



FISHERIES TSUNAMI EMERGENCY PROGRAMME

Indonesia

Post-tsunami Emergency Intervention and Rehabilitation of Fisheries in Nanggroe Aceh Darussalam (NAD)

by
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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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Overview of Post Harvest Fisheries Pre- and Post-Tsunami

This overview report has been prepared by David James (Post-harvest Rehabilitation/Reconstruction Adviser), a member of the FAO Fisheries Assessment Team. It is not integrated into an overall assessment report as the team was not able to make a joint assessment. Within the time available and due to other competing demands it has also not been possible to present consolidated data for the post-harvest sector but it should be noted that the statistics produced by the fisheries department (DKP) are remarkably detailed.

General Pattern of Fish Landing and Utilization – Pre-tsunami

The marine fisheries of NAD are in general small scale; they supply the immediate local market, larger towns such as Banda Aceh and Medan and important regional markets in Malaysia and Singapore. The destination depends on selection by species and quality as the markets in neighbouring countries are generally more profitable than those locally. Typically species like sea bass, pomfret, marine shrimp and crab enter the regional market.

Fisheries Department (DKP) statistics give total marine capture for 2003 as 134000t, almost equally distributed between the east and west coasts. The total value was over Rp863x10⁸ for 2003¹. In addition there is a very substantial aquaculture production in salt and brackish water ponds (tambaks) and a growing cage culture for groupers. The aquaculture sector is divided between intensive operations for shrimp culture, largely under the control of non-locals, and less intensive polyculture of shrimp, milkfish and tilapia run by local entrepreneurs. The main species is *Peneus monodon* (black tiger) with smaller quantities of *P. merguensis*. There is said to be no production of *P. vandemae*, which is commonly cultured in neighbouring North Sumatra. While the bulk of the shrimp is destined for international markets, including Malaysia and Singapore, the milkfish and tilapia from aquaculture go mostly to the local market with some higher value species (groupers) to Malaysia and Singapore.

On the East coast the bulk of high value marine production is from small owner-operated wooden vessels ranging from planked canoes of about 5m through outboard boats to the most popular class of 7.5m vessels with 12-23hp diesel engines. These use trammel nets for shrimp, small to medium mesh gill nets for fish and bottom setting long lines for the larger species. In addition there is a class of small purse seiners (20-25m) fishing for small pelagics. In many cases the purse seiners are not owned by the operators. All of these vessels make day trips and do not take ice on board. On the West coast the vessels are of the same type but generally larger and many make extended trips for which ice is required. Here there are also some non-powered catamarans that operate lift nets for the

¹ US\$1 approx. Rp9000 in March 2005

small pelagic species that are boiled and dried. These stay at sea for an extended period, delivering their catches to 40hp outboard tenders.

There is a national classification of harbours and landing centres which depends on their size, the numbers and sizes of vessels using them and the landed weight. The port classification ranges from A to E. Type A and B (PPN) are funded and run by the central government. Type C (PPP) facilities are funded and run by the provincial government, while types D and E (PPI) are the responsibility of the district administration. The fishery harbours are of type C to E

There are type C harbours in Lampulu (Banda Aceh), Sigli, Lhoksuewawe, Meulaboh and Aceh Selantan. Other smaller local centers at district and sub-district level are of type D or E depending on size. Dinas Perikanan is responsible for the type D and E landing centers but they are operated by the district or sub-district fishermen's associations. In general they all have a jetty or concrete wharf, a covered concrete auction space and an area for aggregating consignments fish and shrimp and icing it for transport to the larger urban markets, neighbouring countries or to processing plants for export. This trade is handled by middlemen, a characteristic feature of fish marketing in Indonesia. In some cases the marketing and packaging operations are physically separated from the landing.

Ice is not commonly used for the local market but there is a serious problem with the use of formalin as a preservative. It is apparent that this is widespread, though whether applied at sea or after landing, by middlemen, is unclear. Although the Ministry of Marine Affairs and Fisheries technological laboratory in Jakarta is working on a rapid test the level of control is unsatisfactorily low. Some consumers are aware that as formalin is a carcinogen this practice is dangerous and they tend to deal only with traders known to them. However, there does not seem to be adequate channels for regulation or providing information to consumers. Operating practices as well as the hygienic and construction standards both of landing centres and local markets leave much to be desired and should be better controlled.

Only a few of the landing centers have ice plants, although Dinas Perikanan had planned to install more. In the larger towns there are commercial ice making facilities, with limited supplies available at around Rp400000/t. There is no production of flake or other small ice, only 50-60kg blocks. The blocks are crushed before use, either on board or in the packing centre. Due to the shortage of ice the middlemen transport ice in insulated containers to the packing areas for fish as well as the shrimp from aquaculture. These containers (about 200kg) are then used to transport the iced product to market or processing plant. Inevitably this reduces the bargaining position of the producers.

The export shrimp processing industry is now centred in Medan, North Sumatra where there are currently 15 large plants and 35 medium sized ones registered for export. Historically this was once a major producing area but overstocking led to outbreaks of viral disease that have rendered the ponds unusable. As a result sourcing of product shifted to NAD, where production was less intensive and disease only an emerging problem. Tsunami damage has seriously affected virtually all ponds and it will be some time before production resumes. Even under pre-tsunami conditions of production, collection, handling and transport in the shrimp industry it is difficult to see how a complete HACCP plan could include a reliable traceability element that could be verified. Although earlier NAD production was processed within the province, all but three of the export plants had transferred to Medan before the tsunami because of the conflict situation in NAD. Of these three plants two were processing shrimp while the third was a newly established sashimi plant freezing loins for the international market and airfreighting iced tuna to Japan.

Processing

In addition to shrimp and some fish frozen for export there is a thriving fish drying industry for the local and regional markets, being the only alternative to fresh fish sales. The 2003 statistics show that in 2003 approximately 80 percent of marine production was marketed fresh, 17 percent was

salted and dried and the balance was converted to pindang (boiled without drying), shrimp paste (belachan) or other specialized products. The most profitable business is production of boiled and dried small pelagic fish (ikan bilis). The fresh fish is brined for a short period in saturated brine and then boiled in saturated brine for about 15 minutes before being laid out on mesh racks for sundrying. Brining is done in a concrete tank and the cooking in a fabricated aluminum vessel of about 150litres using a pressurized kerosene burner. The drying racks are approx 2m x 1m wooden frames with plastic mesh and are usually laid on the sand in unhygienic conditions, rather than on raised racks. Some smaller species are salted and dried whole while larger fish, sharks etc. are split, brined and sun dried. There is also a significant production of dried shrimp, particularly of smaller sizes. The higher quality ikan bilis retails at up to Rp400000/kg and finds a ready market both in Indonesia and Malaysia. This information is particularly related to observations on the east coast, however, it is noted that the DKP statistics for 2003 indicate that 75 percent of dried fish production originates on the west coast, so it can be anticipated that there will be a greater need to rehabilitate the industry in that area.

Post-tsunami situation

The December 26, 2004, tsunami had a particularly savage impact on the fishing communities because of their location in the immediate coastal zone. Marine fishers and those involved in aquaculture were equally vulnerable and affected. Wherever the waves penetrated they left behind enormous loss of human life, massive destruction of housing, environment and infrastructure as well as enduring misery for the coastal people. "Getting back to normal" in Aceh will be a long, long process. The full scale of the tragedy will probably never be known but the large number of reports and assessments that have been prepared are fully indicative of the magnitude. The task now, after immediate emergency assistance has been provided, is to gear up for a massive rehabilitation effort for the population at large and for the fishing community in particular.

With respect to the post-harvest sector most of the fish landing centers that were touched by the tsunami were either badly damaged or totally destroyed. On the west coast destruction was complete as far south as Meulaboh, where the harbour was seriously damaged but is still operational. On the east coast the larger facilities in Pide and Bireuen districts were badly damaged while smaller landing centers were lost. In Aceh Utara (Lhoksuemawe) facilities in eight out of eleven coastal sub-districts were lost. The landing centers were characteristically sited within river mouths and access to the sea has been altered in many cases. Early indications are that the volume of water flowing out of rivers as the waves receded had a tendency to deepen and enlarge channels but it is too early to say if this effect is permanent.

Much of the fishing community's housing was destroyed and naturally its replacement is of the highest priority. The Government of Indonesia has decided that there should, in future, be a green belt or buffer area in the immediate coastal zone. There were early rumours that this might be an exclusion zone for fishermen's houses of up to 2km. Urgent clarification is needed although it now appears that, depending on the nature of the coast, water depth and other parameters a belt of 200-300m is intended. The Government is working on a master plan for rehabilitation, in itself a major undertaking; which will be published on 28 March, 2005, and should give clarity and guidance for reconstruction efforts. There is every indication that the marine fishermen understand and accept the need for a green belt to be replanted with mangroves and other indigenous species, even though this will cause them some dislocation. They have ample evidence that the destruction behind areas where the mangroves and other trees remained was less than where they had been cleared for other activities. Those involved in aquaculture would prefer to re-excavate tambaks right up to the margin for economic reasons. Fish landing, processing and marketing activities are intended to be re-established within the green belt in most cases.

The limited ice making capacity in many smaller centers was destroyed as were the 40t/day commercial plant in Meulaboh and the 65t/day plant of the tuna exporter in Krueng Raya, close to Banda Aceh. This latter very sophisticated plant, employing 400 workers was totally inundated and although reconstruction has started it will not be operational for some time. As a result there is no ice locally available on the west coast except for the two commercial plants, of about 35 and 50t/day capacity, still operational in Banda Aceh, which supply the northern sector. As the road down the west coast is still impassable one of these plants remains closed for lack of demand. In the southern sector some ice is available from a small plant I Blancpide or is being trucked in from N Sumatra to where fishing has recommenced and Medan remains an attractive market. When fishing resumes in other areas of the west coast there may be difficulties in finding market outlets for catches in excess of immediate local demand. Increased processing (drying) is an option. On the east coast ice is available in limited quantities, from local sources or brought in from the Medan area, for the higher valued species for urban or regional markets. Decisions on the provision of ice making capacity under rehabilitation programmes are important. It will presumably not be possible to channel international assistance funds to private sector operators, although it may be that they could avail themselves of credits or loans from international financing agencies. Where there is private sector capacity it may be more efficient than a government supported plant but will not generally provide ice for smaller landings. However, there are plans to incorporate ice making and storage in the rebuilt fish landing centers, which would be owned by the DKP but under the management of the fishermen's associations. This initiative should be encouraged. Quotes have been obtained for block ice plant of various size as well as ice storage.

Capacity	Indicative Price US\$
5t/day	43000
10t/day	96000
20t/day	137000
30t/day	173000
40t/day	204000

A 50t ice store operating at -5°C will cost US\$ 25000. Decisions on the size of ice plant to install should be governed by the volume of normal landings, expected demand and considerations mentioned below on the possibility of providing ice for aquaculture operators to make them less dependent on middlemen and processors in setting prices.

It is difficult to generalize but at a distance of six weeks from the disaster indications were that fishermen on the east coast were anxious to repair vessels and gear to return to the sea, while many on the west coast were still suffering from trauma and although they intend to eventually start fishing they still needed more time. Medical teams from the Red Cross and Medicins sans Frontiers acknowledge that post-stress trauma is likely to be the most enduring health problem.

The fish drying infrastructure (racks, sheds, boilers etc.) was naturally fragile and was almost totally destroyed by the tsunami where it was impacted. When planning replacement there are opportunities for significant improvement, particularly in standards of hygiene. Some level of commercial activity had resumed soon after the disaster with material salvaged from the wreckage. In addition drying activity increased in those areas that were not seriously affected. This is particularly important in view of providing a market for catches in excess of local demand as well as increased opportunities for income generation particularly for women.

Fish Inspection and Marketing

As intimated earlier the level of control and inspection of domestic marketing is inadequate and is an issue that needs to be addressed. DKP has the authority to supervise markets but it is not clear that this is being exercised. With regard to export inspection this is under the purview of the National Centre for Quality Control and Processing Technology Development, based in Jakarta. Prior to the tsunami there was a well equipped analytical laboratory in Lampulo, the fishing port of Banda Aceh, capable even of assessment of antibiotic residues. This facility was totally destroyed by the tsunami, which also caused the loss of life of some of the staff. Because most of the processing activity had already transferred to the Medan area, where there are also excellent facilities, there are no immediate plans to rebuild a laboratory in Aceh. There is, however, a very urgent need to improve domestic market infrastructure and operation. Independent of the immediate rehabilitation needs all aspects of fish handling, landing, icing and packaging for transport, processing, as well as wholesale and retail marketing need to be improved.

There may be opportunities to increase returns to the small scale shrimp farmers through marketing campaigns. In the US, Europe and Japan there are wholesalers/retailers that would be prepared to offer a premium for product from the tsunami affected region. Such a venture would require careful control and liaison with a reliable processor as well as the guarantee of an effective chain of custody but is worthy of further investigation.

Emergency Response and Long-term Rehabilitation Needs

The international community has responded generously to calls for financial assistance for emergency intervention, to the extent that there are potential problems with the wise use of funds. It is very important for FAO to be aware of the competing pressures of well intentioned NGO's as well as international agencies. Both of these groups have proved to be much more adept in responding to an emergency situation and capable of a more rapid response than FAO but they do not have the technical capacity to respond effectively to the specific emergency needs of the fishing community or the long term development requirements. Of particular concern is the possibility of unwittingly introducing excess capacity to the catching sector or too intensive utilization of aquaculture areas in a well-meaning desire to help. The best role for the Organization is to place emphasis on its capacity for long-term technical support. It is clear from contacts with NGO's and other agencies at the field level that they acknowledge that they lack fisheries expertise and are anxious to avail themselves of expert advice.

On-the spot investigation has demonstrated that DKP at the district level has the capacity to make a valid assessment of the damage and the needs and should be the partner of choice for FAO in direct interlocution and delivery to those in need. Only through DKP will FAO be able to interact directly at the community level. Notwithstanding both DKP, at provincial level and the Ministry of Marine Affairs and Fisheries at the national level, rely on FAO to play a coordinating role between all concerned parties in responding to the immediate needs and to longer term rehabilitation goals. It should be constantly re-emphasised to FAO staff, particularly the Headquarters component, that it has been mandated by the Government of Indonesia as the lead agency for coordination of the international response to the tsunami disaster in addition to its role in delivery of donor-funded project assistance. At the national and provincial level there are signed memoranda of understanding confirming this undertaking on behalf of the Organization. The Government and the people appreciate FAO's willingness to help and rely on the Organization for technical support above all things. While the rapid response and contribution to the Government's strategy have been greatly esteemed the promises will ring hollow if there is a continued failure to deliver concrete project inputs to tsunami relief efforts. From the technical perspective in the field this is seen as resulting from the Organization's convoluted and tortuous administrative procedures, which are

particularly poorly adapted to emergency assistance. It should be borne in mind that even at a distance of eleven weeks from the disaster no orders had been placed for fishery related inputs for Aceh and even when they are the slowness of the purchasing process is legendary. The reputation of FAO needs protection – not by damage limitation but by quick action. Consultants will become increasingly reluctant to continue in the field if this situation is not urgently addressed and they can be confident that the promises they have given to beneficiaries will be made good.

It is evident that assistance in the post-harvest sector or any other specific sector of the fisheries must be integrated in an overall response to the needs, and as already noted, must be delivered at the community level. In this regard it is important to ensure that, if and when blockages in the procurement pipeline are resolved, there are FAO staff or consultants on the spot (and this means at the level of the fishing community) to guide the delivery and use of the inputs.

An example of how FAO assistance could be directed to the community is given in the attached draft project activity for Aceh Utara District. Applicability to the seven other affected districts of NAD of all or part of this proposal needs to be determined – it is clear that a “one size fits all” approach will not work and assistance needs to be tuned to local needs. However, in general terms it is most likely that activities planned for Aceh Utara could be replicated elsewhere.

A summary of this proposal for Aceh Utara, which was discussed and accepted by the district-level DKP, the leaders of the fisherman’s associations and specifically the District Administrator (Bupati) on 22 February 2005 follows:

Proposed FAO Activity in Support of the DPK Tsunami Rehabilitation Programme

Following a rapid assessment of the impact of the December 26 2004 tsunami on the fishing community in Aceh Utara District, conducted from 12 – 19 February 2005, the emergency rehabilitation programme, which is summarised below is proposed by the FAO consultants for immediate implementation.

- **Direct grant assistance to fishermen’s associations** delivered through the Panglima Laut at a sub-district level. Each Panglima Laut will receive a grant of Rp 200 million to be used for immediate inputs to get the fishermen back to sea (repairs, gear replacement, processing equipment) with the balance to be used to provide bridging finance to enable boatbuilders to construct fishing boats for purchase by fishermen as well as funds for fishing gear.
- **Purchase of equipment.** FAO will arrange the local purchase of tools for 44 boatbuilders to replace those lost. Material for the construction of boatbuilding and processing sheds will also be purchased locally as will some items of processing equipment.
- **Preparation of an overall plan for fisheries infrastructure.** FAO will contract a national consultant architect to survey the sub-districts affected, to prepare a design for fish landing centres, ice plant and processing facilities and to provide an estimate of the total cost. FAO will then undertake to seek a donor to fund a new infrastructure

development.

- **Replanting of mangroves and other trees in the coastal belt.** Through purchase of seedlings and liaison with national environmental agencies and with international agencies funding cash for work programmes FAO will ensure the employment of internally displaced people for the replanting operation.

This proposal for Aceh Utara is integrated over all sectors, from boatbuilding, capture, fish landings and processing. More detail is needed on the requirements for fishing gear and on how the community approach can best be directed to assist those involved in aquaculture to get back into production and eventually to earn more for their products. The proposal is predicated on delivering assistance through the leaders of the fisherman's associations broken down to the sub-district level. The sub-district, consisting of a number of villages, is the lowest level of government administration. The leaders of the fisherman's associations, the Panglima Laut, are selected by the members and are in general the most senior member of the community. They are trusted by the community and the government alike and are used to controlling funds. The least complex channel for delivering funds to the Panglima Laut needs to be identified as a matter of extreme urgency. In this regard it is noted that they all have a corporate identity and a bank account belonging to the association. The names of the Panglima Laut and their account numbers are given for reference in the proposal.

The proposal also identifies physical inputs for boatbuilding and processing with quotations from local suppliers. Procurement from within the community has the obvious advantage of generating income within the community as well as providing for continuity and access to spare parts. With respect to processing (fish drying) activities the sub-districts of Muara Batu and Dewantara were the main drying areas with 73 separate operations. All were lost and will have to be replaced. In addition to the provision of processing sheds and cooking equipment new drying racks will also be needed. In the calculations on material requirements an allowance has been made for making 100 racks of approx 2m².

The third element of the proposal is the recruitment of a national consultant architect to conduct a survey of the damaged landing centers, plan a new infrastructure, design the facilities and prepare specifications. Early indications are that each landing center will cost in the range of US\$500000, with a total figure of perhaps US\$5 million for Aceh Utara District alone. Management of a reconstruction programme of this magnitude is beyond the capacity of FAO, even if sufficient funding were available. It is hoped that the output of this activity could be made quickly available so that a consolidated project for infrastructure replacement could be submitted to one of the international banks or major infrastructure funding agencies as soon as their funding is confirmed. They could then immediately start preparation of tender documents for competitive bidding. The activity could be replicated in all the other tsunami affected districts as there is a common and massive need for rebuilding fish landings. The opportunity to integrate the inclusion of ice plants in those centers close to major aquaculture areas should be considered in the planning phase. This would liberate producers from dependence on middlemen or processors who are presently the main source of ice and thus control the price of high value products. This would be encouraged by closer cooperation between the Panglima Laut and the BMPT (Tambak Farmers Association) who would both have to be involved in the planning.

The final element concerns the establishment of a green belt. As noted the fishing community is supportive although the move will not be without some dislocation. The position of the Government will be clearer after the master plan for reconstruction is released on 28 March 2005 but there will have to be a measure of replanting of mangroves and other species in the coastal zone. The role of

FAO, coordinated through the Panglima Laut, would be to ensure community participation in the planning of re-forestation and particularly to ensure that cash for work resources directed to the replanting are used to employ internally displaced people from the fishing community who have been unable to resume their fishing activity.

Project Activities for Emergency Action for Post-Tsunami Rehabilitation in Aceh Utara District of NAD

In the eight sub-districts of Aceh Utara and Lhoksuemawe Kota the loss of life in the tsunami was high. Fishermen and their families were particularly exposed and many perished. In addition to the loss of family members and homes the surviving fishermen lost a large proportion of their productive assets (boats and gear). Forty percent of the fleet of about 1800 fishing boats was lost. Much of the community infrastructure: landing centres, ice plant, markets, processing sheds etc. was also swept away. Rehabilitation and reconstruction will take a long time but as a first intervention Project ?? will provide emergency assistance through four specific project activities: direct assistance to fisherman's associations, purchase of equipment to replace that lost, preparation of a master plan for the reconstruction of community infrastructure and facilitation of a cash for work programme for the replanting of mangroves.

Activity 1: Letters of Agreement with Fisherman's Organizations

In NAD there are very strong associations of fishermen, which are organized at the sub-district level. Each of these selects a leader, the Panglima Laut who is responsible to the District Chief of the Dinas Perikanan (Fisheries Department) through a district Panglima Laut. The Panglima Laut is invariably a fisherman who is highly respected in the community and is already involved in a number of community social assistance programmes. They have collectively agreed to the responsibility of accepting funds for disbursement to the fishing community and, after some initial grants, to use the balance for a revolving fund to provide the maximum benefit to the fishing community. Grants will be for assistance to boat builders, to fishermen for the repair or replacement of boats and gear and to the small scale processing industry in order to restart fish drying activities. This proposal is coherent with the social and religious ethics of the region, while the concept of revolving funds is well understood.

Standard letters of agreement for approx US\$22000 will be drawn up between FAO and the eight sub-district Panglima Laut (See Appendix 1 which includes a list of the sub-districts and names of the Panglima Lauts). After translation and clearance by the Ministry of Marine Affairs and Fisheries they will be signed by the Panglima Laut for immediate implementation, as soon as funds are deposited in their association account. They have asked for the inclusion of a monitoring system for the purposes of control. In addition to internal monitoring by the FAO CTO it is proposed to request the GTZ - funded BALAI project, under the Ministry of Industry and Trade, to conduct a mid-term and final assessment of the use of funds.

Activity 2: Purchase of Equipment

Boatbuilding

Most boat builders lost their tools and sheds in the tsunami and are presently working to repair and start construction of vessels with the equipment they have been able to scavenge. A comprehensive list of the hand and electric tools they commonly use has been drawn up with an individual value of approx US\$2000/kit. A total of 44 boat builders survived and are anxious to restart work. Their names and addresses as beneficiaries are listed in Appendix 2. Kits of tools will be purchased locally and delivered to the district Dinas Perikanan (Fisheries Department) for these men, with the possibility of their subsequent contribution to the revolving fund run by the Panglima Laut. The tool list with specifications is attached as Appendix 3. In addition materials will be purchased for the construction of one 30x10m boat building shed in each sub-district. During the life of the project activity, which is proposed as twelve months, it is projected that 500 boats will be constructed, fitted out and delivered to fishermen.

Engines

The engines of the boats that have been damaged are generally beyond repair and will have to be replaced. In addition engines will be required for new vessels. The standard engine used is a diesel of 12, 16 or 23 hp manufactured in China and widely available locally with spare parts. The Government of the People's Republic of China plans to provide direct assistance for tsunami rehabilitation. This assistance may include engines for which details of those commonly used are provided in Appendix 4.

Fish Processing

The small scale fish drying industry was totally wiped out. The Panglima Laut together with Dinas Perikanan have identified the specific locations where re-equipping this industry is required. The highest level of activity was in Muara Batu and Dewantara with other smaller facilities in Samudera, Tanir Pasir and Seunoddon sub-districts. If rehabilitation can be done immediately production can be restarted – the larger infrastructure for marketing and distribution (ice plant etc.) will take time to plan and build. The two main processed products are salted, boiled and dried small fish and salted and dried larger species. Materials for the construction of processing sheds, drying racks and storage areas will be provided for those sub-districts where there are fish drying activities. The other requirements are boilers and salting vats which are manufactured locally and pressure kerosene burners that are ordered by a local supplier on demand. Prices and suppliers are given in Appendix 5.

Fishing Gear

The need for standard types of fishing gear will be assessed and a bulk purchase made with funding from other sources.

Activity 3: Preparation of a Master Plan for Fisheries Infrastructure

Reconstruction of major infrastructure is beyond the scope of this project's activities but it is essential that a plan be prepared quickly as there are already signs of haphazard building that may conflict with the government's long-term goal of reserving a green belt in the immediate coastal area. In addition there are excellent indications that major funding agencies (ADB, WB, UNIDO, UNDP) are gearing up to deliver investment projects. It is proposed to employ a qualified local architect as a national consultant to conduct a survey of the coast of the whole district, prepare a master plan for fish landings, market facilities, ice plant and storage at the sub-district level, specify the requirements and estimate the costs. FAO will then be able to facilitate an approach to the international donor community with a technically sound reconstruction proposal. A first estimate puts total costs at around US\$3 million. Terms of reference for the National Consultant are in Appendix 6. An early estimate of the cost of one landing center is given in Appendix 7

Activity 4: Replanting of Mangroves

As part of national planning policy the government has reserved a green belt at the margin of the sea as there is evidence that where the mangroves and trees had not been cut the tsunami damage was less. As a result much of the area will have to be planted with mangroves and other native species, either to replace what was destroyed by the tsunami or to account for previous losses. The project will catalyse the fishing communities' involvement in this process, which will be carried out under the supervision of national environmental agencies. It is anticipated that a large scale replanting programme will be formulated but such formulation is outside the scope of this project activity. Such a programme must necessarily involve the Forestry Department and cover identification of sites to be planted, choice of species and management after planting to ensure survival. This project's role will be to ensure that the district participates in such a programme, arrange for the purchase or collection of seedlings and particularly to liaise with international agencies or NGO's involved with cash for work programmes to ensure that they are directed to the employment of internally displaced people from the fishing community for the replanting operation.

Estimated Budget

	US\$
Contracts:	
(Letters of Agreement for equivalent US\$ 22000 with 8 Panglima Laut)	176000
Consultants:	
International Consultant (Implementation and Monitoring) 2 pm	30000
National Consultant Architect 3 pm	7500

Equipment:	
44 tool kits at US\$2000	88000
500 kits of timber for construction of 7.5m boats	163000
117 Processing Units lost at US\$ 100	11700
Material for drying racks 50 for 117 sites at Rp 80000/each	50900
Material for stands for processing racks	25000
Material for 8 boatsheds at US\$4000	32000
Material for 60 processing sheds at US\$1000	60000
TOTAL	644100

Appendix 1.

Draft Letter of Agreement to Provide Funds for the Panglima Laut

LETTER OF AGREEMENT

Provision of funds from the Food and Agriculture
Organization of the United Nations to the

Panglima Laut Sub-district of

Lhoksuemawe, Indonesia

1. Introduction

The Food and Agriculture Organization of the United Nations (hereinafter referred to as "FAO"), will make available to the Panglima Laut Sub-district of (hereinafter referred to as "Recipient Organization") a financial contribution in the amount of Rp 200 Million for activities in support of the FAO Programme for the Rehabilitation and Reconstruction of Fisheries in Aceh Province.: specifically and a

2. Purpose

- a) The activities for which the funds provided by FAO under this Agreement shall be used are the following:
 - i) Procurement of inputs to restart fishing and fish processing operations
 - ii) Acting as a catalyst to coordinate the link between boatbuilders and fishermen to replace lost fishing vessels and to ensure the provision of fishing gear that meets the regulations of the Indonesian authorities.
 - iii) Rehabilitation of premises for boatbuilding and fish processing operations (including replacement of drying racks and processing equipment)

(Hereinafter referred to as the "project").
- b) The background, the terms of reference, the inputs to be provided by the Recipient Organization and FAO, if any, the budget of the project and the identification of the Monitoring/Certifying Officer are given in detail in the attached Annex which constitutes an integral part of this Agreement.

3. General Conditions

- a) Funds provided by FAO under this Agreement are to be used by the Recipient Organization exclusively in support of the project.

- b) The Recipient Organization will be responsible for the organization and conduct of the project. FAO will not be held responsible for any accident, illness, loss or damage which may occur during the implementation of the project.
- c) The use of the official emblem and name of FAO on any publication, document or paper is specifically prohibited without prior written approval from FAO.
- d) All intellectual property rights (including copyright) in the work to be performed under this Agreement shall be vested in FAO, including, without any limitations, the right to use, publish, translate, sell or distribute, privately or publicly, any item or part thereof. Neither the Recipient Organization nor its personnel shall communicate to any other person or entity any confidential information made known to it by FAO in the course of the performance of its obligations under the terms of this Agreement nor shall it use this information to private or company advantage. This provision shall survive the expiration or termination of this Agreement.
- e) The personnel assigned by the Recipient Organization to the organization and running of the project shall not be considered as staff members of FAO and shall not be entitled to any privilege, immunity, compensation or reimbursement by FAO. Neither the Recipient Organization nor its personnel shall be allowed to incur any commitment or expense on behalf of FAO. Nothing in this Agreement or in any document relating thereto, shall be construed as constituting a waiver of privileges or immunities of FAO, nor as conferring any privileges or immunities of FAO on the Recipient Organization or its personnel.
- f) The present Agreement shall be governed by general principles of law, to the exclusion of any single national system of law.
- g) If, after meeting the costs of the project, there are unexpended funds under this Agreement, the Recipient Organization shall return such unexpended funds to FAO.
- h) FAO shall have the right to terminate this Agreement, by written notice to this effect, if it considers that the continued implementation of the Agreement is impossible or impractical:
 - 4. for unforeseen causes beyond the control of FAO;
 - ii) in the event of a default or delay on the part of the Recipient Organization.
 - i) In the event of the Recipient Organization's non-compliance or partial compliance with the terms of this Agreement, it will refund to FAO any payment already received in respect of activities that have not been performed by the Recipient Organization to a standard considered acceptable to FAO.
- 4. In the event of termination by FAO for unforeseen causes beyond its control, FAO shall complete all payments which may be due up to the effective date of termination.

4. Reporting

- a) The Recipient Organization shall submit to the FAO Representative, Jakarta through the FAO Chief Technical Officer (Fisheries) Banda Aceh a mid-term implementation report no later than six months after project inception.
- 4. The Recipient Organization shall submit to the FAO Representative, Jakarta through the FAO Chief Technical Officer (Fisheries) Banda Aceh a final report within three months of the completion of the project.

- c) The Recipient Organization shall submit to the FAO Representative, Jakarta through the FAO Chief Technical Officer (Fisheries) Banda Aceh a final audited statement of accounts showing the utilization of funds as determined under this Agreement within three months of the completion of the project. If the legal status of the Recipient Organization precludes the provision of audited financial statements, a statement certified as to its correctness by the officer responsible for maintaining them will be provided. In such cases the Organization shall have the right to review the relevant records.
- d) The Recipient Organization shall facilitate external monitoring of project implementation and expenditure by the GTZ funded BALAI project.

5. Terms of Payment²

- a) For the execution of the project under this Agreement, FAO will make a financial contribution in local currency not exceeding Indonesian Rupiah 200 million in one single payment.
 - b) The sum stipulated in paragraph 5a) above represents the full amount to be paid by FAO for all services and activities to be provided by the Recipient Organization under this Agreement.
4. FAO will make the above-mentioned payments in accordance with the banking instructions provided below by the Recipient Organization.

6. Settlement of Disputes

Any dispute between FAO and the Recipient Organization arising out of the interpretation or execution of this Agreement shall be settled by mutual agreement. If FAO and the Recipient Organization are unable to reach agreement on any question in dispute or on a mode of settlement other than arbitration, either party shall have the right to request arbitration in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL), as at present in force. FAO and the Recipient Organization agree to be bound by any arbitration award rendered in accordance with the above, as the final adjudication of any such dispute.

7. Amendments

Any amendment to this Agreement shall be effected only on the basis of written mutual consent by the Parties.

8. Entry into Force

- a) The present Agreement will enter into force upon signature by both Parties.
- b) The Recipient Organization must sign two copies of this Agreement and return one to the FAO Representative, Jakarta

Signed on behalf of the Food and Agriculture Organization of the United Nations:

Signature:

Date:

[name and title of the FAO Officer]

Signed on behalf of the [full name of the Institution]:

Signature:

Date:

[name and title of the officer of the Recipient Organization]

Detailed Banking Instructions (including: the name of the account holder, account number, bank's name and its full address)

Names of District and Sub-district Panglima Laut and Bank Account Numbers

District Panglima Laut T Bustaman

Sub-district Panglima Lauts

Sub-district	Name	Account in BritAma Bank (Tabungan Bank Rakyat Indonesia)	Tanda Penegal
Muara Batu	H Ibrahim	0043-01-010807-50-7	08/PL/MBT/2005
Dewantara	Yusuf	0043-01-010794-50-0	22118/09/75/03/2003
Svamtalira Baru	Tgk Hamdani	0043-01-010831-50-6	950/233/2004Lampho 5
Samudera	I Ibrahim	0043-01-010799-50-0	SK/950/233/2004
Tanah Pasir	Ismail Insyah	0043-01-010801-50-1	SK/950/233/2004
Baktiya Barat	Abdul Hadi	0043-01-010809-50-9	08/PL/BTB/2005
Seunuddon	Nurdin	0043-01-010802-50-7	08/PL/DWT/2005
Tanoh Jambo Aye	Ben Sabi	0043-01-010804-50-9	950/233/2004

ANNEX 1

TERMS OF AGREEMENT

1. Background

The December 26 2004 tsunami left massive destruction in its wake. The fishing communities of Nanggroe Aceh Darussalam, including those of Aceh Utara District, were very severely affected. Through this Letter of Agreement with the leaders (Panglima Laut) of the fishermen's associations in Aceh Utara FAO wishes to contribute directly to the rehabilitation effort. The panglima laut are the elected representatives of the registered fishermen's associations and through them FAO will be able to interact directly at the community level – the sub-district. Each sub-district association covers the fishermen in three or four villages. The sub-district panglima laut is responsible both at the district and provincial levels where the district and provincial officers of the associations are responsible to the Fisheries Department (DKP). The principal role of the sub-district panglima laut in the project is to act as a catalyst for the rehabilitation of fisheries by transferring financial and technical inputs from FAO to the community. They have been selected as recipient organizations due to their close association with the community and their familiarity with handling funding for development.

2. Terms of Reference

2.1 Description of Activities/Services

The Panglima Laut will arrange for the purchase or direct funding of the immediate inputs required to get the fishing fleet of their sub-district back to sea and the processing sector operating again. This will include repair of fishing boats and fishing gear, erection of sheds for boatbuilding and fish drying and purchase of the necessary items of fish processing equipment.

The Panglima Laut will liaise with builders of fishing boats to erect boatbuilding sheds and identify those builders to receive tools and also timber for boat construction from FAO. They will use the balance of funds for purchase of vessels completed by these builders.

Through consultation with the members of the fishermen's association the Panglima Laut will determine the priority order by which new vessels will be allocated to fishermen and whether any system of cost recovery should be instituted.

The Panglima Laut will be responsible for the provision of the reporting required under this Letter of Agreement.

2.2 Definition of Outputs

At the close of the project fishing, boatbuilding and fish processing activities will have been re-established in the sub-district and at least 25 fishing boats will have been replaced.

2.3 Duration and Timing

The time frame for the project is twelve months dating from inception.

2.4 Monitoring and Progress Reporting

The FAO CTO (Fisheries) Banda Aceh will be responsible for monitoring project implementation, if necessary backstopped by staff of FIIT. All project reports mentioned below must be addressed to the CTO. A brief mid-term progress report, identifying any problems must be provided by the RO after six months and a final report within three months of project termination. These reports can be provided in the Acehenese or Indonesian languages. A final certified statement of the utilization of funds should be provided in Acenese or Indonesian within three months of project completion.

3. Inputs to be provided in kind by FAO

In addition to the funding provided under this agreement FAO will provide parallel funding for supply replacement tool kits for 44 boatbuilders, material for the construction of fishing boats as well as boatbuilding and fish processing sheds and equipment for the fish drying industry.

4. Monitoring/Certifying Officer

The FAO CTO (Fisheries) Banda Aceh will be the certifying officer to ensure that project outputs are maintained and the reporting schedule adhered to.

Appendix 2

List of Boatbuilders in Aceh Utara District

1.	<u>Kec. Muara Batu</u> (sub-district)			
1.	A.Halim Bunsu	Ds.Dakuta	Kepala Tukang	Chief of BBldrs.
2.	Nurdin M.Amin	Ds.Dakuta	Tukang	Boatbuilder
3.	Nurdin Ahmad	Pante Geurah	Tukang	
4.	Hasan	Cot Trong	Tukang	
5.	Yusuf Ben	Bungkah	Tukang	
6.	Sakdan	Ms.Drang	Tukang	
2.	<u>Kec.Dewantara</u>			
1.	Usman Abet	Ds. Bangka Jaya	Kepala Tukang	Chief BBldr
2.	M. Yunus Ibrahim	Ds. Paya Gaboh	Tukang	Boatbuilder
3.	Hamid Hasan	Bangka Jaya	Tukang	
4.	Syambudiman	Bangka Jaya	Tukang	
3.	<u>Kec. Syamtalira Bayu</u>			
1.	M. Isa	Bungong	Kepala Tukang	Chief BBldr
2.	Nurdin	Bungong	Tukang	Boatbuilder
3.	M. Yasin	Baroh BL. Rimueng	Tukang	
4.	Mahmud Saleh	Baroh BL. Rimueng	Tukang	
5.	Usman Sabil	Lancok	Tukang	
6.	Muchtaruddin	Lancok	Tukang	
7.	M. Husen Sajari	Lancok	Tukang	
8.	Sulaiman Johan	Lancok	Tukang	
9.	Ismail Manyak	Lancok	Tukang	
4.	<u>Kec. Samudera Geudong</u>			
1.	Rasyidin	Sawang	Kepala Tukang	Chief BBldr
2.	Syarbaini	Sawang	Tukang	Boatbuilder
3.	Ismail	Sawang	Tukang	

4.	Razali	Sawang	Tukang	
5.	Daimuddin	Sawang	Tukang	
6.	Abu Karim	Sawang	Tukang	
7.	Jailani	Sawang	Tukang	
8.	Ramli Amad	Kuta Geulumpang	Tukang	
5.	<u>Kec. Tanah Pasir</u>			
1.	M. Isa S	Matang Baroh	Kepala Tukang	Chief BBldr
2.	Usman Abdullah	K. Keureuto	Tukang	Boatbuilder
3.	M. Yusuf	K. Keureuto	Tukang	
4.	Hanafiah	Matang Baroh	Tukang	
5.	Ibrahim	Matang Baroh	Tukang	
6.	Sulaiman R	Kuala Cangkoy	Tukang	
6.	<u>Kec. Seunuddon</u>			
1.	M. Taleb	Matang Lada	Kepala Tukang	Chief BBldr
2.	M. Ali	Kp. Lhok Puuk	Tukang	Boatbuilder
3.	Zakaria	Ulee Rubek Timu	Tukang	
4.	Asnawi	Ulee Rubek Barat	Tukang	
5.	M. Hasan	Ulee Rubek	Tukang	
6.	M. Yatim	Ulee Rubek	Tukang	
7.	<u>Kec. Tanah Jambo Aye</u>			
1.	Utoh Suid	Rantau Panyang	Kepala Tukang	Chief BBldr
2.	Madyah Ali	Glp. Uno	Tukang	Boatbuilder
3.	Zainuddin	Glp. Uno	Tukang	
4.	Bukhari Amad	Tanjong Dalam	Tukang	
5.	A.Bakar	Ms.Merbo	Tukang	

Lhokseumawe, 14 February 2005
Kasubdin Perikanan Laut
Drs.Mukhlis Usman Us. Mp

Appendix 3

FOOD & AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO-UN)

Banda Aceh

ACEH POST TSUNAMI PROJECT. BOATBUILDING / REPAIR COMPONENT

This appendix is based on the work of M Shawyer, Boatbuilding Consultant.

- Notes:** 1) Please state maximum delivery time after placement of purchase order.
 2) Give specification if item quoted is different from the list.
 3) Give banking details for payments.
 4) All 1) Handtools. Should be provided in box with lock. Electric tools will preferably have individual cases.

Boatbuilders Toolkits.

1) Handtools

Item	Quantity	Unit cost	Total
Saw; Crosscut 26" x 7pts/inch, tempered steel, Mfg: Bahco or equivalent quality. Note: Saws with electro hardened steel teeth are NOT acceptable.	1		
Plane; smoothing 2" blade 200/250mm long, Wood or steel. Mfg: Stanley or equivalent quality	1		
Plane; Jack 2 1/4" blade 450/500mm long, wood or steel. Mfg: Stanley or equivalent quality	1		
Plane; Rabbet. 1" blade 100/150mm long, wood or steel Mfg: Stanley or equivalent quality	1		
Chisel; wood, 38mm blade. (1 1/2") Mfg: Stanley, Marples or equivalent quality only.	1		
Chisel; wood, 25mm blade. (1") Mfg: Stanley, Marples or equivalent quality only.	1		
Chisel; wood, 19mm blade. (3/4") Mfg: Stanley, Marples or equivalent quality only.	1		
Chisel; wood, 10mm blade. (3/8") Mfg: Stanley, Marples or equivalent quality only.	1		
Sharpening stone, Fine/coarse combination type,	1		
Hammer; claw. 16oz. Drop forged head, Massaki, Stanley or equivalent quality.	1		
Punch; nail, 6mm tip.	1		

Punch; nail, 8mm tip.	1		
Rasp, wood, 300/330mm	1		
G-Clamp. Steel 6" opening.	4		
Bar clamp, steel 120mm x 300mm	2		
Bar clamp, steel 120mm x 600mm	2		
Brace, carpenters ratchet, 10" swing with 2 or 4 jaw chuck	1		
Chisel; wood cutting, 1 1/2" blade. Mfg: Stanley or equivalent quality	1		
Chisel; wood cutting, 1" blade. Mfg: Stanley or equivalent quality	1		
Chisel; wood cutting, 3/4" blade. Mfg: Stanley or equivalent quality	1		
Chisel; wood cutting, 1/2" blade. Mfg: Stanley or equivalent quality	1		
Chisel; wood cutting, 3/8" blade. Mfg: Stanley or equivalent quality	1		
Drill; Breast, manual 3/8" chuck.	1		
Drill; hand. 1/4" chuck. Double pinion design, Stanley or equivalent quality.	1		
Drill bits; HSS, 10mm	2		
Drill bits; HSS, 6mm	5		
Drill bits; HSS, 4mm	5		
Drill bits; HSS, 3.5mm	10		
Tape measure, 5m steel	1		
Square; carpenters with wood or alloy stock, 8" steel blade.	1		
Bevel; carpenters, wood or plastic stock with 6" steel blade.	1		
Plumb bob, brass or steel, weight minimum 300g	1		
Spirit level. 24" (600mm) Alloy frame, 3 level vials for horizontal and vertical use	1		
Hacksaw frame, 12". Eclipse or equivalent quality.	1		
Hacksaw blades, Bi-metal type 24pt/inch.	10		

Spanner, open end/ring end combination 12mm Chrome Vanadium steel.	1		
Spanner, open end/ ring end combination 10mm Chrome Vanadium steel.	1		
Toolbox: of sufficient size to contain the above tools, steel or wood construction, with hasp & staple & padlock.	1		

Boatbuilders Toolkits.

2) Electric & Power Hand Tools.

Circular saw, 7" Carbide tip blade. 220Vac xxxW. Mfg: Makita, Bosch or equivalent quality.	1		
Saw, reciprocating. 220VAC xxxW. Mfg: Makita, Bosch or equivalent quality. Supplied in case with 6 spare bi-metal blades 12" x 6 teeth/Inch	1		
Drill, variable speed 0-1200rpm, 3/8" (10mm) chuck. HD model. Mfg: Makita, Bosch or equivalent quality.	1		
Planer, electric. 82mm blade width 220VAC, 650W HD. Mfg: Makita, Bosch or equivalent quality.	1		
Grinder; angle, 4" disc with sanding pad attachment. Mfg: Makita or equivalent quality	1		
Sanding discs 4" x 36 grit	10		
Chainsaw, minimum 50cc motor x 50cm" bar minimum. Mfg: Stihl, Husqvarna or equivalent quality.	1		
Spare chainsaw for above saw	1		
File; round, to suit chainsaw sharpening	4		

COSTING FOR BOATSHED AND PROCESSING SHEDS FOR LHOKSEUMAWE DISTRICT ACEH.

Item #	Item	Description	No	Unit cost	Total cost
1	Posts	4.8m x 4" x 4" Damar Laut	24	145000	3480000
2	Ridge pole	30m Lineal x 4" x 4" Damar Laut	30	30208	906240
3	Joist, double	160m Lineal x 2" x 4" Damar Laut	160	14600	2336000
4	Longitudinal braces	90m Lineal x 2" x 4" Damar Laut	90	14600	1314000
5	Roof beam	100m Lineal x 2" x 4" Damar Laut	100	14600	1460000
6	Braces, misc.	80m Lineal x 2" x 4" Damar laut	80	14600	1168000
7	Roofing nailing strips	320m Lineal x 2" x 2" Damar Laut	320	7300	2336000
8	Side bracing, misc	140m Lineal x 1" x 6" Damar Laut	140	11500	1610000
9	Tool store planking	160m Lineal x 1" x 8" Damar Laut	160	15625	2500000
10	Galv. Roofing sheets	7ft x 3ft size, 230 pieces	230	44000	10120000
11	Concrete bases for post	Standard size with steel insert	24	50000	1200000
12	Bolts	Iron/galv. Bolts 3/8"(10mm) w/nut/wshr	150	2000	300000
13	Nails	Nails assorted sizes+roof nails x Kg.	100	10000	1000000
14	Labour cost	60 man/days, (Carpenters 10 x 6 days)	60	50000	3000000
	Labour cost	6 man/days, (Chief carpenter x 6 days)	6	75000	450000

Total Rp. **Rp33,180,240.00**

Total US\$ @ 9,200 **\$3,606.55**

Note 1: For overall budget the figures should be rounded up to allow for some wastage i.e., **\$4,000.00**

Note 2: For the processing shed which is half the length of boatshed assume half cost i.e., **\$2,000.00**

Appendix 4

Marine Engines in use in Lhoksuemawe District

Most of the boats with inboard engines use those of Chinese manufacture. There are few outboard motors used for fishing except for special applications such as the smallest class of seiners have a 40 hp outboard in a tunnel to avoid fouling the net. The smallest classes of planked canoe and sampam are equipped with two stroke inboard petrol engines of 5-6 hp (usually Robin) driving directly to a stainless steel shaft and small propeller. By far the most popular are single cylinder diesel engines in the range of 12, 16 and 23 hp which are used for planked vessels of 7.5m and upwards. The two most popular manufacturers are Jiang Dong and Dong Feng. These are normally equipped with a gearbox.

Typical specifications for the engines are:

- 12 hp Diesel engine Jiang Dong brand type S 195 12 hp/2000rpm
- 16 hp Diesel engine Jiang Dong brand type S1100 16 hp/2200rpm
- 23 hp Diesel engine Jiang Dong brand type SH 1115 23 hp/2200rpm

Gearbox and Stern Gear

Gearbox-06 Hang Zhou brand 2.5:1 or 3:1 ratio
2m stainless steel shaft + stainless bolt 80cm, 20-22 inch
Mikasa propeller, 1 inch water pump, 1 inch shaft joint and pulley type coupling.

Typical prices quoted for the above complete installations are:

12 hp Rp 4650000	US\$505
16 hp Rp 4725000	US\$513
23 hp Rp 6100000	US\$663

Almost without exception those vessels equipped with outboard engines use the Yamaha 40 hp unit. These vessels are generally small purse seiners (10m or slightly over) that have a tunnel for the outboard to avoid fouling the net on the propeller.

Appendix 5

Equipment for Fish Processing

The most common processing method for small fish is by pre-salting in a concrete tank, boiling in an aluminum boiler over a pressure kerosene burner followed by sundrying on plastic mesh racks of 3x1m. The value of such products from *Stolephorus* sp is relatively high (Rp 40000/kg). For cheaper species and larger fish processing is by salting and sundrying.

Suppliers and prices

It is assumed that simple processing needs such as knives, plastic buckets and bamboo strainers and scoops can be obtained locally at low cost. The larger specialized items are costed below.

Aluminum boiler 90x35 cm made locally to order by only one supplier U D MZ in 1.2mm sheet:

Rp350000

Circular concrete tank with bottom used for brining, 1x0.9m made locally by CV Fadel

Rp 55000

Heating arrangement consisting of pressure tank, hand pump, burner and piping – ordered on demand by Toko Baru

Rp 472500

Total Rp 877500

ApproxUS\$100

Material (timber, roofing, nails etc.)

For processing sheds 10x10m:

US\$1000

For boatbuilding sheds 30x10m:

US\$4000

Appendix 6

Draft Terms of Reference for the National Consultant (Architect)

Under the direct supervision of the FAO Fisheries CTO in Banda Aceh the National Consultant (Architect) will:

- Conduct a survey in those eight coastal sub-districts of Lhoksuemawe where the fisheries infrastructure suffered damage from the tsunami to identify the need for construction or rehabilitation of the fish landing, marketing and/or processing facilities.
- Prepare an overall plan for a new landing, marketing and processing infrastructure. The plan should be specific for each site in terms of landing facilities, buildings and cold storage as well as processing areas and ice plant if these are justified. The size of the infrastructure at each location should be designed on the basis of the average fish landings.
- Produce a design proposal for each site with an estimate of costs.
- Submit a final report of the findings, together with drawings, which includes all the above information

Qualifications

The National Consultant will be a qualified architect with a minimum of ten years experience, including some projects in the fisheries sector.

Period of Work

Three months

Reporting

The National Consultant will submit a brief final report on the main findings accompanied by copies of a detailed plan for the fish landing infrastructure, a design for the individual components and an estimate of the total costs.

Rehabilitation and reconstruction of the fishery harbours in Aceh after the Tsunami

(provided by Harbour Consultant Sigurdur Sigurdson)

Preparation of an overall plan for fisheries infrastructure.

Survey the sub-districts affected, to prepare a design for fish landing centres, ice plant and processing facilities and to provide an estimate of the total cost

Kab / Kota (District)

Plans for the rehabilitation of the fishing harbours

Plans for the rehabilitation of the fishing harbours can be as follows:

Short Term Program, 1 year, rehabilitation of wharfs in existing harbours for loading and unloading.

- Wharf / jetty
- Fuel facility
- Water supply
- Access road

Medium Term Program, 1 – 2 year

- Iceplant
- Auction / market facility
- Access road
- Industrial area for processing and handling (the facilities are private companies)

Long Term Program, 2 – 5 years, existing or new location, 3 to 5 harbours

- Centralization of Fishing Villages with infrastructure support and good environment.
- Fisheries Management, limited access to the fishing grounds

Categories of harbours

Type of harbour depends on the number of fishermen, number of boats, size of boats and weight of catch.

Type A and B (PPN) harbours are funded and run by the central government.

Type C (PPP) harbours are funded and run by the provincial government.

Type D (PPI) harbours are funded and run by the district government.

The size of wharf/jetty differs between categories of harbours. For heavier load concrete wharfs are preferred with piles up to 20 m long.

Type A: >10 m wide, >500 m long. Jakarta has wharfs of about 1200 m.

Type B: >6 m wide, 300 m long.

Type C: 5 m wide, 150 m long.

Type D: 3 m wide, 100 m long.

Boat sizes and depth in different type of fishing harbours:

Type A: > 60 GT > 5 m draft

Type B: < 60 GT > 3 m draft

Type C: < 30 GT > 2 m draft

Type D: < 2 GT 0.5 – 1.0 m draft, often more or up to 2.5 m

Aceh Utara

List of type D (PPI) fish landing facilities affected by the Tsunami:

Seunuddon.

Tanah Pasir. Kuala Cangkoi, location of the fish landing site that was destroyed by the Tsunami N 05° 10.738' and E 97° 18.332'. Location of the new fish landing site N 05° 10.148' and E 97° 18.410'. The old landing site was completely destroyed and nothing is left, building or quays, Figures aa-bb.

Muara Batu. Location N 05° 14.975' and E 96° 35.170'

Estimated catch 20 t/day.

Tidal difference about 1.5 m.

List of smaller landing sites, type E (Tangkahan), affected by the Tsunami:

Seunuddon.

Svamtalira Bavu.

Lhokseumawe (Kota)

Only little Tsunami damages

Bireuen

Peudada. Location N 05° 12.045' and E 96° 35,170'

Pidie

Sigli. Location N 05° 24.331' and E 95° 56.148'

Aceh Besar

Cost estimate for total reconstruction of type D (PPI) harbour

Quay	Quay constructed of concrete piles and concrete deck, ___ m long sections with a slope protection of gabion nets fill with stones in-between. Total length 100 m and width 3 m. Water depth at low tide 2.5 m.	IDRp	560 million
Fuel facility	Fuel tank	IDRp	15 million
Water supply facility		IDRp	90 million
Auction or market facility, TPI	Open building of wood and concrete, 12*24 m	IDRp	270 million
Processing and handling facility	Open building of wood and concrete, 12*24 m This building will be given to the fishermen association to manage.	IDRp	270 million
Packing and storing		IDRp	144 million
Building for ice plant	Closed building of wood and concrete for a 20 tonne ice plant, 8*15 m	IDRp	180 million
Ice storage	Temperature controlled building or container, -5°C for ice, +/-0°C for fish, with a 50 tonnes storage	IDRp	230 million
Office for Panglima Laut and government	Closed building of wood and concrete, 8*12 m	IDRp	144 million
Fishermen community centre	Closed building of wood and concrete, 8*12 m	IDRp	144 million
WC and wash room		IDRp	58 million
Surface of land area	Concrete deck on half of the estimated PPI area, or 4000 m ²	IDRp	340 million
Drainage	Estimated length for all facilities 650 m	IDRp	84 million
Fence	Estimated length 250 m	IDRp	161 million
		IDRp	2,690 million
Total contractor cost			
Engineering	Detailed design, cost estimate, tender documents and supervision estimated as 10%	IDRp	269 million
Contingencies	Contingencies are estimated as 14%	IDRp	377 million
		IDRp	3,336 million
Total cost for infrastructure			
Iceplant		IDRp	1,263 million
Total cost for reconstruction		IDRp	4.600 million
		US\$	500.000

Cost estimate for the contractor cost of infrastructure is based on information from Mr T. Faisal of CV. Q Design Consultant, Lhokseumawe, and confirmed by Ir. Abdullah Rohman of Kepala Dinas Kelautan dan Perikanan, Kabupaten, Aceh Utara.

CV. FADEL

CONCRETE TANKS

Jln. Maharaja No. 7 Telp. 40278 - 43580
Mon Geudong - Lhokseumawe

INDUSTRI KILANG
GENTENG WARNA
CONT BLOK
DAN PAGAR UKIR

Kepada Yth : FAO - UN BANZA ACEH.

Alamat :

FAKTUR

No	NAMA BARANG	Banyaknya	@	Jumlah harga
1	Cincau Jumbo	1	30.000,	
2	Cincau Jumbo paket 1 Tantais 1 Tim	1	57.000	

TANDA TERIMA

WITH
BOTTOM

Not : Barang yang sudah diterima tidak dapat ditukar atau pun dikembalikan
Harap terima dengan baik

Jumlah : Rp.

Lhokseumawe.....200.....

Hormat Kami
CV. FADEL

(T. FAUZAN ALI)

U.D. MZ

Menerima Pesanan Talang, Dandang
Open dll.

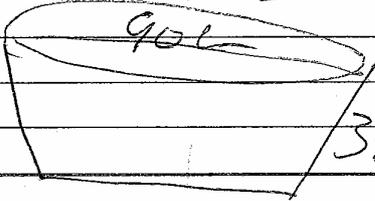
Jln. Merdeka II No. 4 Telp. (0645) 46687
Kuta Blang - Lhokseumawe

..... tgl 19

Kepada Yth:

FAO Bameha Aceh

FAKTUR / BON / KONTAN No.

Banyaknya	NAMA BARANG	@	Jumlah
	Dang Rebers ikan material elastis tebal 1,2 mm	1	350.000
Boiler			

TANDA TERIMA

Barang yang sudah dibeli tidak dapat dikembalikan!

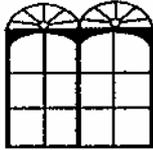
JUMLAH Rp.

M-ZAWI ALI

BASTARER BID

20/2/05

copy



KILANG KOSEN / KETAM

Rumah Indah,

JL. MEDAN B. ACEH SAMPING MESJID GEUDONG NO. 2
GEUDONG - LHKSEUMAWE TELP. 98149

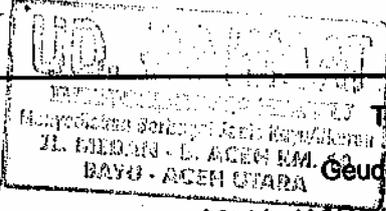
0813 60086041

150	BAUT 6" x 7/8	@ 1000	150.000
20kg	PAKU 2inci	@ 7.000	140.000
20kg	PAKU 4inci	@ 7.000	140.000
20kg	PAKU SENG	@ 10.000	200.000
	TRANSPORT	@ 500.000	500.000

NO. REKENING . 050.007143443.901

BANK . B.N.I. LSM.

SYAHKIAL



Total Rp 1.130.000

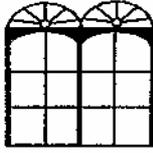
(pemesan)

F.A.O. UN BANDA ACEH MAD

(_____)

SARIANI
Direktur

20/2/05



KILANG KOSEN / KETAM

,Rumah Indah,

JL. MEDAN B. ACEH SAMPING MESJID GEUDONG NO. 2
GEUDONG - LHOKSEUMAWE TELP. 83449

F.A.O. UN BANDA ACEH NAD. 0813 60086041

JENIS KAYU SECUMANTON

24.	4x4x16 SMT	@ 120.000	2.880.000
7.	4x4x	@ 76.000	76.000
94.	2x4x 450 SMT	@ 60.000	5.640.000
67.	2x2x 322 MM	@ 21.000	1.407.000
34.	1x8x 163 M	@ 21.000	714.000
34	1x6x 163 M	@ 15.000	527.000
230	SENG 7x3	@ 42.000	9.660.000
24	BAUT 10"x 7/8	@ 2000	60.000
24	KALI BAYON	@ 2.500	60.000
50	BAUT 8"x 7/8	@ 1.600	80.000

Total Rp. 21.104.000

(pemesan)

Geudong 21/2/05

SARIANI
Direktur



BOXTSHED/PROCESSED (2) BIDS
CV. WADAH JAYA
CONTRAKTOR - SUPPLIER

Jln. Medan Banda Aceh KM. 268 Tlp. (0645) - 44230. Blang Panyang Aceh Utara

NOTE: THE MORE EXPENSIVE BID
IS PREFERABLE, BETTER
DURABILITY. WOOD.

TO : FAO - UN
Banda Aceh - NAD

No	Item	Dimension	Pcs	Unit Cost	Total
1.	Posts Meranti	4" x 4" x 4.80 M	24	115,000.00	2,760,000.00
2	Ridge Meranti	4" x 4" x 3.00 M	1	115,000.00	115,000.00
3	Rafters, Baners, Beams Loastud, Nails and Etc Meranti	2" x 4" x 4.50 M	94	57,000.00	5,358,000.00
4	Nailing Strips Meranti	2" x 2" x 3.22 M	67	30,000.00	2,010,000.00
5	Planking Meranti	1" x 8" x 1.63 M	34	35,000.00	1,190,000.00
6	Planking	1" x 6" x 1.63 M	34	25,000.00	850,000.00
7	Corrucated Roof Sheets	7' X 3'	230	57,000.00	13,110,000.00
8	Concrete Bases		24	25,000.00	600,000.00
9	Bolts	10" x 3/8" W/Nut & Washer	30	5,000.00	150,000.00
10	Bolts	8" x 3/8" W/Nut & Washer	50	3,500.00	175,000.00
11	Bolts	6" x 3/8" W/Nut & Washer	150	3,000.00	450,000.00
12	Nails (Roof)	2"	20 Kg	14,500.00	290,000.00
13	Nails Common	2 1/2"	20 Kg	12,000.00	240,000.00
14	Nails Common	4"	20 Kg	12,000.00	240,000.00
15	Transport Cost		2 Times	500,000.00	1,000,000.00
					28,538,000.00

ACCOUNT NUMBER : 0105101168.1
CV. WADAH JAYA
PT. BANK PEMBANGUNAN DAERAH
CABANG LHOKSEUMAWE

Lhokseumawe, February 18, 2005
CV. WADAH JAYA

AFRIDI
Marketing Manager



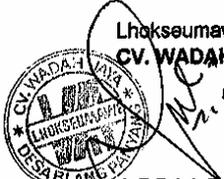
CV. WADAH JAYA CONTRAKTOR - SUPPLIER

Jln. Medan Banda Aceh KM. 268 Tlp. (0645) - 44230. Blang Panyang Aceh Utara

TO : FAO - UN
Banda Aceh - NAD

No	Item	Dimension	Pcs	Unit Cost	Total
1	Posts Damar Laut	4" x 4" x 4.80 M	24	145,000.00	3,480,000.00
2	Ridge Damar Laut	4" x 4" x 3.00 M	1	145,000.00	145,000.00
3	Rafters, Baners, Beams Loastud, Nails and Etc Damar Laut	2" x 4" x 4.50 M	94	70,000.00	6,580,000.00
4	Nailing Strips Damar Laut	2" x 2" x 3.22 M	67	35,000.00	2,345,000.00
5	Planking Damar Laut	1" x 8" x 1.63 M	34	40,000.00	1,360,000.00
6	Planking	1" x 6" x 1.63 M	34	30,000.00	1,020,000.00
7	Corrucated Roof Sheets	7' X 3'	230	57,000.00	13,110,000.00
8	Concrete Bases		24	25,000.00	600,000.00
9	Bolts	10" x 3/8" W/Nut & Washer	30	5,000.00	150,000.00
10	Bolts	8" x 3/8" W/Nut & Washer	50	3,500.00	175,000.00
11	Bolts	6" x 3/8" W/Nut & Washer	150	3,000.00	450,000.00
12	Nails (Roof)	2"	20 Kg	14,500.00	290,000.00
13	Nails Common	2 1/2"	20 Kg	12,000.00	240,000.00
14	Nails Common	4"	20 Kg	12,000.00	240,000.00
15	Transport Cost		2 Times	500,000.00	1,000,000.00
					31,185,000.00

ACCOUNT NUMBER : 0105101168.1
CV. WADAH JAYA
PT. BANK PEMBANGUNAN DAERAH
CABANG LHOKSEUMAWE

Lhokseumawe, February 18, 2005
CV. WADAH JAYA

AFRIADY
Marketing Manager



BANK SITER / PROCESS SITER *copy*
C.V. KARYA TAMBON PUTRA
CONTRACTOR - INDUSTRI - SUPPLIER

Jl. Raya Medan - Banda Aceh
Desa Tambon Baroh Telp. (0645) 56176
KR. GEUKUEH - LHOKESEUMAWE

BANK : BNI 46

No. 065/KTP/II/2005

Krueng Geukueh, 19 Februari 2005

Kepada Yth
FOOD AND AGRICULTURE
ORGANIZATION - UNITED NATION
Di
Tempat

Dengan Hormat,

Sehubungan dengan permintaan penawaran harga dan Food and Agriculture Organization - United Nation, kami dari CV. Karya Tambon Putra menawarkan harga Barang seperti berikut ini :

NO	ITEM	DIMENSION	QUANTITY	PCS	UNIT COST	TOTAL
1	POSTS (Kayu Meranti)	4"x4"x 4.8 Mtr	24	EA	110,000	2,640,000
2	RIDGE	4"x4"x 3.0 Mtr	1	EA	110,000	110,000
3	RAFTER, BRACES, BEAMS	2"x4"x4.50 Mtr	94	EA	55,000	5,170,000
4	NAILING STRIPS (Meranti)	2"x2"x3.22 Mtr	67	EA	275,500	18,458,500
5	PLANKIN	1"x8"x1.63 Mtr	34	EA	60,000	2,040,000
6	PLANKIN	1"x8"x1.63 Mtr	34	EA	43,000	1,462,000
7	CORRUGATED ROOF SHEETS	7"x3"	230	EA	56,000	12,880,000
8	CONCRETE BASES		24	EA	10,000	240,000
9	BOLTS	10"x3/8"	30	EA	6,000	180,000
10	BOLTS	8"x3/8"	50	EA	5,500	275,000
11	BOLTS	6"x3/4"	150	EA	5,000	750,000
12	NAILS (ROOF)	2"	20	Kg	30,000	600,000
13	NAILS (COMMON)	2.5"	20	kg	15,000	300,000
14	NAILS (COMMON)	4"	20	kg	15,000	300,000
15	Delivery Charge					500,000
	Grand Total Price					45,905,500

Barang yang akan dikirim diterima sampai di tempat lokasi yang akan ditunjuk oleh pemilik order.
Untuk pembayaran harap di kirim ke Nomor Rekening Kami di Bank BNI 46 AC. 050.000002654.
203, Cabang Lhokseumawe.

Demikianlah penawaran ini kami ajukan, atas kerja sama yang baik kami ucapkan terima kasih

Hormat kami
CV KARYA TAMBON PUTRA



HAND TOOLS/ELECTRIC TOOL BIDS



**TOKO BESI
RAHMAT TANI**
MENJUAL ALAT - ALAT BANGUNAN, LISTRIK DLL
Jalan Gudang No. 5 Telp. (0645) 83608
Geudong - Aceh Utara

Geudong tgl 19-2-2015

Kepada _____

FAKTUR/BON/ No. _____

Banyaknya	NAMA BARANG	@	Jumlah Harga
1	1 GERGAJI SANVIT.		60.000.
2	1. MATA KETAM. TAGAN 2"		15.000
3	1. " " " 2 1/4"		25.000
4	1. " " " 1"		14.000.
5	1 PANAT KAYU SETENGLIS 1/2.		25.000.
6	1 " " " 1"		14.000.
7	1 " " " 3/4"		13.000
8	1 " " " 3/8"		12.000
9	1 BATU ASAH PANJANG		10.000
10	1 PALU ASLI BESAR.		25.000.
11	1 DROP 6ML		10.000
12	1 " 8ML		15.000.
13	1 KIKIR KAYU 12"		35.000.
14	4. PRGS 6 6"	45000	180.000
15	2. PRGS BIRSA 120 x 300	40.000	80.000
16	2. " " 120 x 600	45000	90.000
17	1. BOR ENGKOL		45.000
	MATA 1"		15.000
	" 3/4"		10.000
	" 1/2"		6.000

TANDA TERIMA

Barang² yang sudah dibeli
tidak dapat dikembalikan

Jumlah : Rp.

699.000

ELECTRIC TOOLS.



TOKO BESI
RAHMAT TANI
 MENJUAL ALAT-ALAT BANGUNAN, LISTRIK DLL
 Jalan Gudang No. 5 Telp. (0645) 83608
 Geudong - Aceh Utara

Geudong tgl. 19-8-2005

Kepada _____

FAKTUR/BON/No. _____

Banyaknya	NAMA BARANG	@	Jumlah Harga
1	1 SIKUSON GERBAJI LISTRIK KAYU 7" 220V MAKITA		875.000
2	1 PENGHAPUS KAYU/HALUS		525.000
3	1 BOR LISTRIK 3/8" 10 ML MAKITA		525.000
4	1 KETAM LISTRIK 82 ML/220V		650.000
5	1 GERBDA LISTRIK MAKITA		625.000
6	10 PENGHALUS KAYU TIPIS 4" x 4 x 36 GRIT		450.000
7	1 SENSO SOCC MOTOR 16" BAR. MEREK STIHL		5.250.000
8	1 RANTAI SENSO		150.000
9	4 KIKIR SENSO	10.000	40.000
-> A/C 2960232016 - P. Borneo account P/N. KAMARUDDIN SYAFARI BCA LMKK SEMAWA.			}
-> Delivery time after order : 3 days.			

TANDA TERIMA

Barang² yang sudah dibeli tidak dapat dikembalikan

Jumlah : Rp.

8.640.500

ICRE DESI
RAHMAT TANU

.....

NOTE: Original worksheet
for this bid. (Draft)

ACEH

Boatbuilders Toolkits.

TOOL KITS IN BOXES FOR DELIVERY
TO DINAS PERIKANAN, LHOEKSEUMAWE

Handtools

RAHMAT PAK ABDULLA RACHMAN.

Barang

Jumlah Harga 1 buah Jumlah total.

2kg besi 1

a ketam
nyhalus 2

ret.

tu asah

lu

BITS.
KUCE.

15000
10000
8000
4000

Item	Quantity	Unit cost	Total
Saw; Crosscut 26" x 7pts/inch, tempered steel, Mfg: Bahco or equivalent quality. Note: Saws with electro hardened steel teeth are NOT acceptable.	1	60 000	
Plane; smoothing 2" blade 200/250mm long, Wood or steel. Mfg: (Stanley) or equivalent quality	1	15 000	
Plane; Jack 2 1/4" blade 450/500mm long, wood or steel. Mfg: (Stanley) or equivalent quality	1	25 000	
Plane; Rabbet. 1" blade 100/150mm long, wood or steel Mfg: (Stanley) or equivalent quality	1	14 000	
Chisel; wood, 38mm blade. (1 1/2") Mfg: (Stanley) Marples or equivalent quality only.	1	25 000	
Chisel; wood, 25mm blade. (1") Mfg: (Stanley) Marples or equivalent quality only.	1	14 000	
Chisel; wood, 19mm blade. (3/4") Mfg: (Stanley) Marples or equivalent quality only.	1	13 000	
Chisel; wood, 10mm blade. (3/8") Mfg: (Stanley) Marples or equivalent quality only.	1	12 000	
Sharpening stone, Fine/coarse combination type.	1	10 000	
Hammer; claw. 16oz. Drop forged head, Massaki, Stanley or equivalent quality.	1	25 000	
Punch; nail, 6mm tip.	1	10 000	
Punch; nail, 8mm tip.	1	15 000	
Rasp, wood, 300/330mm	1	35 000	
G-Clamp. Steel 6" opening.	4	45 000	
Bar clamp, steel 120mm x 300mm	2	40 000	
Bar clamp, steel 120mm x 600mm	2	45 000	
Brace, carpenters ratchet, 10" swing with 3 or 4 jaw chuck	1	45 000	
Drill; Breast, manual 3/8" chuck.	1		
Drill; hand. 1/2" chuck. Double pinion design, Stanley or equivalent quality.	1	12 000	
Drill bits; HSS, 10mm	2	15 000	
Drill bits; HSS, 6mm	5	12 000	

PLEASE STATE: 1) DELIVERY TIME AFTER PURCHASE ORDER
2) BANK DETAILS. FOR PAYMENT

Boatbuilders Toolkits.

Electric & Power Hand Tools.

→ listrike.

1.	Circular saw, 7" Carbide tip blade. 220Vac xxxW. Mfg. (Makita) Bosch or equivalent quality.	1	825 000	
2.	Saw, reciprocating. 220VAC xxxW. Mfg. (Makita) Bosch or equivalent quality. Supplied in case with 6 spare bi-metal blades 12" x 6 teeth/Inch	1		
3.	Drill, variable speed 0-1200rpm, 3/8" (10mm) chuck. HD model. Mfg. (Makita) Bosch or equivalent quality.	1	525 000	
4.	Planer, electric. 82mm blade width 220VAC, 650W HD. Mfg. (Makita) Bosch or equivalent quality.	1	650 000	
5.	Grinder, angle, 4" disc with sanding pad attachment. Mfg. (Makita) or equivalent quality	1	625 000	
6.	Sanding discs 4" x 36 grit	10		
7.	Chainsaw, minimum 50cc motor x 16" bar minimum. Mfg. (Stihl) Husqvarna or equivalent quality.	1	5,250 000	
8.	Spare chainsaw for above saw	1	150 000	
9.	File; round, to suit chainsaw	4	10 000	

22	Drill bits; HSS, 4mm	5	8000	
23	Drill bits; HSS, 3.5mm	10	6000	
24	Tape measure, 5m steel	1	10000	
25	Square; carpenters with wood or alloy stock, 8" steel blade.	1	12000	
26	Bevel; carpenters, wood or plastic stock with 6" steel blade.	1		
27	Plumb bob, brass or steel, weight minimum 300g	1	10000	
28	Spirit level. 24" (600mm) Alloy frame, 3 level vials for horizontal and vertical use	1	35000	
29	Hacksaw frame, 12". Eclipse or equivalent quality.	1	20000	
30	Hacksaw blades, Bi-metal type 24pt/inch.	10	10000	
31	Spanner, open end/ring end combination 12mm Chrome Vanadium steel.	1	8000	
32	Spanner, open end/ ring end combination 10mm Chrome Vanadium steel.	1	8000	
33	Toolbox: of sufficient size to contain the above tools, steel or wood construction, with hasp & staple & padlock.	1	520000	
34	EXTENSION CORD, 25m.	1	40000	
35	EXTENSION CORD, 10m	1	20000	



HAND TOOL / ELECTRIC TOOL BIDS
TOKO DUNIA BARU

CONTRACTOR - SUPPLIER & HARDWARE - TOOLS

HEAD OFFICE : JLN. PERDAGANGAN NO. 46 TEL. 43136 LHKSEUMAWE **FAX** 0645.44876

TO: F A O-U N

DATE : 15 Februari 2005

OUR REF : 05/DE/II/05

YOUR REF :

ENCLOSED :

Dear Sir,

Herewith we would like to offer you the price of mentioned M. R.

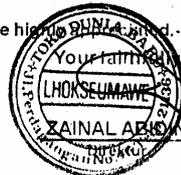
Item No.	Qty / Unit	DESCRIPTION	Unit price Rp.	Amount Rp.
1.	1 Ae	Saw Crosscut 26" X 7 Pts/Inch, Temperet Steel, mfg, Bahco Or Equivalen quality. Note, Saws With Electro Hardened Steel Teeth Are Not Acceptable	90.000	90.000,-
2.	1 Ea	Plane: Smoothing 2" Blade 200/250mm Long, wood or steel. mfg stanley or equivalen quality offer 1 3/4"	27.500	27.500,-
3.	1 Ea	Plane; jack 2 1/4" Blade 450/500mm Long, wood or steel. mfg: stanley or equivalen quality, offer 1 1/3"	27.500	27.500,-
4.	1 Ea	Plane Rabbat 1" blade 100/150mm long, wood or steel. mfg. stanley or equivalen quality. offer 1 3/4"	27.500	27.500,-
5.	1 ea	Chisel; wood, 38mm blade 1 1/2" mfg; stanley Marples or equivalen quality only	25.000	25.000,-
6.	1 ea	Chisel; wood 25mm blade 1" mfg. stanley, marples or equivalen quality only	22.000	22.000,-
7.	1 ea	Chisel; wood 19mm blade 3/4" mfg. stanley, marples or equivalen quality only	20.000	20.000,-
8.	1 ea	chisel, wood 10mm blade 3/8" mfg, stanley, marples or equivalen quality only	17.000	17.000,-
9.	1 ea	Sharpening stone, fine/coarse combination type	8.000	8.000,-
10	1 ea	hammer claw. 16oz. drop forged head massaki, stanley or equivalen quality	40.000	40.000,-
11.	1 ea	Punch, nail, 6mm tip	12.000	12.000,-
12.	1 ea	Punch, nail, 8mm tip	15.000	15.000,-
13.	1 ea	Rasp, wood, 300/330mm	20.000	20.000,-
14.	4 ea	G-clam. steel 6" opening	38.000	152.000,-
15.	2 ea	Bar clamp, steel 120mm X 300mm	25.000	50.000,-

DELIVERY TIME :

Total Value Rp.

F. O. B. : Job site

This for you information and your support will be highly appreciated.



cc. file.

TOKO DUNIA BARU

CONTRACTOR - SUPPLIER & HARDWARE - TOOLS

HEAD OFFICE : JLN. PERDAGANGAN NO. 46 TEL. 43136 LHKSEUMAWE FAX 0645-44896

TO :

DATE :
OUR REF :
YOUR REF :
ENCLOSED :

Dear Sir,

Herewith we would like to offer you the price of mentioned M. R.

Item No.	Qty / Unit	DESCRIPTION	Unit price Rp.	Amount Rp.
16	2 Ea	bar clamp, steel 120mmX600mm	38.000	76.000,-
17	1 Ea	Brace, carpenters ratchet, 10" swing with 3 or 4 jaw chuck	30.000	30.000,-
18	1 ea	Drill, hand. 1/4" chuck double pinion design stanley or equivalent quality	70.000	70.000,-
19	2 ea	drill bits, hss, 10mm	52.000	110.000,-
20	5 ea	Drill bits HSS 6mm	25.000	125.000,-
21	5 ea	Drill bits HSS 4mm	13.000	65.000,-
22	10 ea	Drill bits HSS 3,5mm	12.000	120.000,-
23	1 ea	Square carpenters with wood or alloy stock 8" steel blade	7.500,-	7.500,-
24	1 Ea	Plumb bob, brass or steel, weight minimum 300 g	7.000	7.000,-
25	1 ea	Spirit level. 24" (600mm) alloy frame, 3 level vials for horizontal and vertical use	55.000	55.000,-
26	1 ea	hacksaw frame 12" eclipse or equivalent quality	29.000	29.000,-
27	10 ea	Hacksaw blades, bi-metal type 24pt/inch	9.000	90.000,-
	1 ea	Spanner, open end/ring end combination 12mm chrome vanadium steel	13.000	13.000,-
29	1 ea	spanner, open end/ring end combination 10mm chrome vanadium steel	10.500	10.500,-
30	1 ea	Toolbox, of sufficient size to contain the above tools, steel or wood construction, with haps & staple & padlock (1 intr X75X75cm)	240.000	240.000,-
31	1 Ea	Extension cord 220V 25 mtr	350.000	350.000,-
32	1 Ea	Extension cord 220V 10 mtr	60.000	60.000,-
33	1 ea	Wood bits For brace 1"	9.500	9.500,-
34	1 Ea	Wood bits for brace 3/4"	8.500	8.500,-

DELIVERY TIME :

Total Value Rp.

F. O. B. : Job site

This for you information and your support will be highly appreciated.-



cc. file.

TOKO DUNIA BARU

CONTRACTOR - SUPPLIER & HARDWARE - TOOLS

HEAD OFFICE : JLN. PERDAGANGAN NO. 46 TEL. 43136 L.HOKSEUMAWE *Fax 06544896.*

TO :

DATE :
OUR REF :
YOUR REF :
ENCLOSED :

Dear Sir,

Herewith we would like to offer you the price of mentioned M. R.

Item No.	Qty / Unit	DESCRIPTION	Unit price Rp.	Amount Rp.
35	1 Ea	wood bits for brace 5/8"	8.000	8.000,-
36	1 ea	Wood bits For Brace 1/2"	7.000	7.000,-
37	1 Ea	Wood bits for brace 3/8"	6.000	6.000,-
38	1 ea	Circular saw, 7" Carbide tip blade 220Vac mfg makita, bosh or equivalent quality	1.450.000	1.450.000,-
39	1 ea	Saw, reciprocating 220vac mfg makita, bosh or equivalent, quality. supplied in case with 6 spare bi-metal blades 12"x6 Teeth/inch	1.200.000	1.200.000,-
40	1 Ea	Drill, variable speed 0-1200rpm, 3/8(10mm) chuck HD model mfg Makita, bosh or equivalent quality	1.750.000	1.750.000,-
41	1 Ea	Planer, electric, 82mm blade width 220vac 650W HD mfg Makita or Equivalent	1.350.000	1.350.000,-
42	1 Ea	Grider angle 4" disc with sanding pad attachment Mfg Makita or equivalent	600.000	600.000,-
43	10 Ea	Sanding disc 4 x 36 grit	9.000	90.000,-
44	1 Ea	Chainsaw, minimum 50cc motor x 16" bar minimum Mfg stihl Husgvarna or equivalent	8.000.000	8.000.000,-
45	1 Ea	Spare Chainsaw for above saw	150.000	150.000,-
46	4 Ea	File, round, to suit chainsaw	9.000	36.000,-

=====
Bank details for payment
ZAINAL ABIDIN
A/C 8263899
BANK DANAMON
CAB. L.HOKSEUMAWE

DELIVERY TIME : 3 minggu

Total Value Rp. 16.655.500,-

F. O. B. : Job site

This for you information and your support will be highly appreciated.-





HAND TOOLS / ELECTRIC TOOLS

COPY

HARAPAN BARU

JL. SUKARAMAI NO 45 TELP (0645) 44988 – 44772 FAX (0645) 43742

LHOKSEUMAWE

PENAWARAN HARGA

Dengan hormat,

Dengan ini kami menawarkan harga-harga material sebagai berikut :

Item	Quantity	Unit cost	Total
Saw, Crosscut 26 " x 7pts/Inch,tempered steel, Mfg. Bahso or ewuitvalent quality. Note : Saws with electro hardened steel teeth are Not acceptable.	1	Rp.75.000,-	Rp. 75.000,-
Plane ; smoothing blade 1 3/4 "200/250 mm long, Wood or steel Mfg : Stanley or equivalent quality	1	Rp.31.500,-	Rp. 31.500,-
Plane; jack 2 1/4 " blade 100/150 mm long, wood or steel Mfg; Stanley, Marples or equivalent quality	1	Rp.37.500,-	Rp. 37.500,-
Plane ; Rabbet. 1 blade 100/150 mm long, wood or steel Mfg : Stanley or equivalent quality.	-	Not available	-
Chisel;wood 38mm blade (1 1/2 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.40.000,- (Black Spol)	Rp. 40.000,-
Chisel;wood 25mm blade (1 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.27.500,- (Stanley)	Rp. 27.500,-
Chisel;wood 19mm blade (3/4 ") Mfg : Stanley, Maeples or equivalent quality only.	-	Not available	-
Chisel;wood 10mm blade (3/8 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.17.500,- (Stanley)	Rp. 17.500,-
Sharpening stone, Fine/coarse combination type.	1	Rp.17.500,-	Rp. 17.500,-
Hammer; clow. 16 oz, Drop forged head, Massaki, Stanley or equivalent quality.	1	Rp.34.500,- (Prohex)	Rp. 34.500,-
Punch, nail, 6 mm tip	-	Not available	-
Punch, nail, 8 mm tip	-	Not available	-
Rasp, wood, 300/330mm	1	Rp.46.000,-	Rp. 46.000,-
G - Clamp. Steel 6 " opening.	4	Rp.155.000,-	Rp. 620.000,-
Bar clamp, steel 120mm x 300mm	2	Rp.40.500,-	Rp. 81.000,-
Bar clamp, steel 120mm x 600mm	2	Rp.57.500,-	Rp. 115.000,-



HAND TOOLS / ELECTRIC TOOLS

COPY

HARAPAN BARU

JL. SUKARAMAI NO 45 TELP (0645) 44988 – 44772 FAX (0645) 43742

LHOKSEUMAWE

PENAWARAN HARGA

Dengan hormat,

Dengan ini kami menawarkan harga-harga material sebagai berikut :

Item	Quantity	Unit cost	Total
Saw, Crosscut 26 " x 7pts/Inch,tempered steel, Mfg. Bahso or ewuitvalent quality. Note : Saws with electro hardened steel teeth are Not acceptable.	1	Rp.75.000,-	Rp. 75.000,-
Plane ; smoothing blade 1 3/4 "200/250 mm long, Wood or steel Mfg : Stanley or equivalent quality	1	Rp.31.500,-	Rp. 31.500,-
Plane; jack 2 1/4 " blade 100/150 mm long, wood or steel Mfg; Stanley, Marples or equivalent quality	1	Rp.37.500,-	Rp. 37.500,-
Plane ; Rabbet. 1 blade 100/150 mm long, wood or steel Mfg : Stanley or equivalent quality.	-	Not available	-
Chisel;wood 38mm blade (1 1/2 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.40.000,- (Black Spol)	Rp. 40.000,-
Chisel;wood 25mm blade (1 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.27.500,- (Stanley)	Rp. 27.500,-
Chisel;wood 19mm blade (3/4 ") Mfg : Stanley, Maeples or equivalent quality only.	-	Not available	-
Chisel;wood 10mm blade (3/8 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.17.500,- (Stanley)	Rp. 17.500,-
Sharpening stone, Fine/coarse combination type.	1	Rp.17.500,-	Rp. 17.500,-
Hammer; clow. 16 oz, Drop forged head, Massaki, Stanley or equivalent quality.	1	Rp.34.500,- (Prohex)	Rp. 34.500,-
Punch, nail, 6 mm tip	-	Not available	-
Punch, nail, 8 mm tip	-	Not available	-
Rasp, wood, 300/330mm	1	Rp.46.000,-	Rp. 46.000,-
G - Clamp. Steel 6 " opening.	4	Rp.155.000,-	Rp. 620.000,-
Bar clamp, steel 120mm x 300mm	2	Rp.40.500,-	Rp. 81.000,-
Bar clamp, steel 120mm x 600mm	2	Rp.57.500,-	Rp. 115.000,-



HARAPAN BARU

JL. SUKARAMAI NO 45 TELP (0645) 44988 – 44772 FAX (0645) 43742

LHOKSEUMAWE

Item	Quantity	Unit cost	Total
Planer, Elektrik 82mm blade width 220VAC, 650W HD, Mfg: Makita, Bosch or equivalent quality.	1	Rp.1.875.000,-(Makita)	Rp.1.875.000,-
Grinder, angle, 4" disc with sanding pad attachment Mfg: Makita or equivalent.	1	Rp.1.015.000,-(Makita)	Rp.1.015.000,-
Sanding discs 4" x 36 grit.	10	Rp.8.500,-	Rp. 85.000,-
Chainsaw, Minimum 50cc motor x 16" bar minimum, Mfg : Stihl, Husqvarna or equivalent quality.	1	Rp.5.375.000,-	Rp.5.375.000,-
Spare chainsaw for above saw.	1	Rp.230.000,-	Rp. 230.000,-
File; round, to suit chainsaw.	4	Rp.25.500,-	Rp. 102.000,-
Extension Cord, Elektrik 25m	1	Rp.287.500,-	Rp .287.500,-
Extension Cord, Elektrik 15m	1	Rp.109.500,-	Rp. 109.500,-
Mata bor kayu biasa 1"	1	Rp.12.500,-	Rp. 12.500,-
Mata bor kayu biasa $\frac{3}{4}$	1	Rp.8.500,-	Rp 8.500,-
Mata bor kayu biasa $\frac{1}{2}$	1	Rp.7500,-	Rp. 7500,-
Mata bor kayu biasa $\frac{3}{8}$	1	Rp.5.500,-	Rp. 5.500,-
		Grand Total	Rp.16.933.500,-

- Delivery time : 2 Minggu.
- Mohon di Transfer ke rekening : A.C : 752 -30-00941-1
Atas nama : Taufik
Pada Bank Lippo Cabang Lhokseumawe.

Lhokseumawe, 17 Februari 2005.

HARAPAN BARU

ALIMIN TAUFIK



LINDA KERAMIK
 JL. SUKARAMAI NO 52 TELP (0645) 43892 – FAX (0645) 42625
 LHOKSEUMAWE

PENAWARAN HARGA

Dengan hormat,

Dengan ini kami menawarkan harga-harga material sebagai berikut :

Item	Quantity	Unit cost	Total
Saw, Crosscut 26 " x 7pts/Inch, tempered steel, Mfg. Bahso or equivalent quality. Note : Saws with electro hardened steel teeth are Not acceptable.	1	Rp.85.000,-	Rp.85.000,-
Plane ; smooching blade 1 3/4 "200/250 mm long, Wood or steel Mfg : Stanley or equivalent quality	1	Rp.38.000,-	Rp.38.000,-
Plane; jack 2 1/4 " blade 100/150 mm long, wood or steel Mfg; Stanley, Marples or equivalent quality	1	Rp.44.500,-	Rp.44.500,-
Plane ; Rabbet. 1 blade 100/150 mm long, wood or steel Mfg : Stanley or equivalent quality.	-	Not available	-
Chisel; wood 38mm blade (1 1/2 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.44.000,- (Black Spol)	Rp.44.000,-
Chisel; wood 25mm blade (1 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.30.500,- (Stanley)	Rp.30.500,-
Chisel; wood 19mm blade (3/4 ") Mfg : Stanley, Maeples or equivalent quality only.	-	Not available	-
Chisel; wood 10mm blade (3/8 ") Mfg : Stanley, Maeples or equivalent quality only.	1	Rp.20.000,- (Stanley)	Rp.20.000,-
Sharpening stone, Fine/coarse combination type.	1	Rp.21.000,-	Rp.21.000,-
Hammer; clow. 16 oz, Drop forged head, Massaki, Stanley or equivalent quality.	1	Rp.38.500,- (Prohex)	Rp.38.500,-
Punch, nail, 6 mm tip	-	Not available	-
Punch, nail, 8 mm tip	-	Not available	-
Rasp, wood, 300/330mm	1	Rp.55.500,-	Rp.55.500,-
G Clamp. Steel 6 " opening.	4	Rp.175.000,-	Rp.700.000,-
Bar clamp, steel 120mm x 300mm	2	Rp.45.500,-	Rp.91.000,-
Bar clamp, steel 120mm x 600mm	2	Rp.63.500,-	Rp.127.000,-



LINDA KERAMIK
JL. SUKARAMAI NO 52 TELP (0645) 43892 – FAX (0645) 42625
LHOKSEUMAWE

Item	Quantity	Unit cost	Total
Brace, carpenters ratchet, 10" swing with 3 or 4 jaw chuck.	1	Rp.192.000,-(Sellery)	Rp.192.000,-
Drill; Breast, manual $\frac{3}{8}$ Chuck	-	Not available	
Drill; hand, $\frac{1}{4}$ Chuck Double pinion design, Stanley or equivalent wuality.	1	Rp.135.000,-(Sellery)	Rp.135.000,-
Drill; bits; HSS 10mm x 250 mm	2	Rp.56.000,- (Bova)	Rp. 112.000,-
Drill; bits; HSS 6mm	5	Rp.24.500,- (Bova)	Rp. 122.500,-
Drill; bits; HSS 4mm	5	Rp.14.000,- (Bova)	Rp. 70.000,-
Drill; bits; HSS 3,5mm	10	Rp.12.500,- (Bova)	Rp. 120.000,-
Tape measure, 5m steel	1	Rp.13.000,-	Rp. 13.000,-
Square, carpenters with wood or alloy stocj, 8" steel blade.	1	Rp.20.000,-	Rp. 20.000,-
Bavel; carpenters wood 8" plastic stock with steel blade.	1	Rp.38.000,- (Sellery)	Rp. 38.000,-
Plumb bob, brass or steel weight minimum 300g	1	Rp.10.000,-	Rp. 10.000,-
Spirit level. 24" (600mm) Alloy frame, 3 level vials for horizontal and vertical use.(Waterpas)	1	Rp.95.500,- (Sellery)	Rp. 95.500,-
Hacksaw frem, 12" Eclipse or equivalent quality.	1	Rp.70.000,- (Pronex)	Rp. 70.000,-
Hacksaw blades, Bi-metal type 24pt/inch.	10	Rp.12.500,-	Rp. 125.000,-
Spanner, open end/ ring end combination 12mm Chorome Vanadium steel.	1	Rp.16.500,-(Tekiro)	Rp. 16.500,-
Spanner, open end/ ring end combination 10mm Chorome Vanadium steel.	1	Rp.13.500,- (Tekiro)	Rp. 13.500,-
Toolboox; of sufficient size to contain the above tools, steel or wood construction, with hasp & staple & padlock.	1	Rp.600.000,-(Wood)	Rp. 600.000,-
Circulas saw, 7" carbide blade 220 Vas xxxW. Mfg Makita Bosch or equivalent quality. Hitachi.	1	Rp.1.900.000,-(Hitachi)	Rp. 1.900.000,-
Saw, reciprocating, 220VAC xxxW Mfg: Makita, Bosch or equivalent quality. Supplied in case with 6 spare bi-metal blades 12" x 6 teeth/Inch.	1	Rp.3.100.000,-	Rp.3.100.000,-
Drill, variable speed 0-1200rpm, $\frac{3}{8}$ " (10mm) chusk. HD model.Mfg; Makita Bosch or equivalent quality. Hitachi.	1	Rp.725.000,-(Bosch)	Rp.725.000,-



LINDA KERAMIK
JL. SUKARAMAI NO 52 TELP (0645) 43892 – FAX (0645) 42625
LHOKSEUMAWE

<i>Item</i>	<i>Quantity</i>	<i>Unit cost.</i>	<i>Total</i>
<i>Planer, Elektrik. 82mm blade width 220VAC, 650W HD, Mfg: Makita, Bosch or equivalent quality.</i>	<i>1</i>	<i>Rp.2.050.000,-(Makita)</i>	<i>Rp.2.050.000,-</i>
<i>Grinder, angle, 4" disc with sanding pad attachment Mfg: Makita or equivalent.</i>	<i>1</i>	<i>Rp.1.075.000,-(Makita)</i>	<i>Rp.1.075.000,-</i>
<i>Sanding discs 4" x 36 grit.</i>	<i>10</i>	<i>Rp. 9.250,-</i>	<i>Rp. 92.500,-</i>
<i>Chainsaw, Minimum 50cc motor x 16" bar minimum, Mfg : Stihl, Husqvarna or equivalent quality.</i>	<i>1</i>	<i>Rp.6.050.000,-</i>	<i>Rp.6.050.000,-</i>
<i>Spare chainsaw for above saw.</i>	<i>1</i>	<i>Rp.242.500,-</i>	<i>Rp.242.500,-</i>
<i>File; round, to suit chainsaw.</i>	<i>4</i>	<i>Rp.27.500,-</i>	<i>Rp.110.000,-</i>
<i>Extension Cord, Elektrik 25m</i>	<i>1</i>	<i>Rp.315.000,-</i>	<i>Rp.315.000,-</i>
<i>Extension Cord, Elektrik 15m</i>	<i>1</i>	<i>Rp.120.500,-</i>	<i>Rp.120.500,-</i>
<i>Mata bor kayu biasa 1"</i>	<i>1</i>	<i>Rp. 14.000,-</i>	<i>Rp. 14.000,-</i>
<i>Mata bor kayu biasa $\frac{3}{4}$</i>	<i>1</i>	<i>Rp. 9.500,-</i>	<i>Rp. 9.500,-</i>
<i>Mata bor kayu biasa $\frac{1}{2}$</i>	<i>1</i>	<i>Rp 8.500,-</i>	<i>Rp. 8.500,-</i>
<i>Mata bor kayu biasa $\frac{3}{8}$</i>	<i>1</i>	<i>Rp. 8.000,-</i>	<i>Rp. 8.000,-</i>
		Grand Total	Rp.18.862.500,-

18.02.2005

- Delivery time : 40 Hari.

Lhokseumawe, 17 Februari 2005.

LINDA KERAMIK





LINDA KERAMIK
JL. SUKARAMAI NO 52 TELP (0645) 43892 – FAX (0645) 42625
LHOKSEUMAWE

<i>Item</i>	<i>Quantity</i>	<i>Unit cost.</i>	<i>Total</i>
<i>Planer, Elektrik. 82mm blade width 220VAC, 650W HD, Mfg: Makita, Bosch or equivalent quality.</i>	<i>1</i>	<i>Rp.2.050.000,-(Makita)</i>	<i>Rp.2.050.000,-</i>
<i>Grinder, angle, 4" disc with sanding pad attachment Mfg: Makita or equivalent.</i>	<i>1</i>	<i>Rp.1.075.000,-(Makita)</i>	<i>Rp.1.075.000,-</i>
<i>Sanding discs 4" x 36 grit.</i>	<i>10</i>	<i>Rp. 9.250,-</i>	<i>Rp. 92.500,-</i>
<i>Chainsaw, Minimum 50cc motor x 16" bar minimum, Mfg : Stihl, Husqvarna or equivalent quality.</i>	<i>1</i>	<i>Rp.6.050.000,-</i>	<i>Rp.6.050.000,-</i>
<i>Spare chainsaw for above saw.</i>	<i>1</i>	<i>Rp.242.500,-</i>	<i>Rp.242.500,-</i>
<i>File; round, to suit chainsaw.</i>	<i>4</i>	<i>Rp.27.500,-</i>	<i>Rp.110.000,-</i>
<i>Extension Cord, Elektric 25m</i>	<i>1</i>	<i>Rp.315.000,-</i>	<i>Rp.315.000,-</i>
<i>Extension Cord, Elektric 15m</i>	<i>1</i>	<i>Rp.120.500,-</i>	<i>Rp.120.500,-</i>
<i>Mata bor kayu biasa 1"</i>	<i>1</i>	<i>Rp. 14.000,-</i>	<i>Rp. 14.000,-</i>
<i>Mata bor kayu biasa $\frac{3}{4}$</i>	<i>1</i>	<i>Rp. 9.500,-</i>	<i>Rp. 9.500,-</i>
<i>Mata bor kayu biasa $\frac{1}{2}$</i>	<i>1</i>	<i>Rp 8.500,-</i>	<i>Rp. 8.500,-</i>
<i>Mata bor kayu biasa $\frac{3}{8}$</i>	<i>1</i>	<i>Rp. 8.000,-</i>	<i>Rp. 8.000,-</i>
		Grand Total	Rp.18.862.500,-

18.02.2005

- Delivery time : 40 Hari.

Lhokseumawe, 17 Februari 2005.

LINDA KERAMIK





SUMBER BARU

JL. SUKARAMAI NO 53 TELP (0645) 46768

CHOKSEUMAWA

Item	Quantity	Unit cost	Total
Brace, carpenters ratchet, 10" swing with 3 or 4 jaw chuck.	1	Rp.190.000,- (Sellery)	Rp.190.000,-
Drill; Breast, manual $\frac{3}{8}$ Chuck	-	Not available	-
Drill; hand, $\frac{1}{4}$ Chuck Double pinion design, Stanley or equivalent wuality.	1	Rp.145.000,- (Sellery)	Rp.145.000,-
Drill; bits; HSS 10mm x 250 mm	2	Rp.55.500,- (Bova)	Rp. 111.000,-
Drill; bits; HSS 6mm	5	Rp.24.000,- (Bova)	Rp. 120.000,-
Drill; bits; HSS 4mm	5	Rp.15.000,- (Bova)	Rp 75.000,-
Drill; bits; HSS 3,5mm	10	Rp.13.000,- (Bova)	Rp. 130.000,-
Tape measure, 5m steel	1	Rp.13.000,-	Rp. 13.000,-
Square, carpenters with wood or alloy stocj, 8" steel blade.	1	Rp.19.500,-	Rp. 19.500,-
Bavel; carpenters wood 8" plastic stock with steel blade.	1	Rp.37.500,- (Sellery)	Rp. 37.500,-
Plumb bob, brass or steel weight minimum 300g	1	Rp.11.500,-	Rp. 11.500,-
Spirit level. 24" (600mm) Alloy frame, 3 level vials for horizontal and vertical use.(Waterpas)	1	Rp.92.500,- (Sellery)	Rp. 92.500,-
Hacksaw frame, 12" Eclipse or equivalent quality.	1	Rp.69.000,- (Pronex)	Rp 69.000,-
Hacksaw blades, Bi-metal type 24pt/inch.	10	Rp.14.000,-	Rp. 140.000,-
Spanner, open end/ ring end combination 12mm Chorome Vanadium steel.	1	Rp.17.000,- (Tekiro)	Rp. 17.000,-
Spanner, open end/ ring end combination 10mm Chorome Vanadium steel.	1	Rp.14.000,- (Tekiro)	Rp. 14.000,-
Toolbox; of sufficient size to contain the above tools, steel or wood construction, with hasp & staple & padlock.	1	Rp.625.000,- (Wood)	Rp.625.000,-
Circulas saw, 7" carbide blade 220 Vas xxxW. Mfg Makita Bosch or equivalent quality. Hitachi.	1	Rp.1.950.000,- (Hitachi)	Rp. 1.950.000,-
Saw, reciprocating.220VAC xxxW Mfg: Makita, Bosch or equivalent quality. Supplied in case with 6 spare bi-metal blades 12" x 6 teeth/Inch.	1	Rp.2.950.000,-	Rp.2.950.000,-
Drill, variable speed 0-1200rpm, $\frac{3}{8}$ " (10mm) chusk. HD model.Mfg: Makita Bosch or equivalent quality. Hitachi.	1	Rp.750.000,- (Bosch)	Rp.750.000,-



SUMBER BARU

JL. SUKARAMAI NO 53 TELP (0645) 46768

LHOKSEUMAWE

Item	Quantity	Unit cost	Total
Planer, Elektrik. 82mm blade width 220VAC, 650W HD, Mfg: Makita, Bosch or equivalent quality.	1	Rp.2.025.000,- (Makita)	Rp.2.025.000,-
Grinder, angle, 4" disc with sanding pad attachment Mfg: Makita or equivalent.	1	Rp.1.100.000,- (Makita)	Rp.1.100.000,-
Sanding discs 4" x 36 grit.	10	Rp.9.500,-	Rp. 9.5000,-
Chainsaw, Minimum 50cc motor x 16" bar minimum, Mfg : Stihl, Husqvarna or equivalent quality.	1	Rp.6.000.000,-	Rp.6.000.000,-
Spare chainsaw for above saw.	1	Rp.240.000,-	Rp.240.000,-
File; round, to suit chainsaw.	4	Rp 27.000,-	Rp.108.000,-
Extension Cord, Elektrik 25m	1	Rp.325.000,-	Rp.325.000,-
Extension Cord, Elektrik 15m	1	Rp.122.500,-	Rp.122.500,-
Mata bor kayu biasa 1"	1	Rp.14.500,-	Rp.14.500,-
Mata bor kayu biasa $\frac{3}{4}$	1	Rp. 9.000,-	Rp. 9.000,-
Mata bor kayu biasa $\frac{1}{2}$	1	Rp. 8.500,-	Rp. 8.500,-
Mata bor kayu biasa $\frac{3}{8}$	1	Rp. 7.500,-	Rp. 7.500,-
	Grand Total		Rp.18.776.500,-

- Delivery time : 30 Hari.
- Nomor Rekening : 650.000.42689
- Atas Nama : ENKUI.
- Bank : BCA Cabang SUNRISE Jakarta - Barat.

Lhokseumawe, 17 Februari 2005.



SAMSUL BAHRI

