Do no Harm and Types of Plastic Collected

- Concentrate on plastic that is not being collected
  - “nylon” HDPE bags, water sachets
  - LDPE plastic bags

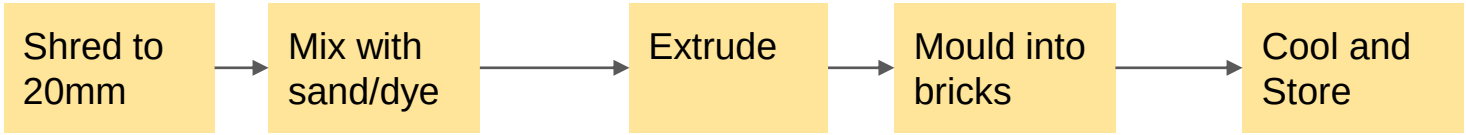
- Reduce Plastic going into the Benue River

- Recycle into safe products that do not generate microplastics
  - Need to attend to onward uses of bricks, pellets, flake

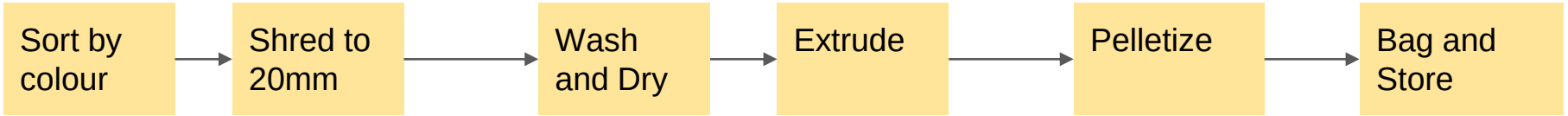
- Do not compete with existing waste picker value chains
  - PET bottles likely to compete most
  - Not common in the poor riverine communities; can be collected in wealthier areas
  - Useful in the brick mix
  - Selling PET flake unwashed does not appear to be economically viable.

PRODUCTION FLOW DIAGRAM FOR BRICKS, PELLETS & FLAKE

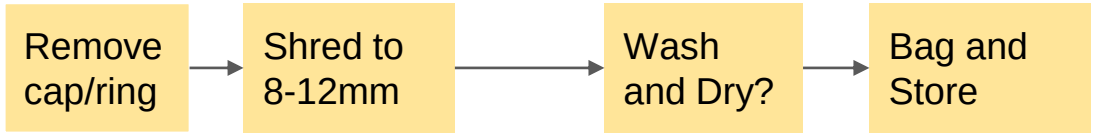
HDPE/LDPE/PET and Sand Recycling into interlocking bricks



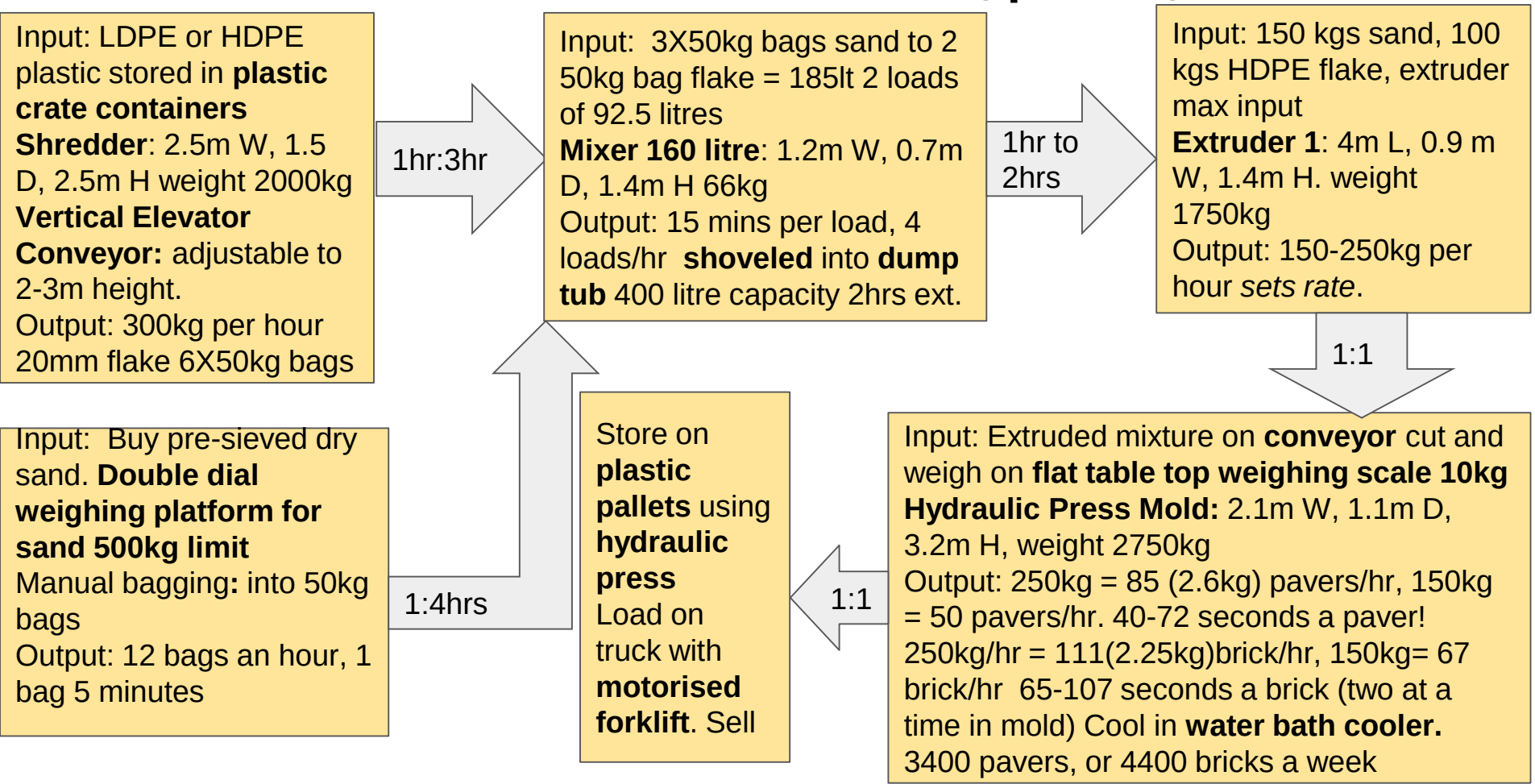
HDPE/PP Recycling into Pellets



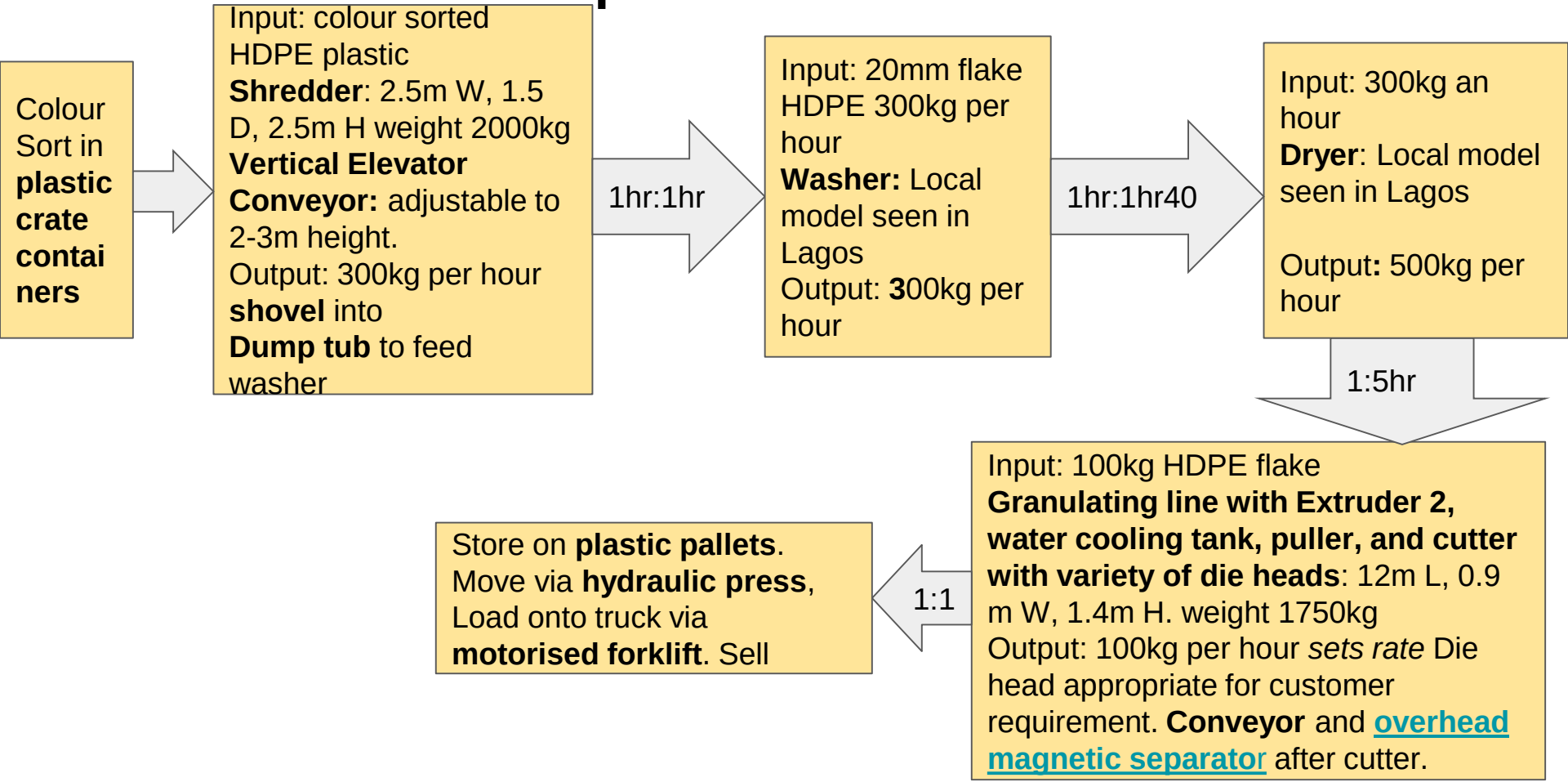
PET bottles recycled into PET flake either washed or unwashed



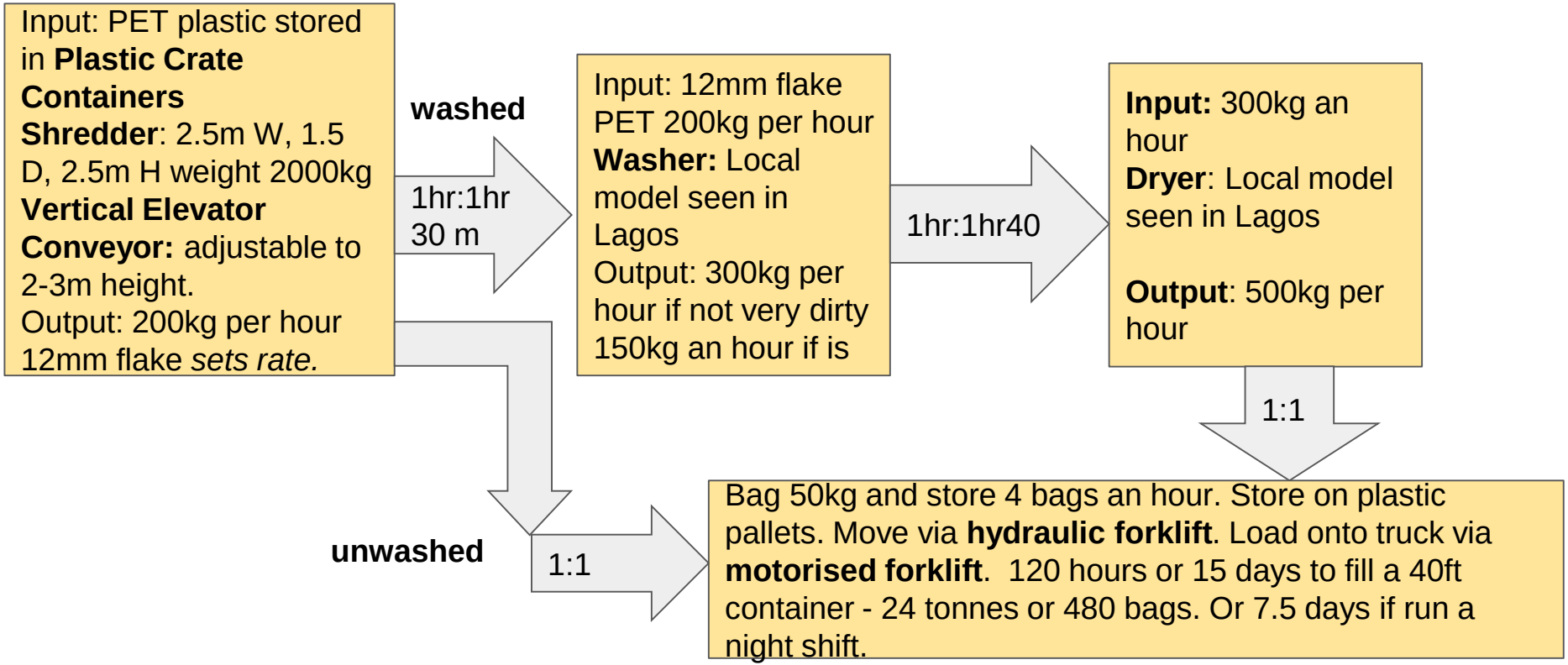
HDPE/LDPE/PET Sand Extrusion bricks, pavers, roof tiles



HDPE extrusion into pellets



PET Plastic flake production, washed and unwashed



Maximum Production: Shredder and 2 Extruder time

One week and one day can fill a 40ft container with 24 tonnes of PET flake per month if the shredder is run day and night. Will have to sharpen one set of blades by day and one set of blades by night for the following day. Procure three sets of blades sharpen two each day.

Plastic Sand extrusion and pellet extrusion will require a maximum of 32 tonnes of HDPE a month That can be shred to 20mm in two weeks and four days, or to 12mm in four weeks.

So we need to run a night time shredder shift or buy a bigger shredder to run all three lines and maximum capacity.

If we focus on HDPE and do not collect PET and flake it then we are ok with our current shredder size.

Maximum production and constraints

Monthly requirement to produce max is 24 tonnes PET and 32 tonnes of HDPE

The collection system will be the input side constraint

Marketing and sales will be the output side constraint

Expected revenues will need to take into account both constraints

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