ROLE OF TECHNOLOGY IN YOUR BUSINESS

(MACHINE)

EQUIPMENT, FACTORY AND PLANT

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IT’S NOT ABOUT IDEAS. IT’S ABOUT MAKING IDEAS HAPPEN.



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EQUIPMENT, FACTORY & PLANT

- **Equipment**:- is necessary item/machine for a particular purpose.

  Example: Mill, Mixer, Screw etc……

- **Factory**:- a machine or a group of machinery where goods are manufactured or assembled including building.

  Example: Cloth Factory, Food Factory etc……

- **Plant**:- is a site where a specific process takes place.

  Example: Feed plants, Sugar plant etc……

1. EQUIPMENT

- Based on importance
  - **1.1** Auxiliary equipment's
    - Example: Boiler, Compressor, Generator ….
  - **1.2** Main equipment's
    - Example: Mixer, Elevator, Belt Conveyor, Silos
- Based on supply availability
  - **1.3** locally supplied equipment's
    - local market available
  - **1.4** Brought out equipment's
    - (imported)



2. FACTORY



❖Based on purpose

Feed Factory;

Chemical Factory;

Sugar Factory;

Cement Factory;

Gypsum Factory;

Textile Factory etc….



3. PLANT

- Feed plant;
- Sugar plant;
- Quartz plant;
- Cement plant





4. WHAT ARE YOU LOOKING FOR?

Considerations for Equipment, Factory and plant

4.1 Total power Consumption & demand

Example: 500kw; 80 Amp; 380 Vac and 50Hz; 220V.

Example: Indian, Ethiopian, china….. are same

4.2 Critical line that needs generator power.

Example: kiln needs critical power.

4.3 Space requirement and mode of line (LxWxH)

- Vertical line or
- Horizontal line or hybrid

4.4. Capacity of equipment, Factory & plant

Example: TPH; TPD, TPY, LPD etc.

4.5 Consider brand and experience on Specific requirements

Example: ABB; Bubler; Bejai Ethio

4.6 Easy to operate (feasible/ maneuverable)

Manual; Semi automatic; Fully automatic; Smart and AI.

Example: Color Sorter

4.7 Spare part availability

Example: parts are standard & easily available

4.8 Durability

Machine made of quality metals SS; MS; CS; Special treated; 100% Copper… etc.

4.9 Safety

Does it have safety signs; Alarm; Guards; Protections; Interruption; Emergency buttons etc…

4.10 Types of machine on

static, Dynamic, Vibration, Thermal, Sliding etc……

4.11 Maintainability

Is the machine maintainable easily

4.12 Specialty

Environmental Friendly?

4.13 Resealablity

Can we sell the machine after we do our work?

4.14 Feasible Cost

Machine cost feasibility

4.15 Standard

Is the machine standard for societal, legal, political system

4.16 Moral of Technology

Example: unemployment ….etc.

5. WHAT ARE WE MANAGE AND WHAT WE PAY ?

S/N	FOR EQUIPMENT; FACTORY; PLANT COST ITEMS	PERCENTAGE OF TOTAL COST
5.1	**STUDY**	**2%**
5.2	**DESIGN**	**5%**
5.3	**MANUFACTURING**	**65%**
5.4	**PROCUREMENT**	
5.5	**DELIVERY (TRANSPORTATION)**	**3%**
5.6	**ERRECTION**	**5%**
5.7	**INSTALLATION**	**5%**
5.8	**COMMISIONING**	**2%**
5.9	**TESTING**	**1%**
5.10	**TRAINING**	**2%**
5.11	**HAND OVER**	**1%**
5.12	**AFTER SALES SERVICE**	**2%**
5.13	**SPARE PART FOR 1 YEAR**	**2%**
5.14	**WARRENTY/ GUARANTY**	**5%**

6. CHOOSING CAPACITY OF EQUIPMENT; FACTORY OR PLANT

Mainly consider

6.1 Based on available market, product or service

6.2 Based on investment cost

6.3 Based on available land infrastructure

6.4 Based on available skills

6.5 based on raw materials …etc.

7. CHOOSING LINES

❖Market inconsistence will make the line to be splited; or tripled or etc.

Example: choosing 10TPH compound feed processing will be advised two 5TPH each compound feed processing machine

i.e.

- To sustain market
- To facilitate maintenance (predictive, preventive, breakdown and over haul)
- To use lower power by generator
- To reduce the production cost
- To resist raw material supply fluctuation
- To produce two different products at a time

8. ASK FOR PI (PROFORMA INVOICE) ?

Consider points in PI (minimum)

- ✓Date on PI number
- ✓Buyers name and address
- ✓Sellers name and address
- ✓Description of equipment's, factory or plant
- ✓Designs and layouts (preferably 3D)
- ✓Total capacity
- ✓Detail itemized specification quantity; prices etc.
- ✓All costs mentioned in slide 10
- ✓Delivery place, mode and time
- ✓Bank detail
- ✓Reference for good mfg practices.
- ✓Signature and stamp
- ✓Brochures



"People with goals succeed because they know where they're going"

9. QUICK TIPS OF PROJECTS ON EQUIPMENT, FACTORY OR PLANT

9.1 LOW COST HOUSING BRICK MAKING EQUIPMENT FOR LOW COST HOUSE



- Capacity all available and Drive with diesel & Electric
- The machine includes Clay Hopper, Clay Mixer, Clay Strip Extruder, Wire Cutter and Clay Strip Cutter.



9.2 LOW COST BRICK HOUSE



- Example: 7m*14m with 3m high all floor, wall, roof, beds, chair etc. It is possible to build the floor, wall, roof, kitchen, bed, seat with clay without cement or with a little cement. It is possible to work in areas where land is available of bricks



9.3 SANITARY PAD FROM BANANA / FALSE BANANA STEM



- Banana fibre is naturally super absorbent and highly effective at locking away menstrual fluid.
- Banana farmers earn extra income each harvest by selling banana stems or fibres which were previously discarded as agro-waste.
- Production of hygiene products (like pads and diapers) by turning discarded banana trees into fiber, cotton and paper.
- The production is easy. It is perishable which makes it preferable.

9.4 DRIED FISH POWDER PRODUCTION



- Fishmeal takes the form of powder or cake. This form is obtained by drying the fish or fish trimmings, and then grinding it.
- If the fish used is a fatty fish it is first pressed to extract most of the fish oil. The production and large-scale use of fishmeal are controversial..
- In particular, the areas with fish production are Arbaminca, Bahr Dar, Zwai, Awasa, Sekote, etc.
- The syrup can be used on rice, porridge, in various recipes. It can be stored for a long time. You need the drying/grinding and packing machine

9.5 BALLOON IRRIGATION



- It is especially useful around Bale, Gojam, Arsi, Gondar, Awasa, Afar, Sumale, etc.
- It is also possible to make a business by providing services to your own farm or another farm. Balloon irrigation is done by installing a water tank and a pump with a badge with this system, you can make more than one thousand birr per hour. which is more than 30,000 thousand birr per day.
- Farming is a basic business idea if managed with knowledge and diligence.

9.6 PRODUCTION OF COLORED GYPSUM POWDER



- Before gypsum was widely produced in our country, it used to take a lot of time and consume a lot of cement. But now, without cement, we have started to replace the wall block or ceiling/slab directly with gypsum, thus reducing cement consumption and time. But he couldn't stop painting.
- But by easily changing the gypsum powder to different colors, it will reduce the cost of painting and the time spent on painting.
- This happens by receiving gypsum powder and powder paint from the factories and producing colored gypsum 5tph. Aqueous Gypsum can be made water-resistant.

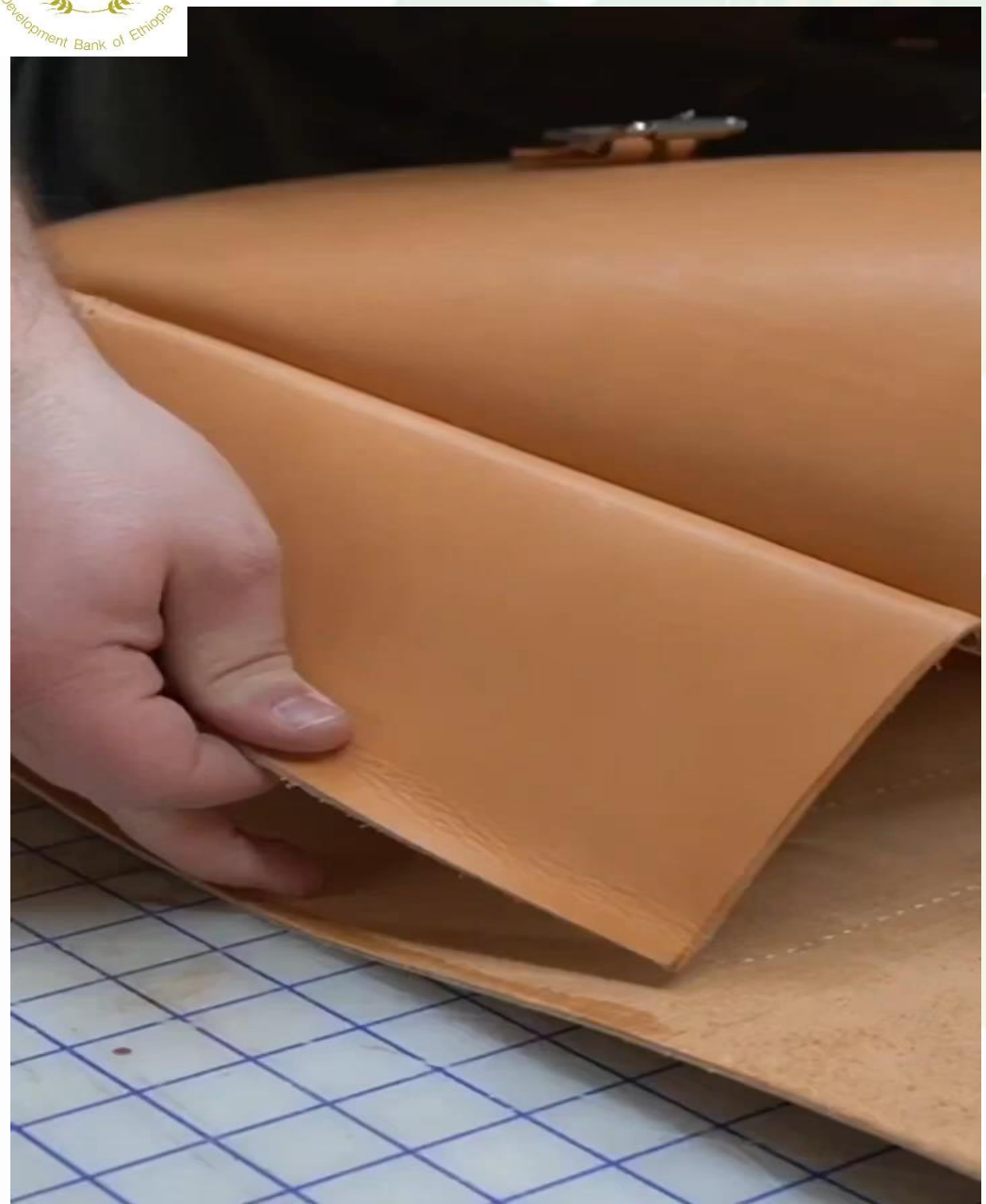
9.7 COMFORTER AND QUILIT MAKING



- Comforter, quilt, table dress….. Comforters are mostly imported; has artificial cotton and nylon lining inside. It comes in different designs from different country.
- If you produce 20 organic healthy comforters per day and package them and offer them to the domestic and foreign markets.



9.8 LEATHER BAG AND PRODUCTS MANUFACTURING



- Our country has leather resources and It’s easy to use and dye the leather after tanning and fixing it, and it is possible to do it at the cottage industry level.
- Do you know how many student bags are imported into the market each year? Too much fabric for that matter. A leather bag is strong and durable if it is well made. Let's think of producing "student bags".

9.9 AQUA PHONICS (FISH POND) AND FISH PRODUCTION



- The farming of aquatic organisms including fish, molluscs, crustaceans and aquatic plants.
- Farming implies some sort of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc.
- Farming also implies individual or corporate ownership of the stock being cultivated, the planning, development and operation of aquaculture systems, sites, facilities and practices, and the production and transport.

9.10 COMPOUND ANIMAL FEED PRODUCTION



- Animal feed is an important input to animal agriculture and is frequently the main cost of the raising or keeping of animals. Farms typically try to reduce cost for this food, by growing their own, grazing animals or supplementing expensive feeds with substitutes, such as food waste like spent grain from beer brewing.
- Compound feed machine is the mixing of different ingredients in quantity and type. It is to prepare protein, carbohydrates, fats, minerals, vitamins, sometimes medicine by grinding and mixing corn, oil juice, lime, bone, molasses, etc.

Animal Feed



9.11 BABY FOOD PROCESSING (FORTIFIED FOOD)



- Especially Borena-Mekele-Semera-Sekota-Gonder-Debretabor-Awasa-Hosaena-Wolkite-Arbaminc.Among the problems that have occurred in Ethiopia in the past years is the shortage of children's food.
- School feeding program: NGOs (FAO, save the children..) that help poor areas with food and food consumers are the main market. The basic raw materials and production are corn, soybeans, chickpeas, wheat, vitamins, minerals, and oil. Combing-cutting-grinding-spraying-processing and packing are the main production processes..



9.12 PRODUCTION OF LIQUID NATURAL FERTILIZER

- Environmental plants nitrogen, phosphorus and potassium Production of N:P:K (nitrogen, phosphorus, potassium) ....

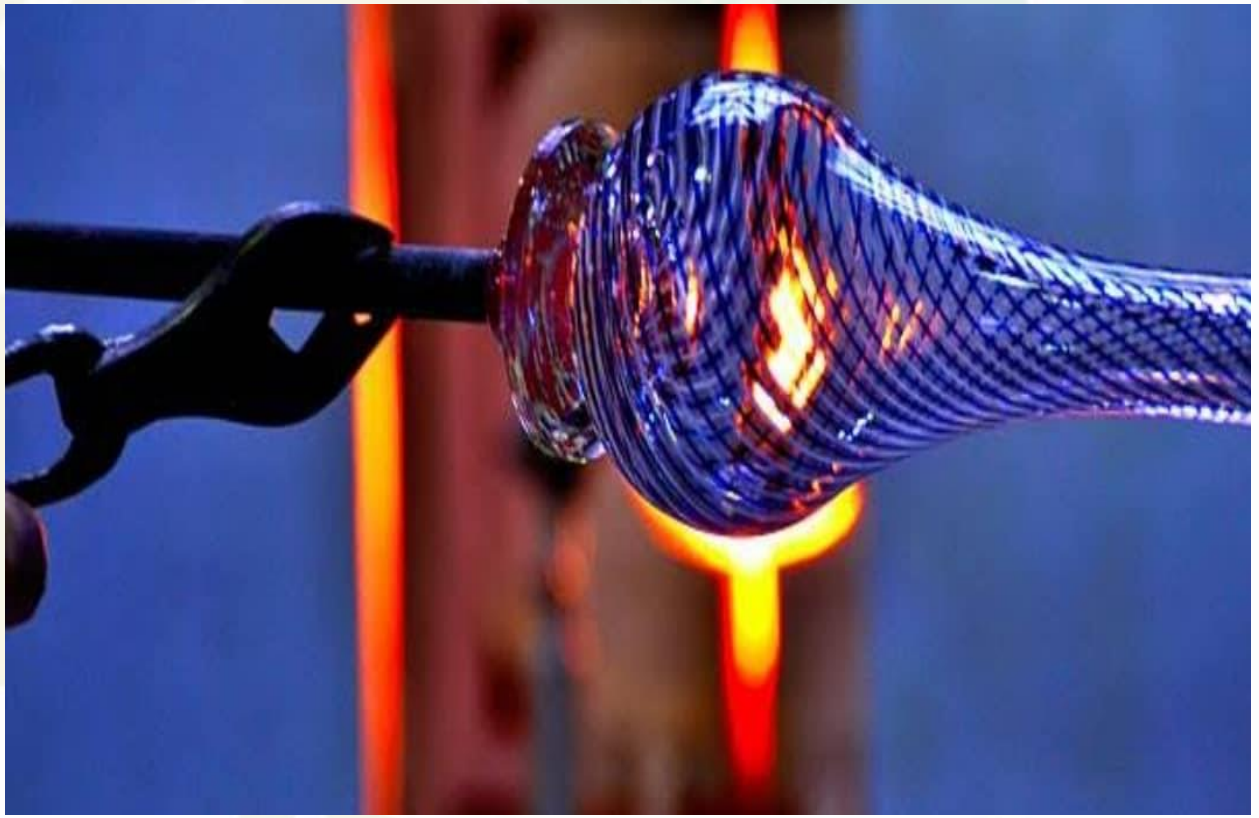




9.13 MAKING OF DISCARDED GLASS, BOTTLES AND FLOWER DECORATIONS

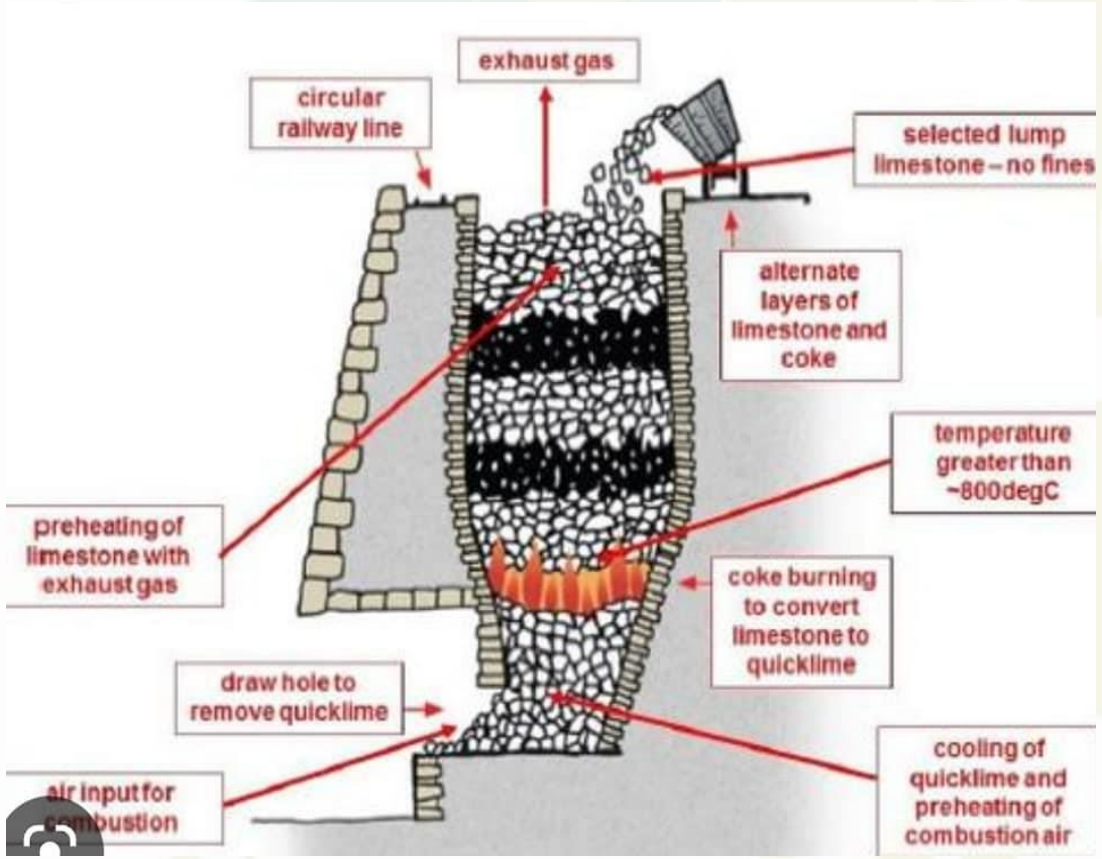
- Using mill, high temperature furnace, compressor, molds, and materials by melting the broken bottle, putting it in the mold, using compressor or blowing, producing different utility materials.

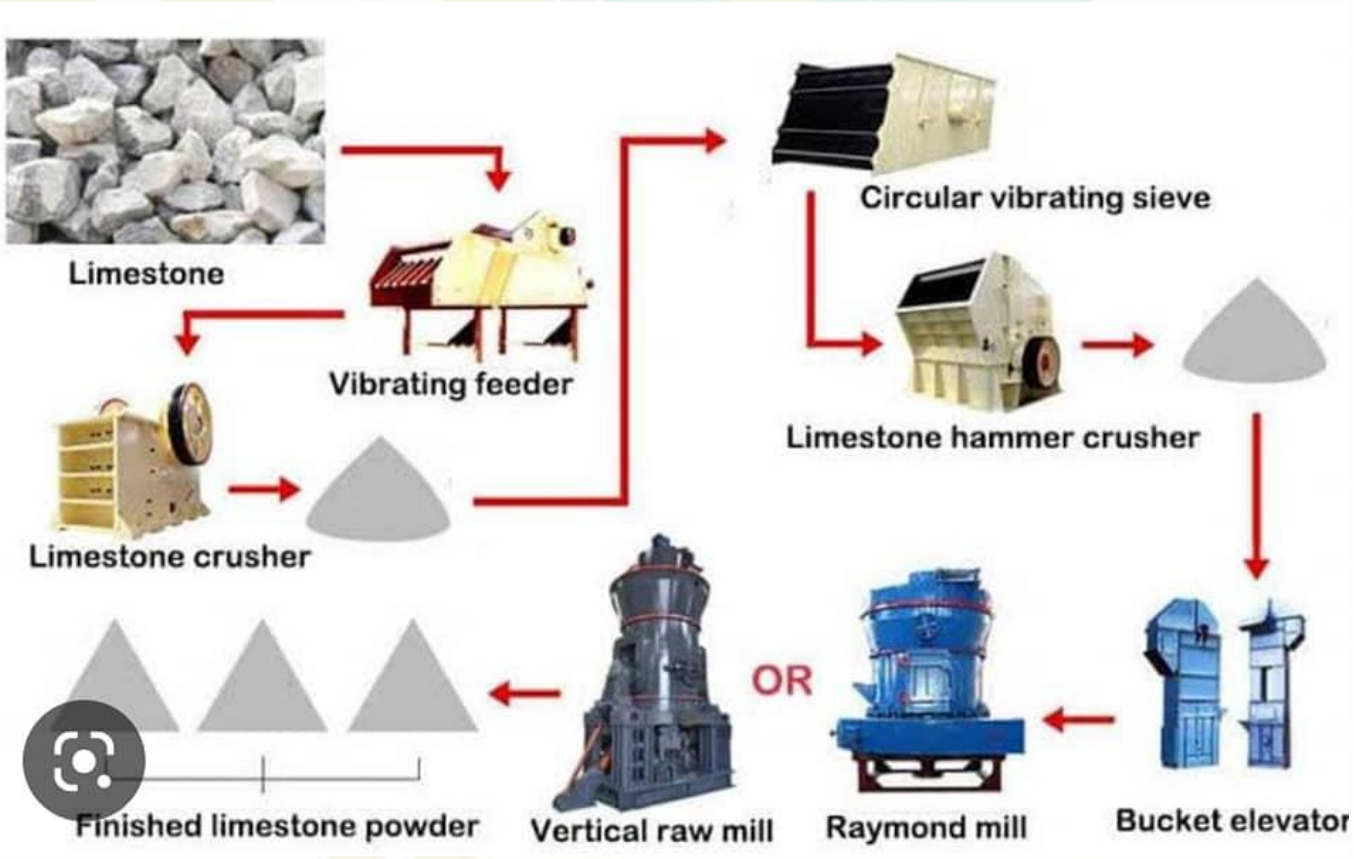




9.14 LIME PRODUCTION

- (raw Ca2CO3, hydrated lime, dried and calcined lime)
- Lime is useful for many things, grind it for animal feed, grind it for agricultural soil treatment, burn it and grind it for sugar and paper factories, dyes, etc.





9.15 FOOD TRUCK

- Selling food and drink on the go. Selling food/drinks/cakes and various things whenever and wherever you want while pulling a pickup truck.



9.16 EGG CRATE AND EGG TRAY MACHINE

- In order to bring more eggs to the market, care is needed. Although there are many methods, the production of egg trays made from recycled paper is a profitable business. It is possible to produce the product by grinding, crushing, molding and drying waste paper.



9.17 RIVER SIDE FARMING

- Good agriculture requires skilled manpower, financing through loan contributions, land provided with water, technology, seeds, fertilizers, medicine, agricultural management information system in an organized manner.



9.18 ESSENTIAL OILS PRODUCTION

- Rosemary cumin, Enslal, Bsobela It is used as a flavoring agent for medicine, as a tonic for food and drink, and as a preservative (soap and shampoo).





9.19 TOURISM WORK

- It is to make tours from services and facilities by preparing transportation-safari-cooking and lodging cars.





9.20 MEAT DRIER MACHINE

- Preparation of beef, goat, mutton meatballs and packaging and offering to domestic and foreign markets. By preserving food, it helps in the process of fattening.





9.21 SALT PRODUCTION

- Wash the salt, make it iodized and grind it. Raw salt is available from Afar, wash it with brine solution, dry it without iodization, grind it and sell it without grinding it.



9.22 PRODUCTION OF SODIUM HYDROXIDE FROM SALT



- Its used for soap, for paper, for textiles, for metal, for paint, for rayon, for oxide coating, for electroplating.



9.23 (JAGGERY) IS NATURAL CANE SUGAR

- We use sugar at a high level and it is coming in from outside. Factory sugar uses lime, sulfur and sometimes diatomite, but there is a shortage.





9.24 POWER ALCOHOL EXTRACTION

- It can be used by wood or electric distiller. It uses a smoke-free production method.





9.25 PLASTIC WATER TANKER MANUFACTURING



- To make a plastic tank, put the polymer powder in a metal mold and heat it for 30 minutes.



9.26 GROWING MUSHROOMS



- Mushroom is a popular food because it contains healthy and nutritious ingredients

9.27 PRODUCTION AND SALE OF COFFEE CAPSULES

- It is common to send the raw or crushed or ground to the domestic or foreign market.





9.28 PLASTIC RECYCLING

- Plastic recycling is possible to reuse old water (PET), car battery (PP) and similar (PVC) plastics...
- One of the business ideas is to grind, wash and separate them according to their colors and provide them as resources for other industries.



9.29 DECAFFEINATED COFFEE

- You see, a large part of society is caffeine sensitive! Coffee has about 95mg of caffeine.





9.30 SPICE PROCESSING

- Spice products are available in our country like Southwest Ethiopia, Kembata, North Gondar, Gurage, etc.





9.31 DRYING OF FRUITS (RWD)

- We can dry any fruits without changing the taste and change it to a powder form for juice.



9.32 STONE AND CONCRETE SPLITTING

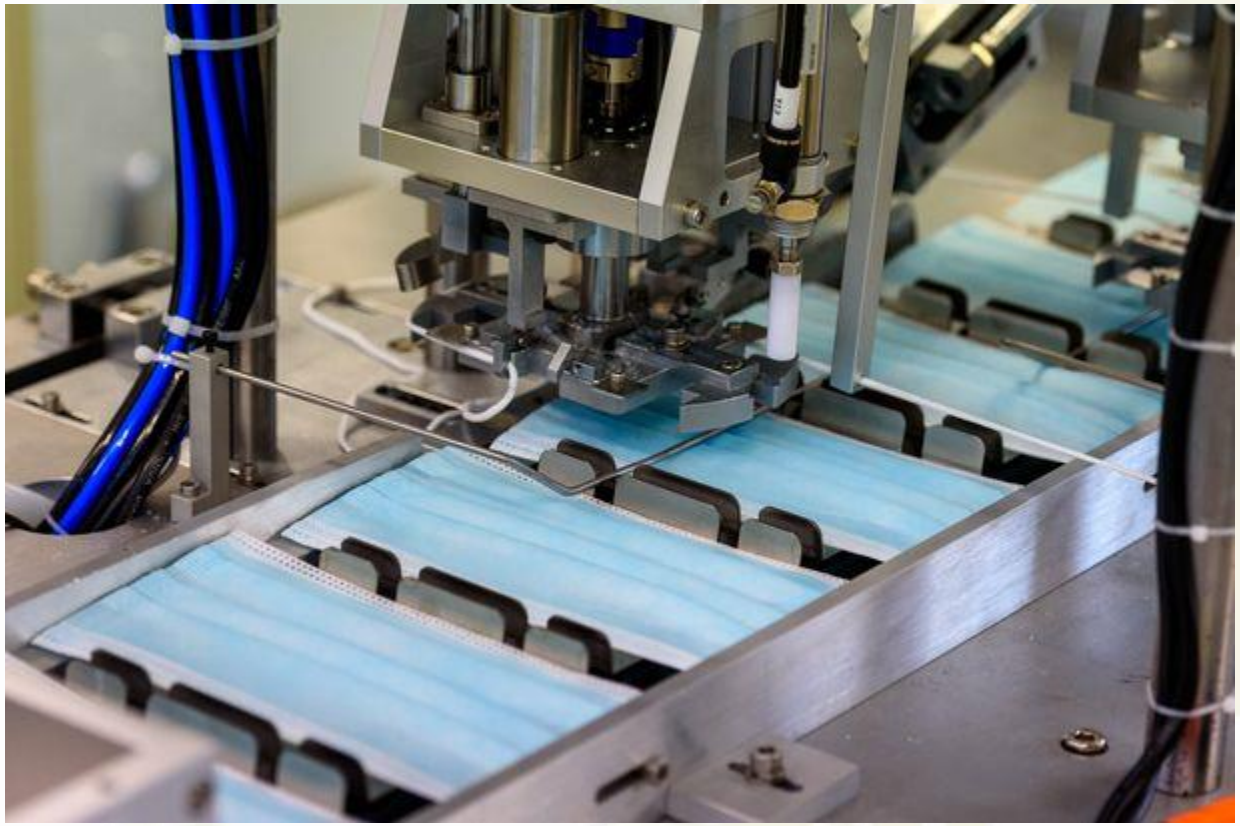
- Splitting machines accurately split material to thinner dimensions and can split a thick material into many thinner pieces.





9.33 MEDICAL FACE MASK PRODUCTION

- A medical face mask is a loose fitting, disposable mask that covers the nose and mouth. This includes products labelled as surgical, dental, medical procedures, insulation, mouth and nose protection, and laser masks.





9.34 BANDAGE (GAUZE) PRODUCTION

- Gauze and a method for fabricating the same are provided to prevent generation of dust and contaminants, to shorten manufacturing processes, and to produce a large amount of gauze





9.35 MEDICAL APRON PRODUCTION

- Disposable aprons are important personal protective equipment used to protect healthcare workers from the risk of infection and to reduce the possibilities for cross contamination of microorganisms.







9.36 HOSPITAL BED PRODUCTION

- A hospital bed or hospital cot is a bed specially designed for hospitalized patients or others in need of some form of health care. These beds have special features both for the comfort and well-being of the patient and for the convenience of health care workers.



9.37 PATIENT WHEEL CHAIR PRODUCTION

- A wheelchair is a chair with wheels to help people move around. It is used by individuals who have impairments that limit their ability to walk.



9.38 CLINICAL SYRINGE PRODUCTION

- Syringes – devices used to inject medication into or withdraw fluid from the body.





9.40 NITRILE AND LATEX GLOVE PRODUCTION

- Latex gloves are made of natural rubber that fits comfortably and protects from viruses and bacteria. Nitrile gloves are made of synthetic rubber that resists punctures and harsh cleaning chemicals but impedes range of motion.





9.41 IV FLUID PRODUCTION

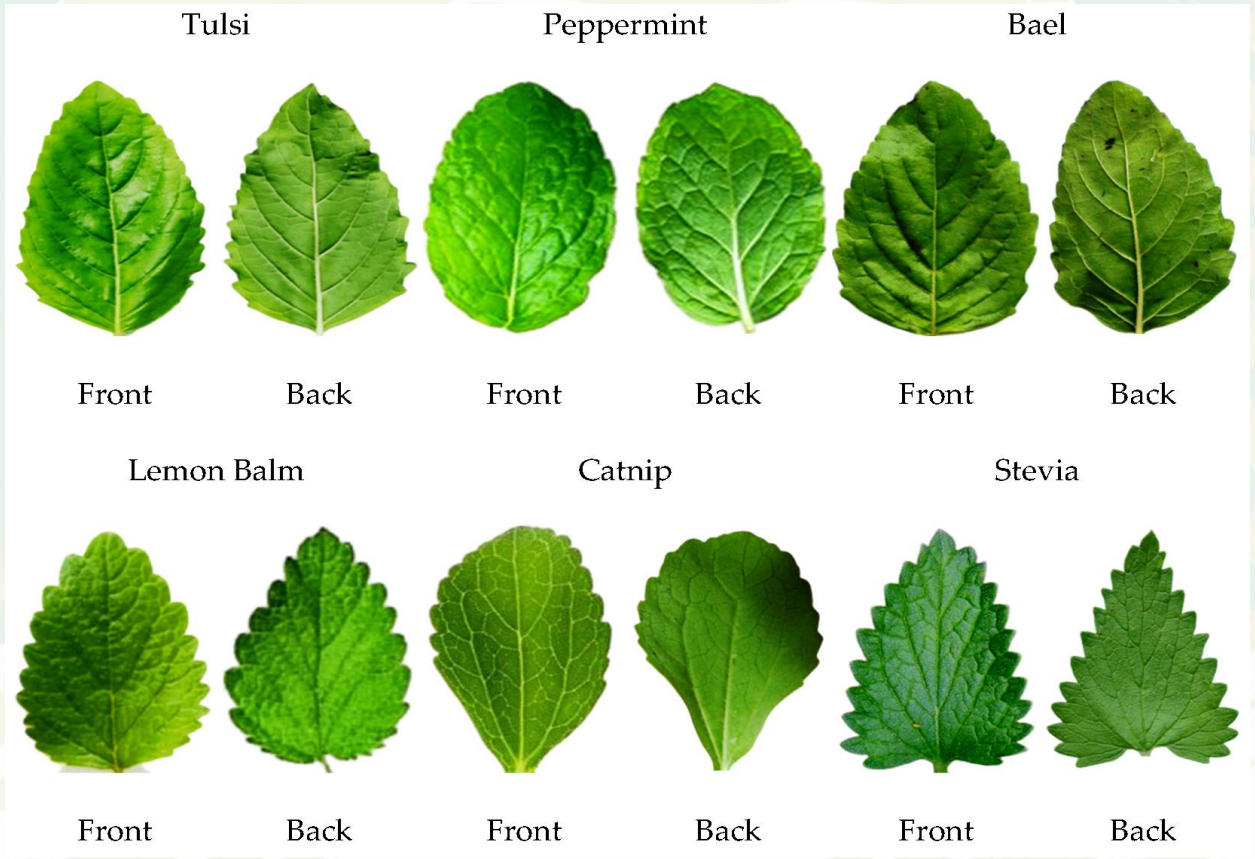
IV fluids are specially formulated liquids that are injected into a vein to prevent or treat dehydration. They are used in people of all ages who are sick, injured, dehydrated from exercise or heat, or undergoing surgery. Intravenous rehydration is a simple, safe and common procedure with a low risk of complications.





9.42 MEDICINAL PLANTS PRODUCTION (Wabi shebele, Baro river, Awash…)

- Medicinal plants can be defined as the plants that possess therapeutic properties or exert beneficial pharmacological effect on the human or animal body.



9.43 RABIT FARMING

- Global rabbit meat imports amounted to 36 thousand tones in 2015, reducing by -10.5% against the previous year level. Overall, the global rabbit meat imports indicated a pronounced decline from 2007 to 2015. The trend pattern, however, remained consistent, with only minor fluctuations throughout the analyzed period. The total import volume decreased at an average annual rate of -1.7% over the last eight years.
- The growth pace was the most rapid in 2012, when the output figure increased by +6% from the previous year level. Over the period under review, the global rabbit meat imports attained its maximum volume of 42 thousand tones in 2007. From 2008 to 2015, the total rabbit meat imports growth failed to regain its strength.
- In value terms, global rabbit meat imports amounted to $163 million in 2015. Overall, the value of global rabbit meat imports decreased substantially from 2007 to 2015, curtailing at an average annual rate of -2.3%. This trend pattern, however, indicated relatively mild fluctuations throughout the analyzed period.
- In addition to their meat, rabbits are used for their wool, fur, and pelts, as well as their nitrogen-rich manure and their high-protein milk. Production industries have developed domesticated rabbit breeds (such as the well-known Angora rabbit) to efficiently fill these needs.



- Top Rabbit Meat Importing Countries in the World
- **1. Belgium (7K Tonnes)**
- **2. Germany (6K Tonnes)**
- **3. France (4K Tonnes)**
- **4. Italy (3K Tonnes)**
- **5. Portugal (3K Tonnes)**
- **6. Netherlands (2K Tonnes)**
- **7. Russian Federation (2K Tonnes**
- Rabbit manure has four times more nutrients than cow or horse manure and is twice as rich as chicken manure. Cow, horse and chicken manure are considered “hot” and need to be composted (well-rotted) to use as fertilizers. One of the best things about rabbit manure is it doesn't need to be composted.
- As well as hay, grass and fresh food, you should give each of your rabbits one tablespoon of nuggets every day (or twice a day if they're over 3.5kg).
- If you raise rabbits, then you know how much poop they create. A single rabbit can generate between 200 and 300 rabbit pellets per day, and one ton of manure in the course of a year. That's a lot of manure.

MACHINERY

A. FOOD MACHINERY

- **A1**- rice milling and polishing, parboiled
- **A2**- complete flour mill, maize flour
- **A3**- complete biscuit plant, bread Baguette
- **A4**- candy, lollipop, toffee and jelly machinery
- **A5**- juice and drink plant
- **A6**- corn and cassava starch, potato starch flakes plant
- **A6.1**- corn maize rice syrup plant
- **A7**- mineral water bottling plant
- **A8**- instant noodles plant
- **A8.1-** spaghetti macaroni pasta plant
- **A9**- liquid glucose syrup plant
- **A10**- complete chocolate plant
- **A11**- oil extraction and refining plant
- **A12**- animal feed and fish feed plant
- **A13**- pet food production line
- **A14**- stick ice cream plant
- **A15**- chicken cattle slaughting house abattoir
- **A16**- rendering plant (feather meal)
- **A17-** gelatin glycerin or lecithin or refining plant
- **A18-** stevia (sugar) processing plant
- **A19**- edible table salt refining plant
- **A20**- box ice cream plant
- **A21**- potato chips, corn snacks, rice cake plant
- **A22**- fish meal (powder) plant
- **A23**- chicken maggi sugar cube plant
- **A24**- cashew nut processing plant
- **A25** -milk powder yoghourt plant

B. PLASTIC MACHINERY

B1- plastic pipe extrusion line

- **B2**- plastic sheet (board) extrusion line
- **B3**- plastic bag-making line
- **B4**- plastic bottle blowing
- **B5**- plastic injection molding
- **B6**- packing tape(band)line with waste PET bottles
- **B7**- fruit foam net extrusion line
- **B8**- PE net extrusion line
- **B9**- PVC soft sheet extrusion line
- **B10**- PVC window and door extrusion line
- **B11**- Plastic film blowing line
- **B12**- PP woven bag line for rice, cement
- **B13**- plastic cup making line
- **B14**- plastic recycle plant
- **B15**- Self-adhesive tape making line
- **B16**- plastic barrel (20 -5000 L) molding machine
- **B17**- medical disposable syringes plant
- **B18**- PE foam sheet extrusion line
- **B19**- PE bubble sheet production line
- **B20**- PVC medical glove plant US4$ 1.5 million
- **B21**- car/furniture foam seat injection
- **B22**- pvc flex banner line
- **B23**- plastic flower pot machinery
- **B24**- nylon cable pipe tie
- **B25**-PVC EVA water stopper seals line
- **B26**- window rubber seals production line
- **B27**- optical glasses/lens machinery
- **B28**- condom making plant
- **B29-** plastic dental floss machine
- **B30**- epdm tape line

C. SMALL PROFITABLE PROJECTS

- **C1**-Toilet and Laundry Soap Plant
- **C2**- Corrugated Paper-box Line
- **C3**- Shoe-making plant idc
- **C4**- paper cup machines
- **C5**- printing machine, A4 paper cutting machine
- **C6**- ice-making & cold storage
- **C7**- egg tray molding machine
- **C8**- toothpaste plant
- **C9**- perfume production and filling plant
- **C10**- flakes ice machine
- **C11**- prefab cold store
- **C12**- car battery (Lead acid) plant
- **C13**- LED lights and assembly line
- **C14**- Aluminum lunch box production line
- **C15**- glass bottle/ampoule plant
- **C16**- detergent plant
- **C17**- face mask plant
- **C18**- pocket gas lighter filling plant
- **C19**- lithium battery SKD/CKD assembly plant project

THANK YOU

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