

Cashew Apple Powder All-Mix by Amritattava Nutrition Pvt. Ltd.

AMRITA SUHASINI



Founder & Director

M.Sc.- Food Science and Nutrition,
Pondicherry University

DBT-BIRAC SIIP Fellow, 2020-2022, KIIT-TBI,
(Food & Nutrition)

Incorporated in 2021 at UP, Ghaziabad

Post MVP , Grant



Cashew Apple Powder - All Mix

An indigenous nutrition.....



BY
AMRITATTAVA NUTRITION PRIVATE LIMITED



Developing convenience food from indigenous harvests to address various nutrient deficiencies naturally

In India natural food ingredient is the most rapidly growing segment of the convenient food industry with 11.6% per year

Problem

❑ Nutritional deficiency in 70.5% (97.33 crore) Indians , particularly among women and children is one of the key causes for:

- Undernutrition (22.4 Cr)
- Over nutrition (3.42 Cr)
- Anaemia (18.73 Cr)
- Vulnerability and stunted children (3.6 Cr)

Problem with existing solutions

Synthetic Supplements
(Tablets)

- Not sustainable/side effects (majorly heart & kidney disease), uses marine animal

Natural Supplements
(cheese, yogurt)

- Expensive

Food based
supplements (fortified
food)

- Contains flavour additives or chemical preservatives

Time constrain

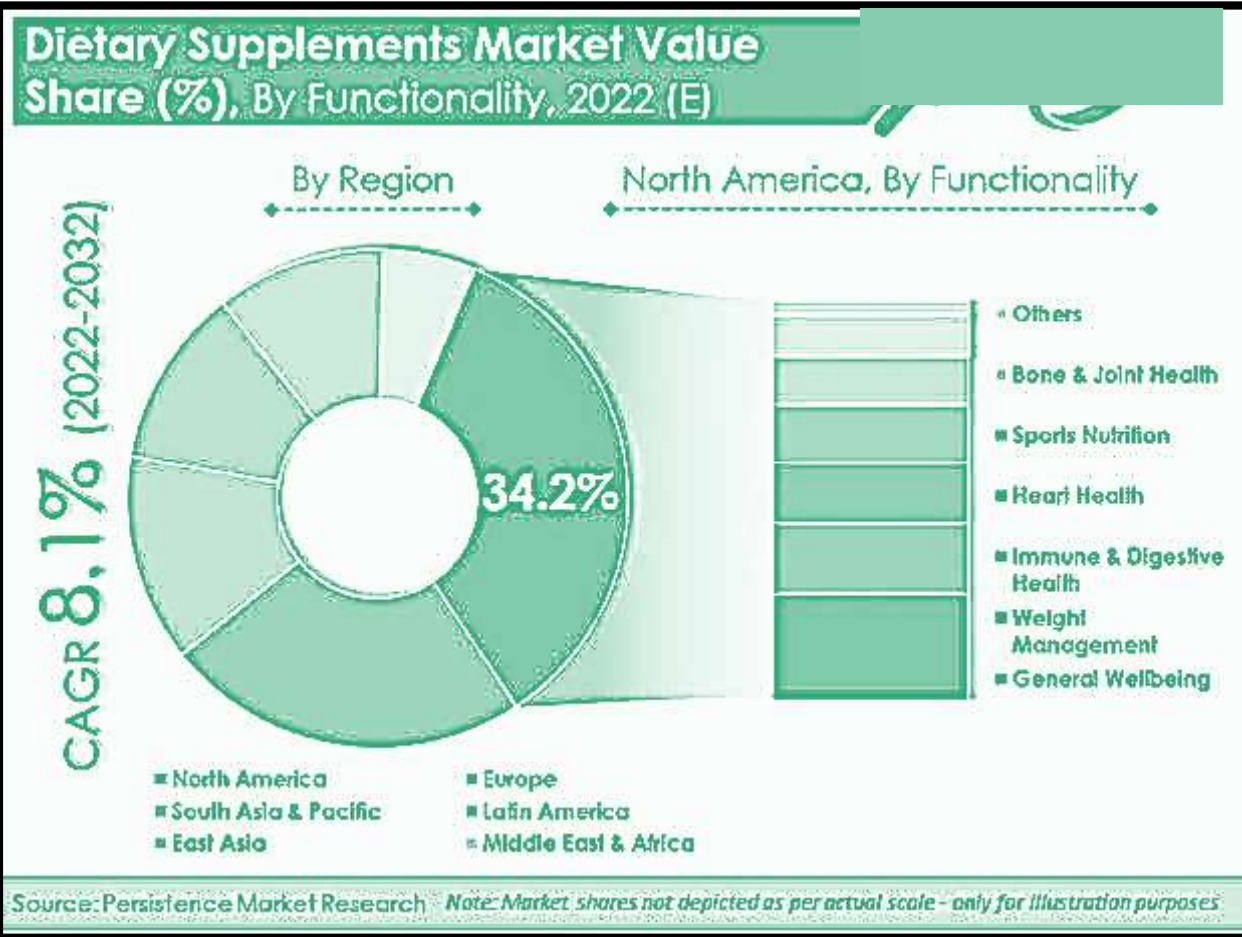
- Inability to cook



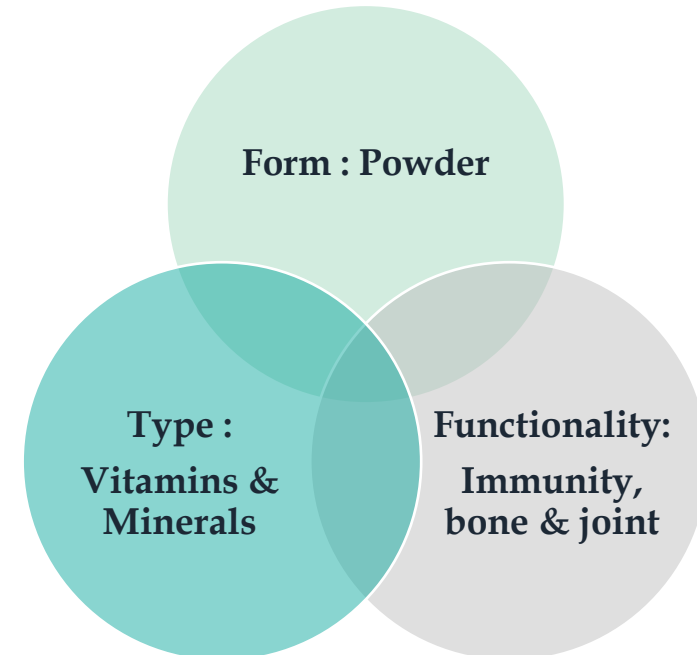
Trends and Demands

The United States & Asia lead the world in supplement consumption (54% of North Americans and 43% of Asians)

- ✓ High usage in emerging markets
- ✓ Popularity & demand for plant-based dietary supplements
- ✓ Changing lifestyle and growing awareness
- ✓ Evolving personalized nutrition : prospect for manufacturers



Natural health product industry research by category



Opportunity

- Convenient choice for Indian women who rarely spend on health supplements
- Very few economical, malnutrition-combating nutrient products.
- Local, nutritionally dense fruit available & currently completely being wasted.
- No natural flavor Indian diet compliant supplement available.
- Immunity booster with better bone health

Need

There is a need to meet nutrient requirements by the concept of home fortification or regular dietary channel methods



What is Cashew Apple Powder

(sprinkle over cooked food, salads, pizza toppings, pastries, smoothies or make bakery /chocolate products in 80:20 ratio)

A micronutrient-boosting powder made from *Anacardium Occidentals L.* (Cashew apple) fruit that is organoleptically aligned (taste neutral) to blend with almost any food dish. It would be a ready-to-eat combination that requires minimum cooking.

Cashew apple instant mix would help to meet the RDA of Calcium requirement by 66% through Indian diet while also providing natural Vitamin C from an indigenous fruit



Tangible Benefits

Home-fortifier/Government Schemes



Average Chatua price : 146/-



Value added Chatua price per Kg: 236



Cashew apple chatua price : 221/-

Wine



Average Cost of fruit wine : 700/- to 1000/-



Average Cost of cashew apple wine : 110/-

Bakery



Average Pastry price: 120/-



Value added pastry range 200/- to 400/-



Cashew apple pastry price- 197/-

FMCGs



Average instant biryani/noodles price per 300g to 400g: 150/- to 250/-



Cashew apple instant biryani/noodle: 227/-



LILABA
ANALYTICAL LABORATORIES
A COMPLETE FOOD & WATER TESTING LABORATORY



LAL/QF/7.8/01

Report No. LAL-FD-020224014

TEST REPORT

ULR : TC717024000001532F

Page No. 1/1

Issued To: Amritattava Nutrition Private Limited C/O Jyoti Suman, H.N-G103, Alkhananda Apartment, Rampuri, Surya Nagar, Ghaziabad, UP 201011, India	Sample Code : FD-020224014 Issue Date : 05/02/2024 Your ref. : -
---------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------

PART A : PARTICULARS OF SAMPLES

1. Date of Receipt	: 02/02/2024	19. Batch No./Lot No	: N.M.
2. Analysis starting Date	: 03/02/2024	20. Date of Mfg	: N.M.
3. Analysis completion Date	: 05/02/2024	21. Date of Expiry	: N.M.
4. Sample Drawn By	: Customer	22. Brand Name, If Any	: N.M.
5. Sampling Method	: N.A.	23. BIS Seal	: Not Applicable
6. Sampling Location	: N.A.	24. IO's Signature	: Not Applicable
7. Temp. at the time of Sampling	: N.A.		
8. Group Name	: Fruits and Vegetables Products		
9. Sample Name	: Water Cleaned		
10. Description of the Sample	: Cashew Apple Powder		
11. Sample Condition	: Received in Good Condition		
12. Temp. at the time of Sample Receipt	: 26.4°C		
13. Test Report As Per	: -		
14. Sample Qty. Received	: 1		
15. Any Other Information	: -		
16. Declared Value if any	: -		
17. Grade/Variety/Type/Class/Size/etc	: 150 gm		
18. Mode Of Packing	: Packed in Aluminium Foil Bag		

PART B : TEST RESULTS

Food and Agricultural Products

Chemical Testing

Chemical Parameters

Sr. No.	TEST NAME	SPECIFIED REQUIREMENT	LOQ	RESULTS	TEST METHOD
1	Vitamin C, mg/100gm	N.A	0.50	248.12	FSSAI Manual - Fruit & Vegetable Products : 2016, Method - 2.8
2	Calcium (as Ca), mg/kg	N.A	2.50	9234.28	FSSAI Manual - Metals: 2016, Method - 5.0

REMARKS :

Nil

NOTE :

Please Refer Overleaf

END OF THE TEST REPORT

Reviewed By
Ms. Dhara Savaliya (Sr. Analyst
Chemical)

Authorised Sign
Mr. Dilip Kukadiya (T.M. Chemical)



LAB REPORTS

NABL ACCREDITED

PART B : TEST RESULTS

Food and Agricultural Products

Chemical Testing

Chemical Parameters

Sr. No.	TEST NAME	SPECIFIED REQUIREMENT	LOQ	RESULTS	TEST METHOD
1	Vitamin C, mg/100gm	N.A	0.50	248.12	FSSAI Manual - Fruit & Vegetable Products : 2016, Method - 2.8
2	Calcium (as Ca), mg/kg	N.A	2.50	9234.28	FSSAI Manual - Metals: 2016, Method - 5.0

Value Proposition



- **First player/Early entry**
- **Demand of natural ingredients**
- **Import & Export market**

- **Utilising at least 1-2% of waste(40L tons)**
- **Controlled value chain**
- **No player sorted the farm to table**



- ✓ **Scalable technology, 50% gross margin**
- ✓ **5 times the revenue from 5 different producing states (3 years)**
- ✓ **WHO approved technology**



Product USP



How to prepare/adopt



- Mix with any food recipe/dish
- Good Texture : Due to presence of unsaturated fat in cashew apple (oleic and palmitoleic acids)
- Oil absorption capacity decreases
- Ravishing Fruity aroma



- Value added Bakery & Confectionary products (Rich in Vitamin C, Fibre, Calcium etc.)
- Supports bone health
- Immunity booster
- Improve gut health



- Cheap, indigenous raw material
- Farm to table
- Increasing demand



- Convenient and affordable
- No side effects
- No refrigeration required for storage



- 12 months shelf life
- Restores taste loss
- No bitter/aftertaste



- Certified
- High quality product
- WHO Approved Technology
- Profitable (11% annual growth)



- Environmental
- Waste Reduction
- Employment opportunities (3X in 3 years)



- Improved IP
- Booming industry (18% CAGR)
- Energy efficient technology



- No side effects
- No chemical/synthetic used
- Meets daily calcium need



- High yield
- Less time consuming
- Royalty can be earned

Competitor analysis and differentiation



v/s



Cashew apple powder

NO

50%

YES

YES

5/-

Parameters

Synthetic/Chemicals added (fortification/masking/flavour)

Bioavailability

Natural Source/ingredient

Affordable/Availability

Price (per g/ml/piece)

Natural Food Items (yogurt/cheese/milk, seeds, green leafy veg)

YES

30%-50%

YES

MAYBE/NO

1.45/- to 20/-

Fortified beverages

YES

20%-30%

MAYBE

MAYBE/NO

1.9/- to 3.6/-

Fortified food Items/breakfast cereals

YES

20%-30%

MAYBE

MAYBE/NO

1.3/- to 12.5

Serving Size and Unit Price



RDA of Calcium= 1000mg/day

Calcium:

- i. Serving size of CA powder= 30g
- ii. Calcium content in 30g= 300mg
- iii. DV percentage= 30%

RDA of Vitamin C= 69mg/day

Vitamin C

- i. Serving size of CA powder= 30g
- ii. Vitamin C content in 30g= 87mg
- iii. DV percentage= 126%

- Price of 1g of CA powder =5/-
- Price of 1 serving (30g) = 150/-
- Ratio for FMCGS= 5% to 20% (95:5 to 80:20)
- Current average calcium intake of an Indian= 200-600mg
- Delivery of calcium = 45mg to 196 mg
- DV % =4.5% to 20%
- Cost increment = 7.5/- to 30/-
- Benefits=10x to 12x



B2B & B2C Model



SKU: 5 Kg & 1 Kg

Product	Quantity	Costing	Replacing with	Why Amritattava Nutrition
Synthetic or marine animal extraction	38,597,800 kg	27,829 Cr	Cashew apple powder with 40,00,000 kg @ 400 Cr	Animal, synthetic to plant based, increasing demand of natural food ingredient, lack of calcium content in Indian food, no side effects
Tutti Frutti	1,85,00,000 kg	1448 Cr	Cashew apple Tutti Frutti (waste) with 10,00,000 kg @ 20 Cr	New flavour and variety Waste to value Rich source of fibre & Vitamin C
Carbonated drinks/ flavoured beverages	6,255.2ML	869Cr	Cashew apple Juice with 1,000.0 ML @ 6Cr	Unhealthy to healthy New flavour and variety No requirement of adding sugar

Market and customer details



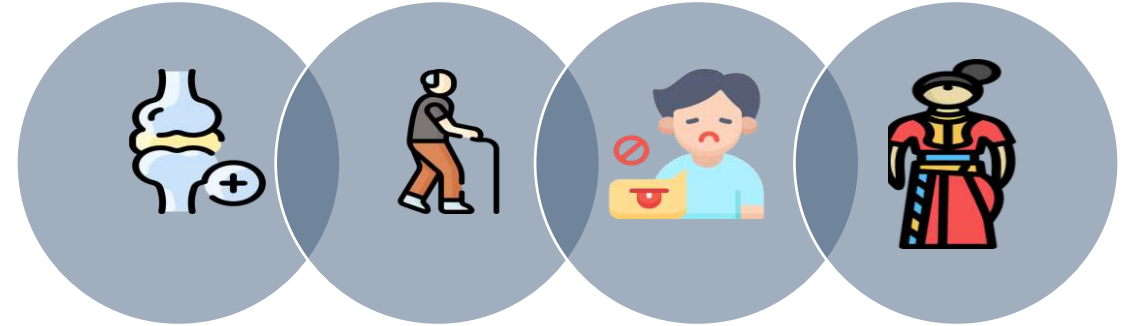
Target market

- Disease burden- 15% of India's total disease burden (21 crores)
- Dietary Calcium deficiency- 52% of total population
- Anosmia or Ageusia- 1.8% of total population

CAGR Dietary Supplements- 17.28%
(20-26); USD 3924.44 Million in FY2020



Direct Target customers



Women with dietary calcium deficiency

Geriatrics population

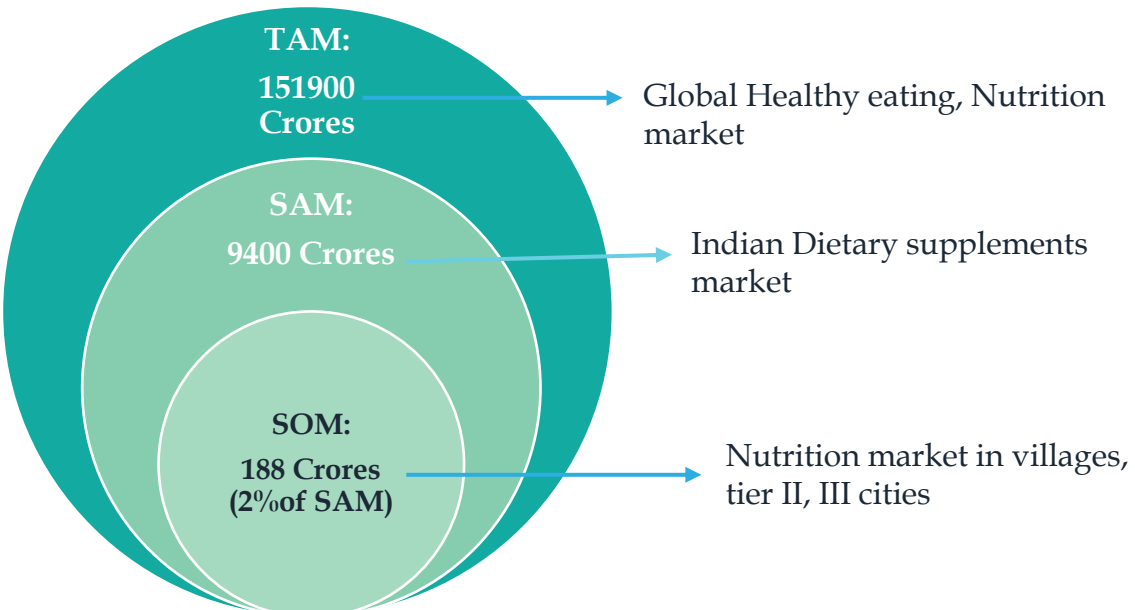
Individual with weak immunity & taste loss

Rural women with no access to calcium rich food

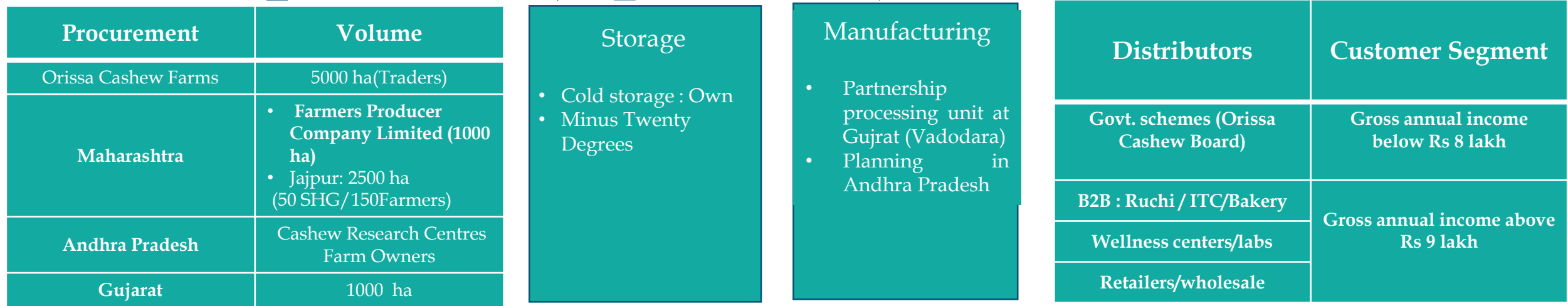


Indirect Target Customer

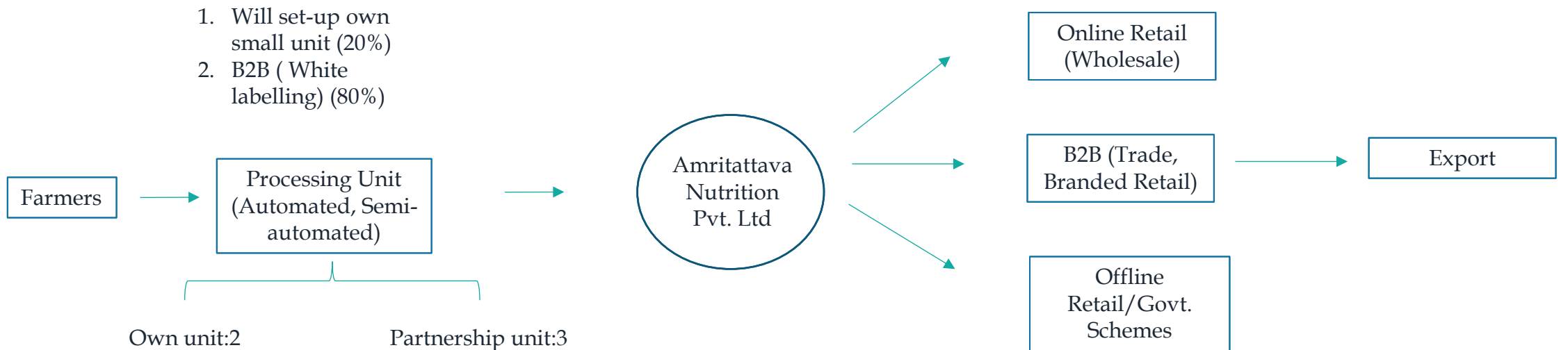
- Nutritionist/Dieticians
- Patients of Doctors
- Family of direct target customer
- General population for healthy food option



Product Availability & Distribution



Business model: B2B



Revenue Model



Products in pipeline:

- Juice of cashew apple
- Chocolate
- Jackfruit
- Ginger
- Turmeric etc



Cost Reduction

- Own processing unit,
- Reducing transportation cost,
- Units in other producing state for easy reach



Target and annual revenue

- Total waste : 40L MT
- Target (now) : 1% of total waste (4 Cr kg)
(40,000 MT)
- Final product (yield) : 10% of raw material
(40,00,000 kg/4000 MT)
- Selling price: 5000/-to 6000/- (per kg)
- Revenue : 200 Cr to 400Cr
- Scaling up : from 200 MT 1000 MT (per location)



Unit Economics & Financial Projection

Term	Value (INR)
Monthly Revenue	~12,00,000
Customer Acquisition Cost	10,800 per annum
Geographical coverage	Karnataka, Mumbai, Delhi

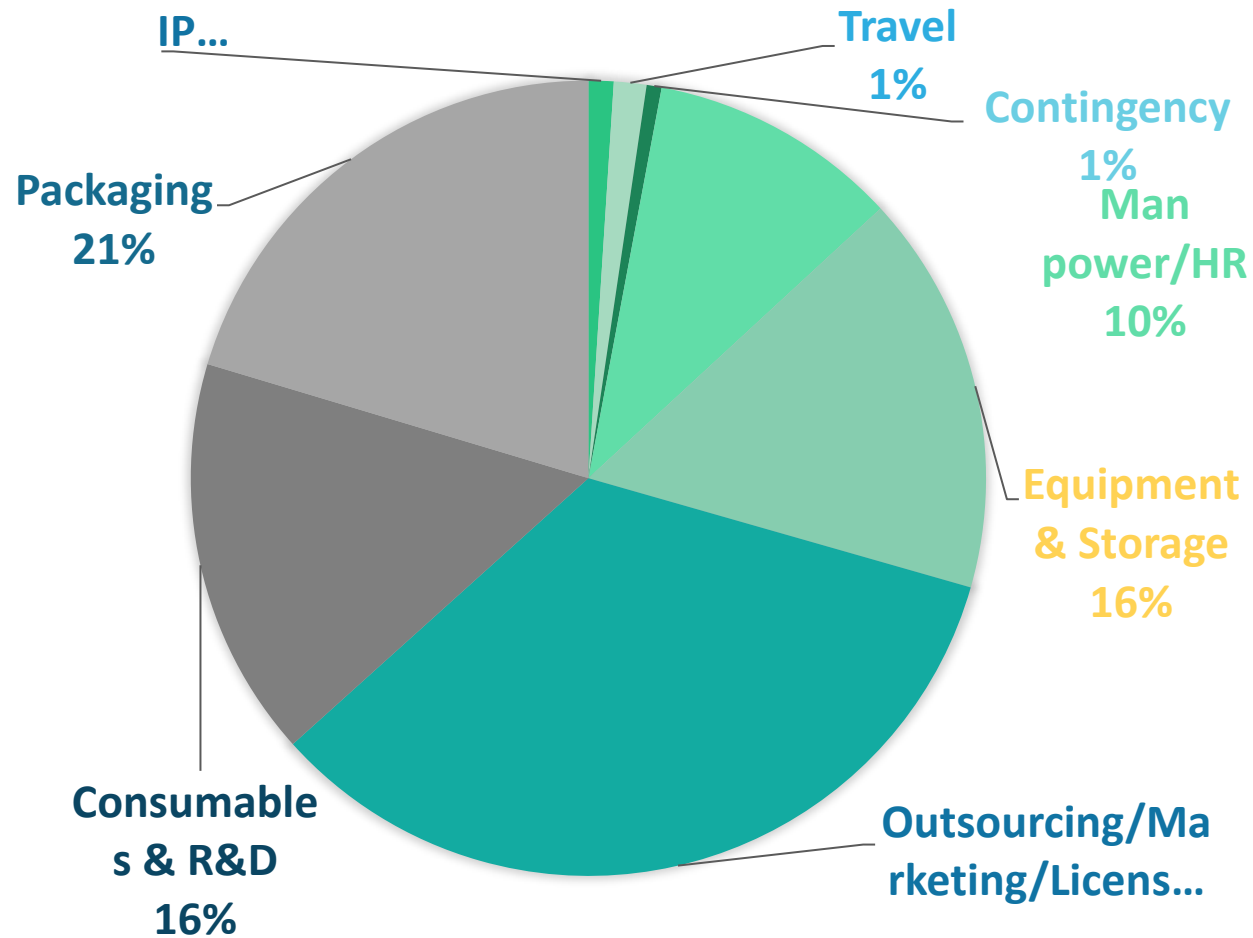
Term/Year	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29
Gross Revenue	35.39 L	83.83 L	91.37 L	163.66 L	184.77 L
Net Revenue	64.61 L	166.17 L	198.63 L	316.34 L	375.23 L
PBT	0.76 L	44.67 L	51.33 L	122.75 L	145.35 L
EBITDA	19.24 L	61.51 L	68.07 L	137.21 L	157.55 L



**Ask:
3 Cr**



Support



1. Grant/Investment/financial support
2. Connects of investors (innovative products)
3. Customer and market connect
4. Networking with industry experts
5. Connecting with Government or their schemes.
6. Focused intervention in product, GTM, sales, and customer segmentation
7. Workshops, labs and clinics connect

SIIP Journey- 18 months

A BIRAC initiative

Problem Identification And Mapping Through Field Immersion

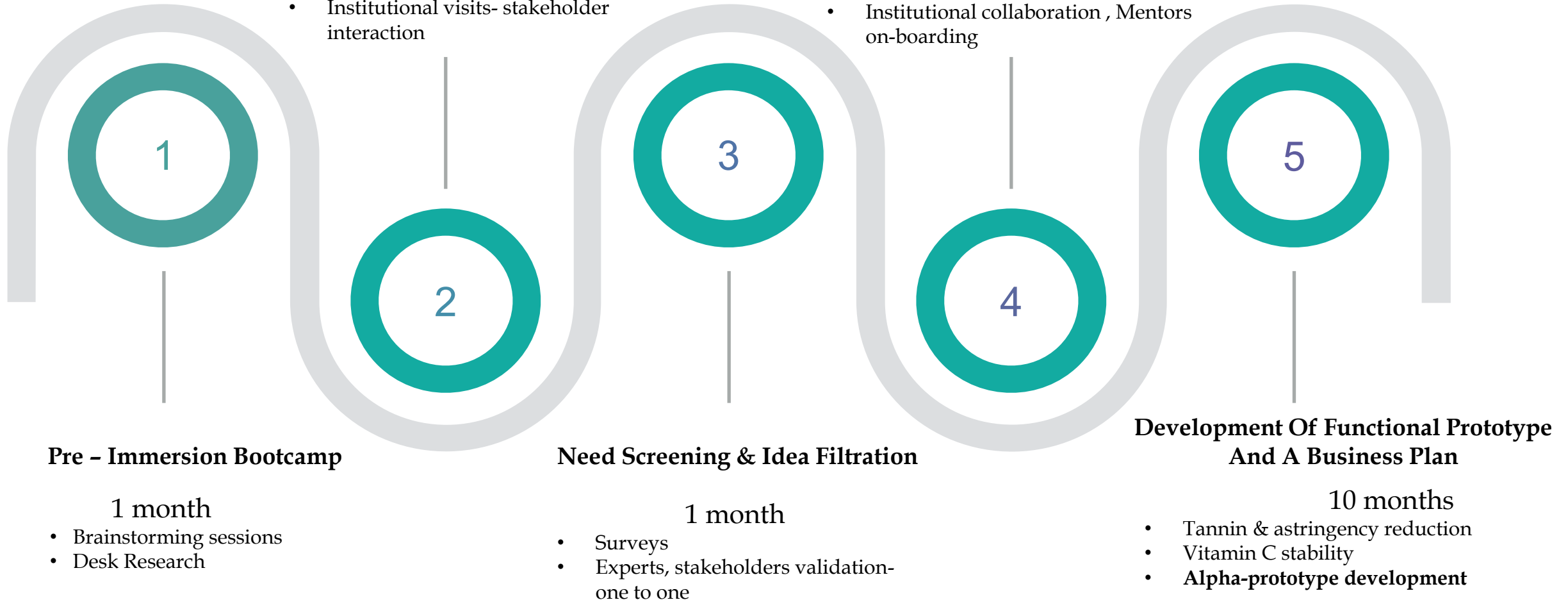
4 months

- Rural & Urban field immersion
- Institutional visits- stakeholder interaction

Concept Generation And Solution Design

2 months

- **Idea Freezing: Zinc fortified Cashew apple porridge**
- Institutional collaboration , Mentors on-boarding





Grant Received :

5 lakhs from DBT-BIRAC under SIIP



Soft Commitments:

1. Parikarma Foundation
2. Deshpande Foundation
3. Bio-Gen Healthcare
4. Botanic Healthcare (MoU)



Partnership:

Have collaborated with third party manufacturer at Vadodara

Also, supporting in marketing

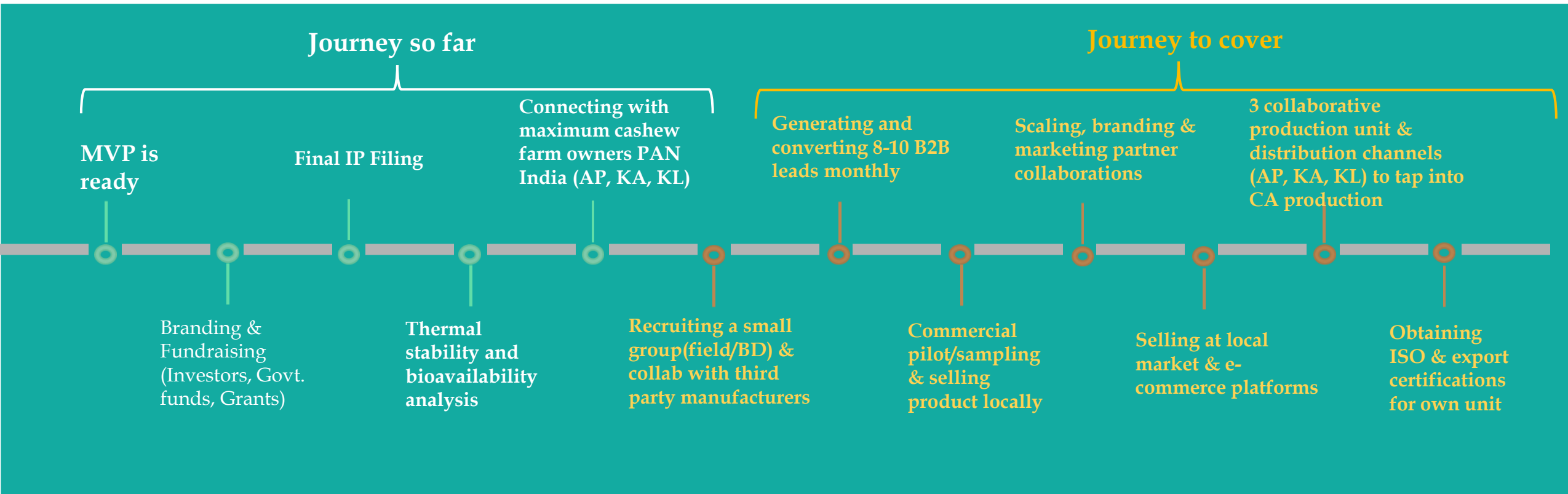


Major Milestone :

Launched product on website for online purchase

Will be launching the product in international market by June, 2024

3 years Road Map



Team & Advisory Board

Founder & Director



Amrita Suhasini,
Founder & Director
M.Sc Food Science & Nutrition

Business & R&D



R&D, Manufacturing – Twin
Engineers, Vadodara



Paresh Patel,
CEO – Twin Engineers,
Business Advisor

Marketing



Prajakta S.
M.Sc. Food Science Technology

Technical & Marketing



Dr. Shivanand S. Shirkole,
Assistant Professor,
ICT, Bhubaneswar



Prof. Bhaskar Narayan
Thorat,
Director & Professor
ICT, Bhubaneswar



Mr. TSGiridharan,
Director,
SSn iFOUND, Chennai



Prof. Manab Bose,
Adjunct Faculty, IIM
Udaipur



WOMEN FARMER

COLLABORATION WITH WOMEN FARMER



FARM TEAM

CONTACT



8300105504



suhasinamrita@gmail.com



www.amritattava.com



C/O Jyoti Suman, H.N?G103, Alkhananda Apartment, Rampuri, Surya Nagar, Ghaziabad, UP 201011, INDIA

Supported By



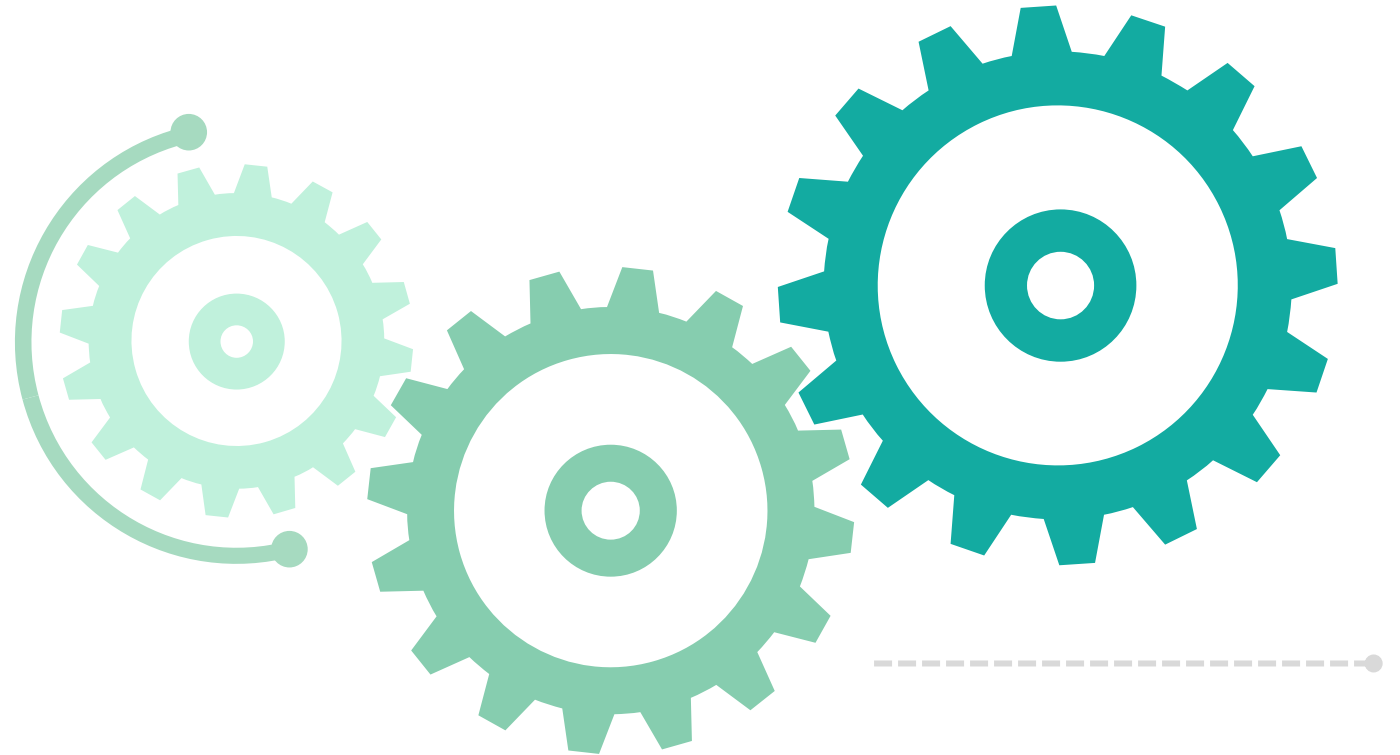
Utilization of Cashew apples

Nutrient rich by-product
Strengthening three sectors

 **Post harvest loss**

 **Health issues**

 **Social Impact**



Resolution 1: Post-Harvest Loss

Economic analysis of cashew apple processing indicated that a net profit of around Rs. 10000 can be earned per t of cashew apple, facilitating an additional income of Rs. 20000 per ha of cashew orchard, assuming a minimum production of 2 t of good cashew apple from a hectare, making cashew cultivation more economic and attractive. Taking at least 30% of the total cashew apple produced in the country as suitable for processing, the contribution to the national economy through cashew apple processing is worked out to Rs. 1800 crores.

Top Ten Cashewnut Producing States

Rank	State Name	Area	Production in 000MT
1	Maharashtra	191.45	269.44
2	Andhra Pradesh	186.78	116.92
3	Odisha	193.99	98.59
4	Karnataka	129.07	89.45
5	Kerala	92.81	88.18
6	Tamil Nadu	142.28	71.03
7	Goa		34.26
8	West Bengal	11.36	12.96
9	Chhattisgarh	13.7	9.83
10	Gujarat	7.25	6.5

clear no. India produces more than six million tonnes of fruit, and only about 20 per cent is being used for making feni in Goa and Karnataka. The situation is not very different in other parts of the world. According to the African Cashew Alliance, an association of Africa's cashew industry, Brazil, a major cashew-growing country, processes only 12 per cent of cashew apple it grows.

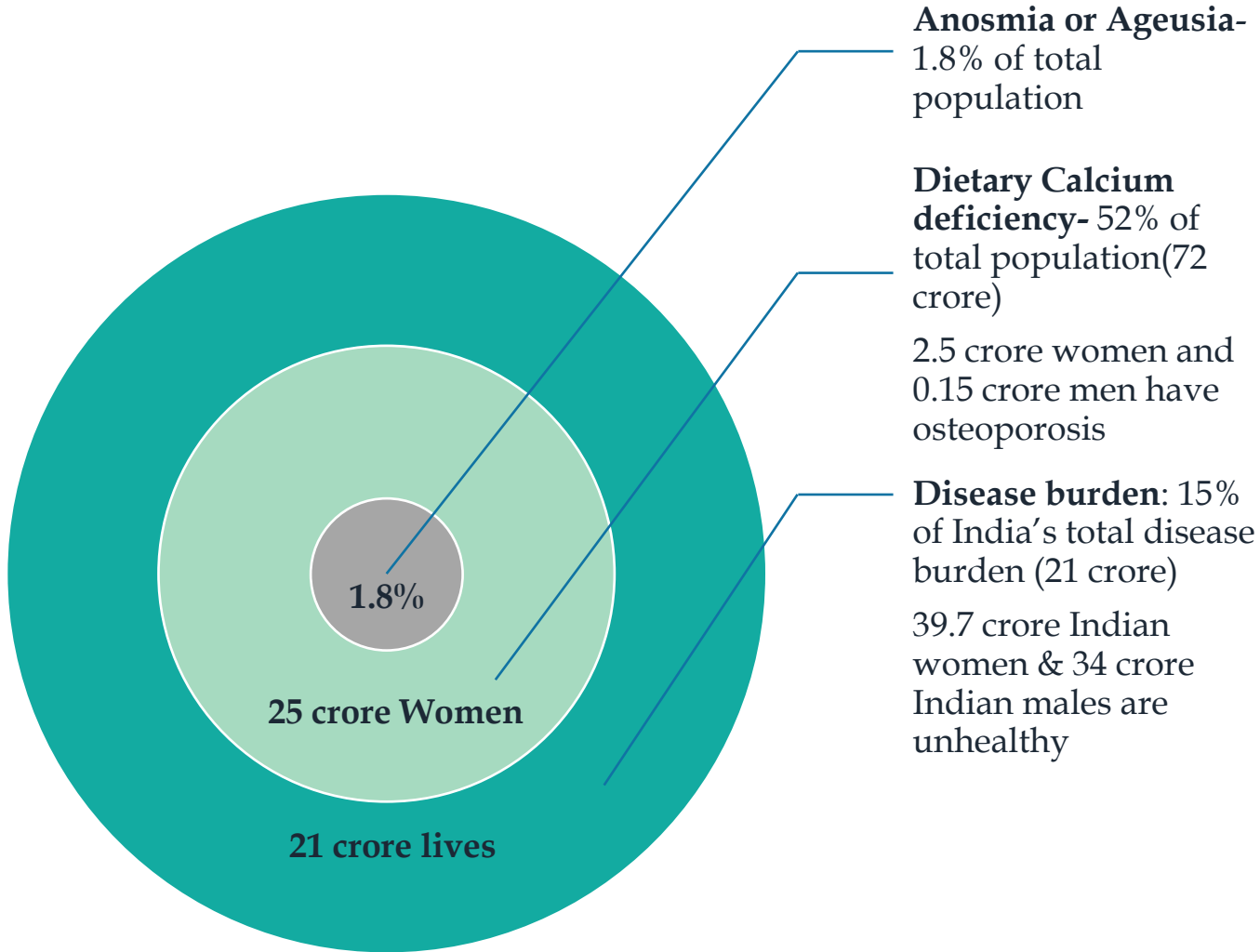
'Cashews are expensive because there is just one nut per fruit. Cashews trees have to be farmed, harvested, separated from the false fruit, roasted, cooled, cracked open, peeled, sundried and sorted - and only then can you sell them as raw nuts. The amount of value added is incommensurate to the amount of labour that goes into it.'

Major Cashew nut production in Odisha (Koraput, Malkanpuri, Dhenkanal, Ganjam, Kordha etc.)

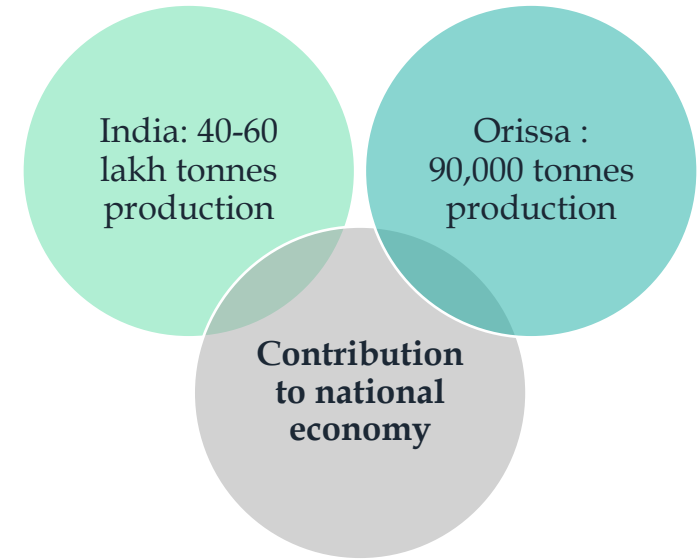
No. of cashew nut produced= No. of cashew apple produced

So, an equivalent and huge amount of cashew apple fruit is getting wasted in the current scenario, due to lack of awareness, technology etc.

Resolution 2: Health Issues (India)



Resolution 3: Social Impact



Livelihood

Employment opportunity for local farmers & SHG : The size of income of the small scale farm holders (less than ten hectares of cashew plantation) gets affected

Pre-treatment



□ Sorting

□ Grading

□ Cleaning

Skilled works at processing unit



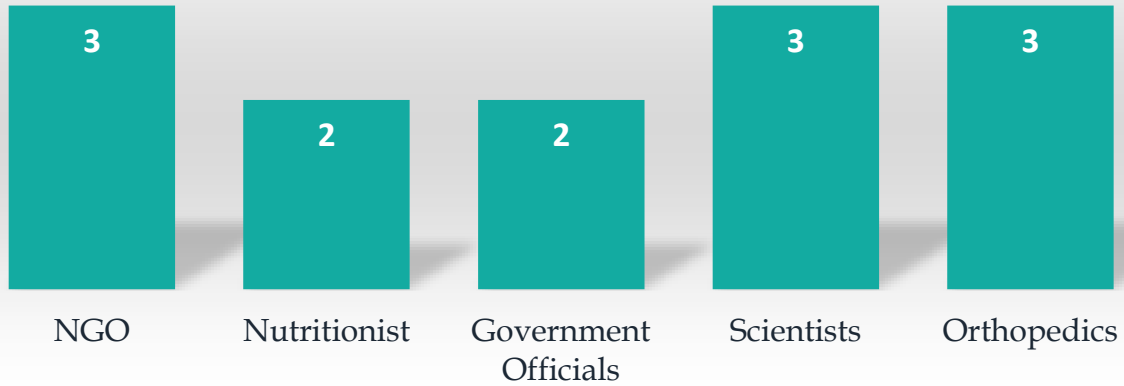
□ Machine Operators

□ Helpers

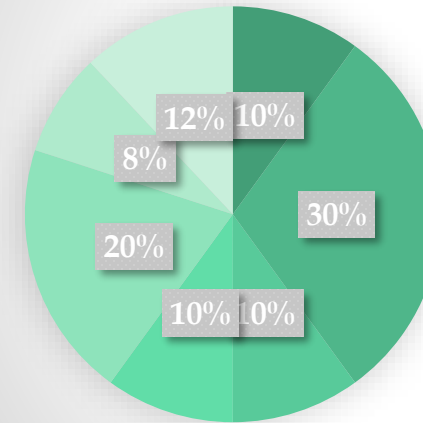
Need Identification Survey

Survey was done on field and virtually to determine the trend and problems related to bone health due to lifestyle and eating habits

Stakeholders

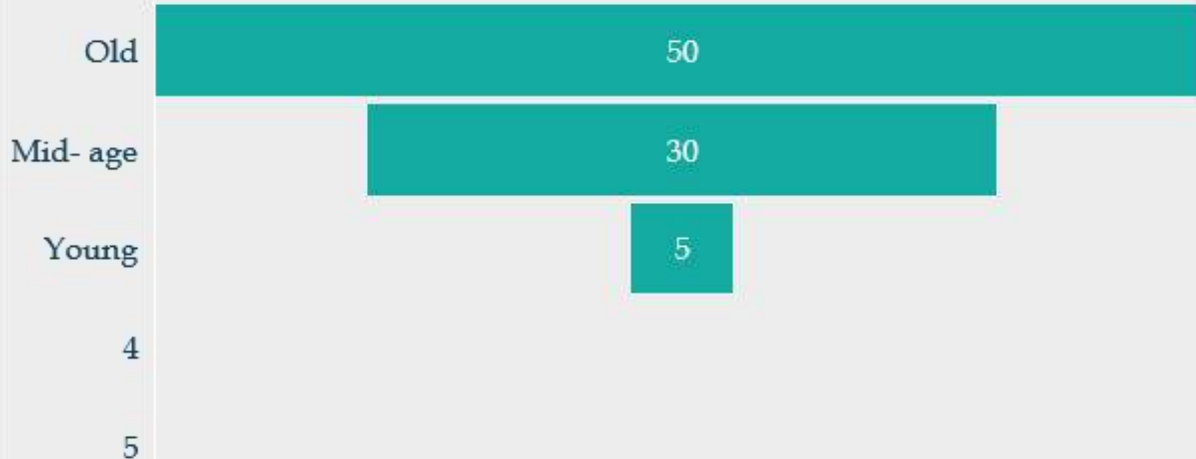


Rural

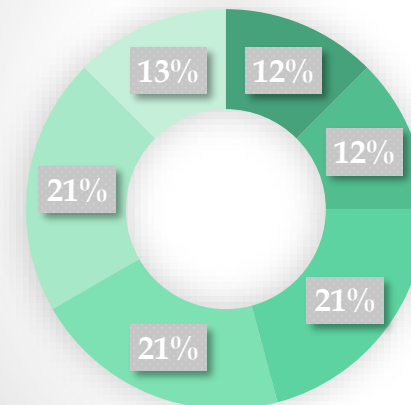


- Nagada
- Jafarpur
- Rasinga
- Taraboi
- Gorechandpur Malaksai
- Naruda
- Nuasai

Bone Issue



Urban

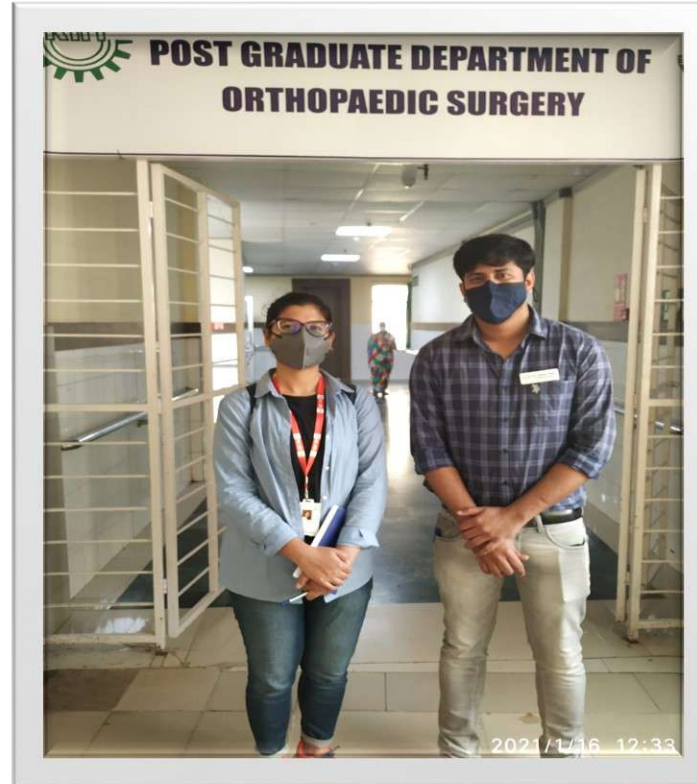


- 10 to 15
- 15 to 20
- 20 to 30
- 30 to 50
- 50 to 60
- 60 and above

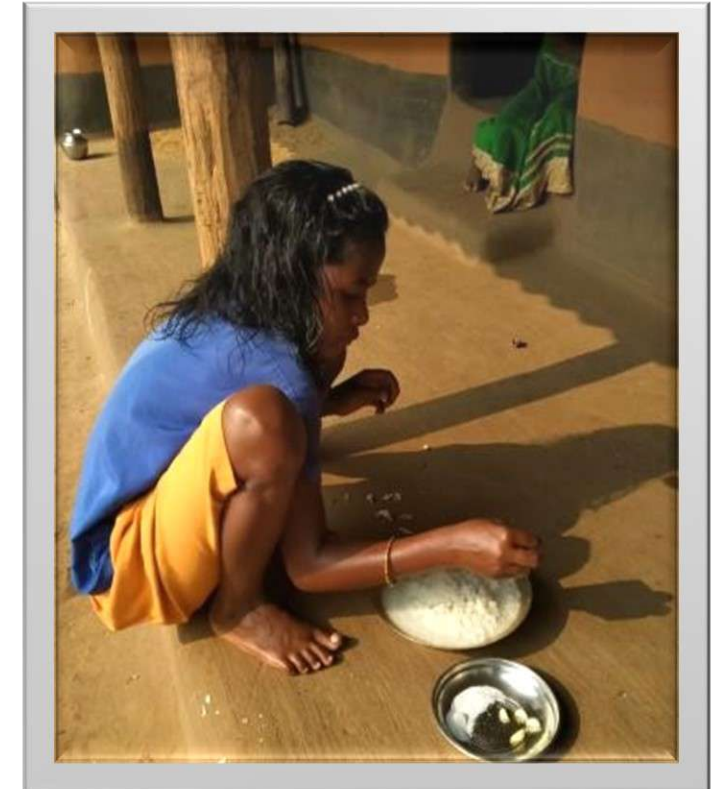
Observation and Experience from Immersion



**Visit to KIMS (Orthopaedics Dept)
(Dr. Debashish Mishra)**



**Visit to KIMS (Orthopaedics Dept)
(Dr. Eshwar Patel)**



**A tribal girl with traditional
food (rice with salt and garlic),
Nagada village, Sukinda**

Instant cashew apple powder with optimized parameter is developed

Incorporating the prepared cashew apple powder with other base material to make a whole meal in for, of porridge .

01.



Fresh cashew apple pomace

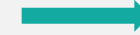


Dried Cashew apple powder

02.



Cooked broken wheat

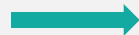


Dried broken wheat

03.



Cooked lentils



Dried Lentils

04.

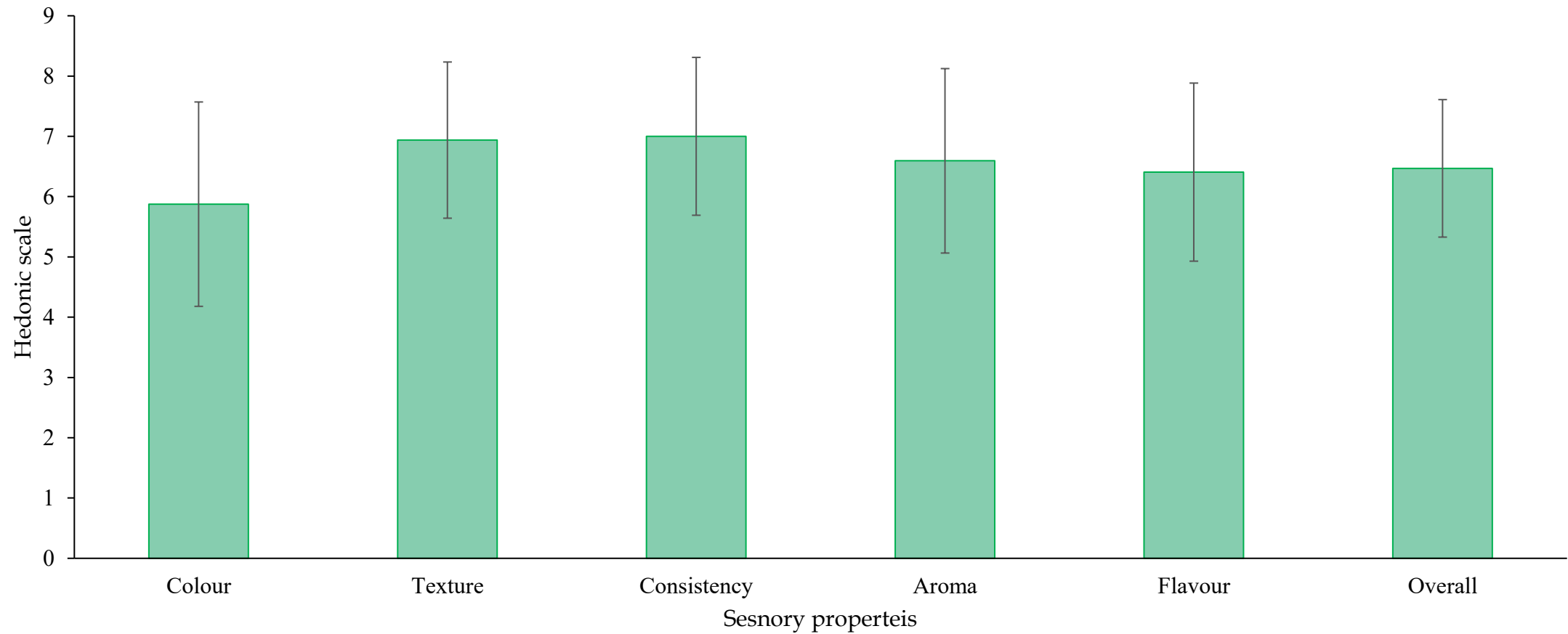


Trial packaging



Final Packaging

Sensory Evaluation of Zinc Fortified Cashew Apple Porridge



Entry Barrier



Early
export
market
entry

IP

Location (proximity
to resource, market,
supply chain)

Government Support

Farmers, SFG, FPO's onboarding

Infrastructure
(appropriate storage
and distribution
channels)

International
standards

Formulation

INTANGIBLE BENEFITS

Bakery	Wine
<ol style="list-style-type: none"> 1. Value added Bakery & Confectionary products (Rich in Vitamin C, Fibre, Calcium etc.) 2. Good Texture : Due to presence of unsaturated fat in cashew apple (oleic and palmitoleic acids) 3. Oil absorption capacity decreases 4. Ravishing flavour/smell/natural fibre source 5. Increased shelf-life of the product/item 	<ol style="list-style-type: none"> 1. Non-seasonal availability 2. Brand new flavour and taste 3. Revitalising indigenous product/practice 4. Traditional and or regional beverage
Government Schemes	FMCGs/Supplement
<ol style="list-style-type: none"> 1. Consumed by any individual: Distribution of supplements/ food item is restricted to specific age group/gender/condition 2. Multi-nutrient home fortifier (No cooking) 3. No divergent from daily diet and routine 4. New but indigenous variety and flavour 5. Affordable supplement (Vitamin C, Calcium, fibre) 	<ol style="list-style-type: none"> 1. Nutrient enhancement (Vitamin C, Calcium, fibre) 2. Ready to eat 3. Taste neutral 4. Value addition to packaged food 5. Increase of final product shelf-life (anti-bacterial characteristics) 6. Affordable supplement (Vitamin C, Calcium, fibre)

Process

The instant mix is processed such that it retains maximum nutrients, color but tannin and astringency was brought down to just 1%-2% of the total content.

Key milestones

01

Standardizing exocarp pre-treatment for maximum tannin & astringency reduction

02

Volarization & stabilizing nutrients, calcium bioavailability & cellular absorption

03

An instant mix, perfectly blending with majority of the Indian dishes

04

Establishing 9-12 months shelf-life stability of micronutrient enriched cashew apple powder

05

Pilot study to collect responses from targeted group of consumers for improving the product

06

Development of Minimum Viable Product for commercialization

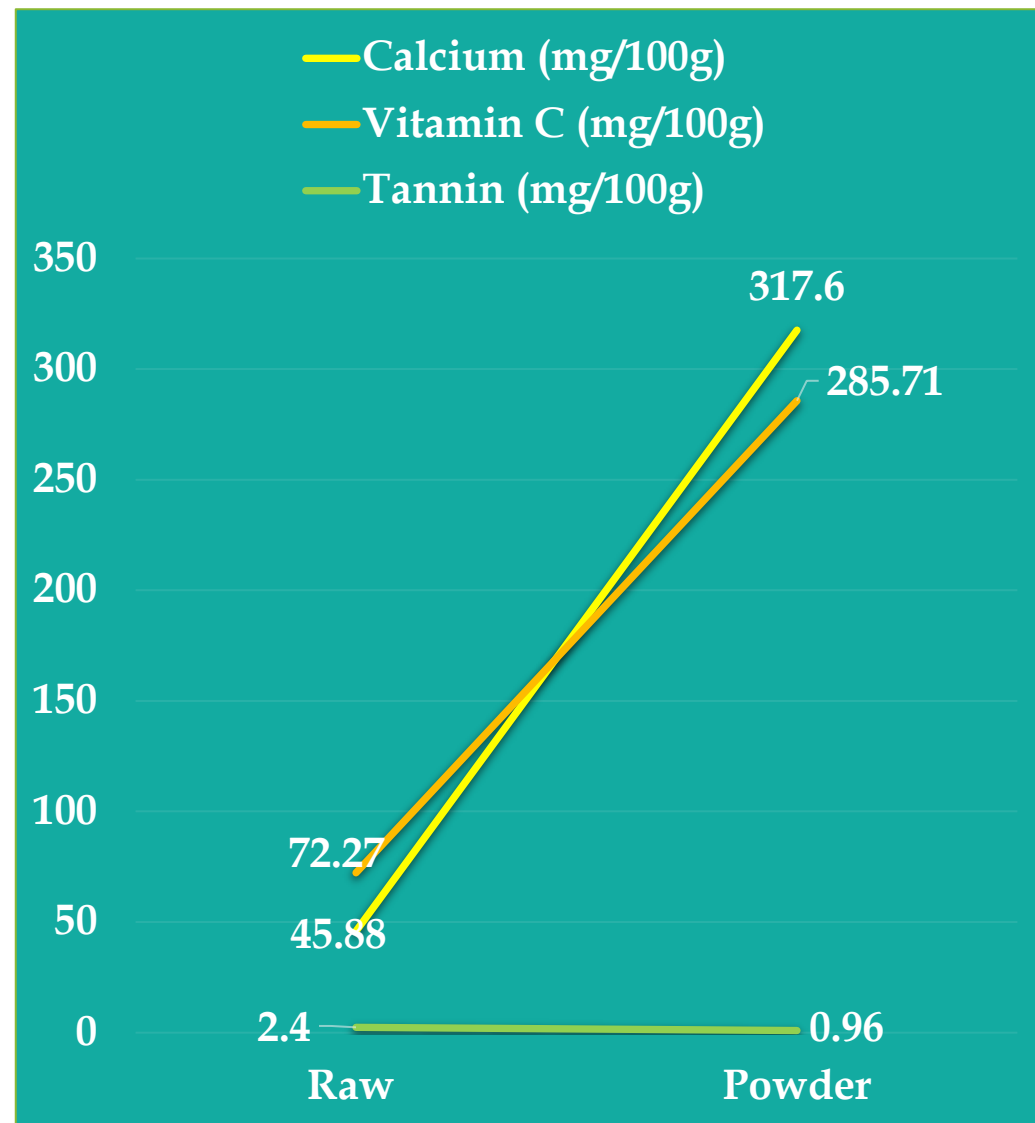
Preliminary Results

Results obtained from Microwave drying

Parameters/ Form	Tannin (mg/100g)	Calcium (mg/100g)	Vitamin C (mg/100g)
Raw Fruit	2.4	45.88	72.27
Final Product (Powder)	0.96- 1	900	285.71- 495

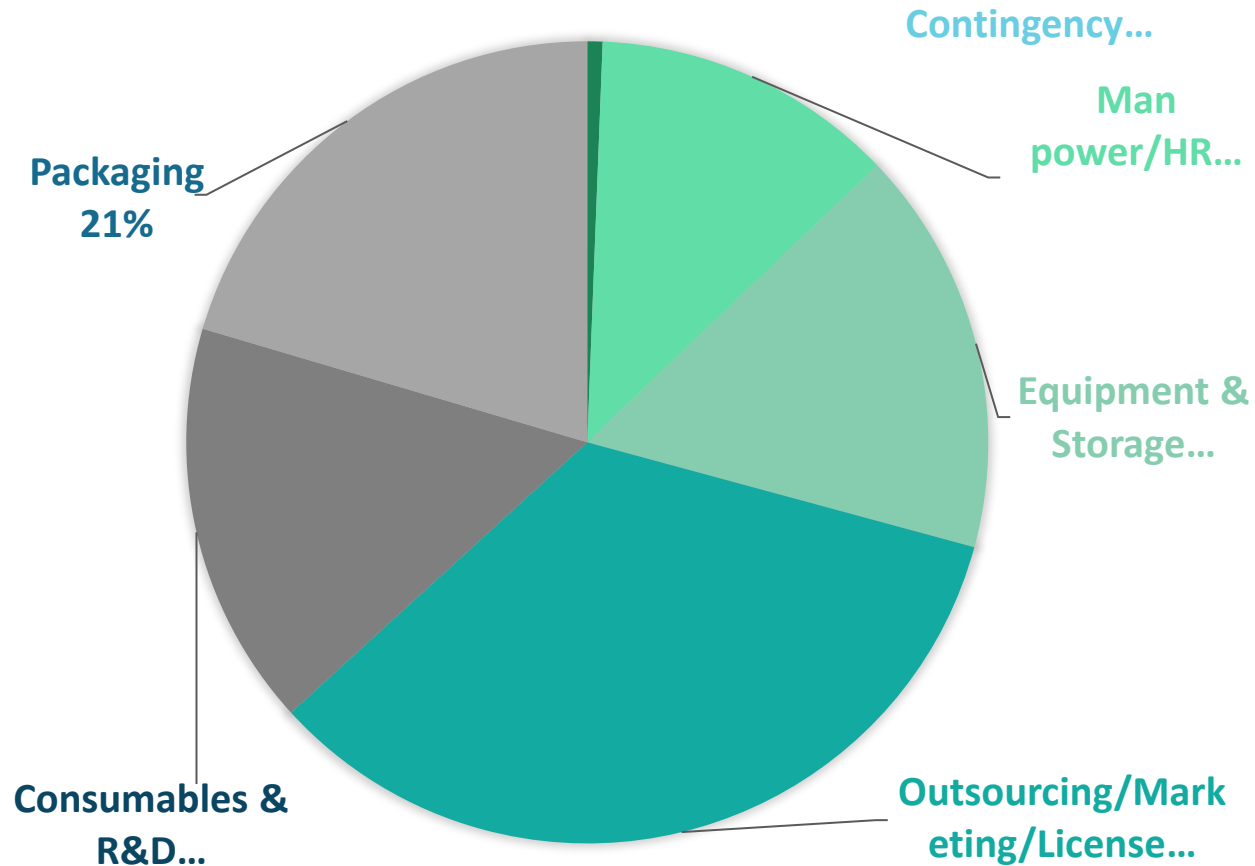


v/s



Ask:3 Cr

Utilization



- Procurement and storage
- Packaging, commercialization
- Marketing of the product
- Expansion and reaching the targeted revenue