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Design of Automatic Cocoa Fermenter and the Business Model in Fab Lab

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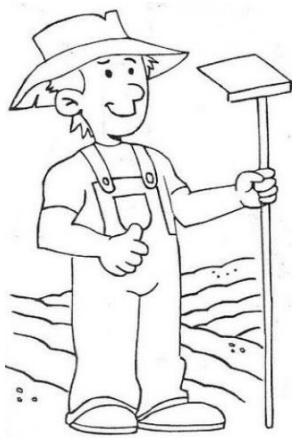
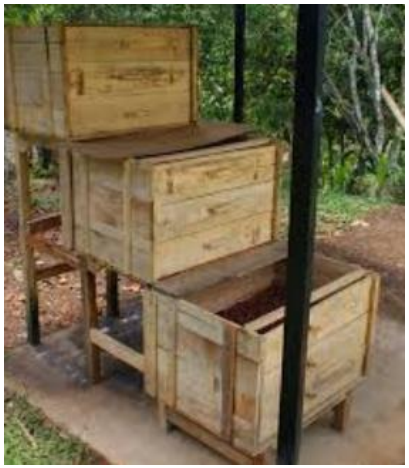
Background





Fermented

Drying

Toasted

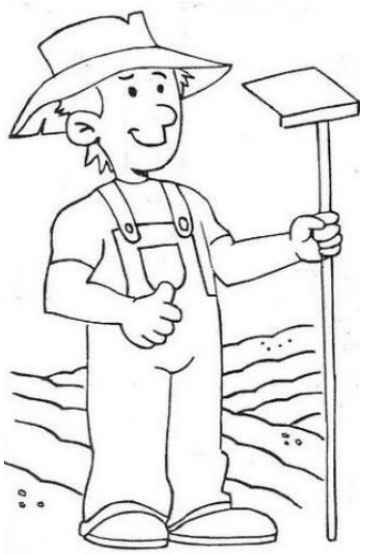
seed

Harvest

Stage that defines the quality of flavor, aroma and color

- Great Manual Work
- Lack of control in the process
- Low quality cocoa

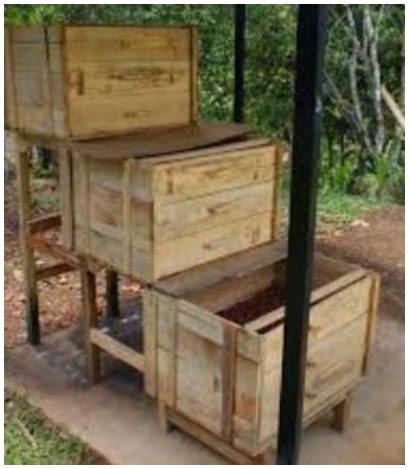
Necessity



Farmerr

City people

- Low economic income
- Long hours of manual work
- Low quality product due to lack of control.



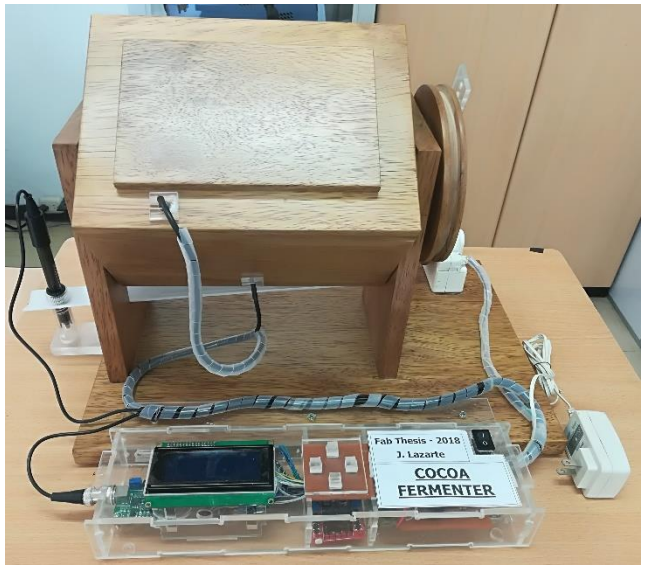
Fermented

Drying

- He wants to prepare chocolate but he does not find a good product in the market.
- The first chocolate they sell to the factories.

This will allow farmers to use it in the field.

You must reduce manual work.



Reduce production times and increase the quality of the product, improving its price and economic income

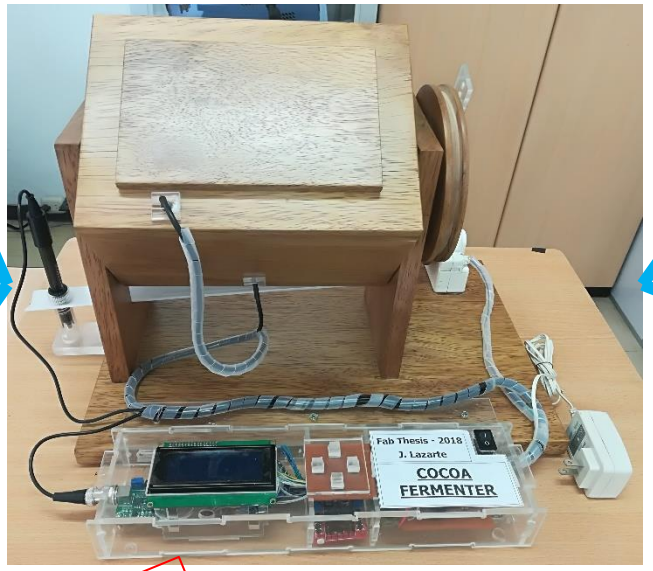
The automation of the cocoa fermentation and drying process.

Approach

A

Less production time

Best price in the market



Less manual work

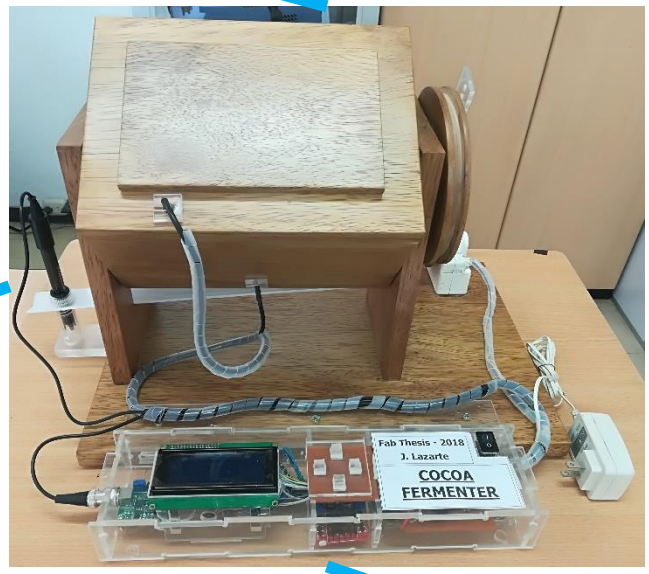
Higher product quality

Benefits

B

Better standard of living for farmers' families

In the market there are no teams that can do the two processes, that of fermentation and drying.



It can be scaled to versions for farmers and for city clients

There is no equipment on the market that is automatic.

Butget

Activities	USD
Development of the prototype and supplies	6,000.00
Development of digital means of diffusion of the project.	9,000.00
Development of Marketing activities and networks of contacts	35,000.00
Execution of the business plan.	20,000.00
Total	70,000.00

For Farmer

N° of Machines	Days	Kilograms	Kg/ Month	Cost NP	Cost P
1	6	10	50	30	125

Price of 1Kg. Of Cocoa Processed in USD=	2.5		Cost of Electricity in USD	10
Price of 1Kg. Of Cocoa No Processed in USD=	0.6			

Gain/Month =	85
Gain/Year	1020
Recovery time of the capital in Months	5.8824

For The Enterprice

No. of registered associations	No. of Farmer / Association	N° of Customer	IF is contacted only 80%	In the Marketing Campain contact only (%)	No. of Potential Customer
600	20	12000	9600	50	4800

If the percentage of final Customer are (%) =	7		Total incom in USD	168000
The N ° of Machines sold / Customer =	1		Gain in USD	14,000.00
N° of Efective Customer in one year=	336			

The final result has a very strong aroma and attractive colour as shown in the image. We conclude that the equipment is adequate to carry out the fermentation process successfully.

Feedback benefit Cost	1.15
NPV	36,617.55
IRR	32.27%

As a business model, it is confirmed that, the machine scaled to a larger size (10 kg.) allows sustainability as a product in Peruvian market. Innovation Patent is pending.