**Site Visit Report – BRR Area at Lhoong: Kemukiman Cot Jeumpa**

**Location:**

Approximately 2 hours south of Banda Aceh. The site lies on the east side of the highway and has good access off the highway. There are temporary Bailey Bridges virtually on the north and south sides of the site over stream lines sourced in the hills above. The more southerly river is the source of the water supply for this block of land and was previously sufficient to all double cropping of sawah.

The general location of Kemukiman Cot Jeumpa can be seen in Figure 1, though the land under consideration does not stretch as far inland as the label on the map.

**Figure 1 Aceh Besar - Lhoong**


**Tsunami Damage:**

There was significant damage to housing, some damage to the irrigation system, approximately 20 people in the village died (more were lost at sea) but the land as such was obviously not badly damaged. Local information is:

- The flood came and went in one day
- There is no significant salinity damage – crops are being grown in some parts already
- There was sedimentation and what was seen on this visit was mainly sandy to gritty and not overly deep

**Present Situation:**

**Social**

- The Mamamia NGO under Caritas is building high quality houses and a normal village ambience is starting to be reformed. Each house is to be supplied with 2 fruit trees
- The school is virtually undamaged and there are 7 teachers on hand to cope with the returning population
- There appeared to be very few people in the village!
- The domestic water supply system is functional and is currently being worked upon. The system is piped from above the or part-way up the waterfall

**Landuse**

- This land is more "upland" than the normal alluvial plains cultivated as sawah that were so badly damaged by the tsunami. In other words there is a decent depth of soil above any water table and there is natural drainage to the river which flows down the southern boundary of the area
- Large areas between the highway and village have been fenced and small bunds created as though some farming or at least land preparation was in hand
- No signs of much of this land being cultivated were seen and the "feeling" was that there was a people shortage, perhaps displaced persons have not yet returned to the village
- One crop of maize was inspected and the pattern was very clear with very strong, deep green crop on the high points and sparse, withered looking yellowish planes in the low points – this is soil drainage or minor salinity and would be easily remedied
- This block of land would appear to have been irrigated in the past as the remnants of an irrigation supply system were located – damaged and non-functional
- The land was in need of leveling and thorough tilling to assist with leveling and also to mix in the sediments that do exist
- At first glance this block of land could lend itself rather nicely to mechanized agriculture

**Irrigation**

- The area was previously irrigated and two crops per season were possible
- The irrigation system requires total refurbishment:
  - the settling pond below the waterfall is in fair order as is the main off take channel
  - however the control gates need work
  - of the delivery channel and only the first 50 metres or so of this is still functional
  - secondary and tertiary channels have basically vanished in many places, possibly buried by sediment and hence no longer commanding the fields
  - new "in-field" channels at sufficient height to gain command need constructing

**Recommendations:**

**1. Soil Survey**

A rapid soil survey should be done throughout this site. If this site is around 200ha then to allow mapping at 1:5,000 scale in total 80 soil inspection sites would be required – this meets the FAO barest minimum of observations. Based on the estimate of 200ha then:

| Auger points | Profile Pits | Total soil sites | Soil samples | Soil Analyses On No of samples | Days for Fieldwork Person Days | Days for Lab Analysis | Days Until report |
|---|---|---|---|---|---|---|---|
| 72 | 8 | 80 | 32 | 16 - 32 | 8 - 10 | 21 days | 7 days after lab data |

- Auger holes would be excavated to 100+ cm or any limiting layer
- Soil profile pits would be sited on "representative" sites selected from the auger survey and excavated to a minimum of 150cm depth or to any limiting layer or water table

- All sites and soils horizons would be fully described and, where possible, the Indonesian soil classification system applied – but this is not essential. Suitable soil description pro-forma would be used and can be supplied by ETESP
- All profiles would be sampled to full depth by natural horizon

**Soil Analyses**

Bulk samples would be taken from auger sites as follows:

0 – 25cm
25 – 50cm
50 – 75cm
75cm – 100cm

Soil pH and salinity (ECe) would be measured on these samples. If this could be done in the field using mobile equipment it would be an added bonus, if not they would have to be done in the laboratory.

Samples from representative profiles would be analysed in the laboratory for:
Soil pH – water and KCl buffer
ECe
CEC
TEB
Exchangeable cations – Ca, Mg, K and Na plus aluminium if any pH was 5.5 or less
Total – N
OM
Available-P

**Interpretation**

The above analyses would allow assessment of inherent fertility and fertility potential plus allow indications of any nutrient imbalances to be spotted. In addition any salinity problem within the site at depths up to 100cm would be mapped. Reclamation procedures would also be produced as required and necessary.

A soil map at a suitable scale would be drawn and, if possible, this map would then be processed in a GIS system but this is not essential.

From the soil and laboratory data plus any other physical data from the site would then be used to produce physical land capability classification for the area. Agronomists and farmers might have to supply many or some of the crop criteria, otherwise established data and norms would be used and the data processed on computer using a tool that ETESP has.

Information on what crops the local farmers wanted to grow would be collected and the suitability of the land assessed for these crops, it would also be possible to recommend other crops that would / should grow on the site.

**Costs:**

| Item | Unit | Number | Unit Cost | Cost |
|---|---|---|---|---|
| Surveyor days - field | Days | 10 | 20 | 200 |
| Surveyor days - mapping & reporting | Days | 21 | 20 | 420 |
| Labour days - filed work | Days | 30 | 10 | 300 |
| Office assistant costs | Days | 30 | 20 | 600 |
| Office reporting costs | Lump sum | | 200 | 200 |
| Laboratory costs | Unit | 32 | 75 | 2400 |
| Equipment costs / hire | Lump sum | | 500 | 500 |
| Field restoration costs | Hectare | 200 | 500 | 100000 |
| Field per diem costs / accommodation | Days | 10 | 20 | 200 |
| Transport | Lump sum | | 500 | 500 |
| *Unit cost in US$* | | | **Total** | **105320** |