

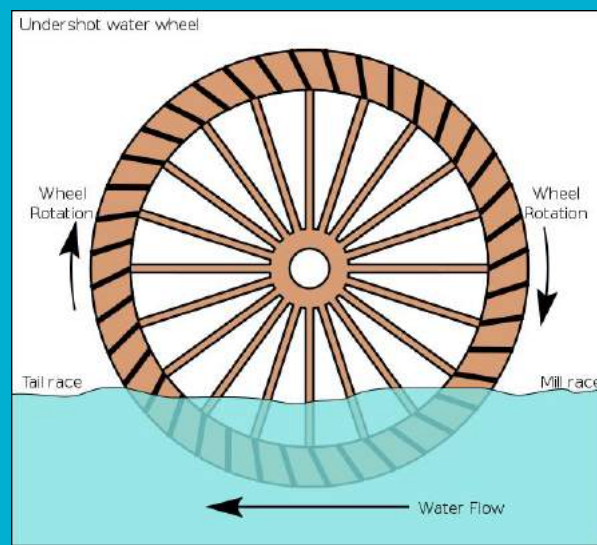
BioFuel



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Our Idea

- Water mill powered by local river
- Grinder and press mechanism driven by water mill



Users

- The mill will be used to grind local crop waste and press the waste - no human labor involved
- Design does require maintenance- volunteers from community
- The compressed waste will be used as fuel for locals to use to cook



Peanut shells



Pea shells

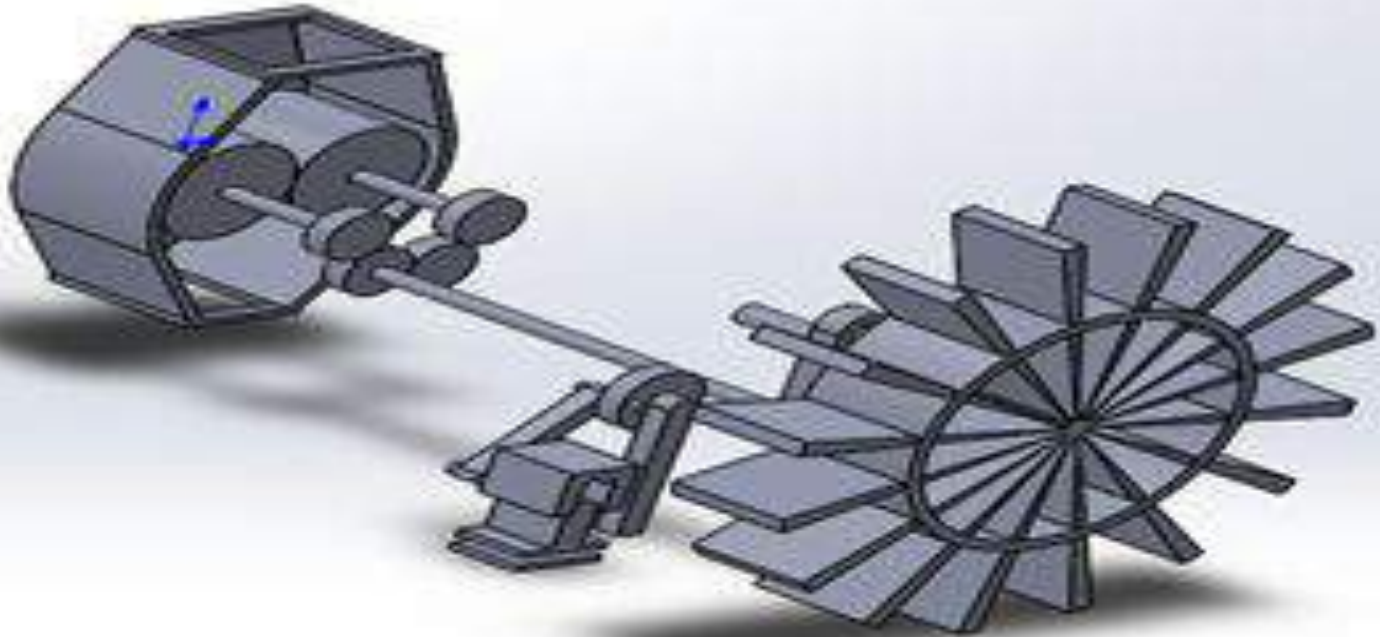


Corn

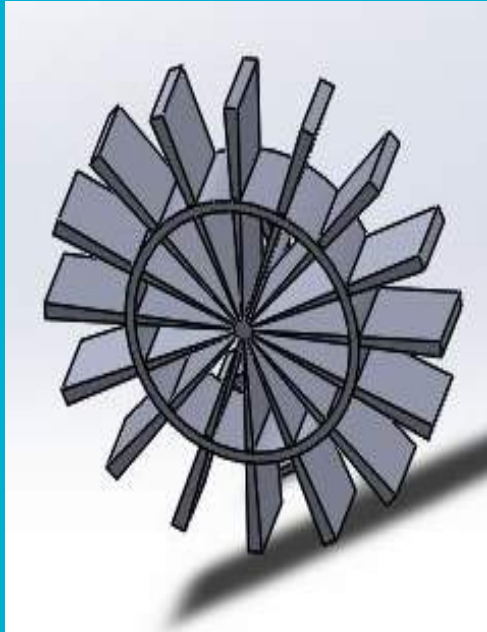


Coconut peels

Design concepts and features of your product and motivation behind them.

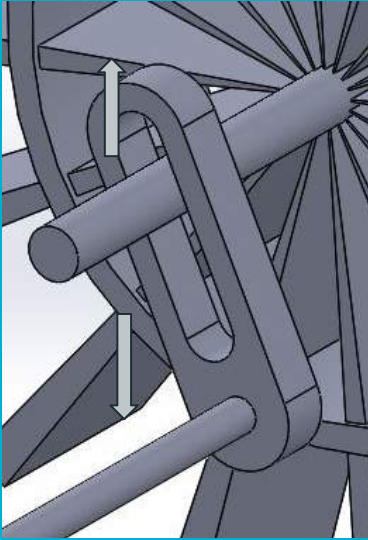


Design concepts and features of your product and motivation behind them.



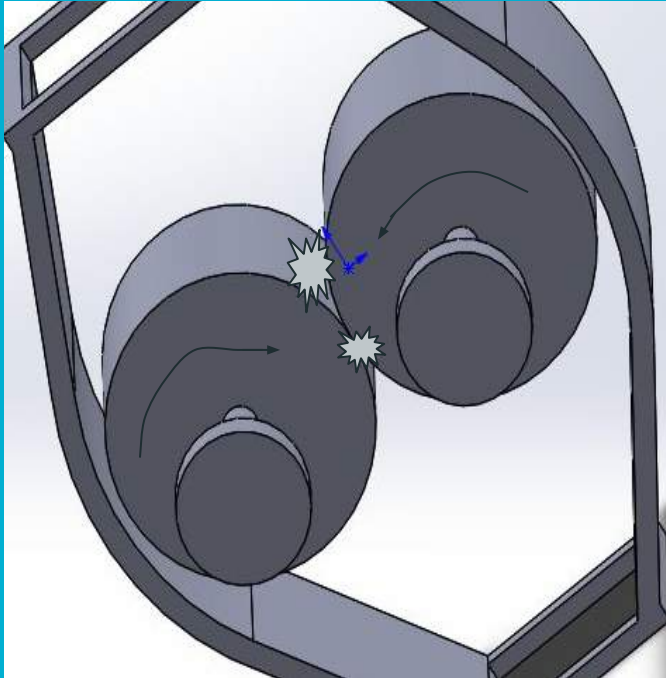
- Water mill
 - Natural resource
 - No humans
 - Easy and simple design
- Energy
 - Continuous
 - No cost

Design concepts and features of your product and motivation behind them.



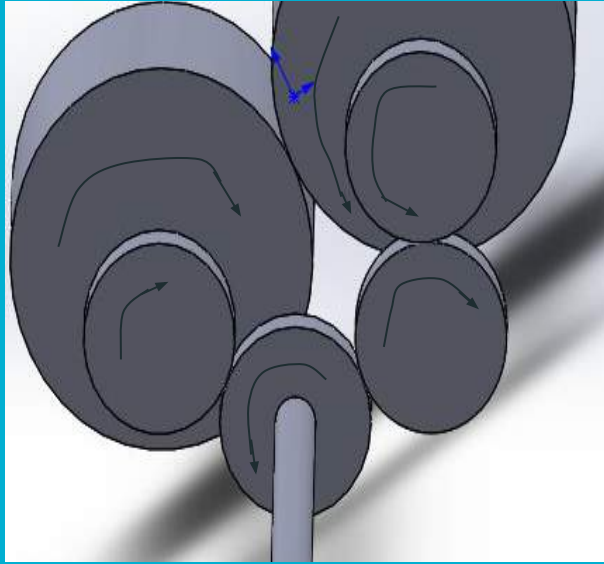
- Level changer
 - Water level changes
 - Go down and up
 - Smaller mill

Design concepts and features of your product and motivation behind them.



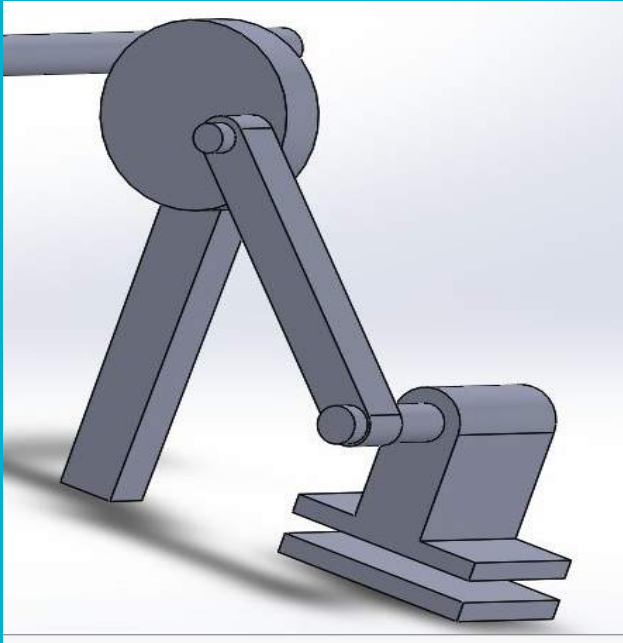
- Grinder
 - Grinds crop

Design concepts and features of your product and motivation behind them.



- 4 Gears
 - Grind in the middle
 - Change the way

Design concepts and features of your product and motivation behind them.



- Press
 - Compress the grain
 - Energy from the mill

Required Power for Water Mill

2854710 Watts of Hydro Power for a 3 meter diameter Water Mill and 97 m³/s

$$P = \eta \cdot \rho \cdot g \cdot h \cdot \dot{q}$$

Green engineering design considerations

- #1 Inherent rather than circumstantial
- #7 Durability rather than immortality
- #9 Minimize material diversity



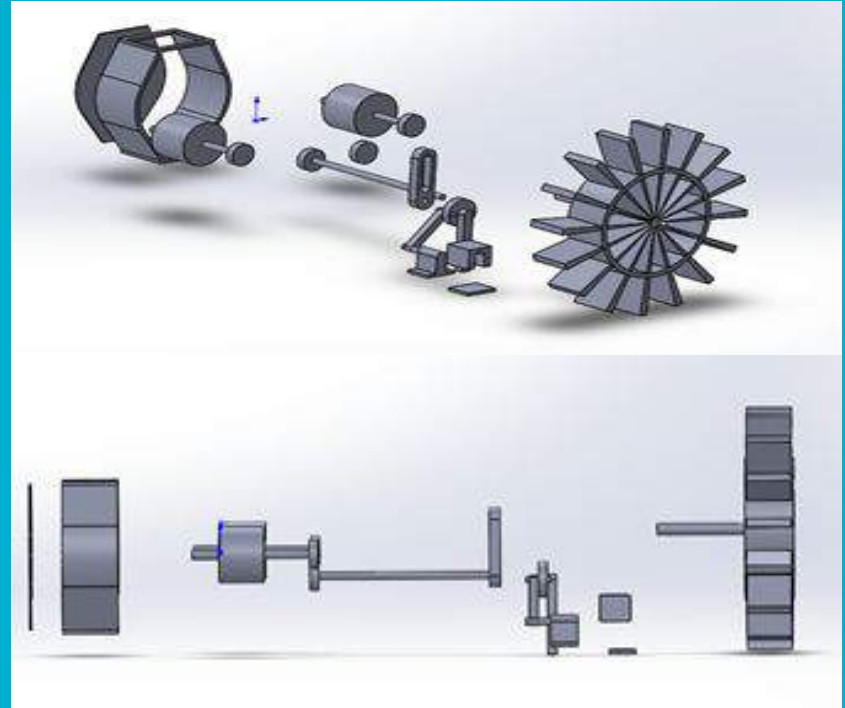
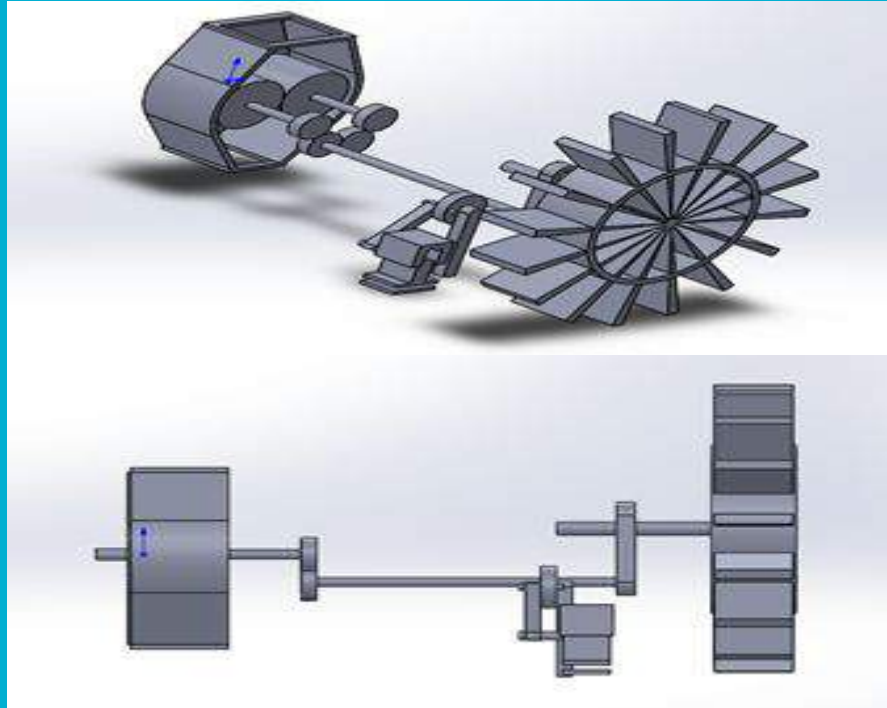
Potential environmental, economical, and social impacts (both positive and negative) of your product.

1. Human Labor is eliminated
2. Use and Application of BioFuels
3. Removal of Old Traditional Methods (Positive and Negative)
4. Faster. Efficient. Consistent.
5. Increase in Profit + Increase in Jobs = Increase in Economy
6. Hydro-Powered Energy

Long Term Goals

1. Maintenance (Durability rather than Immortality)
2. Increase in Profit
3. Create more jobs and projects in El Cercado
4. Large Mass Production of BioFuel
5. Expansion, Transportation, Education, and Networking to other Areas and communities in the DR

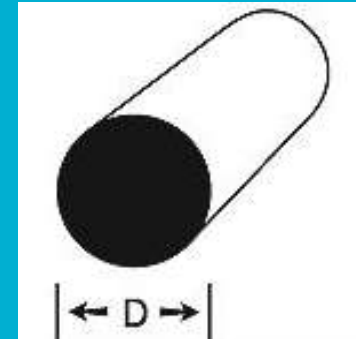
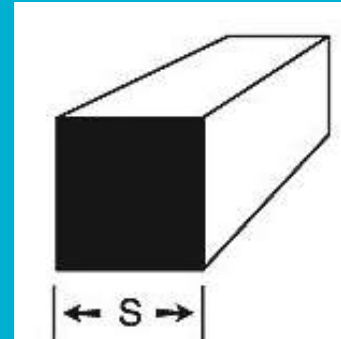
A sketch of your final product in the presentation.



Cost analysis (US)

Mild Steel – \$2,350.42

- Grinder's inside parts
- Press mechanism
- Four bars



Wood – \$8,715

- 1 Cord of hardwood:

- Half Moon Bay, CA: Oak – \$415

Materials total: \$11,480.42



- **Money for the project**

Get sponsors

- Kickstarter
- Fundly
- GoFundMe

- **Labor**

- Time of work: 40 days
- Amount of payment per worker per day: \$7.50
- Workers: three
- Total: **\$900**

- **Maintenance**

Volunteers from the region

Total (materials and labor): \$12,380.42



References

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