

# Business of Humanity

## Turning Waste into Social Housings



**EKOPANELY**®

March 13, 2015

Group 11: Malu Segalla, Mark Volovic, John Thompson, Jeremy Cypher, Dalibor Roik

# Context and Background

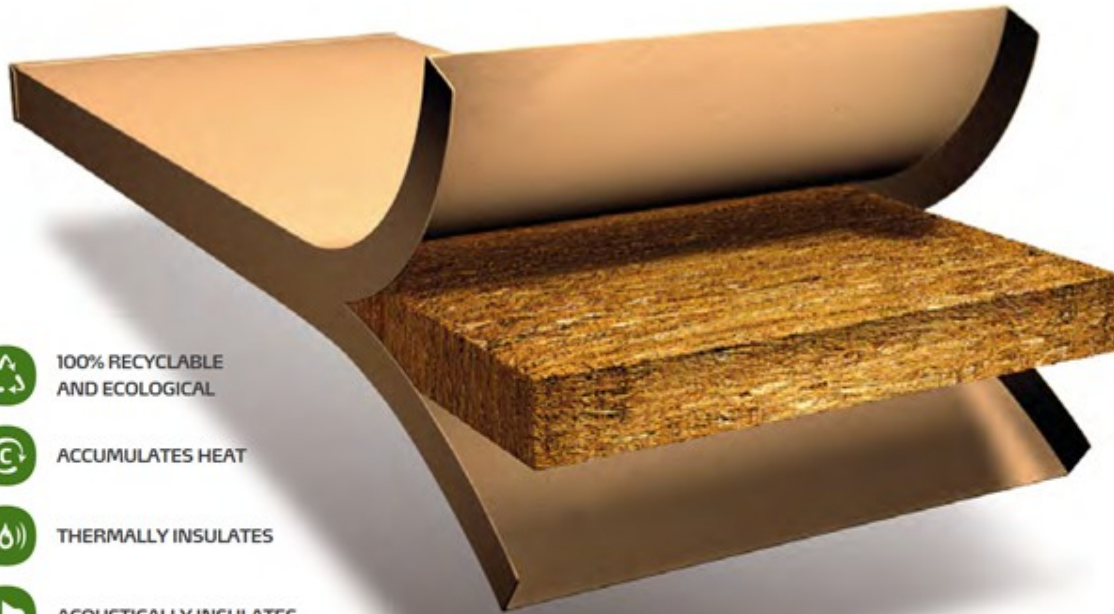
---

- Egypt produces 25 million tons of agricultural waste annually
- Government has failed to address the waste issue
- Farmers burn leftover straw illegally, creating:
  - severe pollution
  - increased respiratory complications
  - implications on heart disease
- Humanitarian needs in Egypt
  - 45% of Egypt population lives in slum
  - of the worlds 30 largest slums, 3 are in Cairo
  - 42,000 new housing units needed
  - slum development will cost over \$140M US dollars





# Product Innovation



100% RECYCLABLE  
AND ECOLOGICAL



ACCUMULATES HEAT



THERMALLY INSULATES



ACOUSTICALLY INSULATES



MECHANICALLY DURABLE



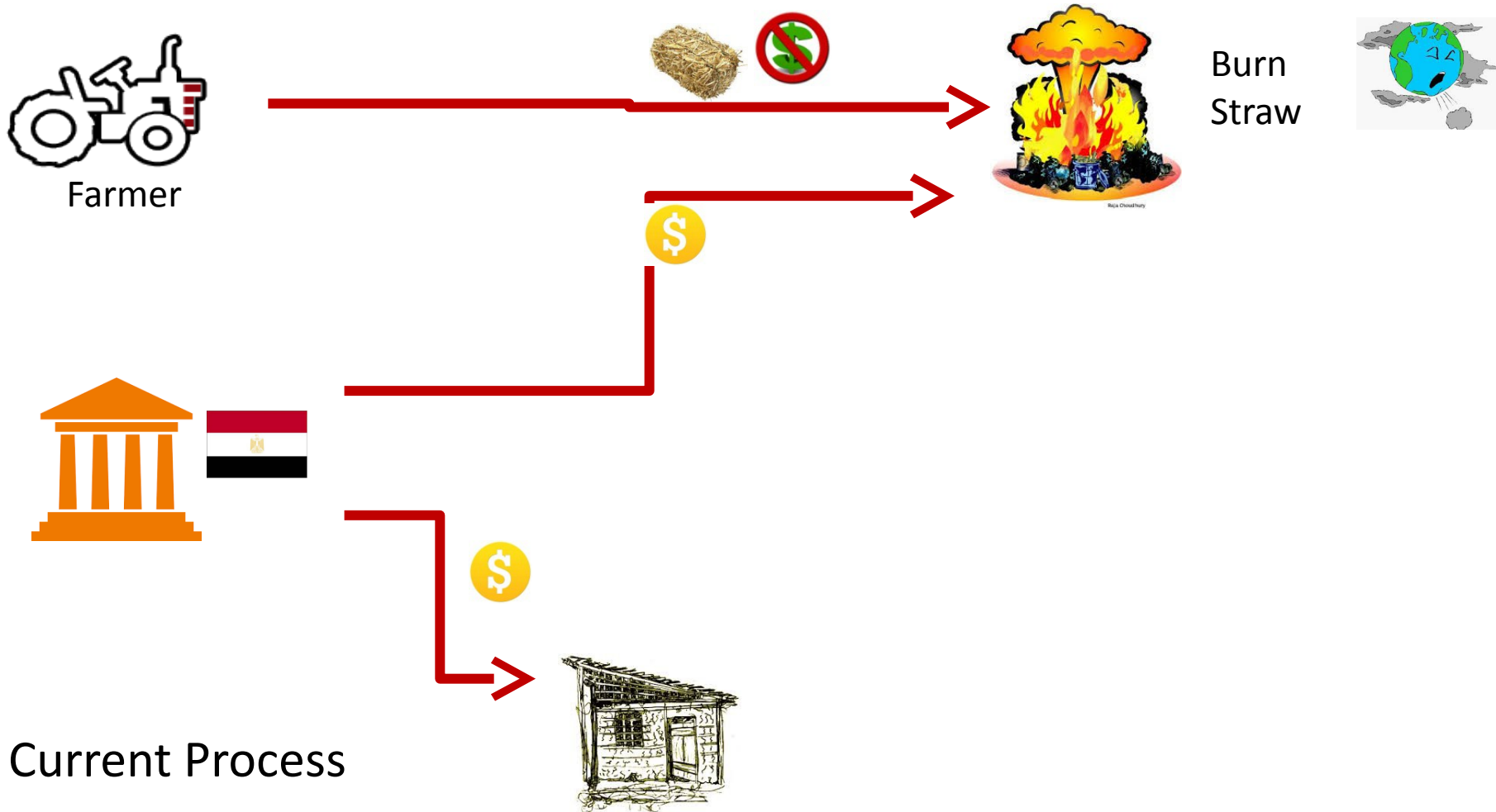
EASY MOUNTING



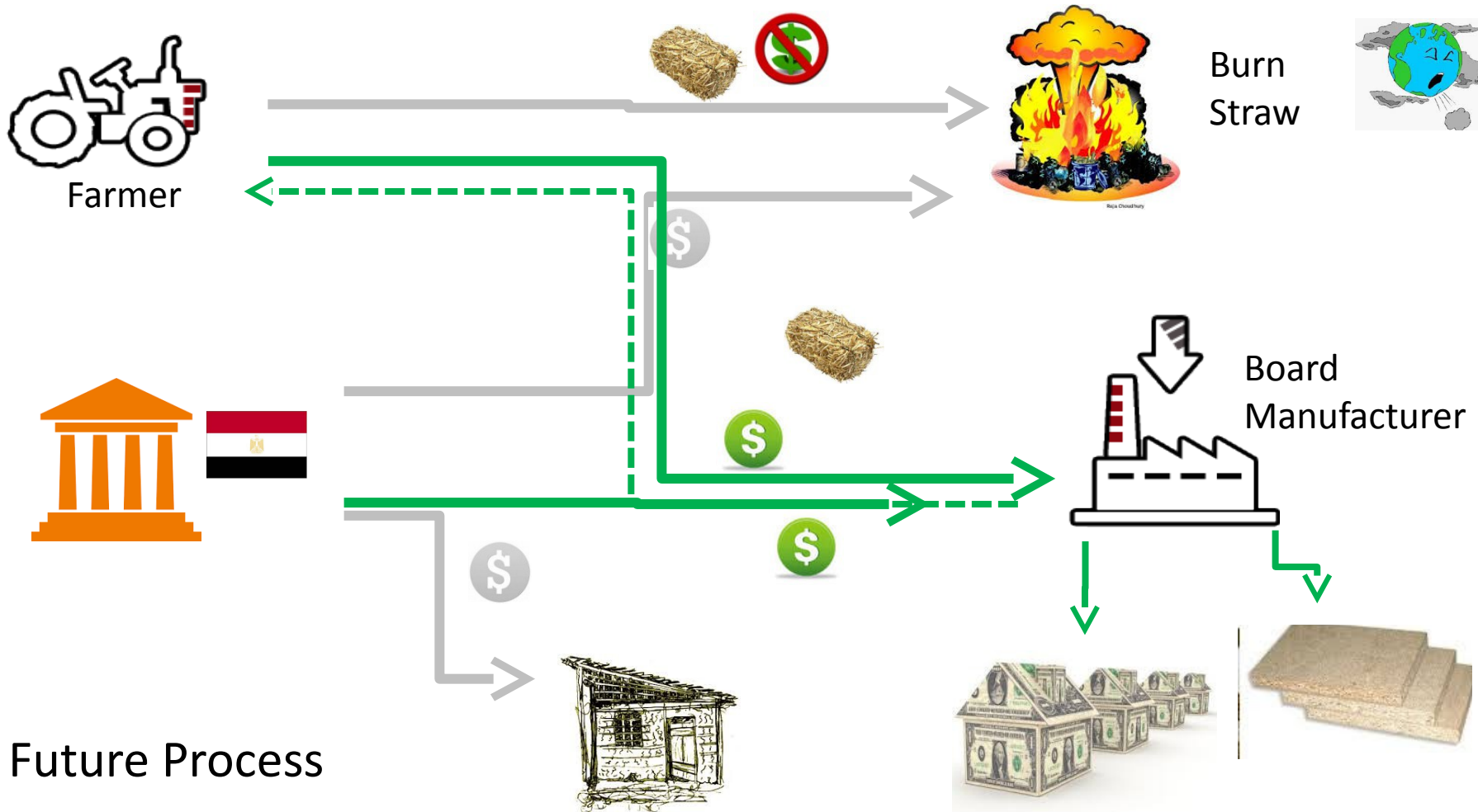
WIDE RANGE OF APPLICATION

- Ecological pressed boards
- Raw material from straw
- No bonding agents
- 100% natural and fully recyclable
- Permanent part of a building
- Lowers builder costs
- Environmentally safe
- Speed of installation by 25%
- Excellent thermal properties
- Superior structural properties

# Value Chain and Proposition



# Value Chain and Proposition



Future Process

# Results & Outcomes






---

## By the numbers:

- 7200 Tons of straw will produce 2.7 Million sq. ft. of product
- 1 house takes 2118 sq. ft. of end product, or 8.4 tons of raw material
- 4 assembly lines → 4300 houses per year → \$2.5M → 36,000 tons of straw reused
- Housing cost is less than ½ the price government projects

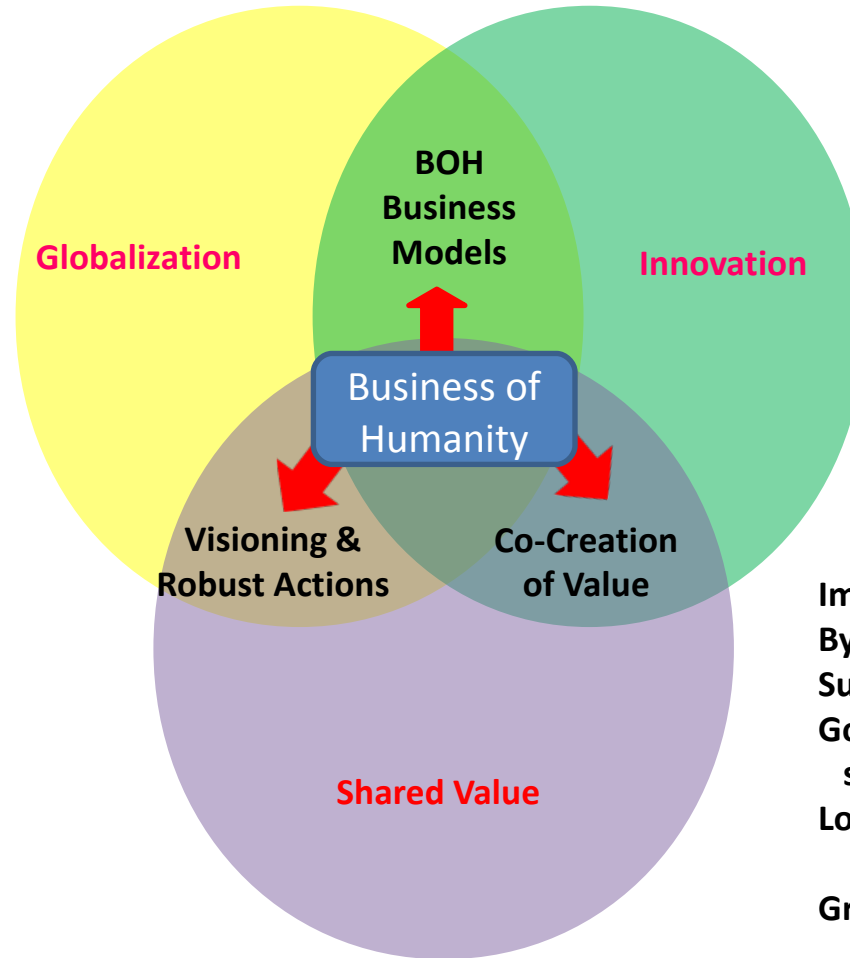
## Profitability

- 4 assembly lines → produce raw product for sale → 10.8 Million sq. ft.
- At 35% margin, profit side product produces \$1.4M in net revenue annually
- Superior as a drywall substitute
  - similar costs
  - greater strength
  - outdoor use
  - ... and more

- Farmer income + quality of life 
- Government funding 
- Jobs within the local economy 
- Slum housing deficit 
- Sustainability 

# A View of the 'Rules of Strategy'

**California**  
175M tons @\$45/ton  
**Europe**  
1.5B tons  
**Pollution**  
Carbon emissions



Recycled materials  
Pressed board

Natural solution  
Reduce waste  
Corporate profit  
Urban renewal

Improved farmer income  
Byproduct reuse  
Sustainability  
Government expenditure or subsidies  
Low cost houses for people who live on \$7 US/week  
Green friendly

# Thank you for your attention

---

