **7. KIWEI PAT KI JINGPEIT BNIAH (ADDITIONAL STUDIES)**

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### **7.1 KI JINGPYNBIT PYNBIANG HA KI JAKA THYMMAI BAD JINGAI JAKA (RESETTLEMENT AND REHABILITATION PLAN)**

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Ka jingdonkam jaka na ka bynta ban shna ia ki jingtei bapher bapher jong ka projek kan long kumba 85.229 ha. Baroh ki jaka ba la donkam ban shna ia ka projek na ka bynta ki jingtrei bapher ba pher ki dei ki jaka shimet. Na ka 85.229 ha, 11.349 ha ki dei ki jaka khlaw, 65.880 ha ki dei ki bym long khlaw bad kaba sah 8 ha, ka dei ka lynti ia id ka um ha ka wah. Baroh ki jaka shimet ba la mang na ka bynta ban shna ia ka projek ki hap hapoh 5 tylli ki shnong , kata, Bataw kaba don ha East Jaintia Hills District bad ka Amtra, Trangblang, Satpator bad Kharkhana kiba hap hapoh ka West Jaintia Hills District. Ki jaka shimet ia kaba la mang ban thied ki hap hapoh 122 ki trai jaka. Baroh 122 tylli ki longiing kin duh noh katto katne ki jaka rep jong ki, bad yn ym don kano kano ka longiing ka ban duh ia ka jaka sah jong ki ne kino kino ki jingdon jingem. Ia ki jaka shimet ba la mang na bynta ka projek yn sa siew katkum ka ain “The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCT\_LARR)” bad “Meghalaya Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2017.”

Ka jingkhein kyllum ia ka jinglut jingsep na ka bynta ban pyntreikam ia kane ka Rehabilitation and Resettlement plan bad Economic Development Package ka long Rs.18,614.32 lak kumba pyni kumne harum:

### **Ki jingkhein jingdiah kyllum**

| S. No. | R&R Components            | Cost (Rs in lakh) |
|--------|---------------------------|-------------------|
| 1      | Rehabilitation Grant      | 18,584.32*        |
| 2      | Monitoring and Evaluation | 30.00             |
|        | <b>Total</b>              | <b>18,614.32</b>  |

\* Ka dor ba thikna na ka bynta ka bai jaka bad ki jingdon jingemkan sa long katkum ka dor ban buh da ki Deputy Commissioner bad na Distrik Horticulture ha ka por ban thied ia ki jaka.

## 7.2 KA BUIT TREI KAM BAN KYNTIEW IA KA ROI KA PAR HA KI SHNONG KI THAW (LOCAL AREA DEVELOPMENT PLAN)

Baroh ki jaka shimet ba la mang na ka bynta ka projek ki hap hapoh ki 5 tylli ki shnong , kata, Bataw kaba don ha East Jaintia Hills District bad ka Amtra, Trangblang, Satpator bad Kharkhana kiba hap hapoh ka West Jaintia Hills District. Namarkata, ki jaka ba ia jan bad kine ki 5 tylli ki dorbarshnong kin ioh ia ki jingmyntoi na ki scheme jong ka roi ka par (Local Area Development schemes).

Ia kino kino ki jing pynsgew ha ka por survey bad ruh ha ka Public Hearing, ha dien ka jing ia tai sani bha ba la ia mynjur lang, yn ia leh ban pynurlong ban wanlam ia ka roi ka par kaba neh (sustainable development) ha ka liang ka im lang sah lang, ka ioh ka kot bad ruh ka jingpynneh pynsah bad jingpynbha ia ka mariang, ha kaba ka jingmyntoi kan wan sha ki nongshong shnong ha ki jaka projek.

Ka jing mang pisa na ka bynta ban pyntreikam ia ka Local Area Development plan bad ki program bapher bapher ba la kdew hapoh ka Local Area Development Plan ha ki shnong ba shah ktah ha ka projek, ka long Rs 15.00 crore tyngka.

## 8. KI JINGMYNTOI NA PROJEK

Ka Myntdu-Leshka Stage-II HEP kan iarap ha ka jingpynmih bording na ka um jong ka wah Myntdu ka ban kot sha ka 605.64 MU ha ka shi snem bad wanrah ruh ia ki jingmyntoi jong ka bording ba khuid ba suba (Renewable Energy). Nalor ka jingmyntoi ha ka liang pynmih bording, kane ka projek kaba heh kan wanrah ruh ia ki jingioh jingmyntoi sha kine ki thain bad kyntiew ia ka rukom im, ka ioh ka kot jong ki briew kiba shong ba sah ha kine ki jaka. Kane ka projek kan pynbha ruh ia ki surok ki lynti ki syngkien ki iing ki sem bad ki kam bylla ia ki nongshong shnong ha ka por ba tei ia ka projek bad hadien ba la dep tei. Nalor kine, kan don ruh ki lad kamai ia ki nongshong shnong kum kaba seng ia ki dukan ban pynbiang ia ki nongtrei ba wan nabar bad ki nongwanrah ia ki tiar ki tar jong ka projek. Ia ka mang pisa na ka bynta ka jingmyntoi ia ki nongshong shnong kiba shah ktah ha ka projek yn pynrung sha ka Local Area Development fund. Kumjuh ruh, yn mang pisa ban pyndonkam ban pyntbit ia ki sap ki phong jong ki briew khnang ba kin lah ban seng ki kam ki jam lajong bad ruh ban iarap kyntiew ia ka ioh ka kot jong ka shnong ka thaw. Ynda la plie ia ka projek, shi bynta na ki jingiohnong yn thep ha ka Corporate Social Responsibility Fund bad ia ki kam pynroi yn pyniaid shaphrang ban wanrah ia ki jingmyntoi sha ki nongshong shnong na ka bynta ka roi ka par.

## **9. KA PLAN BAN PYNBHA IA KA JINGLONG KA MARIANG BAD KI SAWDONG SAWKUN (ENVIRONMENT MANAGEMENT PLAN-EMP)**

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Ka jingbymkhuid ka wan jia barabor ha ka por ba pyntei ia ka projek kaba long ha ka dur ka tdem, ka um jaboh ne ka jingkiew ka jingsawa, ha ka ba ngi lah ban pynduna ne teh lakam noh da ka jingpyntreikam ia ki rukom pynkhuid bad rukom iada lyngba ka Environmental Management Plan.

Ka Environment Monitoring Cell (EMC) ka dei ka kynhun kaban ia trei lang bad ki nongshong shnong na ka bynta ban pyntrei bha ia ki prokram iada bad pynbha ia ka mariang kiba don ha kane ka EMP.

### **9.1 KA CATCHMENT AREA TREATMENT PLAN (KA PLAN BAN IADA IA KI JAKA HA KABA KA UM SLAP KAN WAN TUID)**

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Ka Catchment Area Treatment Plan ka pynshai halor ki rukom pynduna bad iada na ka jingrong ia ka khyndew (soil erosion) na ka jaka ha kaba ka um slap ka tuid sha ki wah jong ka projek. Ki snem kiba ngi lah ban pyndonkam ia ka um ba la pynlang ha ka dam kin sa duna noh suki suki na ka daw ka jingwantuid ki khyndew ki shyiap bad kiwei kiwei.

Ha kane ka jingwad bniah bad jingkhein ba dang shen (CAT Plan), la thaw ia ki lad rukom jingiada na ka jingrong ia ka khyndew (soil erosion) ha ka ka catchment area haduh ka jaka ban shna ia ka dam. Ka jingheh jong ka catchment area ka long 130 sq km.

Ka plan ban iada ia ki jaka ha kaba ka um slap kan wan tuid (Catchment Area Treatment Plan) ka kynthup ia kine harum:

- Ban sngewthuh ia ka rukom shah rong ka khyndew na ki lum ki wah
- Ban pyndonkam ia ki lad jingai jingmut ban pynduna ia ka jingrong noh ka khyndew

Ka jingmang tyngka hapoh kane ka CAT plan ka long 1312.46 lakh tyngka.

### **9.2 KA COMPENSATORY AFFORESTATION (KA JINGTHUNG DIENG NA KA BYNTA BAN PYNBIANG IA KITO KI JAKA KHLAW KIBA LA SHA KTAH HA KA PROJECT)**

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Ka Myntdu-Leshka Stage-II projek ka hap hapoh ka jingpeit jong ka Jowai Forest Division ha East bad West Jaintia Hills District, Meghalaya. Ka jingdonkam jaka na ka bynta ban shna ia ki jingtei bapher bapher jong ka projek ka long kumba 85.229 Ha, kaba dei lut ki jaka shimet. Na kane jaka ba 85.229 Ha, 11.349 Ha ki dei ki jaka khlaw, 65.880 Ha ki dei ki bym don khlaw bad kaba sah 8 Ha ka dei ka jaka jong ka wah. Namar ia ki jaka bym long khlaw na ka bynta ban pynlong khlaw la mang ia ka jaka kaba don ha Maweit, West Khasi Hills District, namar kata ka jaka ban thung dieng kan ia ryngkat ia ka jaka kaba shah ktah ki khlaw, kata 11.349 Ha.

Ka jingmang tyngka ban pyntreikam ia kane ka plan ka kynthup ia ka dor thung dieng (Compensatory Afforestation), ka NPV, ka jingpynkhyllem ia ki dieng ki siej bad ruh ia ka dor jong ka jaka ba 11.349 Ha ban ai bujli noh da ka jaka kaba don ha Mawait, West Khasi Hills District bad baroh ka long Rs 457.29 lakh. Ka jingbatai ka long kumne harum:

| S. No. | Particulars                                                        | Amount<br>(Rs. In lakh) |
|--------|--------------------------------------------------------------------|-------------------------|
| 1      | Compensatory Afforestation                                         | 29.35                   |
| 2      | Net Preset Value (NPV)*                                            | 106.58                  |
| 3      | Dor pynkhyllem dieng (Cost of Deforestation)                       | 117.08                  |
| 4      | Dor jong ka jaka ba 11.349 ha ha Mawait, West Khasi Hills District | 204.28                  |
| Total  |                                                                    | 457.29*                 |

*\*Ia ka dor kaba thikna yn sa rai da ka Forest Diversion Proposal*

*\*Ia ka dor pynkhyllem ia ki dieng (Cost of deforestation) la ioh na ka ophis u Divisional Forest Officer (Territorial), West Jaintia Hills, District.*

*\*Ia ka dor ban shim ia ka jaka kaba heh 11.349 Ha ka dei katkum ka dor sorkar jong u snem 2020*

*\*Ia ka dor thikna yn ai da u Deputy Commissioner jong ka West Khasi Hills District bad ka Forest Department ha ka por ba theid ia ka jaka.*

### **9.3 BIO-DIVERSITY CONSERVATION & WILDLIFE MANAGEMENT PLAN (KI LAD PYNNEH PYNSAH IA KI JINGTHAW BA IM BAD KI MRAD KI MRENG HA KA MARIANG)**

Ban iada ia ka mariang bad ki mrad ki mreng na ki jingktah ki ban mih na ka projek, la ai jingmut ban pyntrei kam kumne harum hapoh ka Biodiversity Conservation and Wildlife Management Plan:

- I. Wildlife Habitat Preservation and Improvement (ka jingiada bad pynbha ia ki khlaw ba shong ba sah ki mrad)
- II. Jingshna ia ka Eco Park
- III. Jingpynpur bad ker ia ki jaka jaka da ki dieng ki siej bad ki jingthung
- IV. Jingiada bad jingkhang lad ia ki jingpluh khlaw
- V. Jingthung bad pynroi ia ki jait phlang na ka bynta ki blang ki masi
- VI. Ki lad ai jinghikai bad jingpynsgewthuh (awareness) ia ki rukom pynneh pynsah ia ka mariang
- VII. Jingpynkhlain ia ki jingtrei jong ka Forest Department
- VIII. Ki briew ba la thung kyrpang (committee) ha ka Biodiversity Management

Ka jingmang pisa na ka bynta ban pyntrei ia baroh kine ki kam bapher bapher jong ka Biodiversity Wildlife Conservation Plan ka long Rs 132.00 lakh tyngka.

#### **9.4 GREEN BELT DEVELOPMENT PLAN INCLUDING RESERVOIR RIM (KA PLAN BAN PYNJYRNGAM IA KA MARIANG BAD BAN IADA BAD PYNBHA IA KI RUD KI KIAR JONG KA PUNG UM)**

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Hapoh kane ka Green Belt Development Plan, kan kynthup ia ki jingthung ia ki tynrai dieng ha bun ki jaka kum harud hakiar ki surok, sawdong pyllun ki jaka jingtei bad ha kiwei kiwei ki jaka kum ha ki ophis bad ki jaka sah briew. Ha ka por ba thung ia ki dieng, dei ban husiar ban ym thung da ki dieng kiban heh palat hadien hajan ki iing ban lait na ki jingktah/jingjia ryngkhat ia ki iingsah. Nalor kane, la thmu ruh ban pynjyrngam da ki dieng ki siej kiban ker sawdong ia ki jaka trei bad tei ban pynduna ia ka jingsawa bad ka pumpum, ki ban mih na ki jaka tylliat maw, thung dieng sawdong ki jaka tylliat maw. Ban thung ki dieng harud ki lynti iaid, ki dieng ba itynnad bad ki dieng soh ha ki jaka ba la thmu bad ruh ha ki phyllaw ophis jong ka projek. Ia ki jingthung kiba kham kordor, kiba phuh syntiew bad mih soh, yn thung ha ki jaka sah jong ki nongtrei (colony area). Ia kine ki tynrai jingthung kiba itynnad bad ki dieng soh yn theid na ka Horticulture Department bad na ki jaka sara jingthung jong ki briew shimet, katba ia ki tynrai dieng ban thung lynter ha ki lynti iaid yn thied na ki nursery jong ka Forest Department. Ban iada ia kine ki dieng na ka jingwantur ki masi, yn ker ia ki da ki jingker sainar. La mang pisa kumba Rs. 47.50 lak tyngka ban thung bad pynroi ia ki dieng kiba la kdew haneng ha ki jaka ka projek.

#### **9.5 RESERVOIR RIM TREATMENT PLAN (KI LAD BAN IADA BAD PYNBHA IA KI RUD KI KIAR KA PUNG UM)**

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Ki rud um jong ka pung Leshka ki long kiba skhem bad tang ha ki katto katne ki jaka donkam ban sumar ia ki rud um. Kan nym don kano kano ka jingksam jong ka um sha ki jaka ba marjan namar ka jingpyndap ia ka um (FRL) kan nym jrong bad ka um ka shong ha ki sharing bad ki them kiba skhem. La lap ruh ba ym don ki mar poh khyndew ba rem dor ban shah tap ha ka pung um jong ka Myntdu-Leshka Stage-II HEP ha ka por ba pyndap ia ka.

Kumba Rs 100 lak tyngka la mang na ka bynta ban sumar ia ki rud um jong ka pung da kaba thung ia ki dieng ki siej. Kane ka jinglut ka kynthup ha ka mang tyngka jong ka Catchment Area Treatment Plan. Kumta, ym shym la mang tyngka kyrpang na ka bynta kane ka kam.

#### **9.6 MUCK MANAGEMENT PLAN (KI BUIT TREI KAM BAN BRET BAD THEH IAKA KHYNDEW KABA MIH NA KA JING PYNTREI IA KA PROJEK)**

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Ka jingpyntrei ia ka projek kan pynmih ia ka khyndew bad ki maw na ki jingtih jylliew ban shna ia ki jingtei bapher bapher jong ka. Baroh ia ki khyndew ki maw ki ban mih na ki jaka tih na dam, intake, Head Race Tunnel bad Pressure Shaft kan long 8,15,668.99 cum. Ha kaba kumba 4,59,156.61 cum (56%) yn sa pyndonkam biang, namar kata donkam ban bret noh ia kaba sah ka ba long kumba 3,56,512.38 cum. Ka jingheh baroh jong ki 2 tylli ki jaka pynlang khyndew

(dumping yard) ka long 4.40 Ha kaba kan ngiam khyndew 4,07,228 cum, wat la ka khyndew kaba lah khein lypa ban pynlang ka long tang 3,56,512.38 cum.

Ka jinglut jingsep na ka bynta ka jingtheh ia ka khyndew ki maw ki shyiap kiba tam bad ki lad jingiada ka long Rs 199.24 lak tyngka.

#### **9.7 LANDSCAPING AND RESTORATION OF CONSTRUCTION SITES (KI BUIT TREI KAM BAN PYNITYNNAD BAD PYNBHA IA KI JAKA TREI)**

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Ka jingpynitynnad, jingpynkhuid bad jingpynbha pat ia ki jaka ba la dep pyndonkam ki dei khamtam eh ia ki jaka kum ki par maw, ki jaka tih khyndew, ki jaka trei kam, ki jaka sah brier bad ki surok jong ka projek. Hadien ba la dep pyndonkam ia ki, ia kine ki jaka yn pynbha biang katkum ba shah ka kam. Kine ki kam pynbha (restoration work) kin pynkylla dur noh ia ka jaka ba ju long. Namar kata, ka long kaba donkam eh ba hadien ba lah dep pyntrei ia ka projek bad ki jingtrei bapher bapher, ki kam pynbha biang ia ka mariang hap ban pyntrei ha kine ki jaka ban shah ktah. Bun ki jait kam pyntrei ban pynneh pynsah ia ka mariang, kum ban shna ia ki kynroh bad ban thung dieng thung phlang, yn pyntrei na ka bynta ban pynbha pynwandur ha ki jaka ba shah ktah ha ka projek. Ia kane ka buit trei kam ban pynitynnad bad pynbha ia ki jaka trei, yn pyntreikam da ka jingiarap jong ki riewshemphang stad mariang ha ka jingiatreilang bad ka Jowai Forest Department hapoh ka jingpeit jingkhmih ki bor jong ka projek kiban bei ruh ia ka jinglut jingsep bad bud dien ruh ia ki kam kiba pyntrei. Ka dor ba la antad ia ki kam pynitynnad, ki kam pynkhuid bad pynbha pat ha ki jaka tih par maw, ki jaka tih khyndew, ki ophis trei kam, ki jaka sah ki nongtrei bad ki lynti ki syngkien jong ka projek la mang kumba Rs 206.52 lak tyngka.

#### **9.8 DISASTER MANAGEMENT PLAN (KA PLAN TREI KAM BAN IADA NA KA JINGPYNJOT KA MARIANG)**

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Ha kaba iohi lypa ia ki jingjia ban pynjulor ia ka mariang ki bym lah ban tip lypa, la pynkhreh ia ka Dam Break Modelling bad ia ka map kaba pyni ia ka jingdap kyrthep ka um. Halor ki jingmih bad jingtip ba la iohi na kane ka nomuna (modelling), la pynkhreh ia ka Disaster Management Plan ban iada na ka jingjulor ka mariang. Kane ka plan ka pyni ia ki jingmaham bad ki rukom jingpynbna kiba yn hap bud lada wan jia ka jingjulor um lane dap um na jrong ka dam. Ka jingthmu ka long ban ai ka jingmaham bad jingpyntip ba biang por ia ki paidbah kiba lah ban shah ktah bad ban ai jingtip wut wut ia ki ophisar bad ki brier kiba don bynta ban ai ki lad jingiada lada wan ki jingjia ba kyndit. Ka jingmang tyngka na ka bynta ki lad jingiada lyngba ka Disaster Management Plan, kynthup ia ki tiar ki tar ka long Rs 159.00 lak.

#### **9.9 PUBLIC HEALTH DELIVERY SYSTEM (KA PLAN TREI KAM BAN KYNTIEW IA KA KOIT KA KHIAH U PAIDBAH)**

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Ka jingpyntrei bad jingpyniaid ia ka projek kan wanrah bun ki jingkylla ha ka ioh ka kot khamtam ha ki jaka ba marjan jong kane ka projek bad ruh kaba lah ban ktah ia ka koit ka khiah jong ki paidbah.

- I. Ki jingpang kiba thymmai na ka daw ka jingwan jong ki nongtrei kiba na bar
- II. Ka lah ban don ka jingkiew ha ki jingpang saphriang lyngba ka um, kum ka khieshoh bad khieshoh rih
- III. Ka lah ban kiew ruh ki jingpang shadem na ka daw ka jingher ki pum pum ha ka por ba shna ia ka projek
- IV. Ka lah ban kiew ki jingpang kpoh kum ka gastroenteritis, cholera bad typhoid ha ki jaka sah ki nongbylla.

Ka jingshakri ha ka koit ka khiah ha ki kyrdan bapher bapher (primary, secondary and tertiary services) ka dei ban wanrah ia ka jingiatrei lang ha ka rukom kaba iar bad ba kine kin ia snoh kti lang ban ai ka jingshakri kaba bit ba biang ha ka District. Kine harum ki long ki jylli jingtrei hapoh kane ka plan:

- Yn buh kawei ka Ambulance kaba biang ki tiar ai jingsumar, ka generator, bad kiwei kiwei ki jingdonkam ha ka jaka jong ka projek
- Yn mang pisa ban pyniaid ia katei ka ambulance kaba kynthup ia ka bai umphniang, nongniah kali bad bai shna na ka bynta ki 6 snem
- Yn buh ar tylli ki jaka ai jingsumar kyrkieh (first aid posts) kaba kynthup ia ka iing, ki shuki ki miej bad ki tiar ai jingsumar
- Ia kitei ki jaka ai jingsumar kyrkieh, yn mang pisa ia ka bai dawai, nongsumar, ki nurse bad nong ap, bad kiwei kiwei ki jingdonkam 6 snem
- Yn mang pisa ban pynkhain ka jingtreikam ki jaka sumar ba lah don lypa
- Yn pyndonkam ia ki lad iada ban teh lakam ia ka khlam COVID 19 ha ka jaka projek
- Yn mang pisa na ka bynta ban pynlong ia ki jingpynsngew paidbah da ki Health camp bad ki jaka ai tika

Baroh ki jinglut ban pyntrei ia ki lad ai jingsumar bad ki lad kyntiew ia ka koit ka khiah kin kot Rs 172.00 lak tyngka.

#### **9.10 LABOUR MANAGEMENT PLAN FOR THEIR HEALTH AND SAFETY (KA PLAN TREI KAM BAN IADA IA KI NONGBYLLA BAD KI NONGTREI NA KI JINGMA)**

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Ha ka jingpyntrei kam ban tei ia ka projek yn don ki jingmysaw lada khlem phikir bad jingktah ia ka koit ka khiah jong ki nongbylla kiba iakynduh ha ki jingtrei jong ki. Na kane ka daw, donkam ban pynbiang pura ia ki jingbthah ban bud ryntih ia ki kyndon ban iada na ka jingmysaw bad ia ka koit ka khiah ia ki nongbylla da ki bor pyniaid projek/contraktor shwa ban pyndonkam ban pyntrei ia ki ha ka projek. La mang tyngka Rs 89.00 lak ia kine ki plan trei kam hapoh ka EMP.

### **9.11 SANITATION AND SOLID WASTE MANAGEMENT (KA PLAN BAN LEH KHUID BAD KA RUKOM BRET IA KI JABOH)**

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Ia ki jaboh ki ba mih na ki jaka sah kiba shi por ha ka por ba pyntrei ia ka projek bad na ki jaka sah jong ki nongtrei kiban pyniaid ka projek, donkam ban bret ne leit buh ha ka rukom kaba bit ba biang. Ki bor pyniaid ia ka projek kin khmih ba ka um jaboh kaba mih na kine ki colony bad ruh na ki ophis yn pynjar bad pynkhuid ia ka shwa ban pyllait biang katkum ki kyndon jong ka State Pollution Control Board. Ki bynta ba ha khmat jong kane ka Solid Waste Management ki long:

- Reuse/Recycling (pyndonkam biang ia ki jaboh kum ka sbob bad ia ki tiar yn pyndonkam ha kiwei ki jingdonkam)
- Storage/Segregation (kaba pynlang ia ka jaboh bad pyniakhlad ia ki na ki jaboh ba pyut bad ki bym pyut)
- Collection and Transportation (kaba lum bad jingleit kit ia ki jaboh)
- Disposal (kaba bret noh ia ki jaboh ha ki jaka ba la jied kyrpang)

Ia ki jaboh ki banmih na ki jaka ka projek yn lum, pyniakhlad na ki jaboh ba pyut bad bym pyut bad yn bret noh ia ki kat kum ki kyndon ba la buh ha ka Solid Waste Management Rules, 2016. Baroh ki jinglut ban pyntreikam ia kane ka rukom lum bad bret ia ki jaboh na ki jaka jong ka projek kan long Rs 208.20 lak tyngka.

### **9.12 ENERGY CONSERVATION MEASURES (KA PLAN PYNTREI KAM BAN TYNGKAI IA KA JINGPYNDONKAM DIENG HA KA SHET KA TIEW)**

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Na ka jingwan jong ki nongbylla bad nongtrei ha ka projek, kan don bun ka jingdawa ia ka umphniang sharak bad kiwei kiwei ki lad pynmeh ding. Namarkata, ki nongpyniaid jong ka projek kin hap pynbiang ia ki lad ki lynti da kaba pyntrei kam kum ka jingia shet ja ba ia shet lang/bam lang, jingpynbiang ia ki umphniang sharak, ki LPG bad ki solar lantern. Ia kine hap pynbiang da ki nongpyniaid ka projek lane da ki kontraktor ban nym pynshlur ia ka jingpom dieng pathar bad pyndonkam ia ki ha ka shet ka tiew. Na ka bynta kane la mang kumba Rs 183 lak tyngka.

### **10. KI JINGLUT HABA KHEIN KYLLUM (SUMMARY OF COST)**

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Ki jinglut ha kaba pyntrei kam ia ka Environment Management Plan jong ka Myntdu-Leshka HEP Stage-II la khein kyllum kumne harum:

**Ki jinglut ban pyntreikam ia ka Environmental Management Plan**

| S. No.       | Ki bynta jong ka EMP                                      | Tyngka trai (Rs. in lakh) | Ki jinglut ha ki snem bapher bapher (Rs. in lakh) |               |               |               |               |               | Jinglut baroh (Rs. in lakh) |
|--------------|-----------------------------------------------------------|---------------------------|---------------------------------------------------|---------------|---------------|---------------|---------------|---------------|-----------------------------|
|              |                                                           |                           | Year 1                                            | Year 2        | Year 3        | Year 4        | Year 5        | Year 6        |                             |
| 1            | Catchment Area Treatment Plan                             | 1312.46                   | 0.00                                              | 0.00          | 0.00          | 0.00          | 0.00          | 0.00          | <b>1312.46</b>              |
| 2            | Compensatory Afforestation*                               | 457.29                    | 0.00                                              | 0.00          | 0.00          | 0.00          | 0.00          | 0.00          | <b>457.29</b>               |
| 3            | Biodiversity and Wildlife Conservation & Management Plan  | 100.00                    | 5.35                                              | 5.33          | 5.33          | 5.33          | 5.33          | 5.33          | <b>132.00</b>               |
| 4            | Green Belt Development Plan                               | 0.00                      | 0.00                                              | 0.00          | 0.00          | 16.00         | 16.00         | 15.50         | <b>47.50</b>                |
| 5            | Muck Dumping and Management Plan                          | 0.00                      | 40.00                                             | 40.00         | 40.00         | 40.00         | 39.24         | 0.00          | <b>199.24</b>               |
| 6            | Landscaping, Restoration of Quarry and Construction Sites | 0.00                      | 50.00                                             | 50.00         | 34.26         | 34.26         | 38.00         | 0.00          | <b>206.52</b>               |
| 7            | Disaster Management Plan                                  | 135.00                    | 4.00                                              | 4.00          | 4.00          | 4.00          | 4.00          | 4.00          | <b>159.00</b>               |
| 8            | Public Health Delivery System                             | 50.00                     | 20.35                                             | 20.33         | 20.33         | 20.33         | 20.33         | 20.33         | <b>172.00</b>               |
| 9            | Labour Management Plan                                    | 40.00                     | 9.00                                              | 9.00          | 9.00          | 9.00          | 9.00          | 4.00          | <b>89.00</b>                |
| 10           | Sanitation and Solid Waste Management Plan                | 120.00                    | 14.70                                             | 14.70         | 14.70         | 14.70         | 14.70         | 14.70         | <b>208.20</b>               |
| 11           | Energy Conservation Measures                              | 39.00                     | 24.00                                             | 24.00         | 24.00         | 24.00         | 24.00         | 24.00         | <b>183.00</b>               |
| 12           | Control of Air, Noise and Water Pollution                 | 0.00                      | 10.00                                             | 10.00         | 10.00         | 10.00         | 10.00         | 10.00         | <b>60.00</b>                |
| 12           | Environmental Monitoring Program                          | 0.00                      | 27.1                                              | 27.08         | 27.08         | 27.08         | 27.08         | 27.08         | <b>162.50</b>               |
| 13           | Rehabilitation and Resettlement Plan**                    | 18,614.32                 | 0.00                                              | 0.00          | 0.00          | 0.00          | 0.00          | 0.00          | <b>18,614.32</b>            |
| 14           | Local Area Development Plan                               | 0.00                      | 250.00                                            | 250.00        | 250.00        | 250.00        | 250.00        | 250.00        | <b>1500.00</b>              |
| <b>Total</b> |                                                           | <b>20,868.07</b>          | <b>454.50</b>                                     | <b>454.44</b> | <b>438.70</b> | <b>454.70</b> | <b>457.68</b> | <b>374.94</b> | <b>23,503.03</b>            |

\* Ia ka dor kaba thikna yn sa rai da ka Forest Diversion Proposal

\*\* Ka dor ba thikna na ka bynta ka bai jaka bad ki jingdon jingemkan sa long katkum ka dor ban buh da ki Deputy Commissioner bad na Distrik Horticulture ha ka por ban thied ia ki jaka.