



August 2011

WORLDBARROW learning's from small field study

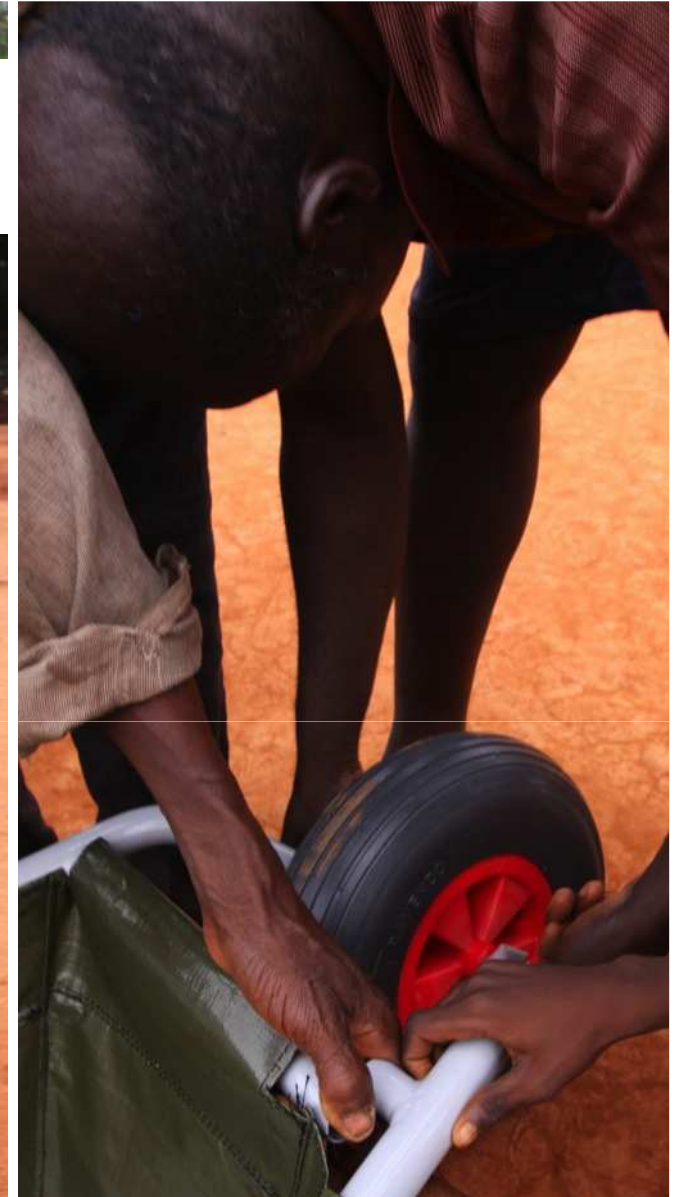
Sunyani and Amankwakrom, Ghana

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CONSIDER: Record on video the young man (below) in the middle to undertake the full assembly as an instruction video



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INSIGHT – USABILITY

Assembly: After instructions no real problems with the assembly. Only challenge seemed to be to remember to fix the frame-connection tube at the wheel (around 7 assembled WB this was hanging loose) (see picture on the right). However, is easily discovered and redone.



**WORLD
BARROW** 

INSIGHT – USABILITY

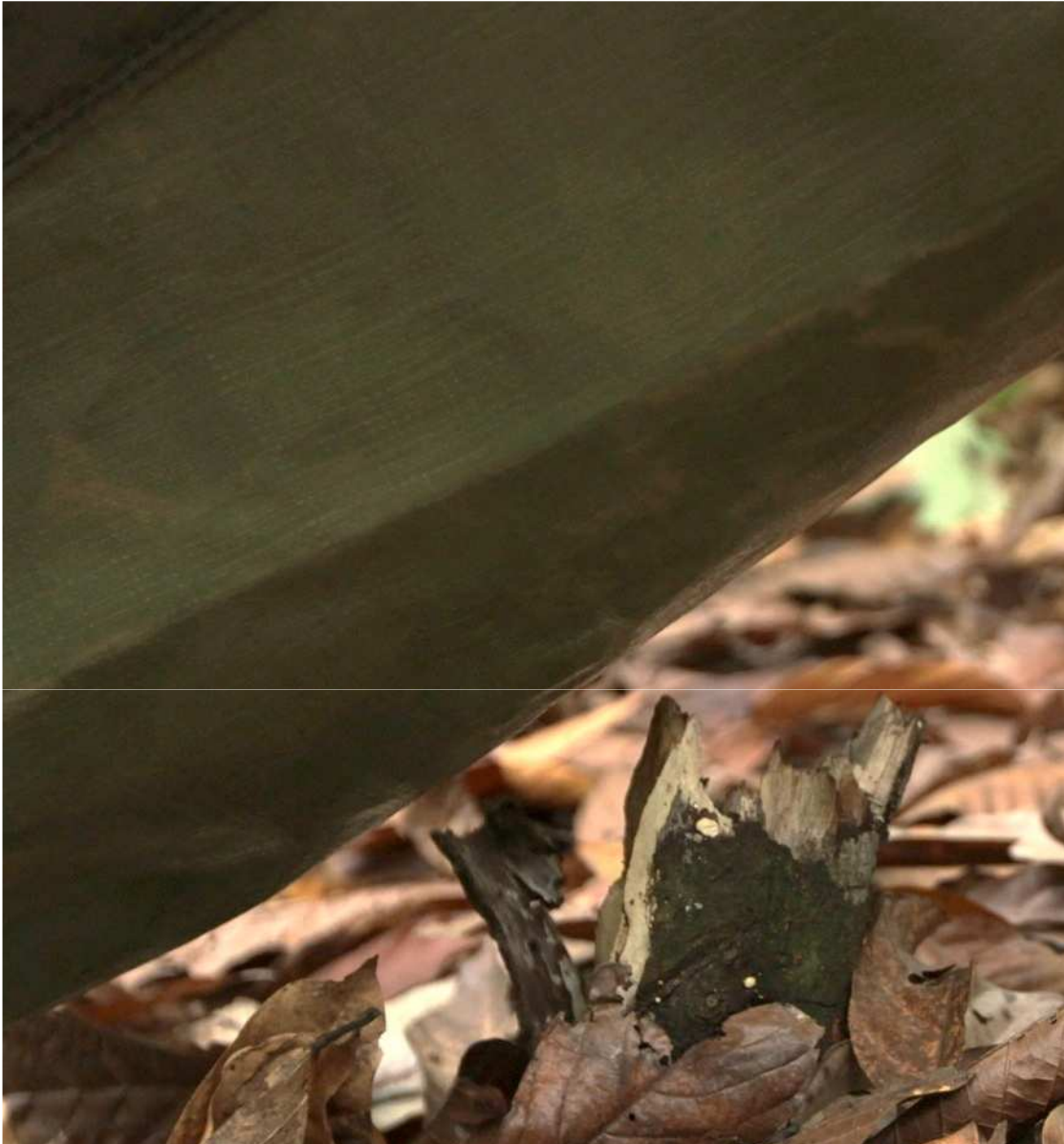
Optimize transport of crops: the WB can carry estimated 3-5 times the volume of the basket
=> More time to nurture the farm / bring more crops to the market? Economical benefit of the extra volume to be further addressed.



**WORLD
BARROW** 

INSIGHT – DURABILITY

Wheels: A very attractive feature of the WB since they are puncture free – demonstration of the puncture free feature was very convincing. In addition then the wheel have good “bounce” effect for uneven roads.

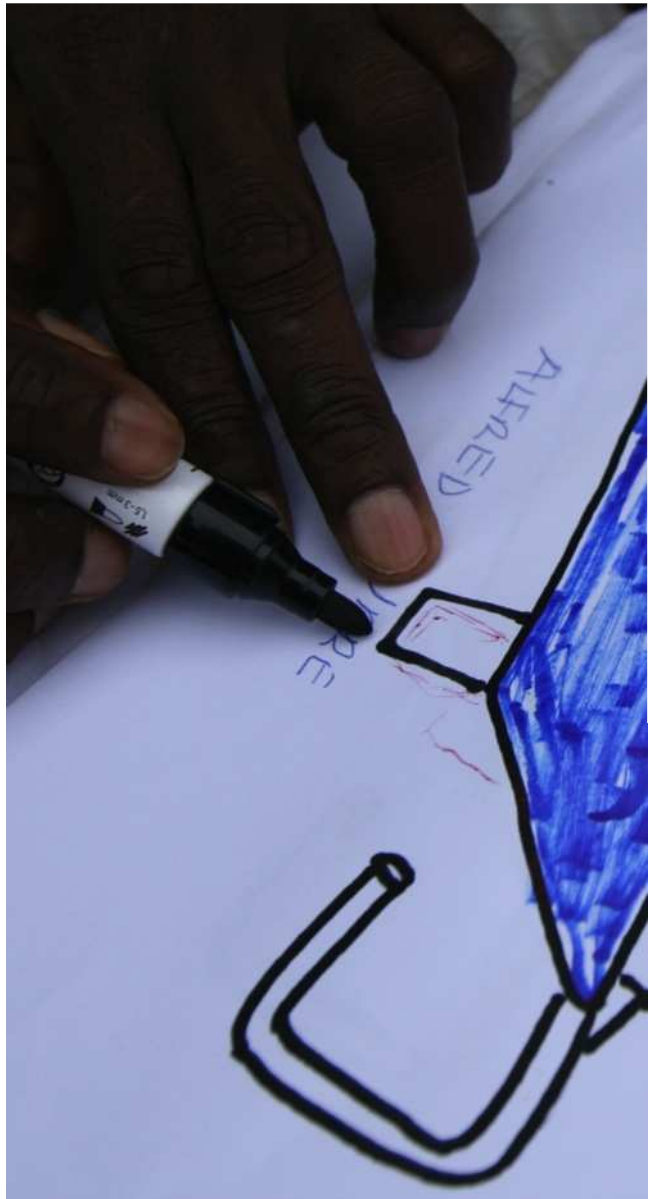


**WORLD
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INSIGHT – DURABILITY

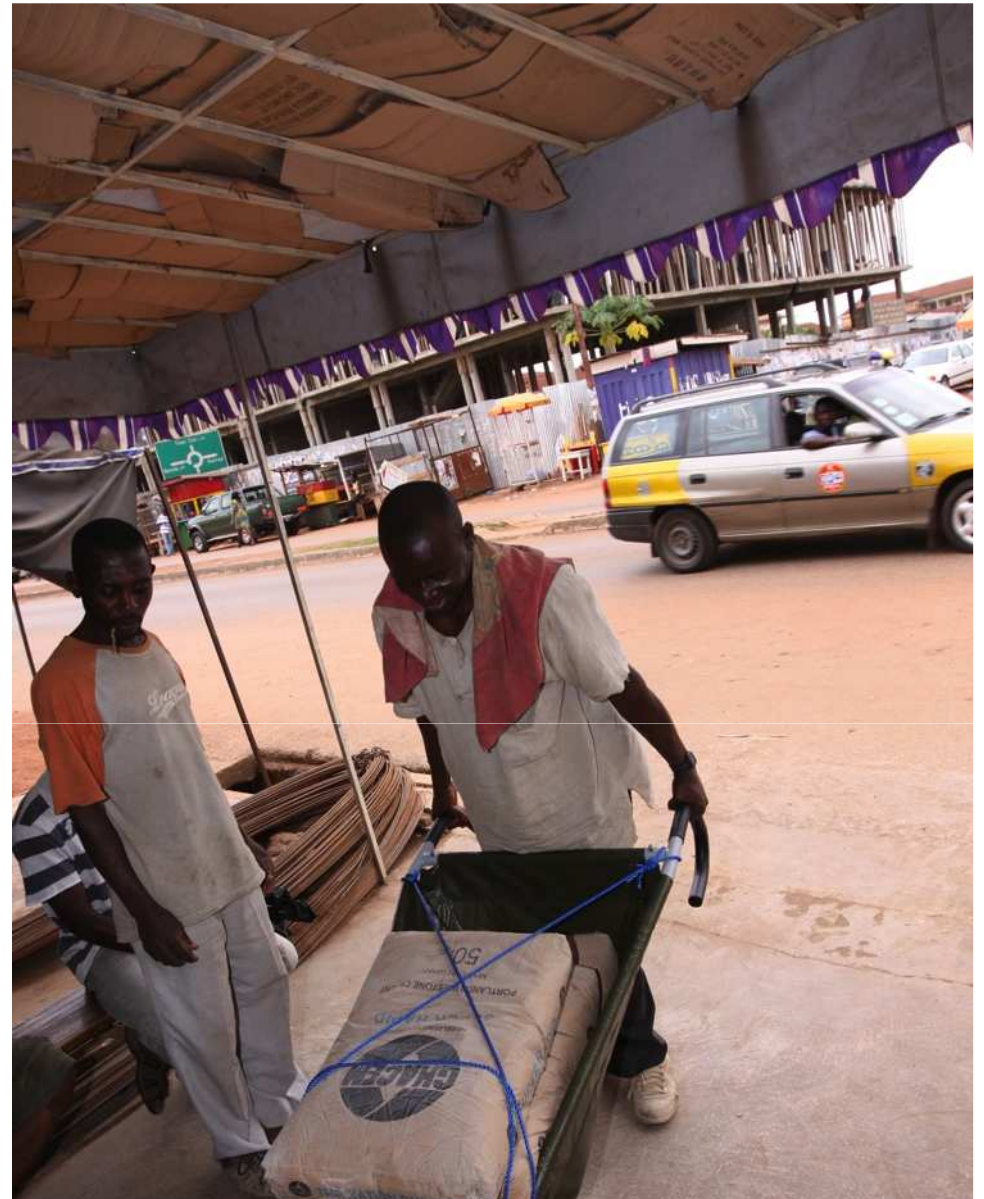
Canvas: Small rots/sticks pinching the bottom canvas when putting the filled WB down on the ground (to rest). Farmers need to rest due to heavy loads. Many sticks found in the ground in the forest.

FARMERS TOLD: That when going down-hill with the WB you will like to be able to break/slow down which could be done by letting the extended handles or fixed leg touch the ground.



INSIGHT – USABILITY

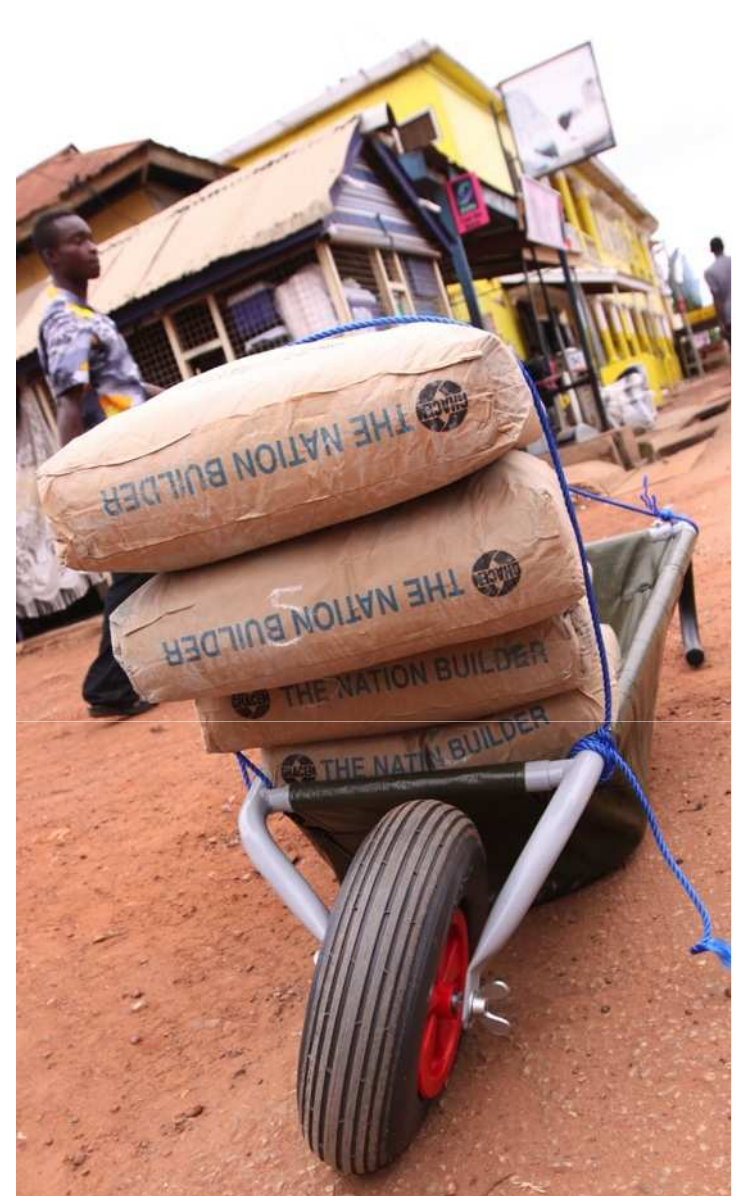
SUGGESTION: Good with low height when loading. However, discussed to elevate the canvas to protect. Farmers suggested to attach supporting legs before the handles. Manufacturer suggested to elevate the length of the handles to ease the manufacturing (GREEN).



**WORLD
BARROW** 

INSIGHT – USABILITY

Could be sold with straps. 3 purposes of the delivered straps: to ensure content carried do not fall out, to carry the WB when folded together, to distribute some of the load on the shoulders



**WORLD
BARROW** 

INSIGHT – DURABILITY

Frame: Worldbarrow has been tested to 150 kg. Weakest point is near the bended section at the wheel. Asymmetric after being used in extreme testing (250kg test).



**WORLD
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INSIGHT – DURABILITY

Canvas: Scenario: Farmers carry the Cutlass Machete Knife inside the WB and can cut a hole in the canvas. Several times it was observed that farmers carried the knife like that (no picture of this though).





**WORLD
BARROW** 

INSIGHT – DURABILITY

Canvas: Consider that people will carry “shaper crops” such as sugar pipes and cassava roots in the canvas, as well as fire wood – challenge rip tear. People may also occasionally “slide” the canvas along the mud roads (left picture).



CONSIDER: The color blue has a Biblical meaning symbolizing heavenly grace.

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INSIGHT – ACCEPTABILITY

COLOR: Several farmers communicated interest for the WB to be more colorful – ideas such as the colors of the Ghana flag or Blue which has a special meaning. Bright colors may also ensure that the WB is easy to find in the brown and green forest. In Sunyani town black canvas was suggested.

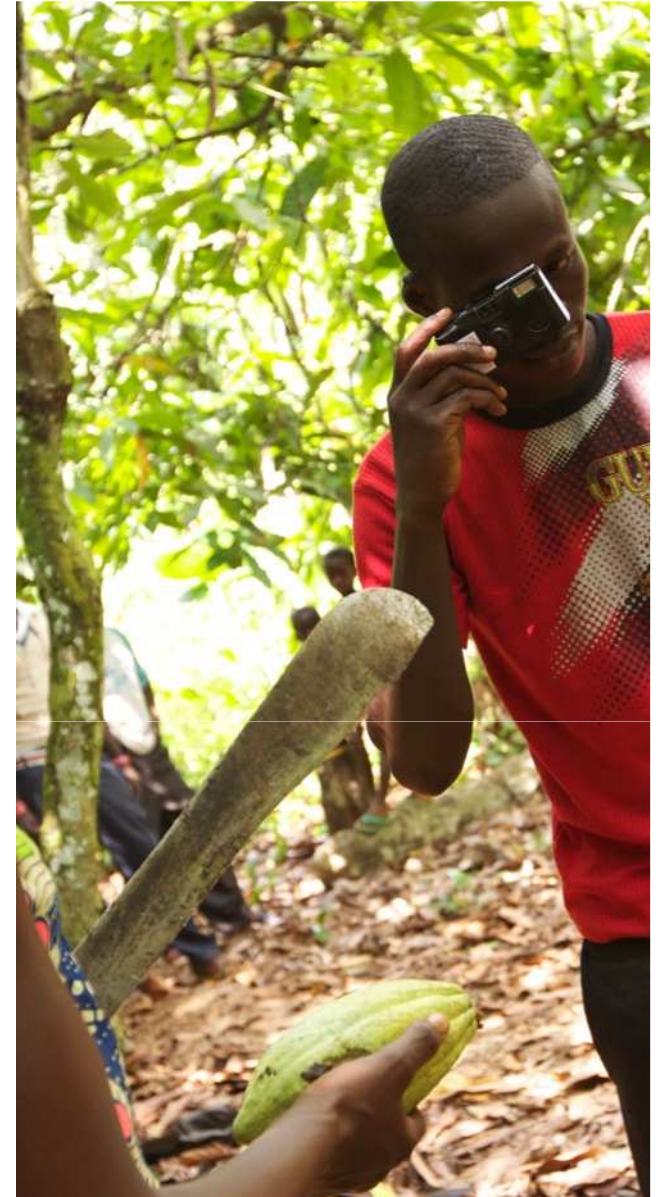


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INSIGHT – MARKET

Pricing need to be cheaper than the regular wheelbarrow (60-80 GHC)

Design communicate a different use than regular wheelbarrow – not for construction workers and contractors



**WORLD
BARROW** 

INSIGHT – USABILITY

TEST: Giving 20 farmer disposable cameras for them to communicate insight in their own time and environment, guided by 10 request printed on the camera. 14 disposable cameras still to be collected in Village to develop the pictures.



INSIGHT – USABILITY

Day workers in Sunyani, all awaiting for the next job with their wheelbarrow.

Told that there is a place in Sunyani that has specialized in reinforcing wheelbarrows. If needed repair possibilities available.

LABOR WORK: 10 GHC/day x (maybe) 3men x 20d = 600 GHC/year

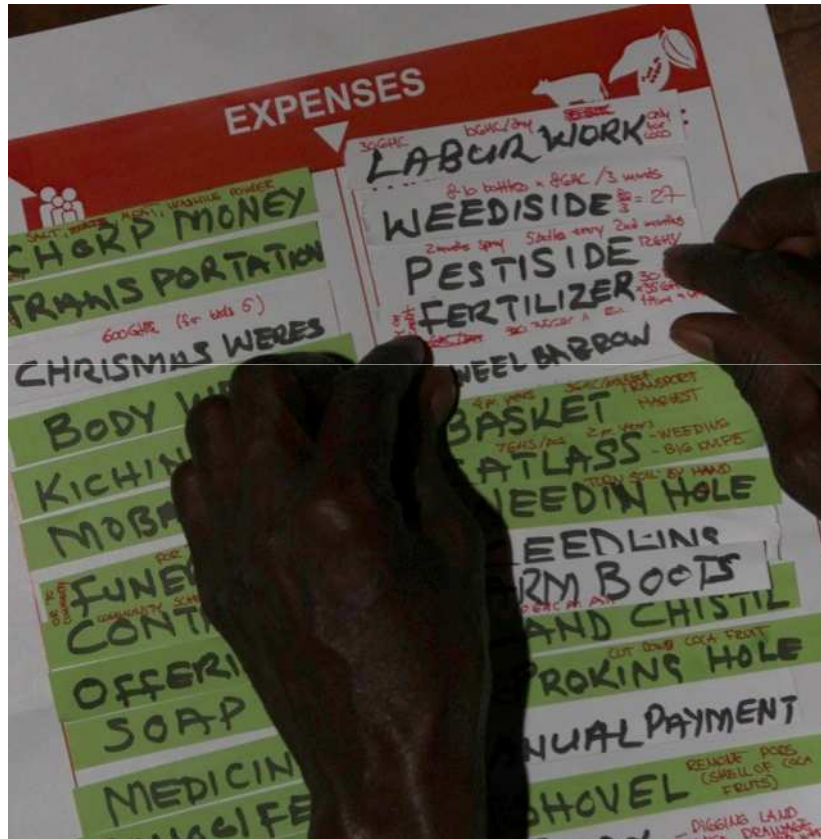
CATLASS for weeding: 10GHC x 4pcs/year = 40 GHC/year

FARM BOOTS: 10-15GHC x 2 pair/year = 20-30 GHC/year

BASKET to carry cocoa: 4GHC x 6 baskets/year = 24 GHC /year

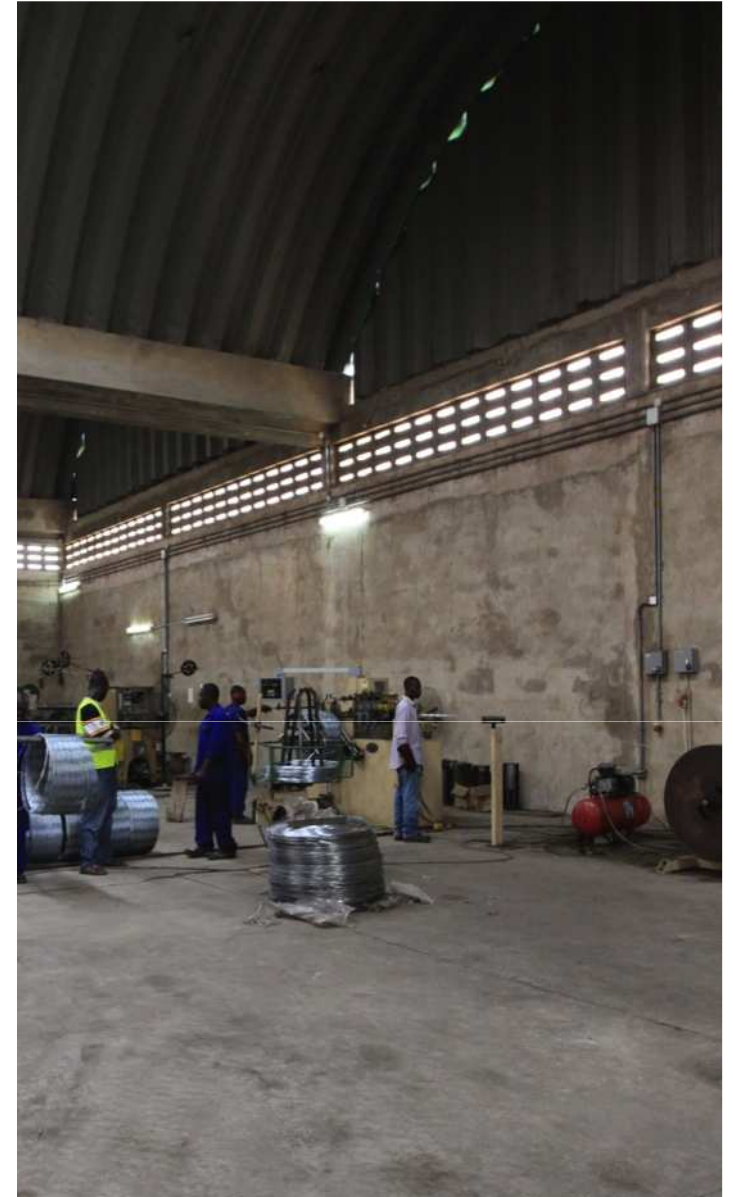
AXE for cutting trees: = 20 GHC/5 years

SHOVEL to remove cocoa fruits: = 15 GHC/5years



INSIGHT – AFFORDABILITY

Mapping 2 households resource and cash-flow for household and farming business. Larger spending's on “Christmas wear”, spending's on farming equipment , some only seasonal use, and short lifetime, large spending's on labor including labor to carry cocoa to pick-up place. Savings potential of WB.



**WORLD
BARROW** 

INSIGHT – ACCESSIBILITY

Manufacturing: Setting up new line of production or tap into existing productions

Supply and distribution: Tapping into current distribution systems – through Ministry of Agriculture or Cocoa Board?



Summary (preliminary)

Easy to assemble and maintain

Good for cocoa harvesting – can replace 3-5 baskets and significantly increase capacity.

Very good with puncture free wheel

Durable and well suited for farm crops, but not for heavy construction work

Possible modifications could include elevating canvas, including straps and using stronger colours

Cost should be lower than traditional wheelbarrows.

Economic calculations indicate that it can be affordable and a good investment, replacing hired labour and other farm equipment (baskets to carry cocoa).

Good possibilities to repair locally if needed

Local production in Ghana would be preferable

Additional results will be gathered after 1-2 months via interviews and photos