

Summary of comments by section

General comments

- Less repetition and more simplification (particularly section i)
- Change structure to split 'planning' and 'use'. Planning includes quantity calculations.
- Consider training/knowledge transfer possibilities (WKW, Institute of Wood Science)
- Checklists of key questions for different staff e.g. Logistician, Program Manager etc.
- More on 'low-tech' solutions where access to good suppliers, treatments etc. is limited
- NGOs need guidance on how commercial timber suppliers operate
- Include issue of wood used for fuel as this greatly effects demand for wood
- Include fiber-based materials
- Checklist to assess availability of: certified wood; neutral wood; legal timber; plantation timber; timber of non-threatened species, from non high conservation value forests and areas with no violation of traditional or civil rights
- Planning needs to consider long-term development issues
- Template Purchase Orders / Contracts would be useful
- Environmental issues include energy efficiency of buildings and CO2 emissions.
- Reference Off-Site Construction (OSC) and Modern Methods of Construction (MMC).
- Issues that need to managed in integrated manner with other sectors/clusters:
 - Establishment of relationships with central and local Government.
 - Damage assessment and needs assessment.
 - Spatial planning and macro reconstruction planning reconstruction, infrastructure development, logistics support
 - Project allocation and management.
 - Individual project management – community consultation and decision making, architectural design, materials requirements planning, tendering and purchasing, materials delivery and storage, project monitoring.

▶ Page numbers are in square brackets e.g. [3]

▶ The structure will be made clearer, with Section A divided into 2 new sections: 'Planning and management' and 'Use'.

i Introduction

i.1 What is this book?

- This section unnecessary. Start at section I.2.

▶ Section i.1 was written only for the Scoping Study. It will be cut

i.2 What is in this book?

i.3 What is not in this book

- [5] Composite panels, engineered lumber, and I-beams could be a valuable addition. These are proven construction items and (depending upon community acceptance) could be used for both temporary and permanent structures.
- [5] Composite products: do include them, but not in too much detail.
- [5] include wood wall slabs - strips of timber soaked in cement

i.4 Assumptions before using this book

- [6] This section not necessary unless used as a disclaimer

i.5 Key messages

- [6] Considerations of future energy requirements and availability, CO2, and Sustainability. Ref. UK's new Code for Sustainable Homes
- [6] Comment on damage from mass refugee movements e.g. in Goma and Ngozi in '94
- [6] Add: 'Calculate needs appropriately (no room for guestimating)' to key messages

▶ Can we turn 'key messages' or 'key principles' as a starting-point for co-ordination bodies?

i.6 What is timber?

- [8] Timber poles are typically eucalyptus (apart when collected locally for tukuls etc.)
- [9] Missing = heat transfer and insulation. As important in tropics as arctic zones.
- [9] If the locals use it as building material, it should/tends to be technically OK
- [9] More emphasis on sawn timber
- [9] Bamboo: key property is flexibility - requires more supports mid-span. than timber

A Planning and use

A.1 Planning – think before you buy and build

- [11] Add direct harvesting, training, knowledge transfer, industry creation/employment

- [11] Diagram should be simplified.

A.2 Strategy

- [12] Standardise construction plans. 32 different house designs in Aceh all required different timber dimensions. Coordinate to procure uniform, industry-standard sizes.

A.3 Primary considerations

- [13] Provide list of in-country organisations/ NGOs to be contacted to verify supplier claims – recommendations may be informal.
- [14] Consider waste, tearing, pollution and degradability for plastic sheeting.
- [14] "Shelter in use for much longer..." Really important. Give actual time frames from case studies. Related issues include land ownership, financial and other assistance.
- [14] RIL, REA, LCA Sections: too much detail. Comments about sustainability of source and of constructions more fitting. Similar for section on CITES and ITTA references could be given for web-based summaries on sustainability.
- [14] Environmental issue: chemically treated wood (e.g. Poles). Refer to (B.3.2).
- Check quality of treatment. Superficial treatment or un-treated parts (e.g. cracked wood) will limit treatment benefits. When demand for treated poles goes up in emergency, timber treatment exposure time is decreased to meet the demand.
- [15] RIL: Address de-stumping and re-use of roots for other purposes e.g. Firewood.
- [15] Add need for pre-agreed re-planting and forestry management scheme.
- [16] When budgeting, NGOs must realize that legal wood is expensive. In most countries most of what little sustainable wood there is available is exported.
- [16] Section on ITTA needs clarity. Focus on their guidelines or put in resources annex.
- [16] It is questionable whether schemes can guarantee sustainability/legality of timber.
- [16] 'I must not build latrines from endangered trees': yes, but... am I going to fly in wood to construct latrines next to a teak plantation in South Sudan?
- [18] Does latrine include the wood for slabs? Suggest alternatives: concrete or plastic.

► *Are Life Cycle Analysis and Reduced Impact Logging realistic approaches in emergency situations? Is it more useful in emergency preparedness instead?*

► *What is the best resource on forest management? Is there an example of addressing this in emergencies?*

A.4 Chain of custody and certification

- [20] Evaluations of schemes depends on who makes the evaluation. Check independence of all but FSC schemes – many may have vested interests
- [20] Certification is a tool to assist timber purchaser to decide on the source of the timber, its legality and the sustainability of the logging operations. See: www.illegal-logging.info, <http://assets.panda.org/downloads/fcagfinal.pdf>, http://www.panda.org/about_wwf/what_we_do/forests/our_solutions/
- [20] Add Bureau Veritas: http://www.bureauveritas.com/wps/wcm/connect/bv_com/Group
- Certification includes 'neutral' category which includes recycled, urban and drift wood as well as salvage and should also be traceable (see www.rainforest-alliance.org/)

► *Is it possible to agree on which certification schemes are 'good' and which are 'not so good'?*

A.5 Who will construct

- [22] Add – Upgrade local knowledge + New eco initiatives
- [22] Procurement scenario: Group of NGOs pool needs and make a contract with sustainable lumber companies for: supply, warehousing, delivery to contractors.
- [23] Timber composites may offer better solutions / advantages

A.6 What materials?

- [24] This information should be moved to the introduction
- [25] Hemp fibre is useful / very fast growing (10 week harvest in temperate zones). Useful for insulation, hemp + lime blocks and slabs for walls and floors, etc.
- [25] Explain potential for 'off-gassing' of harmful substances from products made with certain glues/materials. Include OSB, Glulam, Strand Lumber, Wood Insulation, etc.
- [25] Add notes on moisture-stabilised timber, maintenance, termite resistance, keeping dry, intumescent treatments, fire treatments, design for minimising fire risk, smoke hazards, prolific use of water for washing down indoors, etc.
- [25] Suggest explain possible negative social connotations with case examples.
- [25] Two people in a sawing pit highly unusual.
- [25] Redo quartersawn drawing – there are various ways of doing this
- [25] backsawn = "through and through"
- [25] Beware of chemically treated softwood.
- [25] Waste from trees can be used for fuel and fibre boards
- [25] Poles are cheaper and quicker and more effective than sawn timber.

A.7 Alternatives to timber

- [26] Is there bamboo in south America?
- [26] "never use tropical hardwoods" – is this viable advice??
- [26] Establish agreed international protocol on salvage
- [26] Cleaning timber needs more info. Must be 'de-nailed' (remove nails, screws, bolts)
- [26] Timber in oil is a good treatment!
- [26] Treat before you use! You can't treat something dug into the ground.
- [26] Plywood etc is very important here.
- [27] Timber structural frame with rammed earth, straw or other infill materials

A.8 Design, joints and fixings

- [28] Local risks (earthquake etc.) should go into Introduction
- [28] 'keep it dry' – OR get it dry a.s.a.p. (timber will survive wetting /soaking provided it is not left wet / soaked. Get it dry quickly and it will most often be OK.
- [28] Minimise wood wastage in construction (including doors and windows)
- [28] Add adobe to roofs, and fire not burnt clay tiles.
- [30] Walls sheet cladding with proper nailing can provide better bracing / tacking resistance, and may be easier to fit.
- [30] Diagram, lintel failure – may also be wrong sizing of timber. Provide simple span tables for different types of timber that give sizes related to spans and loads.
- [30] Treat timber before use!
- [31] SKAT publication weblink?
- [33] Nails natural tannins / substances in the timber can also quickly corrode metal fixings. Stainless steel, copper, etc. can be very costly.
- [33] All wood (green/dry, treated/untreated) expands/contracts. Only totally sealed wood is perfectly stable. Construction techniques need to that into account.
- [33] Gang plates: use tech terms: explain them. Also don't forget washers.
- [35] Box needs to include: shrinkage; settlement – differential movement – compression; Breath-ability; Cleaning - Water on floors, etc.; Cooking provisions – in or out of the house; Toilet / latrine provisions; Fire treatments and precautions in design and specification
- [35] Sustainable Timber has the least negative effect on the environment. The real issue for alternative building products is local acceptance and perception.

► Can we realistically produce a useful design/ construction guide while keeping the booklet brief? What are the main external resources to reference?

B Section B

B.1 Specification sheet

- [38] Most EU timber is dried to maximum 20% moisture content. It may be less (e.g. 18%) but specifying 15% will increase cost and limit suppliers. Solar kiln drying could be encouraged for locally felled timber BUT the time delays may be unacceptable
- [38] Grading: Construction grades are based on strength. Decorative grades are based on visual attributes. NGOs will be purchasing legal/sustainable timber from suppliers using construction grades. If purchasing from local lumber yards international standard grading not possible, your visual requirements are essential.
- [38] Durability. No one will guarantee durability of wood - too many variables in use. Treaters offer guarantees for durability of their products, but with specific requirements for how and where the treated wood is used. If a supplier guarantees durability of wood without very specific qualifications, I would not be willing to trust that supplier.
- [38] Treatment – address possible toxicity. Creosote may no longer be acceptable
- [39] Add notes on protection of floor decking, means of handling materials, pre-inspection of materials (delivery delays may make post-delivery inspection impractical)
- [39] Add bamboo and poles: in case of local purchase / inexperienced logistician

► The specification sheet should be the practical back-bone of the final guidelines. This is the most important thing to get consensus on!

B.2 Documentation

- [40] Table row "Proof for sustainability", requirement for int. suppliers should be "Yes".
- [40] Would local suppliers provide proof of legality? If they could: is it credible?
- [40] Samples of the documents would be useful
- [41] National & International legal documents: delete 'preferably'. Sustainable sources should be a main requirement.
- [41] Other verification could be via local community check lists – linked to training.
- [41] Post-discovery penalties could be used for international deliveries.
- [41] How else can you verify? Watch people chop down the trees!
- [42] Aceh example for Phytosanitary Certificates: The GOI requested Phytosanitary

Certificates but US Government would not issue them because Phytosanitary Certificates are only for raw agricultural products. Our timber was dried and some was treated and then re-dried, thus they were no longer covered under the certificates.

B.3 Processes and treatments

- [45] engine oil or sump oil/diesel mix stops termites (but environmental issues?)
- [45] verify moisture test...

B.4 Quality (grading)

- [48] Structural timbers for permanent housing require 60 year design life.
- [49] Provide a range of what is to be expected/ required/ generally found etc
- [50] Wet rot (saturated/soft, breaks along the grain): Dry timber & replace rotten parts.
- [50] Dry rot breaks into cubes and filamentous/cotton thread. Only option: burn timber.

B.5 Quantity

- [54] More explanation about the wastage rates of different dimensions of planks cut from uncut timber bought by NGO and then sent to a sawmill.
- [54] There are acceptable industry standards for each of these issues. To require anything else would decrease the number of potential suppliers and drive up the price.
- [54] Bamboo tests - can you bend it - does it split?
- [55] Sawn and planed (planed = finished) timber.
- [55] More case studies would be useful (effects of deviation in machining)
- [56] Eucalyptus poles:100/150 at base. 12m pole: 8m usable, 4m use for infill etc.
- [58] Shrinkage – timber treatment is available to stabilise moisture content.

B.6 Delivery

- [57] Consideration of handling equipment available is planning consideration.

B.7 Responsibilities and payment

- [58] Insurance! And if you ask your supplier to cover insurance, ask for the certificate

C Section C - Logistics

C.1 Reception

- [61] Check requirements before importing as restrictions may prevent certain orders.

C.2 Storage

- [62] Check regularly and move the timber occasionally to discover any problems.

C.3 Transport

C.4 Distribution to site

C.5 Health and safety

- [67] Chemicals – explain why off-cuts should not be burnt.
- A list of chemicals would be useful, with recommended means of disposal.

ii Annexes

- Useful to have a list of tree species and how they can be recognised, but this would be very long. Concentrate on what not to buy and Find links to external sources instead.

ii.1 Glossary

- [72] glossary needs further work

ii.2 Brief further references

- [71] For CD: basic designs for constructing with minimal wastage
- [73] 'Ask TRADA' is a good reference source.

► *More input from logisticians is needed for this section. Have the logisticians in your organisation seen the book yet?*

► *More suggestions for further references would be welcome!*